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Human Machine Interface

XP-Builder

XGT Panel Series

User's Manual

Safety Instructions

- Read this manual carefully before installing, wiring, operating, servicing or inspecting this equipment.
- Keep this manual within easy reach for quick reference.

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Before using the product…

To use the product safely and effectively, please read this instruction manual thoroughly before use.

- ► Please keep to the safety precaution, for it is to prevent accidents and potential danger from occurring.
- ► Safety precaution is classified into 'Warning' and 'Caution' and their meanings are as follows.

⚠ **Warning**	Violating the instruction may result in serious personal injury or death.
⚠ **Caution**	Violating the instruction may result in slight personal injury or product damage.

- ► The indicated illustrations on the product and in the manual have the following meanings.

⚠ Be cautious, for danger may be present.

⚡ Be cautious, for there is a possibility of an electric shock.

- ► After reading the instruction manual, keep it handy for quick reference.

Design Precautions

⚠ Warning

- **Install a safety circuit external to the HMI to protect the whole control system in case of external power supply trouble.**

  Serious trouble may occur to the entire system due to erroneous output/operation of the HMI.

Design Precautions

⚠ Caution

- **In/output signal or communication cable should be at least 100mm apart from High-voltage/power wires.**

  Otherwise, it may cause erroneous output/operation.

Installation Precautions

⚠ Caution

- **Use the HMI in an environment that meets the general specification contained in this manual or datasheet.**

  Otherwise, it could result in electric shock, fire, erroneous operation or deterioration.

- **In case of much vibration in the installed environment, be sure to insulate the HMI from direct vibration.**

  Otherwise, it could result in electric shock, fire or erroneous operation.

- **Be sure not to let foreign substances such as conductive debris inside the product.**

  Otherwise, it could result in electric shock, fire or erroneous operation.

Wiring Precautions

⚠ Warning

- **Be sure to turn off the HMI and external power before wiring.**

  Otherwise, it may result in an electric shock or damage to the product.

⚠ Caution

- **Wire correctly by checking each of the product's rated voltage and terminal layout.**

  Otherwise, it may result in fire, electric shock or erroneous operation.

- **Tighten terminal screws with specified torque when wiring.**

  If terminal screws are loose, it may result in short circuits, fire or erroneous operation.

- **Use the exclusive HMI 3-type grounding for the FG terminal.**

  If not grounded, it may result in erroneous operation.

- **Be sure not to let any foreign substances such as wiring debris inside the module.**

  Such debris may cause fire, damage or erroneous operation.

Startup and Maintenance Precautions

⚠ Warning

- **Do not touch the terminals while power is on.**
  Otherwise, it may cause electric shock or erroneous operation.

- **Turn off the PLC and external power when cleaning or tightening the terminal.**
  Otherwise, it may cause electric shock or erroneous operation.

- **Do not charge, disassemble, heat, short circuit, solder, etc. the battery.**
  Mishandling the battery may cause overheating, crack, fire and may result in injury or fire.

⚠ Caution

- **Do not disassemble PCB from the product case or modify the product.**
  Otherwise, it may result in fire, electric shock or erroneous operation.

- **Use cellular phone or walky-talky at least 30cm away from the PLC.**
  Otherwise, it may result in erroneous operation.

Disposal Precaution

⚠ Caution

- **When disposing of this product or battery, treat it as industrial waste.**
  Otherwise, it may cause poisonous pollution or explosion.

Revision History

Version	Date	Contents	Revised chapter
V 1.0	’07.10	First Edition	-
V 2.1	’10. 6	Contents modified and added	-
V 2.2	’10. 8	1. Contents added	
		(1) Precaution in installing under Windows 7	Ch1.3
		(2) Transparent setting of device and object ID	Ch3.8
		(3) 256 color mode	Ch8.1, Ch13.2
		(4) Password device mode in security setting	Ch13.4
		(5) Flow alarm location setting	Ch14.3
		(6) Function deleting the history alarm area of NVRAM	Ch14.4
		(7) Device saving the number of the not restored alarms	Ch14.4
		(8) Function backing up the logging data by adding at the end of logging CSV file	Ch14.5
		(9) CSV file format modification and the number of backup setting	Ch14.5
		(10) InitHistoricalAlarm, InitLogging script function and communication script function added	Ch15.9, Ch18.4
		(11) Display trigger	Ch16.9
		2. Function modified	
		(1) Clock object modified	Ch17.16
V 2.3	’10.9	1. Contents added	
		(1) HTML device copier	Ch9.12
		(2) SMTP server setup	Ch13.9
		(3) N:1 communication	Ch19

※ The user manual’s number is indicated at the right of back cover.

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Thank you for purchasing the HMI of LS Industrial Systems Co., LTD.

For right use of the product, read carefully the manual to understand the functions, performance, installation and programming of the product you have purchased before use it and make sure that this manual is delivered to the final user and person in charge of maintenance.

The following manual deals with use of the product.

When necessary, read the following manuals and place an order.

Otherwise you can download PDF files by signing in our company's home page http://eng.lsis.biz/.

Related Manuals

Title	Contents	Serial Number
XGT Panel Communication User's Manual	This manual describes the line diagrams and communication settings necessary for connecting the XGT Panel products to control devices such as the PLC or inverter.	10310000857
XP-Builder User's Manual	This is the XGT Panel software manual describing the functions such as the display data, communication and environment setting, logging/recipe data backup, simulator and printing to use the XGT Panel products.	10310000876
XGT Panel User's Manual	This manual explains the specifications, features and system composition of the XGT Panel series.	10310000867

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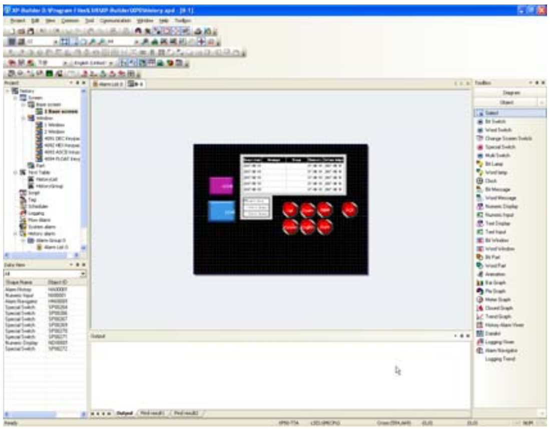
Chapter 1 How to Start

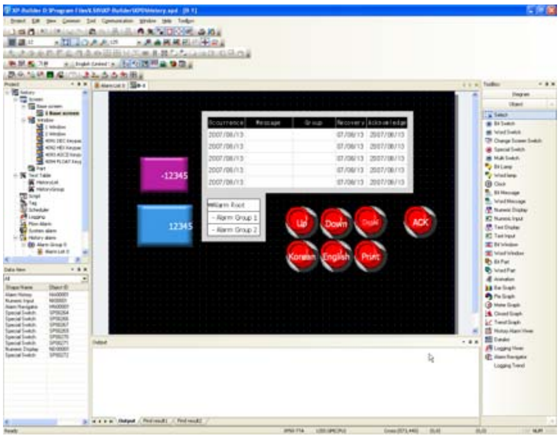
1.1 Features of the XP-Builder

XP Builder is a software tool configuring project data (display data) operated by the XGT Panel series.
XP Builder has the following features and advantages.

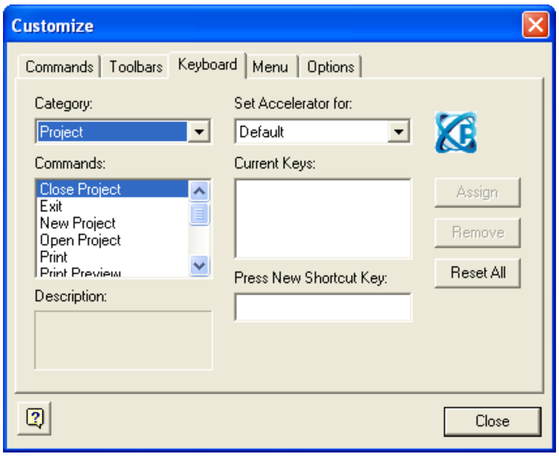
(1) It provides various and convenient display editing.

(a) You can edit the display in great detail by freely adjusting the display size.





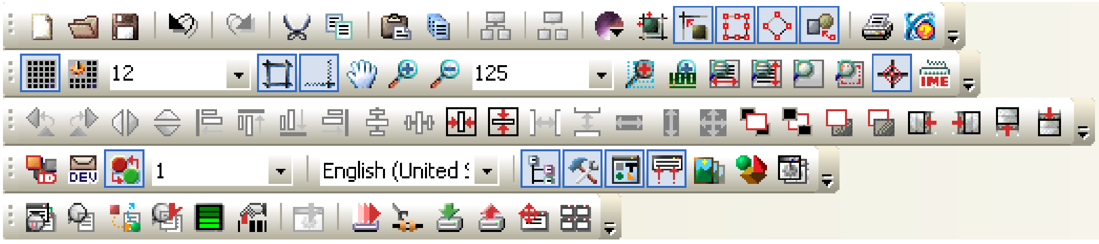
(b) You can edit the display more conveniently and rapidly by adding or modifying hot keys as you wish.


Customize
Commands
Toolbars
Keyboard
Menu
Options
Close Project
Exit
New Project
Open Project
Print
Print Preview
Description:
Current Keys:
Press New Shortcut Key:
Assign
Remove
Reset All
Close

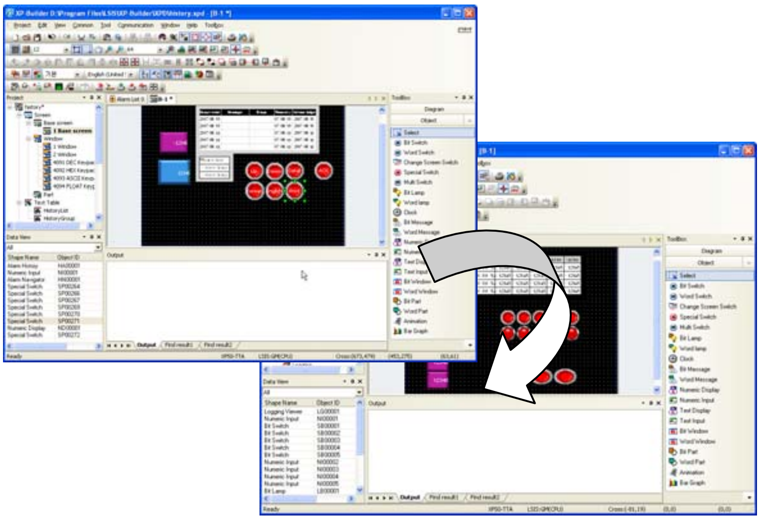
Category: Project

Set Accelerator for: Default

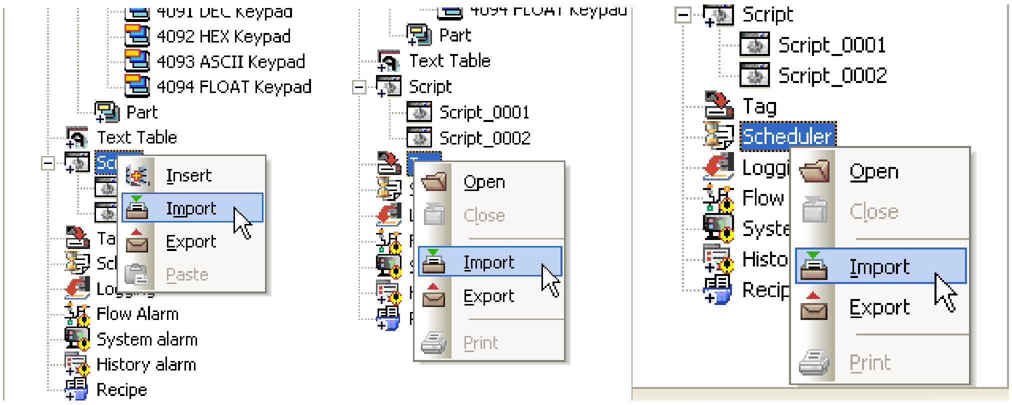
(c) By using icons, you can use the functions more conveniently and easily.


12
125
1
English (United S

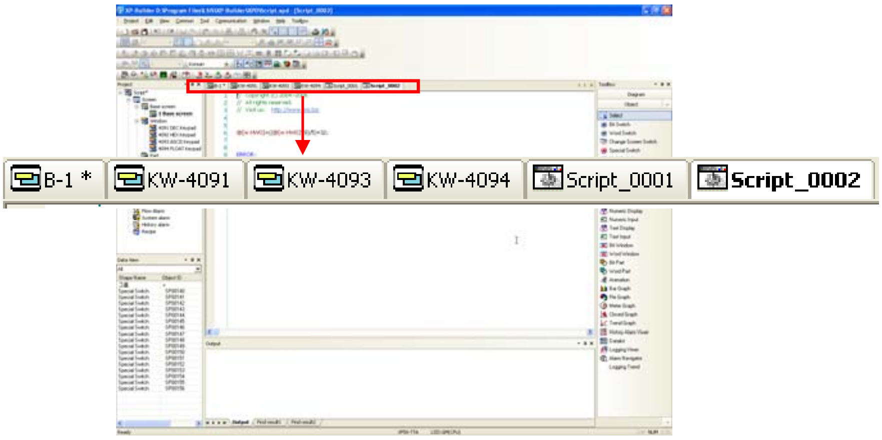
(d) You can operate multiple XP Builders to use other project data.



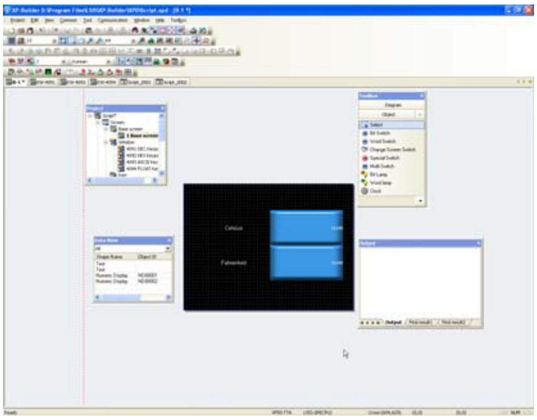
(e) Importing and exporting functions are provided for quicker editing.

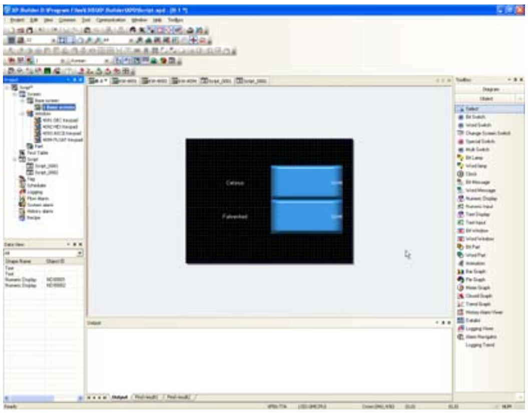

4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Insert
Import
Export
Paste
Flow Alarm
System alarm
History alarm
Recipe
4094 FLOAT Keypad
Part
Text Table
Script
Script_0001
Script_0002
Open
Close
Import
Export
Print
Script
Script_0001
Script_0002
Tag
Scheduler
Open
Close
Import
Export
Print

(f) You can use tabs for convenient editing of multiple displays.


B-1 *
KW-4091
KW-4093
KW-4094
Script_0001
Script_0002

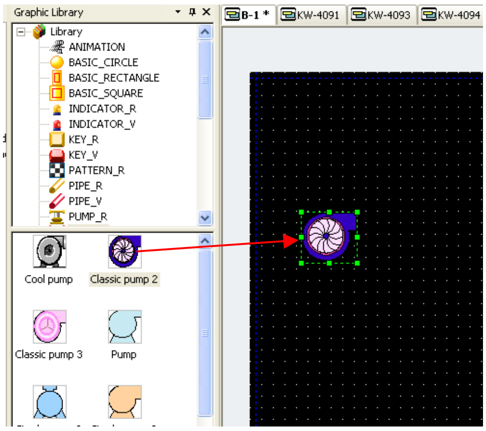
(g) Vast space and efficient editing functions are provided with each tool window arranged as you wish.





(h) Project work space is provided so that you can check the data configuration at a glance.

(i) The drag and drop function is provided for quick and convenient editing.


Graphic Library
Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
Cool pump
Classic pump 2
Classic pump 3
Pump
B-1 *
KW-4091
KW-4093
KW-4094

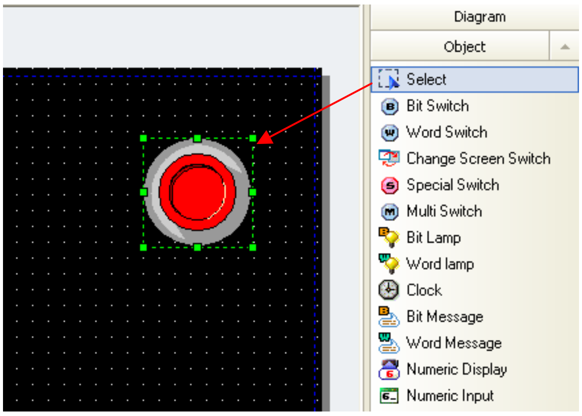
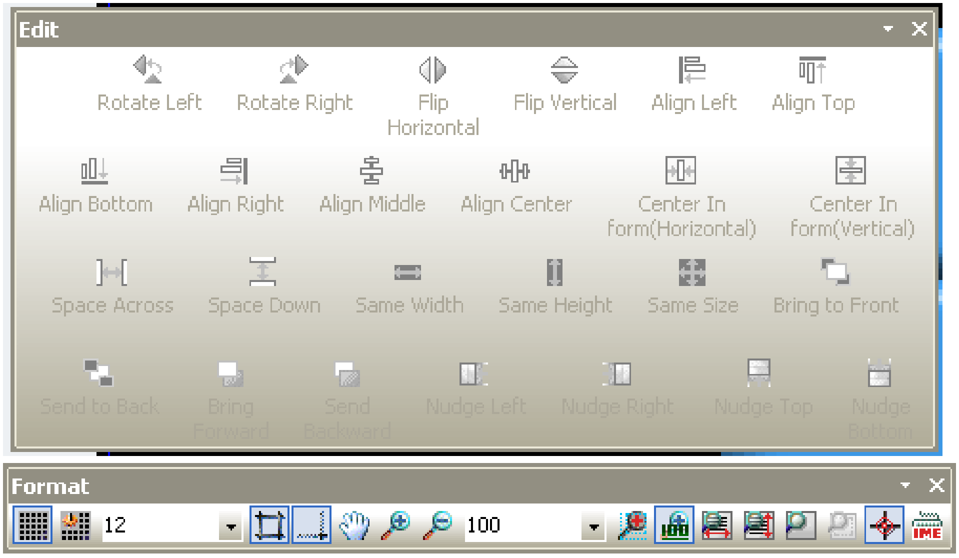
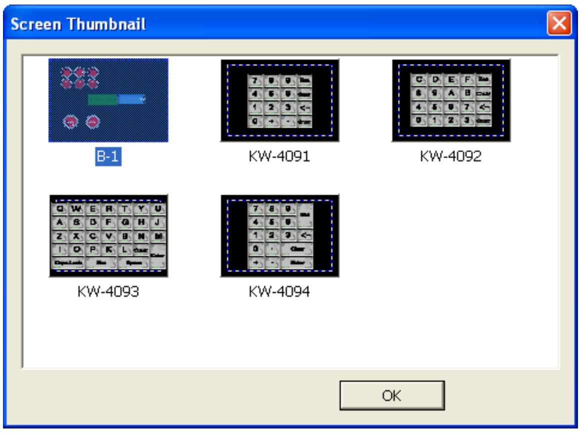


Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch
Multi Switch
Bit Lamp
Word lamp
Clock
Bit Message
Word Message
Numeric Display
Numeric Input

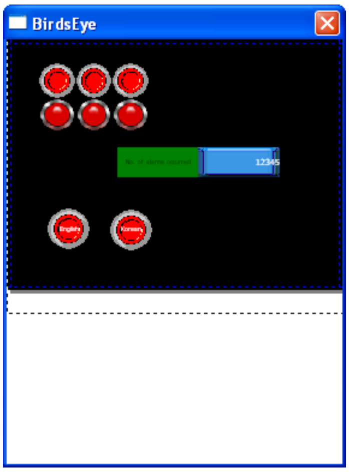
(j) It provides the convenient editing tool.


Edit
Rotate Left
Rotate Right
Flip Horizontal
Flip Vertical
Align Left
Align Top
Align Bottom
Align Right
Align Middle
Align Center
Center In form(Horizontal)
Center In form(Vertical)
Space Across
Space Down
Same Width
Same Height
Same Size
Bring to Front
Send to Back
Bring Forward
Send Backward
Nudge Left
Nudge Right
Nudge Top
Nudge Bottom
Format
12
100
IME

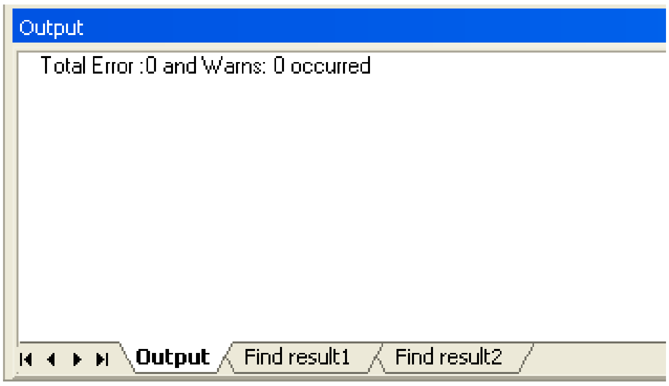
(k) You can see all the display lists at a time.


Screen Thumbnail
B-1
KW-4091
KW-4092
KW-4093
KW-4094
OK

(l) The preview function is provided.


BirdsEye
12345

(m) You can check errors of edited data.

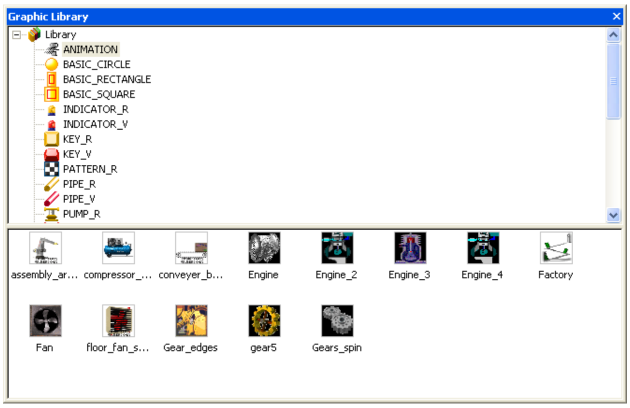

Output
Output
Find result1
Find result2

```
Total Error :0 and Warns: 0 occurred
```

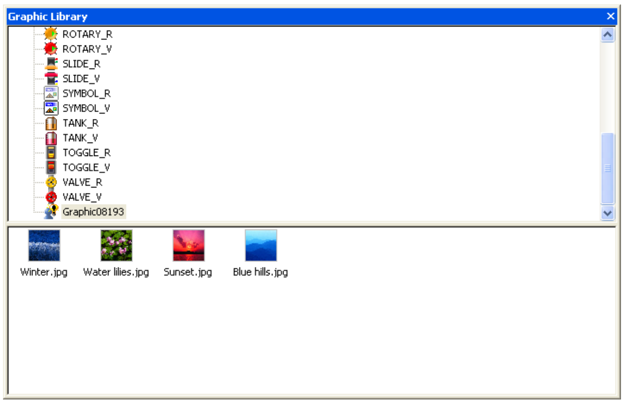
(n) Undo and Redo functions are provided without a limit.

(2) A variety of image libraries and graphic files are provided so that you can configure refined displays.

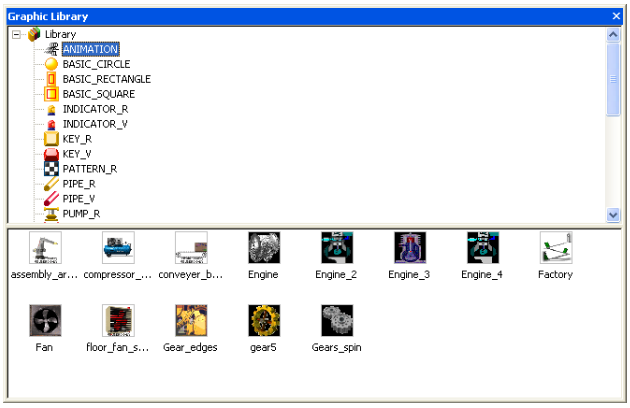
(a) An image library is provided which maintains the configuration when it is zoomed in or out.


Graphic Library
Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
assembly_ar...
compressor_...
conveyer_b...
Engine
Engine_2
Engine_3
Engine_4
Factory
Fan
floor_fan_s...
Gear_edges
gear5
Gears_spin

(b) You can edit the displays with a variety of graphic files (WMF, JPG, BMP, etc.).


Graphic Library
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
Graphic08193
Winter.jpg
Water lilies.jpg
Sunset.jpg
Blue hills.jpg

(c) Animation file (GIF) can be edited as well.


Graphic Library
Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
assembly_ar...
compressor_...
conveyer_b...
Engine
Engine_2
Engine_3
Engine_4
Factory
Fan
floor_fan_s...
Gear_edges
gear5
Gears_spin

(3) Advanced functions are provided in addition to basic objects.

(a) A variety of alarms such as history/system/flow alarms

(b) Logging

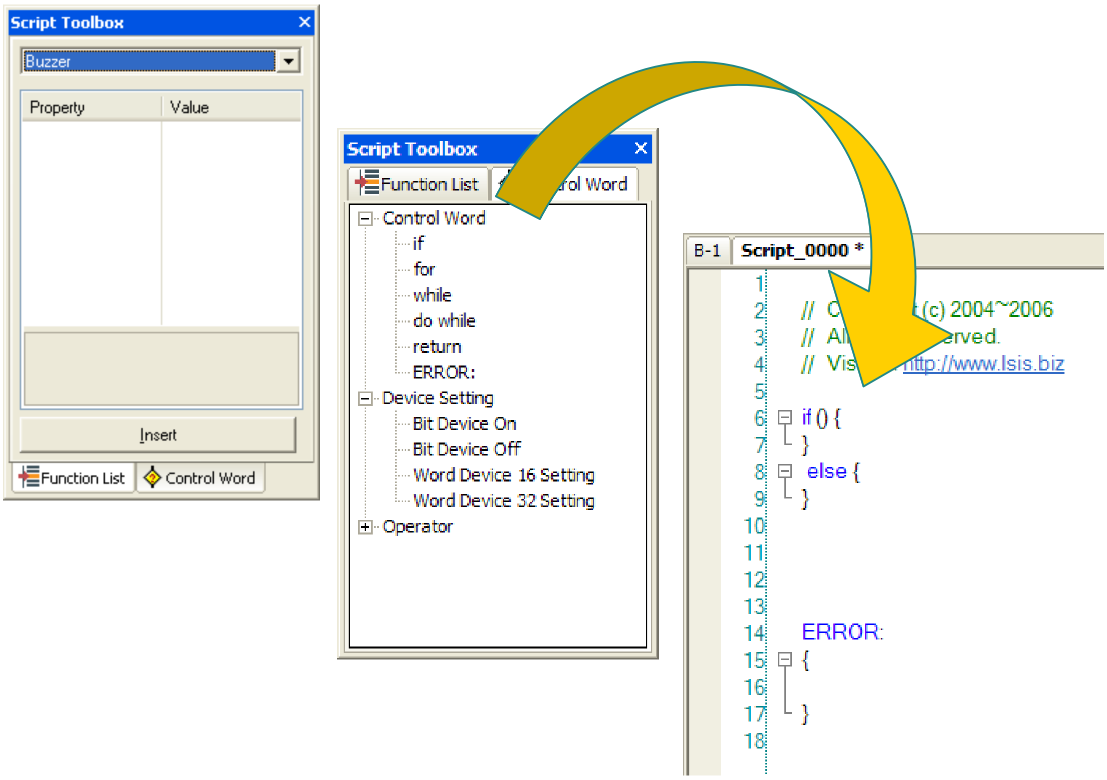
(c) Recipe

(d) Scheduler

(e) Project Print

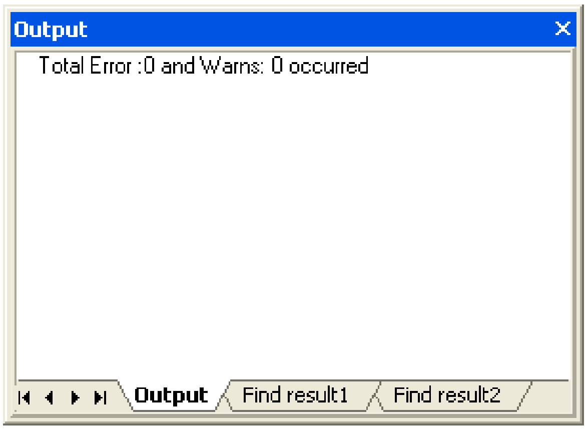
(4) Easy and convenient scripts are provided.

(a) By using the script tool box, a beginner can use the script easily.


Script Toolbox
Buzzer
Property
Value
Insert
Function List
Control Word
Script Toolbox
Function List
rol Word
Control Word
if
for
while
do while
return
ERROR:
Device Setting
Bit Device On
Bit Device Off
Word Device 16 Setting
Word Device 32 Setting
Operator
B-1
Script_0000 *

```
// C          (c) 2004~2006
// Al          erved.
// Vis      http://www.lsis.biz

if () {
}
 else {
}




ERROR:
{

}
```

(b) The script debugging function is also provided.


Output
Output
Find result1
Find result2

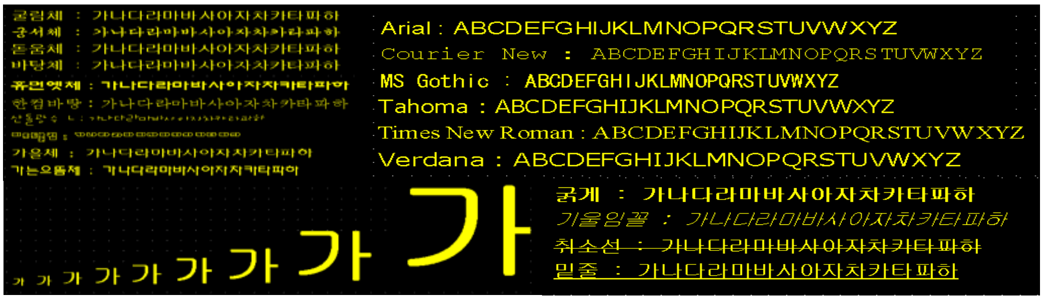
```
Total Error :0 and Warns: 0 occurred
```

(5) Multi-language and various fonts are available.

(a) Multi-language is available.

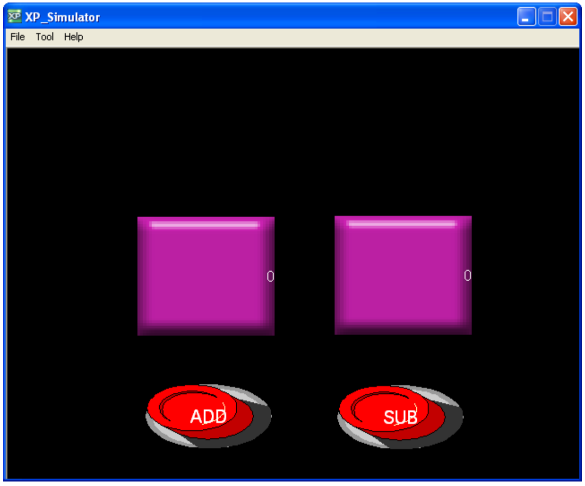
(b) You can edit with up to four languages at a time.

(c) You can edit characteristics by using the window/user fonts.


굴림체 : 가나다라마바사아자차카타파하
궁서체 : 가나다라마바사아자차카타파하
돋움체 : 가나다라마바사아자차카타파하
바탕체 : 가나다라마바사아자차카타파하
휴먼엣체 : 가나다라마바사아자차카타파하
한컴바탕 : 가나다라마바사아자차카타파하
가을체 : 가나다라마바사아자차카타파하
가는으뜸체 : 가나다라마바사아자차카타파하
Arial : ABCDEFGHIJKLMNOPQRSTUVWXYZ
Courier New : ABCDEFGHIJKLMNOPQRSTUVWXYZ
MS Gothic : ABCDEFGHIJKLMNOPQRSTUVWXYZ
Tahoma : ABCDEFGHIJKLMNOPQRSTUVWXYZ
Times New Roman : ABCDEFGHIJKLMNOPQRSTUVWXYZ
Verdana : ABCDEFGHIJKLMNOPQRSTUVWXYZ
가 가 가 가 가 가 가 가 가
굵게 : 가나다라마바사아자차카타파하
기울임꼴 : 가나다라마바사아자차카타파하
~~취소선 : 가나다라마바사아자차카타파하~~
밑줄 : 가나다라마바사아자차카타파하

(6) The simulation function is available.

(a) You can verify the project data in advance.


XP_Simulator
File Tool Help
0
0
ADD
SUB

(7) A variety of communication methods are provided.

(a) Ethernet communication of project data is provided, which is more rapid than the serial communication.

(b) You can transfer data to the USB memory and conveniently replace the project data for maintenance.

1.2 System Requirements for Operation of XP-Builder

(1) PC and Memory
CPU over Pentium 4 and memory of 512MB or above
(2) COM Port
RS-232C serial port or Ethernet port
(3) Hard Disk
Capacity above 1GB
(4) Mouse
A mouse connectable to the PC
(5) Monitor
The resolution should be above 1024 X 768.
(6) OS
Windows 2000/XP

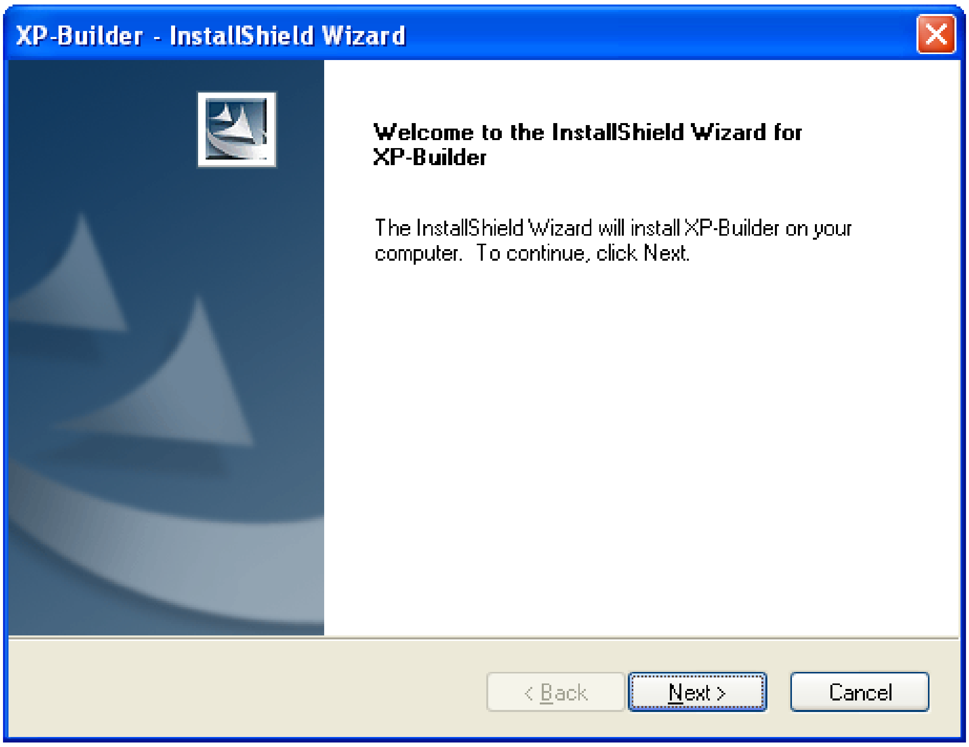
1.3 Setup of XP-Builder

[Procedure]
(1) Start the setup file.

(2) Select installation language.

(3) The Installation wizard prepares the setup.

(4) You are asked to start setup of XP Builder as shown in the following window. Click on [Next] to proceed.

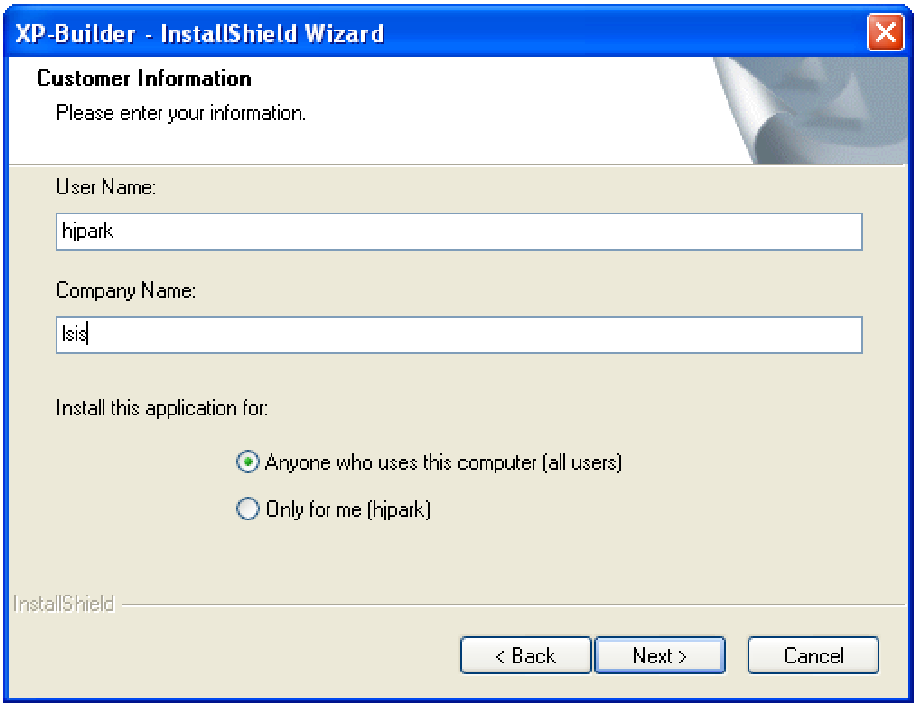


XP-Builder - InstallShield Wizard

Welcome to the InstallShield Wizard for XP-Builder

The InstallShield Wizard will install XP-Builder on your computer. To continue, click Next.

(5) You are asked to enter the user's information. Specify the user. If you want to use the XP Builder exclusively, click on 'Only for me'.



XP-Builder - InstallShield Wizard

Customer Information

Please enter your information.

User Name: hjpark

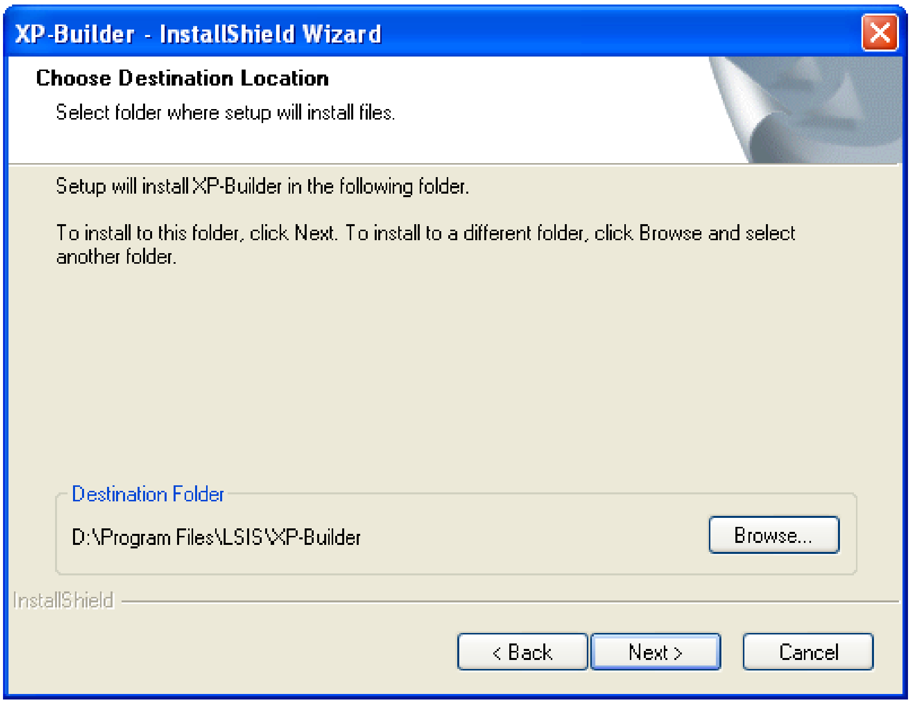
Company Name: lsis

Install this application for:

● Anyone who uses this computer (all users)

○ Only for me (hjpark)

(6) You are asked to specify the folder in which the XP Builder is to be set up. XP Builder requires space of about 100 MByte. Check whether there is sufficient space in the folder where you want to set up the XP Builder. If there is not enough space, a warning message pops up and you cannot go on. Select the folder and click on [Next].



XP-Builder - InstallShield Wizard

Choose Destination Location

Select folder where setup will install files.

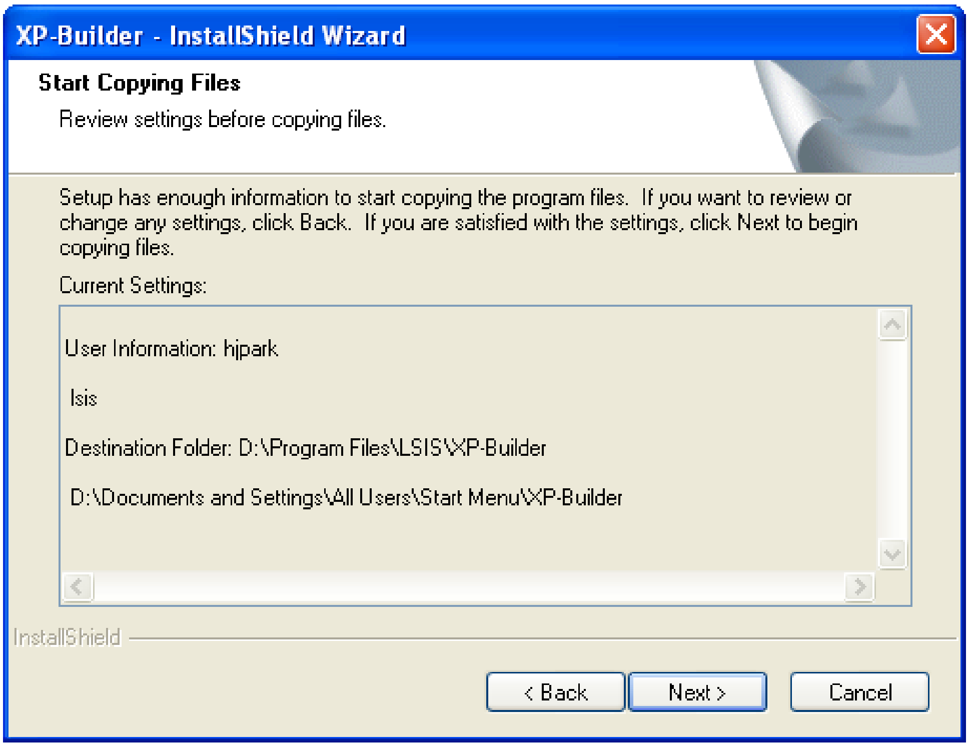
Setup will install XP-Builder in the following folder.

To install to this folder, click Next. To install to a different folder, click Browse and select another folder.

Destination Folder

D:\Program Files\LSIS\XP-Builder

(7) The window below displays the user information and setup path entered by you. To proceed with the setup, click on the Next button.



XP-Builder - InstallShield Wizard
InstallShield
< Back
Next >
Cancel

Start Copying Files

Review settings before copying files.

Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.

Current Settings:

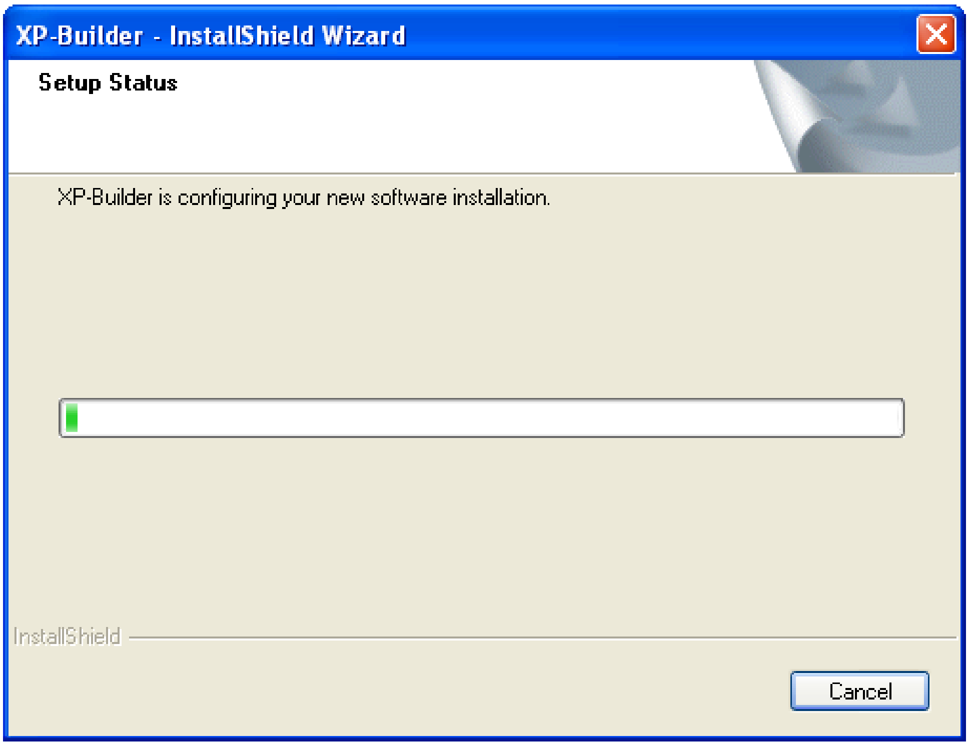
User Information: hjpark

lsis

Destination Folder: D:\Program Files\LSIS\XP-Builder

D:\Documents and Settings\All Users\Start Menu\XP-Builder

(8) The progress of the setup is displayed.

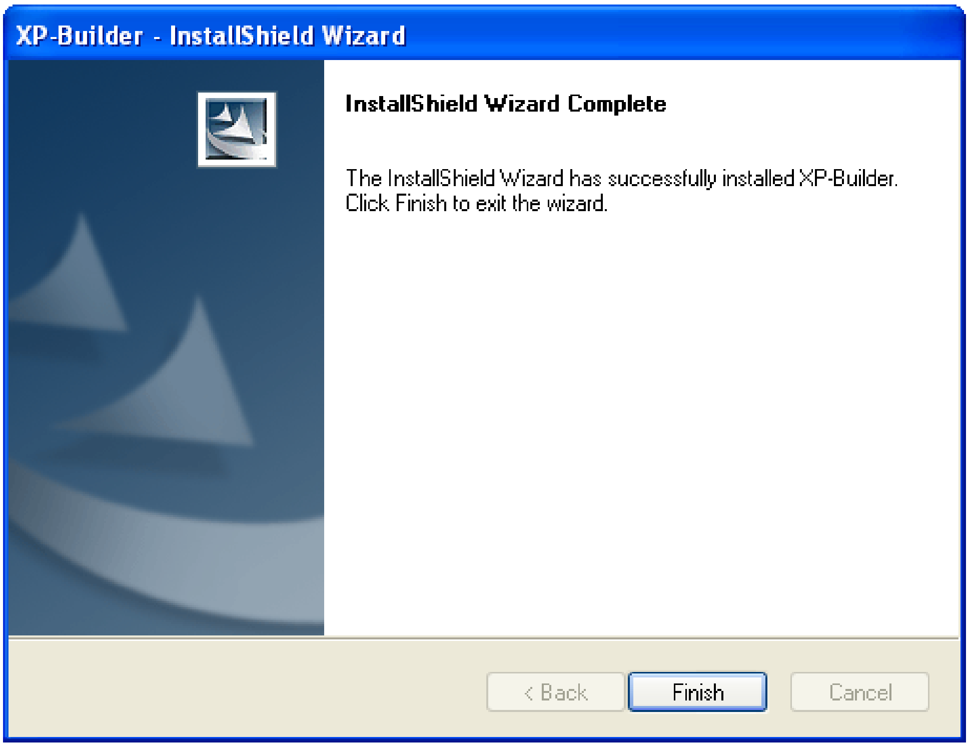


XP-Builder - InstallShield Wizard
InstallShield
Cancel

Setup Status

XP-Builder is configuring your new software installation.

(9) The window below shows that the setup has been successfully completed.



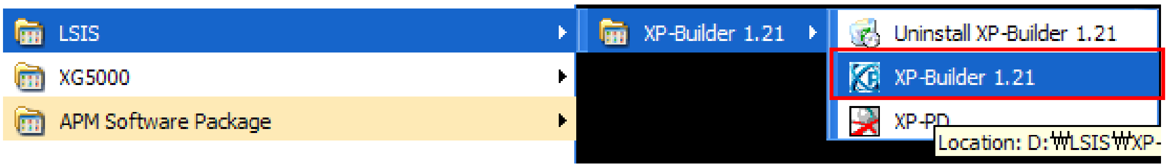
XP-Builder - InstallShield Wizard

InstallShield Wizard Complete

The InstallShield Wizard has successfully installed XP-Builder.
Click Finish to exit the wizard.

< Back
Finish
Cancel

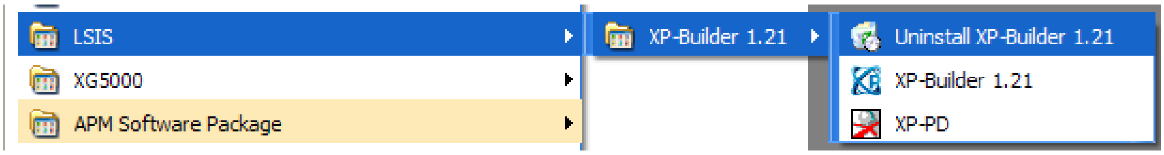
(10) You can start XP Builder in the [Start] menu or use the shortcut created in the desktop.



LSIS
XG5000
APM Software Package
XP-Builder 1.21
Uninstall XP-Builder 1.21
XP-Builder 1.21
XP-PD
Location: D:₩LSIS₩XP-

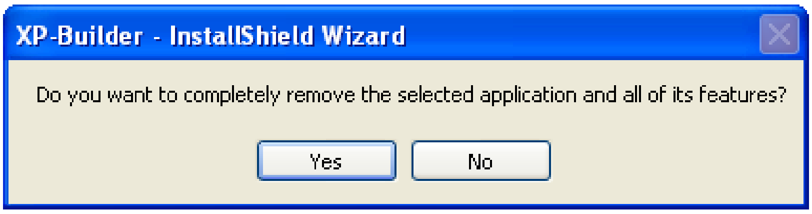
[Uninstall]

(1) To remove the XP Builder, execute the Uninstall file or execute [Add or Remove Programs] in the control panel.



LSIS
XG5000
APM Software Package
XP-Builder 1.21
Uninstall XP-Builder 1.21
XP-Builder 1.21
XP-PD

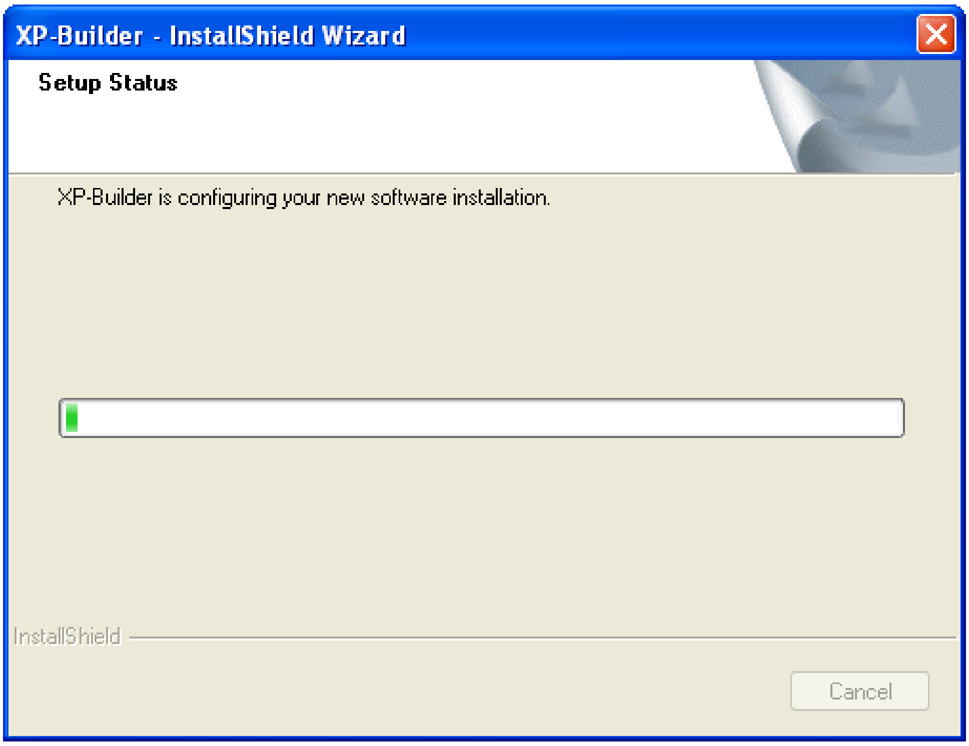
(2) An uninstall confirmation message pops up.


XP-Builder - InstallShield Wizard

Do you want to completely remove the selected application and all of its features?

Yes
No

(3) To start uninstall, click on the OK button.

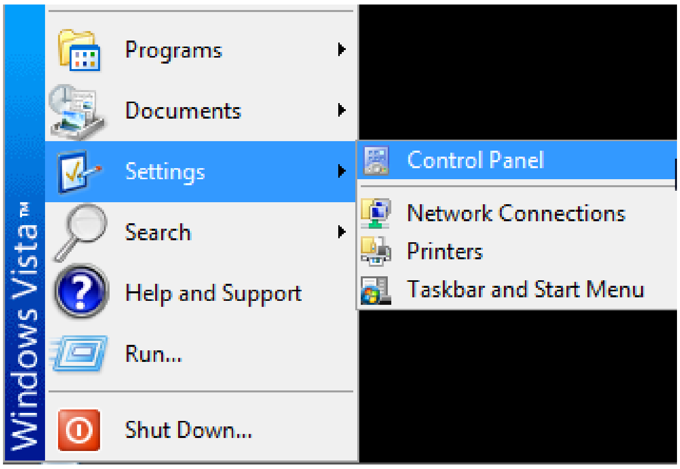

XP-Builder - InstallShield Wizard
Setup Status

XP-Builder is configuring your new software installation.

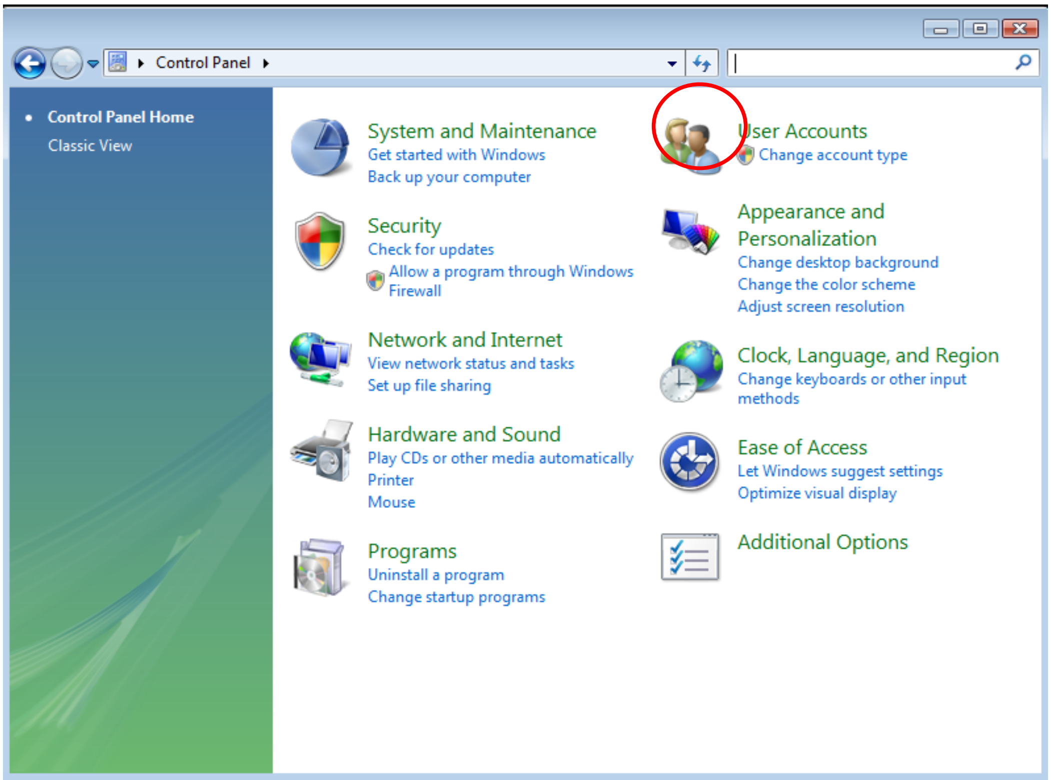
InstallShield
Cancel

Note

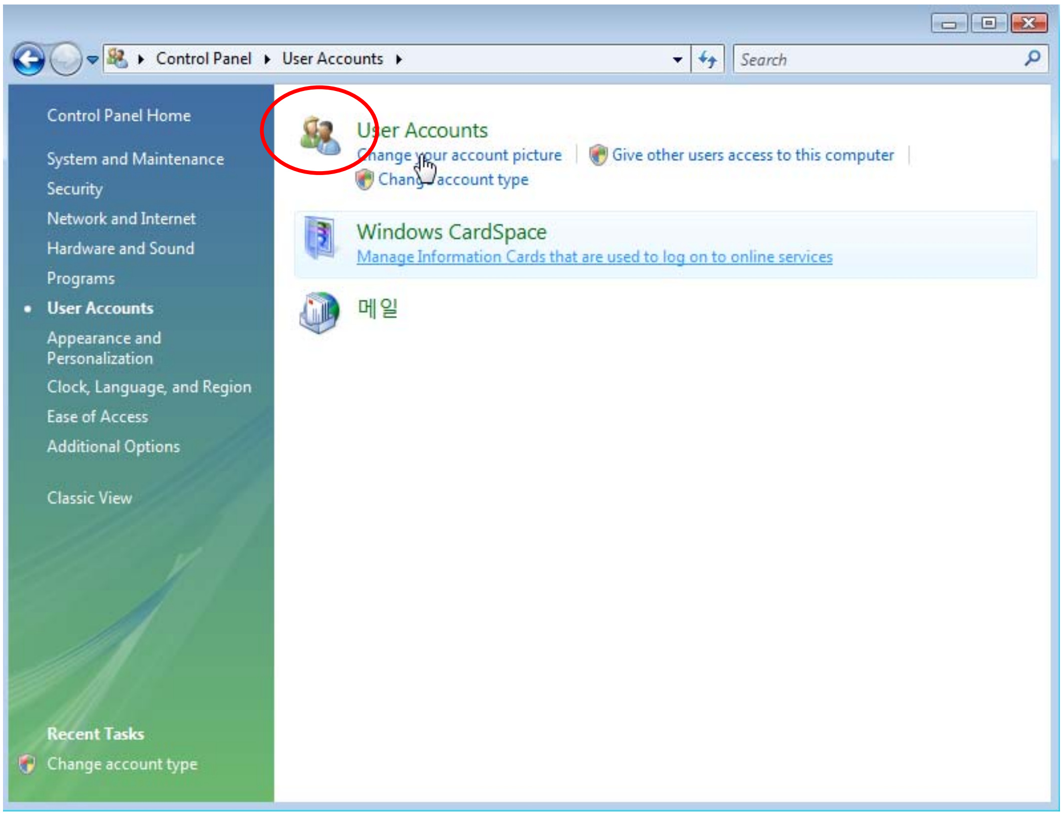
1. The minimum capacity of PC for installation is as below.
   (1) At least 700MB is required for a system driver (where OS is installed, normally, C:\) regardless of installation route. (It is the minimum size to operate Window OS and install XP-Builder)
   (2) The driver for established route needs at least 250MB for its saving capacity.
   (3) Although a system driver is more than 700MB, if the capacity is below than the above or it can not meet the minimum size (may be different depending on OS version, computer specifications) to operate stably Windows OS, some installation problem may be raised.
2. Please note the below for installation under Windows Vista.
   (1) To install XP-Builder, log-in with Administrator account all the time.
   (2) Security process is needed after installation as below.
   2.1) Click Start->Settings and execute a control board


Windows Vista™
Programs
Documents
Settings
Search
Help and Support
Run...
Shut Down...
Control Panel
Network Connections
Printers
Taskbar and Start Menu

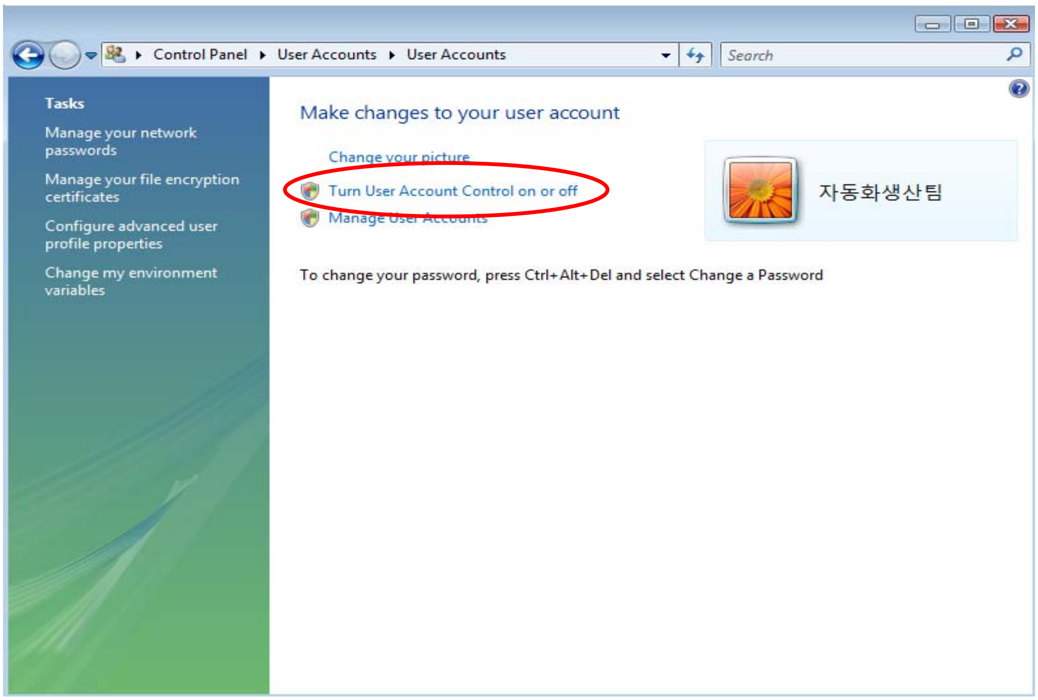
2.2) Click Control Panel → User accounts


Control Panel
Control Panel Home
Classic View
System and Maintenance
Get started with Windows
Back up your computer
Security
Check for updates
Allow a program through Windows Firewall
Network and Internet
View network status and tasks
Set up file sharing
Hardware and Sound
Play CDs or other media automatically
Printer
Mouse
Programs
Uninstall a program
Change startup programs
User Accounts
Change account type
Appearance and Personalization
Change desktop background
Change the color scheme
Adjust screen resolution
Clock, Language, and Region
Change keyboards or other input methods
Ease of Access
Let Windows suggest settings
Optimize visual display
Additional Options

2.3) Click the user accounts from User Accounts settings screen.

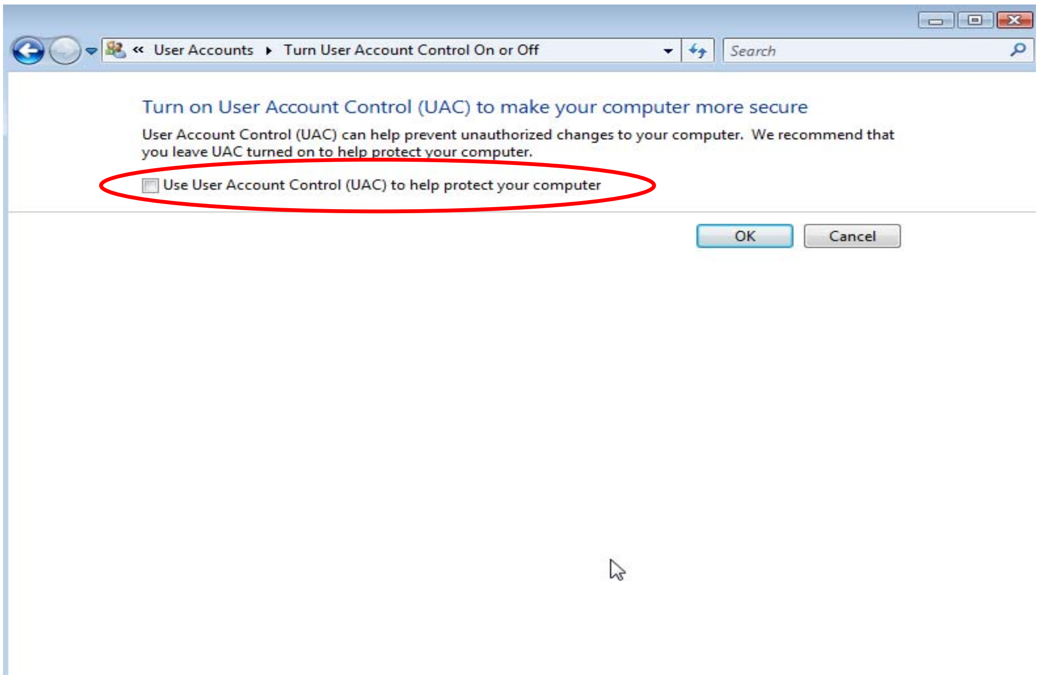

Control Panel ▸ User Accounts ▸
Search
Control Panel Home
System and Maintenance
Security
Network and Internet
Hardware and Sound
Programs
User Accounts
Appearance and Personalization
Clock, Language, and Region
Ease of Access
Additional Options
Classic View
Recent Tasks
Change account type
User Accounts
Change your account picture
Give other users access to this computer
Change account type
Windows CardSpace
Manage Information Cards that are used to log on to online services
메일

2.4) Click the menu Turn User Account Control on or off -> User Account Setting screen.


Control Panel ▸ User Accounts ▸ User Accounts
Search
Tasks
Manage your network passwords
Manage your file encryption certificates
Configure advanced user profile properties
Change my environment variables
Make changes to your user account
Change your picture
Turn User Account Control on or off
Manage User Accounts
자동화생산팀

To change your password, press Ctrl+Alt+Del and select Change a Password

2.5) Cancel the menu at the “Turn User Account Control On or Off” screen



Turn on User Account Control (UAC) to make your computer more secure

User Account Control (UAC) can help prevent unauthorized changes to your computer. We recommend that you leave UAC turned on to help protect your computer.

☐ Use User Account Control (UAC) to help protect your computer

3. Please note the below for installation under Windows 7

(1) Install the XP-Builder with Administrator account

(2) After installation, security setting is needed as follows.

3.1) Execute the control panel

3.2) Click “Control Panel → User account and family protection” icon

3.3) Click “User account” icon at the user account setting screen.

3.4) Click “Change user account control setting” at the “User account → User account setting screen”

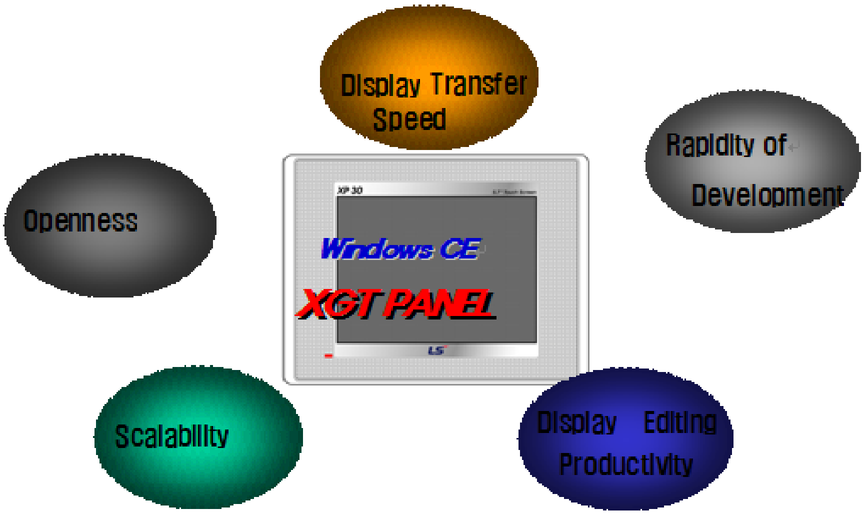
3.5) Set the user account control as [Don’t notify] at the user account control setting screen.

Chapter 2 Overview and Basics of XGT Panel

2.1 Overview of XGT Panel

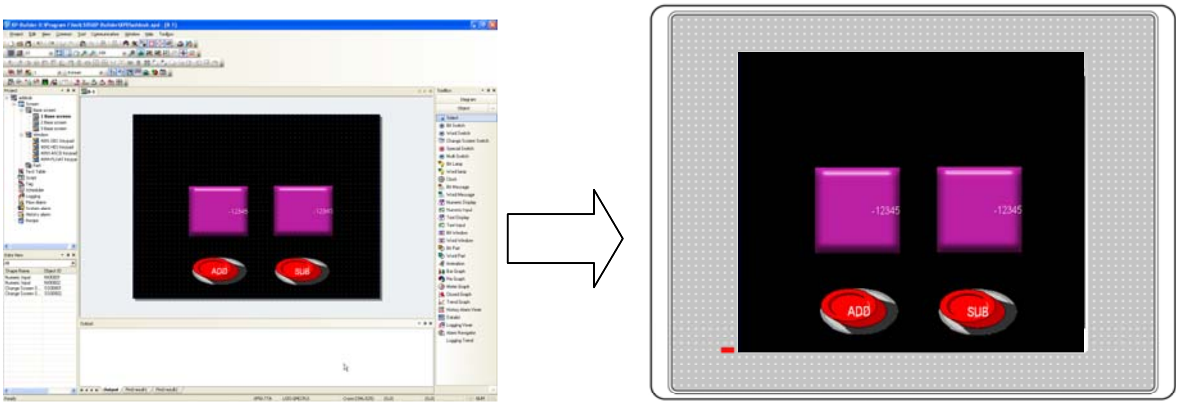
2.1.1 Introduction of XGT Panel

XGT Panel is a graphic control device which can monitor and control the PLC and control device of various makers including our company's PLC. You can monitor the information of each control as you set in the tool by arranging various figures and objects on the screen through an editing tool for transferring data to XGT Panel, setting them simply and transferring them to XGT Panel. In addition, simple control is also available through the switch and writing object. Moreover, XGT Panel provides advanced functions such as scripts, loggings, recipes and alarms so that diverse needs of uses can be met.



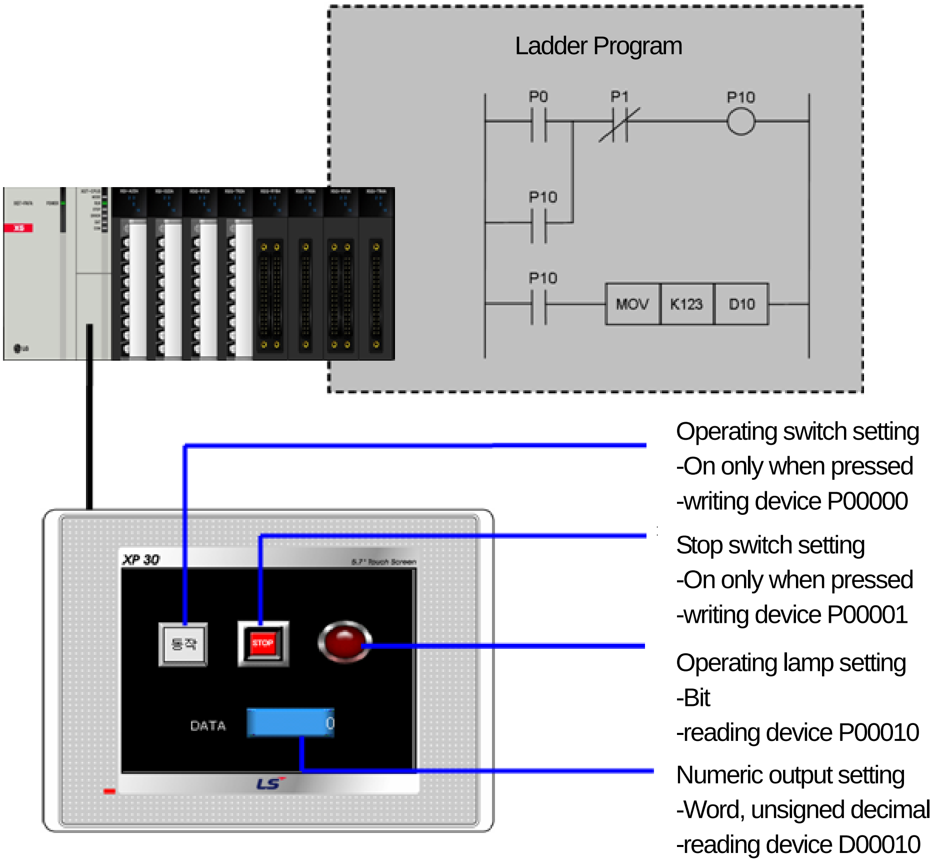
2.1.2 Data Displayed in XGT Panel

XGT Panel transfers and displays a variety of objects and figures through XP Builder, an editing tool. In more detail, XGT Panel creates a project in the XP Builder tool, arranges the switch, lamp and numeric/text input and output devices on the screen and sets the address and action for each of them (setting, unsetting, adding, subtracting). When necessary, you can set the condition of more details. You can check whether the switch, lamp, numeric/text input and output device which are arranged on the screen are operating as you have set through communication to XGT Panel by media such as Ethernet or serial.



2.1.3 Examples of Simple Operation of XGT Panel

The following is examples of operation of the XGT Panel connected with the programmed PLC.


Ladder Program
P0
P1
P10
P10
P10
MOV
K123
D10
XP 30
5.7" Touch Screen
동작
STOP
DATA
0
LS

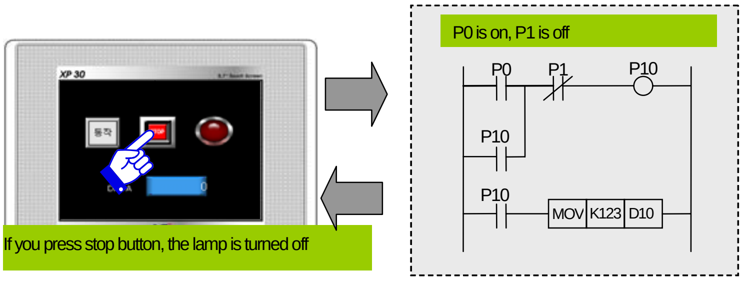
Operating switch setting
-On only when pressed
-writing device P00000

Stop switch setting
-On only when pressed
-writing device P00001

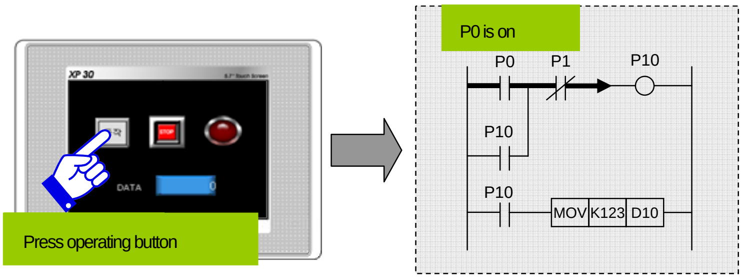
Operating lamp setting
-Bit
-reading device P00010

Numeric output setting
-Word, unsigned decimal
-reading device D00010

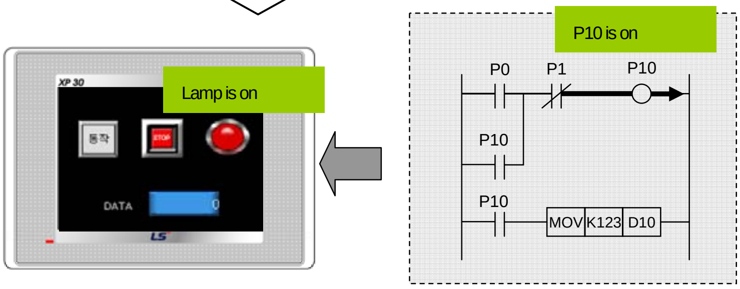
An example of an action:


XP 30
동작
STOP
DATA
0
If you press stop button, the lamp is turned off
P0 is on, P1 is off
P0
P1
P10
P10
P10
MOV
K123
D10

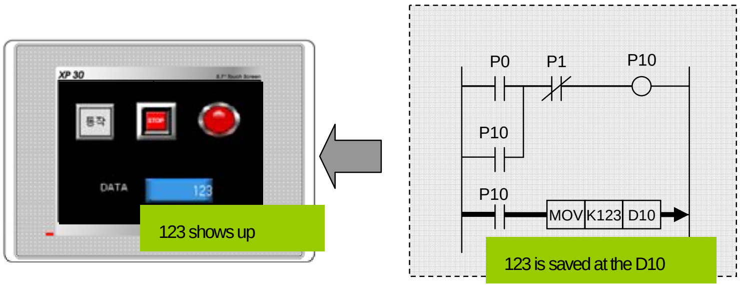
(1) If you press the ‘Start’ button on the left, the bit device is turned on.


XP 30
STOP
DATA
0
Press operating button
P0 is on
P0
P1
P10
P10
P10
MOV
K123
D10

(2) With the bit device PO being on, the bit device P10 is turned on. The operating lamp set as P10 is turned on.


XP 30
Lamp is on
동작
STOP
DATA
0
LS
P10 is on
P0
P1
P10
P10
P10
MOV
K123
D10

(3) If the P10 bit is turned on, 123 are saved in the word device D10. Now, 123 are displayed on the numeric display device set as D10.


XP 30
동작
STOP
DATA
123
123 shows up
P0
P1
P10
P10
P10
MOV
K123
D10
123 is saved at the D10

(4) If you click on Stop touch switch, the bit device P1 set in the Stop button is turned on. Bit device P1 is the condition in which P10 is turned off, so the operating lamp set as P10 is turned off.

2.2 Basics of XGT Panel

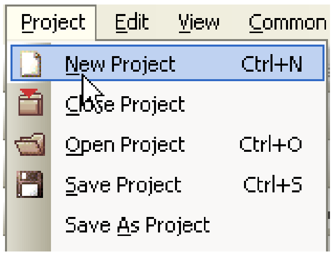
Follow the examples to get a rough idea how to use XGT Panel.

2.2.1 Project Creation

(1) Project Creation

[Procedure]

(a) Select Project – New Project in the menu.

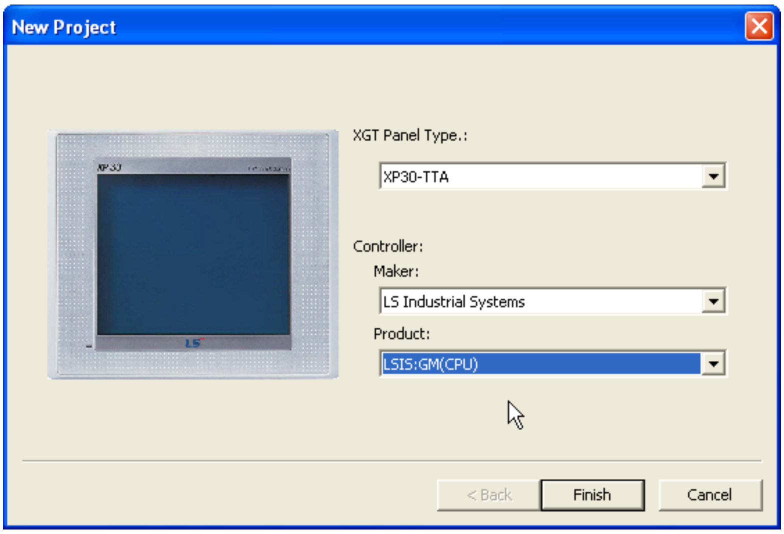

Project
Edit
View
Common
New Project Ctrl+N
Close Project
Open Project Ctrl+O
Save Project Ctrl+S
Save As Project

(b) Select the XGT Panel type, the PLC product to connect and its maker.

Note

(1) The PLC product and maker you select here are the basic settings. If you want to add an additional PLC, select and use 1:N connections in Menu → Common → Project Property Setting → XGT Panel Settings.

In the following example, XP30-TTA has been selected as the device type and the GM (CPU) of LSIS has been selected as the PLC. Detailed communication settings are conducted in the project properties dialog box. Press the OK button after setting.

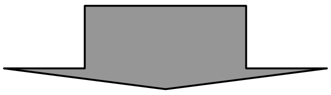

New Project
< Back
Finish
Cancel

XGT Panel Type.: XP30-TTA

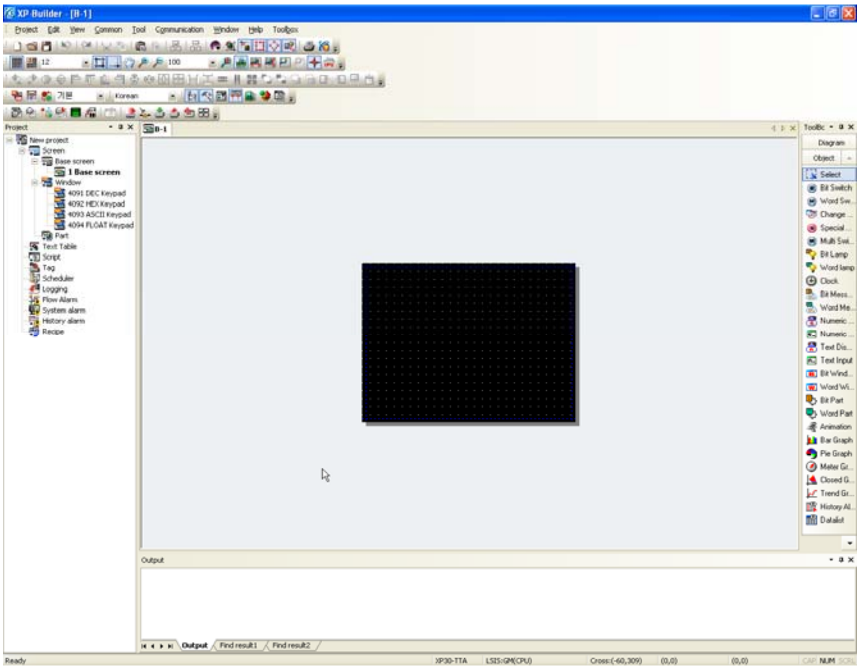
Controller:

Maker: LS Industrial Systems

Product: LSIS:GM(CPU)



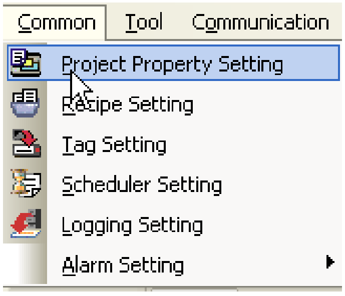
As the project is created, the following basic window is invoked at the center of the frame of XP Builder.


XP Builder - [B-1]
Project Edit View Common Tool Communication Window Help Toolbox
Project
New project
Screen
Base screen
1 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
B-1
Toolbox
Diagram
Object
Select
Bit Switch
Word Sw...
Change ...
Special ...
Multi Swi...
Bit Lamp
Word lamp
Clock
Bit Mess...
Word Me...
Numeric ...
Numeric ...
Text Dis...
Text Input
Bit Wind...
Word Wi...
Bit Part
Word Part
Animation
Bar Graph
Pie Graph
Meter Gr...
Closed G...
Trend Gr...
History Al...
Datalist
Output
Output
Find result1
Find result2
Ready
XP30-TTA
LSIS:GM(CPU)
Cross:(-60,309)
(0,0)
(0,0)
NUM

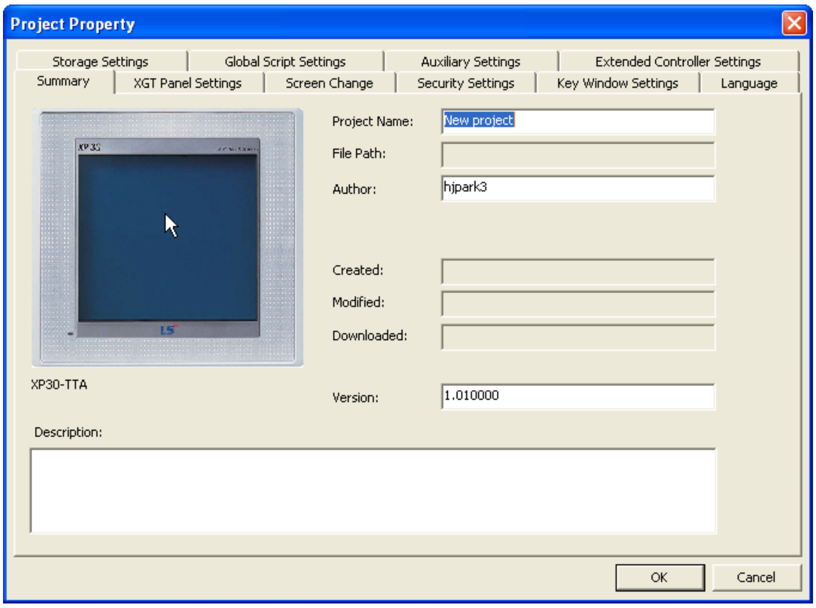
2.2.2 Project Properties Change

When a project is created, the basic properties are accompanied. However, to set a parameter such as communication or to configure a project as you want, be sure to change the project properties. The following is the procedure of adjusting the communication parameter of the project.

[Procedure]
(a) Select Project Property Setting in the common menu.


Common
Tool
Communication
Project Property Setting
Recipe Setting
Tag Setting
Scheduler Setting
Logging Setting
Alarm Setting

The following project information dialog box is invoked on the screen.



Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
OK
Cancel

Project Name: New project

File Path:

Author: hjpark3

Created:

Modified:

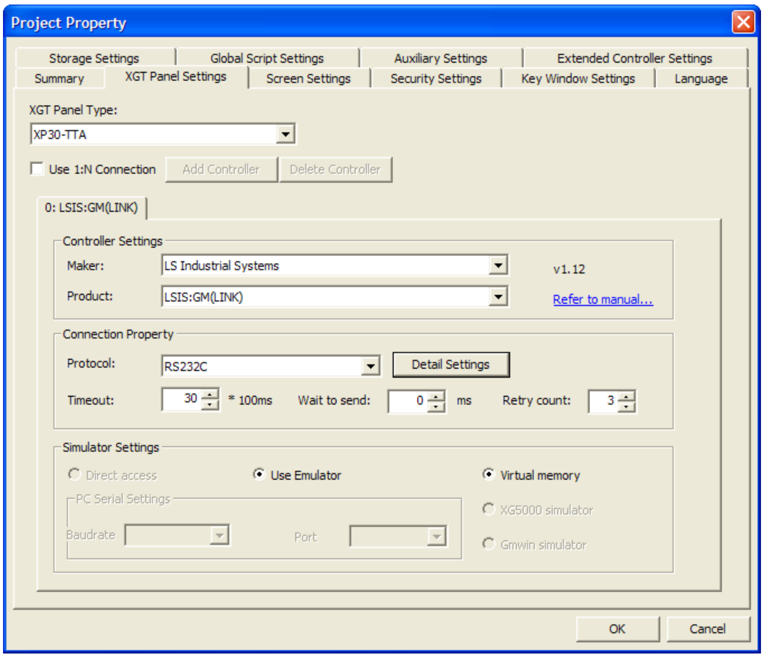
Downloaded:

XP30-TTA

Version: 1.010000

Description:

(b) If you click on [XGT Panel Settings], the second tab of the dialog box, the following text boxes is displayed.



Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:GM(LINK)
Controller Settings
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
OK
Cancel

XGT Panel Type: XP30-TTA

☐ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:GM(LINK)

v1.12

Protocol: RS232C

Timeout: 30 * 100ms

Wait to send: 0 ms

Retry count: 3

○ Direct access

● Use Emulator

● Virtual memory

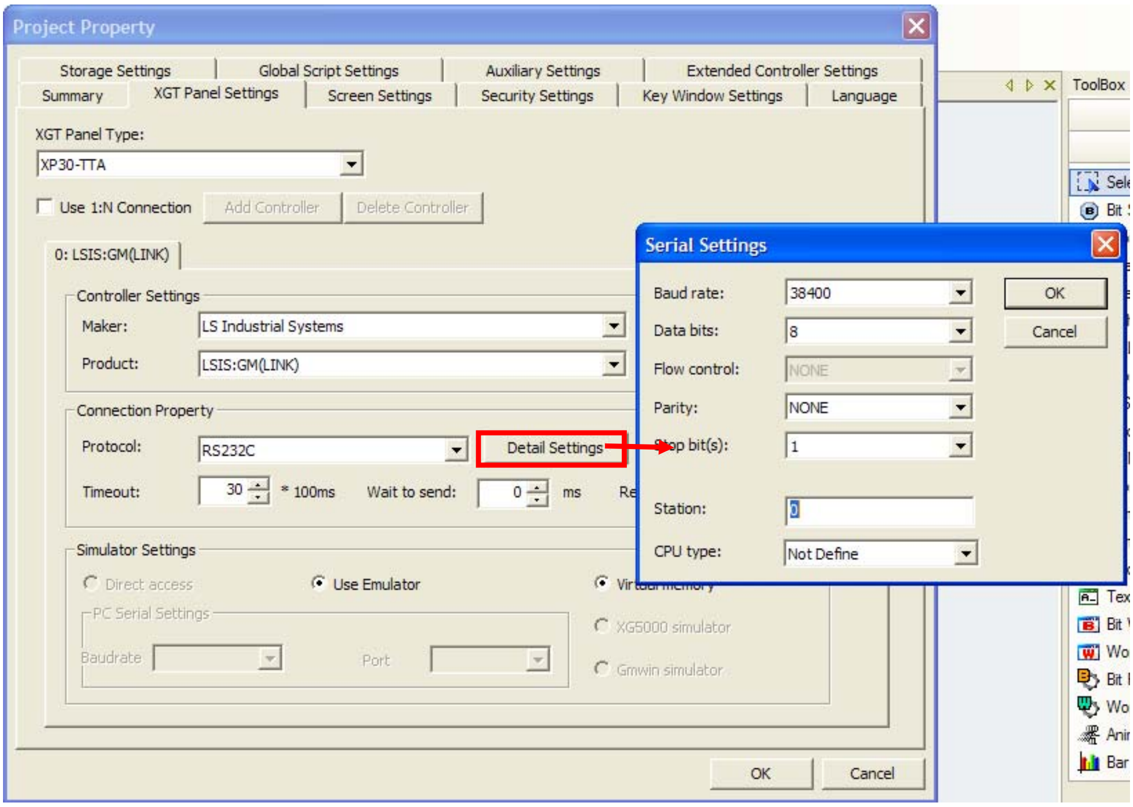
○ XG5000 simulator

○ Gmwin simulator

Baudrate

Port

(c) To change the current transfer speed of RS-232C, this is the default access setting, click on [Detail Settings]. As the access method of RS-232C is serial, the following serial setting dialog box is invoked.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:GM(LINK)
Controller Settings
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
OK
Cancel
ToolBox
Serial Settings
OK
Cancel

XGT Panel Type: XP30-TTA

☐ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:GM(LINK)

Protocol: RS232C

Timeout: 30 * 100ms Wait to send: 0 ms

○ Direct access ● Use Emulator ● Virtual memory

○ XG5000 simulator

○ Gmwin simulator

Baudrate Port

Baud rate: 38400

Data bits: 8

Flow control: NONE

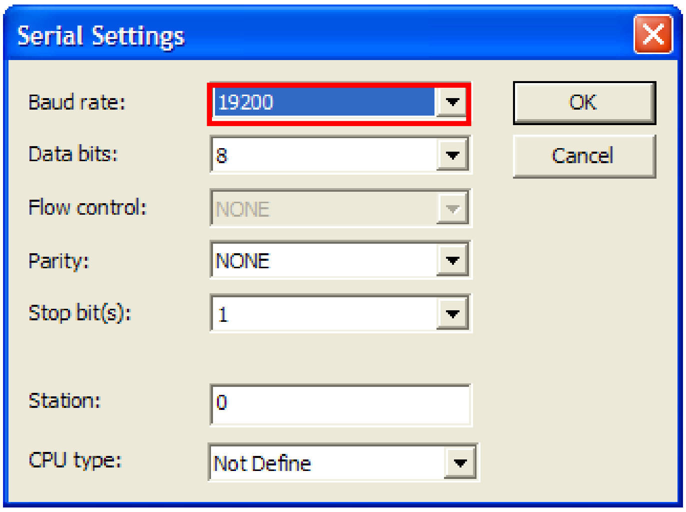
Parity: NONE

Stop bit(s): 1

Station: 0

CPU type: Not Define

(d) Change the transfer speed from 38400 to 19200 and click on the OK button.


Serial Settings
OK
Cancel

Baud rate: 19200

Data bits: 8

Flow control: NONE

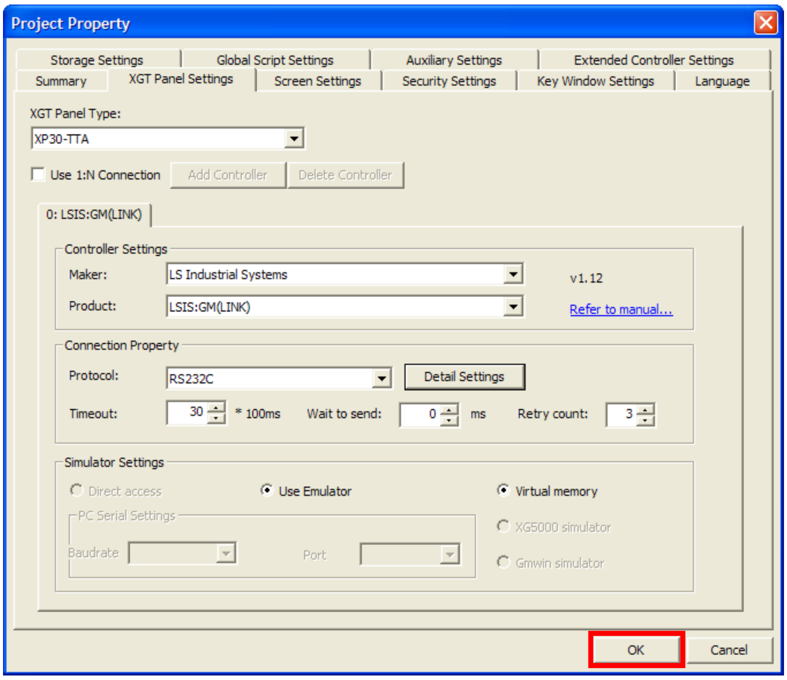
Parity: NONE

Stop bit(s): 1

Station: 0

CPU type: Not Define

(e) Now the serial setting dialog box is closed. Click on the OK button to finish the settings.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:GM(LINK)
Controller Settings
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
OK
Cancel

XGT Panel Type: XP30-TTA

☐ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:GM(LINK)

v1.12

Protocol: RS232C

Timeout: 30 * 100ms

Wait to send: 0 ms

Retry count: 3

○ Direct access

● Use Emulator

● Virtual memory

○ XG5000 simulator

○ Gmwin simulator

2.2.3 Screen Creation and Properties Change

(1) Screen Creation

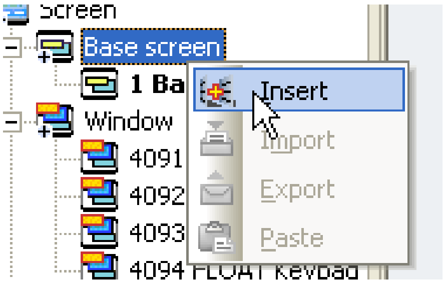
The screen is the area where you can put figures and objects, so the first thing you have to do after creating a project is create a screen.

The initial display refers to the screen that first appears when you have transferred the project you have configured in XGT Panel. The initial display can be set only from the basic screens that you have configured.

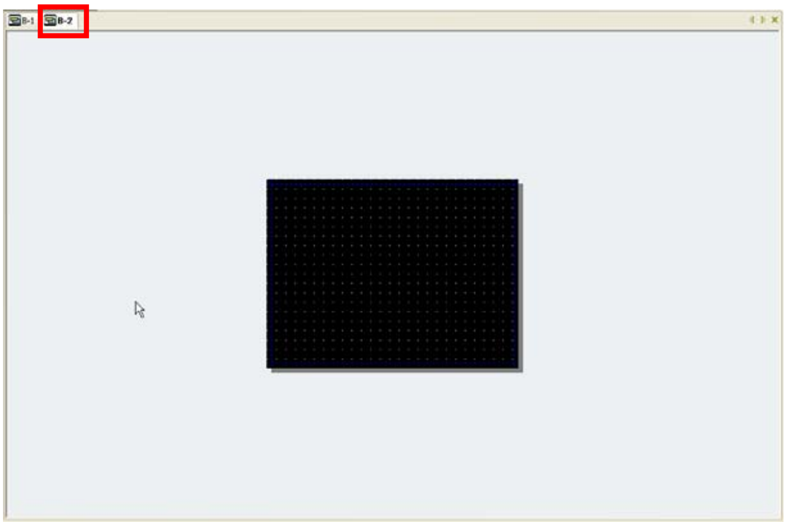
From now on, we are going to follow the procedure of creating window #2 and setting it as the initial display.
(For details, see Chapter 3.)

[Procedure]

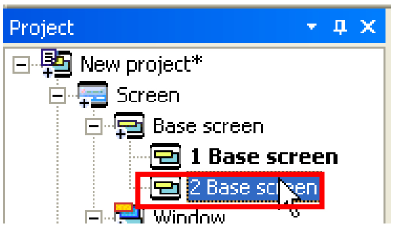
(a) Press the right button on the mouse on the project list and select [Insert] or click on the hot key.


Screen
Base screen
1 Ba
Window
4091
4092
4093
4094 FLOAT Keypad
Insert
Import
Export
Paste

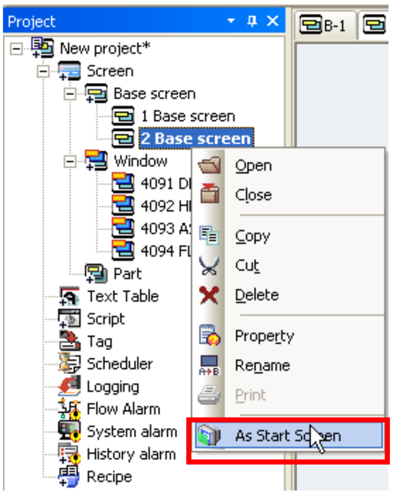
(b) The following screen is created and a tab of which the name is B-2 is also added.



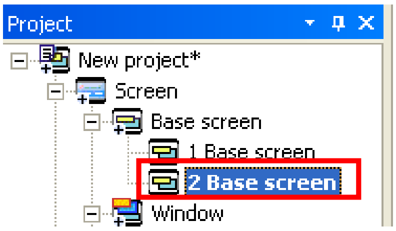
(c) As shown below, [2 Base screen] has been added to the project list.


Project
New project*
Screen
Base screen
1 Base screen
2 Base screen
Window

(d) To change the initial display number to 2, press the right button on the mouse on [2 Base screen] in the project list and then select [As Start Screen] or press the function key [F2] on the keyboard.


Project
B-1
New project*
Screen
Base screen
1 Base screen
2 Base screen
Window
4091 DI
4092 HI
4093 A
4094 FI
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
As Start Screen

The [2 Base screen] caption in the project list is now shown in bold characters.


Project
New project*
Screen
Base screen
1 Base screen
2 Base screen
Window

(2) Check and Change of Screen Properties

XP-Builder provides the function of changing the screen properties such as the background color and background image specification of the created window. You can check the properties of the display and change the background color in the following method.

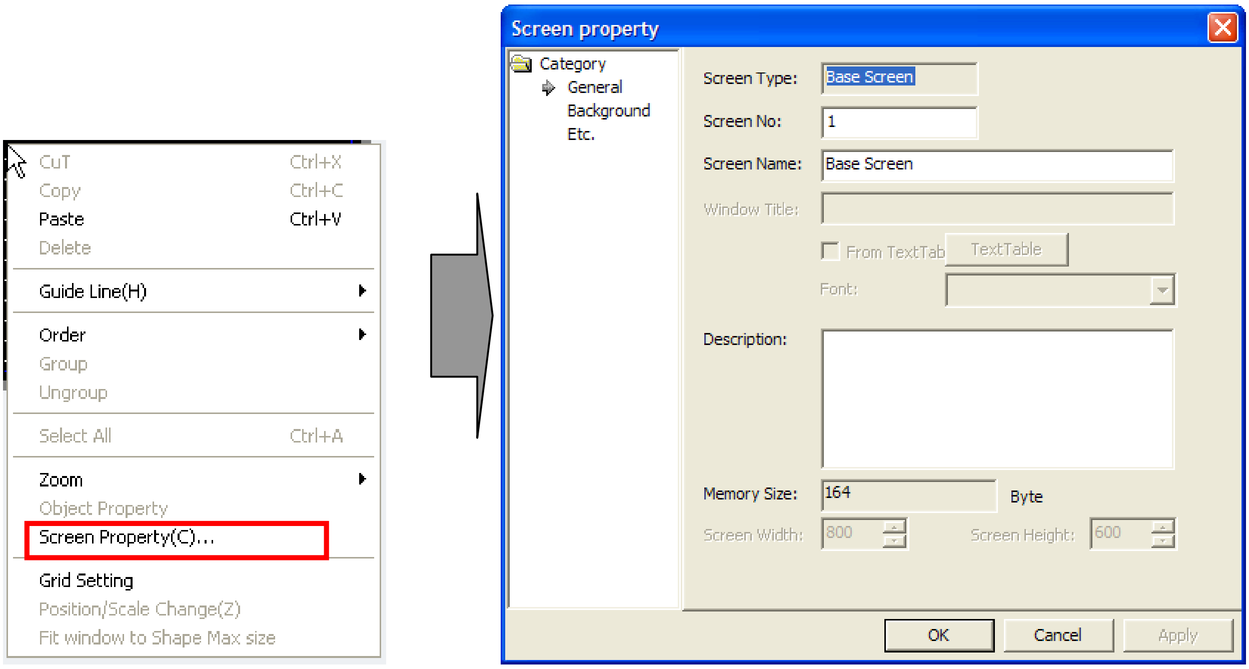
You can check the properties of the screen as shown below.

[Procedure]

(a) Press the right button on the mouse on a point of the space of the window such as the base screen, window screen or part screen.

(b) Click on [Screen Property] or press Alt + C.

(c) The following dialog box is invoked to display the information on the properties of the screen.


CuT Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup
Select All Ctrl+A
Zoom
Object Property
Screen Property(C)...
Grid Setting
Position/Scale Change(Z)
Fit window to Shape Max size
Screen property
Category
General
Background
Etc.
From TextTab
TextTable
Font:
Description:
OK
Cancel
Apply

Screen Type: Base Screen

Screen No: 1

Screen Name: Base Screen

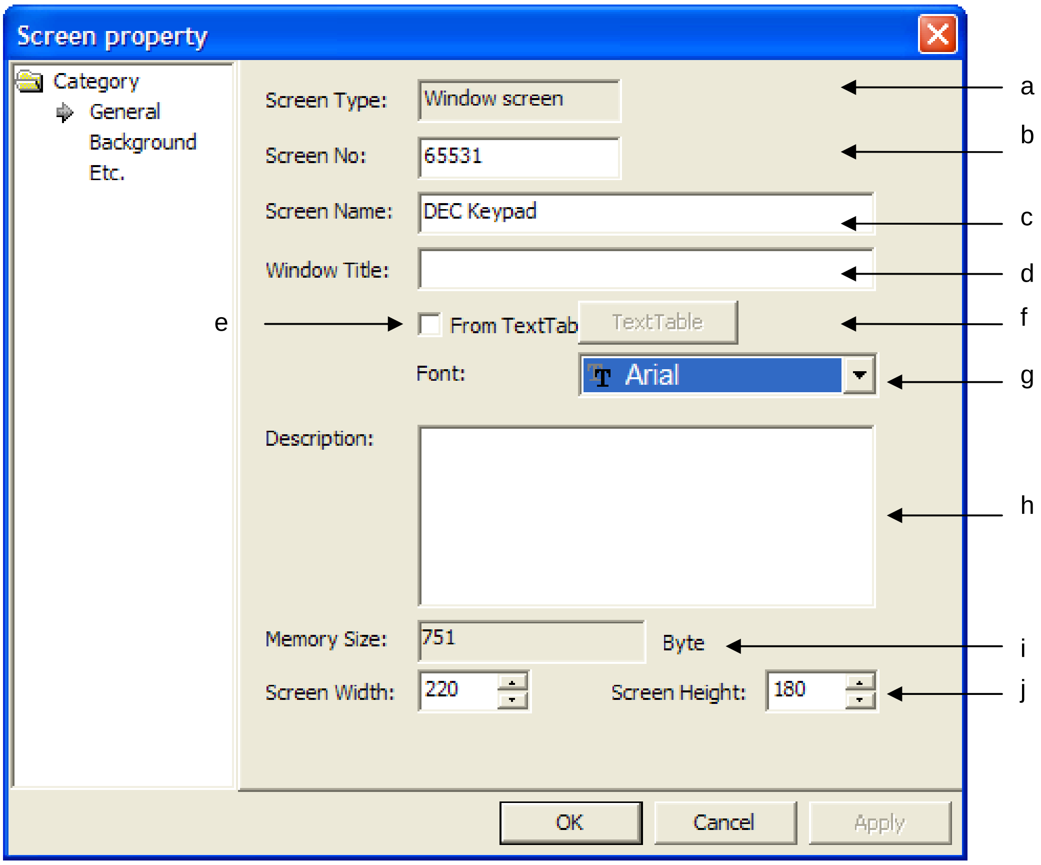
Window Title:

Memory Size: 164 Byte

Screen Width: 800

Screen Height: 600

The description of each dialog box is as follows.



Screen Type: Window screen

Screen No: 65531

Screen Name: DEC Keypad

Window Title:

☐ From TextTab

Font: Arial

Description:

Memory Size: 751 Byte

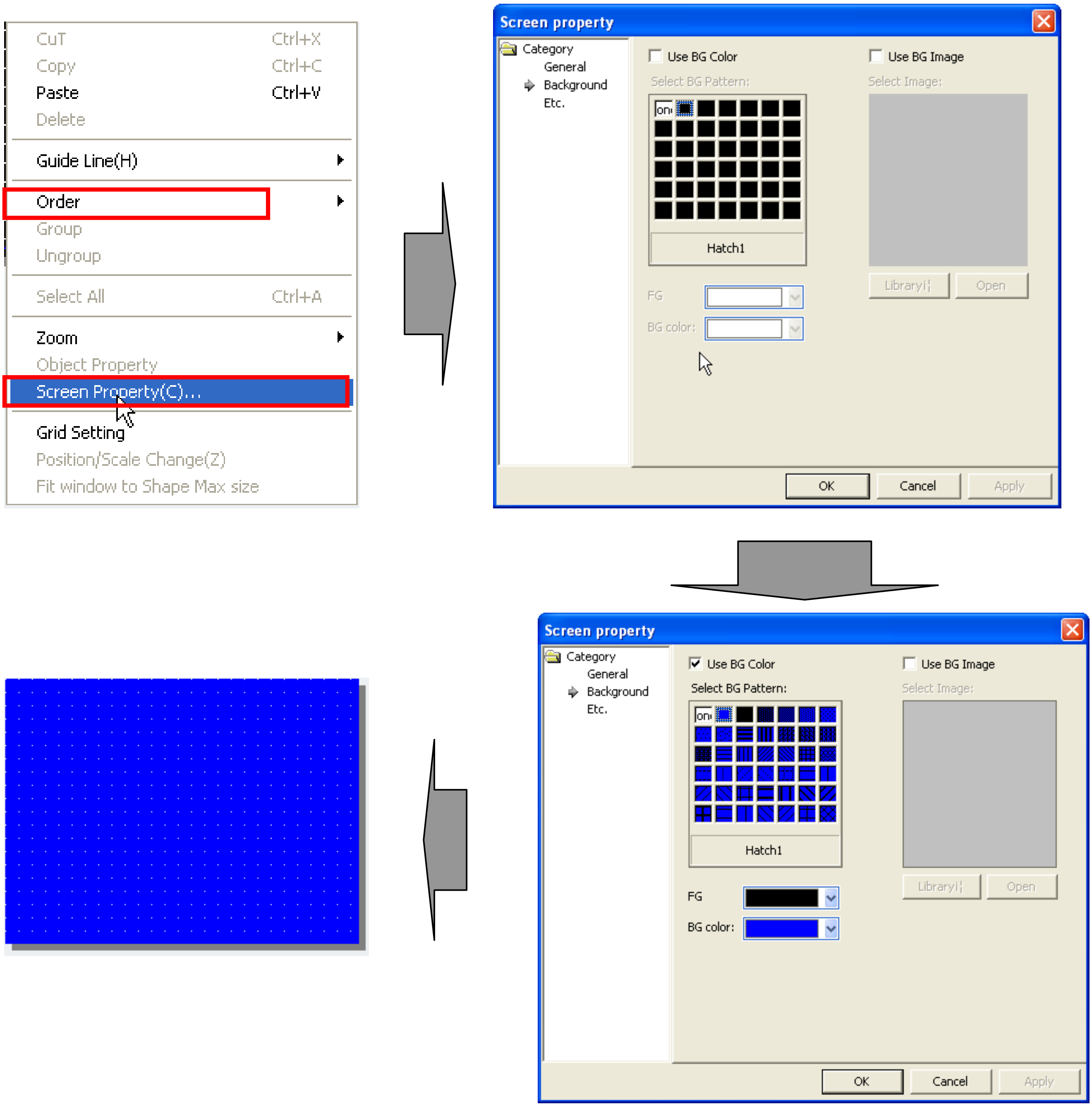
Screen Width: 220

Screen Height: 180

Type	Description
Screen type(a)	The type of the current window such as the base screen, window screen or part screen is indicated
Screen No(b)	The number of the present window is indicated.
Screen name(c)	Indicates the specified name in the project tree
Window title(d)	Available at window screen. Indicates the window title when window object appears.
From text table(e)	Available at window screen. You can get the text from text table for window title not inputting text directly.
Text table(f)	Available at window screen. If you press this button, the text table dialog box appears where you can select text.
Font (g)	Available at window screen. In case of inputting the window title directly, you can select the font from combo box. And in case of inputting the window title from text table, font of text table is indicated at the combo box.
Description(h)	The user can enter the description on the display and the description previously entered is also shown.
Memory size(i)	The size of the memory currently used in the window is indicated in the unit of Byte.
Screen size(j)	The width and height of the present window is indicated.

In addition to the display properties, you can change the current background color of the screen to blue as follows.

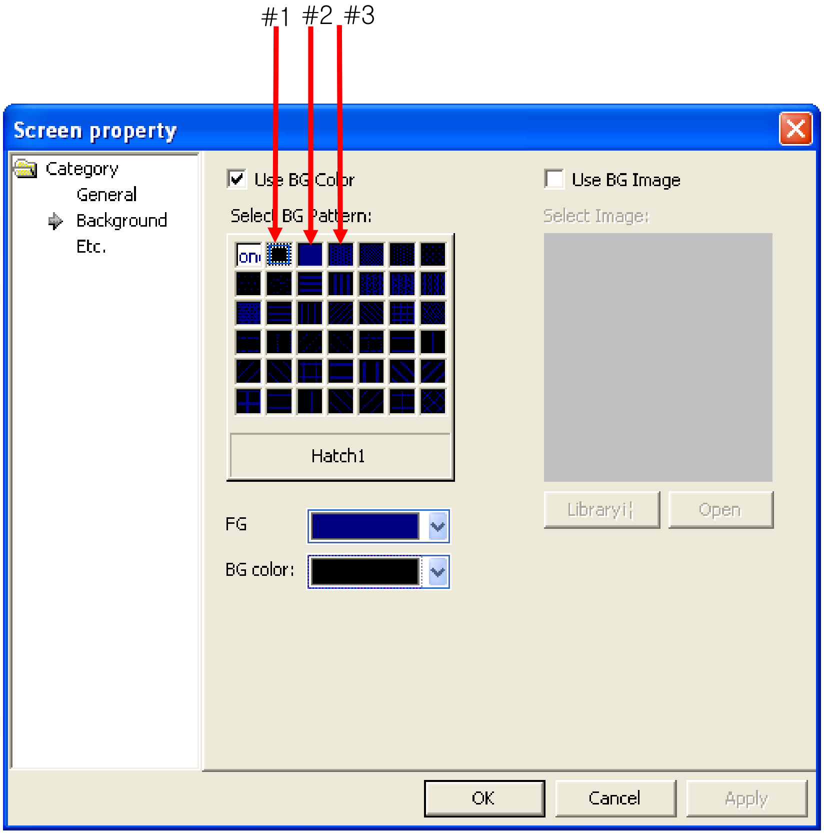
[Procedure]
(a) Press the right button on the mouse on a point of the space of the window such as the base screen, window screen or part screen. Click on [Screen Property] or press Alt + C.
(b) The following dialog box is invoked to display the information on the properties of the display.
(c) Click on [Background] and then [Use BG Color].
(d) You can set the [FG color (Foreground Color)] and [BG color (Background Color)]. Set the background color as blue and as pattern #1.


CuT Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup
Select All Ctrl+A
Zoom
Object Property
Screen Property(C)...
Grid Setting
Position/Scale Change(Z)
Fit window to Shape Max size
Screen property
Category
General
Background
Etc.
☐ Use BG Color
☐ Use BG Image
Select BG Pattern:
Select Image:
Hatch1
FG
BG color:
Library
Open
OK
Cancel
Apply
Screen property
Category
General
Background
Etc.
☑ Use BG Color
☐ Use BG Image
Select BG Pattern:
Select Image:
Hatch1
FG
BG color:
Library
Open
OK
Cancel
Apply

Note

(1) The relationship between the pattern number and foreground and background colors is as follows.

Pattern Number	Application
Pattern 1	Pattern not used
Pattern 2	The background color applied to all the patterns.
Pattern 3	The foreground color applied to all the patterns.
Pattern 4~42	The background and foreground colors apply to the background and foreground colors of the pattern respectively.


#1
#2
#3
Screen property
Category
General
Background
Etc.
OK
Cancel
Apply
Library¡¦
Open

☑ Use BG Color

Select BG Pattern:

Hatch1

FG

BG color:

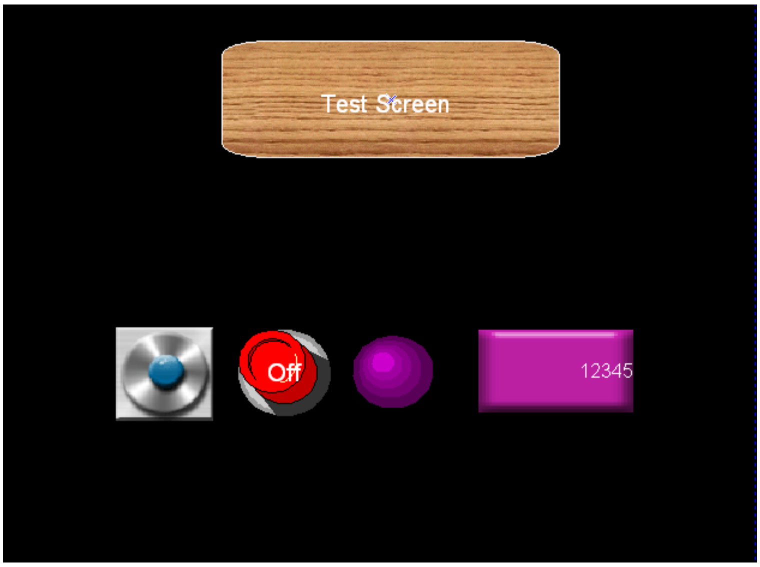
☐ Use BG Image

Select Image:

2.2.4 Screen Editing

Screen editing refers to configuring the contents of the window. That is, this is arranging the dynamic objects changing the address value of the control or expressing the value of the control through connection with the figures and the static objects changing the window background or deliver information and the PLC control as the user wants

Below, we are going to make some simple base screens consisting of a RoundRect, Text, Switch, Lamp and Number input device.

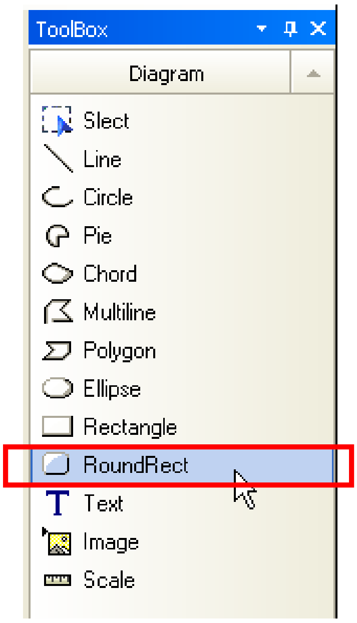

Test Screen
Off
12345

(1) Drawing a RoundRect

You can edit a RoundRext on the screen as follows.

[Procedure]

(a) Select [RoundRect] in [Tool Box]-[Diagram].


ToolBox
Diagram
Slect
Line
Circle
Pie
Chord
Multiline
Polygon
Ellipse
Rectangle
RoundRect
Text
Image
Scale

(b) Drag the figure until it becomes as large as you want and place the figure at a desired point.

(c) Modify the ‘Fill’ properties as follows in the dialog box invoked when you release the mouse button and then click on the OK button.

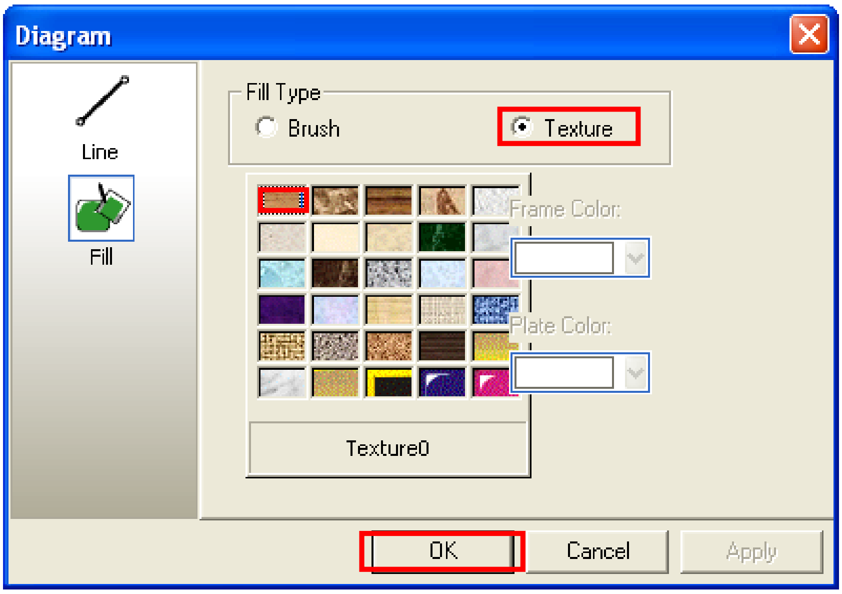
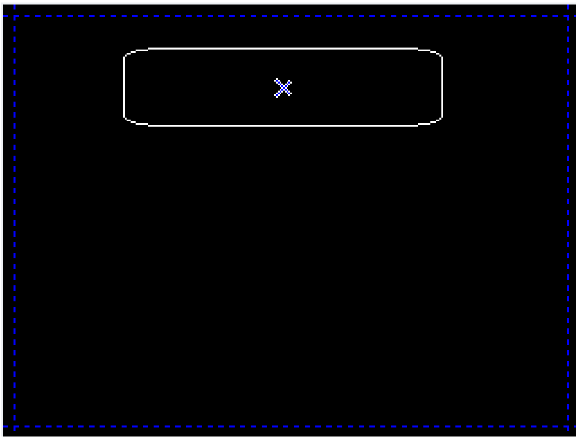
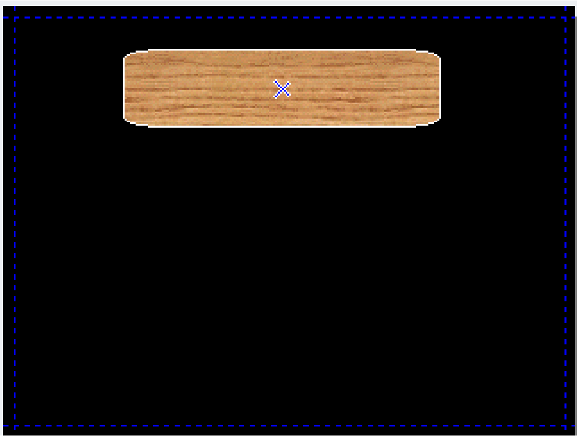


Diagram
Line
Fill
Fill Type
○ Brush
● Texture
Frame Color:
Plate Color:
Texture0
OK
Cancel
Apply

Note
(1) You cannot select the texture in XP30-BTA.

(d) The properties of the RoundRect has been changed as shown below.



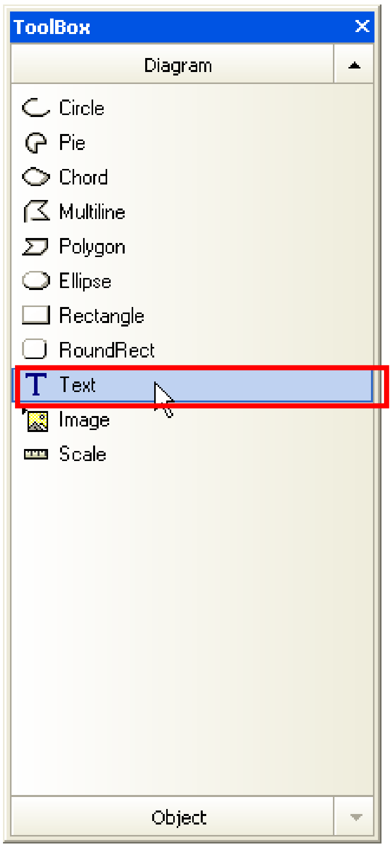


(2) Drawing a Text

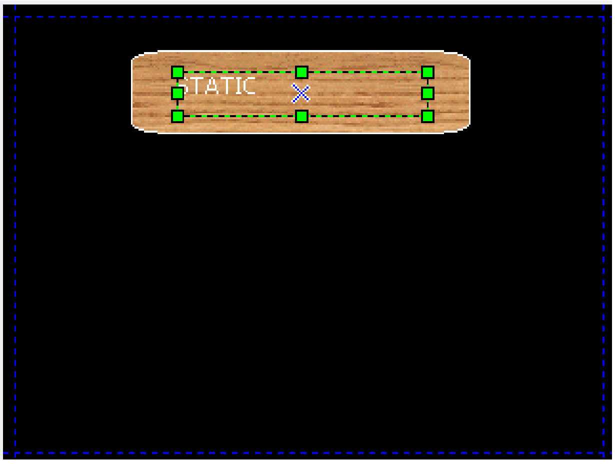
You can edit a Text on the screen as follows.

[Procedure]

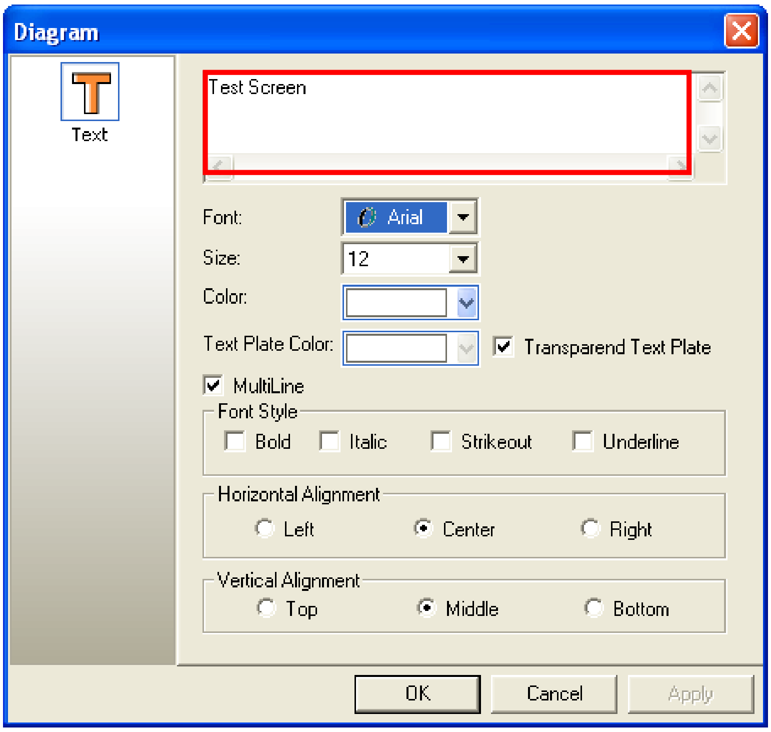
(a) Select the Text in the tool box.


ToolBox
Diagram
Circle
Pie
Chord
Multiline
Polygon
Ellipse
Rectangle
RoundRect
Text
Image
Scale
Object

(b) Put the Text in the RoundRect.



(c) Modify the 'text' properties as follows in the dialog box invoked when you release the mouse button and then click on the OK button.



Test Screen

Font: Arial

Size: 12

Color:

Text Plate Color: ☑ Transparend Text Plate

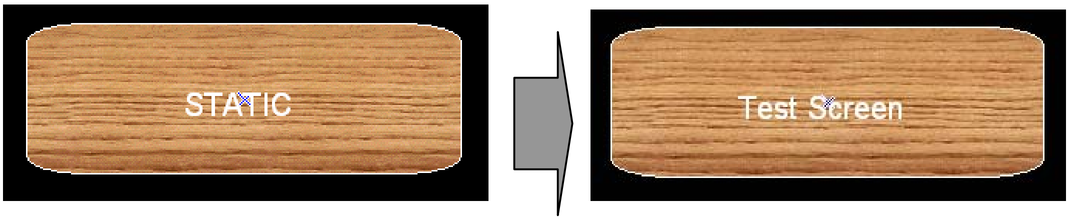
☑ MultiLine

Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment
○ Left ● Center ○ Right

Vertical Alignment
○ Top ● Middle ○ Bottom

(d) The properties of the Text (text, font, size) have been changed in the window. Adjust the size of the Text so that the entire text is shown.

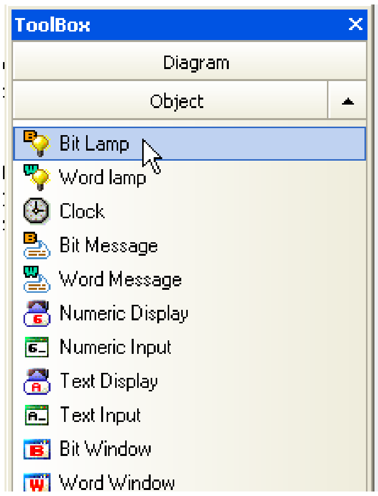


(3) Bit Lamp Setting

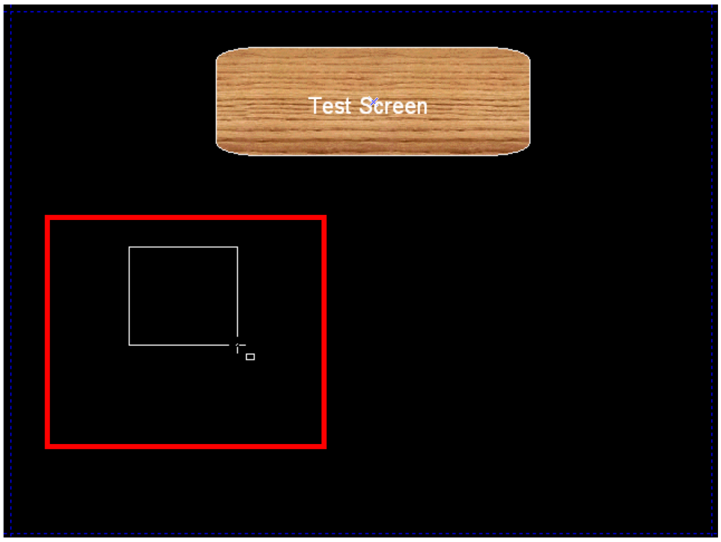
You can edit the bit lamp, which is an object expressing the address value and state of the PLC control through connection to the address of the PLC control, as follows.

[Procedure]

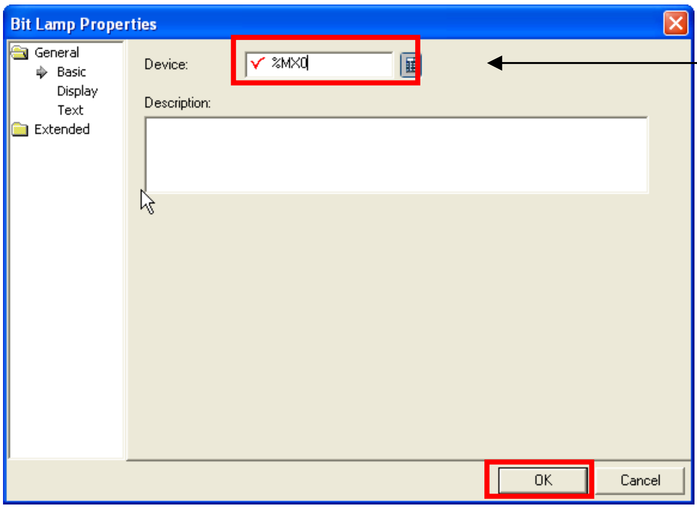
(a) Select [Bit Lamp] in [Tool Box].


ToolBox
Diagram
Object
Bit Lamp
Word lamp
Clock
Bit Message
Word Message
Numeric Display
Numeric Input
Text Display
Text Input
Bit Window
Word Window

(b) Drag the bit lamp until it becomes as large as you want and place the figure at a desired point.


Test Screen

(c) Modify the basic properties of the bit lamp as follows in the dialog box invoked when you release the mouse button and then click on the OK button.


Bit Lamp Properties
General
Basic
Display
Text
Extended
Description:
OK
Cancel

Device: %MX0

Set the address as %MX0.

(d) Modify the [Display] properties of the bit lamp as follows and click on the OK button.

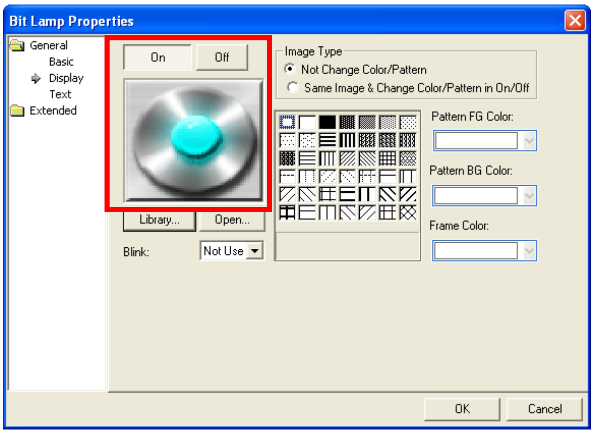

Bit Lamp Properties
General
Basic
Display
Text
Extended
On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

Image Type: ● Not Change Color/Pattern ○ Same Image & Change Color/Pattern in On/Off

Blink: Not Use

Press the library button and change the image corresponding to Off as shown.

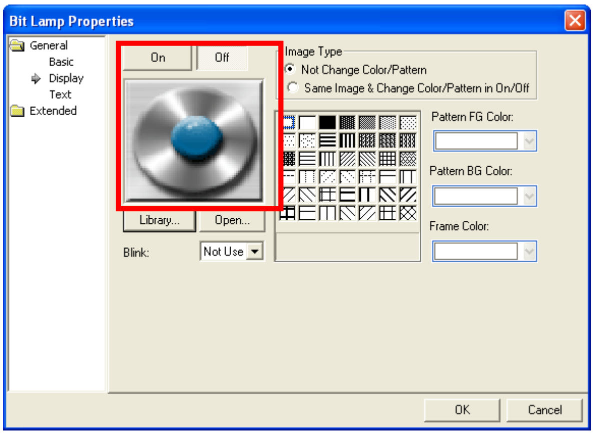
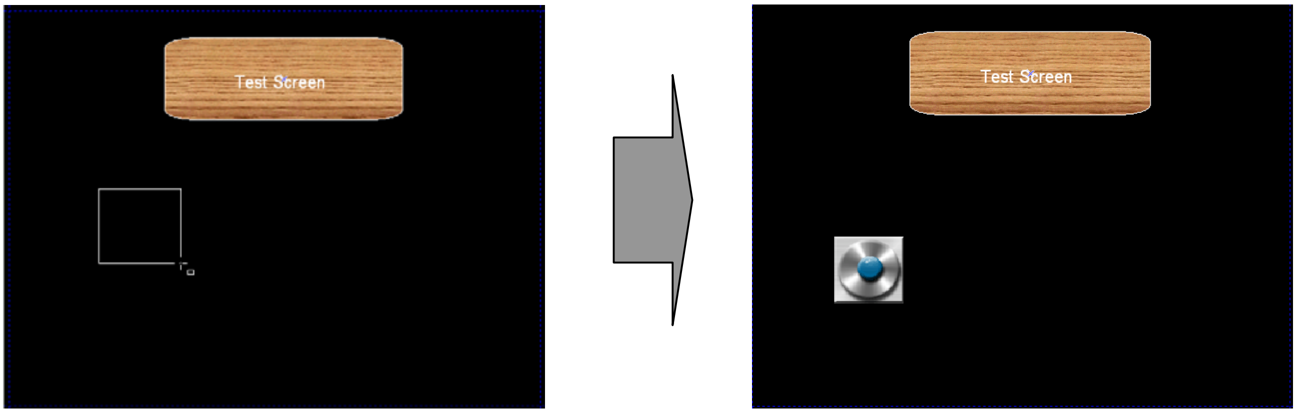

Bit Lamp Properties
General
Basic
Display
Text
Extended
On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

Image Type: ● Not Change Color/Pattern ○ Same Image & Change Color/Pattern in On/Off

Blink: Not Use

Press the library button and change the image corresponding to On as shown.

The settings are now shown in the display.

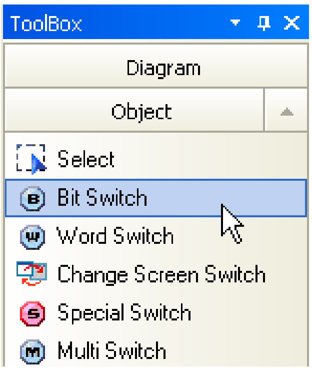

Test Screen
Test Screen

(4) Bit Switch Setting

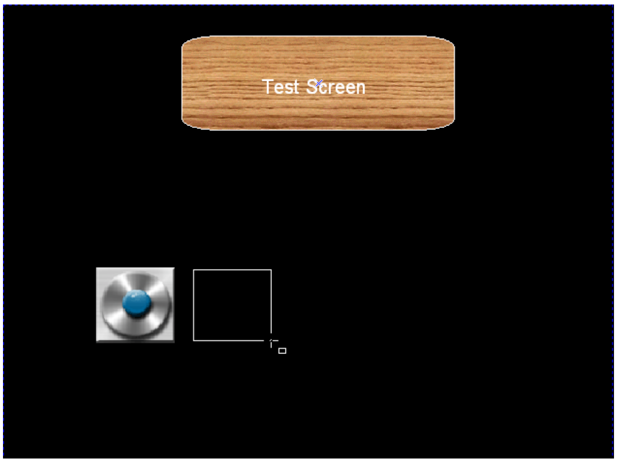
You can edit the bit switch, which is an object expressing the address value and state of the PLC control through connection to the address of the PLC control, as follows.

[Procedure]

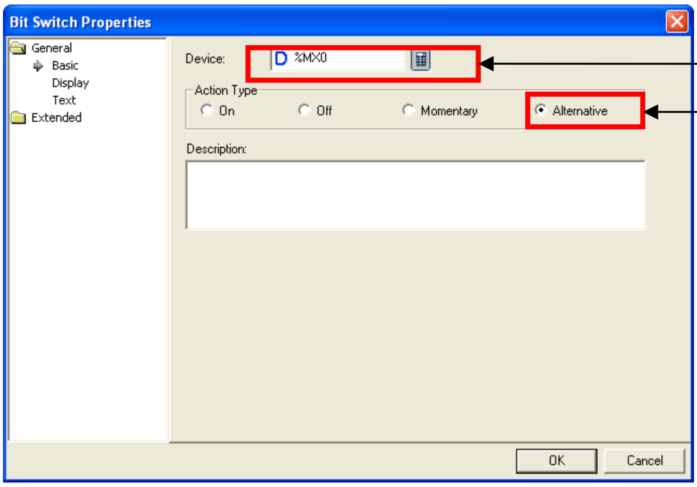
(a) Select [Bit Switch] in [Tool Box].


ToolBox
Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch
Multi Switch

(b) Drag the bit switch until is becomes as large as the bit lamp.


Test Screen

(c) When the dialog box is invoked, modify the basic properties of the bit switch and press the OK button.


Bit Switch Properties
General
Basic
Display
Text
Extended
OK
Cancel

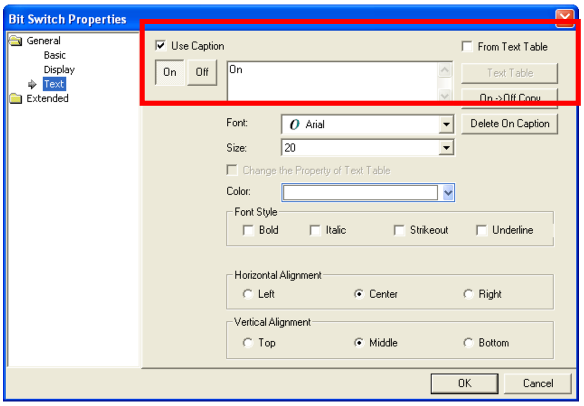
Device: %MX0

Action Type: ○ On ○ Off ○ Momentary ● Alternative

Description:

Select %MX0 as the device address and Alternative as the Action type.

(d) Modify the properties of the [Text] of the bit switch and press the OK button.


Bit Switch Properties
General
Basic
Display
Text
Extended
On
Off
Text Table
On->Off Copy
Delete On Caption
OK
Cancel

☑ Use Caption ☐ From Text Table

On: On

Font: Arial

Size: 20

☐ Change the Property of Text Table

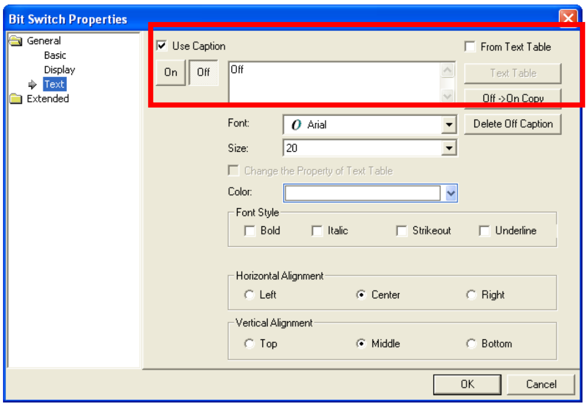
Color:

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

Enter On as the caption of the On state.


Bit Switch Properties
General
Basic
Display
Text
Extended
On
Off
Text Table
Off->On Copy
Delete Off Caption
OK
Cancel

☑ Use Caption ☐ From Text Table

Off: Off

Font: Arial

Size: 20

☐ Change the Property of Text Table

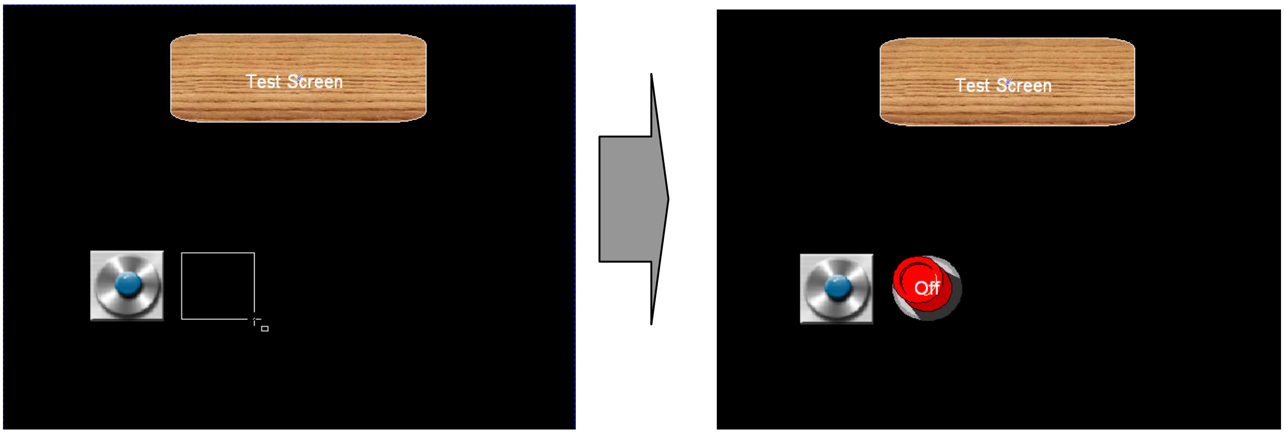
Color:

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

Enter Off as the caption of the Off state.

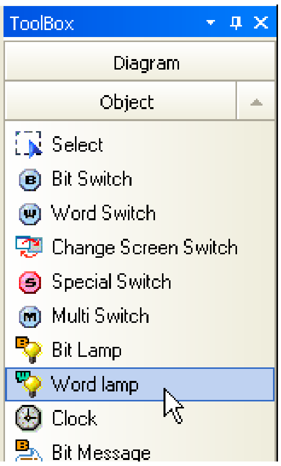

Test Screen
Test Screen
Off

(5) Word Lamp Setting

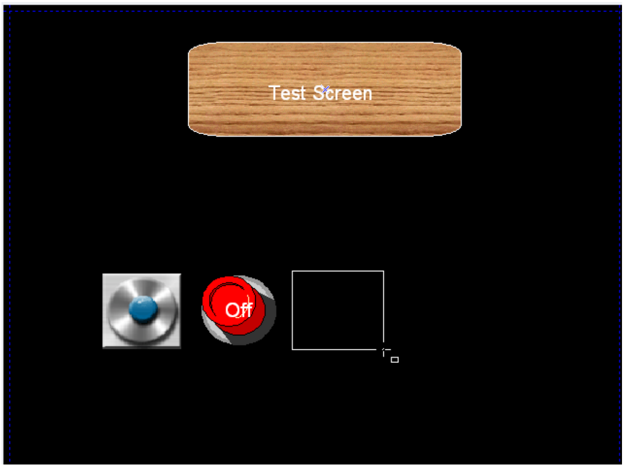
You can edit the word lamp, which is an object expressing the address value and state of the PLC control through connection to the address of the PLC control, as follows.

[Procedure]

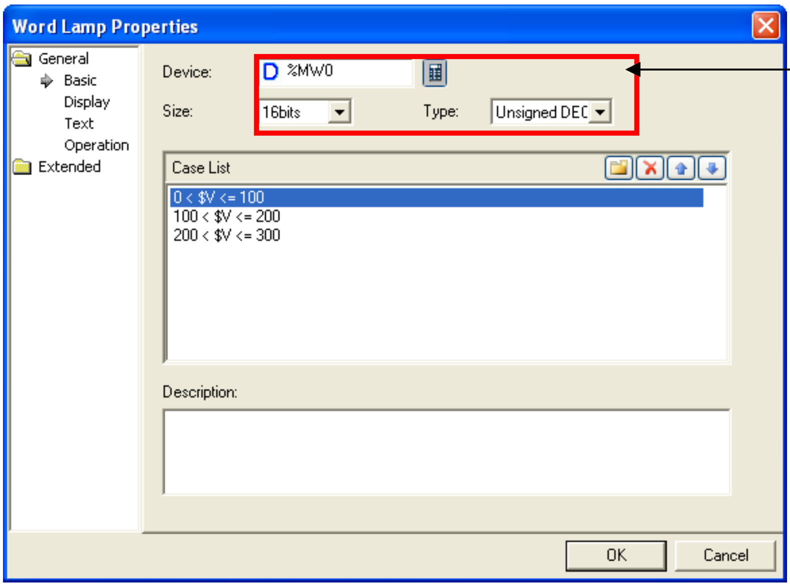
(a) Select [Word Lamp] in [Tool Box].


ToolBox
Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch
Multi Switch
Bit Lamp
Word lamp
Clock
Bit Message

(b) Drag the word lamp until it is properly far from the bit switch.


Test Screen
Off

(c) Modify the basic properties of the word lamp as follows in the dialog box invoked when you release the mouse button.


Word Lamp Properties
General
Basic
Display
Text
Operation
Extended
OK
Cancel

Device: %MW0

Size: 16bits Type: Unsigned DEC

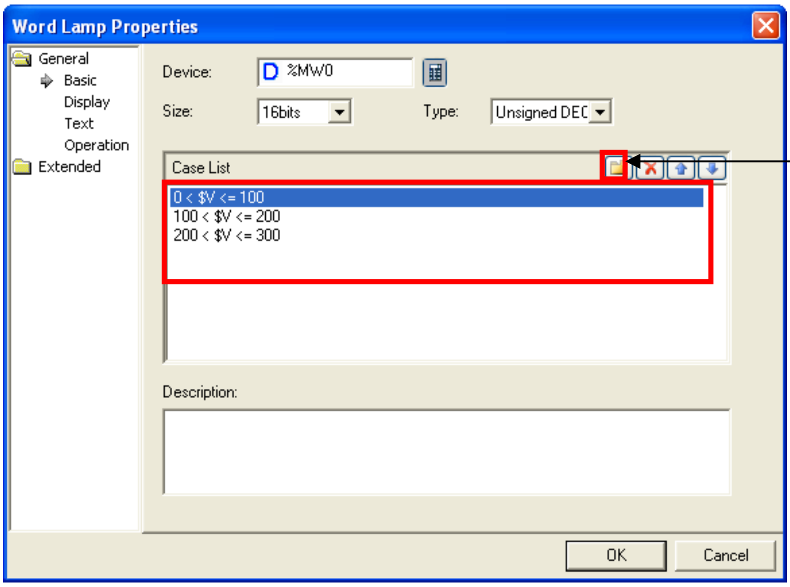
Case List

0 < $V <= 100
100 < $V <= 200
200 < $V <= 300

Description:

Set the device as %MW0.

(d) The list is created in the Case List of the [Basic] item.


Word Lamp Properties
General
Basic
Display
Text
Operation
Extended
OK
Cancel

Device: %MW0

Size: 16bits Type: Unsigned DEC

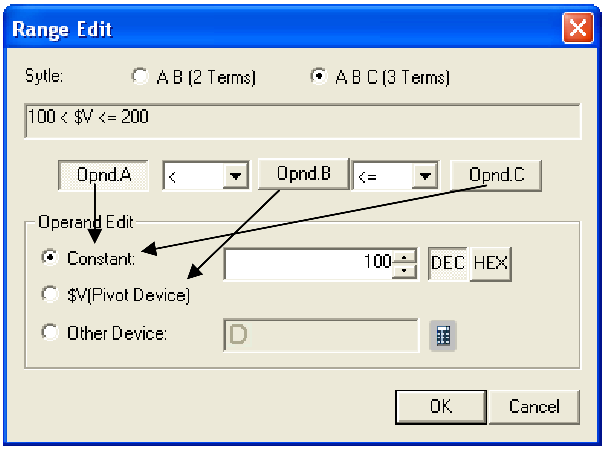
Case List

0 < $V <= 100
100 < $V <= 200
200 < $V <= 300

Description:

Add the case list by using the range editing dialog box invoked when you press the folder button.

You can enter the first item of the case list above in the range editing dialog box as follows.



Range Edit

Sytle: ○ A B (2 Terms) ● A B C (3 Terms)

100 < $V <= 200

Opnd.A | < | Opnd.B | <= | Opnd.C

Operand Edit

● Constant: 100 DEC HEX

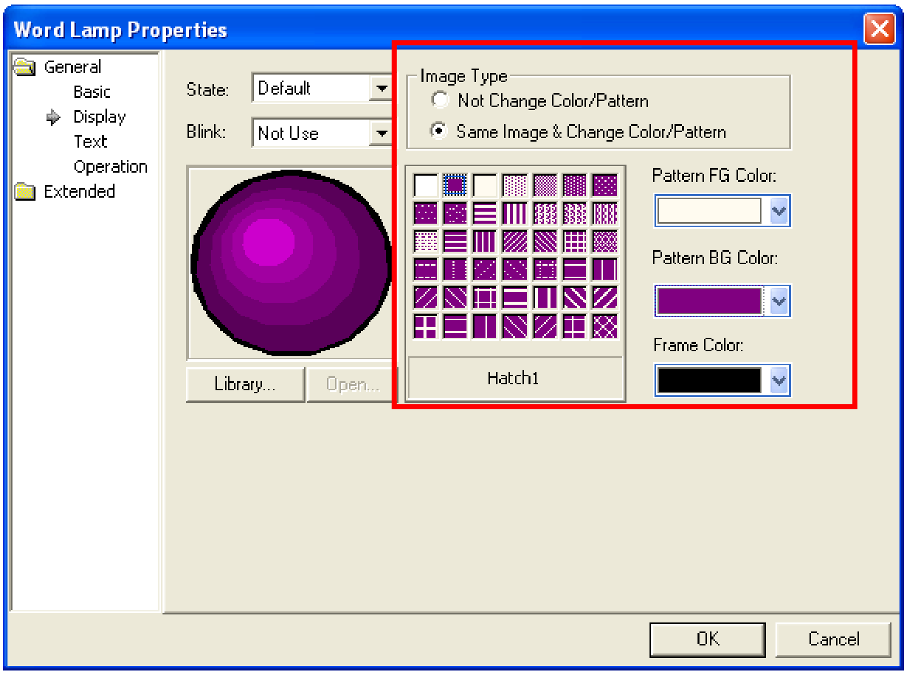
○ $V(Pivot Device)

○ Other Device: D

Press operand A and enter the fixed value 100.
Press operand B and click on the $V (reference device) radio button.
Press operand C and enter the fixed value 200.
The $V (reference device) refers to %MW0 which has been set in the basic item.

Now you should enter the display information of each condition.
Each of the three condition lists can have their own lamp state and up to four states as well if the scope beyond it is included.

(e) Create a list in the case list of the [Display] item. You can set the pattern and color of the lamp for the case corresponding to each case list of the display item.



Word Lamp Properties

State: Default

Blink: Not Use

Image Type

○ Not Change Color/Pattern

● Same Image & Change Color/Pattern

Hatch1

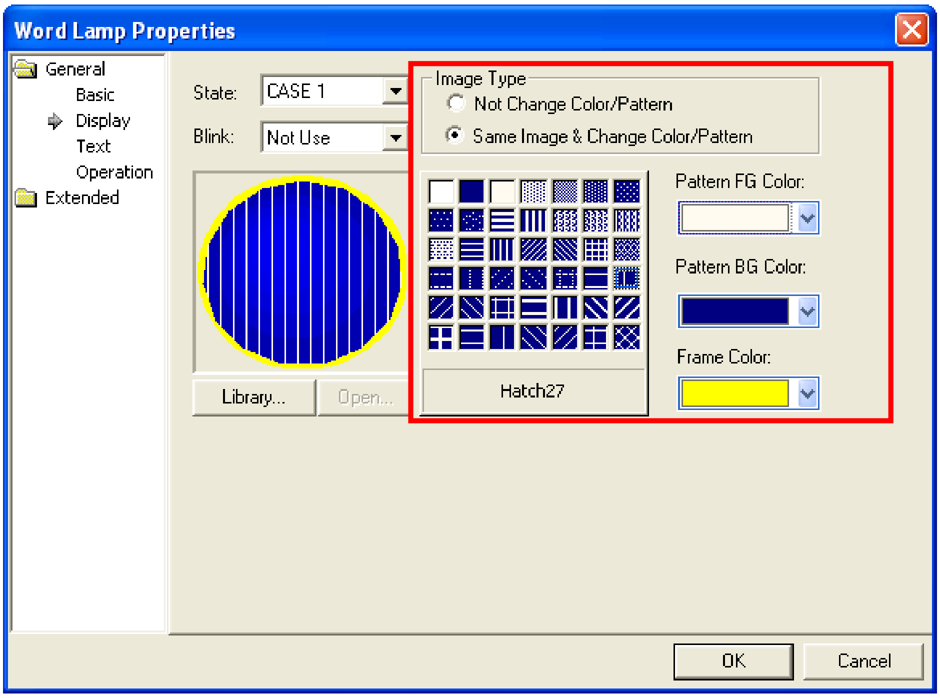
Pattern FG Color:

Pattern BG Color:

Frame Color:

This is the lamp setting for the value corresponding to the basic case, that is, the three conditions above.
- Set the image type as [Sample Image & Change Color/Pattern] and select the second pattern, which means expressing the entire image in the pattern background color.

For details on image types, see 16.2 Display Function Settings of Chapter 16 Object Setting.



Word Lamp Properties

State: CASE 1

Blink: Not Use

Image Type

○ Not Change Color/Pattern

● Same Image & Change Color/Pattern

Hatch27

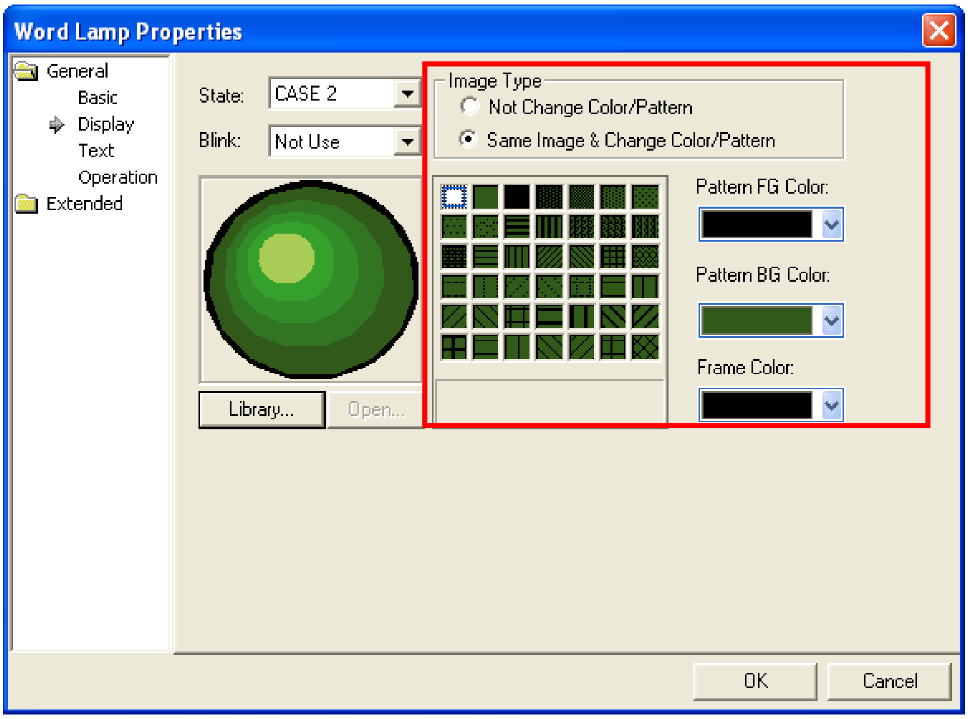
Pattern FG Color:

Pattern BG Color:

Frame Color:

General
Basic
Display
Text
Operation
Extended
Library...
Open...
OK
Cancel

This is the lamp setting for case 1, that is, the first of the case list above.
Set the pattern as 'hatch 27', the foreground as white, background blue and frame color as yellow.



Word Lamp Properties

State: CASE 2

Blink: Not Use

Image Type

○ Not Change Color/Pattern

● Same Image & Change Color/Pattern

Pattern FG Color:

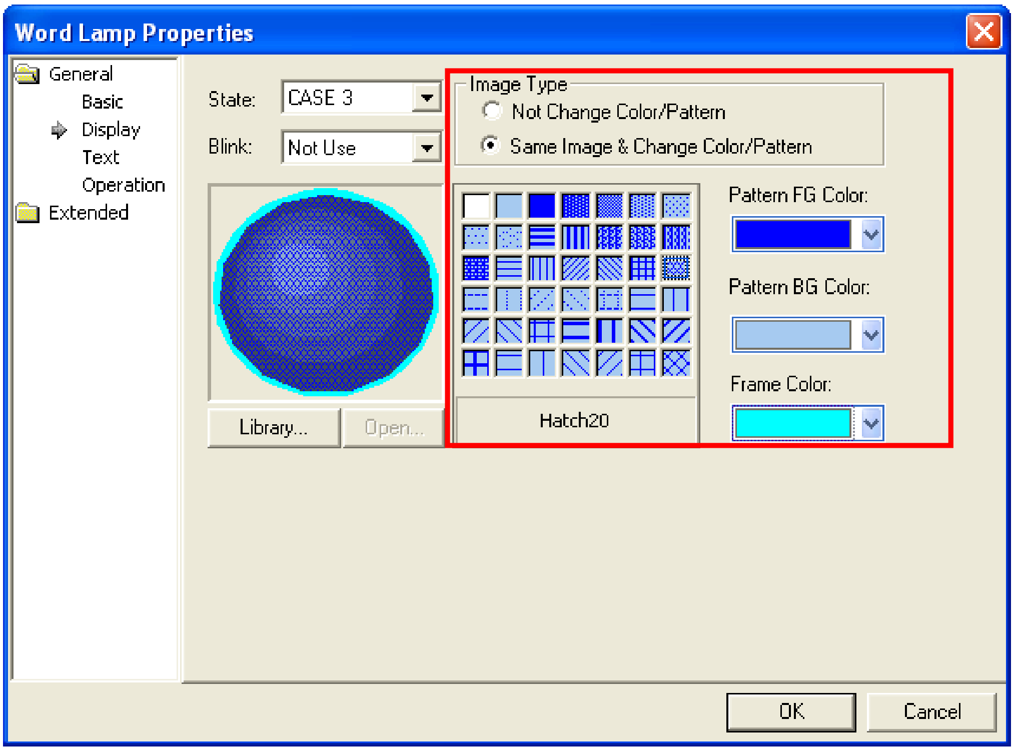
Pattern BG Color:

Frame Color:

General
Basic
Display
Text
Operation
Extended
Library...
Open...
OK
Cancel

This is the lamp setting for case 2, that is, the second of the case list above. Use the first pattern. The green color here consists of phases according to the saturation and value. This is the HSV vector image processing method which changes only the color factors of the original image to green and maintains the value and saturation of the original image.

- HSV: the method of expression colors in the computer. (**H**ue, **S**aturation, **V**alue)


Word Lamp Properties
General
Basic
Display
Text
Operation
Extended
Library...
Open...
OK
Cancel

State: CASE 3

Blink: Not Use

Image Type

○ Not Change Color/Pattern

● Same Image & Change Color/Pattern

Hatch20

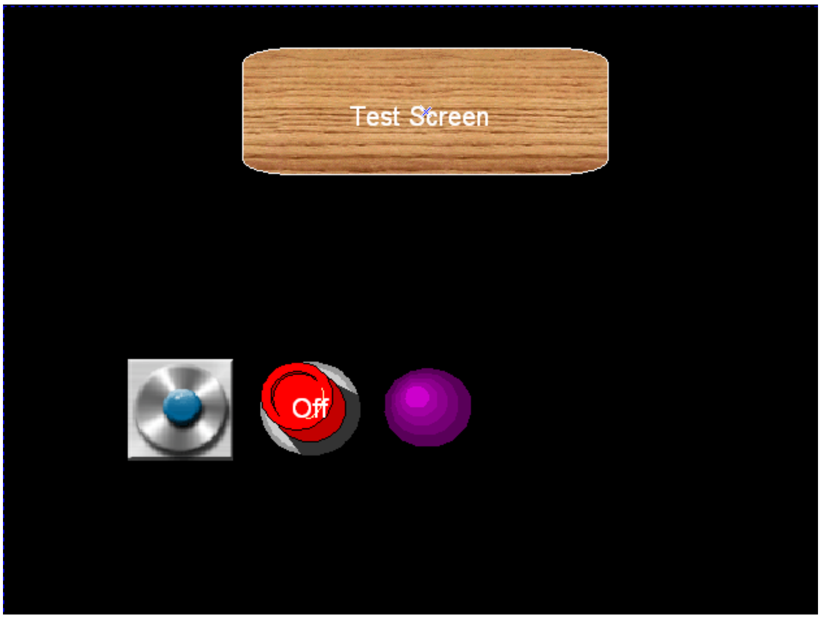
Pattern FG Color:

Pattern BG Color:

Frame Color:

This is the lamp setting for case 3, that is, the third of the condition list above. Set the pattern as 'hatch20' in the form of sloped lattice, pattern foreground color as blue, background color as sky-blue and frame color as the jade color.

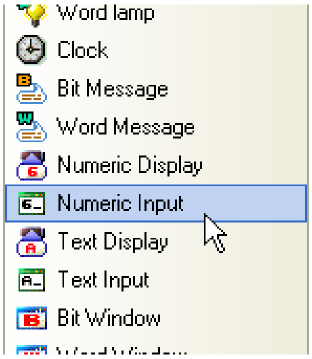
After setting is finished, click on the OK button.


Test Screen
Off

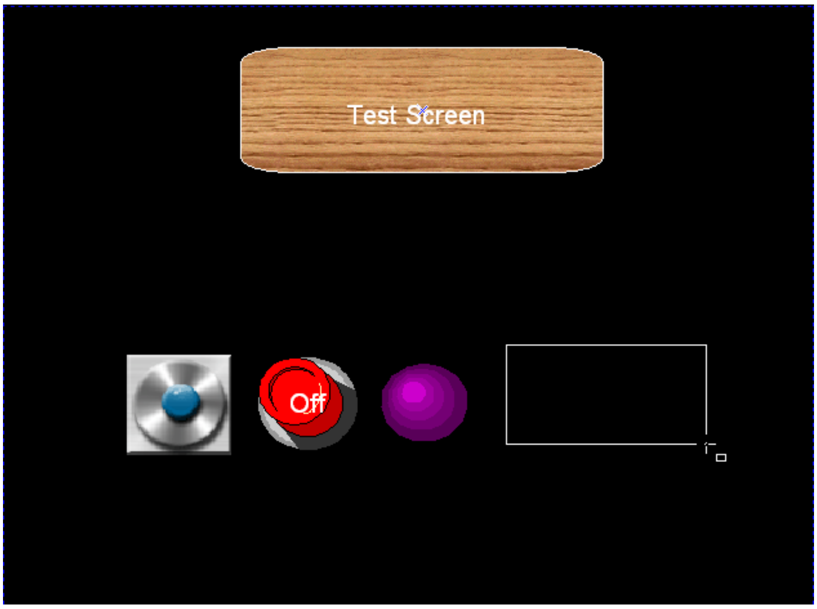
(6) Numeric Input Device Setting

The following is the procedure of setting the numeric input device, the last object in this chapter. The numeric input device has two functions of output (reading device) and input (writing device) at the same time as its basic operation. It usually expresses the value of a particular address of the control, but when the user clicks on the object to write a value in the connected device, a keypad dialog box is invoked so that the value can be entered.

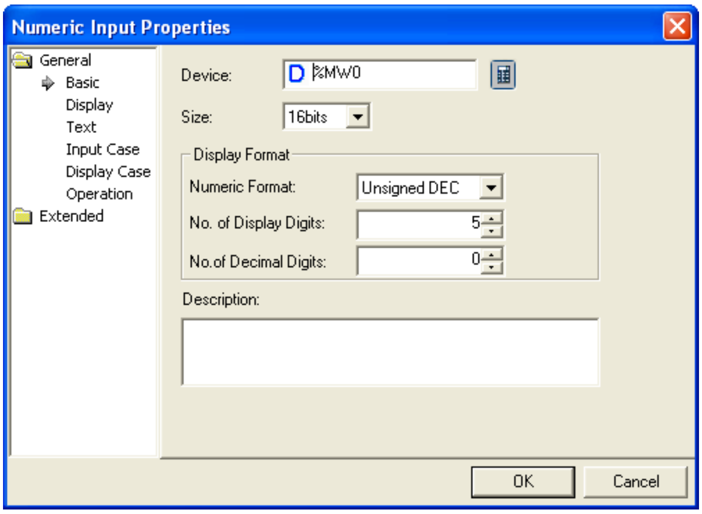
(a) Select the numeric input device in the object tool box.


Word lamp
Clock
Bit Message
Word Message
Numeric Display
Numeric Input
Text Display
Text Input
Bit Window

(b) Drag the Numeric Input until it becomes properly far from word lamp.


Test Screen
Off

(c) Set the properties of the numeric input in the dialog box as follows and click on the OK button.


Numeric Input Properties
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
Display Format
OK
Cancel

Device: D %MW0

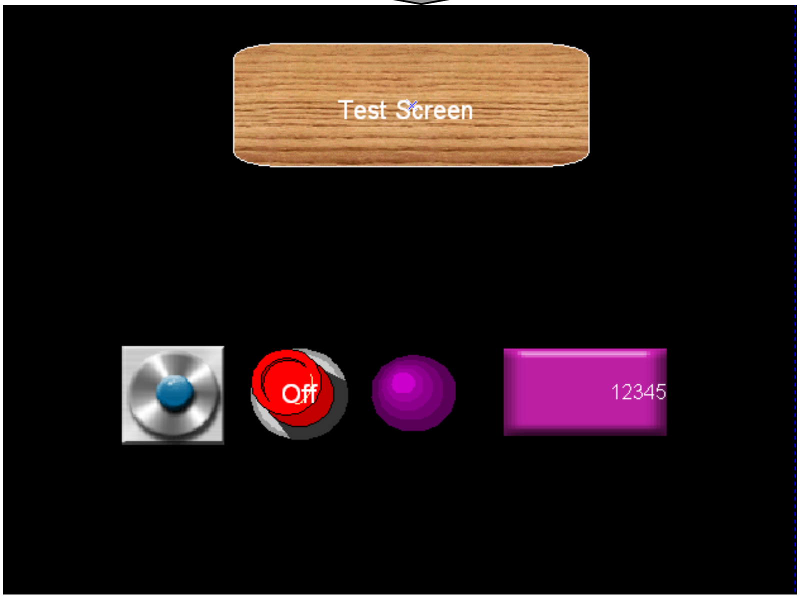
Size: 16bits

Numeric Format: Unsigned DEC

No. of Display Digits: 5

No.of Decimal Digits: 0

Description:

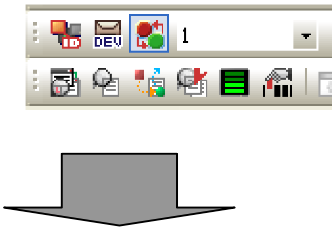

Test Screen
Off
12345

2.2.5 Case and Address Check

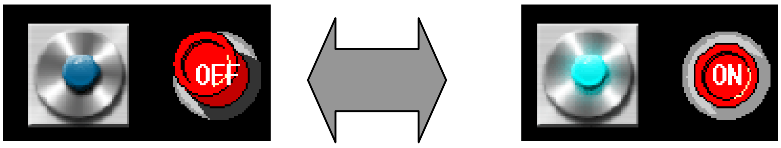
Case and address check is the function of previewing the major properties of the case in order to reduce input errors of the previously set data. You can check the basic address or case properties (e.g. color or caption of the lamp) of the set control in advance without transferring them to XGT Panel. Therefore, if you have finished editing each object, you can reduce errors by checking the case or address in order to confirm the setting information of each object.

(1) Case Check

(a) Click on the On/Off tool bar twice in the information tool bar to check the bit case.



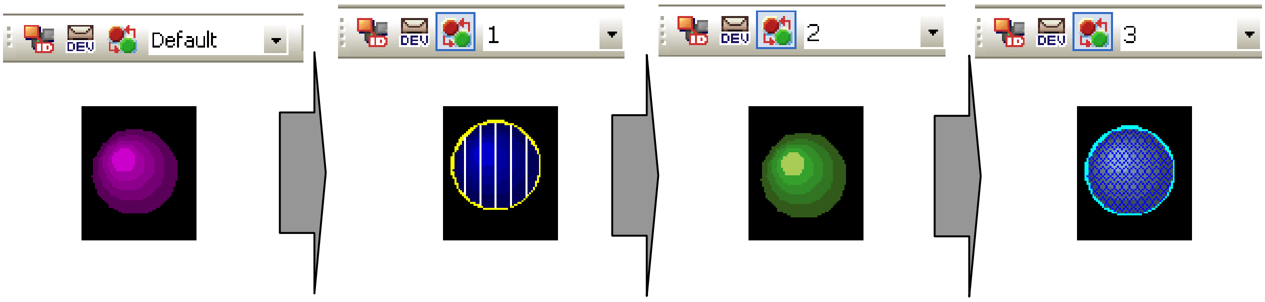
What you entered at On and Off is displayed on the screen respectively when you press the object On/Off tool bar.



Off

On

(b) To check the case of the word lamp, while changing the case in the 'condition no. of word object' combo box of the information tool bar as follows, check whether the color and pattern of the lamp is changed on the screen as you set above.



Basic Case

Condition 1 Case

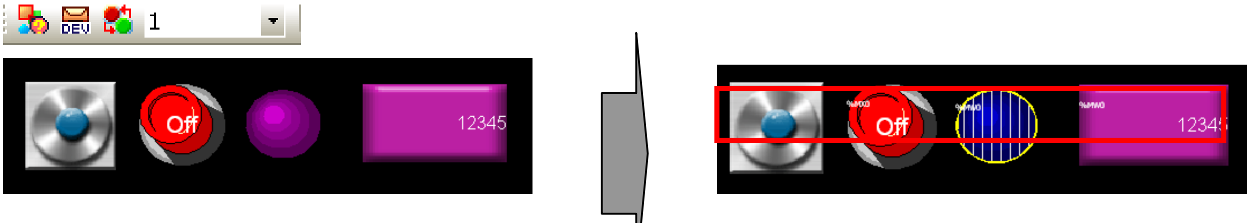
Condition 2 Case

Condition 3 Case

(2) Address Check

Address check is the function or previewing the major addresses which you have entered on the screen in advance without clicking on and checking them one by one.

To check the major addresses of the object, click on the 'Toggle the object addrs' twice in the information tool bar.



Address Viewer Off

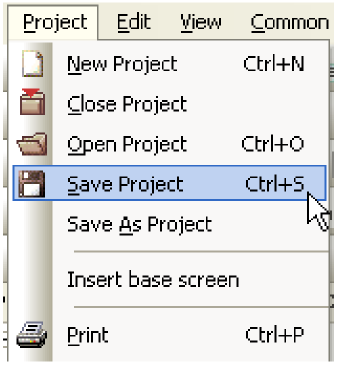
Address Viewer On

2.2.6 Project Saving and Data Error Check

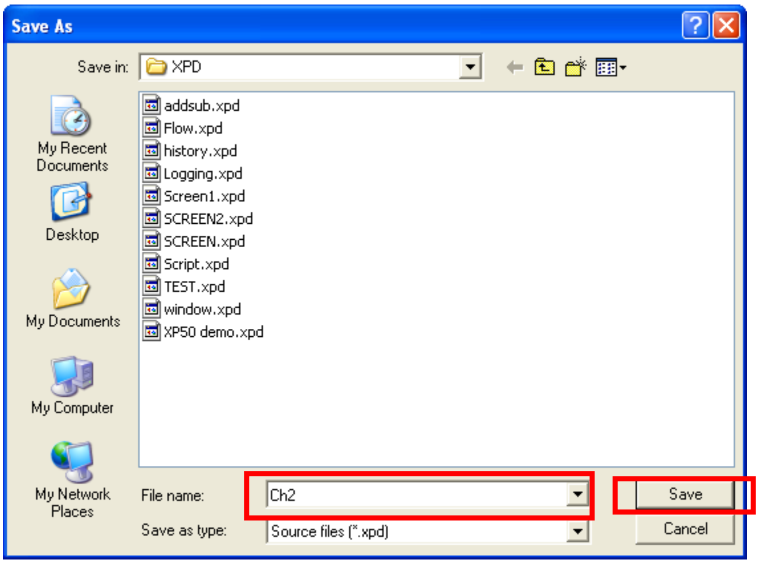
After you have finished editing, you should save the project.

(1) Project Saving

(a) Select Project – Save Project in the menu.


Project
Edit
View
Common
New Project Ctrl+N
Close Project
Open Project Ctrl+O
Save Project Ctrl+S
Save As Project
Insert base screen
Print Ctrl+P

(b) When the saving dialog box is invoked, select the folder, enter the file name and click on the Save button.


Save As
Save in:
XPD
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
Save
Cancel

addsub.xpd
Flow.xpd
history.xpd
Logging.xpd
Screen1.xpd
SCREEN2.xpd
SCREEN.xpd
Script.xpd
TEST.xpd
window.xpd
XP50 demo.xpd

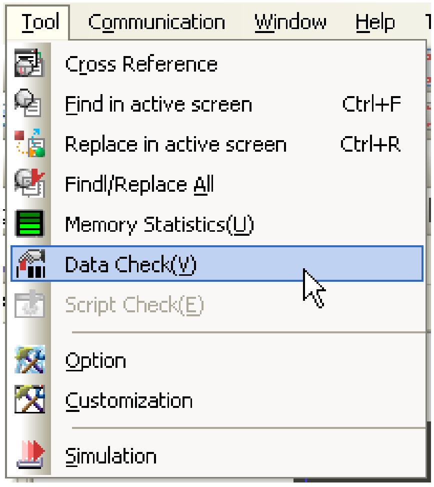
File name: Ch2

Save as type: Source files (*.xpd)

(2) Project Error Check

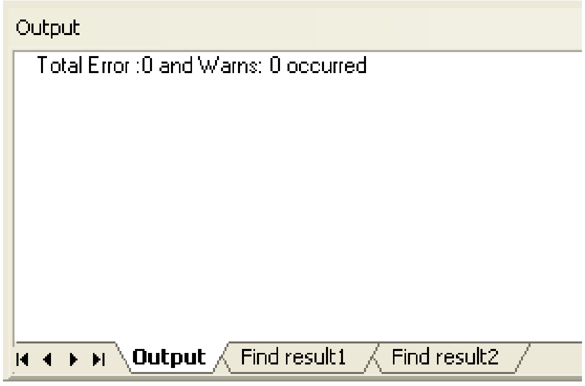
If there is an error in the project, it cannot be transferred to XGT Panel. Therefore, you can enhance the efficiency by checking whether there is any error in the data and if any, modifying it before transferring it.

(a) Select Tool – Data Check.


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

(b) The output box and output window is activated to display the errors. If there are no errors, a message appears to say that 0 number of errors and 0 number of warnings have occurred as shown below. If there is any error, double-click on the relevant line and then you can shift to the screen and object where the error is. Modify the error and click on ‘Data Check’ to check the error.

(☞ **For details on errors, see Appendix 2. Problems)**


Output

```
Total Error :0 and Warns: 0 occurred
```

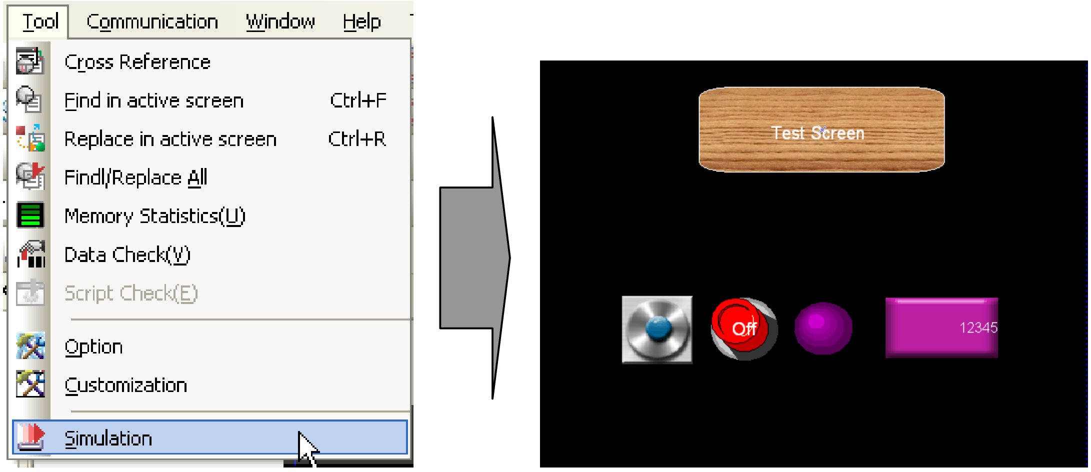
Output
Find result1
Find result2

2.2.7 Simulation and Transfer

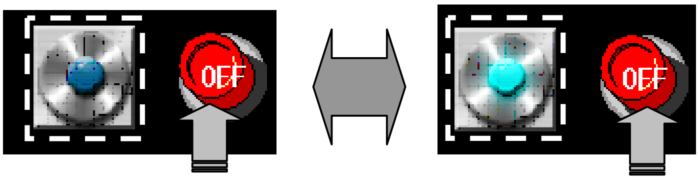
(1) Simulation

Simulation is the function of checking the appropriateness of the data before it is transferred to the XGT Panel and predicting the operation of the control. If the project has been saved and it has been confirmed that there is no error, you can predict the operation and response of the control through the simulator in advance.

(a) Select [Tool]-[Simulation]. As shown below, a simulation window is invoked in the same resolution as when it was downloaded in XGT Panel except the main menu and title.


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation
Test Screen
Off
12345

(b) Click on the bit button to check the operation.

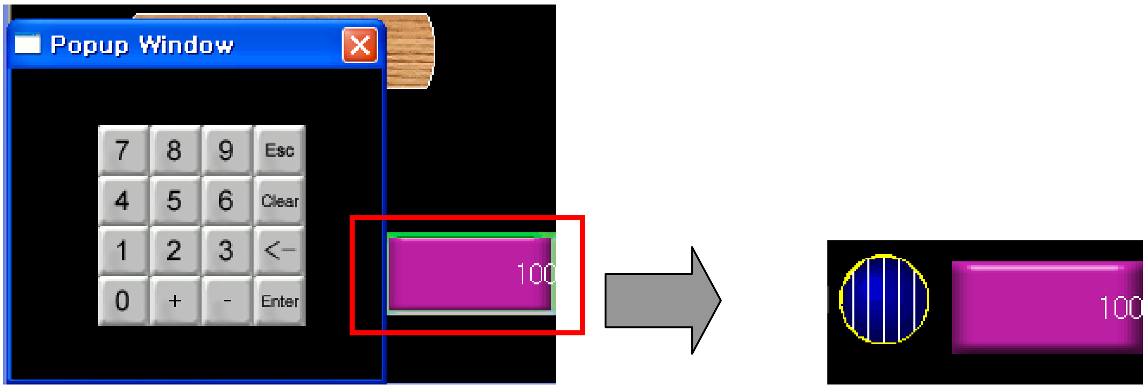


If you click on the bit button, the left bit lamp light is turned on.

If you click on the bit button once again, the left bit lamp light is turned off because it is an alternative switch.

(c) Enter some values randomly, say, 100,200,300 and 400 in the numeric input device.

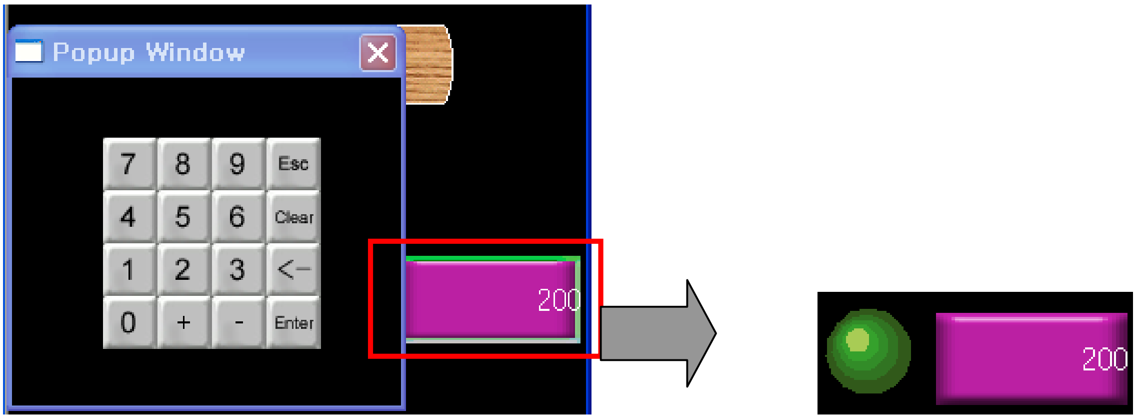
1) Touch the numeric input device on the simulator, enter 100 and click on the Enter key (on the keypad).


Popup Window
7
8
9
Esc
4
5
6
Clear
1
2
3
<-
0
+
-
Enter
100
100

Case Condition 1: 0 < $V <= 100

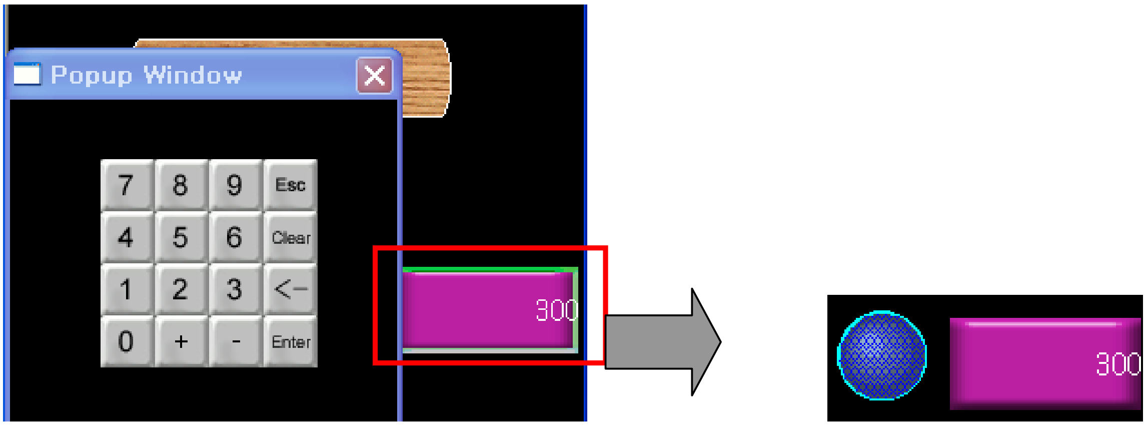
As the word lamp color meets the first case of the case conditions which were set above, the lamp is displayed in the color and pattern as it was set.

2) Touch the numeric input device on the simulator, enter 200 and click on the Enter key.


Popup Window
7 8 9 Esc
4 5 6 Clear
1 2 3 <-
0 + - Enter
200
200

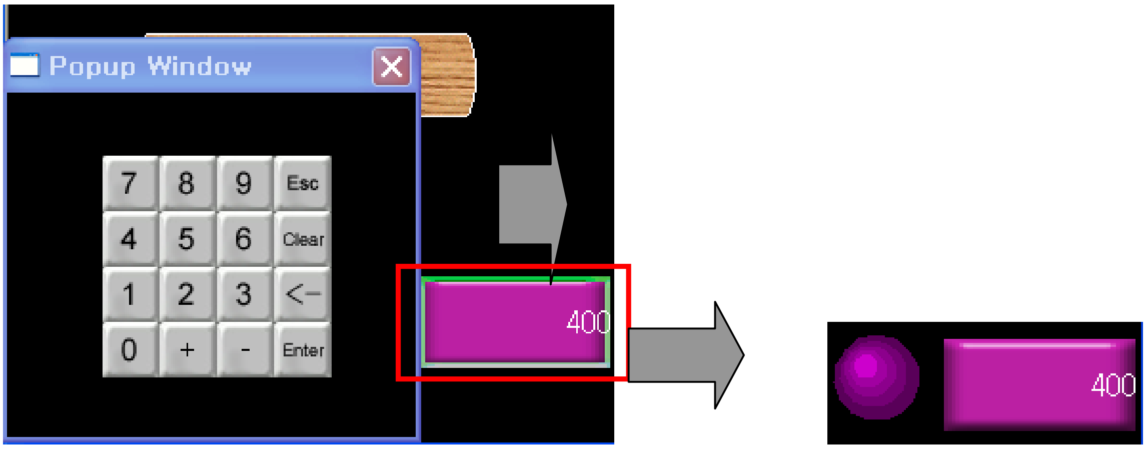
Case Condition 1 : 100< $V <= 200

3) Touch the numeric input device on the simulator, enter 300 and click on the Enter key.


Popup Window
7 8 9 Esc
4 5 6 Clear
1 2 3 <-
0 + - Enter
300
300

Case Condition 1 : 200< $V <= 300

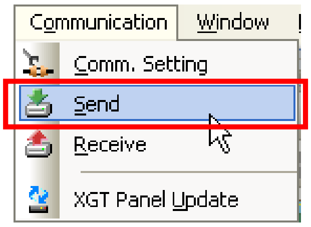
4) Touch the numeric input device on the simulator, enter 400 and click on the Enter key.


Popup Window
7 8 9 Esc
4 5 6 Clear
1 2 3 <-
0 + - Enter
400
400

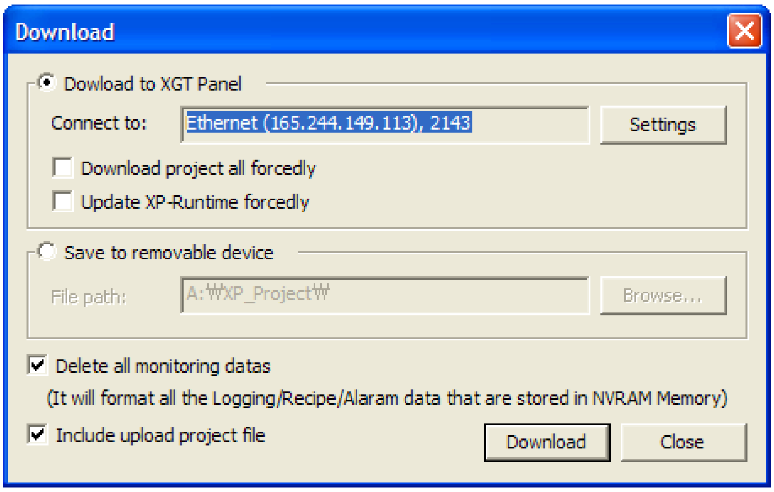
(2) Data Transfer

After the window editing has been finished and if you have found no error, check whether it normally operates by transferring data to XGT Panel. The following is the procedure of transferring data to XGT Panel.

(a) Transfer Setting
1) Select [Communication]-[Send] in the menu.



The following communication dialog box is invoked. If the previously set connection information is the same as the information you are currently transferring, click on the ‘Download’ button in the illustration below. Otherwise, set the connection information in the same procedure as 2).


Download

● Dowload to XGT Panel

Connect to: Ethernet (165.244.149.113), 2143

☐ Download project all forcedly

☐ Update XP-Runtime forcedly

○ Save to removable device

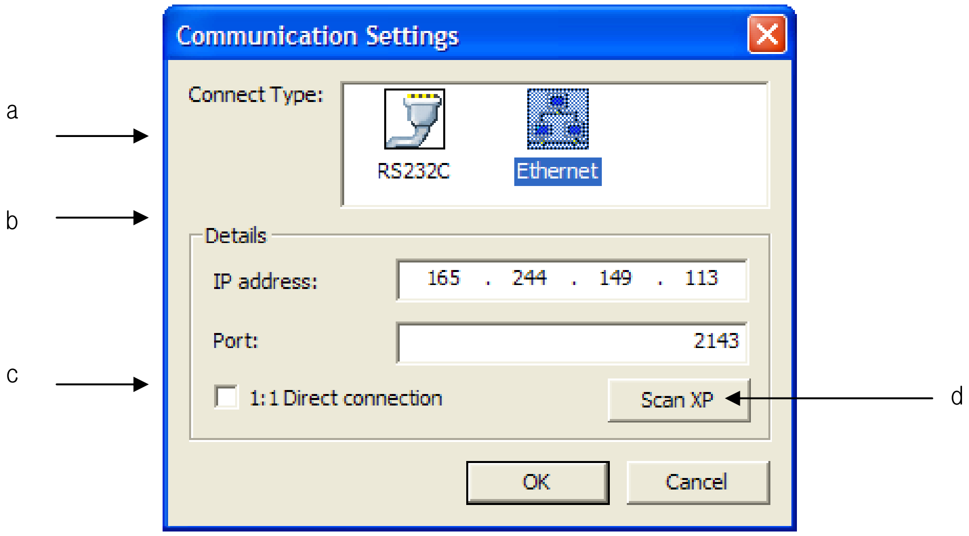
File path: A:₩XP_Project₩

☑ Delete all monitoring datas

(It will format all the Logging/Recipe/Alaram data that are stored in NVRAM Memory)

☑ Include upload project file

2) Click on [Communication Settings].

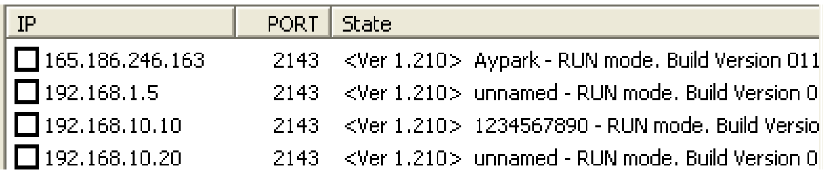


Connect Type: Ethernet

IP address: 165 . 244 . 149 . 113

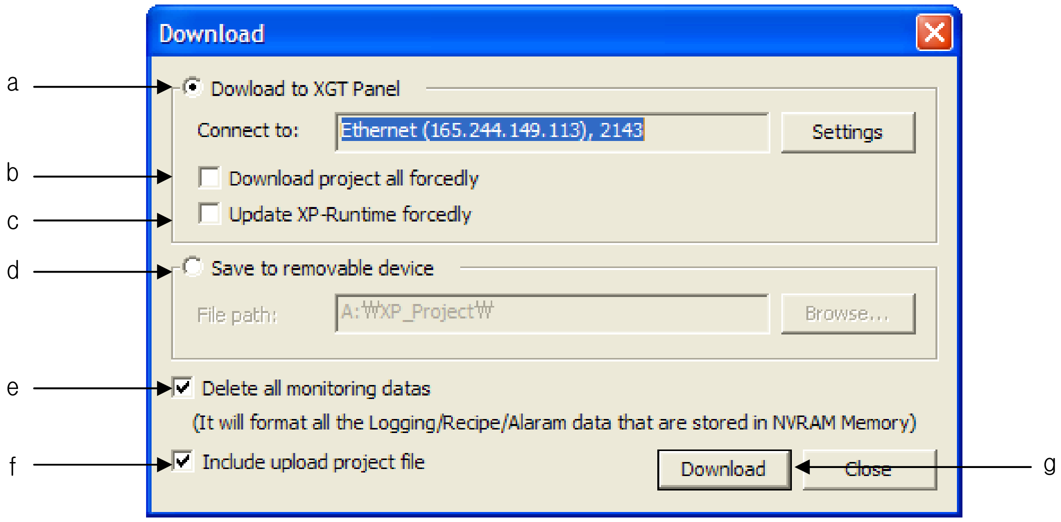
Port: 2143

☐ 1:1 Direct connection

Function	Description
Connecting method (a)	Setting Serial and Ethernet. The default value is set as Ethernet.
Detailed settings(b)	Detailed settings area based on current connecting type. While Ethernet can display the established IP and Port, RS232 can set up COM Port and transmission speed.
1:1 Connection(c)	When there are different PC and XP Panel for former 3 digits from IP XXX.XXX.XXX.XXX, 1:1 connection is recommended.
Search(d)	It is used to search for XGT Panel list that can be connected now. The function is available only under Ethernet, which shows the list of all XP Panels that can be sent. Press the check box of light side to select IP to be transmitted and press 'OK button.  IP PORT State ☐ 165.186.246.163 2143 <Ver 1.210> Aypark - RUN mode. Build Version 011 ☐ 192.168.1.5 2143 <Ver 1.210> unnamed - RUN mode. Build Version 0 ☐ 192.168.10.10 2143 <Ver 1.210> 1234567890 - RUN mode. Build Versio ☐ 192.168.10.20 2143 <Ver 1.210> unnamed - RUN mode. Build Version 0

(b) Transfer of Project and Execution Data

1) Select Transfer Project.



● Dowload to XGT Panel

Connect to: Ethernet (165.244.149.113), 2143

☐ Download project all forcedly

☐ Update XP-Runtime forcedly

○ Save to removable device

File path: A:₩XP_Project₩

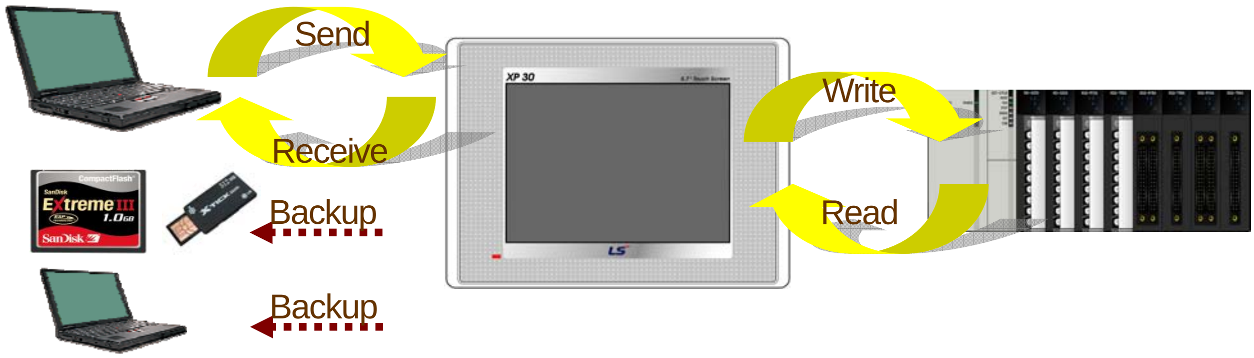
☑ Delete all monitoring datas

(It will format all the Logging/Recipe/Alaram data that are stored in NVRAM Memory)

☑ Include upload project file

Function	Description
Download to XGT Panel (a)	It is to send the project through Communication(Ethernet, RS_-32C)
Download project all forcibly (b)	Normally, XP-Builder judges if it sends only revised project or whole project through its internal algorithm. If the function is activated, the whole project will be sent.
Update XP-Runtime forcibly (c)	Normally, XP-Builder judges if it sends engine files of XP-Runtime folder in the installed XP-Builder through its internal algorithm. If the function is activated, the files will be sent.
Save to removable device (d)	It is to save the project to external equipment including USB based on Offline type by inserting UPB into the devices.
Delete all monitoring data(e)	The option is to judge if it deletes or reserves the alarm, logging, recipe data saved at SRAM of XP Panel.
Include upload project file(f)	The option is to send the compressed data for upload. To set up the saving position of these uploaded files, refer to Chap.13.7 'Setting storage devices'.
Download (g)	It starts sending the project based on user's setting.

2) Click on the OK button, check the cables and check whether the data is being transferred to XGT Panel.
If it is not transferred, see the Troubleshooting or Manual.



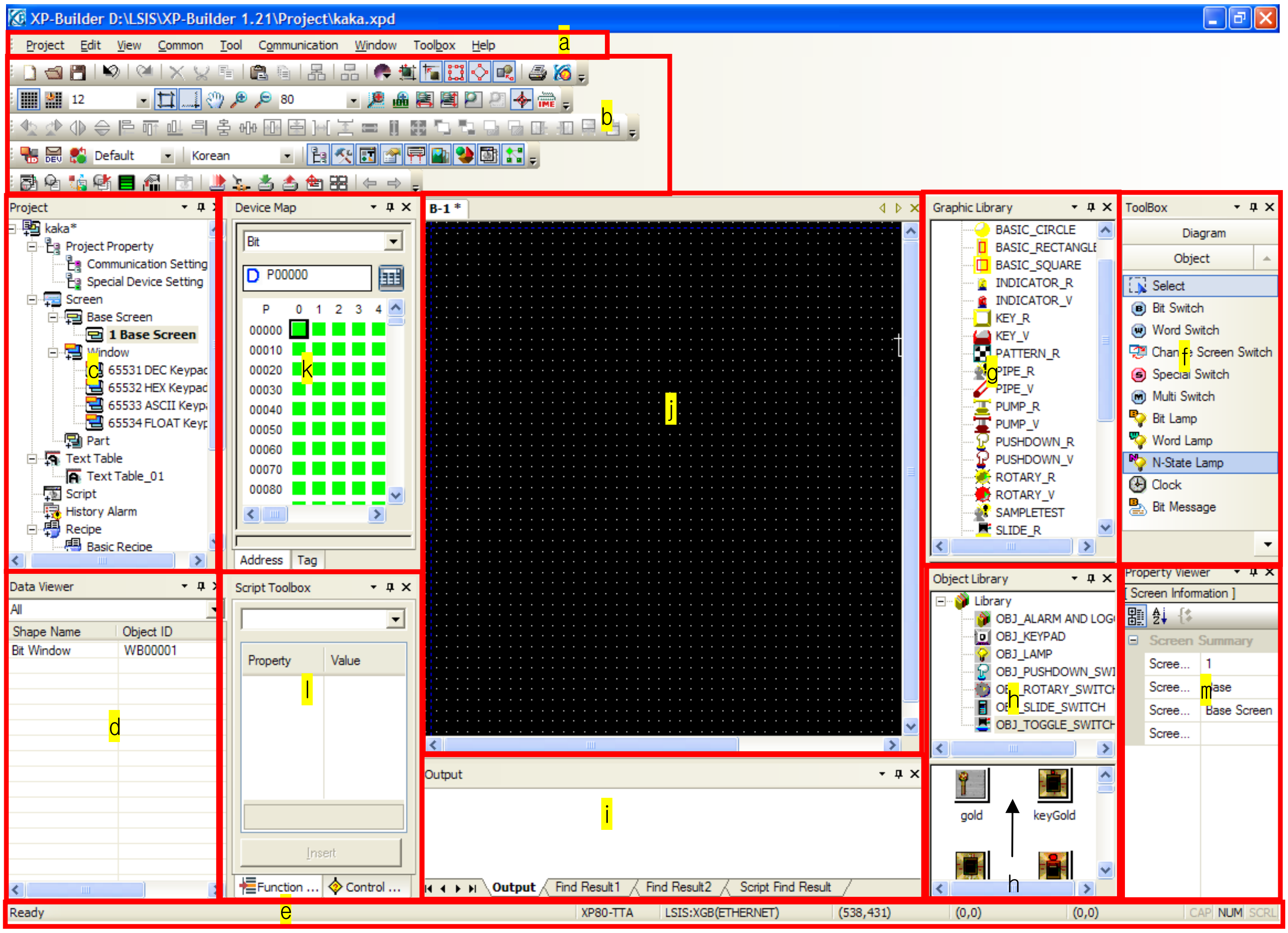
3) Check whether what you edited in XGT Panel and checked in the simulator is all displayed and operated.

Chapter 3 Composition of XP-Builder

3.1 Display Composition

The display of XP-Builder has the following composition.

[Dialog Box]


XP-Builder D:\LSIS\XP-Builder 1.21\Project\kaka.xpd
Project Edit View Common Tool Communication Window Toolbox Help
a
b
12
80
Default
Korean
Project
kaka*
Project Property
Communication Setting
Special Device Setting
Screen
Base Screen
1 Base Screen
Window
65531 DEC Keypad
65532 HEX Keypad
65533 ASCII Keypad
65534 FLOAT Keyp
Part
Text Table
Text Table_01
Script
History Alarm
Recipe
Basic Recipe
c
Device Map
Bit
P00000
k
Address
Tag
B-1 *
j
Graphic Library
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SAMPLETEST
SLIDE_R
g
ToolBox
Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch
Multi Switch
Bit Lamp
Word Lamp
N-State Lamp
Clock
Bit Message
f
Data Viewer
All
Shape Name
Object ID
Bit Window
WB00001
d
Script Toolbox
Property
Value
l
Insert
Function ...
Control ...
Output
i
Output
Find Result1
Find Result2
Script Find Result
Object Library
Library
OBJ_ALARM AND LOG
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWI
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
h
gold
keyGold
h
Property Viewer
Screen Information
Screen Summary
Scree... 1
Scree... Base
Scree... Base Screen
Scree...
m
Ready
e
XP80-TTA
LSIS:XGB(ETHERNET)
(538,431)
(0,0)
(0,0)
CAP NUM SCRL

[Description of Dialog Box]

Item	Description
Title	Displays the path name and window number.
Menu (a)	The basic menu for the program.
Tools (b)	Provides methods of conveniently executing the menu.
Project window (c)	Displays the components of the currently opened project.
Data view (d)	Displays the ID and location information of the objects and figures.
Status bar (e)	Displays the state of XP Builder, product name of the XGT Panel, information of the connected PLC, location of the mouse pointer and location and size of the object. Displays the progress bar during transferring or saving as well.
Tool box (f)	Gives tools that you can use to select and edit various objects.
Graphic library (g)	Has various image registered in the system library and is used as the background image of a figure or object. It provides the user library and can be registered or deleted whenever necessary.
Object library (h)	Provides frequently used objects and their combinations as the system library. It provides the user library and can be registered or deleted whenever necessary.
Output bar (i)	Consists of the message box displaying errors and user interface messages and the [Find Result 1] and [Find result 2] boxes which displays the result of search.
Editing window (j)	The window where you can edit objects and figures and can give the screen properties.
Device map(k)	Provides information on the device used in the entire project as map type
Script tool box(l)	Helps make script by providing the script-related control sentence and function list
Property viewer(m)	Displays the properties of diagram, object and helps change them individually or simultaneously.

3.2 Menu Composition

If you select a menu, commands appear and you can execute them by clicking on them with the mouse or using the keyboard. If there are hot keys in the menu, you can use the keys to execute the command.

(1) Project

Command		Description
New Project		Creates a new project.
Open Project		Opens an existing project.
Save Project		Saves the present project.
Save As Project		Saves the present project as another name.
Close Project		Closes the project.
Action menu (Item addition)	Base screen	Adds a new basic screen to the project.
	Window Screen	Adds a new window screen to the project.
	Part Screen	Adds a new part screen to the project.
	Text Table	Adds a new Text table to the project.
	History Alarm	Adds a new history alarm to the project.
	Recipe	Adds a new recipe to the project.
	Script	Adds a new script to the project.
Print		Prints the contents of the activated window.
Print Preview		You can previews what is going to be printed.
Project Print		Selects and prints an item of the project.
Print setting		Sets the printer option.
Project Password		Sets the password in the current project.
Exit		Ends XP-Builder.

(2) Edit

Command		Description
Undo		Cancels editing in the program editing window and goes back to the previous display.
Redo		Restores the action of which the editing has been cancelled.
Delete		Deletes a block or selected item.
Cut		Copies a block in the clip board while deleting the block.
Copy		Copies a block in the clip board.
Paste		Paste the selected item in the editing window from the clip board.
Multi Copy		Copies multiple figures or objects at a time.
Select All		Make a block of all the contents of the currently activated window.
Delete All		Delete all the contents of the currently activated window.
Grouping	Group	Groups the selected figures, objects or groups.
	UnGroup	Ungroups a group.
Rotate or Flip	Rotate left	Turns the selected figure, object or group anticlockwise by 90 degrees.
	Rotate Right	Turns the selected figure, object or group clockwise by 90 degrees.
	Flip Horizontal	Moves the selected figure, object or group to the opposite side horizontally.
	Flip Vertical	Moves the selected figure, object or group to the opposite side vertically.
Align	Align Left	Aligns the selected figures at the left.
	Align Center	Aligns the selected figures at the center.

Command		Description
Align	Align Right	Aligns the selected figures at the right.
	Align Top	Aligns the selected figures at the top.
	Align Middle	Aligns the selected figures at the middle.
	Align Bottom	Aligns the selected figures at the bottom.
Order	Bring to Front	Moves the selected figure, object or group to the first.
	Send to Back	Moves the selected figure, object or group to the last.
	Bring Forward	Moves the selected figure, object or group forward.
	Send Backward	Moves the selected figure, object or group backward.
Make Same Size	Width	Adjusts the width of the two or more selected figures, objects or groups so that their widths become as long as the longest one of them.
	Height	Adjusts the width of the two or more selected figures, objects or groups so that their heights become as long as the longest one of them.
	Both	Adjusts the width of the two or more selected figures, objects or groups so that their widths and heights become as long as the longest one of them.
Center in Page	Horizontal	Moves the two or more selected figures, objects or groups to the horizontal center of the screen.
	Vertical	Moves the two or more selected figures, objects or groups to the vertical center of the screen.
Space Evenly	Across	Moves the two or more selected figures, objects or groups so that the horizontal space between each of them is equal.
	Down	Moves the two or more selected figures, objects or groups so that the vertical space between each of them is equal.
Snap to grid		Places objects or figures within the grid.
Glue	Glue to Guide Line	Arranges the figure or object on the guide line.
	Glue to Handles	Arranges the figure or object at the handle.
	Glue to Verties	Arranges the figure or object at the vertex.
	Glue to Intersect Point	Arranges the figure or object at the intersection.
First Point As Center		You can make the point on which you clicked the center of an object or figure.
Nudge	Nudge Left	Moves the selected figure, object or group to the left by a dot.
	Nudge Right	Moves the selected figure, object or group to the right by a dot.
	Nudge Up	Moves the selected figure, object or group up by a dot.
	Nudge Down	Moves the selected figure, object or group down by a dot.
Position/Scale change		Changes the location and size of the object or figure.

(3) Tool Box

Command	Description
Bit Switch	Enters the mode of drawing the bit switch.
Word Switch	Enters the mode of drawing the word switch.
Special Switch	Enters the mode of drawing the special switch.
Change Screen Switch	Enters the mode of drawing the display switching switch.
Multi Switch	Enters the mode of drawing the multi switch.
Bit Lamp	Enters the mode of drawing the bit lamp.
Word Lamp	Enters the mode of drawing the word lamp.
N-state Lamp	Enters the mode of drawing the N-state lamp.
Clock	Enters the mode of drawing the clock.

Command	Description
Bit Message	Enters the mode of drawing the bit message.
Word Message	Enters the mode of drawing the word message.
Numeric Display	Enters the mode of drawing the number output.
Numeric Input	Enters the mode of drawing the number input.
Text Display	Enters the mode of drawing the character output.
Text Input	Enters the mode of drawing the character input.
Animation	Enters the mode of drawing the animation.
Bit Window	Enters the mode of drawing the bit window.
Word Window	Enters the mode of drawing the word window.
Bit Part	Enters the mode of drawing the bit part.
Word Part	Enters the mode of drawing the word part.
Bar Graph	Enters the mode of drawing the bar graph.
Pie Graph	Enters the mode of drawing the pie graph.
Trend Graph	Enters the mode of drawing the trend graph.
Logging trend graph	Enters the mode of drawing the logging trend graph
Scatter graph	Enters the mode of drawing the real-time scatter graph or logging scatter graph
Meter Graph	Enters the mode of drawing the meter graph.
Closed Graph	Enters the mode of drawing the closed graph.
History Alarm Viewer	Enters the mode of drawing the history graph viewer.
Datalist	Enters the mode of drawing the data list viewer.
Logging Viewer	Enters the mode of drawing the logging viewer.
Alarm Navigator	Enters the mode of drawing the alarm navigator.
Memo pad	Enters the mode of drawing the memo pad
Recipe navigator	Enters the mode of drawing the recipe navigator (file or basic recipe)
Data list editor	Enters the mode of drawing the data list editor
File recipe editor	Enters the mode of drawing the file recipe editor
Line	Enters the mode of drawing the straight line.
Circle	Enters the mode of drawing the circle.
Pie	Enters the mode of drawing the pie.
Chord	Enters the mode of drawing the chord.
Multi line	Enters the mode of drawing the multi line.
Polygon	Enters the mode of drawing the polygon.
Ellipse	Enters the mode of drawing the ellipse.
Rectangle	Enters the mode of drawing the rectangle.
RoundRect	Enters the mode of drawing the round rectangle.
Text	Enters the mode of drawing the text.
Image	Enters the mode of drawing the image.
Scale	Enters the mode of drawing the scale.

(4) View

Command	Description
Toolbars	Displays or hides the tool bar.
Status bar	Displays or hides the status bar.
Project	Displays or hides the project.
Tool Box	Displays or hides the tool box.

Command		Description
Data Viewer		Displays or hides the data component window.
Property Viewer		Displays or hides the property viewer
Output Bar		Displays or hides the output window.
Graphic Library		Displays or hides graphic library window.
Object Library		Displays or hides object library window.
Device Map		Displays or hides device map window.
Script Toolbox		Displays or hides script toolbox.
Pan Window		Displays or hides Pan window.
Screen Thumbnails		Displays or hides thumbnail.
Grid		Displays or hides the grid.
Grid Setting		Sets the alignment and girding methods.
Margin Line		Displays or hides the space line.
Guide Line		Displays or hides the guide line.
Show Shape Center		Displays or hides the center of an object or figure.
IME		Displays or hides the IME.
Auto Pan		Displays the hidden screen by scroll.
Zoom	Zoom to 25%	Zooms an object or figure by 25%.
	Zoom to -25%	Collapses an object or figure by 20%.
	Zoom to 50%	Collapses an object or figure by 50%.
	100%	Maintains an object or figure by 100%.
	200%	Zooms an object or figure by 200%.
	Within Rectangle	Justifies an object or figure to the set area.
	Page Width	Justifies an object or figure to the page width.
	Page Height	Justifies an object or figure to the page height.
	Whole Page	Justifies an object or figure to the full page.
	Fit Selection	Justifies an object or figure to the set area.
Show/Hide Object ID		Displays or hides the object ID.
Show/Hide Object address		Displays or hides the device address of the object.
Show/Hide Object On/Off		Displays the device value of the object when it is 0 or 1.
Redraw		Updates the window.

(5) Common

Command		Description
Project Property Setting		Sets the project data.
Recipe Setting		Sets the recipe data.
Tag Setting		Sets the tag data.
Scheduler Setting		Sets the reservation.
Logging Setting		Sets the logging data.
Alarm Setting	Flow Alarm	Sets the flow alarm.
	History Alarm	Sets the history alarm.
	System Alarm	Checks the contents of the system alarm.

(6) Tools

Command	Description
Cross Reference	Displays the devices used.
Find in active screen	Searches for a device in the activated window.
Replace in active screen	Changes the retrieved device.
Find/replace All	Retrieves all the devices in the area specified by the user or changes all the devices
Memory Statistics	Displays the device memory status which has been used.
Data Check	Checks the errors of the display data and common data configured by the user.
Script Check	Checks errors of scripts.
Find all script	Finds All scripts such as global script and script used in screen, object
Register object caption to text table automatically	Creates the text table and registers the static caption or static character string of diagram text automatically to text table
Option	Specifies related options of the editing color and work space.
Customization	The user can set the tool bar as he wishes.
Simulation	Simulates the display data configured by the user in the PC.
Previous screen	Activates previous screen
Next screen	Activates next screen
Export Font	Exports all fonts used in the current project into user-specified folder
Install Font	Takes the font from user-specified folder and registers it as window font
Starting a XP-PD	Configuration tool for Optional board such as XPO-EIMT

(7) Communication

Command	Description
Comm. setting	Sets communication with XGT Panel.
Send	Sends data to XGT Panel.
Receive	Receives data from XGT Panel.
XGT Panel Information	Displays information on XGT Panel
XGT Panel Update	Upgrades the XGT Panel S/W.

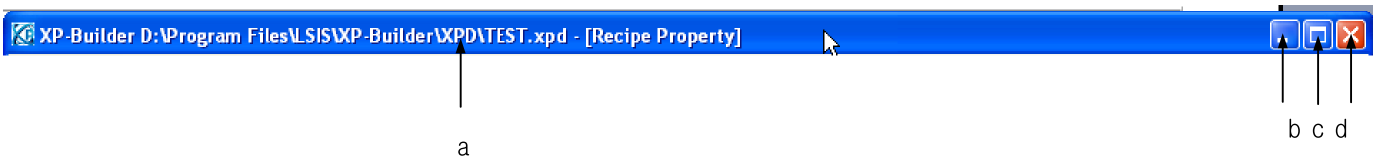
(8) Window

Command	Description
Close All	Closes all the windows of XP-Builder.
Window manger	Activate, save or close window.

(9) Help

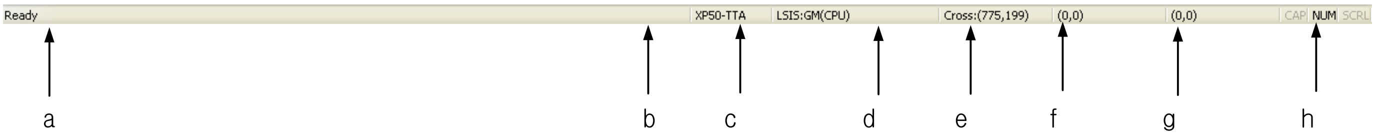
Command	Description
About XP-Builder	You can view some information such as the XP Builder version information.
Help	You can view help.
Update	You can check whether the current version is the latest and update it.
LSIS Online	Moves to the home page of the LSIS.

3.3 Title Bar


XP-Builder D:\Program Files\LSIS\XP-Builder\XPD\TEST.xpd - [Recipe Property]
a
b
c
d

Item	Description
Path name (a)	Displays the path name and window title of an opened project. If it is closed, nothing is displayed.
Minimize (b)	You can minimize the window.
Recover/maximize (c)	You can either maximize the window or recover the window by using the icon.
Close (d)	Closes the program.

3.4 Status Bar


Ready
XP50-TTA
LSIS:GM(CPU)
Cross:(775,199)
(0,0)
(0,0)
CAP NUM SCRL
a
b
c
d
e
f
g
h

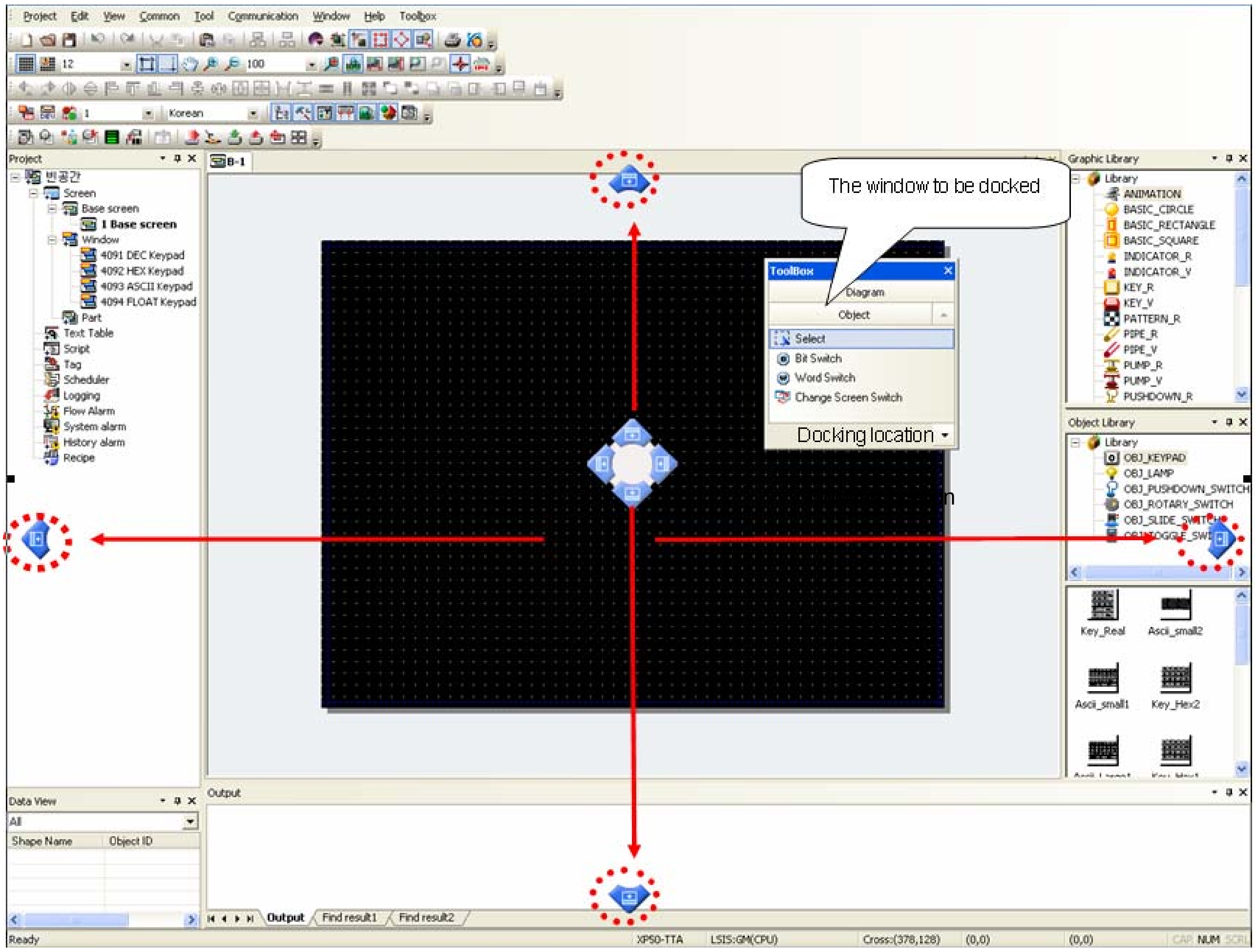
Item	Description
Message (a)	Displays the message describing the job currently conducted by XP Builder.
Progress bar (b)	Displays the progress rate of project saving or opening or executable file saving.
XGT Panel model type (c)	Displays the selected type of the present project of the XGT Panel types.
Control name (d)	Displays the name of the selected control. If there are multiple controls in a single project, the control of the device tab in the project properties dialog or the control selected as the wizard is displayed.
Mouse pointer location (e)	Displays the coordinate of the mouse pointer.
top and left Coordinates of an object or figure (f)	Displays the top and left coordinates of a selected object or figure.
Width and height of an object or figure (g)	Indicates the height of a selected object or figure.
CAP/NUM/SCRL (h)	If one of Caps Lock/Num Lock/Scroll Lock is pressed, the characters are shown in bold style.

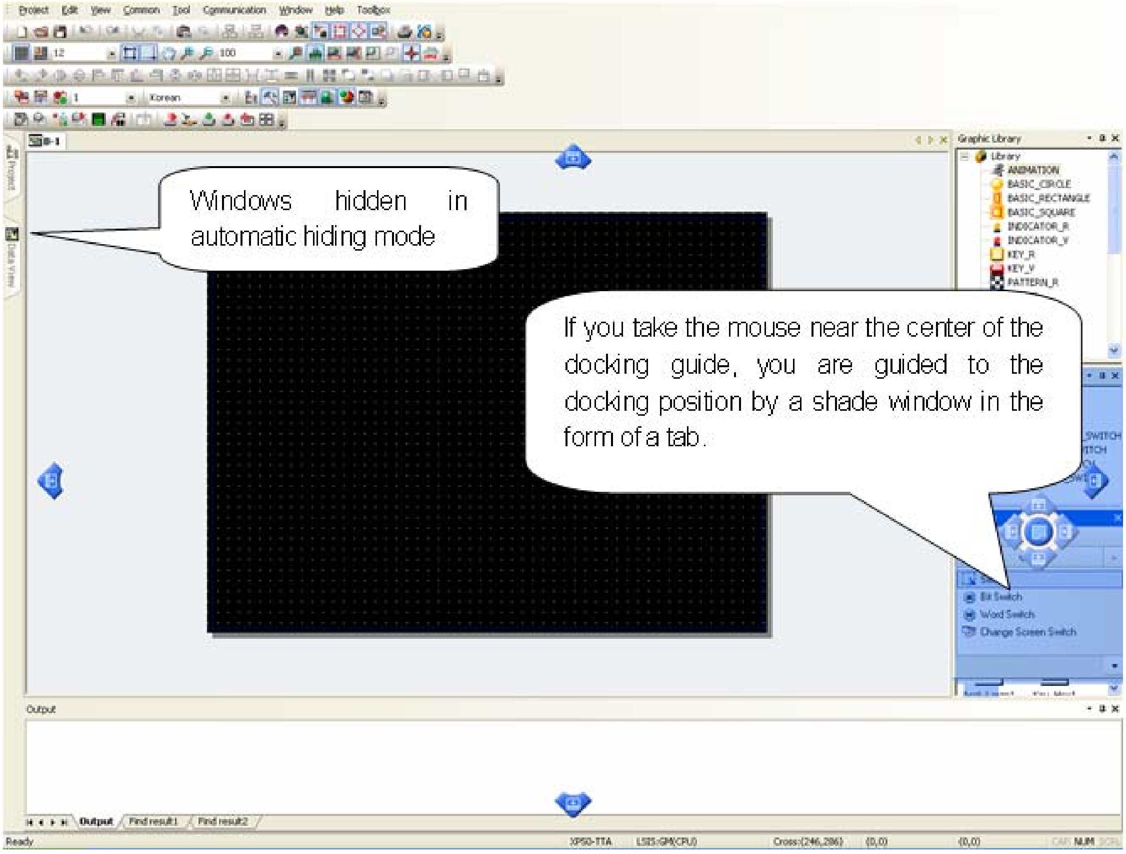
3.5 Docking Window

All the windows in the viewer menu (project window, result window, library window, etc.) can be docked. You can adjust the position and size of the window by using the mouse and docking is available at any position.
You can also keep the docking window floating or set it so that it is automatically hidden.

(1) Docking Window Movement

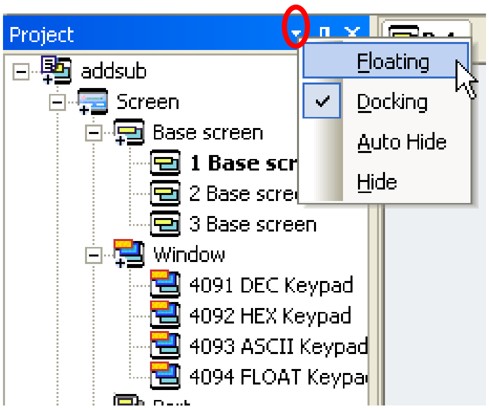
The following illustrates the docking position guides shown when you move the tool window. If you move the tool window as shown below, the docking guide appears in the window. If you take the window near the docking guide, you can easily dock it at a desired position.




Project Edit View Common Tool Communication Window Help Toolbox
Graphic Library
Windows hidden in automatic hiding mode
If you take the mouse near the center of the docking guide, you are guided to the docking position by a shade window in the form of a tab.
Output
Output
Find result1
Find result2
Ready

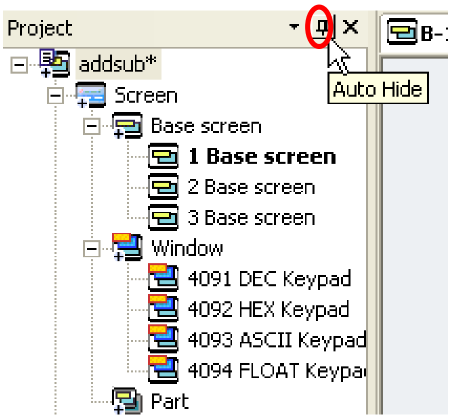
(2) Change to Floating Window

Select [Floating] by pressing the right button on the mouse on the docking window title or clicking on the arrow-shaped button at the bottom.


Project
addsub
Screen
Base screen
1 Base scr
2 Base scre
3 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypa
Floating
Docking
Auto Hide
Hide

(3) Automatic Hiding Mode

To have the window automatically hidden, press the right button on the mouse on the desired docking window title and select [Auto Hide] in the menu or click on the pin-shaped button in the docking window as shown below to shift to the hiding mode.

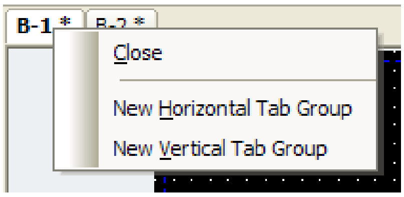

Project
Auto Hide
addsub*
Screen
Base screen
1 Base screen
2 Base screen
3 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypa
Part

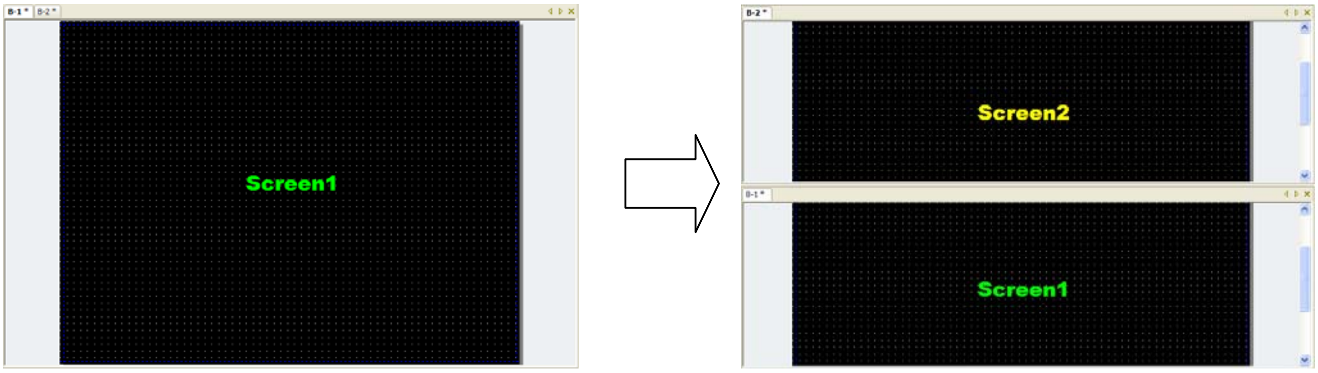
3.6 Screen Tap Group

It is the function to edit multi-screen at the same time. If the screen is divided into several tab groups, it is possible to edit the multi screens simultaneously and move the screen freely by dragging and dropping tab groups.

(1) Creating horizontal tab groups

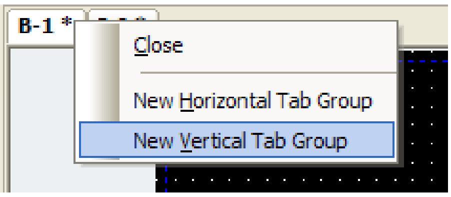
Click right mouse button at the tab and select [New horizontal tab group] and then, you can see the screen will be divided into new horizontal tab groups.

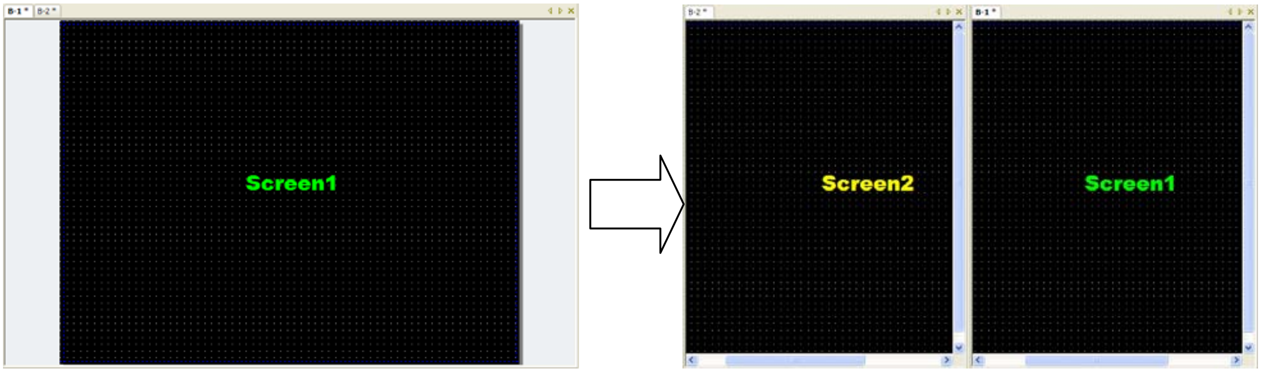

B-1 *
B-2 *
Close
New Horizontal Tab Group
New Vertical Tab Group


Screen1
Screen2
Screen1

(2) Creating vertical tab groups

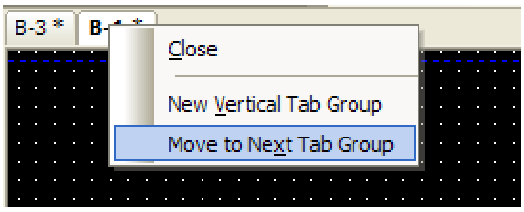
Click the tab with a right mouse button and select [New vertical tab group]. Then, you can see the screen will be divided into new vertical tab groups.

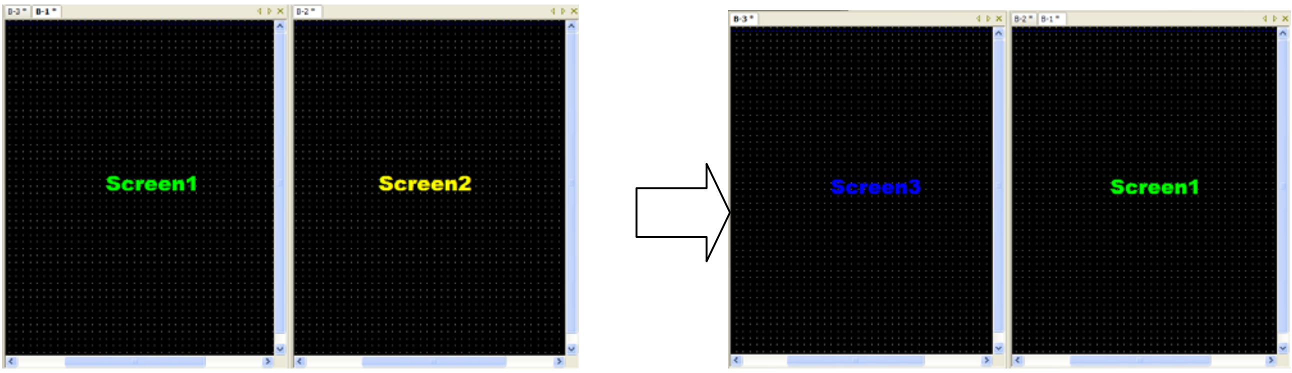

B-1 *
Close
New Horizontal Tab Group
New Vertical Tab Group


Screen1
Screen2
Screen1

(3) Moving to next tab group

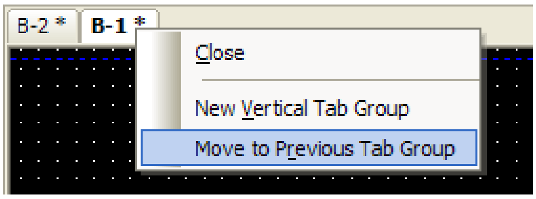
It is used to move to other tab groups from the current tab groups. Furthermore, it can be dropped into other tab groups by dragging the tap of the intended screen.

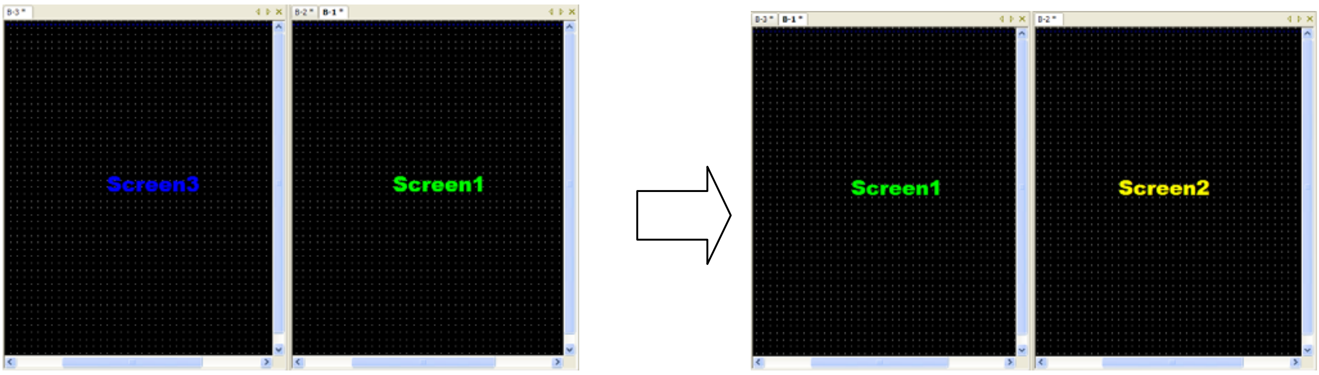

B-3 *
B-1 *
Close
New Vertical Tab Group
Move to Next Tab Group


Screen1
Screen2
Screen3
Screen1

(4) Moving to previous tab groups

It is used to move to the previous tab groups from the current tab groups. Furthermore, it can be dropped into other tab groups by dragging the tap of the intended screen.


B-2 *
B-1 *
Close
New Vertical Tab Group
Move to Previous Tab Group

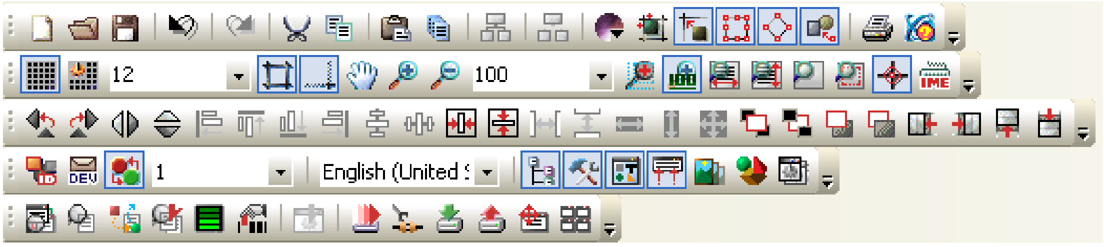

Screen3
Screen1
Screen1
Screen2

3.7 User Specific

3.7.1 Tool Bar

XP-Builder provides icons of frequently used menus.

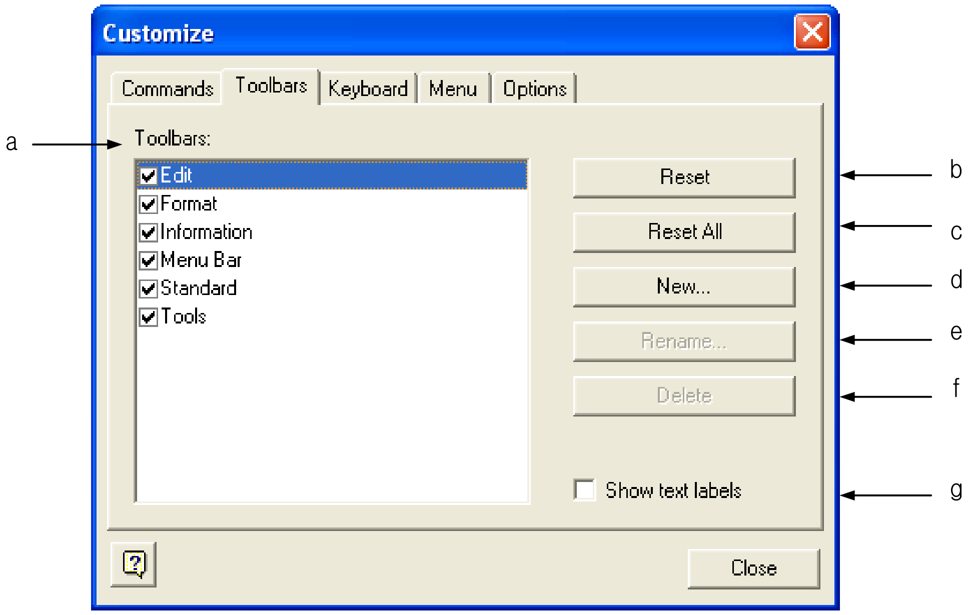
[Tool Bar]


12
100
1
English (United S

(1) New Tool Bar Creation

You can make a new tool bar by grouping the tools you frequently use.

[Dialog Box]


Customize
Commands
Toolbars
Keyboard
Menu
Options
Reset
Reset All
New...
Rename...
Delete
Close
a
b
c
d
e
f
g

Toolbars:

- ☑ Edit
- ☑ Format
- ☑ Information
- ☑ Menu Bar
- ☑ Standard
- ☑ Tools

☐ Show text labels

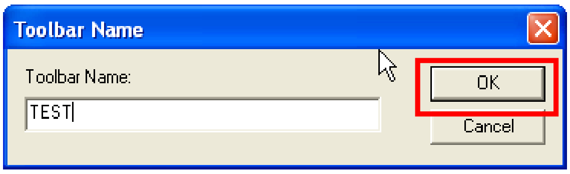
Item	Description
Toolbars (a)	You can set the tool bar so that it is displayed or hidden by checking or leaving unchecked the check box before the name of each tool bar.
Reset (b)	Initializes the tool bar.
Reset All (c)	Sets the basic font size displaying the ID and address of the device and object.
New (d)	Creates a new tool bar.
Rename (e)	Changes the name of the tool bar which the user has made.
Delete (f)	Deletes the tool bar which the user has made.
Show text labels (g)	Displays the name of the tool bar.

[Procedure]

(a) Select [Tool]-[Customization]-[Toolbars] in the menu.

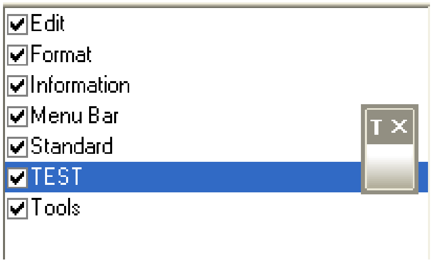
(b) Click on [New].

(c) When the dialog box for entering the tool bar name, enter the desired name.


Toolbar Name
OK
Cancel

Toolbar Name: TEST

(d) Press the OK button. Then an empty tool box is created and 'TEST', which is a new tool bar, is added to the tool bar list.

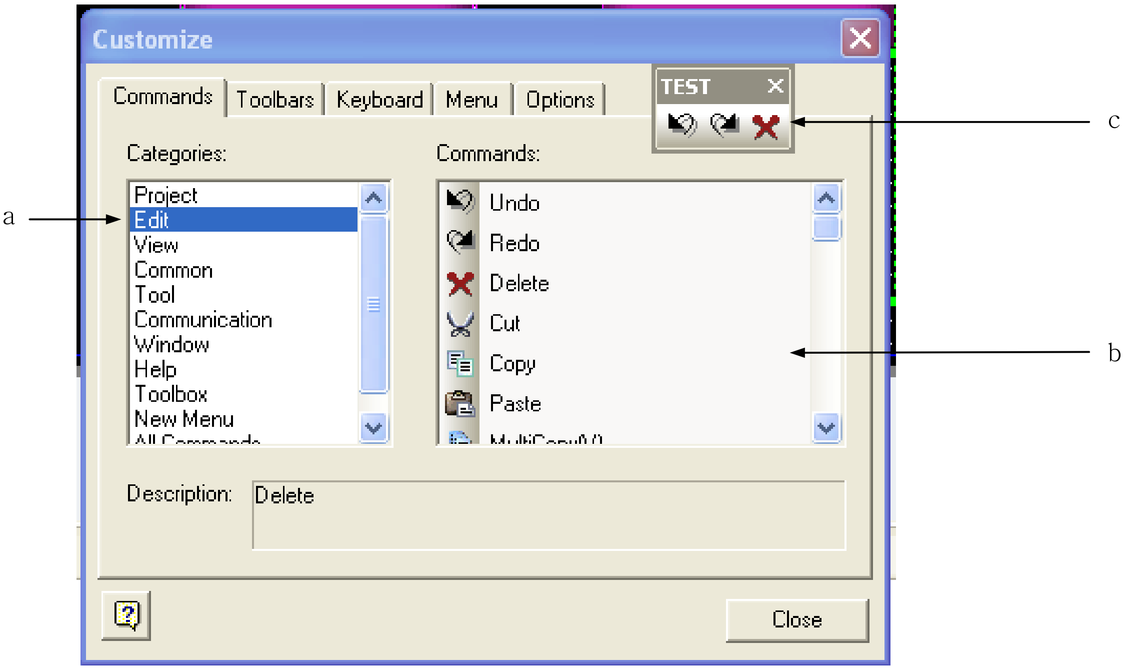


- ☑ Edit
- ☑ Format
- ☑ Information
- ☑ Menu Bar
- ☑ Standard
- ☑ TEST
- ☑ Tools

(2) Filling Tool Bar

This is the command tab of the user specific dialog box. You can create a new tool bar by configuring new commands.

[Dialog Box]


Customize
Commands
Toolbars
Keyboard
Menu
Options
TEST ✕
Categories:
Project
Edit
View
Common
Tool
Communication
Window
Help
Toolbox
New Menu
Commands:
Undo
Redo
Delete
Cut
Copy
Paste
Close
a
b
c

Description: Delete

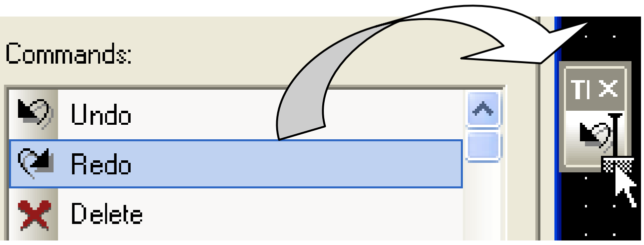
Item	Description
Categories (a)	Arranges the menu list.
Command (b)	Arranges the list of commands belonging to the same menu.
User tool bar (c)	You can add a new tool by dragging a desired command on the user tool box.

The following describes the procedure of filling the tool bar created in (1) with commands.

[Procedure]

(a) Select [Commands].

(b) Drag a desired command and place it on the tool box created above.


Commands:
Undo
Redo
Delete

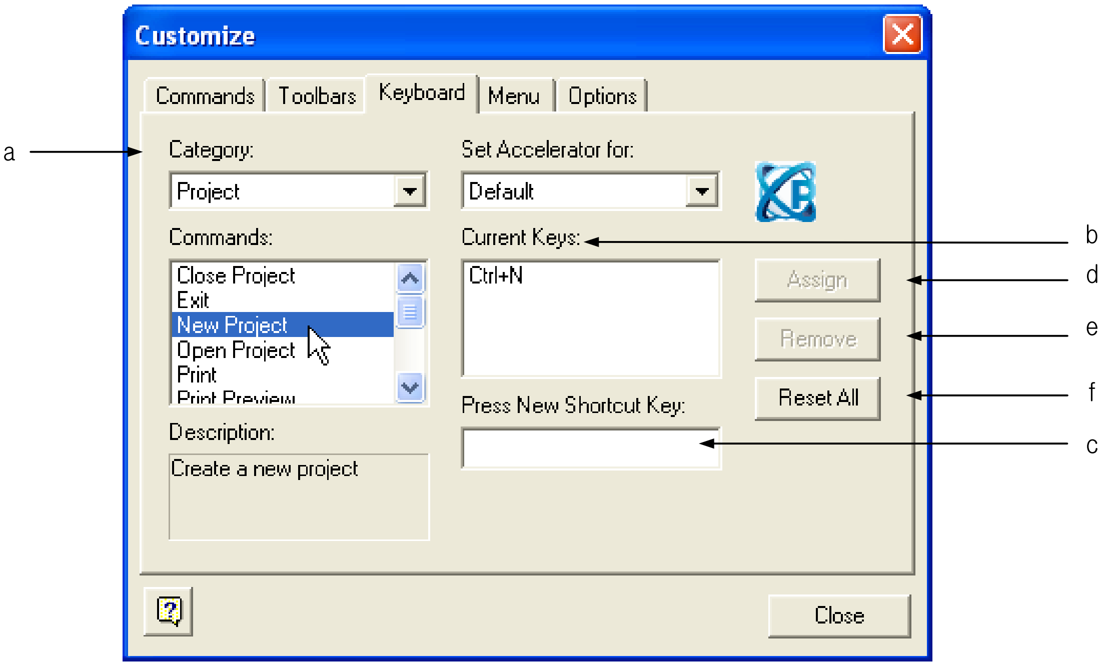
(c) Repeat (2) until you finish adding all desired commands.

(d) When finished, press the Close button.

3.7.2 Shortcut Key Setting

You can set a shortcut key for all commands. In such a case, the previously specified shortcut key is deleted.

[Dialog Box]


Customize
Commands
Toolbars
Keyboard
Menu
Options
Commands:
Close Project
Exit
New Project
Open Project
Print
Print Preview
Assign
Remove
Reset All
Press New Shortcut Key:
Close
a
b
d
e
f
c

Category: Project

Set Accelerator for: Default

Current Keys: Ctrl+N

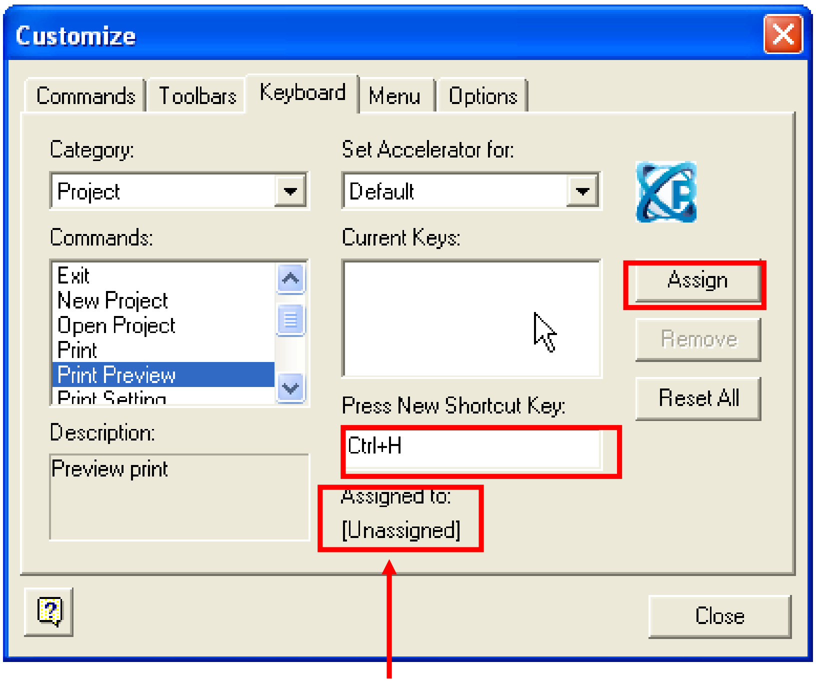
Description: Create a new project

Item	Description
Category (a)	Select the menu of which the hot key want to specify in the scope list.
Current Keys (b)	Displays the currently allotted key.
Press New Shortcut Key (c)	Enter a new hot key here if you want.
Assign (d)	A new hot key entered for the selected menu is allotted.
Remove (e)	Deletes the present hot key.
Reset All (f)	Deletes all the user hot keys and sets all the hot keys by default.

[Procedure]

(a) Select the keyboard tab in [Tool]-[Customization] in the menu.

(b) Select the category of which the hot key to set in the menu selection list.


Customize
Commands
Toolbars
Keyboard
Menu
Options
Category:
Project
Set Accelerator for:
Default
Commands:
Exit
New Project
Open Project
Print
Print Preview
Print Setting
Current Keys:
Assign
Remove
Reset All
Press New Shortcut Key:
Ctrl+H
Description:
Preview print
Assigned to:
[Unassigned]
Close

Message displaying the allotment status

(c) Enter the hot key you want. For example, if you would like to specify Ctrl + H, hold the Ctrl key and press H. Now the hot key is shown in the editing window. If this combination of keys is already being used, a message pops up saying that it has already been allotted and the hot key cannot be selected.

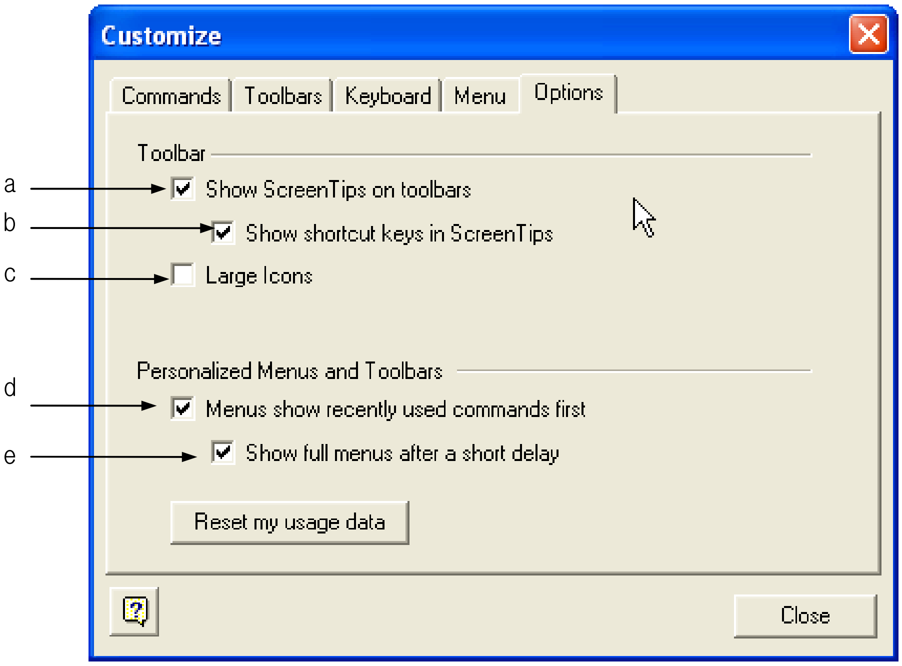
(d) Click on [Assign].

(e) Click on [Close].

3.7.3 Tool Box Option Setting

You can set options of the menu or tool box.

[Dialog Box]



Toolbar

☑ Show ScreenTips on toolbars

☑ Show shortcut keys in ScreenTips

☐ Large Icons

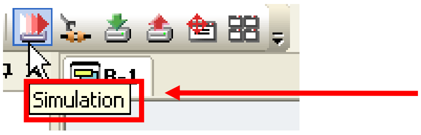
Personalized Menus and Toolbars

☑ Menus show recently used commands first

☑ Show full menus after a short delay

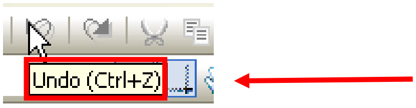
Item	Description
Show Screen Tips on toolbars (a)	Displays the tool tip when the mouse pointer stays in the tool bar.
Show shortcut keys in Screen Tips (b)	Displays the hot key when the mouse pointer stays in the tool bar.
Large Icons (c)	Displays the tool bar icons in a big size.
Menus show recently used commands first (d)	Displays the lately used menu only
Show full menus after a short delay (e)	Displays the full menu after a short period of time when d) is set.

[Example of 'Show Screen Tips on toolbars']



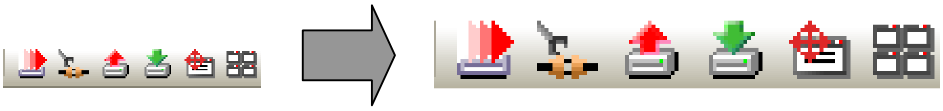
If you place the mouse pointer on the simulation tool, a tool tip saying 'simulation' is displayed.

[Example of 'Show shortcut keys in Screen Tips']

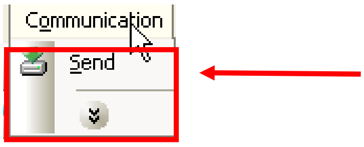


If you place the mouse pointer on the tool for canceling execution, a tool tip saying 'Undo (Ctrl + Z)' is displayed.

[Example of a Big Icon]

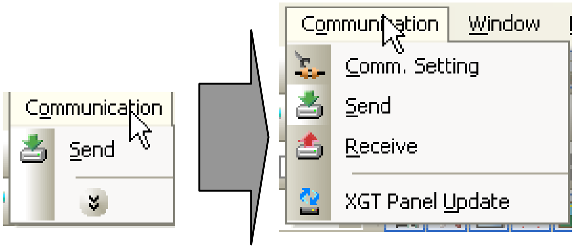


[Example of 'Menus show recently used commands first']


Communication
Send

All the menus except only the lately used menu ([Send]) in the communication menu on the left are not hidden.

[Example of 'Show full menus after a short delay']


Communication
Send
Communication
Window
Comm. Setting
Send
Receive
XGT Panel Update

As shown above, if 'Menus show recently used commands first' is set, the menu is displayed like the left image, but if you stop holding the mouse button, the full menu is unfolded after a short period of time.

3.8 Option

3.8.1 Editing Option

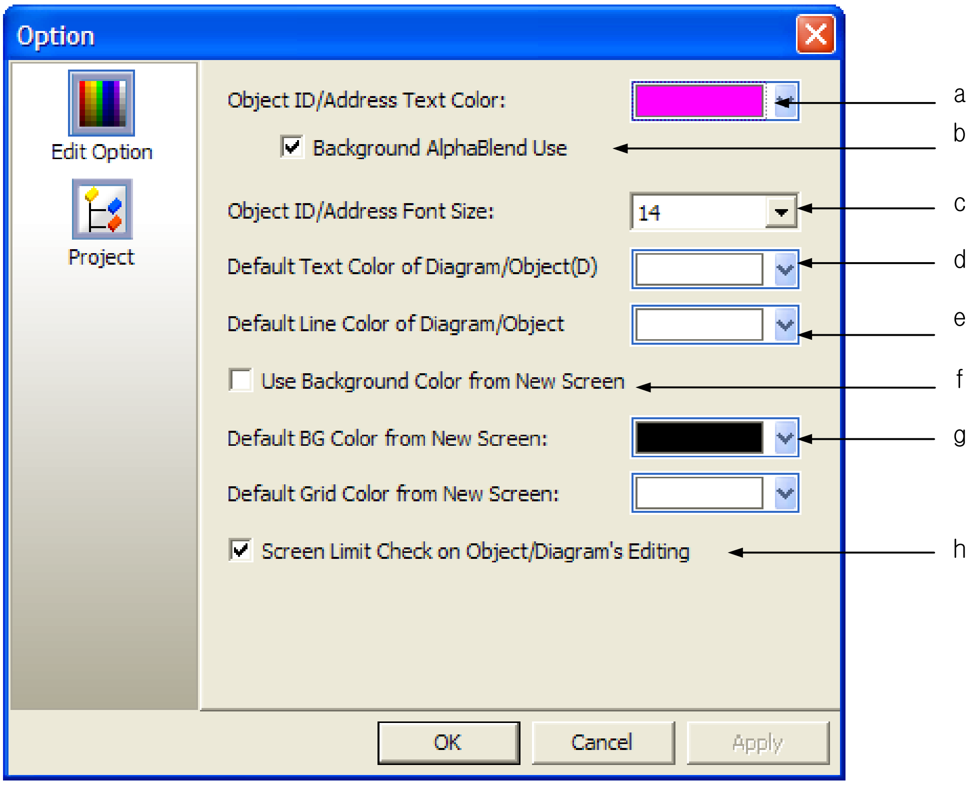
You can set the editing option.

[Procedure]

(a) Select [Tool]-[Option] in the menu.

(b) Select the color tab of [Default Color]

[Dialog Box]



Object ID/Address Text Color:

☑ Background AlphaBlend Use

Object ID/Address Font Size: 14

Default Text Color of Diagram/Object(D)

Default Line Color of Diagram/Object

☐ Use Background Color from New Screen

Default BG Color from New Screen:

Default Grid Color from New Screen:

☑ Screen Limit Check on Object/Diagram's Editing

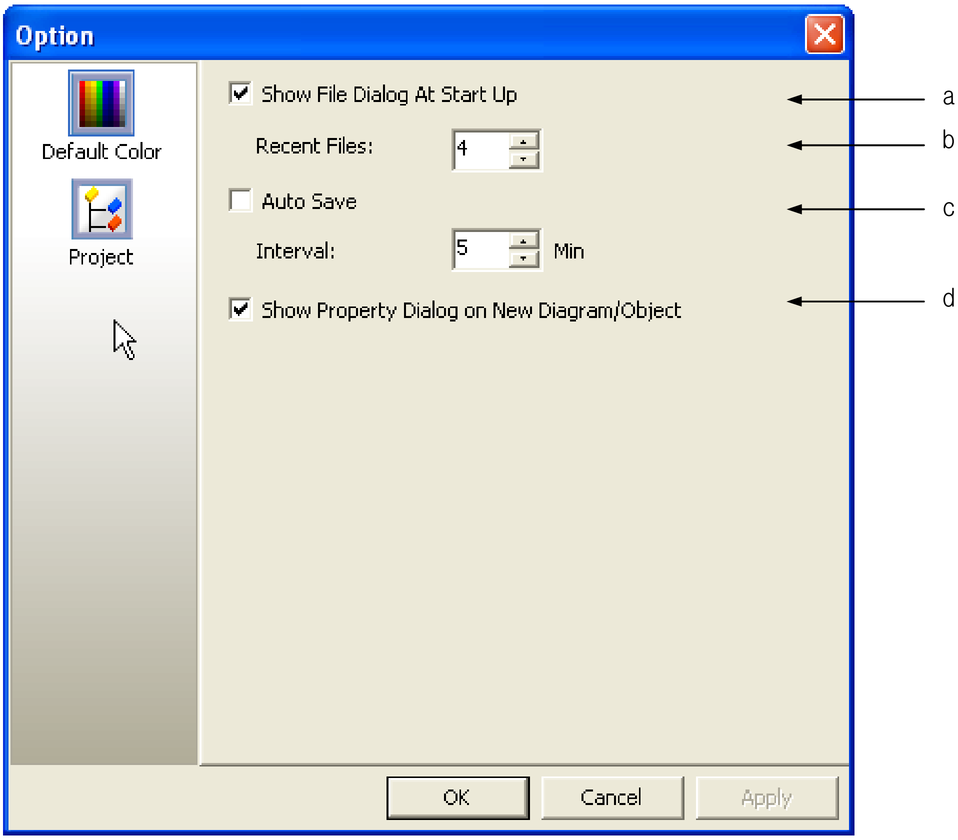
[Description of Dialog Box]

Item	Description
Object ID/Address Text Color (a)	Sets the basic color displaying the device and object ID.
Background AlphaBlend Use (b)	Indicates the ID color of a device and object semi-transparently on the white background
Object ID/Address Font Size (c)	Sets the default font size displaying the device and object ID and address.
Default Text Color of Diagram/Object (d)	Sets the basic color of the character string figure or object containing character properties.
Default Line Color of Diagram/Object (e)	Sets the basic color of the figure or object containing line properties.
Use background color from new screen (f)	Uses the background color which is applied from new screen
Default BG color from new screen (g)	Sets the background color which is applied from new screen
Screen Limit Check on Object/Diagram's Editing (h)	Allows object and diagram to go out of the screen or not. If you check this option, there is no check on going out of the screen when downloading.

Note

(1) The editing options are applied at the following points of time.
  1) (a) (b) (c) (h) apply immediately.
  2) (d) (e) apply after the new object or figure is created.
  3) (f) (g) apply after a new window is created.

3.8.2 Project Management Option


Option
Default Color
Project
☑ Show File Dialog At Start Up
Recent Files: 4
☐ Auto Save
Interval: 5 Min
☑ Show Property Dialog on New Diagram/Object
OK
Cancel
Apply
a
b
c
d

Item	Description
Show File Dialog At Start Up (a)	Decides whether to display the project opening selection dialog box when starting the program.
Recent Files (b)	You can set the maximum number of the lately used file lists.
Auto Save (c)	Sets the automatic project saving and saving interval.
Show Property Dialog on New Diagram/Object (d)	Decides whether to display the properties dialog box when the figure/object is created.

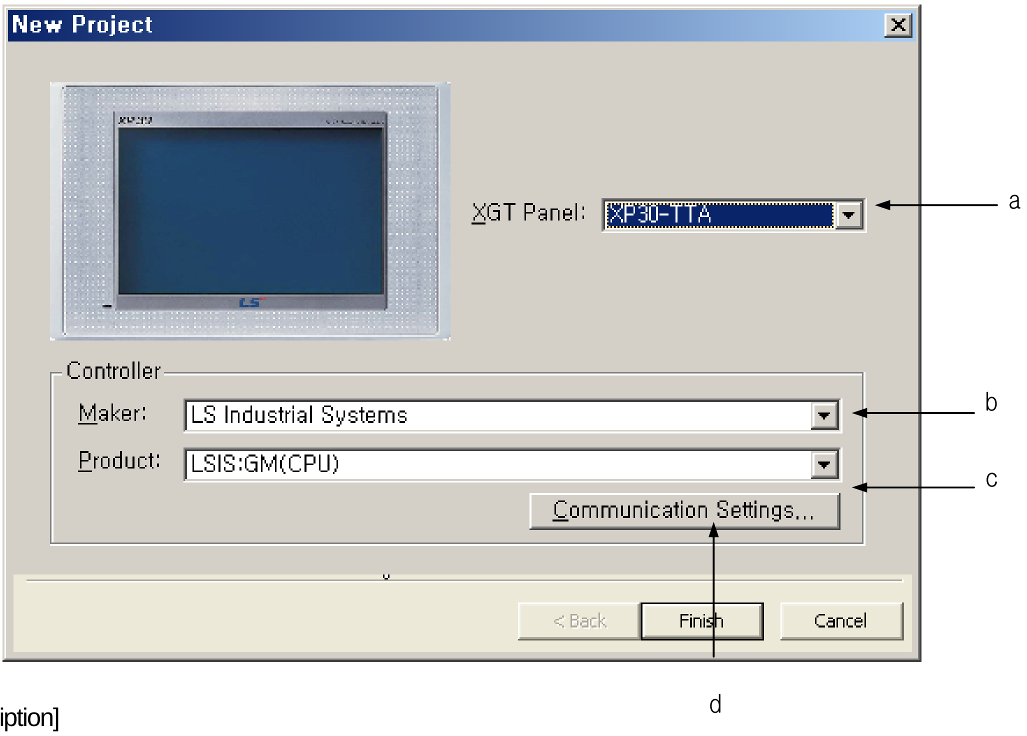
Chapter 4 Project

4.1 Project File Management

4.1.1 Creating New Project

You can create a new project.

[Procedure]
(a) Select [Project]-[New Project] in the menu.
(b) Select the device type and connection controller and click on the OK button.



New Project

XGT Panel: XP30-TTA

Controller

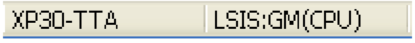
Maker: LS Industrial Systems

Product: LSIS:GM(CPU)

[Dialog Box Description]

Type	Description
XGT Panel Type (a)	Selects the XGT Panel type.
Maker (b)	Selects the PLC maker.
Product (c)	Selects the detailed product name of the controller to be connected with XGT Panel and monitor the data.
Communication Settings (d)	Selects the detailed communication settings.

(c) An empty basic window appears on the screen and the XGT Panel type and controller information set in the dialog box are displayed in the status bar.

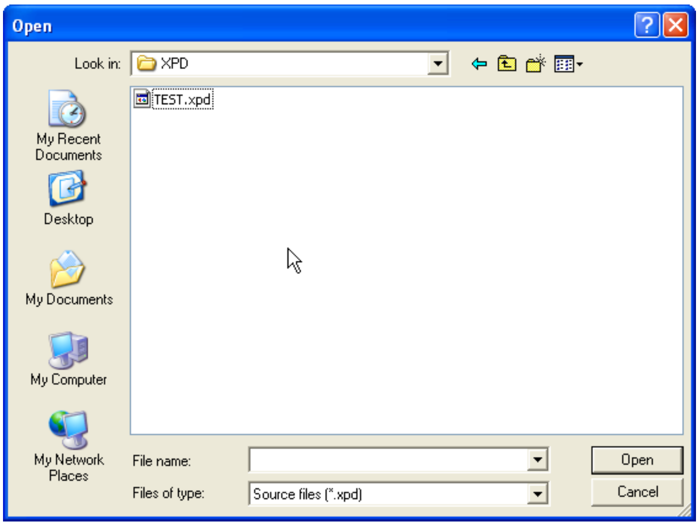


XP30-TTA | LSIS:GM(CPU)

4.1.2 Opening Project

[Procedure]

(a) Select [Project]-[Open Project] in the menu.

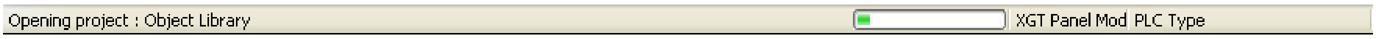

Open
Look in: XPD
TEST.xpd
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
File name:
Files of type: Source files (*.xpd)
Open
Cancel

(b) Select the project file and click on the Open button.

Now the file is opened and the progress is displayed in the progress message and progress bar in the status bar just as it was saved.

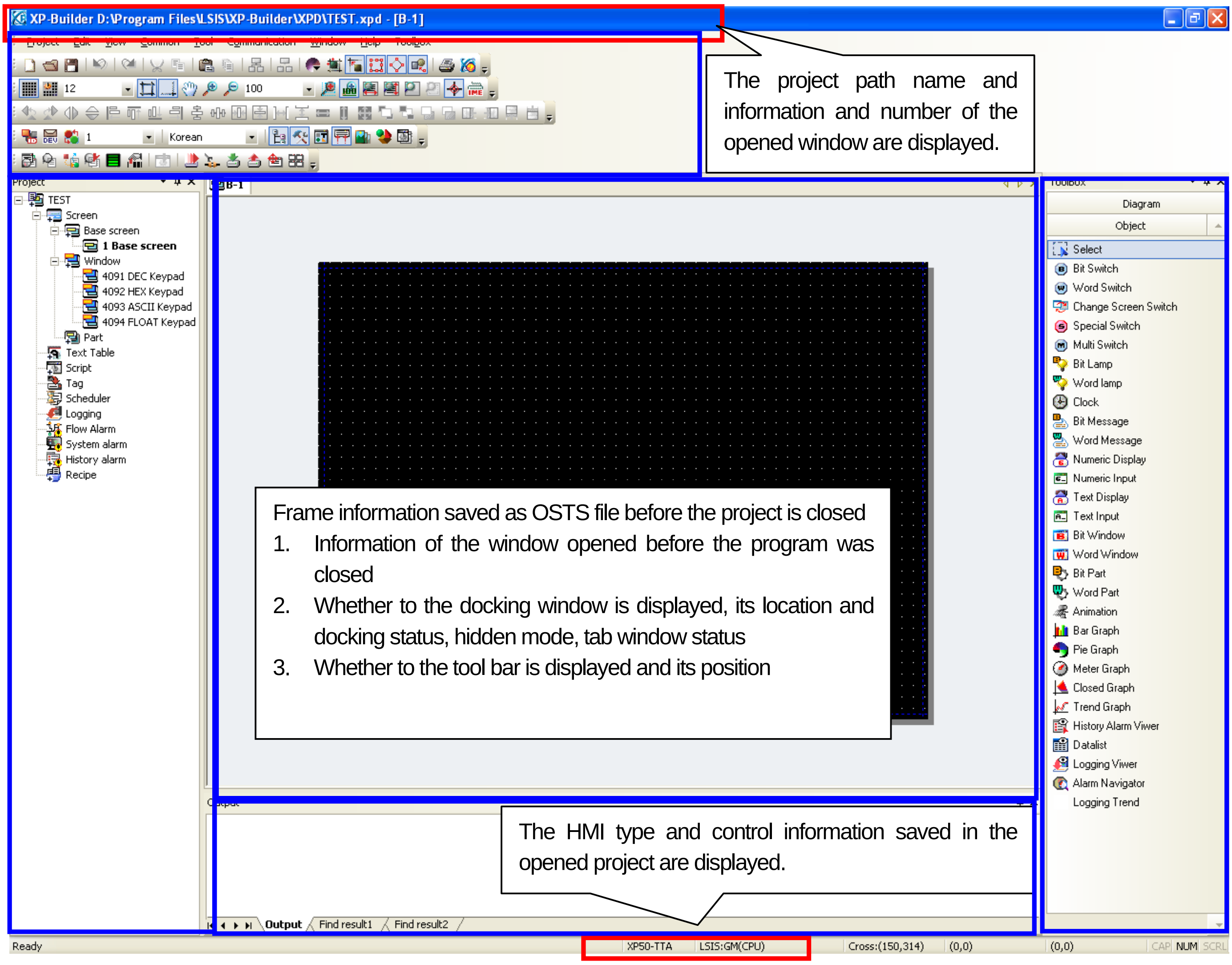
The opening process is displayed at the status bar through process message and progress bar like the saving process.

In the title bar, the project path name is displayed and in the status bar, the XGT Panel information and connection control information of the opened project file are displayed.



Opening project : Object Library | XGT Panel Mod | PLC Type

[The Message and Progress Bar When a File is being Opened]


XP-Builder D:\Program Files\LSIS\XP-Builder\XPD\TEST.xpd - [B-1]
Project
TEST
Screen
Base screen
1 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
B-1
Toolbox
Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch
Multi Switch
Bit Lamp
Word lamp
Clock
Bit Message
Word Message
Numeric Display
Numeric Input
Text Display
Text Input
Bit Window
Word Window
Bit Part
Word Part
Animation
Bar Graph
Pie Graph
Meter Graph
Closed Graph
Trend Graph
History Alarm Viwer
Datalist
Logging Viwer
Alarm Navigator
Logging Trend
Output
Find result1
Find result2
Ready
XP50-TTA
LSIS:GM(CPU)
Cross:(150,314)
(0,0)
(0,0)
CAP
NUM
SCRL

The project path name and information and number of the opened window are displayed.

Frame information saved as OSTS file before the project is closed

1. Information of the window opened before the program was closed
2. Whether to the docking window is displayed, its location and docking status, hidden mode, tab window status
3. Whether to the tool bar is displayed and its position

The HMI type and control information saved in the opened project are displayed.

Note

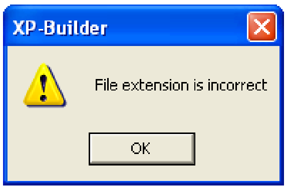
(1) Back-up

(a) When saving the project, previous project is saved in the back-up file. Extension of back-up file is ‘bak’.

(b) In case you open the project file written in old version builder, when saving the project, project is backed up as old version form. Backup file name is ‘project name.xpd_V1.00’

(2) When the file is not opened:

(a) You can open the file by dragging and dropping the project file from the search panel to the editing window. If the extension is not ‘*.xpd’, the following error message is issued and the file stops opening.


XP-Builder
OK

File extension is incorrect

(b) Another case when the file is not opened is when the there is an error in the file header although the extension is the same. In such a case, a message is issued saying ‘The project header information is wrong’ and the progress stops.

Note

(1) Extension

(a) The extension of the XP-Builder project file is '*.xpd'.

(b) The extension of the backup file is '*.bak'.

(c) The extension of the file storing the current project frame status is OSTS.

(d) The extension of the executable file transferred to XGT Panel has a project file name ending with *.hmi.

(e) The extension of the user object library has a library file name ending with *.xpo.

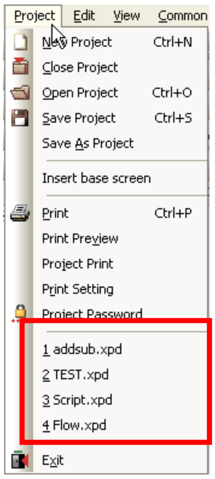
(f) The extension of the user graphic library has a library file name ending with *.xpg.

(g) The export/import extensions of the common data are as follows.

Item	File Extension
Text table, recipe, tag	.CSV
History alarm	.HAL
Flow alarm	.FAL
Logging	.LOG
Scheduler	.SCH
Script	.SPT

(2) MRU

MRU refers to the list of frequently used files and the latest used file is displayed in the menu first.


Project
Edit
View
Common
New Project Ctrl+N
Close Project
Open Project Ctrl+O
Save Project Ctrl+S
Save As Project
Insert base screen
Print Ctrl+P
Print Preview
Project Print
Print Setting
Project Password
1 addsub.xpd
2 TEST.xpd
3 Script.xpd
4 Flow.xpd
Exit

To open a project file, select the menu of the file you want to open.

4.1.3 Saving Project

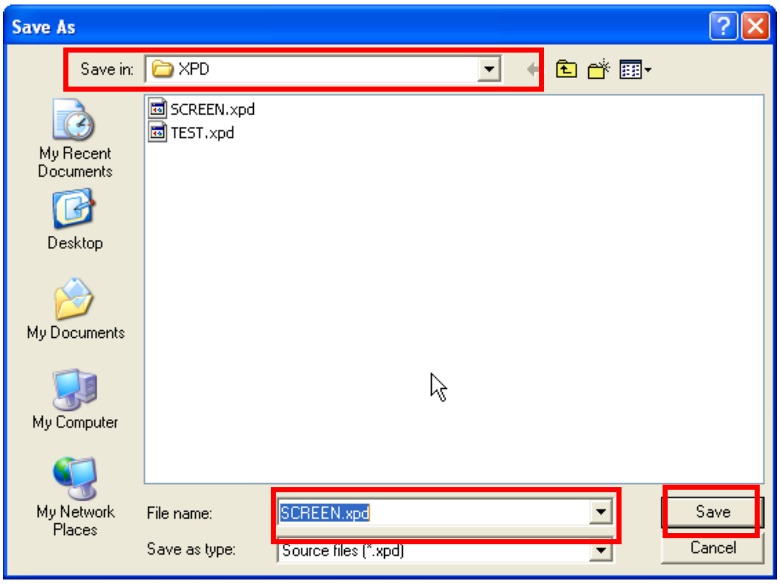
You can save a changed project.

[Procedure]

(a) Select [Project]-[Save Project].

(b) As a new project has never been saved, a saving dialog is displayed.

Choose the location where you want to save, enter the file name and click on the [Save] button. Unless you enter the extension in the file name, '*.xpd' automatically comes after the file name.


Save in: XPD

SCREEN.xpd
TEST.xpd

File name: SCREEN.xpd

Save as type: Source files (*.xpd)

Save As
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
Save
Cancel

The saving progress is displayed through the progress bar and message of the status bar.

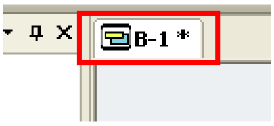
Note

(1) '*' sign

(a) If the '*' sign appears to the right of the project name in the tree in the project window, that means the current project has been modified.

(b) '*' sign also appears in the window tab of the modified window.

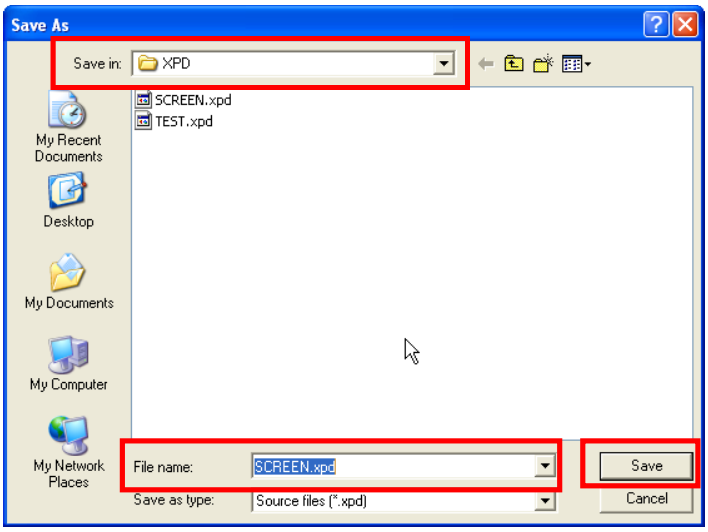
(c) After saving, the '*' sign disappears from the project name and the window tab.

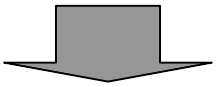


4.1.4 Saving As Project

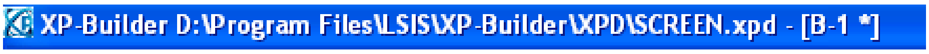
You can save a project as another file name.

[Procedure]
(a) Select [Project]-[Save As Project].
(b) Enter the location and file name to save and click on the Save button.


Save As
Save in:
XPD
SCREEN.xpd
TEST.xpd
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
File name:
SCREEN.xpd
Save as type:
Source files (*.xpd)
Save
Cancel



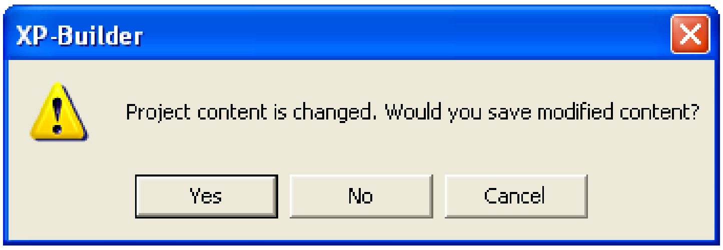
.
The path name of the project saved as another name is indicated in the title bar as shown below.



XP-Builder D:\Program Files\LSIS\XP-Builder\XPD\SCREEN.xpd - [B-1 *]

4.1.5 Closing Project

[Procedure]
(a) Select [Project]-[Close Project].
(b) If the project has yet to be saved after being edited, the following message is issued.



XP-Builder

Project content is changed. Would you save modified content?

Yes
No
Cancel

If you want to save it, click on Yes and if you click on No, the project is closed without being saved. If you click on Cancel, the project is not closed.

4.2 Project Password

You can prevent others from opening the project file by entering a password in the project file.

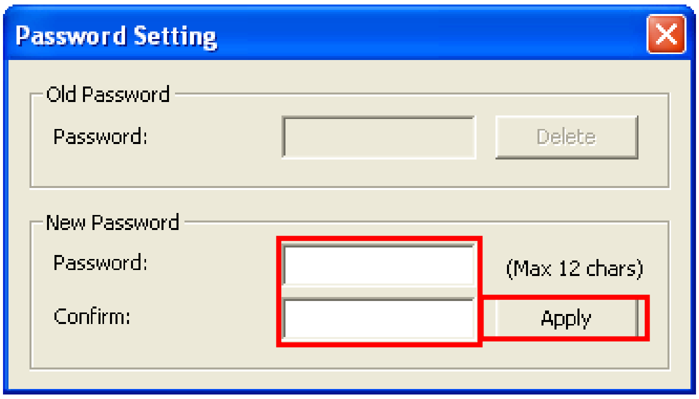
Note

(1) The password does not tell the Korean language from English, but tells small letters from capital letters. The password can be up to 8 letters long.
(2) Note that you cannot open the project file if you forget the password.

4.2.1 Password Setting

You can set a new password for the project in the following procedure.

[Procedure]
(a) Select [Project]-[Project Password].

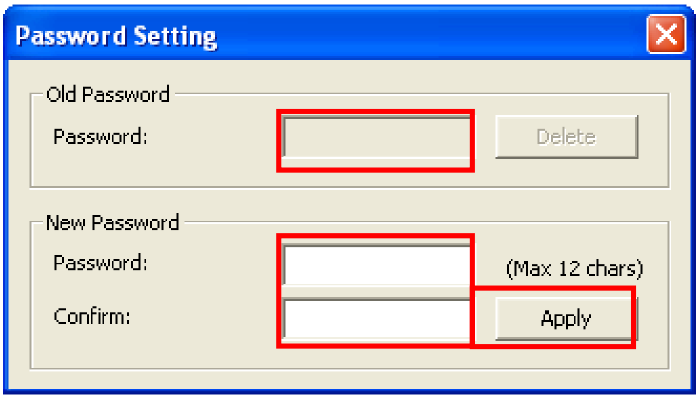

Password Setting
Old Password
Password:
Delete
New Password
Password:
(Max 12 chars)
Confirm:
Apply

(b) Enter a new password.
(c) Re-enter in the [Confirm] text box the password which you just entered.
(d) Click on the Apply button.

4.2.2 Password Change

You can change the previously set password in the following procedure.

[Procedure]
(a) Select [Project]-[Project Password].

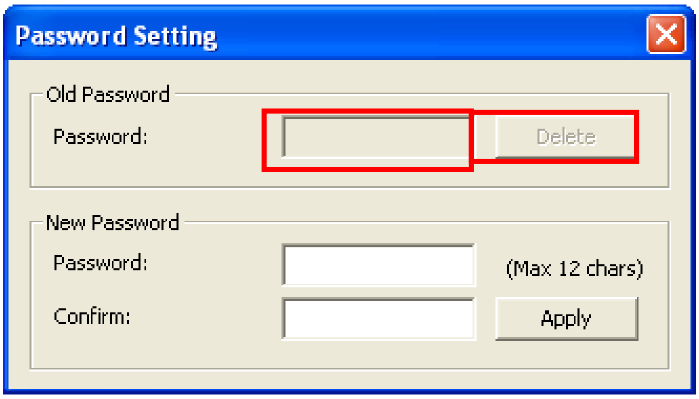

Password Setting
Old Password
Password:
Delete
New Password
Password:
(Max 12 chars)
Confirm:
Apply

(b) Enter the present password in the Old Password text box.
(c) Enter a new password in the New Password text box.
(d) Re-enter in the [Confirm] text box the password which you just entered.
(e) Click on the Apply button.

4.2.3 Password Deletion

You can delete the password you have used so far in the following procedure.

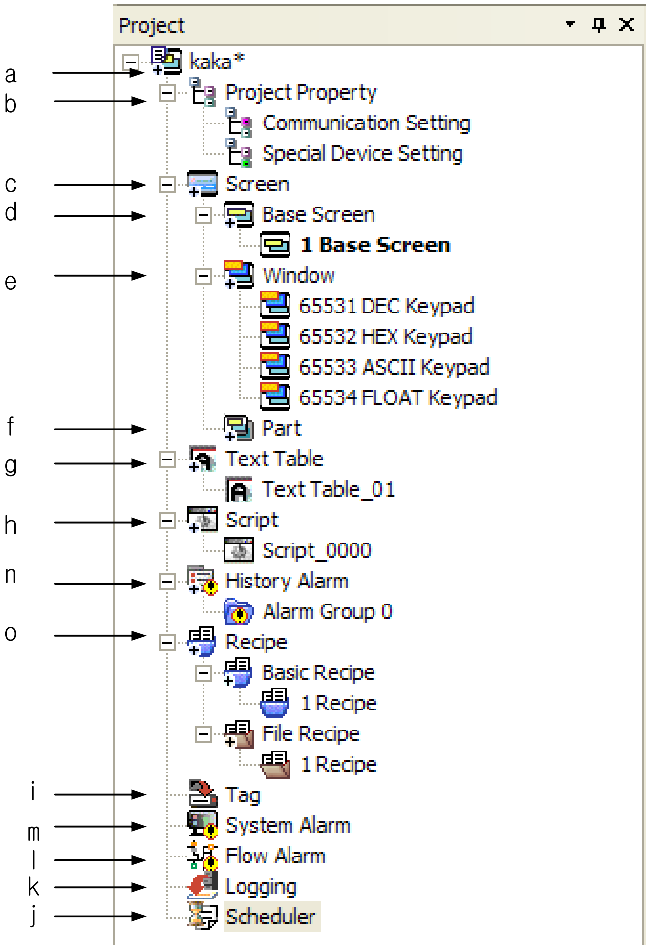
[Procedure]
(a) Select [Project]-[Project Password].


Password Setting
Old Password
Password:
Delete
New Password
Password:
(Max 12 chars)
Confirm:
Apply

(b) Enter the present password in the Old Password text box.
(c) Click on the Delete button.

4.3 Make-up of Project

A project consists of the following items.
[Dialog Box]


Project
kaka*
Project Property
Communication Setting
Special Device Setting
Screen
Base Screen
1 Base Screen
Window
65531 DEC Keypad
65532 HEX Keypad
65533 ASCII Keypad
65534 FLOAT Keypad
Part
Text Table
Text Table_01
Script
Script_0000
History Alarm
Alarm Group 0
Recipe
Basic Recipe
1 Recipe
File Recipe
1 Recipe
Tag
System Alarm
Flow Alarm
Logging
Scheduler
a
b
c
d
e
f
g
h
n
o
i
m
l
k
j

[Dialog Box Description]

Item	Description
Project (a)	Shows the project name.
Project Property (b)	Shows the project property. Especially, you can see and set communication setting and special device setting among project properties.
Screen (c)	There are three types of Screens, which are the base screen, window and part.
Base screen (d)	The basic editing display
Window (e)	A screen where a pop-up or insertion is available
Part (f)	A screen used as an auxiliary means of the component object
Text Table (g)	Defines the text used at the various objects and alarms.
Script (h)	Defines the scripts to be used for various events, an object or schedule.
Tag (i)	Gives another name to the device so that it can be used along with its original name.
Scheduler (j)	Defines the schedule carried out under a particular condition.
Logging (k)	Defines and sets logging

Item	Description
Flow Alarm (l)	Defines the flow alarm so that it is displayed at the bottom of the screen when it occurs.
System Alarm (m)	Defines the error items of XGT Panel so that the details can be referred to in case of an error in XGT Panel.
History Alarm (n)	A history alarm refers to an item that can save an alarm data as a history. History alarms are divided into groups and lists.
Recipe (o)	Defines the recipe data.

Note

(1) The window and part screen can be set between 1 and 4096.
(2) Four windows are already specified as key windows, so you can set the window number between 1 ~ 4090.
(3) When a key window is created by default, four types of window of DEC(4091), HEX(4092), ASCII(4093) and FLOAT(4094) are created and the window number cannot be changed.
(4) History alarms are divided into groups and lists. The height of a list is 4 and there can be up to 32 groups.
(5) The recipe number can range between 1 and 255.

There are tree items where a window and various common components can be inserted in the project window.
Screen insertion is inevitable for project editing. You can insert the base, part and window screens.
A common item refers to an item that can influence the overall project, that is, object editing and overall performance of XGT Panel.
Among tree items, the logging, recipe, text, tag and script are common items.
Each screen, text, history alarm and recipe can have multiple lower tree items.

Chapter 5 Screen Editing

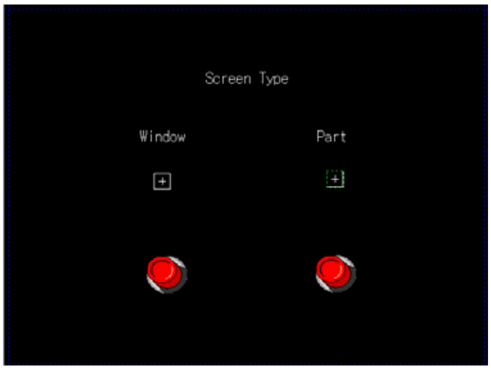
The basics of editing begin with creating a window and placing an object or figure on it. From now on, we are going to learn the types of screen and how to edit a window.

5.1 Overview of Screen

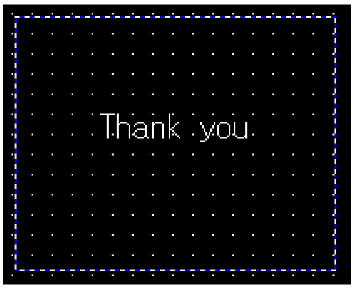
There are three types of screen for creating and editing objects and figures provided by XP Builder, which are the base screen, window screen and part screen. Their features are as follows.

Screen Type	Description	
Base screen	This is the basic screen for editing objects. The screen size is fixed when a project is created.	
	XGT Panel	**Resolution**
	XP30-BTA	320 X 240 pixel, black-and-white 8-color
	XP30-TTA	320 X 240 pixel, color 65535-color
	XP30-BTE	320 X 240 pixel, black-and-white 8-color
	XP30-TTE	320 X 240 pixel, color 256-color
	XP50-TTA	640 X 480 pixel, color 65535-color
	XP70-TTA	640 X 480 pixel, color 65535-color
	XP80-TTA	800 X 600 pixel, color 65535-color
	XP90-TTA	1024 X 768 pixel, color 65535-color
Window screen	A screen which pops up on the base screen or is combined with it.	
Part screen	A screen used as a component in the bit part, word part object.	

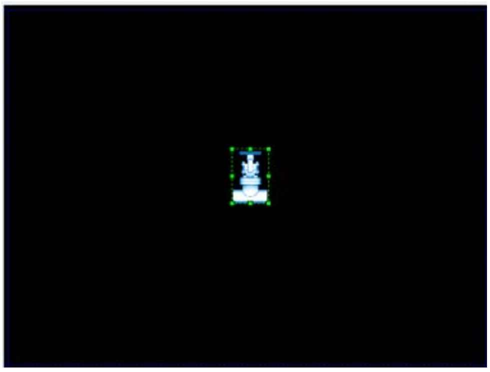
If you have edited a window screen and part screen and edited the bit window and bit part object which respectively invoke the window screen and part screen created in the basic screen as shown below, the base screen is shown in XGT Panel. If the reference device of the bit window and bit part is ON, each screen is invoked and shown. That is, you can invoke and use both the window screen and part screen.



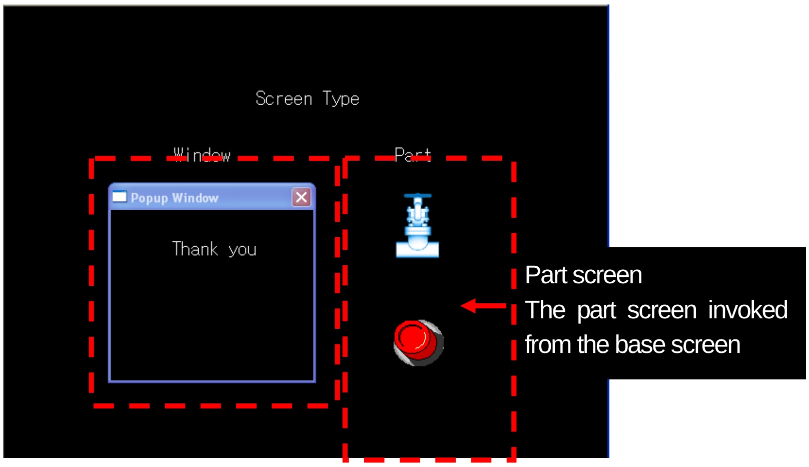
Base screen edited to invoke the window and part screen



Window screen



Part screen


Screen Type
Window
Part
Popup Window
Thank you

Base screen
The base screen for editing XGT Panel

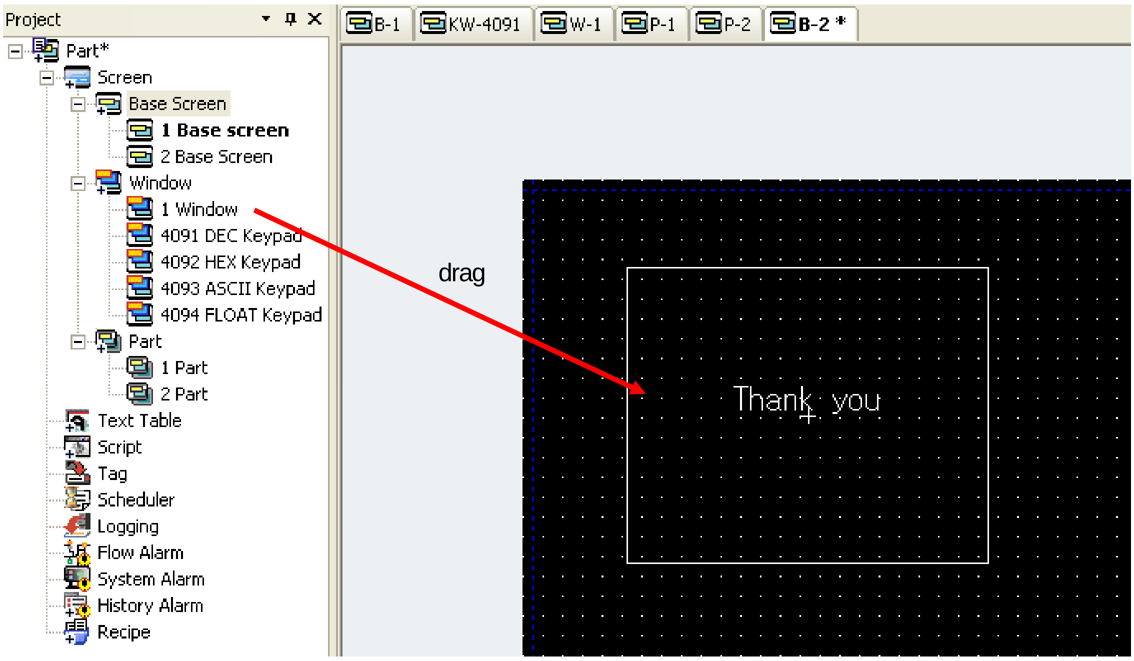
Window screen.
The window screen invoked from the base screen

Part screen
The part screen invoked from the base screen

5.1.1 Base Screen

(1) The base screen is the basic area for editing objects and figures. The screen size is fixed when a project is created.

(2) You can insert a variety of figures and objects in the base screen and you can especially drag and drop base and window screens. In this case, the screens are directly inserted and shown in the present screen in XGT Panel. However, a screen cannot be inserted into itself. **(☞ See 6.8 Drag and Drop)**


Project
B-1
KW-4091
W-1
P-1
P-2
B-2 *
Part*
Screen
Base Screen
1 Base screen
2 Base Screen
Window
1 Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
1 Part
2 Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System Alarm
History Alarm
Recipe
drag
Thank you

(3) If you drag and drop a part screen in the current screen, the contents of the former are copied as they are.

(4) You can make up to 65534 base screens of which the number ranges between 1 and 65534.

5.1.2 Window Screen

(1) This is the screen which pops up on the base screen or combined with it.

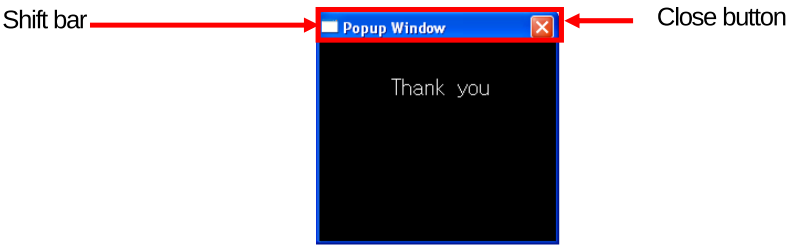
(2) You can make up to 4090 window screens and those between 4091 and 4094 are allotted as the system key windows.

(3) You cannot create other window objects in a window and like the base screen, you can not only insert a figure or object but also drag and drop a base screen and window screen. **(☞ See 6.8 Drag and Drop)** However, a base or window screen cannot be inserted into itself.

(4) These screens are shown on the screen through the window objects on the base screen and up to 8 can be inserted or arranged.

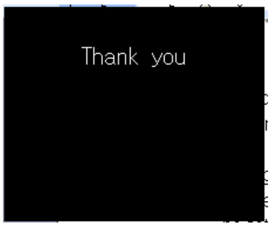
(5) The methods of displaying a window screen on the base screen are the pop-up method and overlap method, which can be set in the bit window and word window. **(☞ See 17.5 Window Object)**

(6) You can close or move a window screen which pops up because it has the Close button and shift bar.

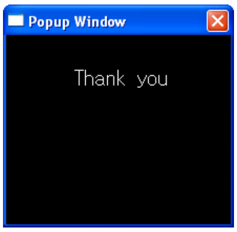


Note

(1) When a popup window appears first in XGT Panel, no shift bar appears. If you want to shift the pop-up window, click on a point in the space of the window. Then the shift bar and Close button appear and you can move the window screen by using the shift bar.



Window screen without a shift bar.
Click on the space.



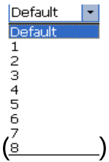
The shift bar and Close button appear.

(2) If you want to remove the shift bar and Close button, click on a point on the space of the window screen.

(3) You cannot set a window object in the window screen. That is, a window screen cannot display another window screen.

(4) If a window screen has been set beyond the basic window, the part out of the maximum base screen size is cut off. Therefore, when setting the position of the window screen, check the size the of the window screen before setting the position.

(5) When it comes to a bit window, you can check in advance the size of the window screen by selecting [View]-[Show/Hide Object On/Off] or clicking on the icon ( ), which makes the window screen shown on the base screen.

(6) When it comes to a word window, if you change the () value in the word status combo box in XP Builder, you can check in advance the size of the window because the window screen appears on the screen according to the window number allotted to the conditional sentence.

5.1.3 Part Screen

(1) A part screen is an object used as a part in the part object. **(☞ See 17.6 Part Object)**
(2) You can make up to 65534 part screens of which the number ranges between 1 and 65534.
(3) If you drag and drop an part screen in the current screen, the contents of the former are copied as they are.
(4) You cannot register an object in an part screen.

Note

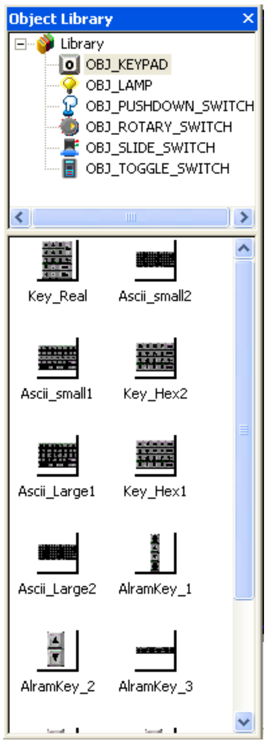
(1) The differences and restrictions of the base, window and part screens above are as follows.

Type	Number of screens	Object editing	Size adjustment
Base screen	1~ 65534 (65534)	O	X
Window screen	1~ 65534 (65534)	O	O
Part screen	1~ 65534 (65534)	X	O

(2) Window screen 65531~65534 is reserved area. 65531, 65532, 65533, 65534 indicates decimal keypad, HEX keypad, ASCII key pad, Real key pad respectively.

5.1.4 Key Window Screen

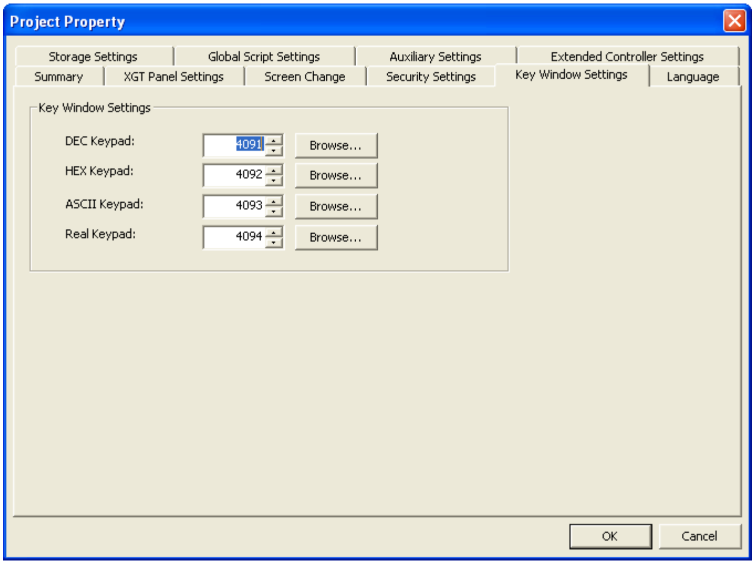
(1) This is a special form of a window which pops up on or overlaps the numeric or text input object when you enter a value there.
(2) XP-Builder provides four types of key pad, which are decimal, ASCII, hexadecimal and float.
(3) To use a user specific key pad, place it on the window screen by using the special function of the switch object or import and modify one of the provided object libraries from the keypad library and use it directly.


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Key_Real
Ascii_small2
Ascii_small1
Key_Hex2
Ascii_Large1
Key_Hex1
Ascii_Large2
AlramKey_1
AlramKey_2
AlramKey_3

Key Pad Object Library

Note

(1) If you want to set the key window number basically used in the text or numeric input devices as the desired window, change the number in [Key Window Settings] of project properties.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Browse...
OK
Cancel

Key Window Settings

DEC Keypad: 4091

HEX Keypad: 4092

ASCII Keypad: 4093

Real Keypad: 4094

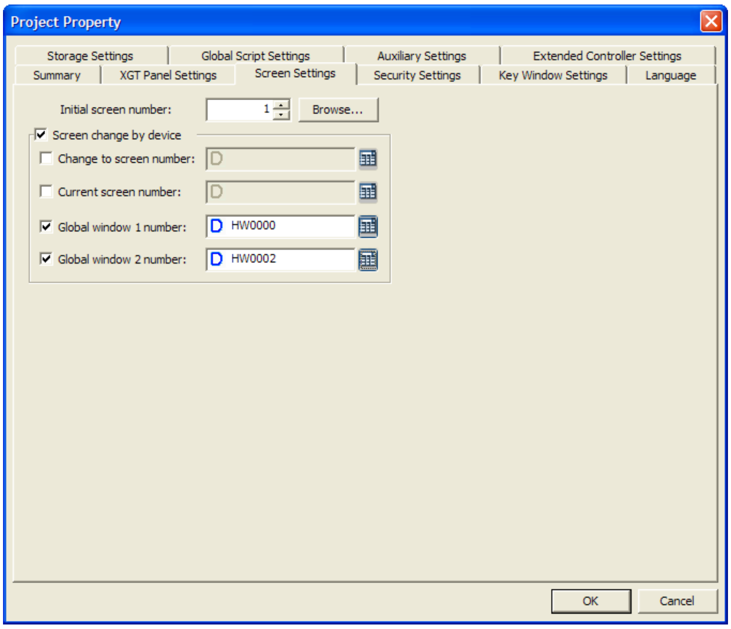
(2) To specify the key window number basically used in the text or numeric input devices or prevent them from popping up on the screen, set it in the [Detail] item of the text or numeric input devices. **(☞ See [Detail] properties of 17.4.3 Numeric Input Settings or 17.4.5 Text Input Settings)**

5.1.5 Global Window Screen

(1) This is a kind of window, but can appear regardless of the window switch of the base screen.

(2) You can set up to two of this screen.

(3) Set the address saving the numbers of ‘Window 1’ and ‘Window 2’ in [Screen Change] in project setting.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Browse...
OK
Cancel

Initial screen number: 1

☑ Screen change by device

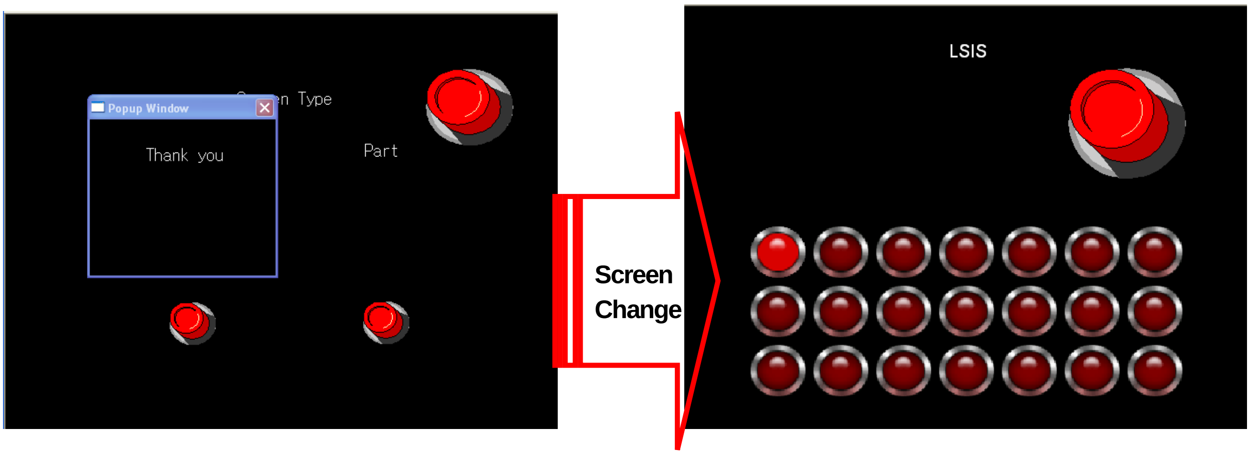
☐ Change to screen number: D

☐ Current screen number: D

☑ Global window 1 number: D HW0000

☑ Global window 2 number: D HW0002

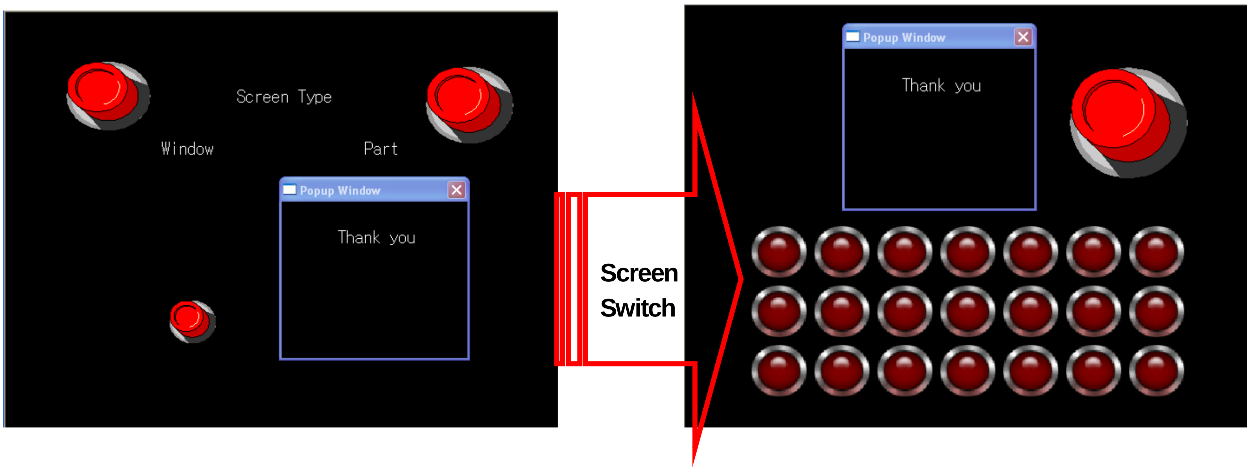
If you set the device of the global window in screen change by the device, the device data value indicates the window screen number. Therefore, if the value of HW0000 is 2, window #2 is the global window and indicated on the base screen regardless of the screen change. Global window #2 is shown on the base screen in the same manner.


Popup Window
Thank you
Screen Type
Part
Screen
Change
LSIS

Screen #1

Screen #2

When you use a general window object as shown above, after the window is invoked in screen #1 and the screen changes, the invoked window screen is no more shown on screen #2.


Screen Type
Window
Part
Popup Window
Thank you
Screen
Switch
Popup Window
Thank you

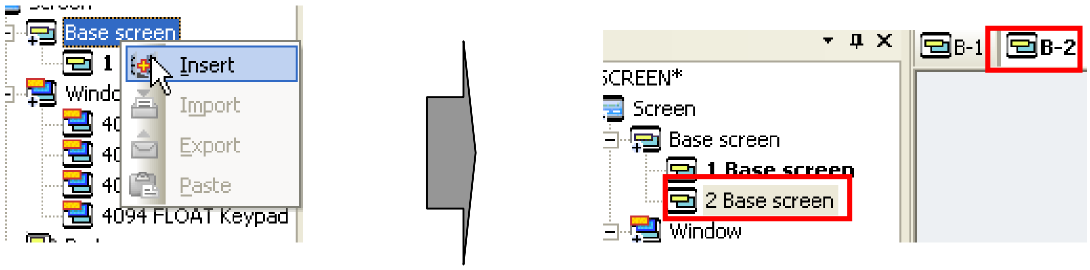
Unlike a general window object, if you use a global window, the window does not disappear after the screen change and remains on the base screen.

5.2 New Window Insertion

The procedure of creating a new window to edit the screen is as follows.

[Procedure]

(a) Press the left button on the mouse on the type of screen where you want to create a new window in the project window. Press the right button on the mouse and select [Insert] or icon I in the menu.


Base screen
1
Windo
Insert
Import
Export
Paste
4094 FLOAT Keypad
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
B-1
B-2

In the case above, a new window is created on the base screen with the minimum number of the empty window numbers given. That is, say, if basic screens 1 and 3 exist, the number of the newly created window is 2.

Note

(1) Dynamic Menu

You can also create a new window using the dynamic menu.

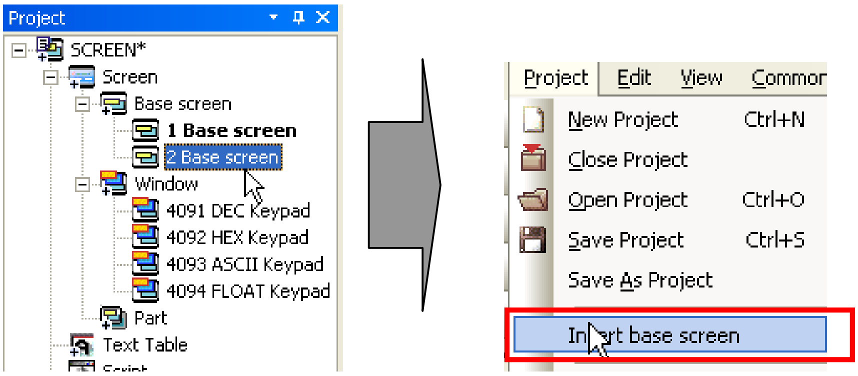
The dynamic menu refers to the menu changing according to the items of the activated menu in the list, which is the menu appearing in the context.

The process of creating the base window through the dynamic menu is as follows.

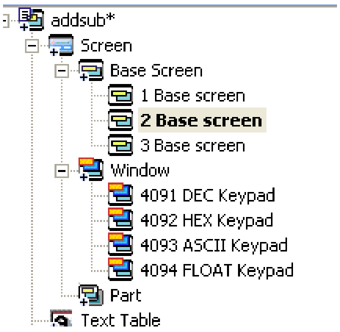
(a) Click on base screen 2 in the list.

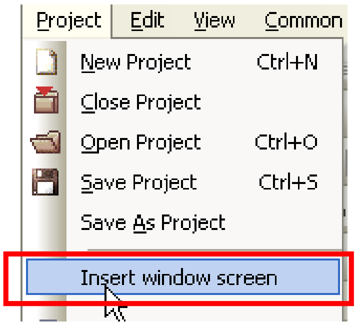
(b) Click on the project, which is the main menu.

(c) Among the menus that have popped up, select [Insert Base Screen]. The dynamic menu changes into the corresponding context menu according to the activated items of the list item. As the basic screen list has been activated here, [Insert Base Screen] is displayed on the menu.


Project
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Project
Edit
View
Commor
New Project Ctrl+N
Close Project
Open Project Ctrl+O
Save Project Ctrl+S
Save As Project
Insert base screen

Meanwhile, click on the window screen and check the [Project] menu in the main menu. You will see the [Insert window screen] menu.


addsub*
Screen
Base Screen
1 Base screen
2 Base screen
3 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table

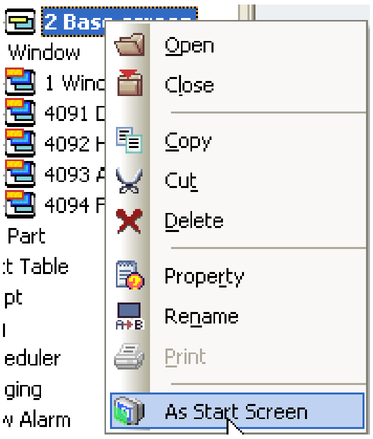

Project
Edit
View
Common
New Project Ctrl+N
Close Project
Open Project Ctrl+O
Save Project Ctrl+S
Save As Project
Insert window screen

5.3 Setting as Start Screen

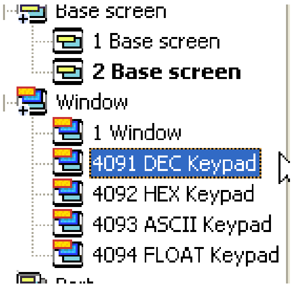
The start screen is the screen that first appears when the screen data is transferred to XGT Panel. In XP Builder, this screen number is shown in black bold style in the list and the start screen can be chosen only from the base screens. The following is the procedure of changing the start screen from base screen 1 to base screen 2.

[Procedure]

(a) Press the left button on the mouse on base screen 2 and select [As Start Screen].


2 Base
Window
1 Winc
4091 D
4092 H
4093 A
4094 F
Part
t Table
pt
eduler
ging
w Alarm
Open
Close
Copy
Cut
Delete
Property
Rename
Print
As Start Screen

Now base screen 1 changes into the normal text style and base screen 2 is shown in bold style. Transfer it to XGT Panel and check whether screen 2 first appears.


Base screen
1 Base screen
2 Base screen
Window
1 Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad

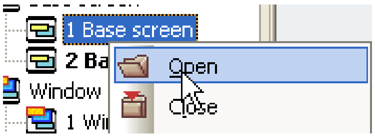
5.4 Opening/Closing Screen

You can open a configured screen or close a screen you have configured.

5.4.1 Opening Screen

[Procedure]

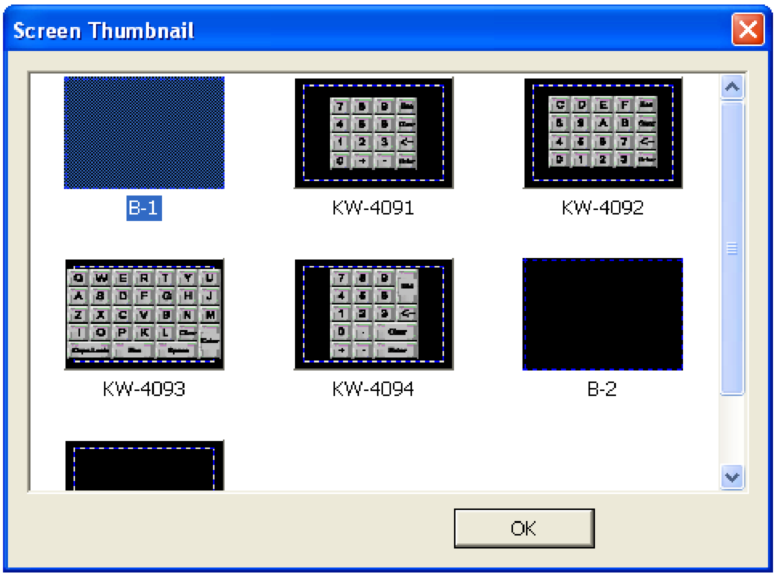
(a) Double-click on the left mouse button on the window you want to open in the project window or click on [Open] in the context menu.


1 Base screen
2 Ba
Window
1 Wi
Open
Close

Note

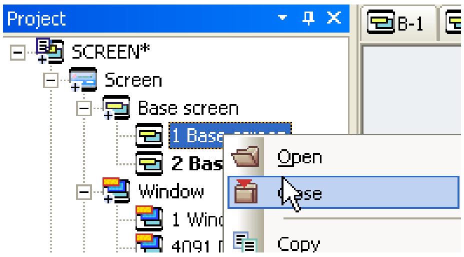
(1) Opening Screen in Thumbnail

Double-click on the window you want to open among the window lists invoked when you execute [Screen Thumbnails] in the [View] menu to open the window just like the procedure described above.


Screen Thumbnail
B-1
KW-4091
KW-4092
KW-4093
KW-4094
B-2
OK

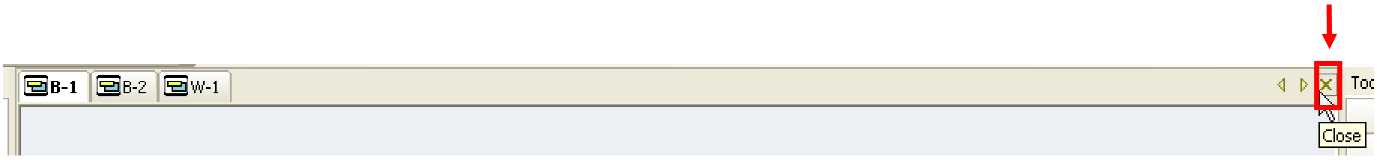
5.4.2 Closing Window

Click on the left mouse button on the Close button at the left top of the window you want to close or click on [Close] in the context menu.


Project
SCREEN*
Screen
Base screen
1 Base
2 Bas
Window
1 Wind
4091
B-1
Open
Close
Copy

Or

Click


B-1
B-2
W-1
Too
Close

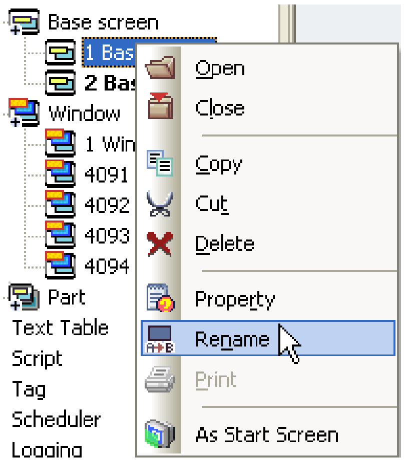
5.5 Renaming

You can change the number and name of the inserted basic, window and part screens.

[Procedure]

(a) Select a desired item in the project window.

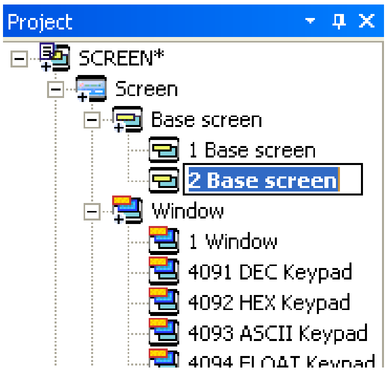
(b) Press the right button on the mouse on [Rename] in the menu.


Base screen
1 Bas
2 Bas
Window
1 Win
4091
4092
4093
4094
Part
Text Table
Script
Tag
Scheduler
Logging
Open
Close
Copy
Cut
Delete
Property
Rename
Print
As Start Screen

(c) Change the number and name and then press the Enter key.

After the number, leave a space before the name. There must be at least a space between number and name.

If you do not enter anything after the number, no name is recognized.


Project
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
1 Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad

Note

(1) If you click on the list item of which the name you want to change, give a second and click on it again, the list item turns into the editing mode, which has the same effect as using the renaming menu above.

(2) If window has the same number as another or there is an error of the entry (when the name has been entered without a space before it), the previous value remains.

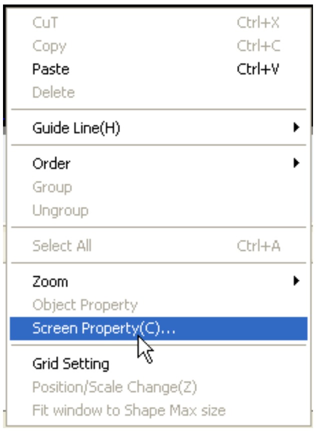
(3) In windows of DEC (4091), HEX (4092), ASCII (4093) and FLOAT (4094), the window number cannot be changed.

5.6 Screen Property

You can make the properties displayed on the screen or change them.

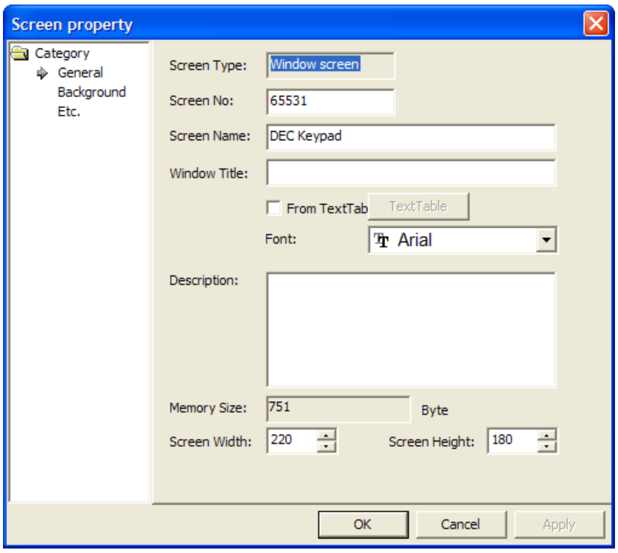
[Procedure]

(a) Press the right button on the mouse on a point in the space on the screen, then the context menu appears. Select [Screen Property].


CuT Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup
Select All Ctrl+A
Zoom
Object Property
Screen Property(C)...
Grid Setting
Position/Scale Change(Z)
Fit window to Shape Max size

5.6.1 General Properties

In the first properties showing the basic information, you can check and modify the type, number, name, description. The name, number and description of the screen are changeable and the width and height of the screen can be changed only in the window screen.


Screen property
Category
General
Background
Etc.
From TextTab
TextTable
OK
Cancel
Apply

Screen Type: Window screen

Screen No: 65531

Screen Name: DEC Keypad

Window Title:

☐ From TextTab

Font: Arial

Description:

Memory Size: 751 Byte

Screen Width: 220

Screen Height: 180

General properties	Description
Screen Type	The type of the current screen(base, window and part)
Screen No.	Displays the number of the current screen. You can change the number.
Screen Name	Displays the name of the current screen. You can change the name.
Window title	Available at window screen. You can specify the title of popup window

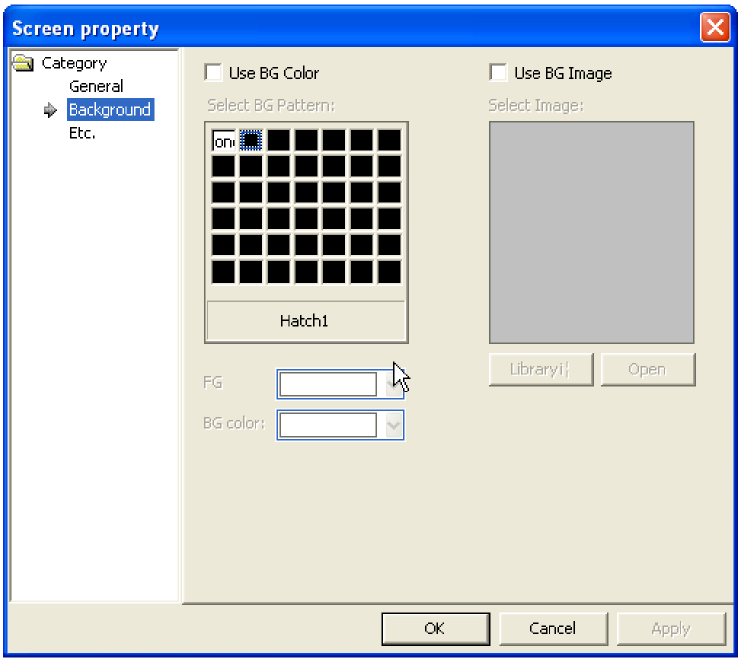
General properties	Description
From text table	Available at window screen. If you check the box, you can specify the title of popup window from the text table
Text table	Available at window screen. Opens text table so that you can specify the title of popup window from text table.
Font	In case of directly inputting the title, specifies font of title. In case of taking the text from the text table, you can't specify the font. It only shows font of text specified in the text table.
Description	Displays the description of the screen which has been entered. You can enter the description of the screen.
Memory size	Displays the size of the current screen.
Screen Width/Height	Displays the width and height of the screen, which are fixed according to the XGT Panel type.

Notes

In case of specifying the window title from the text table, the font is applied but other character string properties such as color, bold, italic, strikeout, underline are not ignored. Title is displayed with white, 15 size character string properties.

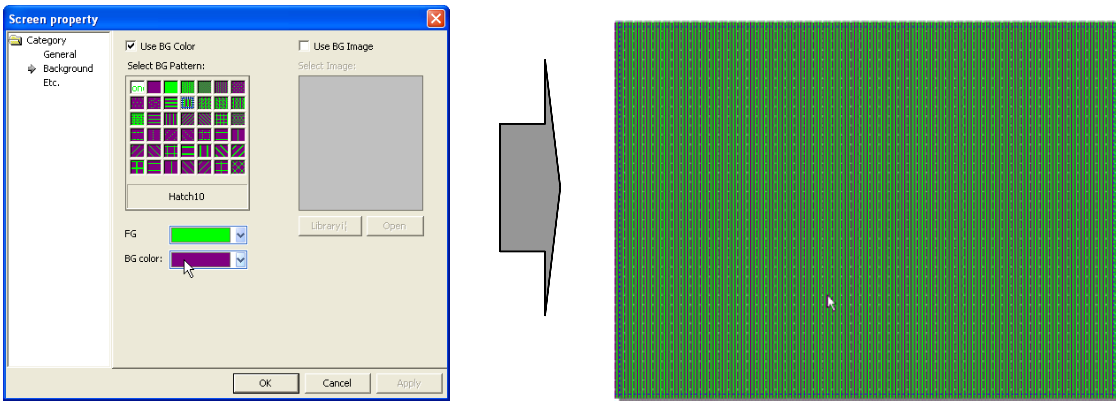
5.6.2 Background Properties

In the background properties, you can set the background color, pattern type and background image. You can use both the background color and image and in such a case, the latter has priority. That is, the background image properties come before the background color properties.


Screen property
Category
General
Background
Etc.
☐ Use BG Color
Select BG Pattern:
Hatch1
FG
BG color:
☐ Use BG Image
Select Image:
Library
Open
OK
Cancel
Apply

[Example of Use of Background Color]

Choose green as the FG color, violet as the BG color and hatch 10 as the pattern in the BG color.



Screen property
Category
General
Background
Etc.
Select BG Pattern:
Select Image:
Library¦
Open
OK
Cancel
Apply

☑ Use BG Color

☐ Use BG Image

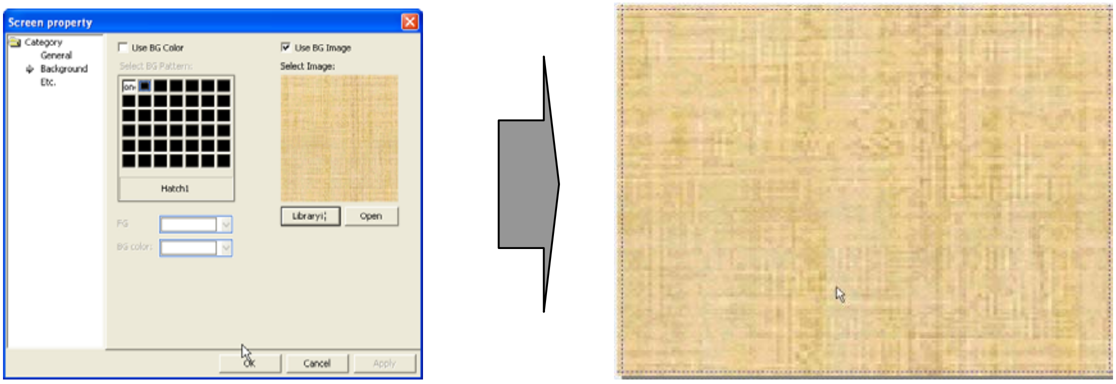
Hatch10

FG

BG color:

[Example of Use of Background Image]

Open the image library and select the follfillback17 image of the PATTERN_R category.



Screen property
Category
General
Background
Etc.
Select BG Pattern:
Select Image:
Library¦
Open
OK
Cancel
Apply

☐ Use BG Color

☑ Use BG Image

Hatch1

FG

BG color:

Note

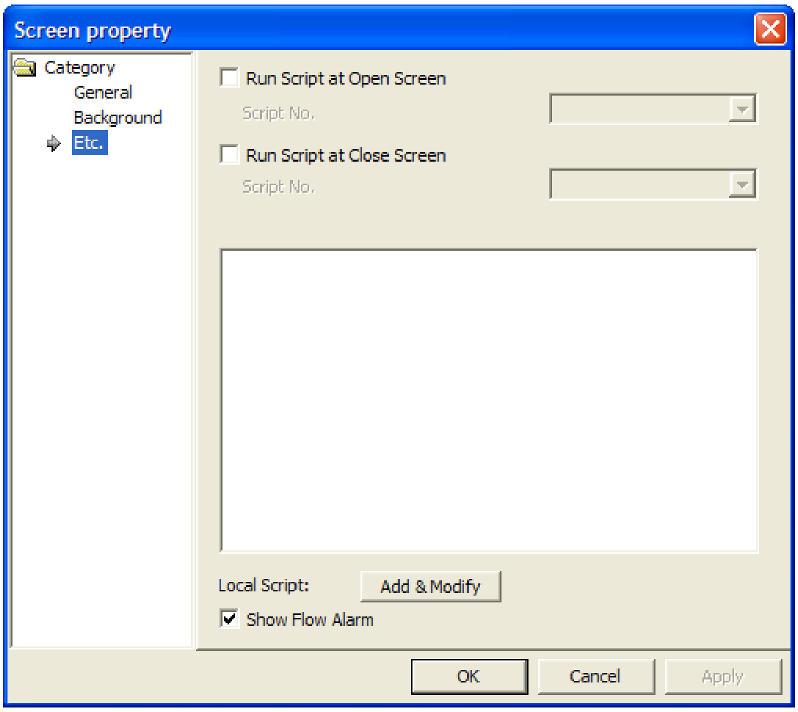
When adding the background image, applicable image types are BMP, JPG, GIF, TGA, PNG, TIF, WMF, ICO and PCX. But for XP30-BTE, economic model, applicable image types are BMP, GIF and JPG.

5.6.3 Other Properties

(1) In other properties, you can set the screen script information and whether flow alarm shows. If the flow alarm has been set in XGT Panel, when it occurs, it is displayed in a stream at the bottom of the window.

(2) You can select and specify a script executed when a screen appears or disappears. When a script is set, it is executed once at the time when each screen disappears or appears.

(3) You can select and specify a script executed when a screen is executed. When setting the script, you can select and specify a script according to execution condition (Consecutive, Periodic, On Bit Rising, On Bit Falling, On Bit Changed)


Screen property

Category
General
Background
Etc.

☐ Run Script at Open Screen
Script No.

☐ Run Script at Close Screen
Script No.

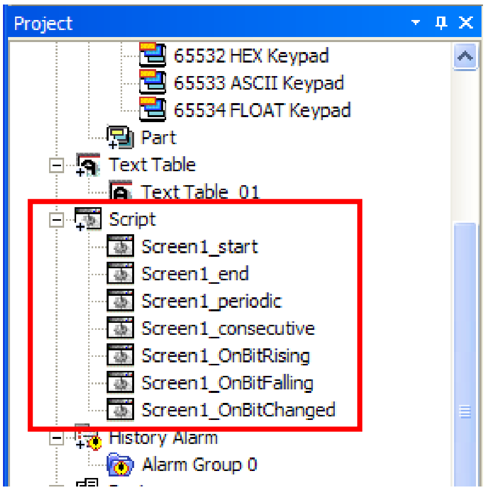
Local Script: Add & Modify

☑ Show Flow Alarm

[Example of Use of Screen Script]

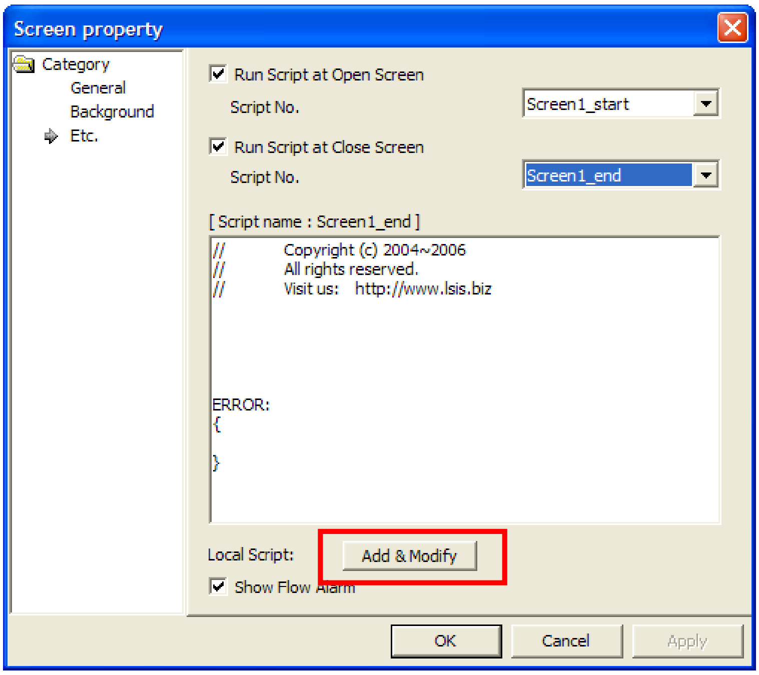
(a) Register two scripts in the project and configure the contents.

(☞ for cautions and common notes in configuration, see Chapter 18 Script)


Project

65532 HEX Keypad
65533 ASCII Keypad
65534 FLOAT Keypad
Part
Text Table
Text Table_01
Script
Screen1_start
Screen1_end
Screen1_periodic
Screen1_consecutive
Screen1_OnBitRising
Screen1_OnBitFalling
Screen1_OnBitChanged
History Alarm
Alarm Group 0

(b) Set up the screen script as below.



☑ Run Script at Open Screen

Script No. Screen1_start

☑ Run Script at Close Screen

Script No. Screen1_end

[Script name : Screen1_end]

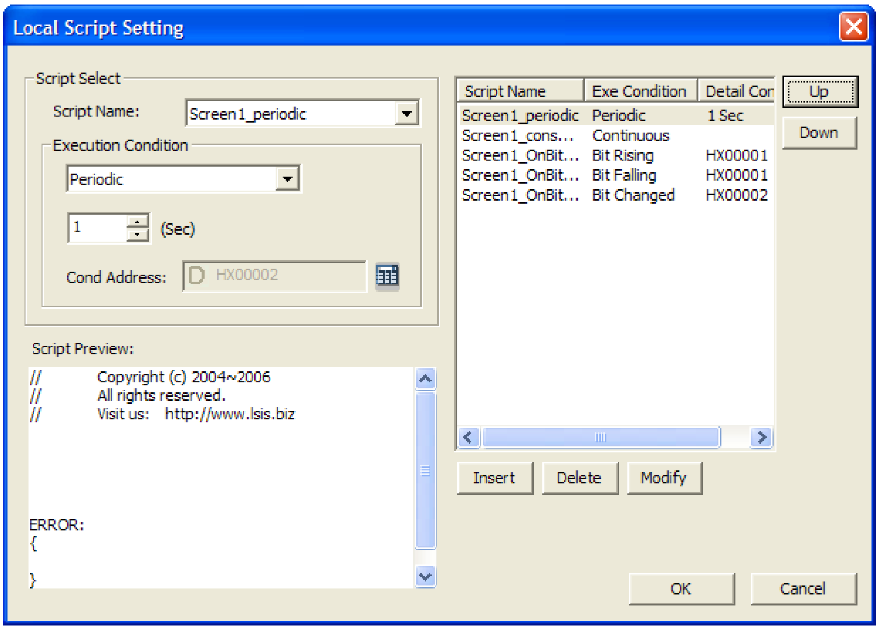
```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz



ERROR:
{

}
```

Local Script:

☑ Show Flow Alarm

(c) Set up the screen script as below.

If you activate Add &Modify bar for screen script, the below properties box will be shown. It is possible to establish that the script is executed based on screen refresh cycle (continuously), every certain time (regularly) or specified device value.



Script Select

Script Name: Screen1_periodic

Execution Condition

Periodic

1 (Sec)

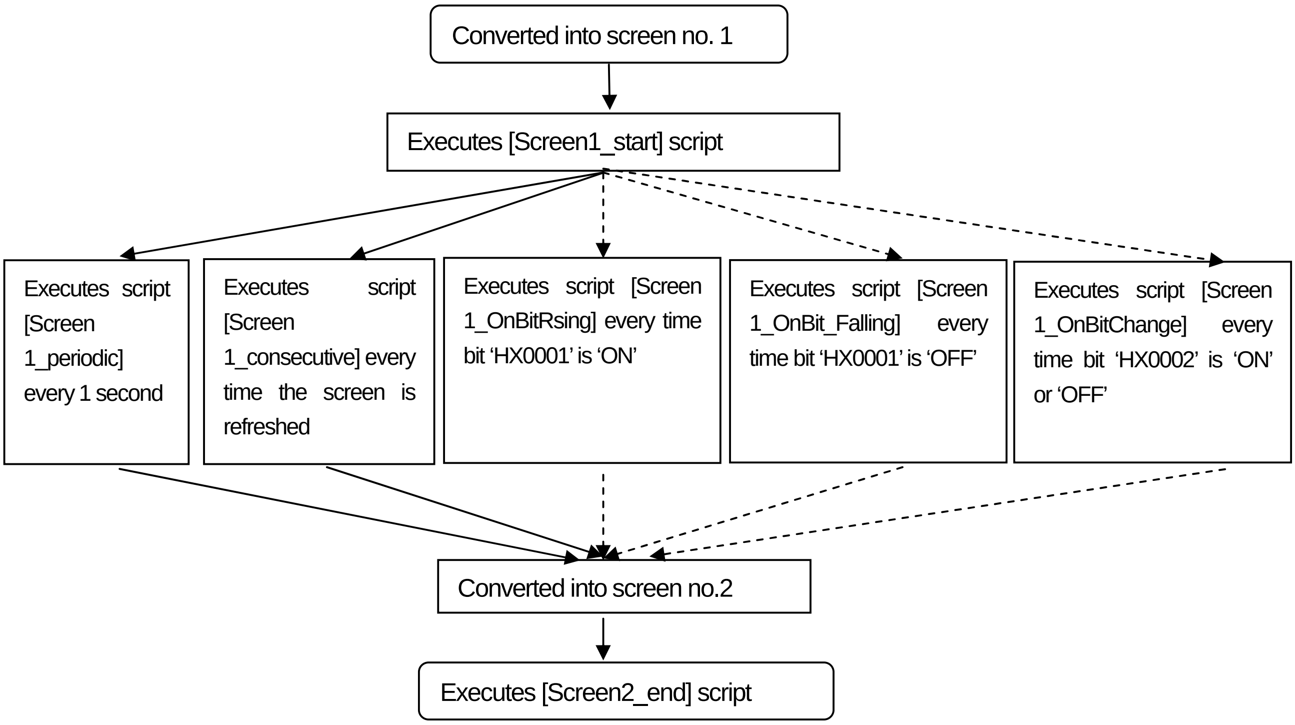
Cond Address: HX00002

Script Preview:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz



ERROR:
{

}
```

Script Name	Exe Condition	Detail Cor
Screen1_periodic	Periodic	1 Sec
Screen1_cons...	Continuous	
Screen1_OnBit...	Bit Rising	HX00001
Screen1_OnBit...	Bit Falling	HX00001
Screen1_OnBit...	Bit Changed	HX00002

After setting [Screen1_start] script to be executed when screen starts and [Screen1_end] script to be executed when screen ends, and setting [Screen1_consecutive], [Screen1_periodic], [Screen1_OnBitRising], [Screen1_OnBitFalling], [Screen1_OnBitChanged] like above figures, the execution procedures of script is as below when the basic screen is converted into No.2 from No. 1


Converted into screen no. 1
Executes [Screen1_start] script
Executes script [Screen 1_periodic] every 1 second
Executes script [Screen 1_consecutive] every time the screen is refreshed
Executes script [Screen 1_OnBitRsing] every time bit 'HX0001' is 'ON'
Executes script [Screen 1_OnBit_Falling] every time bit 'HX0001' is 'OFF'
Executes script [Screen 1_OnBitChange] every time bit 'HX0002' is 'ON' or 'OFF'
Converted into screen no.2
Executes [Screen2_end] script

Note

(1) Although execution condition is fulfilled during processing script, please be noted that there may be some difference of script execution time since the conditions are checked after script completion.

5.7 Screen Editing

The following are about editing screens.

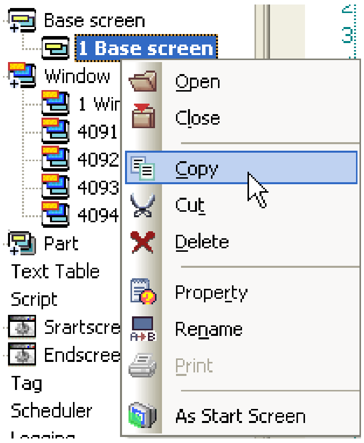
5.7.1 Copying Screen (Ctrl + C) and Pasting Screen (Ctrl + V)

If you copy and paste a screen, the screen number increases along with the ID of the object of each screen. As it is when created, the screen number is allotted from the minimum unoccupied number.

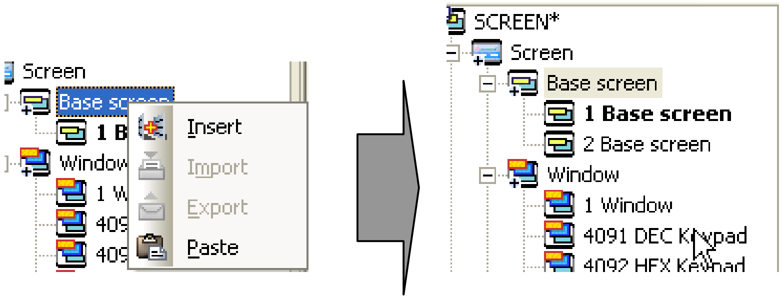
[Procedure]

(a) Select the screen to copy in the project window.

(b) Select [Copy] in the context menu.


Base screen
1 Base screen
Window
1 Wir
4091
4092
4093
4094
Part
Text Table
Script
Srartscre
Endscree
Tag
Scheduler
Open
Close
Copy
Cut
Delete
Property
Rename
Print
As Start Screen

(c) Select [Paste] or icon P in the context menu.


Screen
Base sc
1 B
Window
1 W
409
409
Insert
Import
Export
Paste
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
1 Window
4091 DEC Keypad
4092 HEX Keypad

Note

(1) When there is the corresponding screen data in the clip board, the [Paste] menu means that the screen can be copied, so the [Paste] menu is activated only in such a case.

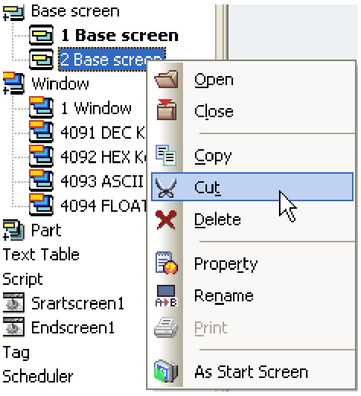
(2) If you want to paste a screen using the hot key, the parent list of the list item you want to paste in the project window should be activated because it is pasted below the parent list.

5.7.2 Cut (Ctrl+X) and Paste (Ctrl+V)

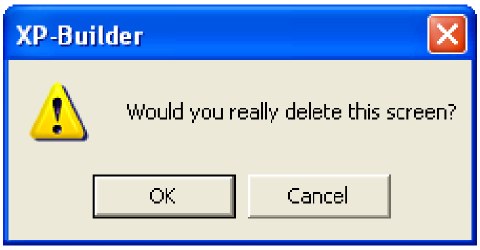
[Procedure]

(a) Select the screen you want to cut in the project window.

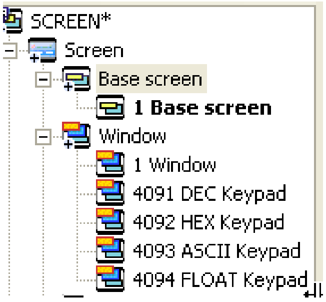
(b) Select [Cut] in the context menu.


Base screen
1 Base screen
2 Base screen
Window
1 Window
4091 DEC K
4092 HEX K
4093 ASCII
4094 FLOAT
Part
Text Table
Script
Srartscreen1
Endscreen1
Tag
Scheduler
Open
Close
Copy
Cut
Delete
Property
Rename
Print
As Start Screen

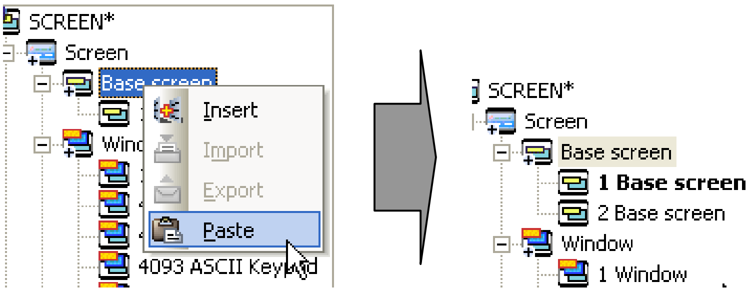
(c) The following message is issued asking whether you want to delete the window. If you click on the OK button, the window is cut. If you click on [Cancel], it is not cut.


XP-Builder
OK
Cancel

Would you really delete this screen?


SCREEN*
Screen
Base screen
1 Base screen
Window
1 Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad

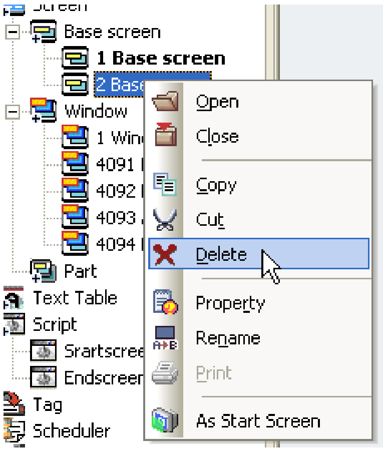
(d) Select [Paste] in the context menu.


SCREEN*
Screen
Base screen
Wind
Insert
Import
Export
Paste
4093 ASCII Keyword
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
1 Window

5.7.3 Deleting Screen

[Procedure]

1) Select the screen you want to delete in the project window.
2) Select [Delete] in the context menu.


Base screen
1 Base screen
2 Base
Window
1 Win
4091
4092
4093
4094
Part
Text Table
Script
Srartscree
Endscreen
Tag
Scheduler
Open
Close
Copy
Cut
Delete
Property
Rename
Print
As Start Screen

A message is issued asking whether you want to delete the screen as it does when you cut it. If you click on the OK button, the screen is deleted. If you click on [Cancel], it is not deleted.

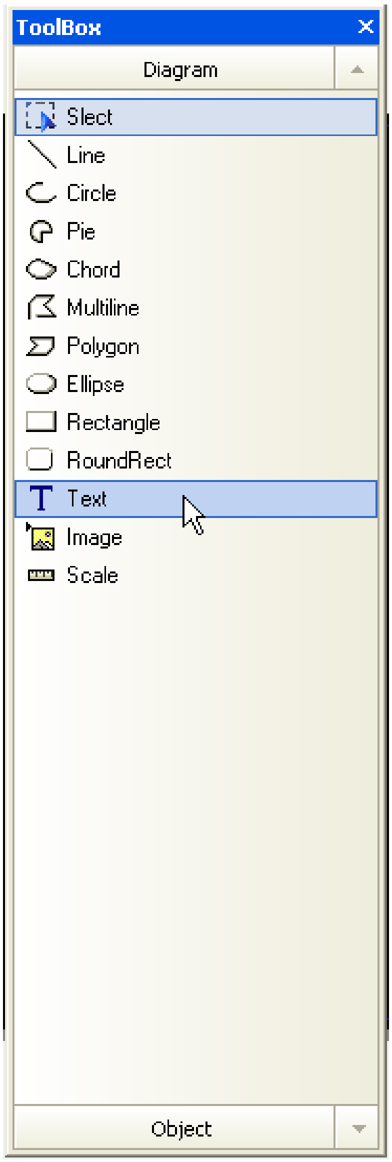
5.8 Drawing Figures/Objects

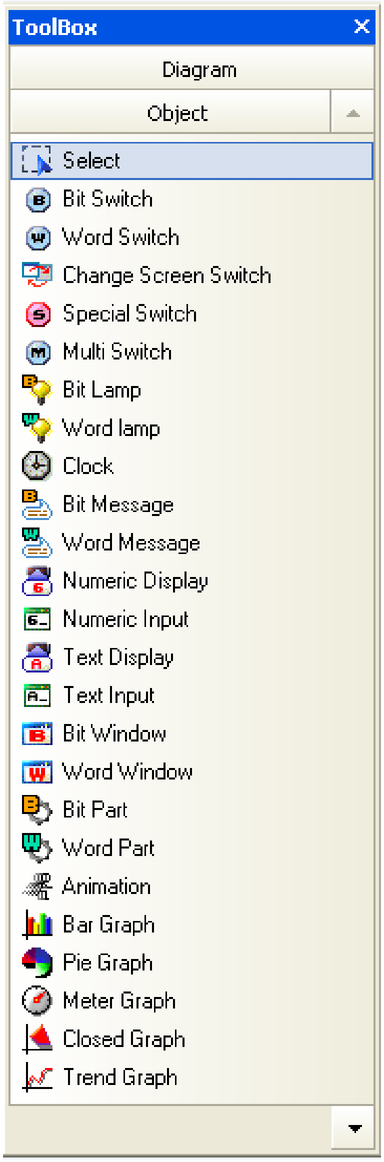
If a window is created, you can place figures or objects on it and enter the properties. From now on, let's learn how to draw figures and objects.

5.8.1 Using Editing Tools

Editing tools are used to change the mode of a figure or object so that they can be drawn. If you select an object in the tool box, the object is ready to be drawn.

Select the figure or object to enter through the tool box menu or tool bar as shown below and insert them by clicking on them.


ToolBox
Diagram
Slect
Line
Circle
Pie
Chord
Multiline
Polygon
Ellipse
Rectangle
RoundRect
Text
Image
Scale
Object


ToolBox
Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch
Multi Switch
Bit Lamp
Word lamp
Clock
Bit Message
Word Message
Numeric Display
Numeric Input
Text Display
Text Input
Bit Window
Word Window
Bit Part
Word Part
Animation
Bar Graph
Pie Graph
Meter Graph
Closed Graph
Trend Graph

(1) Diagram

Command	Description
Select	Enters the mode of selecting a figure or object.
Line	Enters the mode of drawing a straight line.
Circle	Enters the mode of drawing a circle.
Pie	Enters the mode of drawing a pie.
Chord	Enters the mode of drawing a chord.
Multi line	Enters the mode of drawing a multi line.
Polygon	Enters the mode of drawing a polygon.
Ellipse(Alt + B + E)	Enters the mode of drawing an ellipse.
Rectangle(Alt + B + R)	Enters the mode of drawing a rectangle.
RoundRect	Enters the mode of drawing a round rectangle.
Text (Alt + B + G)	Enters the mode of drawing text.
Image (Alt + B + X)	Enters the mode of drawing a image.
Scale	Enters the mode of drawing scales.

(2) Object

Command	Description
Select	Enters the mode of selecting a figure or object.
Bit Switch(Alt + B + S)	Enters the mode of drawing a bit switch.
Word Switch	Enters the mode of drawing a word switch.
Change Screen Switch	Enters the mode of drawing a change screen switch.
Special Switch	Enters the mode of drawing a special switch.
Multi Switch	Enters the mode of drawing a multi switch.
Bit lamp (Alt + B + L)	Enters the mode of drawing a bit lamp.
Word Lamp	Enters the mode of drawing a word lamp.
N-state Lamp	Enters the mode of drawing an N-state lamp.

Command	Description
Clock	Enters the mode of drawing a clock.
Bit message(Alt + B + M)	Enters the mode of drawing a bit message.
Word message	Enters the mode of drawing a word message.
Numeric Display (Alt + B + N)	Enters the mode of drawing a numeric display.
Numeric Input (Alt + B + I)	Enters the mode of drawing a numeric input.
Text Display	Enters the mode of drawing a text display.
Text Input	Enters the mode of drawing a text input.
Bit Window(Alt + B + W)	Enters the mode of drawing a bit window.
Word Window	Enters the mode of drawing a word window.
Bit Part(Alt + B + P)	Enters the mode of drawing a bit part. A bit part is divided into fixed, XY, line and route.
Word Part	Enters the mode of drawing a word part. A word part is divided into fixed, XY, line and route.
Animation(Alt + B + A)	Enters the mode of drawing an animation.
Bar Graph(Alt + B + B)	Enters the mode of drawing a bar graph.
Pie Graph(Alt + B + P)	Enters the mode of drawing a pie graph.
Meter Graph	Enters the mode of drawing a meter graph.
Closed Graph	Enters the mode of drawing a closed graph. A closed curve graph is divided into elliptical and polygonal graphs.
Trend Graph(Alt + B + T)	Enters the mode of drawing a trend graph.
Logging trend graph	Enters the mode of drawing a logging trend graph
Scatter graph	Enters the mode of drawing a scatter graph This is classified into real-time scatter and logging scatter.
History Alarm Viewer(Alt + B + H)	Enters the mode of drawing a history alarm viewer.
Datalist (Alt + B + D)	Enters the mode of drawing a data list viewer.
Logging viewer	Enters the mode of drawing a logging viewer.
Alarm Navigator	Enters the mode of drawing an alarm navigator.
Memo pad	Enters the mode of drawing a memo pad
Recipe navigator	Enters the mode of drawing a recipe navigator

Command	Description
Data list Editor	Enters the mode of drawing a Data list Editor
File recipe Editor	Enters the mode of drawing a File recipe Editor

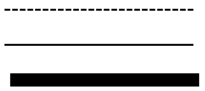
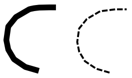
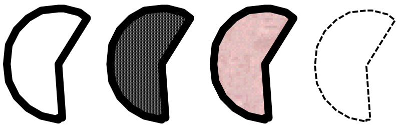
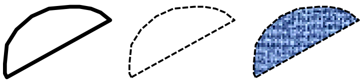
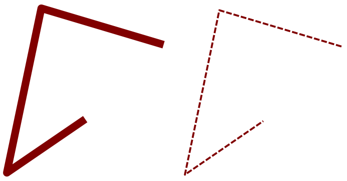
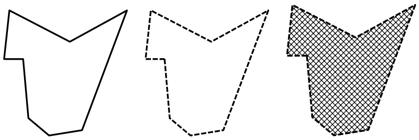
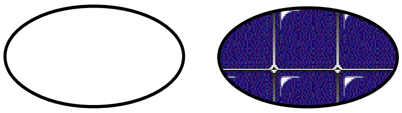
Note

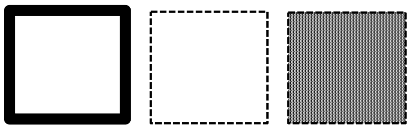
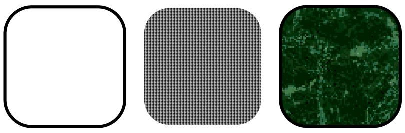
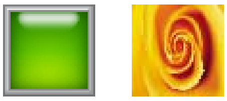
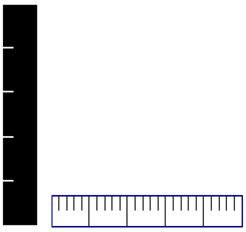
(1) With respect to the hot keys, S stands for Shift and C Ctrl.
(2) The hot keys described above are provided by XP Builder by default.
(3) You can specify a hot key in a tool. For more details, see **3.6.2 Hot Keys setting.**

5.9 Drawing Diagram

5.9.1 Overview of Diagram

You can draw various figures such as lines, circles and pie using the tool box. A figure refers to a static element which is fixed at a particular point on the screen and does not move when executed. The following are detailed description and types of figures.

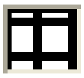
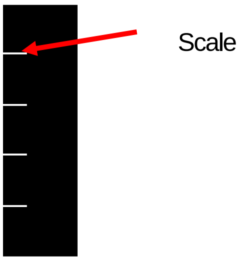
Type	Example	Properties provided	Cautions in using XP30-BTA
Line		Line color, line width, line style	N/A
Circle		Line color, line width, line style	N/A
Pie		Line color, line width, line style Brush filling, texture filling	Texture filling not provided
Chord		Line color, line width, line style Brush filling, texture filling	N/A
Multi line		Line color, line width, line style	N/A
Polygon		Line color, line width, line style Brush filling, texture filling	Texture filling not provided
Ellipse		Line color, line width, line style Brush filling, texture filling	Texture filling not provided

Type	Example	Properties provided	Cautions in using XP30-BTA
Rectangle		Line color, line width, line style Brush filling, texture filling	Texture filling not provided
RoundRect		Line color, line width, line style Brush filling, texture filling	Texture filling not provided
Text	Text string of XP Builder figures	Font, text color, size, plate color, type (bold, italic, underlined, strikeout, horizontal or vertical alignment)	N/A
Image		System graphic library User graphic library	N/A
Scale		Point, plate color, border color, color, direction, position and width of scales	N/A

The properties provided with respect to diagram and related cautions are as follows.

[Table. Properties of diagram]

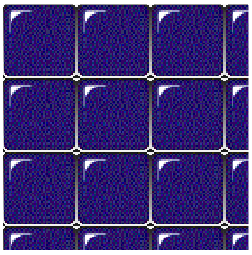
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Color of line and text</td><td>In the case of TTA, up to 65535 colors can be expressed for the color of lines and texts of the figure.
In the case of BTA, up to 8 colors can be expressed for the color of lines and texts of the figure.</td></tr>
<tr><td>Line Style</td><td>As shown below, two types of line can be expressed.
―――――――― (solid line)
------------------------- (dotted line)</td></tr>
<tr><td>Line width</td><td><table>
<tr><td>Line type</td><td>Line width</td></tr>
<tr><td>solid line</td><td>Between 1 ~ 14</td></tr>
<tr><td>dotted line</td><td>width 1 only</td></tr>
</table>
width 1: ―――――― width 2 : ―――――― width 3 : ――――――
width 5 : ▬▬▬▬▬▬ width 6: ▬▬▬▬▬▬ width 7: ▬▬▬▬▬▬
width 11 : ██████ width 12 : ██████ width 14 : ██████</td></tr>
<tr><td>Brush filling</td><td>Up to 41 kinds of brush can be chosen including No Brush.
Brush 0: brush filling not used.
Brush 1: fill with the pattern background color.
Brush 2: fill with the pattern foreground color
Brushes 3~41: fill with the brush combining the pattern background and foreground colors.
Brush 35 which combines the pattern background and foreground colors is as follows.</td></tr>
</table>

Type	Description
	 pattern foreground color: black pattern background color: white
Texture filling	You can choose from 28 types of texture.
Font Style	There are four types of text, which are bold, Italic, strikeout, underlined. bold: STATIC Italic: STATIC Strikeout:: STATIC Underline STATIC You can choose two or more of them.
Text alignment	Horizontal alignment (left, center, right) and vertical alignment (top, middle, bottom) are available.
Points of scales	 The number of scales can range between 1 and 255. Every fifth scale is larger than the others.
Location and direction	The scales may have their position at the top, bottom, right and left of the window. The directions available are left -> right, right -> left, top -> bottom, bottom -> top.

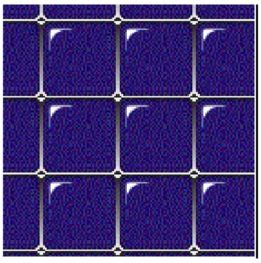
Note

(1) In the case of XP30-BTA, the texture filling function is not provided.

(2) The textures expressed in XP Builder and XGT Panel might be different as shown below.



In XP-Builder



In XGT Panel

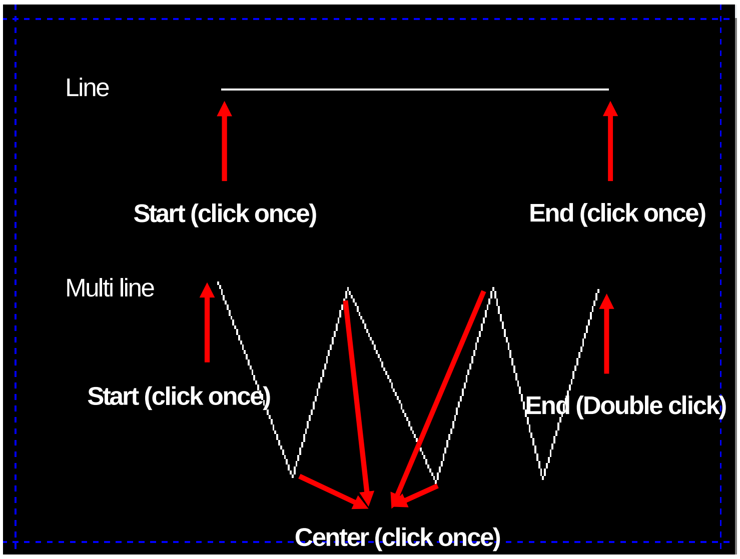
5.9.2 Drawing a Figure by Type

(1) Line

There are two types of line, which are straight and multi lines. The procedure of drawing a line is as follows.

[Procedure]
(a) Select [Line] or [Multi Line] in the tool box.
(b) Place the mouse pointer where you want to insert a line in the window. You can draw a straight or multi line as follows.

Type	Method
Line	1) Press the left button on the mouse at the start point. 2) Press the left button on the mouse at the last point.
Multi Line	1) Press the left button on the mouse at the start point. 2) Press the left button on the mouse at the center of the line. 3) Press the left button on the mouse at the last point


Line
Start (click once)
End (click once)
Multi line
Start (click once)
End (Double click)
Center (click once)

(c) If you want to change the properties of a figure, double-click on the left button on the mouse on the figure. Then a dialog box is invoked for you to change the properties of the figure.

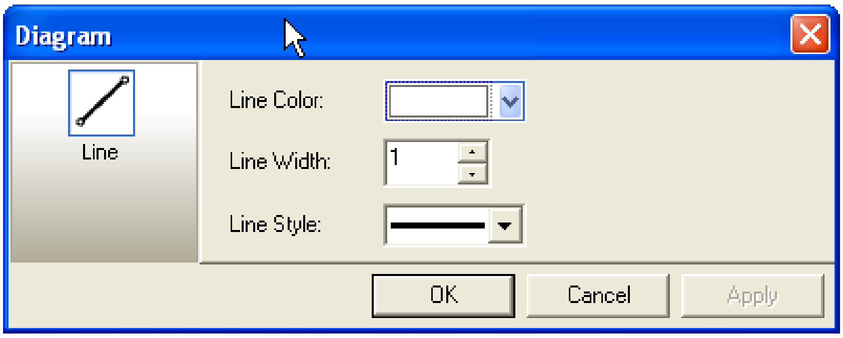


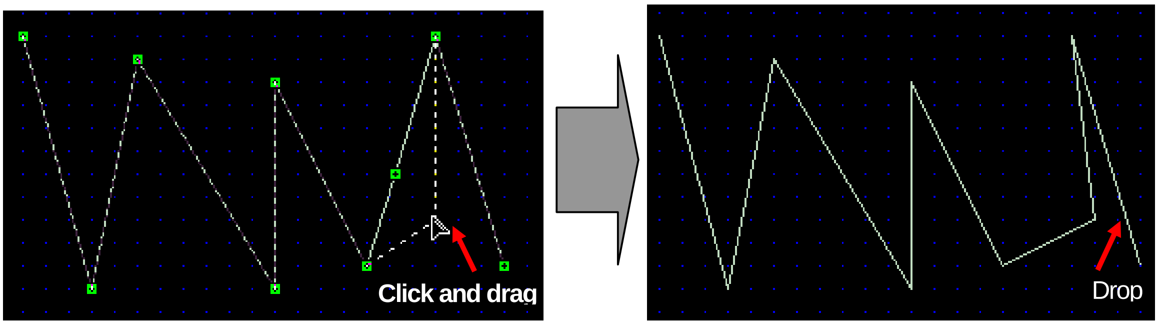
Diagram
Line
OK
Cancel
Apply

Line Color:
Line Width: 1
Line Style:

Note

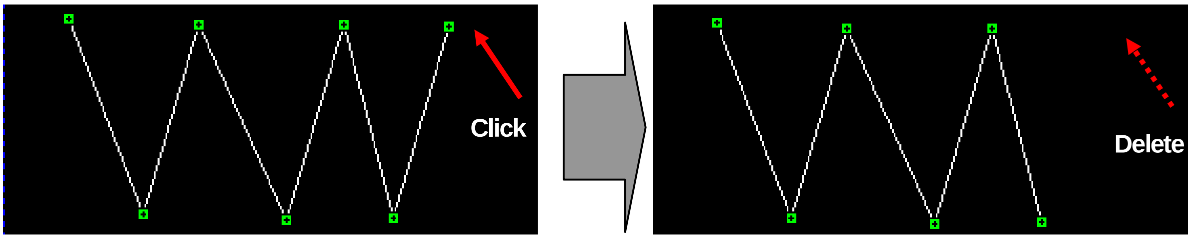
(1) Multi line

(a) If you click on a point on the finished multi line and drag it to a desired point while holding the Ctrl button, another vertex is created.



Press the right button on the mouse at a point on the line while holding the Ctrl button

(b) If you click on a point on the finished multi line while holding the Ctrl button, the point is deleted.



Press the right button on the mouse at a point on the line while holding the Ctrl button

(2) Circle, Pie and Chord

To draw a circle, pie or chord, click on two points on a circle. The procedure is as follows.

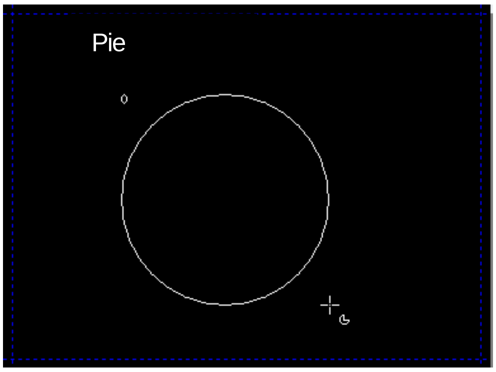
[Procedure]

(a) Select [Circle], [Pie] or [Chord] in the tool box.
Place the mouse pointer at a desired point and drag it until it becomes as large as you want holding the right button on the mouse.

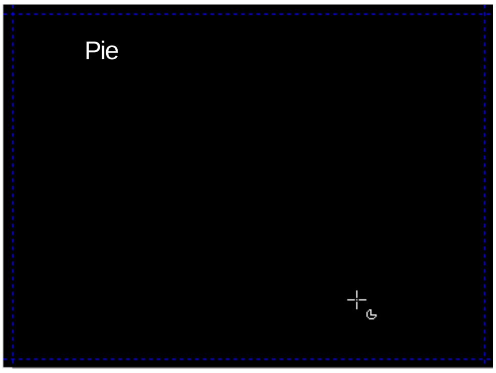
(b) When it becomes as large as you want, release the right button on the mouse. Until you move the mouse on the screen, nothing appears.

(c) If you release the right button on the mouse and move the mouse, the center of the circle is indicated at the center of the area you have drawn. Press the right button on the mouse on the start point from the center of the circle.

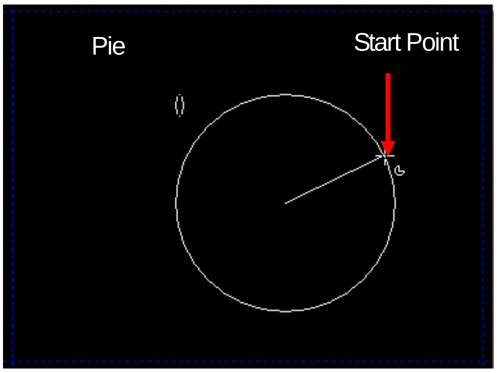
(d) Draw a desired figure from the start point and double-click on the right button on the mouse.



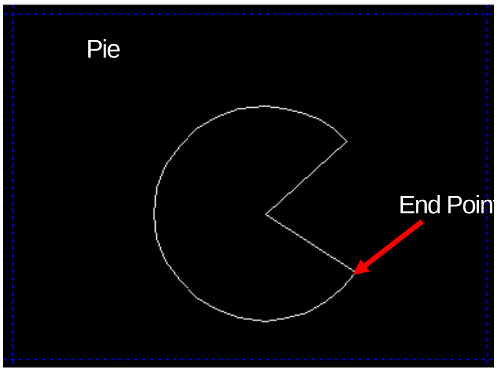
Drag the mouse holding the right button.



Release the right button on the mouse.



After deciding the start point, click on the right button.



Double-click on the right button when you decide the end point.

(3) Ellipse, Rectangle and RoundRect

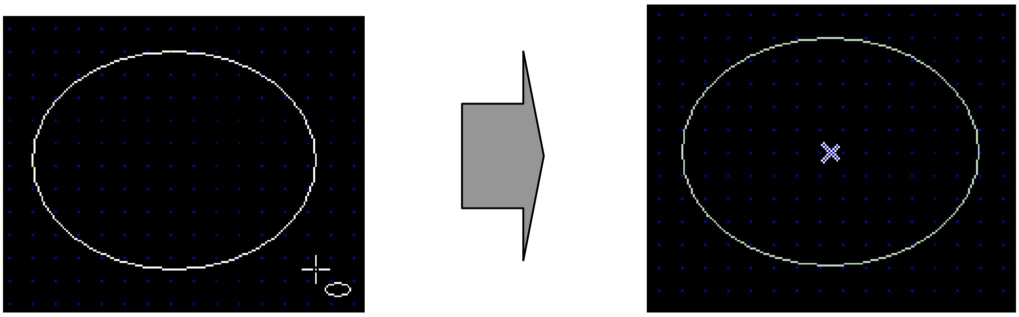
You can draw an ellipse, rectangle and RoundRect in the same method described above. Below let's learn how to draw an ellipse.

[Procedure]

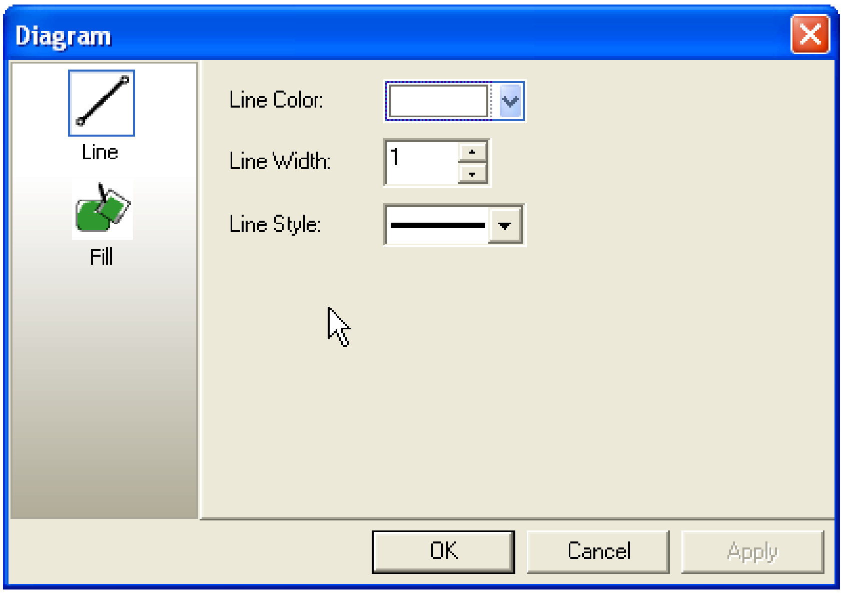
(a) Select [Ellipse] in the tool box.

(b) Place the mouse pointer at a desired point and drag it until it becomes as large as you want holding the right button on the mouse.

(c) When it becomes as large as you want, release the right button on the mouse.



(d) When a dialog box is invoked, change the properties and click on the OK button. Drawing an ellipse, rectangle and RoundRect has the common properties of 'Line' and 'Fill'. For details, see [Properties of Tables and Figures].



Line Color:

Line Width: 1

Line Style:

(4) Polygon

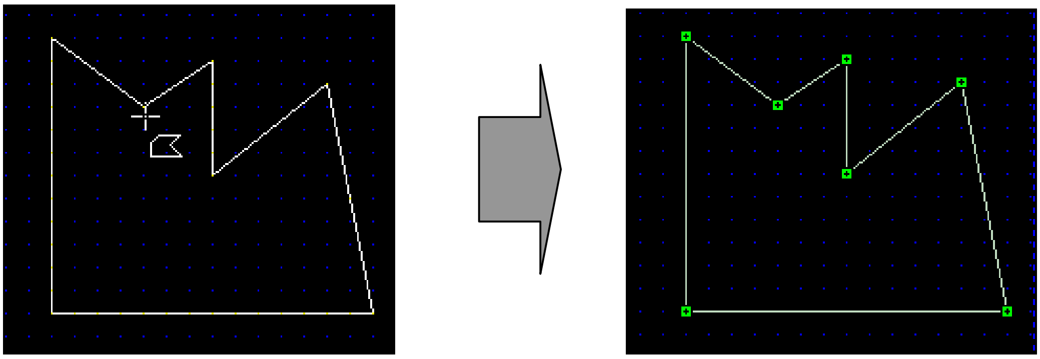
The procedure is as follows.

[Procedure]

(a) Select [Polygon] in the tool box.

(b) Click on every point of the polygon where you want on the screen. Then, the closed curve connecting each vertex of the polygon is formed.

(c) Double-click on the last vertex.



(d) When a dialog box is invoked, change the properties and click on the OK button. For details, see [Properties of Tables and Figures]

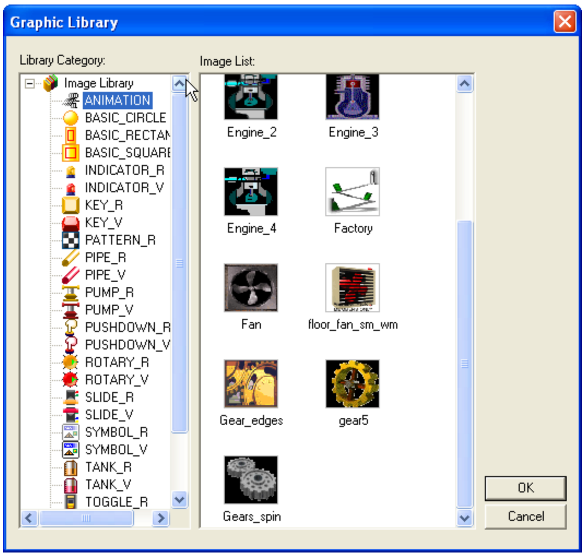
(5) Drawing

You can draw a system graphic image or user graphic image. The procedure is as follows.

[Procedure]

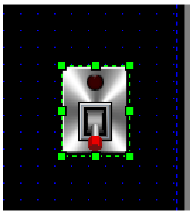
(a) Select [Image] in the tool box.

(b) A dialog box is invoked where you can choose a drawing.


Graphic Library
Library Category:
Image List:
Image Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTAN
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
Engine_2
Engine_3
Engine_4
Factory
Fan
floor_fan_sm_wm
Gear_edges
gear5
Gears_spin
OK
Cancel

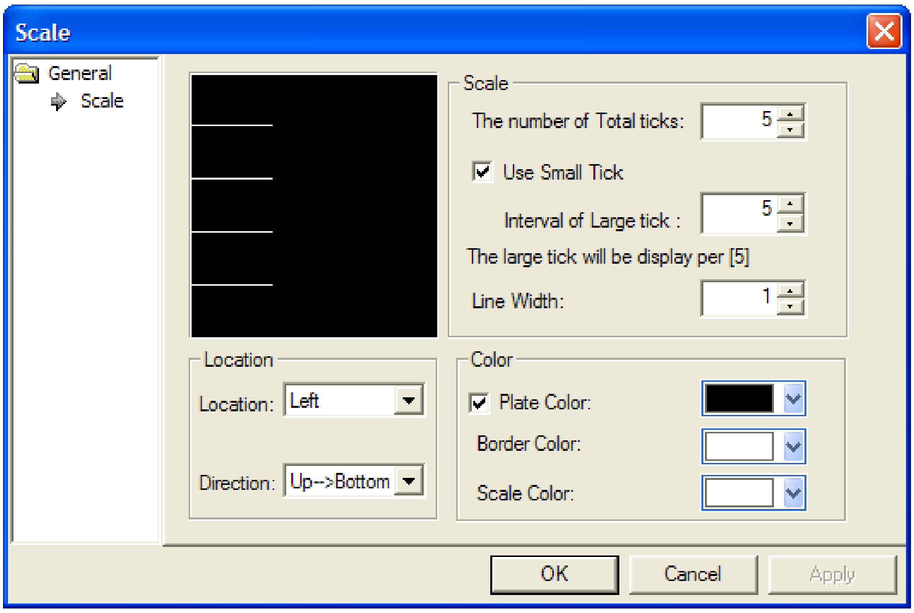
(c) Choose the desired image from the images that you have added and the images provided by the system and click on the OK button (OK). Or, double-click on the selected image.

(d) Click on the point where you want to insert the image. The image is created in its original size. You can adjust the size by dragging and dropping it at a desired point.



(6) Scales

Scales are used as the ruler. Below we are going to learn the detailed properties of scales.



Scale

The number of Total ticks: 5

☑ Use Small Tick

Interval of Large tick : 5

The large tick will be display per [5]

Line Width: 1

Location

Location: Left

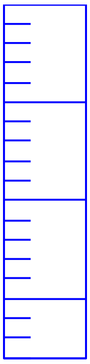
Direction: Up-->Bottom

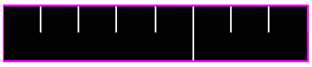
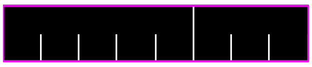
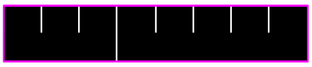
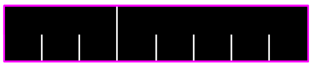
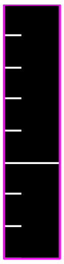
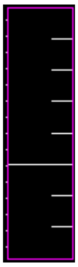
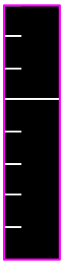
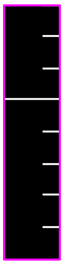
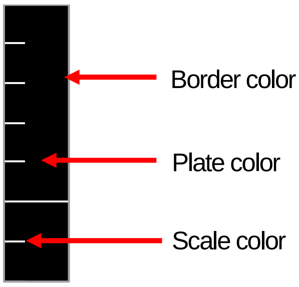
Color

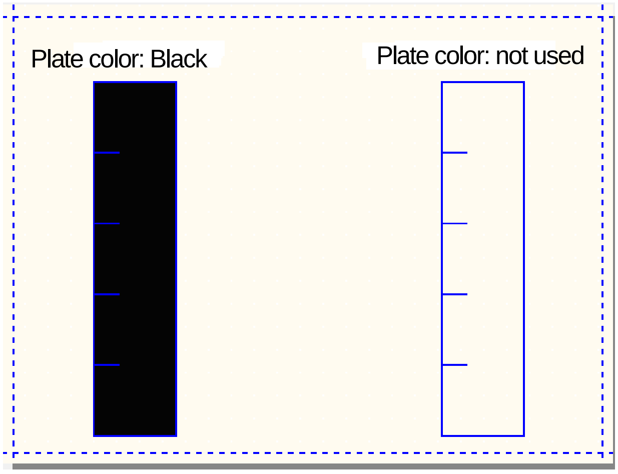
☑ Plate Color:

Border Color:

Scale Color:

Setting Items	Description
Number of tick	In case that [Using Small Tick] function is not applied, the total number of scales is marked as long scale only. If it comes under the figure set by [Interval of Large tick] after marking small scale, it is marked as large scale. Ex. From the above example, if the total number of scales is 18 and the 5th small scale is marked as long scale, it can be shown as below.  It is possible to express a table with two scaled figures. Method) 1. After canceling [Use Small Tick] and [Plate color], designate [The number of Total ticks] equal to the vertical number and set up the scale direction as [Up->Down]. 2. After canceling [Use Small Tick] and [Plate color], designate [The number of Total ticks] equal to the horizontal number and set up the scale direction as [Right->Left]. 3. Overlap No.1 and No.2 figures each other.
Line width	The width of the scales.

Setting Items	Description			
	Position	**Direction**		
		Type	Example	
Position and direction of scales	Top, bottom	Left -> right	 Top	 Bottom
		Right -> left	 Top	 Bottom
	Left, right	Top -> bottom	 Left	 Right
		Bottom -> top	 Left	 Right
Color	 Border color Plate color Scale color In case you don’t use plate color, plate color is displayed transparently.			

Setting Items	Description
	 Plate color: Black Plate color: not used

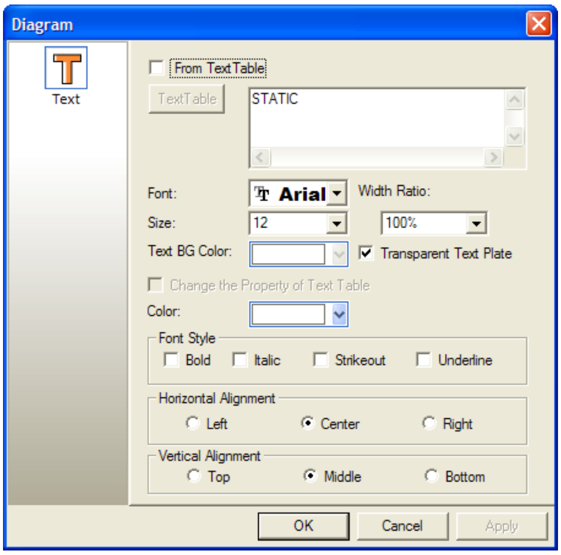
The procedure of drawing scales is as follows.

[Procedure]
(a) Select [Scales] in the tool box..
(b) Place the mouse pointer at a desired point and drag it until it becomes as large as you want holding the right button on the mouse.

(7) Text

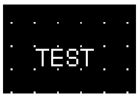
Texts are important part of editing. The procedure of drawing a text string is as follows.

[Procedure]
(a) Select [Text] in the tool box.
(b) Click on the desired point.
(c) When the dialog box is invoked, enter the properties and click on the OK button.



☐ From Text Table
STATIC
Font: Arial
Width Ratio: 100%
Size: 12
Text BG Color:
☑ Transparent Text Plate
☐ Change the Property of Text Table
Color:
Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline
Horizontal Alignment
○ Left ● Center ○ Right
Vertical Alignment
○ Top ● Middle ○ Bottom

(d) Adjust its size so that the entire text can be seen.



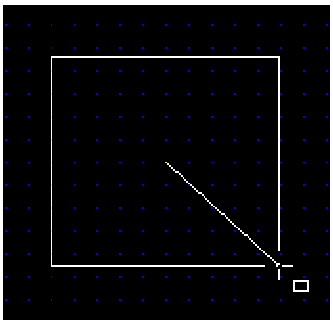
Note

(1) Default Size

Although you can adjust the size when you create a figure or object by dragging and dropping them, you can also create a figure by clicking on it just once in a default size set in the system. The size being different by object and figure, this method applies to ellipses, rectangle, roundrect, polygons, image, text and all objects.

(2) Drawing from the Center

If you want the point you first clicked on to draw a figure or object to be the center of the figure or object, select [First point as Center] in the edit menu. This method does not apply to some figures such as lines and polygons and objects.



5.10 Drawing an Object

The object is the most important dynamic component of screen editing by differently displaying or operating according to the set device value or condition.

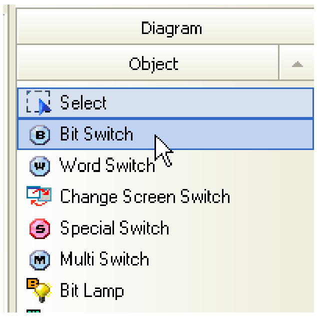
The following limits apply to creating an object.

Item	Limit per screen
Maximum number of figures	No limit
Maximum number of objects	No limit
History alarm viewer object	1
Logging viewer object	1
Alarm search object	1
Window object	8. In case of overlapped window, there is no limit.
Screen insertion	An unlimited number of screens can be inserted except the screen it belongs to. **(☞ See 17.14 Screen Insertion Object)**
Memo pad	1
Recipe navigator	Basic recipe navigator, file recipe navigator respectively 1 in a screen Type of recipe navigator can be set in the dialog box. If exceeded, error occurs in data check when downloading
Data list editor	1
File recipe editor	1

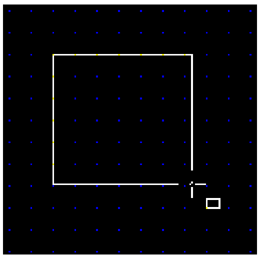
The following is an example of the general procedure of creating a bit switch on the screen.

[Procedure]

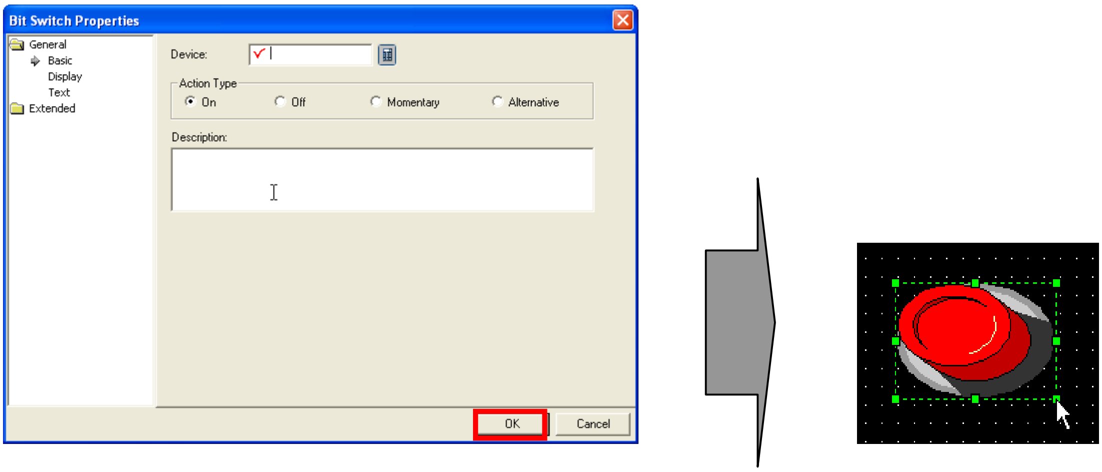
(a) Select the bit switch object in the tool box.



(b) Place the mouse pointer at a desired point and drag it until it becomes as large as you want.



(c) In creating a figure or object in the option, if ‘Show Property Dialog on New diagram/Object’ is set, the dialog box is invoked first on the screen. Set or change the properties and click on the OK button. The object is displayed on the screen.



Device:

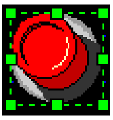
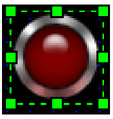
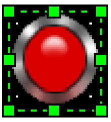
Action Type: ● On ○ Off ○ Momentary ○ Alternative

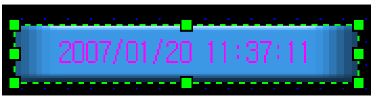
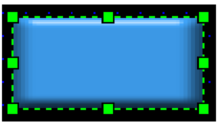
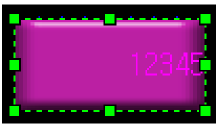
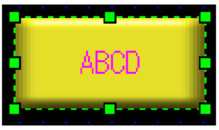
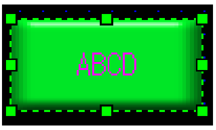
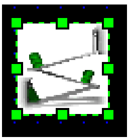
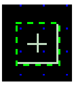
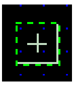
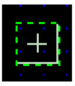
Description:

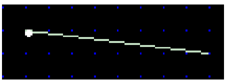
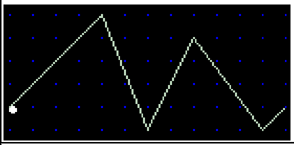
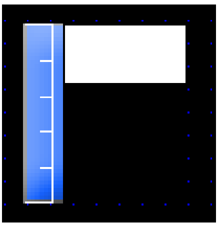
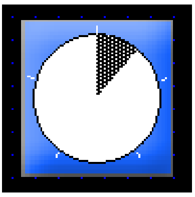
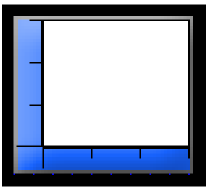
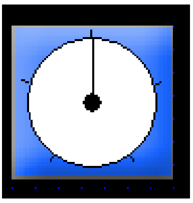
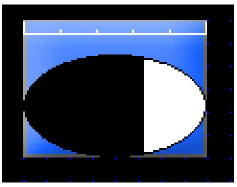
(d) To change the properties of an object, just like a figure, select the object and double-click on it. Then the dialog box for you to change the properties of the object is invoked. In this dialog box, change the properties.

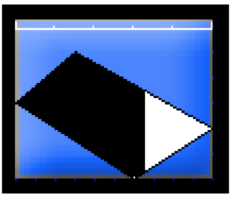
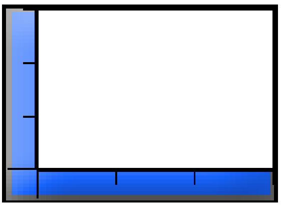
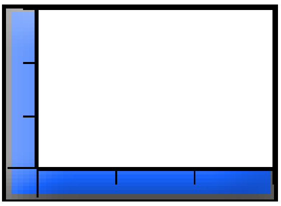
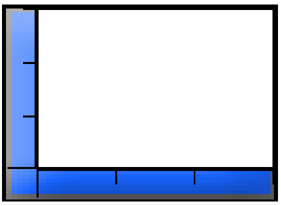
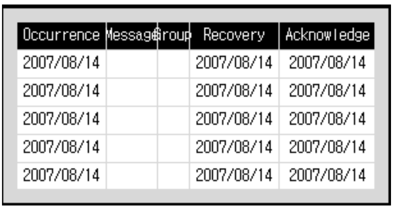
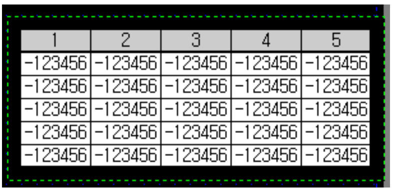
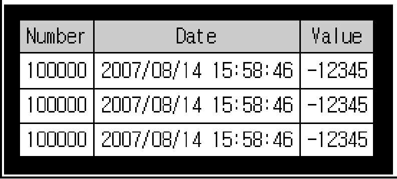
The following is a simple explanation of the method and difference of object drawing. Note that it is assumed that the information tool bar remains the same with respect to the inserted image.

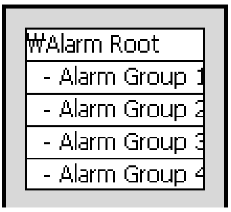
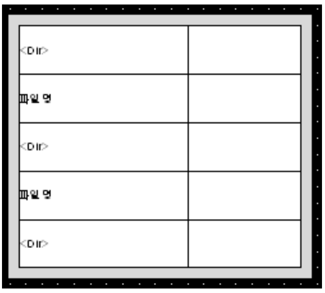
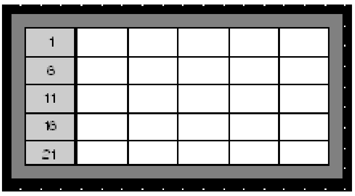
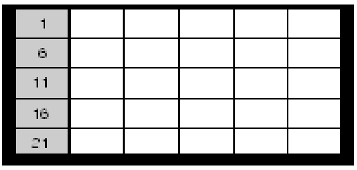
Default
English (United S

Object	Description
Bit switch 	Method 1) Select an object in the tool box and click on a desired point on the screen to create it in the default size(48X48). Method 2) Place the mouse pointer at a desired point and drag it until it becomes as large as you want. If the dialog box is invoked, set the desired properties and click on the OK button. **(☞ See 17.2.3 Bit Switch Setting)**
Word switch	Same as above **(☞ See 17.2.4 Word Switch Setting)**
Special switch	Same as above **(☞ See 17.2.6 Special Switch Setting)**
Change Screen Switch	Same as above **(☞ See 17.2.5 Change Screen Switch Setting)**
Multi switch	Same as above **(☞ See 17.2.7 Multi Switch Setting)**
Bit lamp 	Same as above **(☞ See 17.1.3 Bit Lamp Setting)**
Word lamp 	Same as above **(☞ See 17.1.4 Word Lamp Setting)**

Object	Description
N-state Lamp	Same as above (☞See 17.1.5 N-state Lamp Setting)
Clock 	Same as above **(☞ See 17.13 Clock Setting)**
Bit message 	Same as above **(☞ See 17.3.3 Bit Message Setting)**
Word message	Same as above **(☞ See 17.3.4 Word Message Setting)**
Numeric Display	Same as above **(☞ See 17.4.4 Numeric Display Setting)**
Numeric Input 	Same as above **(☞ See 17.4.3 Numeric Input Setting)**
Text Display 	Same as above **(☞ See 17.6 Text Display Setting)**
Text Input 	Same as above **(☞ See 17.5 Text Input Setting)**
Animation 	Same as above **(☞ See 17.7 Animation Setting)**
Bit window 	Select the object in the tool box and click on a desired point. If you adjust the size with the mouse, no change occurs. **(☞ See 17.5 Window Setting)**
Word window 	Select the object in the tool box and click on a desired point. If you adjust the size with the mouse, no change occurs. **(☞ See 17.5 Window Setting)**
Bit/word part (fixed) 	Select the object in the tool box and click on a desired point. If you adjust the size with the mouse, no change occurs. **(☞ See 17.6 Part Setting)**

Object	Description
Bit/word part (XY) 	Select the object in the tool box and click on a desired point. If you adjust the size with the mouse, no change occurs. **(☞ See 17.6 Part Setting)**
Bit/word part (line) 	Same as drawing lines of a figure **(☞ See 17.6 Part Setting)**
Bit/word part (route) 	Same as drawing lines of a figure **(☞ See 17.6 Part Setting)**
Bar graph 	Method 1) Select an object in the tool box and click on a desired point on the screen to create it in the default size. Method 2) Place the mouse pointer at a desired point and drag it until it becomes as large as you want. If the dialog box is invoked, set the desired properties and click on the OK button. **(☞ See 17.8.3 Bar Graph Setting)**
Pie graph 	Same above **(☞ See 17.8.4 Pie Graph Setting)**
Trend Graph 	Same above **(☞ See 17.8.7 Trend Graph Setting)**
Meter Graph 	Same above **(☞ See 17.8.5 Meter Graph Setting)**
Closed Graph(ellipse)) 	Same as drawing an ellipse **(☞ See 17.8.6 Closed Graph Setting)**

Object	Description
Closed Graph (polygon) 	Same as drawing a polygon **(☞ See 17.8.6 Closed Graph Setting)**
Trend graph 	Same as drawing a bar graph (☞ See 17.8.7 Trend Graph Setting)
Logging trend graph 	Same as drawing a bar graph (☞ See 17.8.8 Logging Trend Graph Setting)
Scatter graph 	Same as drawing a bar graph Selects real-time scatter and logging scatter in the dialog and goes to drawing mode.
History alarm viewer  Occurrence Message Group Recovery Acknowledge 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14 2007/08/14	Select an object in the tool box and click on a desired point on the screen to create it in the size determined according to the font and default properties. **(☞ See 17.9 History Alarm Viewer Setting)**
Data list viewer  1 2 3 4 5 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456 -123456	Select an object in the tool box and click on a desired point on the screen to create it in the size determined according to the font and default properties. **(☞ See 4.10 Data List Viewer Setting)**
Logging viewer  Number Date Value 100000 2007/08/14 15:58:46 -12345 100000 2007/08/14 15:58:46 -12345 100000 2007/08/14 15:58:46 -12345	Select an object in the tool box and click on a desired point on the screen to create it in the size determined according to the font and default properties. **(☞ See 4.11 Logging Viewer Setting)**

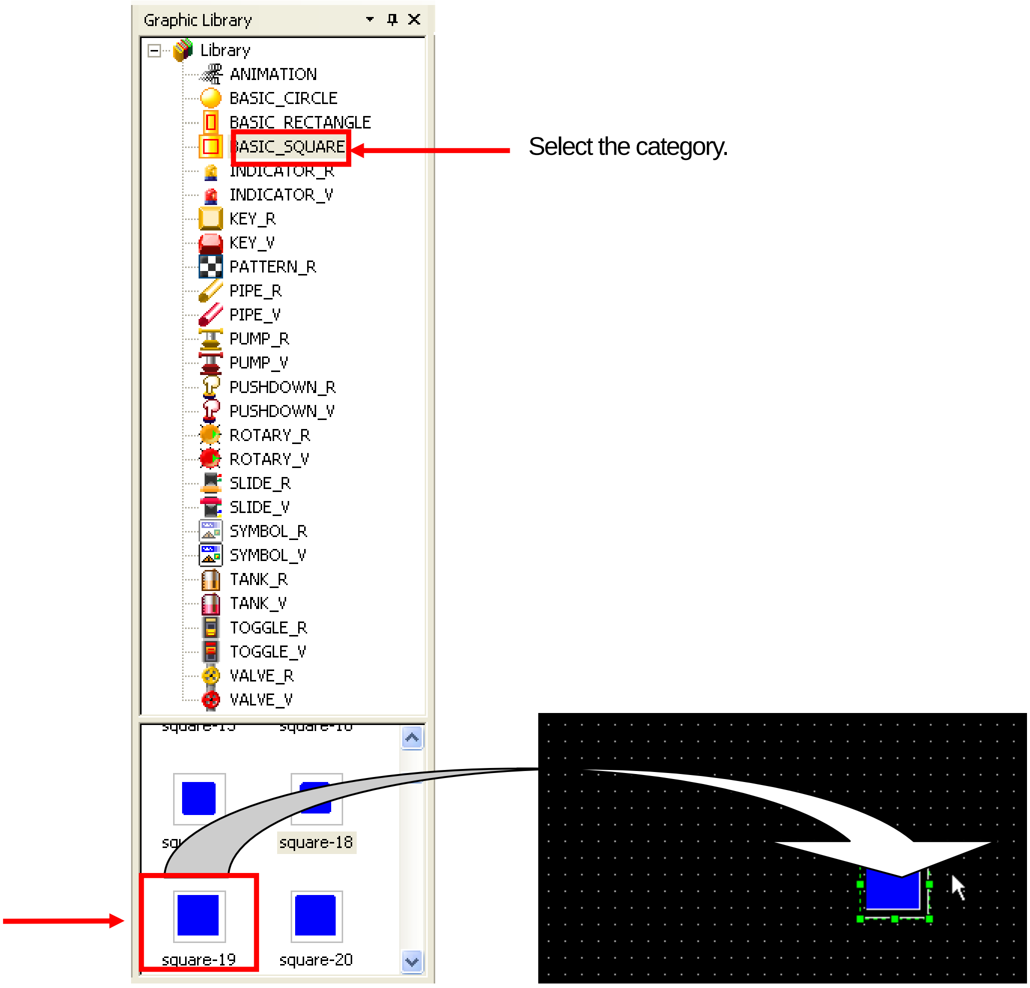
Object	Description
Alarm Navigator  ₩Alarm Root - Alarm Group 1 - Alarm Group 2 - Alarm Group 3 - Alarm Group 4	Method 1) Select an object in the tool box and click on a desired point on the screen to create it in the default size. Method 2) Place the mouse pointer at a desired point and drag it until it becomes as large as you want. If the dialog box is invoked, set the desired properties and click on the OK button. **(☞ See 4.12 Alarm Navigator Setting)**
Screen insertion object	Select the number of the screen you want to insert and drag and drop it in the current window. **(☞ See 4.14 Screen Insertion Setting)**
Memo pad 	Method 1) If you select object at a toolbox and click the intended position with a mouse, a basic-sized memo pad will be create. Method 2) Put a mouse point to the position to be inserted at the screen and drag it until you can get the intended size. If a dialog box is shown, set up the properties that you want and press 'Check' button. (☞ See 17.15 Memo pad Settings.)
Recipe Explorer  	Method 1) If you select object at a toolbox and click the intended position with a mouse, a basic-sized memo pad will be create. Method 2) Put a mouse point to the position to be inserted at the screen and drag it until you can get the intended size. If a dialog box is shown, set up the properties that you want and press 'Check' button. (☞ See 17.16 Recipe Explorer Settings)
Data List Editor  	Method 1) If you select object at a toolbox and click the intended position with a mouse, a basic-sized memo pad will be create. Method 2) Put a mouse point to the position to be inserted at the screen and drag it until you can get the intended size. If a dialog box is shown, set up the properties that you want and press 'Check' button. (☞ See 17.17 Data List Editor Settings)
File Recipe Editor  	Method 1) If you select object at a toolbox and click the intended position with a mouse, a basic-sized memo pad will be create. Method 2) Put a mouse point to the position to be inserted at the screen and drag it until you can get the intended size. If a dialog box is shown, set up the properties that you want and press 'Check' button. (☞ See 17.18 File Recipe Editor Settings.)

5.11 Drawing Figure or Object from Library

This is another way of drawing an object or figure. You can insert a figure or object in the window by using the library.
(☞ See Chapter Graphic/Object Library)

[Procedure]

(a) Select the category and item you want to insert into the window in the graphic library window or object library window.


Graphic Library
Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
square-18
square-19
square-20

Select the category.

Select the item.

(b) Drag and drop it at a desired position. The selected item is displayed where you want it to be.

Note

(1) The library is divided into the vector figure (_V) and raster figure (_R) according to the shape. A vector figure maintains its shape if you enlarge or reduce it and a raster figure is useful if you want to express details of the shape but its shape might be distorted if you enlarge or reduce it.

(2) The image figure created by being dragged from the library is created in its original size, so their size might be different.

Chapter 6 Object and Figure Editing

6.1 Selection

You can choose a figure or object as follows.

[Procedure]

(a) Click on [Select] in the tool box.

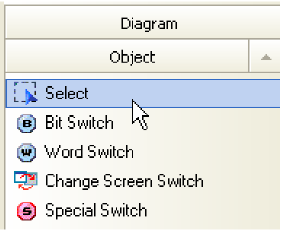
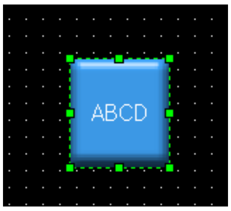


Diagram
Object
Select
Bit Switch
Word Switch
Change Screen Switch
Special Switch

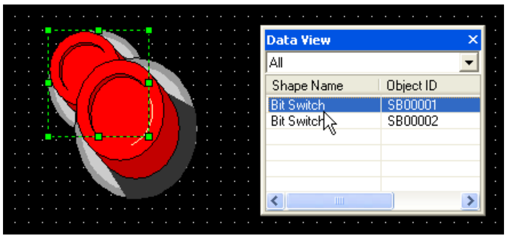
(b) Select a desired or object with the mouse. If you want to select one of them, click on it. Then the handle of the selected figure or object is displayed in green.



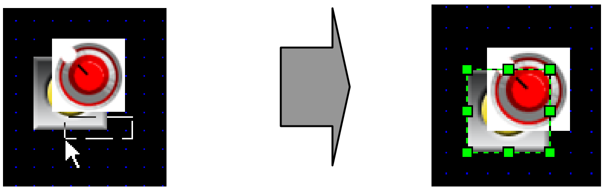
Note

(1) If you want to select all the objects and figures in the window, select [Edit]-[Select All] in the menu.

(2) If you click on the desired figure or object in the data View window, it is marked in the blue bar.


Data View
All
Shape Name
Object ID
Bit Switch
SB00001
Bit Switch
SB00002

(3) If you have trouble selecting the desired figure or object, hold the Ctrl key in the selection mode and drag the tip of the desired figure or object. Then the figure or object on the area is selected and displayed so.



(4) When selecting the diagram, in case internal of circle, rectangle, ellipse, chord, and polygon is not filled with pattern, figure, etc, you have to touch outline to select the diagram. And in case internal is filled, if you touch the internal area, you can select the diagram.

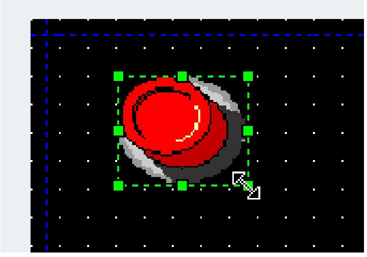
(5) As another method to select, click Ctrl key and right mouse then you can select the diagram and object in order.

6.2 Size Adjustment

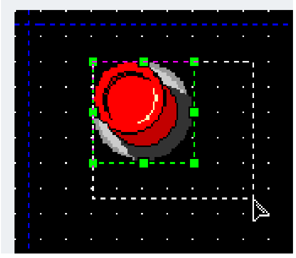
You can change the size as follows.

[Procedure]

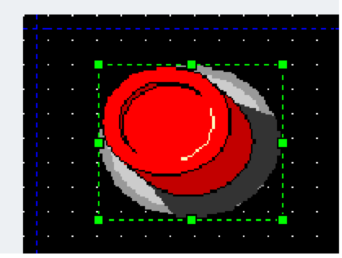
(a) Click on the item you want to delete and place the pointer near the handle of which the size you want to change. The mouse pointer changes into an arrow and it is ready to change the size.



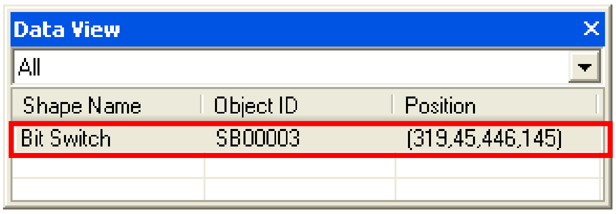
(b) Adjust the size by dragging the mouse.



(c) Release the mouse button when it is as large or small as you want.



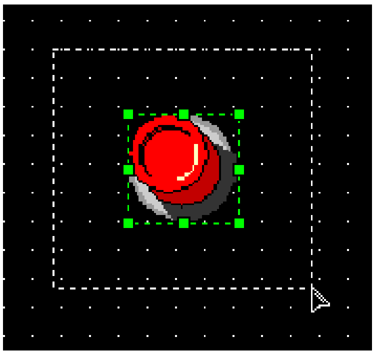
You can check the size information in the data view window.



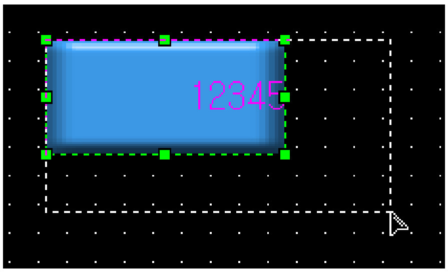
Shape Name	Object ID	Position
Bit Switch	SB00003	(319,45,446,145)

Note

(1) If you press the Ctrl key before dragging the mouse, the size is changed around the center of the object of which the size you want to change.



(2) If you press the Shift key before dragging the mouse, the size of the object is changed with the ratio of the height and width of the original object maintained.

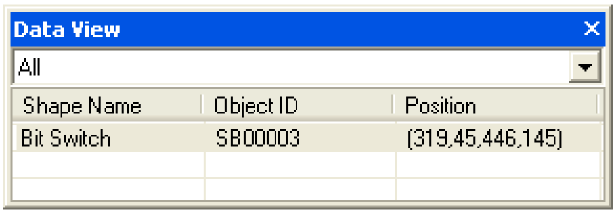


Note

(1) The sizes of the Logging viewer, alarm viewer, data list viewer, window and part cannot be changed.

(2) What is a data view window?

- (a) A data view window consists of three elements, which are the type item which indicates the representative name of a figure or object, ID item representing the ID in the case of an object and location item indicating the coordinates of a figure.
- (b) In the case of a group, the 'type' is displayed as a 'group', an 'object ID' item is displayed as 'GROUP' and for 'location', the maximum quadrangular coordinates of grouped objects are displayed.
- (c) You can arrange by type, object ID and location by clicking on the title of each line.
- (d) You can select, copy, cut and paste items in the data view window.



Shape Name	Object ID	Position
Bit Switch	SB00003	(319,45,446,145)

6.3 Properties Change

You can change the properties of a figure or object in the dialog box invoked whey a figure or object is created. Moreover, after they are created, you can simply change the properties of a figure or object in the properties dialog box.

[Procedure]
(a) Double click on the figure of which the properties you want to change.
(b) In the dialog box, change the properties and click on the OK button.

6.4 Delete

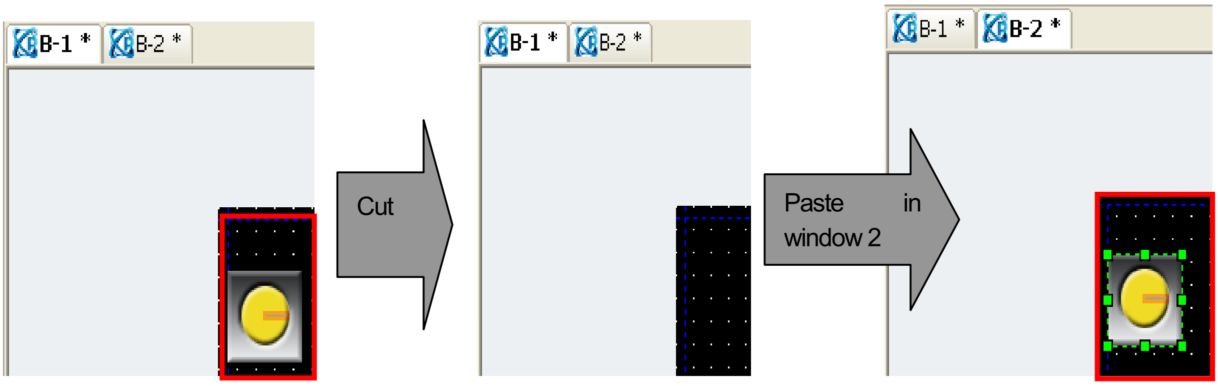
This is the function of deleting a figure or object in the window.

[Procedure]
(a) Click on the figure or object you want to delete.
(b) Select [Edit]-[Delete] or press the Delete key.

Note
(1) If you want to delete all the objects or figures in the window, select [Edit]-[Delete All].
(2) You can also delete an object by selecting the object in the data view window and pressing the Delete key.

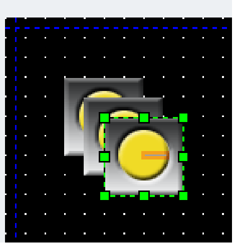
6.5 Cut (Ctrl+X) – Paste (Ctrl+V)

[Procedure]
(a) [Cut]-[Paste] is cutting a selected figure or object and pasting it in another window. Then the selected figure or object is gone from the original window and newly created in the other window.



6.6 Copy (Ctrl+C) - Paste (Ctrl+V)

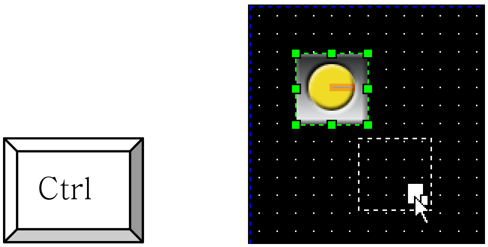
[Copy]-[Paste] is creating another of the selected figure or object. In the illustration below, if you paste a selected figure or object, it is pasted in the new position with a certain offset. If you have pasted it in another window, it is displayed at the same location as it was in the former window. You can check the information of the figure or object which has been pasted from the data component window.



Note

(1) If you copy, the ID of the object increases by 1.

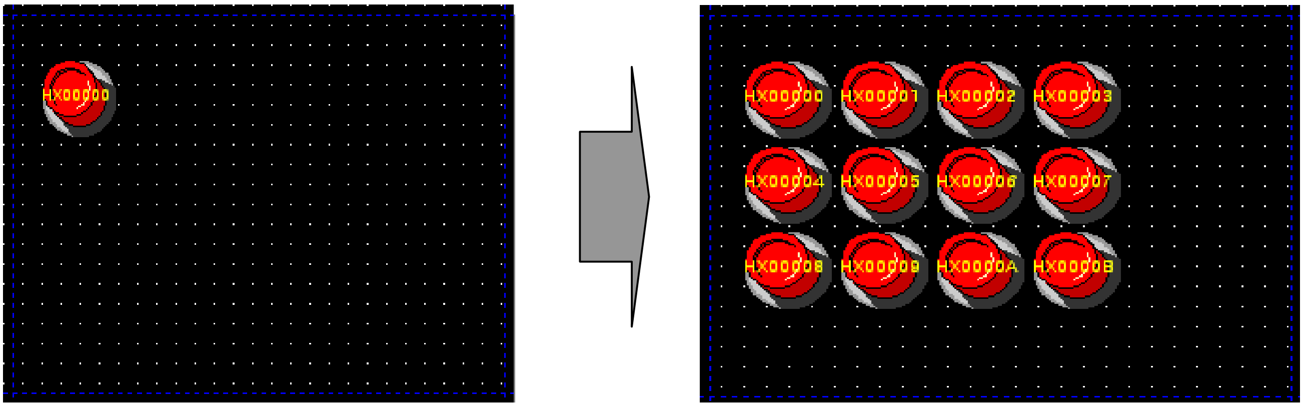
(2) If you move a figure or object holding the Ctrl key and release the mouse button at a desired point, it is copied there.



(3) You can paste general character strings by pasting them in the editor. In such a case, the figure is created in a character string.

6.7 Multi Copy

You can use the multi copy function when you want to create multiple objects with the address increasing or decreasing constantly.
In the illustrations below, you can copy the 12 bit switches with continuous device addresses against the HX0000 bit switch as follows.



Switch bit object set as HX0000 device

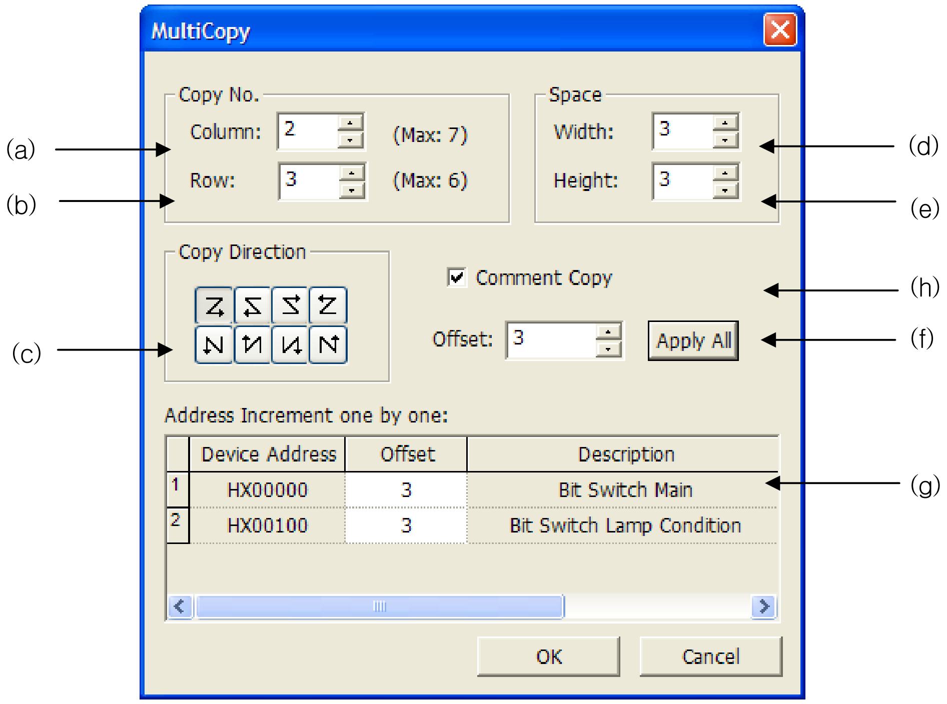
12 Multi copied with the address increasing by 1 against the HX0000 device

[Procedure]

(a) Select the object you want to multi copy.

(b) Select [Menu]-[Edit]-[Multi Copy] or click on icon .

(c) In the dialog box below, set the copy number, space and copy direction.

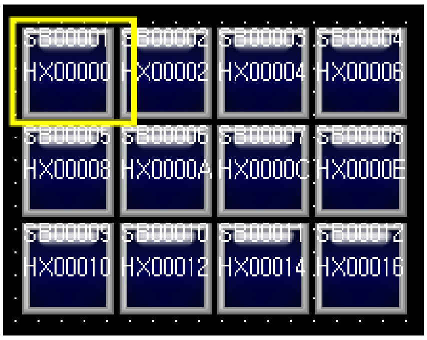
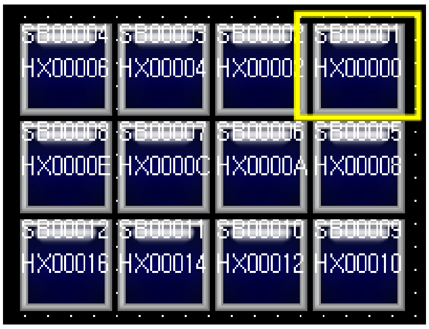
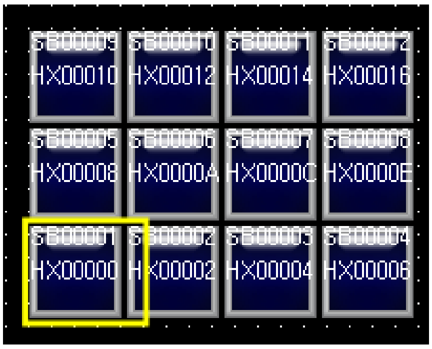
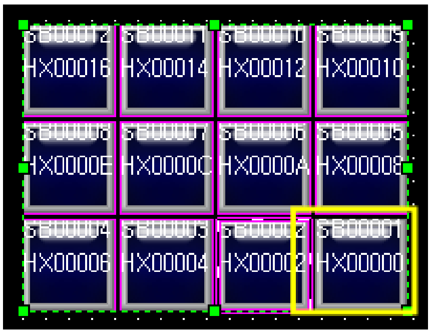


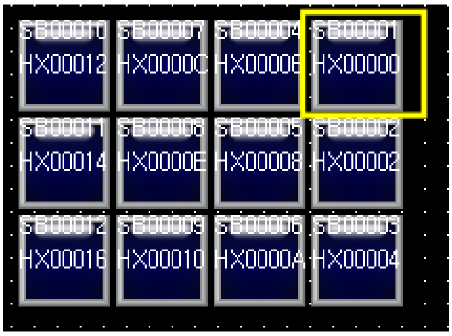
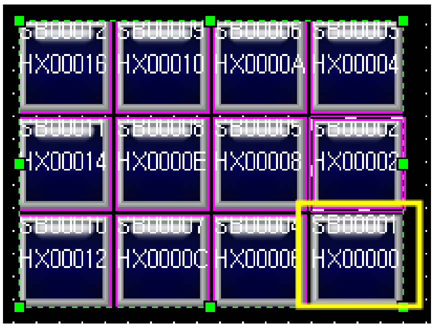
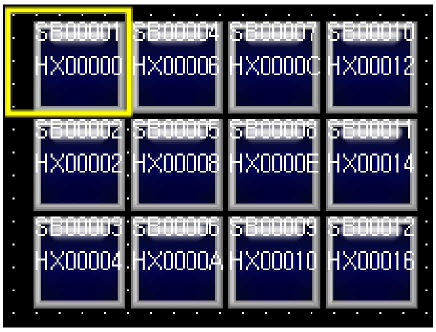
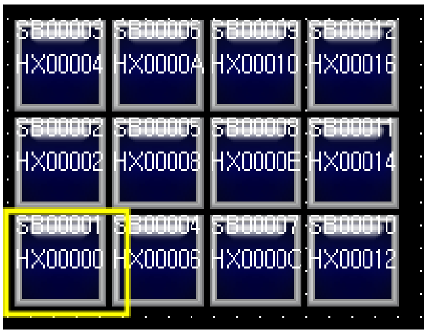
Column: 2 (Max: 7)
Row: 3 (Max: 6)
Width: 3
Height: 3
☑ Comment Copy
Offset: 3

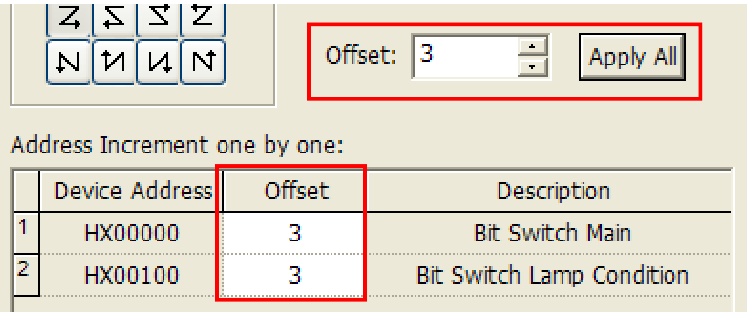
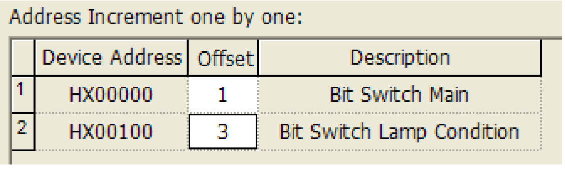
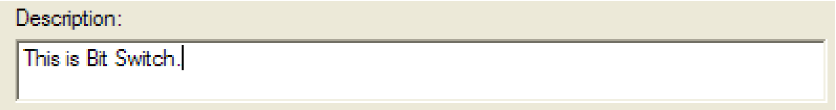
Address Increment one by one:

	Device Address	Offset	Description
1	HX00000	3	Bit Switch Main
2	HX00100	3	Bit Switch Lamp Condition

Item	Settings
Columns(a)	Sets the number of lines of objects to multi copy. The maximum number of columns that can be copied in the window is indicated in the dialog box (up to 5). Make sure that the number of columns does not exceed the maximum number of columns that can be copied.
Row(b)	Sets the number of rows of objects to multi copy. The maximum number of rows that can be copied in the window is indicated in the dialog box (up to 4). Make sure that the number of rows does not exceed the maximum number of rows that can be copied.
Copy Direction(c)	Sets the direction of the multi copy. Sets the increase direction of ID and address. In the following example, address increases by 2 based on the HX00000 (1) ： increases/decreases based on the left-top object as follows

Item	Settings
	 SB00001 HX00000 SB00002 HX00002 SB00003 HX00004 SB00004 HX00006 SB00005 HX00008 SB00006 HX0000A SB00007 HX0000C SB00008 HX0000E SB00009 HX00010 SB00010 HX00012 SB00011 HX00014 SB00012 HX00016 (2) : increases/decreases based on the right-top object as follows  SB00004 HX00006 SB00003 HX00004 SB00002 HX00002 SB00001 HX00000 SB00008 HX0000E SB00007 HX0000C SB00006 HX0000A SB00005 HX00008 SB00012 HX00016 SB00011 HX00014 SB00010 HX00012 SB00009 HX00010 (3) : increases/decreases based on the left-bottom object as follows  SB00009 HX00010 SB00010 HX00012 SB00011 HX00014 SB00012 HX00016 SB00005 HX00008 SB00006 HX0000A SB00007 HX0000C SB00008 HX0000E SB00001 HX00000 SB00002 HX00002 SB00003 HX00004 SB00004 HX00006 (4) : increases/decreases based on the right-bottom object as follows  SB00012 HX00016 SB00011 HX00014 SB00010 HX00012 SB00009 HX00010 SB00008 HX0000E SB00007 HX0000C SB00006 HX0000A SB00005 HX00008 SB00004 HX00006 SB00003 HX00004 SB00002 HX00002 SB00001 HX00000

Item	Settings
	(5) : increases/decreases based on the right-top object as follows  SB00010 SB00007 SB00004 SB00001 HX00012 HX0000C HX00006 HX00000 SB00011 SB00008 SB00005 SB00002 HX00014 HX0000E HX00008 HX00002 SB00012 SB00009 SB00006 SB00003 HX00016 HX00010 HX0000A HX00004 (6) : increases/decreases based on the right-bottom object as follows  SB00012 SB00009 SB00006 SB00003 HX00016 HX00010 HX0000A HX00004 SB00011 SB00008 SB00005 SB00002 HX00014 HX0000E HX00008 HX00002 SB00010 SB00007 SB00004 SB00001 HX00012 HX0000C HX00006 HX00000 (7) : increases/decreases based on the left-top object as follows  SB00001 SB00004 SB00007 SB00010 HX00000 HX00006 HX0000C HX00012 SB00002 SB00005 SB00008 SB00011 HX00002 HX00008 HX0000E HX00014 SB00003 SB00006 SB00009 SB00012 HX00004 HX0000A HX00010 HX00016 (8) : increases/decreases based on the left-bottom object as follows  SB00003 SB00006 SB00009 SB00012 HX00004 HX0000A HX00010 HX00016 SB00002 SB00005 SB00008 SB00011 HX00002 HX00008 HX0000E HX00014 SB00001 SB00004 SB00007 SB00010 HX00000 HX00006 HX0000C HX00012

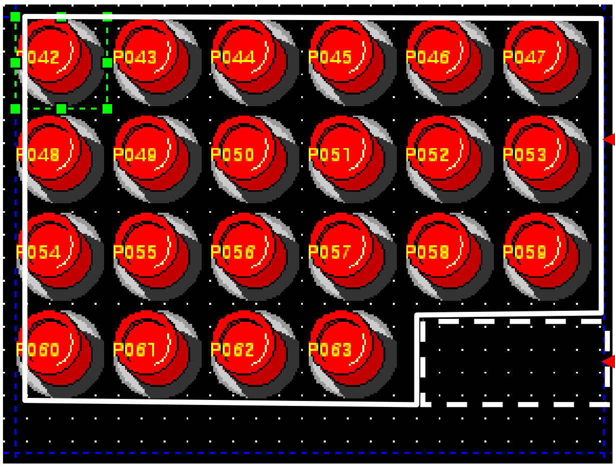
Item	Settings
Space(d, e)	Sets the horizontal and vertical spaces between objects.
Offset (f)	Sets how many address increase or decrease If you want decrease of address, input negative value If you click 'Apply All', same offset value is applied to offset of Address Increment one by one  Offset: 3 Apply All Address Increment one by one: Device Address / Offset / Description 1 HX00000 / 3 / Bit Switch Main 2 HX00100 / 3 / Bit Switch Lamp Condition
Increasing individual address (g)	Increasing Individual address is a useful function for copy with other address offsets when there are other address properties within one object. The function can be applied only when one object is multi-copied. Although figures are included, they do not affect increase in individual address regardless of the kind of figures. For example, in terms of bit switch, suppose you need to multi-copy bit switch address of basic tab and lamp condition device of extended lamp condition tab with other offset. In this case, as the below, if you set other offsets ; bit switch address offset of basic tab as 1, extended lamp condition address as 3, they will be respectively copied with increased offset as the number of set rows and lines.  Address Increment one by one: Device Address / Offset / Description 1 HX00000 / 1 / Bit Switch Main 2 HX00100 / 3 / Bit Switch Lamp Condition
Comment copy (h)	Description note is common property of the object included object properties box's basic tab as below. In case that the property is activated, Description note will be copied, otherwise, it will be not copied. Copying Description note is activated as default setting.  Description: This is Bit Switch.

Note

(1) Note the following objects.

Object type	Cautions
Bit switch, word switch	Continuously copied address: reference device : lamp condition Address not continuously copied: Action condition : offset
Multi switch, special switch	The same result as general copy because no device is set
Multi switch	Continuous copy is not conducted for the device registered in the multi switch list.
Numeric input device, Text input device	Continuously copied address: reference device : Read device : Write Check device Address not continuously copied: Action condition : offset
Trend graph	All the input devices(less than 9) are continuously copies and increase.

(2) If the number of input columns and rows exceed the maximum number of devices, the objects that exceed the maximum number are not copied in the display. For example, the maximum range of P device of MASTER-K of LSIS is between 0 and 63. If 24 devices are continuously copied with the device P0042 being the reference device, only 22 of them are copied. The 23rd and 24th objects are not copied.



Continuous copy with P42 device being the reference device

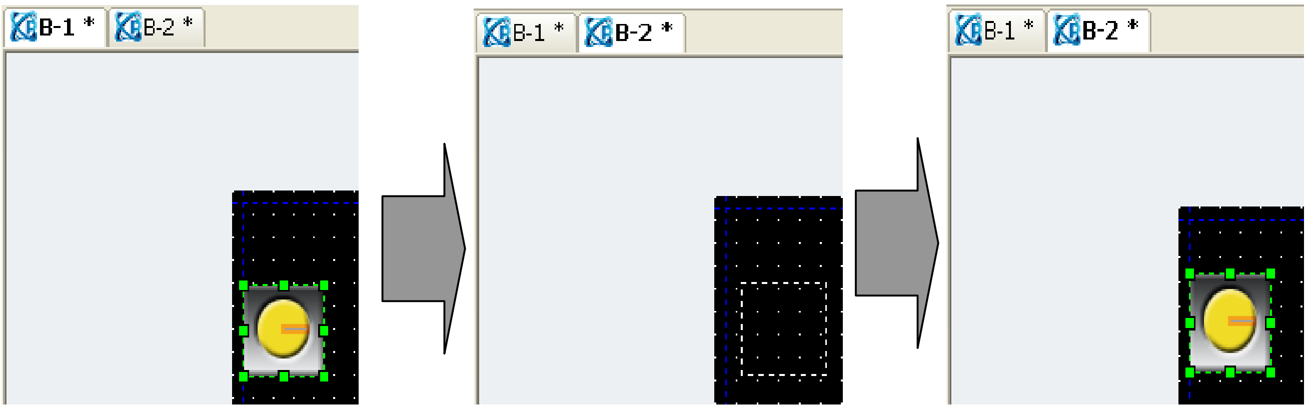
23rd and 24th objects that exceed the maximum range of device

(3) The object specified as a tag is not copied.

6.8 Drag and Drop

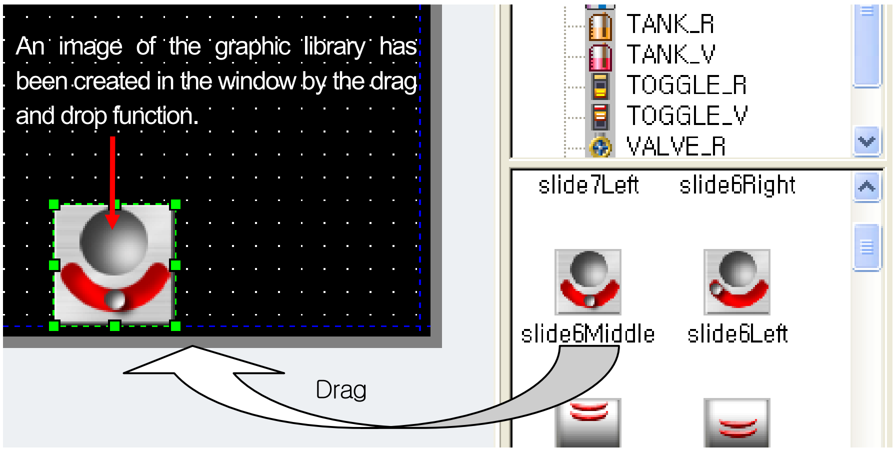
There are two methods of drag and drop, which are [Cut]-[Paste] and [Copy]-[Paste].
If you drag and drop in the same window, it has the same effect as [Cut]-[Paste], but if you drag and drop in different windows, it has the same effect as and [Copy]-[Paste].

[Drag and drop between windows]
If you drag a figure or object to the tab of the window where you want to drop it, the display is activated, that is, moves to the window.
Now move the figure or object to a desired place and drop it.


B-1 *
B-2 *
B-1 *
B-2 *
B-1 *
B-2 *

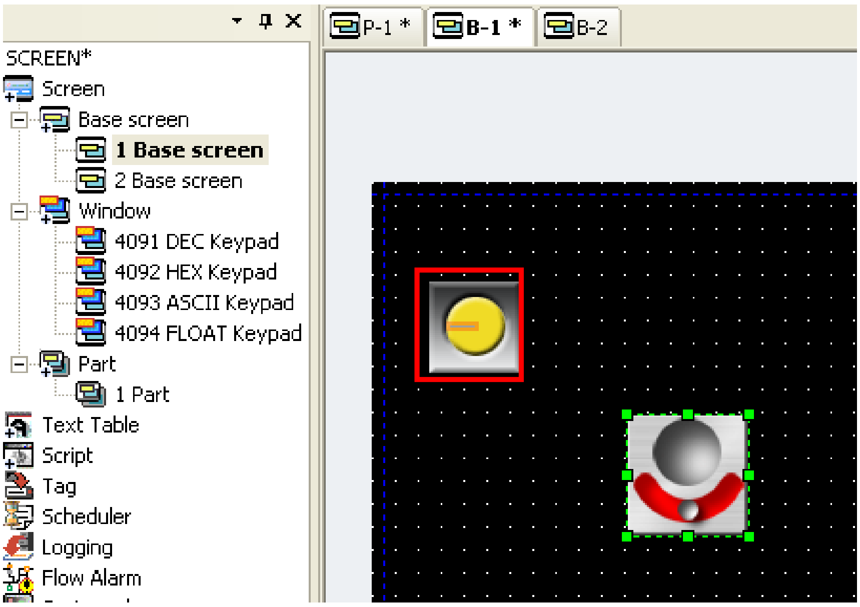
[Drag and drop from the object/graphic library]

You can drag and drop an item from the object library or graphic library windows and in the object library, you can drag and drop a selected object to the user category.


An image of the graphic library has been created in the window by the drag and drop function.
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
slide7Left
slide6Right
slide6Middle
slide6Left
Drag

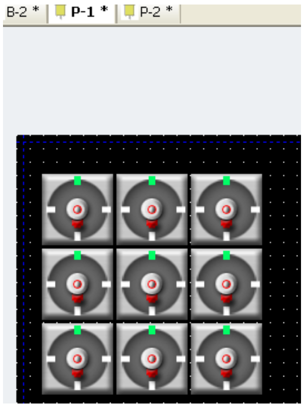
[Drag and drop in the base/window display]

You can drag a figure or object from the base or window screen tree of the project window into a new screen and in such a case, the figure or object is created in a new screen as a screen inserted object.

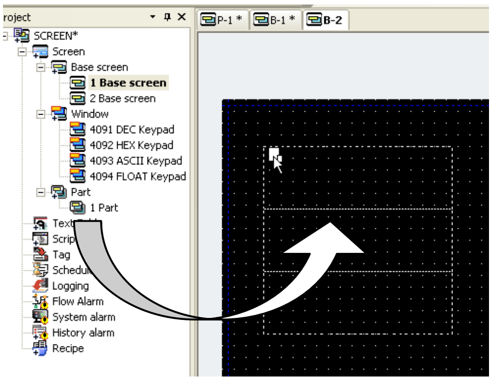

P-1 *
B-1 *
B-2
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
1 Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm

[Drag and drop in the part screen]

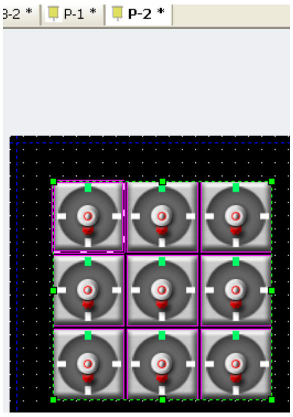
You can drag a figure from the part screen tree of the project window and in such a case, all the figures or objects inserted in the part screen are copied in the new screen.



Base screen #1 original screen


roject
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
1 Part
Text
Scrip
Tag
Schedu
Logging
Flow Alarm
System alarm
History alarm
Recipe
P-1 *
B-1 *
B-2

Drag and drop base screen 1 to base screen 2



Base screen #2 (contents of #1 are copied)

Note

(1) Cut, Copy and Paste are also available through the mouse context menu in the editing window. If you select an object to cut or copy and press the right button on the mouse, the Copy, Paste and Cut context menus appear.

(2) In the following cases when drag and drop is not available, nothing happens if you drag and drop.

(a) You cannot drag and drop in the base and window screen which have the same number.

(b) The animation graphic library category has too big an image size, and affects the performance of XGT Panel. Therefore, it cannot be inserted into another screen.

6.9 Undo and Redo of Editing

You can undo what you have edited or redo what you have undone.

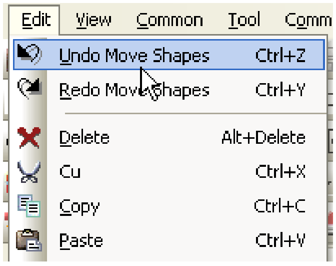
(1) Undo (e.g. Deletion)

[Procedure]

(a) Select a figure or object you want to delete.

(b) Delete the selected XGT Panel by selecting [Edit]-[Delete] or clicking on the Delete key. Then the selected figure or object is gone.

(c) Select [Edit]-[Undo] and the editing undo command appears in the menu. If you click on it, the deleted object is restored in the screen.

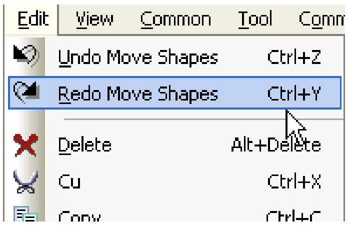

Edit
View
Common
Tool
Comm
Undo Move Shapes Ctrl+Z
Redo Move Shapes Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V

(2) Redo (e.g. Deletion)

[Procedure]

(a) Undo the editing in the procedure of (1).

(b) Select [Edit]-[Redo] and the editing redo command appears in the menu. If you click on it, the restored object is deleted in the screen.


Edit
View
Common
Tool
Comm
Undo Move Shapes Ctrl+Z
Redo Move Shapes Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C

Note

(1) You can undo or redo all figures and objects you have edited, but the screen related properties such as the screen number and common properties cannot be undone or redone.

(2) There is no limit to the frequency of undo.

(3) You can select exactly the desired command because all commands are shown in the menu if you undo or redo.

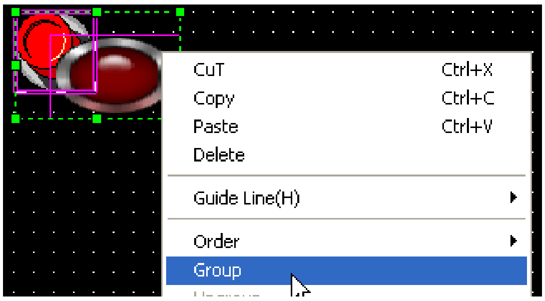
6.10 Group and Ungrouping

You can group or ungroup figures or objects.

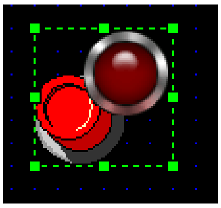
[Procedure]

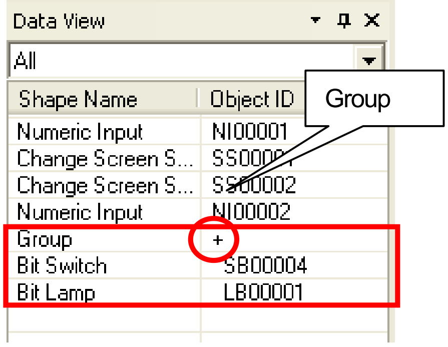
(a) Press the left button on the mouse on the objects you want to group.

(b) Select [Edit]-[Grouping]-[Group] or select the figure or object you want to group and select [Group] in the context menu, the selected objects and figures are grouped.


CuT Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete
Guide Line(H)
Order
Group

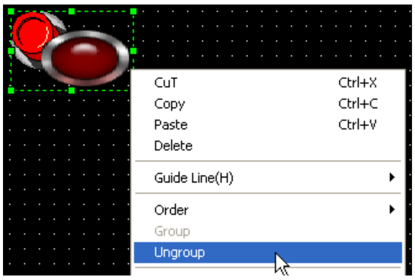
You can confirm the grouped items in the data component window.



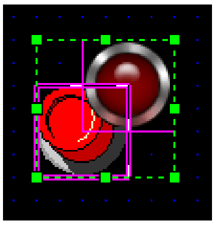

Data View
All
Group

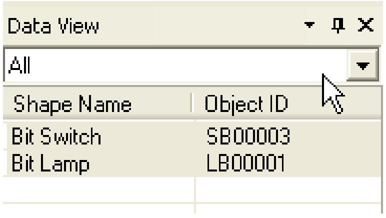
Shape Name	Object ID
Numeric Input	NI00001
Change Screen S...	SS00001
Change Screen S...	SS00002
Numeric Input	NI00002
Group	+
Bit Switch	SB00004
Bit Lamp	LB00001

(c) Select [Edit]-[Grouping]-[Ungroup] or select the figure or object you want to group.


CuT Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup

(d) You can confirm the grouped items in the data view window.




Data View
All

Shape Name	Object ID
Bit Switch	SB00003
Bit Lamp	LB00001

Note

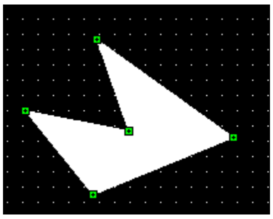
(1) There is no limit to grouping.

(2) A grouped figure or object can be recursively grouped with another figure or object and if they are ungrouped, each of them is ungrouped one by one in the opposite sequence of grouping.

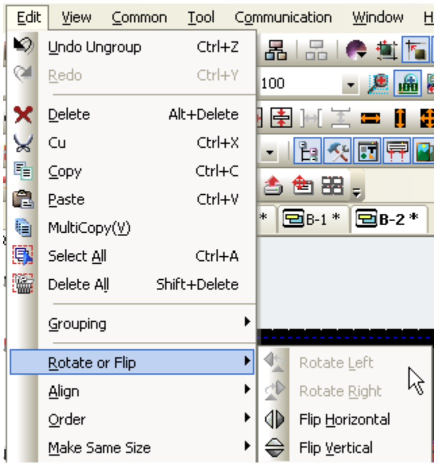
6.11 Rotation

You can rotate a figure in a desired direction. You can rotate only figures but not objects.

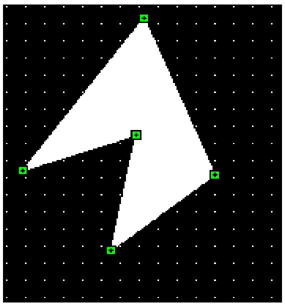
Rotation of a figure (e.g. polygon)
[Procedure]
(a) Edit a polygon in the display.



(b) Select [Edit]-[Rotate or Flip]-[Rotate Left].

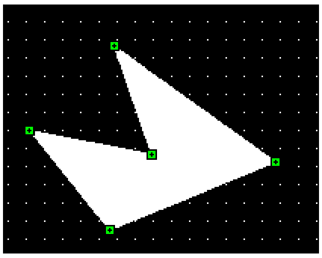

Edit
View
Common
Tool
Communication
Window
H
Undo Ungroup Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
100
B-1 *
B-2 *
Rotate Left
Rotate Right
Flip Horizontal
Flip Vertical

Now the polygon has turned about 90 degrees anticlockwise.



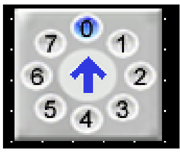
(c) Select [Edit]-[Rotate Right].

Now the polygon has come to its original position.

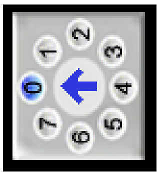


Note

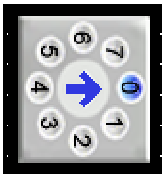
(1) Object can not be rotated.
(2) If there is object among groups or selected things, rotation is not available.
(3) Group or several figures are rotated around the center of maximum square area.
(4) Images are rotated as below.



->90° CCW Rotation from the original



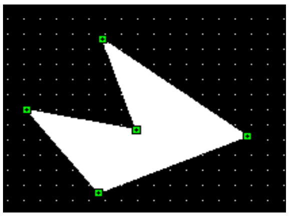
->90° CW Rotation from the original



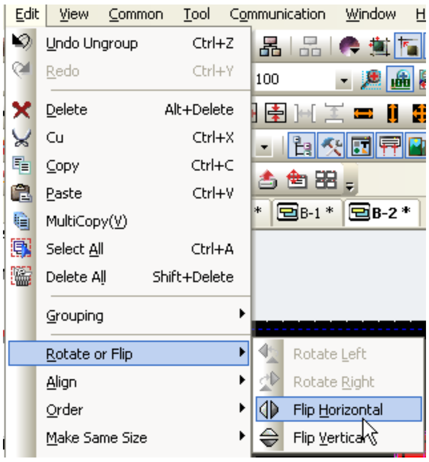
6.12 Symmetric Movement

You can move a figure or object symmetrically.

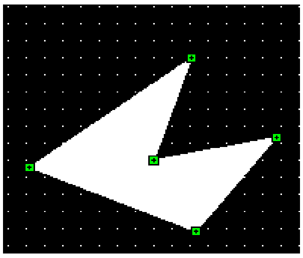
Symmetric of a Figure (e.g. a polygon)
[Procedure]
(a) Create a polygon.



(b) Select [Edie]-[Rotate or Flip]-[Flip Horizontal].

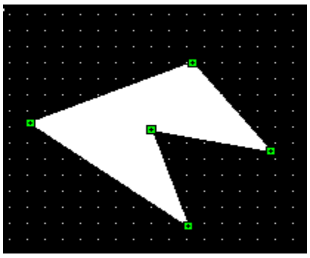

Edit
View
Common
Tool
Communication
Window
H
Undo Ungroup Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Rotate Left
Rotate Right
Flip Horizontal
Flip Vertical
100
B-1 *
B-2 *

The figure has now turned 180 degrees symmetrically and horizontally.



(c) Select [Edit]-[Rotate or Flip]-[Flip Vertical].

The figure has now turned 180 degrees symmetrically and vertically.



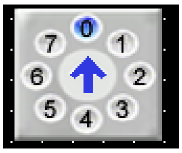
Note

(1) Object can not be moved symmetrically

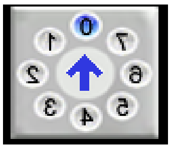
(2) If there is object among groups or selected things, symmetric movement is not available..

(3) Group or several figures are moved symmetrically around the center of maximum square area.

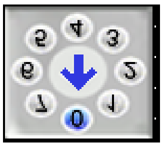
(4) Images are moved symmetrically as below.



-> Flip horizontally



->Flip vertically



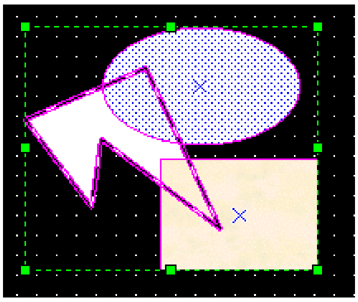
6.13 Arrangement

You can arrange a figure or object to the left, right, top, bottom and center.

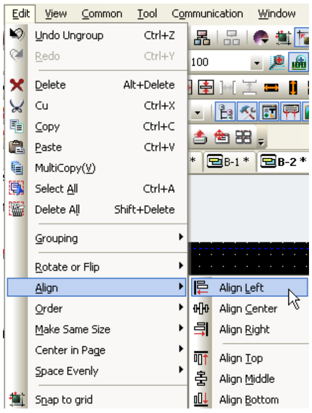
Example of Arrangement of a Figure to the Left

[Procedure]

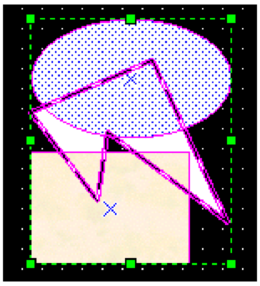
(a) Create a polygon, circle and rectangle.



(b) Select [Edit]-[Align]-[Align left].


Edit
View
Common
Tool
Communication
Window
Undo Ungroup Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Center in Page
Space Evenly
Snap to grid
100
B-1 *
B-2 *
Align Left
Align Center
Align Right
Align Top
Align Middle
Align Bottom

Now the figures have been justified to the left of the first created figure, that is, the polygon shown in bold lines.



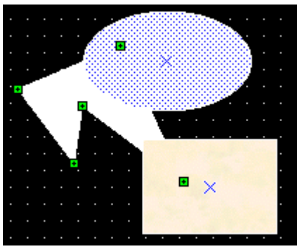
Note

(1) For arrangement, there must be at least two objects or figures.

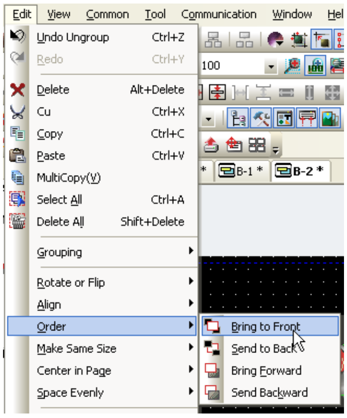
6.14 Change of Drawing Order

You can change the order of drawing a figure or object in the order of the first, the last, one before and one after.

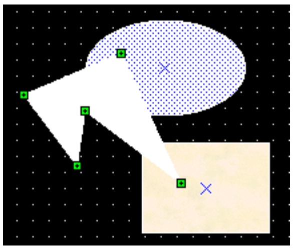
Example of Change of Figure Order
[Procedure]
(a) Create a polygon, circle and a rectangle and then select the polygon, which was first created.

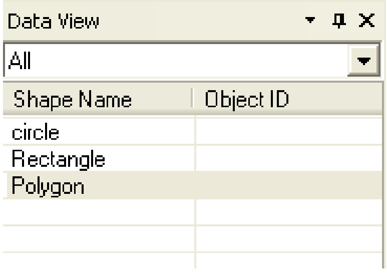


(b) Select [Edit]-[Order]-[Bring to Front].


Edit
View
Common
Tool
Communication
Window
Hel
Undo Ungroup Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Center in Page
Space Evenly
Bring to Front
Send to Back
Bring Forward
Send Backward
100
B-1 *
B-2 *

Now the first created polygon is the furthest to the front, that is, created last. You can also check the result in the data view window.





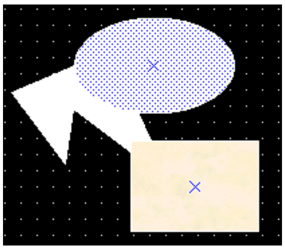
Data View

All

Shape Name	Object ID
circle	
Rectangle	
Polygon	

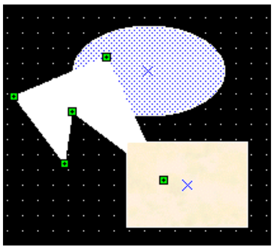
(c) Select [Edit]-[Order]-[Send to Back].

Now the result is the same when you created it first.



(d) Select [Edit]-[Order]-[Bring to Front].

Now the polygon is between the ellipse and circle.



(e) Select [Edit]-[Order]-[Send to Back].

Now the result is the same as (c).

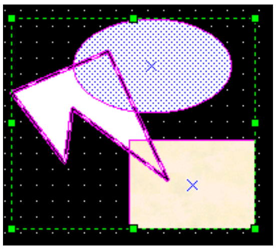
6.15 Same Size

You can change the size of a figure or object to the width, height and size of another figure or object.

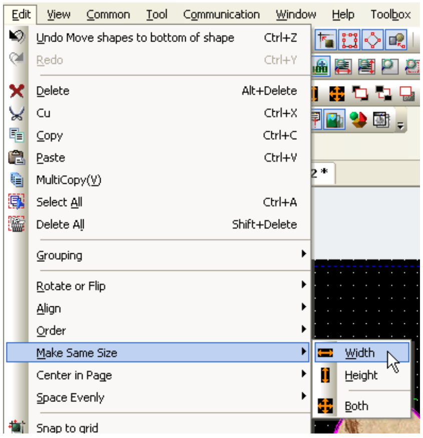
Example

[Procedure]

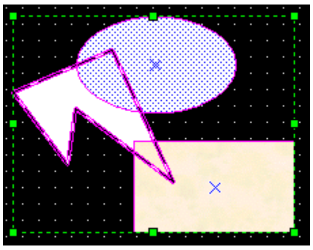
(a) Create a polygon, circle and rectangle and select them all.

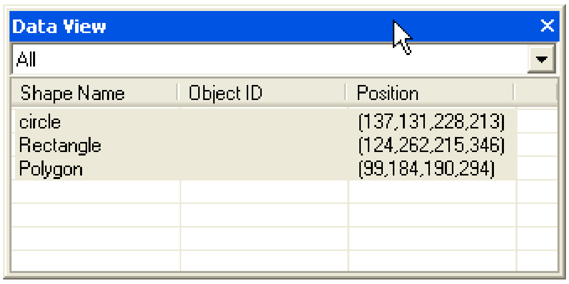


(b) Select [Edit]-[Make Same Size]-[Width].


Edit
View
Common
Tool
Communication
Window
Help
Toolbox
Undo Move shapes to bottom of shape Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Center in Page
Space Evenly
Snap to grid
Width
Height
Both

The widths of all the figures are equal to that of the polygon, which was first created. You can check the value in the data view window.





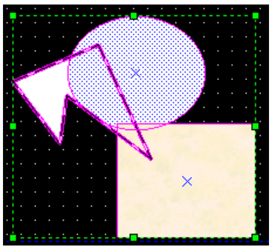
Data View

All

Shape Name	Object ID	Position
circle		(137,131,228,213)
Rectangle		(124,262,215,346)
Polygon		(99,184,190,294)

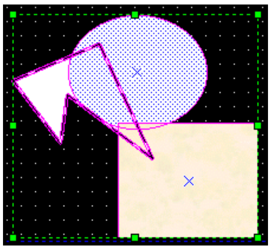
(c) Select [Edit]-[Make Same Size]-[Height].

The heights of all the figures are equal to that of the polygon, which was first created. You can check the value in the data view window.



(d) Select [Edit]-[Make Same Size]-[Both].

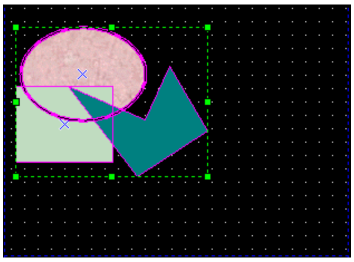
The heights and widths of all the figures are equal to those of the polygon, which was first created. You can check the values in the data view window.

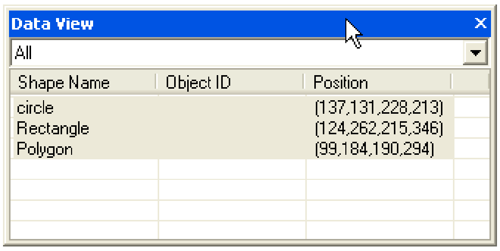


6.16 Justification to the Center

You can move a figure or object to the center of the width or height of the display.

Example of justification to the center
[Procedure]
(a) Create a polygon, circle and rectangle and select them all.



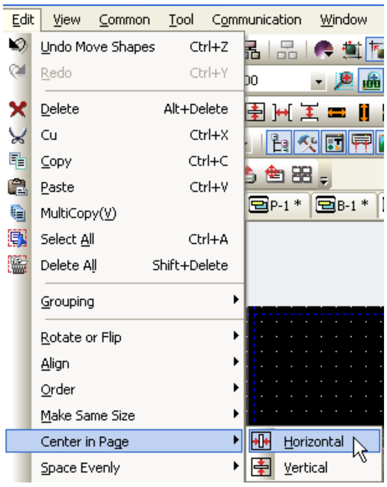


Data View

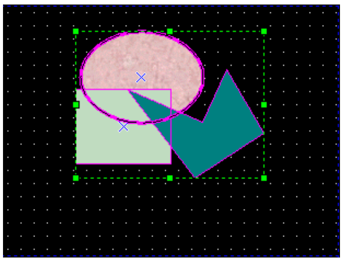
All

Shape Name	Object ID	Position
circle		(137,131,228,213)
Rectangle		(124,262,215,346)
Polygon		(99,184,190,294)

(b) Select [Edit]-[Center in Page]-[Horizontal].

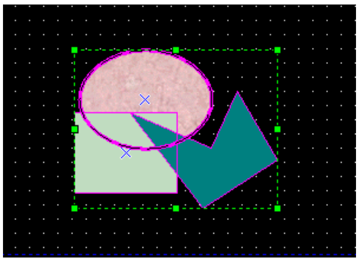

Edit
View
Common
Tool
Communication
Window
Undo Move Shapes Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Center in Page
Space Evenly
Horizontal
Vertical
P-1 *
B-1 *

The figures have now been moved to the horizontal center of the display.



(c) Select [Edit]-[Center in Page]-[Vertical].

Now the figures have moved to the vertical center of the display.



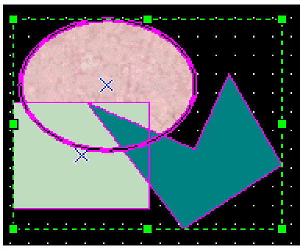
6.17 Same Space

You can make the spaces of a figure or object constant vertically or horizontally.

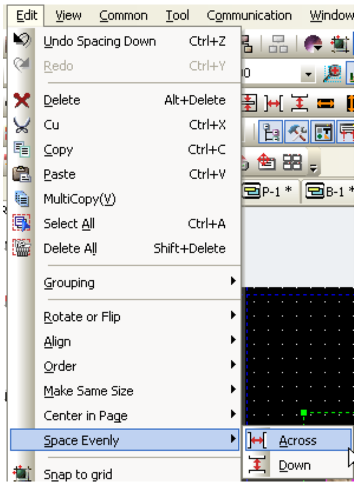
Example

[Procedure]

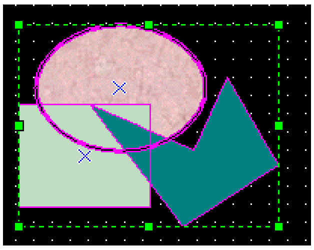
(a) Create a polygon, circle and rectangle and select them all.



(b) Select [Edit]-[Space Evenly]-[Across].

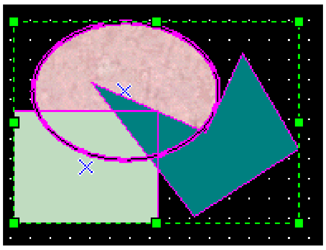

Edit
View
Common
Tool
Communication
Window
Undo Spacing Down Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Center in Page
Space Evenly
Across
Down
Snap to grid
P-1 *
B-1 *

Now the spaces of all the figures have been justified to the rectangle, which is located at the center as shown below.



(c) Select [Edit]-[Space Evenly]-[Down].

Now the vertical spaces of all the figures have been justified to the rectangle, which is located at the center as shown below



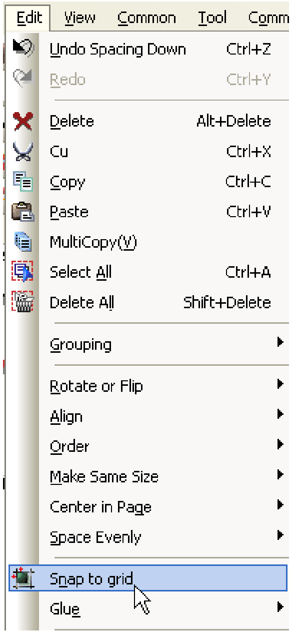
6.18 Paste

Using this function, you can paste a figure or object by moving it near the handle, vertex or intersecting point of a figure or object.

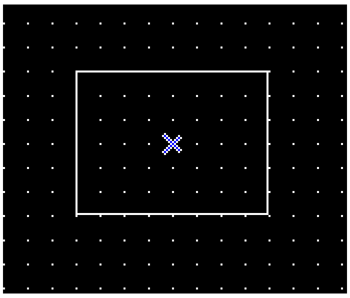
Example of pasting a figure to the grid

[Procedure]

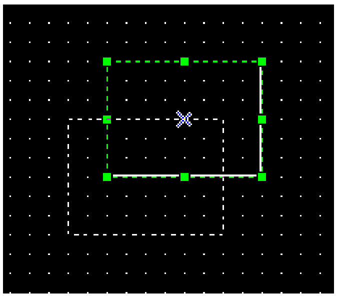
(a) Select [Edit]-[Snap to Grid].

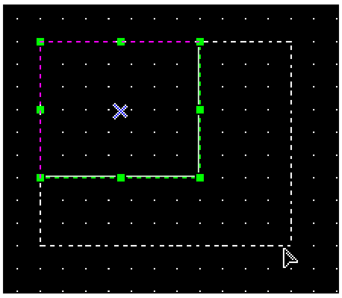

Edit
View
Common
Tool
Comm
Undo Spacing Down Ctrl+Z
Redo Ctrl+Y
Delete Alt+Delete
Cu Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
MultiCopy(V)
Select All Ctrl+A
Delete All Shift+Delete
Grouping
Rotate or Flip
Align
Order
Make Same Size
Center in Page
Space Evenly
Snap to grid
Glue

(b) Create a rectangle.
The corners of the rectangle fit in the grid.



(c) Select, move or change the size of the rectangle.
The rectangle moves along the gird.

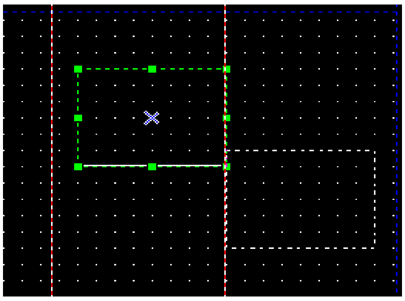




Example of pasting a figure to guide lines

[Procedure]

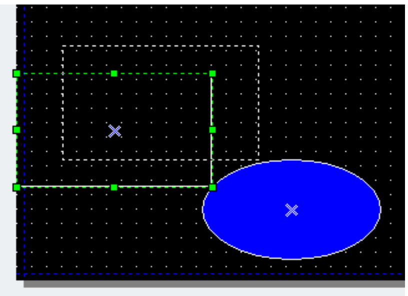
(a) Create a rectangle.
(b) Drag the guide line from the edge of the left frame.
(c) Select [Edit]-[Glue]-[Glue to Guide Line].
(d) Move the rectangle around the guide line.
The rectangle fits onto the guide line.



Example of pasting a figure to handle

[Procedure]

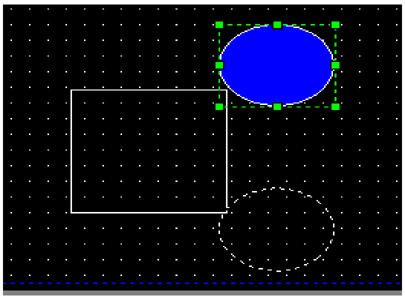
(a) Create a rectangle and a circle.
(b) Select [Edit]-[Glue]-[Glue to Handles].
(c) Move the rectangle around the circle.
(d) The rectangle fits onto the circle.



Example of pasting a figure to vertex

[Procedure]

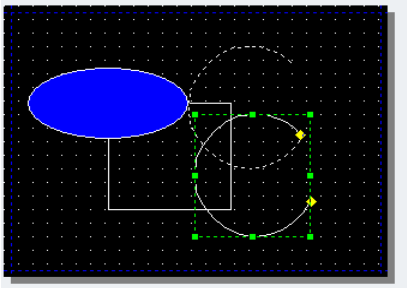
(a) Create a rectangle and an ellipse.
(b) Select [Edit]-[Glue]-[Glue to Verties].
(c) Move the rectangle around the vertex.
(d) The vertex of the rectangle is tangent to the ellipse.



Example of pasting a figure to intersect point

[Procedure]

(a) Create a rectangle, ellipse and pie.
(b) Select [Edit]-[Glue]-[Glue to Intersect Point].
(c) Move the pie around the intersect point of the rectangle and ellipse.
(d) The pie is tangent to the intersect point of the rectangle and ellipse.



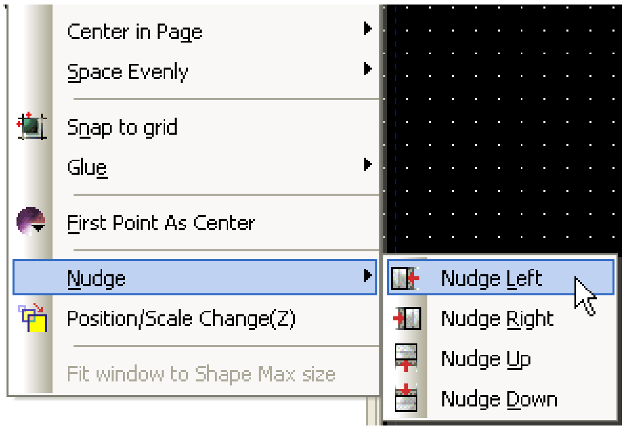
Note

(1) Pasting function is not only applied to one screen but to entire project.

6.19 Movement by a Dot

You can use this command to move a figure or object precisely.

Example of movement by a dot
[Procedure]
(a) Create an object.
(b) Select [Edit]-[Nudge]-[Nudge Left].


Center in Page
Space Evenly
Snap to grid
Glue
First Point As Center
Nudge
Position/Scale Change(Z)
Fit window to Shape Max size
Nudge Left
Nudge Right
Nudge Up
Nudge Down

You can check that the object has been moved a dot to the left in the coordinates information in the data view window.

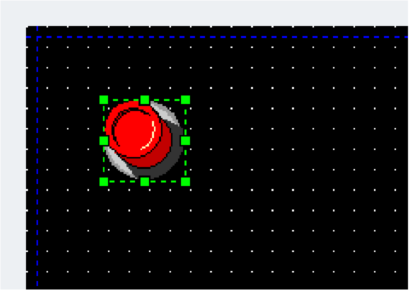
The following are hot keys for movement by a dot.

Shortcut key	Description
→	Moves the selected item a dot to the right.
←	Moves the selected item a dot to the left.
↑	Moves the selected item a dot up.
↓	Moves the selected item a dot down.

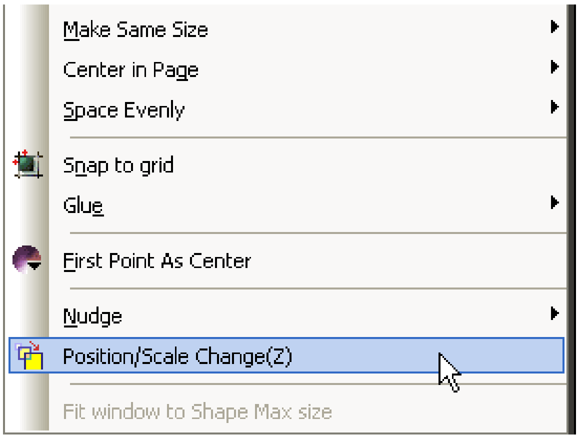
6.20 Change of Location and Size of Figure and Object

By using this function, you can move a figure or object to a particular point or change the width and height.

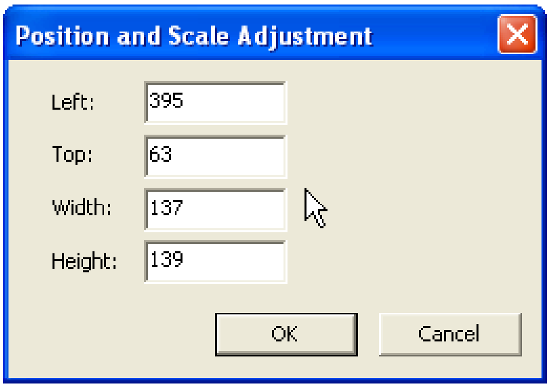
Example of changing the location and size
[Procedure]
(a) Create a switch object.



(b) Select [Edit]-[Position/Scale Change].


Make Same Size
Center in Page
Space Evenly
Snap to grid
Glue
First Point As Center
Nudge
Position/Scale Change(Z)
Fit window to Shape Max size

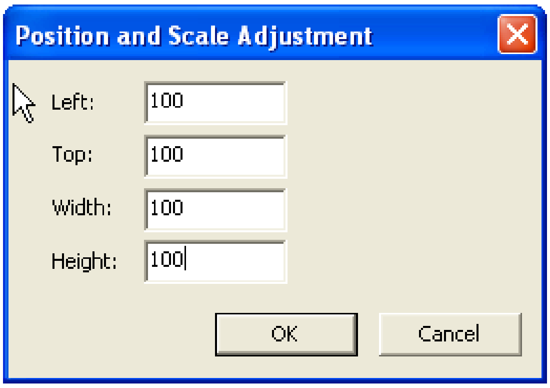
The following dialog box for adjusting the location and size is invoked. In the dialog box, the information of the location, width and height is shown.


Position and Scale Adjustment

Left: 395
Top: 63
Width: 137
Height: 139

OK
Cancel

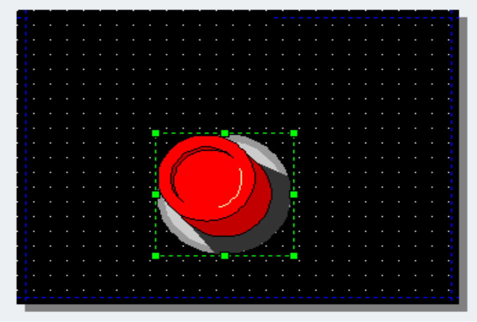
(c) Enter a desired location, width and height in the text box of the dialog box.

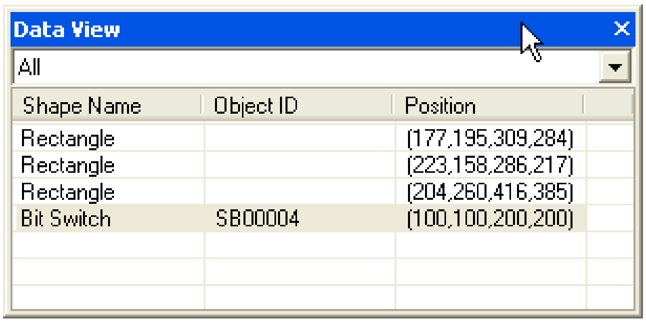


Position and Scale Adjustment

Left: 100
Top: 100
Width: 100
Height: 100

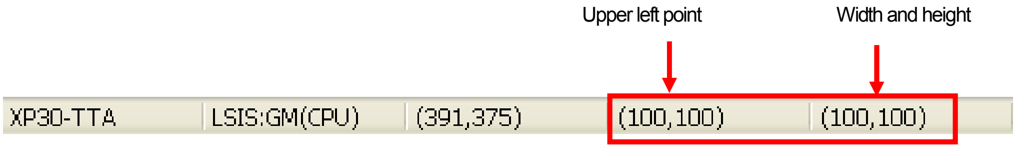
With the object having moved to the following location(100,100), its width and height has also increased to 100 respectively in the data view window and status bar.





Data View

Shape Name	Object ID	Position
Rectangle		(177,195,309,284)
Rectangle		(223,158,286,217)
Rectangle		(204,260,416,385)
Bit Switch	SB00004	(100,100,200,200)



XP30-TTA | LSIS:GM(CPU) | (391,375) | (100,100) | (100,100)

Note

(1) The size of the history alarm viewer, data list viewer, logging viewer, screen insertion, part, window cannot be changed.

6.21 Auxiliary Functions for Editing Object and Figure

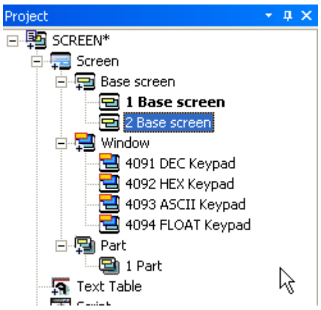
You can use auxiliary functions to edit the program.

6.21.1 Thumbnail

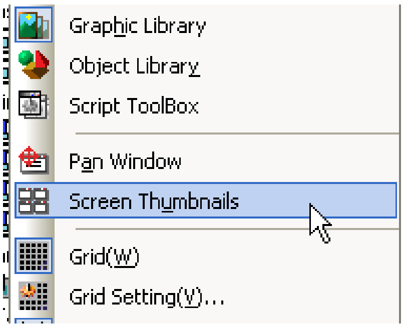
The thumbnail refers to the function displaying all the base, window and part screens of the current project in a single screen. You can also directly shift to a desired window by double clicking on it.

[Procedure]

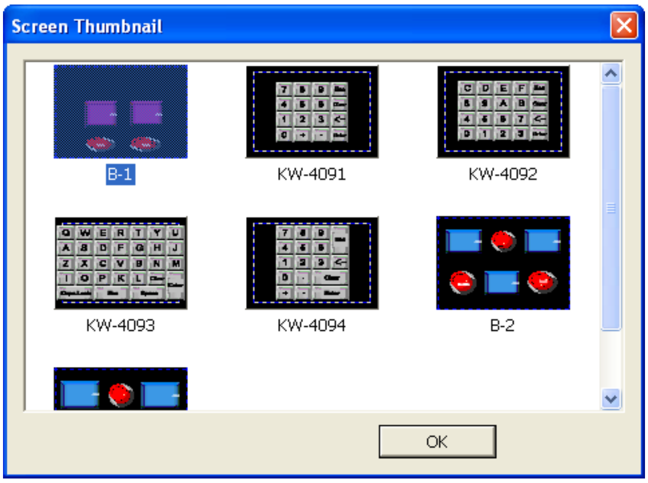
(a) Create a project with base screens 1 and 2 and fill the screens.


Project
SCREEN*
Screen
Base screen
1 Base screen
2 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
1 Part
Text Table

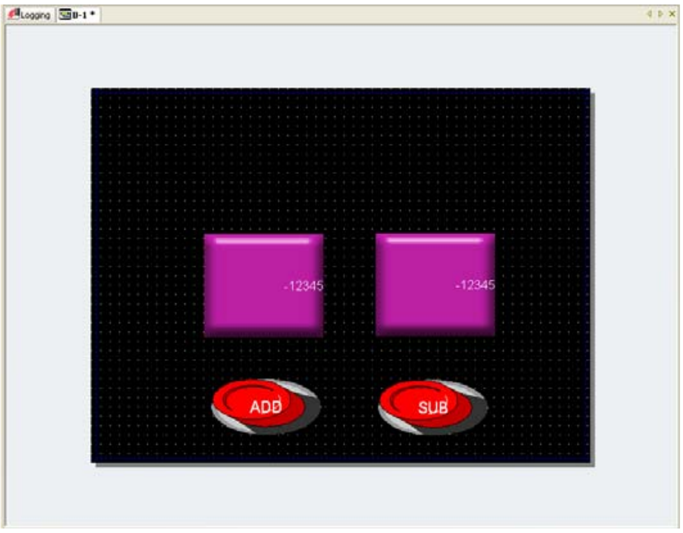
(b) Select [View]-[Screen Thumbnails].


Graphic Library
Object Library
Script ToolBox
Pan Window
Screen Thumbnails
Grid(W)
Grid Setting(V)...

All the base, window and part screens included in the project are displayed in a small size. To close the dialog box, click on the OK button.



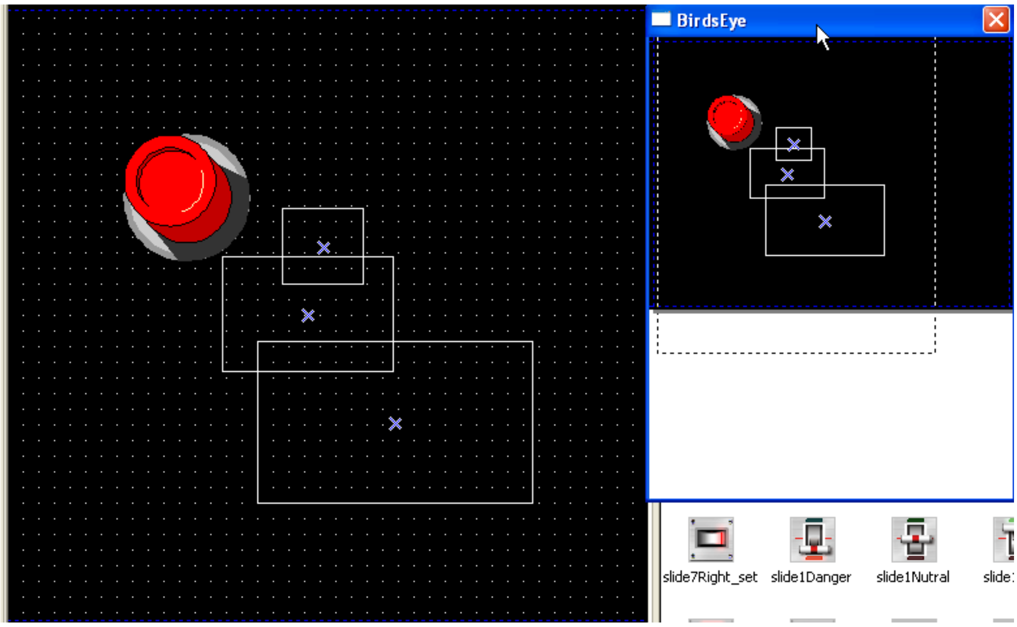
(c) Double click on base screen B-1.
The dialog box is closed and the display B-1 is activated coming to the front.



6.21.2 Pan Window

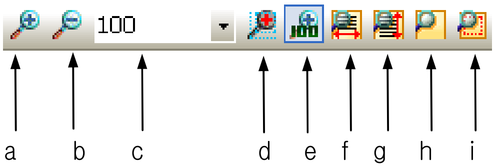
You can see the editing status in a small size using the pan window in editing the entire display.
If there is a scroll area in the display, a dotted quadrangular area appears in the pan window so that you can see the area you cannot see in the real display through the check box in the pan window.

[Procedure]
(a) Place an object and reduce the display so that there is a scroll in it.
(b) Select [View]-[Pan Window]. Then the following pan window appears with a solid line area where you can move the invisible area. Check how the invisible area of the actual display is seen by moving the solid line transfer rectangle.



6.21.3 Zooming

You can zoom in and out a figure or object.
You can edit details of a figure or object with various magnifications using [View].
The minimum unit of the magnification by zooming in and out is 25% and the magnification may range between 10% and 500%.

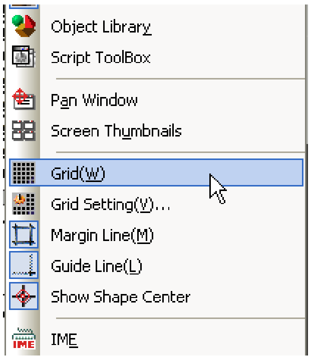


Item	Description
Zoom in (a)	Each click enlarged the screen by 25%
Zoom out (b)	Each click reduces the screen by 25%
100 Magnification (c)	You can enter a desired magnification.
Zoom Within Rect (d)	The selected area is enlarged to fit into the screen.
100% (e)	Goes back to the 100% size.
Zoom to fit page width (f)	Enlarges to the full width of the screen.
Zoom to fit page height(g)	Enlarges to the full height of the screen.
Zoom to fit whole page(h)	Enlarges to the full size of the screen.
Zoom to fit selection(i)	The selected object or figure is enlarged to the full size of the screen.

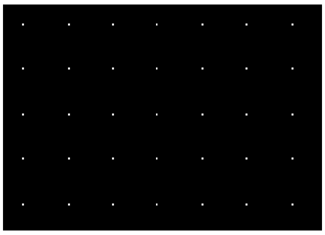
6.21.4 Grid and Grid setting

You can conveniently move and arrange objects and figures by using the grid.
The following is the procedure of displaying and hiding the grid.

[Procedure] Grid Display
(a) Select [View]-[Grid].

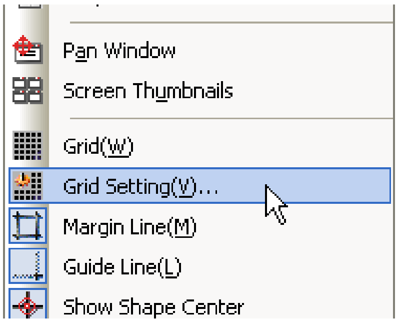

Object Library
Script ToolBox
Pan Window
Screen Thumbnails
Grid(W)
Grid Setting(V)...
Margin Line(M)
Guide Line(L)
Show Shape Center
IME

[Grid Hidden]

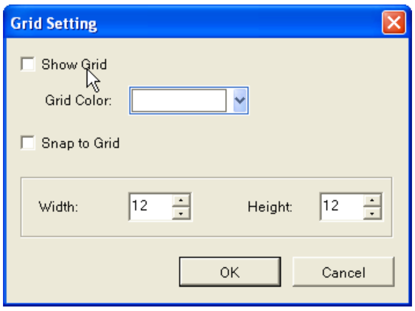

[Grid Displayed]

When the grid is displayed, if you select [View]-[View/Hide Grid], the grid is hidden again.
The following describes grid setting.

[Procedure] Grid Setting
(a) Select [View]-[Grid Setting].


Pan Window
Screen Thumbnails
Grid(W)
Grid Setting(V)...
Margin Line(M)
Guide Line(L)
Show Shape Center

The following grid setting dialog box is invoked.



Grid Setting

☐ Show Grid

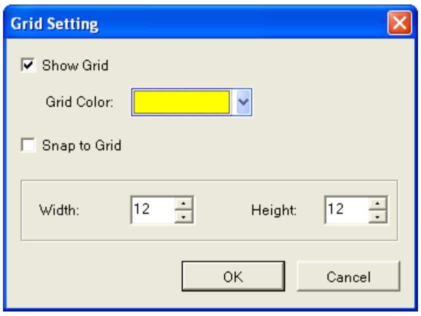
Grid Color:

☐ Snap to Grid

Width: 12

Height: 12

(b) Change the color or space of the grid and check whether the settings apply in the screen. The following “Snap to Grid” function is same as that in “Edit” menu.



Grid Setting

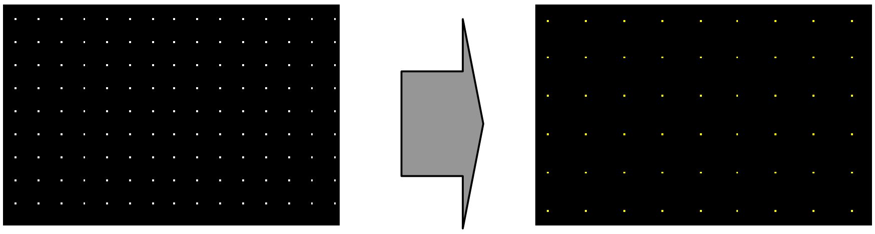
☑ Show Grid

Grid Color: 🟨

☐ Snap to Grid

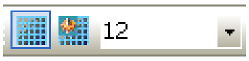
Width: 12

Height: 12



Note

(1) You can also set [View/Hide Grid] in the tool bar and you can directly enter the space of the grid in the combo box. The horizontal and vertical spaces are equal.



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(2) Grid Setting is not only applied to one screen but also applied to entire project.

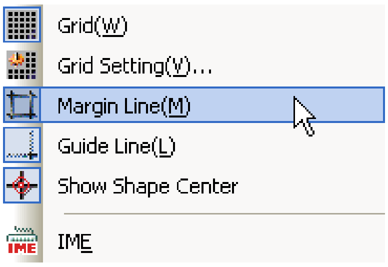
6.21.5 View/Hide of Margin Line and Guide Line

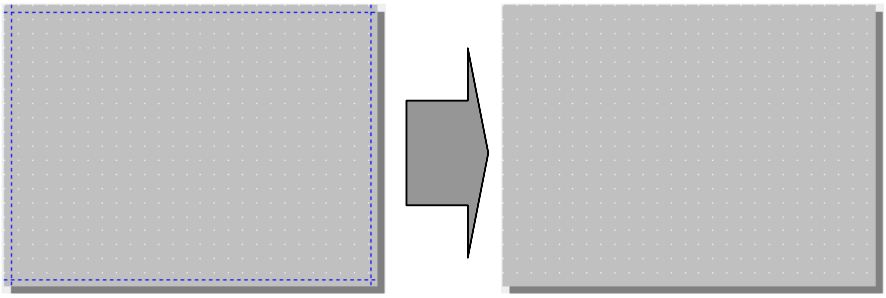
The margin line sets the furthermost boundary of the screen beyond which you do not want to edit.
A guide line provides the maximum quadrangular base line of the editing display, to which you can justify figures or objects.

The following is the procedure of viewing or hiding the border line.

[Procedure] Viewing or hiding the border line

(a) Select [View]-[Margin Line]. A margin line is set in the screen by default, so you can check the margin line is gone.



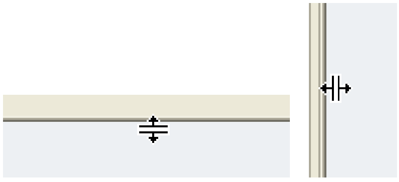


(b) If you select [View]-[Margin Line] again with the margin line gone, it appears back.

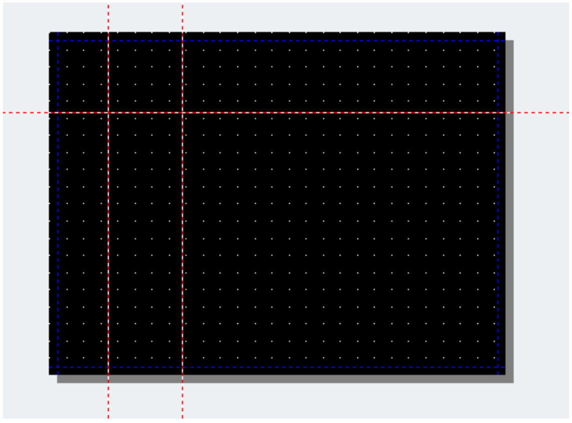
The following is the procedure of viewing or hiding the guide line.

[Procedure] Viewing or hiding the guide line

(a) Select [View]-[Guide Line]. If you place the mouse pointer on the border of the screen frame at the top and on the left of the screen, the pointer turns into a cursor with which you can create an Guide line.



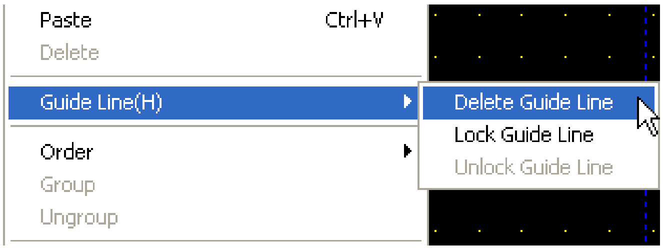
(b) Press the left button on the mouse, drag it and release the mouse button, and then the guide line is created.



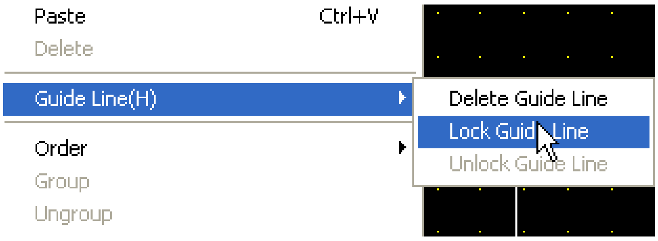
(c) If you click on [View]-[Guide Line] once again, the Guide line is removed from the screen.

Note

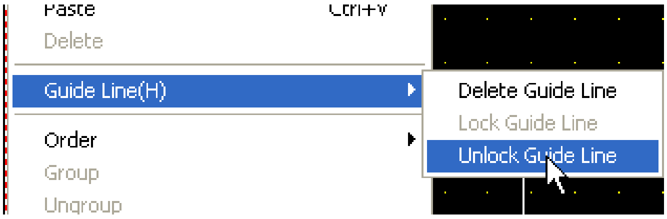
(1) If you want to remove a particular Guide line, press the right button on the mouse on the Guide line you want to delete and select [Delete Guide Line].


Paste
Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup
Delete Guide Line
Lock Guide Line
Unlock Guide Line

(2) If you want to fix a particular guide line, press the right button on the mouse on the guide line you want to fix and select [Lock Guide Line].


Paste
Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup
Delete Guide Line
Lock Guide Line
Unlock Guide Line

(3) If you want to undo fixing an Guide line, press the right button on the mouse on the fixed guide line and select [Unlock Guide Line].


Paste
Ctrl+V
Delete
Guide Line(H)
Order
Group
Ungroup
Delete Guide Line
Lock Guide Line
Unlock Guide Line

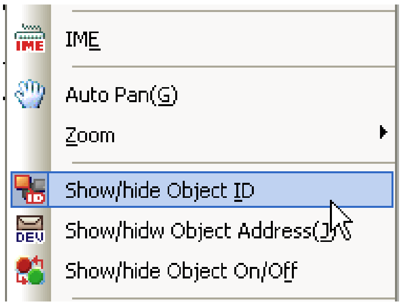
(4) Show/hide Margin line/Guide line function is not only to applied to one screen but also applied to entire project.

6.21.6 Object ID Viewer

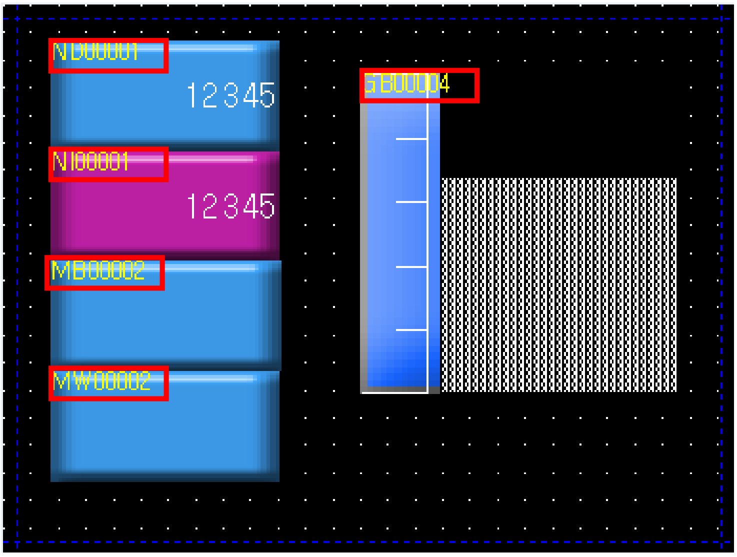
Every kind of object is assigned an ID, which is the most important element that makes an object unique. The ID begins with 1 and you can identify an object easily by viewing or hiding it.

[Procedure]

(a) Select [View]-[Show/hide Object ID].


IME
Auto Pan(G)
Zoom
Show/hide Object ID
Show/hidw Object Address(J)
Show/hide Object On/Off

(b) The ID of the object existing in the screen is displayed on the upper left of the object.


ND00001
12345
NI00001
12345
MB00002
MW00002
GB00004

(c) If you click on [View]-[Show/hide Object ID] once again, the object ID is gone.

The IDs of objects are as follows.

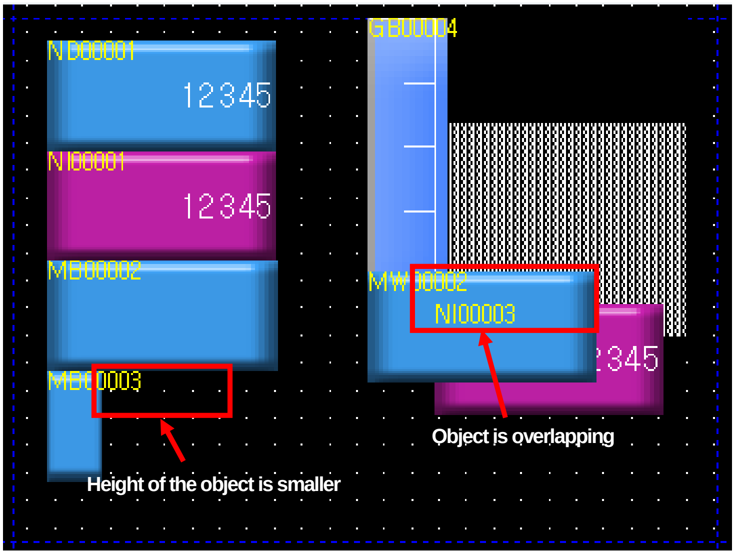
Object	ID	Description
Bit switch	SB0000X	SB refers to the bit switch and 0000X refers to the number.
Word switch	SD0000X	SD refers to the word switch, 0000X refers to the number.
Change Screen Switch	SS0000X	SS refers to the change screen switch, 0000X refers to the number.
Special switch	SP0000X	SP refers to the special switch, 0000X refers to the number.
Multi switch	SM0000X	SM refers to the multi switch, 0000X refers to the number.
Bit lamp	LB0000X	LB refers to the bit lamp, 0000X refers to the number.
Word lamp	LW0000X	LW refers to the word lamp, 0000X refers to the number.
N-state lamp	NL0000X	NL refers to the N-state lamp, 0000X refers to the number.

Object	ID	Description
Clock	CL0000X	CL refers to the clock, 0000X refers to the number.
Bit message	MB0000X	MB refers to the bit message, 0000X refers to the number.
Word message	MW0000X	MW refers to the word message, 0000X refers to the number.
Numeric Display	ND0000X	ND refers to the Numeric display, 0000X refers to the number.
Numeric Input	NI0000X	NI refers to the Numeric input, 0000X refers to the number.
Text Display	AD0000X	AD refers to the text display, 0000X refers to the number.
Text Input	AI0000X	AI refers to the text input, 0000X refers to the number.
Bit window	WB0000X	WB refers to the Bit window, 0000X refers to the number.
Word window	WW0000X	WW refers to the Word window, 0000X refers to the number.
Bit part (fixed)	PBD0000X	PBD refers to the Bit part (fixed), 0000X refers to the number.
Bit part (XY)	PBS0000X	PBS refers to the Bit part (XY), 0000X refers to the number.
Bit part (line)	PBL0000X	PBL refers to the Bit part (line), 0000X refers to the number.
Bit part (route)	PBR0000X	PBR refers to the Bit part (route), 0000X refers to the number.
Word part (fixed)	PWD0000X	PWD refers to the Word part (fixed), 0000X refers to the number.
Word part (XY)	PWS0000X	PWS refers to the Word part (XY), 0000X refers to the number.
Word part (line)	PWL0000X	PWL refers to the Word part (line), 0000X refers to the number.
Word part (route)	PWR0000X	PWR refers to the Word part (route), 0000X refers to the number.
Animation	AM0000X	AM refers to the Animation, 0000X refers to the number.
Bar graph	GB0000X	GB refers to the Bar graph, 0000X refers to the number.
Pie graph	GP0000X	GP refers to the Pie graph, 0000X refers to the number.
Meter graph	GM0000X	GM refers to the Meter graph, 0000X refers to the number.
Closed Graph (ellipse)	GE0000X	GE refers to the Closed Graph (ellipse), 0000X refers to the number.
Closed Graph (polygon)	GPOL0000X	GPOL refers to the Closed Graph (polygon), 0000X refers to the number.
Trend graph	GT0000X	GT refers to the Trend graph, 0000X refers to the number.
Logging trend graph	GLOGT000X	GLOGT refers to the logging trend graph, 0000X refers to the number
Logging scatter graph	GS000X	GS refers to the logging scatter graph, 0000X refers to the number
Real-time scatter graph	RGS000X	RGS refers to the real-time scatter graph, 000X refers to the number.
History alarm viewer	HA0000X	HA refers to the History alarm viewer, 0000X refers to the number.
Data list	DL0000X	DL refers to the Data list viewer, 0000X refers to the number.
Logging viewer	LG0000X	LG refers to the Logging viewer, 0000X refers to the number.
Alarm Navigator	HN0000X	HN refers to the Alarm Navigator, 0000X refers to the number.
Memo pad	MP0000X	MP refers to the memo pad, 000X refers to the number.
Recipe navigator	FM0000X	FM refers to the recipe navigator,000X refers to the number
Data list editor	CV0000X	CV refers to the data list editor, 000X refers to the number
File recipe navigator	FCV0000X	FCV refers to the file recipe navigator, 000X refers to the number.

Note

(1) If the height of the object is smaller than the object ID, the ID is displayed beyond the object area.

(2) All the object IDs are displayed as well when objects are overlapping.


ND00001
12345
NI00001
12345
MB00002
MB00003
GB00004
MW00002
NI00003
345
Object is overlapping
Height of the object is smaller

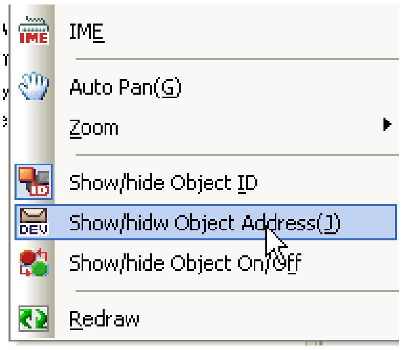
(3) Show/Hide Object ID function is not only applied to one screen but also applied to entire project.

6.21.7 Object Address Viewer

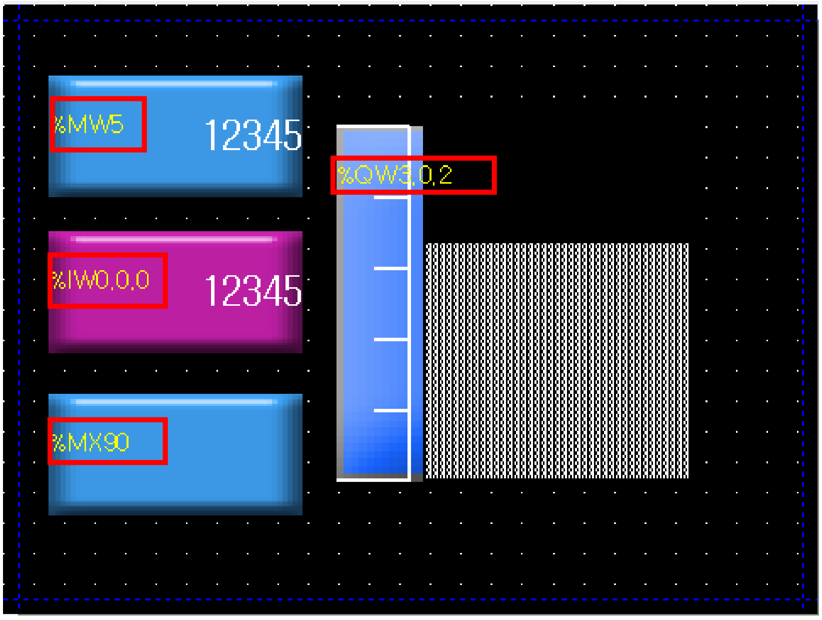
Most objects have one or more addresses. You can see the representative address of the object without opening the properties dialog box.

[Procedure]

(a) Select [View]-[Show/hide Object Address].


IME
Auto Pan(G)
Zoom
Show/hide Object ID
Show/hidw Object Address(J)
Show/hide Object On/Off
Redraw

(b) The representative address of the object existing in the screen is displayed below the object ID on the upper left of the object.

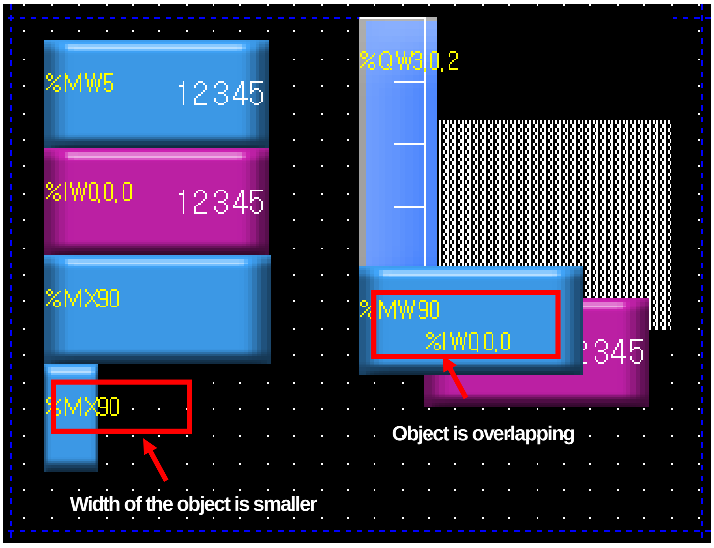

%MW5
12345
%IW0.0.0
12345
%MX90
%QW3.0.2

(c) If you select [View]-[Show/hide Object Address] once again, the address of the object is gone.

Note

(1) If the height of the object is smaller than the object address, the object address is displayed beyond the object range.

(2) The object address is displayed at the top when the objects are overlapping.


%MW5
12345
%IW0.0.0
12345
%MX90
%MX90
%QW3.0.2
%MW90
%IW0.0.0
345

Object is overlapping

Width of the object is smaller

(3) Show/Hide Object Address function is not only applied to one screen but also applied to entire project.

6.21.8 Object Status Viewer

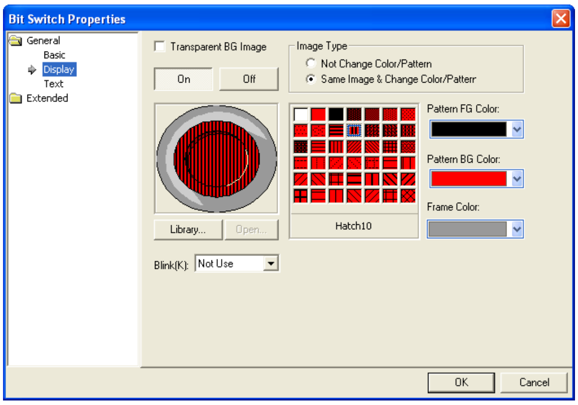
An object which has a different color or character with the bit address has the color or text corresponding to On/Off respectively. Therefore, the editor provides the function of previewing the shape of On and Off. In addition, the color or text of an object is often displayed according to the value of the word address and in such a case, it might have multiple cases according to the values unlike the bit. Therefore, you can preview the shape of the object corresponding to each case in the editor before transferring it to XGT Panel. The following is viewing On/Off of a bit object.

[Procedure] Bit object On/Off

(a) Register a bit lamp in the screen.

(b) Set the On case and Off case for the image, color and caption of the bit lamp by double clicking on them in the dialog box.

[On Properties]

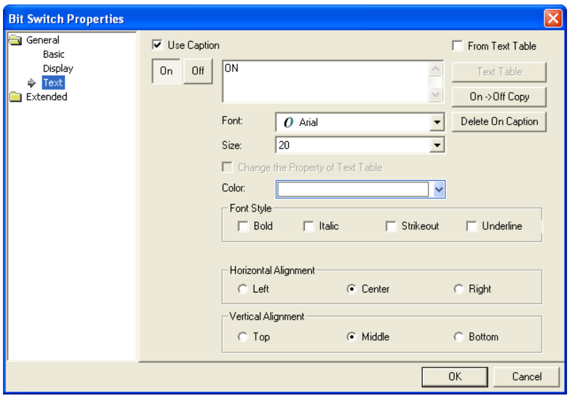

Bit Switch Properties
General
Basic
Display
Text
Extended
On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

☐ Transparent BG Image

Image Type
○ Not Change Color/Pattern
● Same Image & Change Color/Patterr

Hatch10

Blink(K): Not Use


Bit Switch Properties
General
Basic
Display
Text
Extended
On
Off
Text Table
On ->Off Copy
Delete On Caption
OK
Cancel

☑ Use Caption
☐ From Text Table

ON

Font: Arial
Size: 20
☐ Change the Property of Text Table
Color:

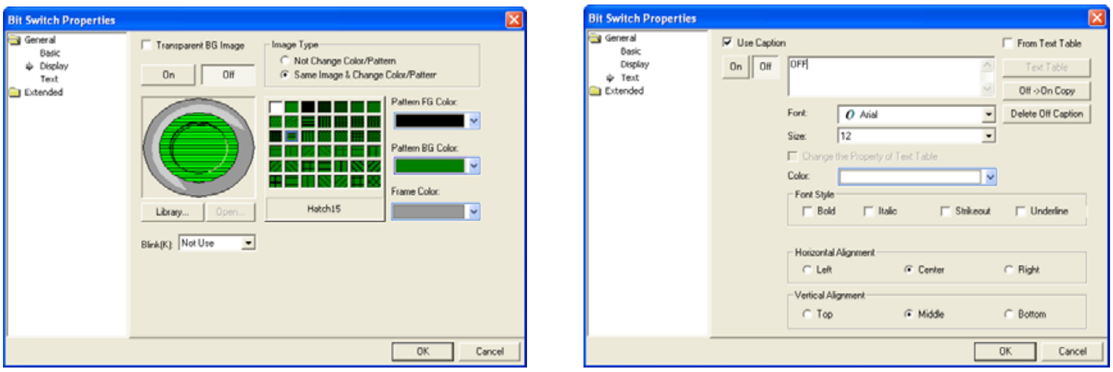
Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment
○ Left ● Center ○ Right

Vertical Alignment
○ Top ● Middle ○ Bottom

Enter the Off properties as follows.

[Off Properties]



Bit Switch Properties

- General
  - Basic
  - Display
  - Text
- Extended

☐ Transparent BG Image

On | Off

Image Type
○ Not Change Color/Pattern
● Same Image & Change Color/Pattern

Pattern FG Color:
Pattern BG Color:
Frame Color:

Hatch15

Library... | Open...

Blink(K): Not Use

OK | Cancel

Bit Switch Properties

☑ Use Caption

☐ From Text Table

On | Off

OFF

Text Table | Off ->On Copy | Delete Off Caption

Font: Arial

Size: 12

☐ Change the Property of Text Table

Color:

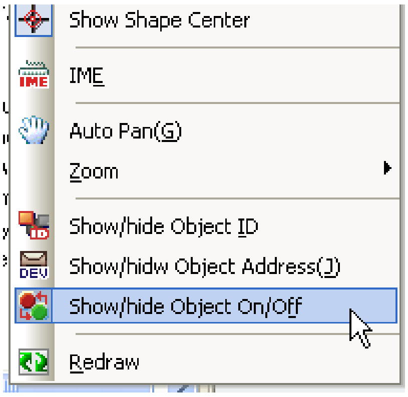
Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment
○ Left ● Center ○ Right

Vertical Alignment
○ Top ● Middle ○ Bottom

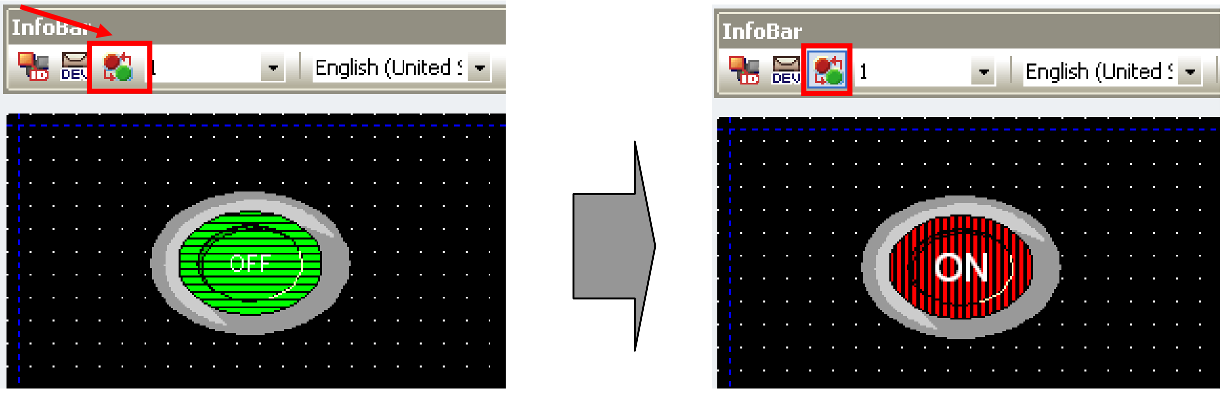
OK | Cancel

(c) Select [View]-[Show/hide Object On/Off].


Show Shape Center
IME
Auto Pan(G)
Zoom
Show/hide Object ID
Show/hidw Object Address(J)
Show/hide Object On/Off
Redraw

(d) The default is Off , so the object existing in the screen is indicated as On.

Click


InfoBar
1
English (United S
OFF
InfoBar
1
English (United S
ON

[Off Case]

[On Case]

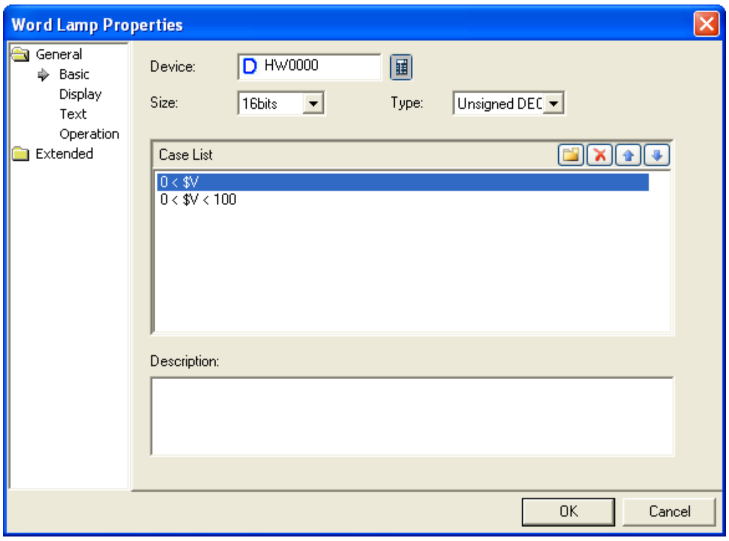
(e) If you select [View]-[Show/hide Object On/Off] once again, the object turns back to Off.

The following is viewing the case of the word object.

[Procedure] Viewing word object case.

(a) Register a word lamp.

(b) Enter two conditional sentences in the [Basic] properties in the dialog box as follows by double clicking on them and set the properties corresponding to each condition.


Word Lamp Properties
General
Basic
Display
Text
Operation
Extended
OK
Cancel

Device: HW0000

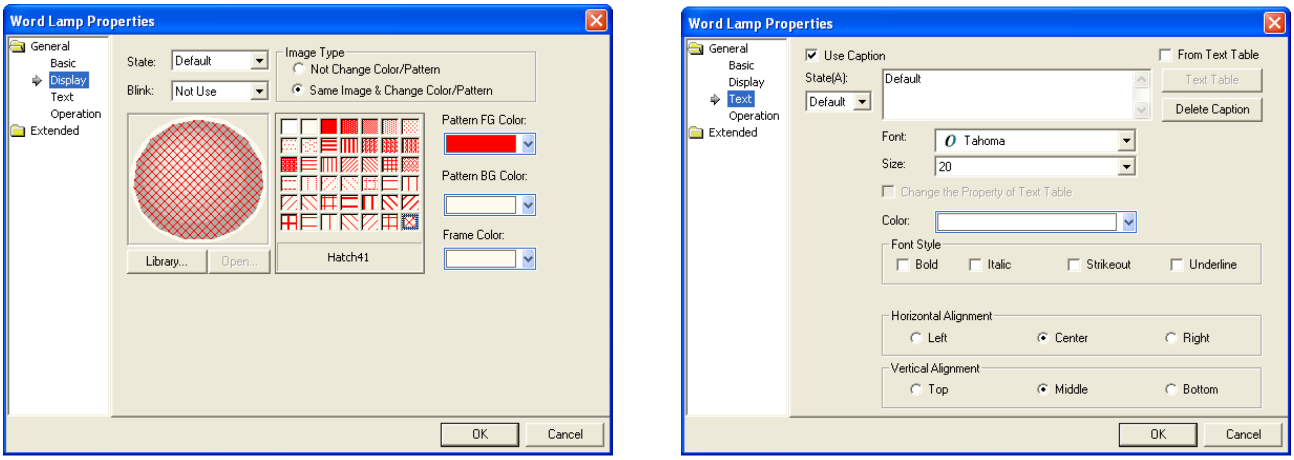
Size: 16bits

Type: Unsigned DEC

Case List:
- 0 < $V
- 0 < $V < 100

Description:

Set as follows according to each condition in [Display] properties.


Word Lamp Properties
General
Basic
Display
Text
Operation
Extended
Library...
Open...
Hatch41
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel
Word Lamp Properties
General
Basic
Display
Text
Operation
Extended
Text Table
Delete Caption
Color:
OK
Cancel

State: Default

Blink: Not Use

Image Type: ○ Not Change Color/Pattern ● Same Image & Change Color/Pattern

☑ Use Caption ☐ From Text Table

State(A): Default

Default

Font: Tahoma

Size: 20

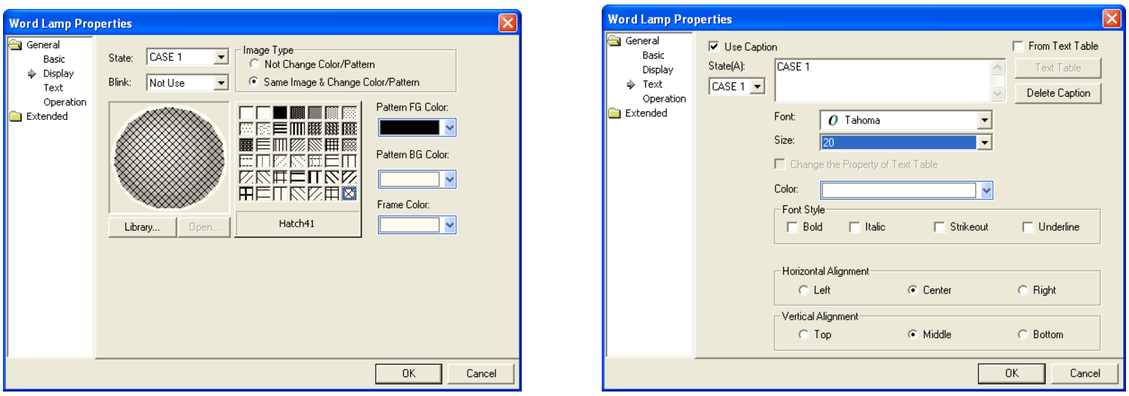
☐ Change the Property of Text Table

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

[Default Case]



Word Lamp Properties

State: CASE 1

Blink: Not Use

Image Type ○ Not Change Color/Pattern ● Same Image & Change Color/Pattern

Pattern FG Color:

Pattern BG Color:

Frame Color:

Hatch41

☑ Use Caption ☐ From Text Table

State(A): CASE 1

CASE 1

Font: Tahoma

Size: 20

☐ Change the Property of Text Table

Color:

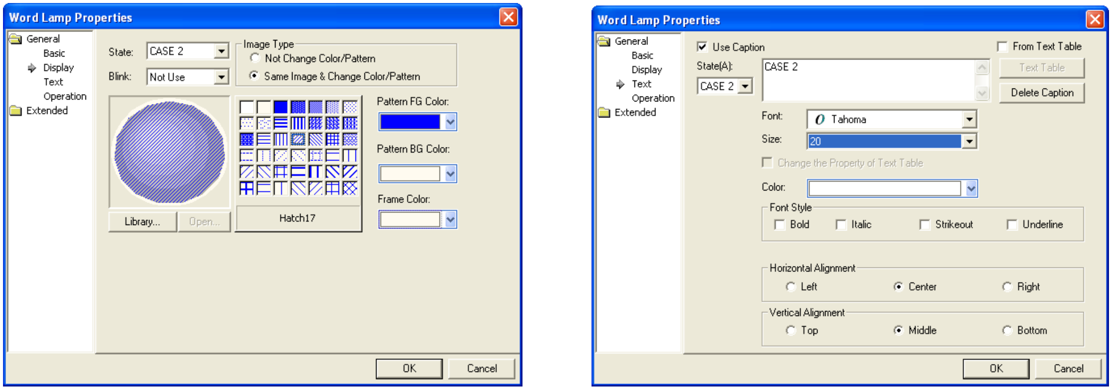
Font Style ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment ○ Left ● Center ○ Right

Vertical Alignment ○ Top ● Middle ○ Bottom

General
Basic
Display
Text
Operation
Extended
Library...
Open...
Text Table
Delete Caption
OK
Cancel

[Case 1]



Word Lamp Properties

State: CASE 2

Blink: Not Use

Image Type ○ Not Change Color/Pattern ● Same Image & Change Color/Pattern

Pattern FG Color:

Pattern BG Color:

Frame Color:

Hatch17

☑ Use Caption ☐ From Text Table

State(A): CASE 2

CASE 2

Font: Tahoma

Size: 20

☐ Change the Property of Text Table

Color:

Font Style ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

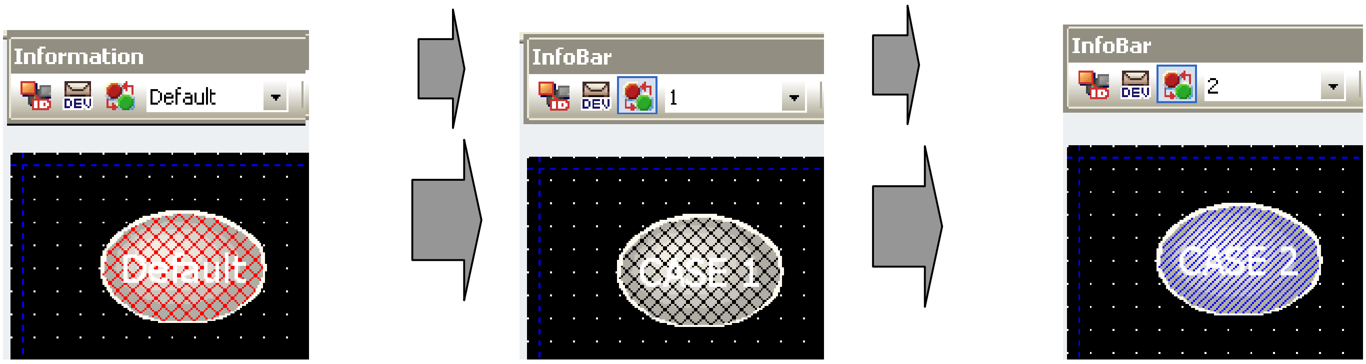
Horizontal Alignment ○ Left ● Center ○ Right

Vertical Alignment ○ Top ● Middle ○ Bottom

General
Basic
Display
Text
Operation
Extended
Library...
Open...
Text Table
Delete Caption
OK
Cancel

[Case 2]

(c) Change the case value in the word case change combo of the information tool bar. The value of XP Builder is set as the default value, so the shape of the object in the display indicates the case of the default value.



Information
ID
DEV
Default
Default
InfoBar
ID
DEV
1
CASE 1
InfoBar
ID
DEV
2
CASE 2

Note

(1) There are nine word cases including 1 to 8 and each of them might have the default case or not, though it may vary according to the object. 1 ~ 8 correspond to the conditional sentence. The objects without the default case are the word message, word window and word parts set as indirect or case.

(2) This function is not only applied to one screen but also applied to entire project.

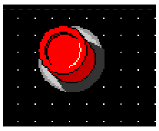
6.21.9 IME Viewer

In XP-Builder, a variety of languages for entry are available with the soft key board (IME) of the language you want to use provided when you enter texts. For details, see 15.3 Text Table. Below we are going to learn how to view or hide the IME.

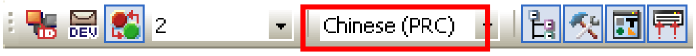
The following shows how to use the IME viewer when you enter the bit switch caption.

[Procedure]

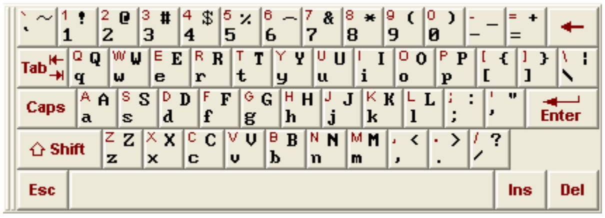
(a) Register the bit switch object.



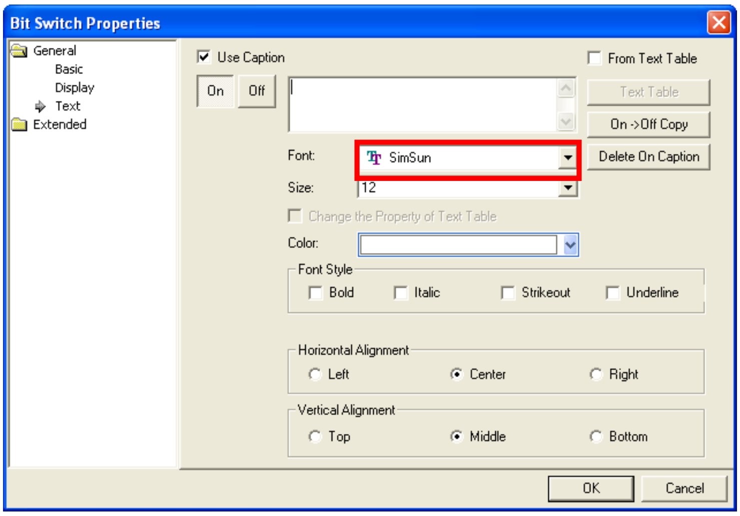
(b) Set the language as Chinese in the information tool bar.



The default Chinese IME is shown on the lower right of the screen as follows. The IME continues to be display in the screen until you hide the IME or close it.



(c) Select [Text] properties by double clicking on the bit switch and click on [Use Caption]. In the font list, ‘SimSun’, which is the default Chinese font, is displayed.



Bit Switch Properties

- General
  - Basic
  - Display
  - Text
- Extended

☑ Use Caption

☐ From Text Table

Font: SimSun

Size: 12

☐ Change the Property of Text Table

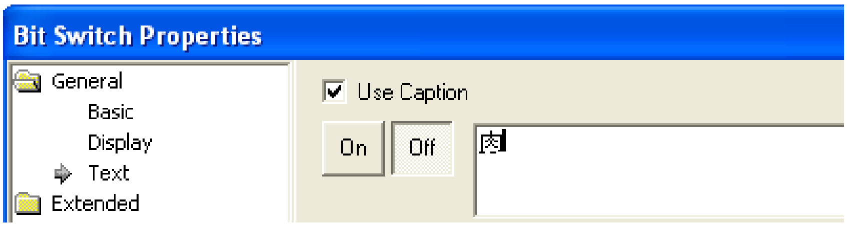
Color:

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

(d) Enter a caption using the IME or key board and close the dialog box.

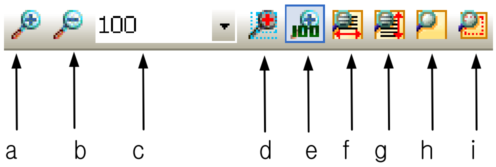


☑ Use Caption

(e) Select [View]-[IME].
The IME is gone now.

6.21.10 Enlargement and Reduction of Editing Window

You can enlarge or reduce the editing window.
The minimum unit of the magnification by Enlarge and Reduce is 25% and the magnification may range between 10% and 1500%.



Item	Description
Zoom in(a)	Each click enlarged the screen by 25%
Zoom out(b)	Each click reduces the screen by 25%
100 Magnification(c)	You can enter a desired magnification.
Zoom within Rect (d)	The selected area is enlarged to fit into the screen.
100%(e)	Goes back to the 100% size.
Zoom to fit page width(f)	Enlarges to the full width of the screen.
Zoom to fit page height(g)	Enlarges to the full height of the screen.
Zoom to fit Page(h)	Enlarges to the full size of the screen.
Zoom to fit selection (i)	The selected object or figure is enlarged to the full size of the screen.

Note

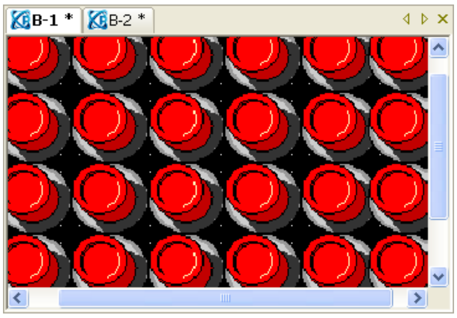
(1) You can enlarge or reduce by scrolling the mouse wheel up and down holding the Ctrl key.
(2) This function is not only applied to one screen but also applied to entire project.

6.21.11 Auto Pan

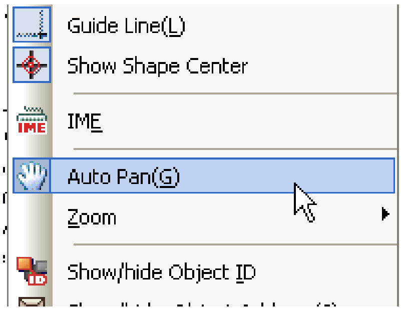
The pan refers to the tool with which you can move in the screen. You can conveniently move to another area of the screen by using the pan.

[Procedure]

(a) Fill the screen with objects and reduce the screen for there to be a scroll.

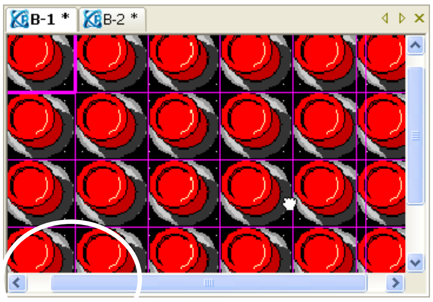


(b) Select [View]-[Auto Pan].



If you place the mouse pointer in the screen, a hand-shaped cursor appears.

(c) If you press the left button on the mouse, the mouse pointer turns into a hand-shaped cursor and you shift to the ready-to-move mode. If you drag the screen, the screen moves in the direction you are moving. You can see the objects in another area by doing so.



(d) Select [View]-[Auto Pan] once again. The pan is released and the mouse pointer turns back into the arrow.

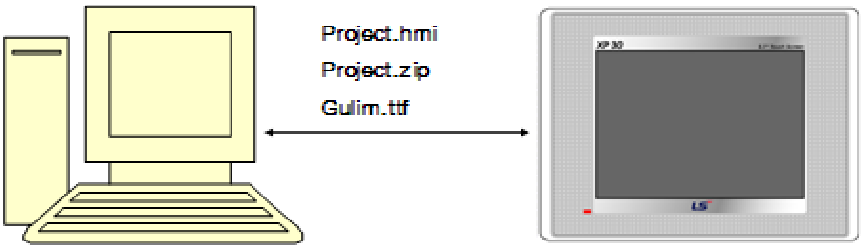
Chapter 7 Online

The windows edited in XP-Builder are sent to and executed in XGT Panel.
There are three transfer types, which are entire transfer, selected transfer of sending part of the edited data and modification transfer of sending only modified edited part. In addition, data can also be received from XGT Panel and there are protocols receiving data created in XGT Panel such as compressed project file reception, logging and recipe and so on.

In addition, there are further functions of reading and indicating or setting XGT Panel information.

7.1 Connection Composition

7.1.1 Serial (RS-232C) Connection



As the serial cable, the 6 pin cable is used which is included in the product package. The cable is connected to the RS-232C port of the computer and the 6 pin cable is connected to Tool which is on the right of the back of XGT Panel.

Downloading through the serial is basic 1:1 communication.

Note

(1) Cable Connection Failure

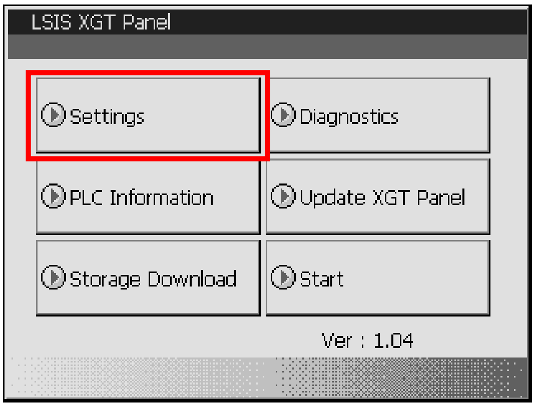
Transfer failure errors occur frequently due to failed connection on downloading through the serial cable. The most frequent error is TOOL port contact failure on the back of XGT Panel with the serial cable hung too long. Make sure that the 6 pin port of the serial cable is correctly plugged into XGT Panel.

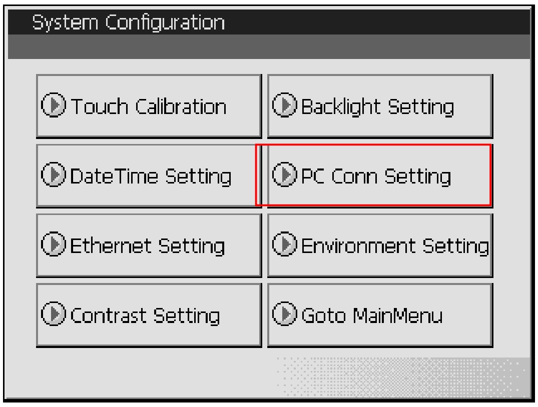
Another probable error is a case when the serial transfer cable passes the device with a lot of noise. For example, if it is near a high voltage switch or motor, communication might not work well because of the noise during transfer.

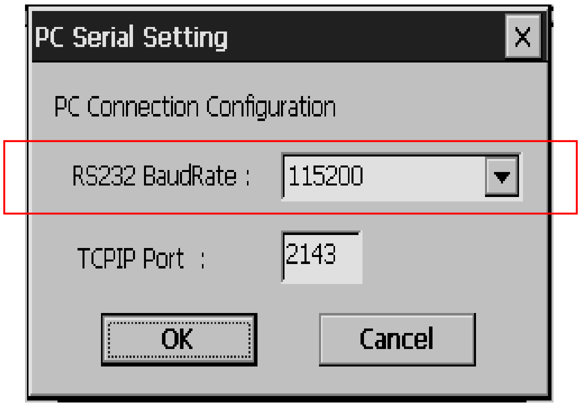
(1) XGT Panel Connection Setting

Set computer connection option through serial in XGT Panel.
Close the monitored program and shift to the basic waiting window of XGT Panel.

Press [Settings]->[PC Conn Setting] on the window.


LSIS XGT Panel
Settings
Diagnostics
PLC Information
Update XGT Panel
Storage Download
Start
Ver : 1.04


System Configuration
Touch Calibration
Backlight Setting
DateTime Setting
PC Conn Setting
Ethernet Setting
Environment Setting
Contrast Setting
Goto MainMenu


PC Serial Setting
X
PC Connection Configuration
OK
Cancel

RS232 BaudRate : 115200

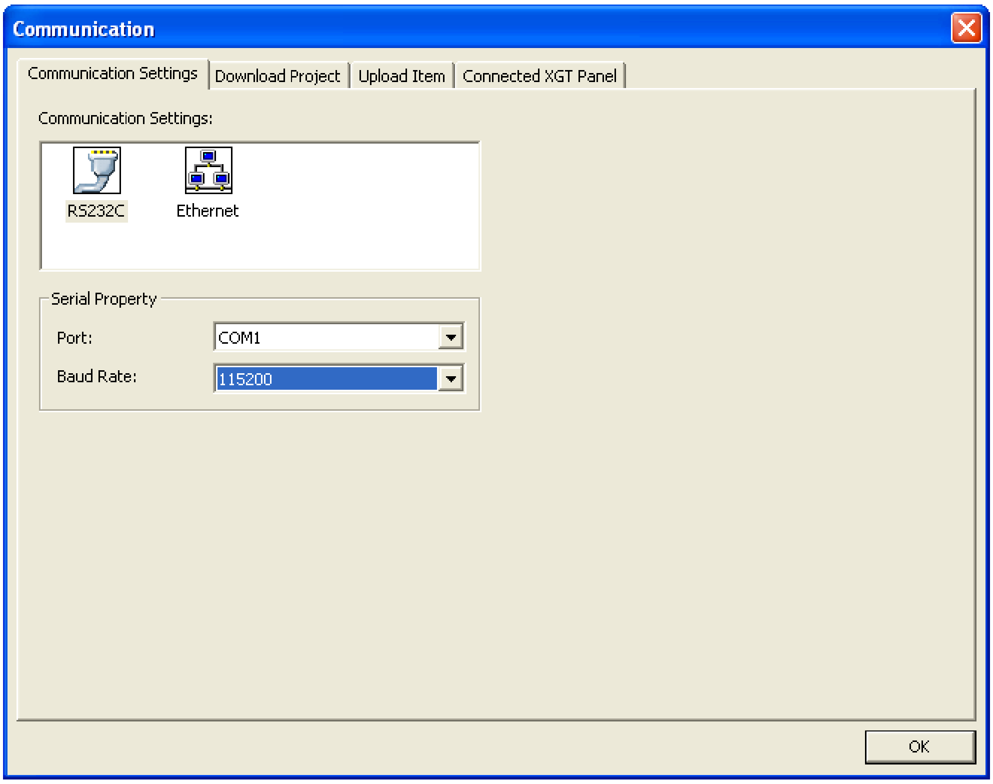
TCPIP Port : 2143

If the communication setting window is invoked, set the serial transfer speed used for connection to the computer in RS232 BaudRate item.
This transfer speed is used for setting XGT Panel to be connected in XP-Builder.

(2) XP-Builder Connection Setting

If the cable is correctly plugged and XGT Panel setting is finished, execute XP-Builder.
Create and save the project to download.

Start the project downloading window. Press [Communication] -> [Comm. setting].


Communication
Communication Settings
Download Project
Upload Item
Connected XGT Panel
RS232C
Ethernet
OK

Communication Settings:

Serial Property

Port: COM1

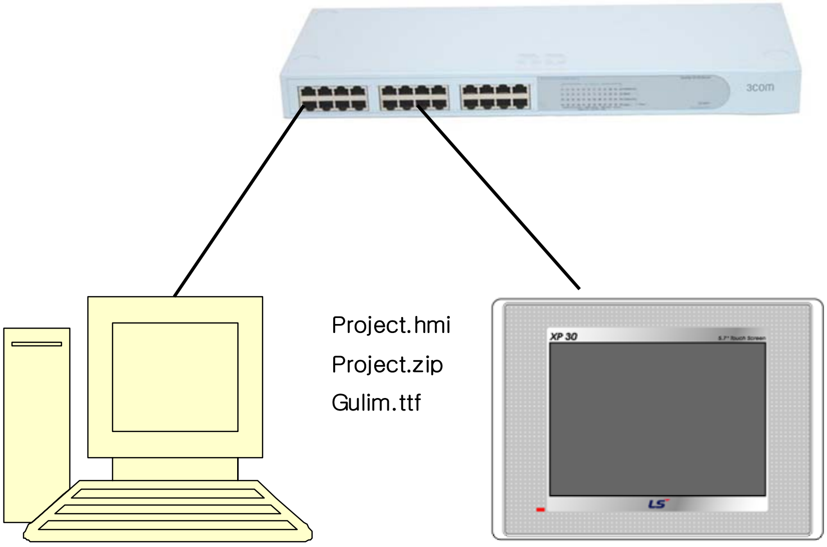
Baud Rate: 115200

Select [RS232C] picture in the [Communication Settings] list.
A combo box of the communication port and baud rate setting appears. Choose the value selected in XGT Panel as the baud rate. If the baud rates are differently set, communication will not work.

Select the port of which the serial cable is connected to the computer.

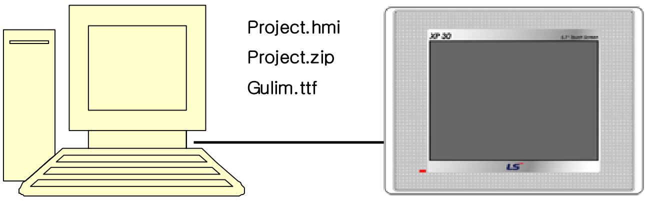
7.1.2 Ethernet Connection

(1) Network Connection


Project.hmi
Project.zip
Gulim.ttf
XP 30
3com
LS

This is available when the computer and XGT Panel are connected to the network. It is recommended that you use Ethernet because downloading using Ethernet is rapid and it can be easily connected to a remote XGT Panel.

(2) 1:1 Connection by Cross Cable


Project.hmi
Project.zip
Gulim.ttf
XP 30
LS

Connection by cross cable is used for downloading through the Ethernet with the computer and XGT Panel not plugged to the network. Setting for cross cable connection is the same as ordinary Ethernet use, but different in that a cross cable is used as the Ethernet cable connecting the computer with XGT Panel.

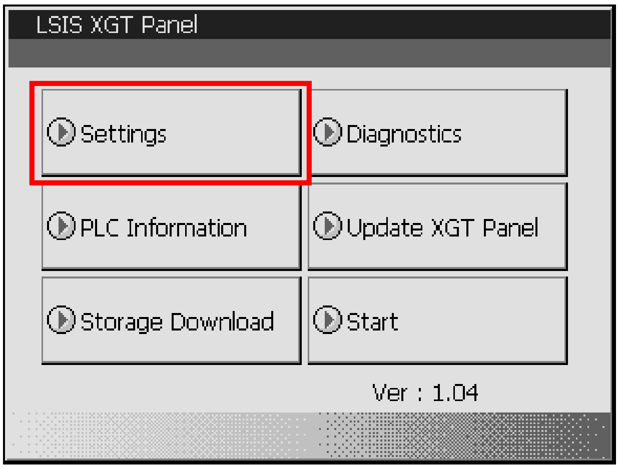
Set the IP of XGT Panel and the connected computer so that they are in the same Subnet mask in using the cross cable connection.

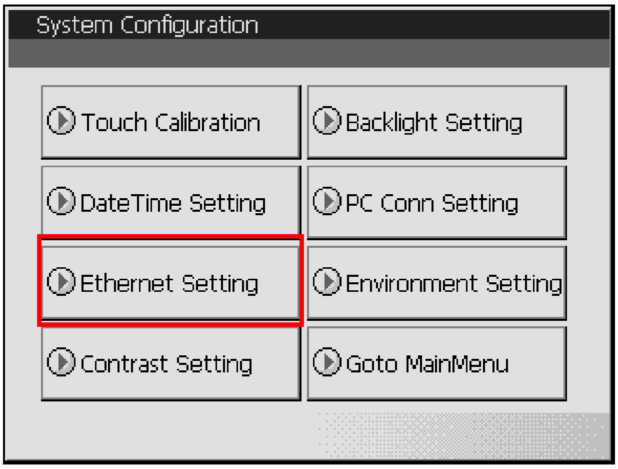
(3) XGT Panel Connection Setting

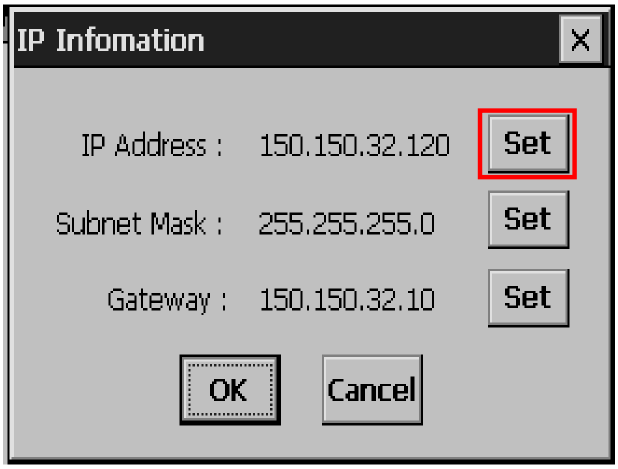
The Ethernet setting of XGT Panel is as follows.

Close the monitored program and shift to the basic waiting window of XGT Panel.

Set the Ethernet IP, Gateway and Subnet mask by pressing [Settings]->[Ethernet Setting] in the waiting window.


LSIS XGT Panel
Settings
Diagnostics
PLC Information
Update XGT Panel
Storage Download
Start
Ver : 1.04

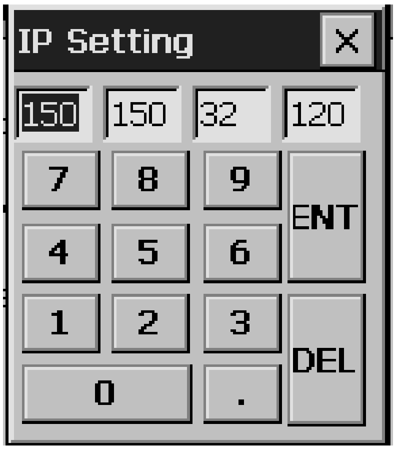

System Configuration
Touch Calibration
Backlight Setting
DateTime Setting
PC Conn Setting
Ethernet Setting
Environment Setting
Contrast Setting
Goto MainMenu


IP Infomation

IP Address : 150.150.32.120

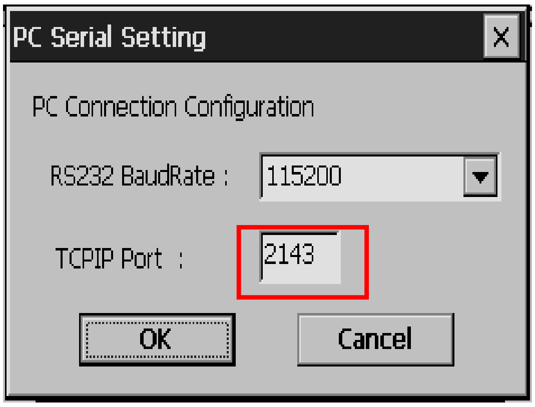
Subnet Mask : 255.255.255.0

Gateway : 150.150.32.10


IP Setting

150 150 32 120

Ethernet TCP/IP connection consists of IP and Port number and indicates the destination.
Press [Settings]->[PC Conn Setting] in the waiting window to set the Port number to be used for connection to the computer.
When the following connection setting window is invoked, set the port number to be used for connection to the computer.
The default value is 2143.


PC Serial Setting

PC Connection Configuration

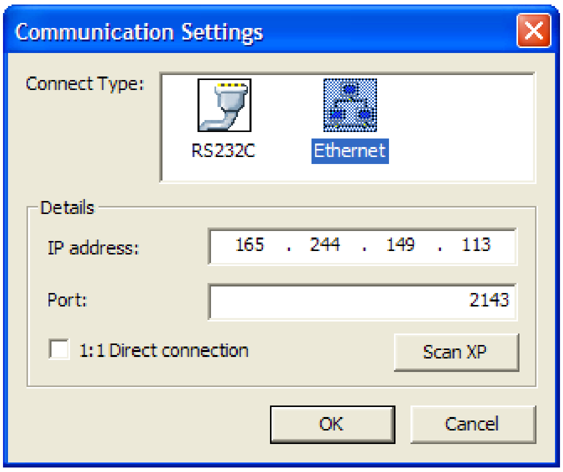
RS232 BaudRate : 115200

TCPIP Port : 2143

(4) XP-Builder Connection Setting

When the cable is correctly connected and XGT Panel setting is finished, execute XP-Builder.
Create and save the project to download.

Execute the project download window. Press [communication] -> [comm. setting].



Communication Settings

Connect Type: Ethernet

Details

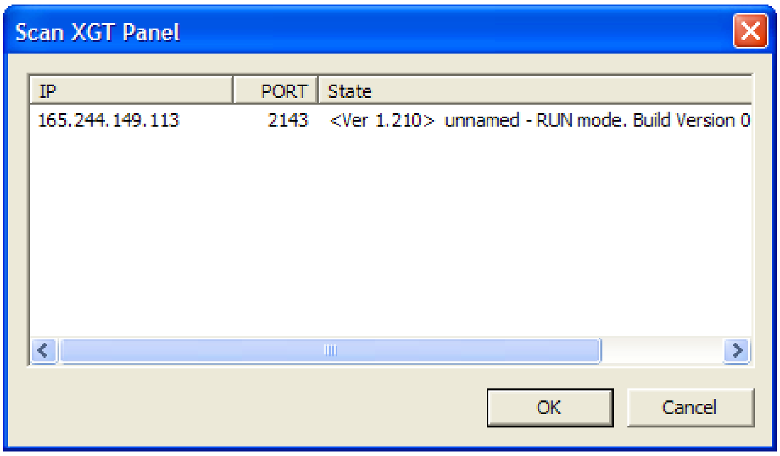
IP address: 165 . 244 . 149 . 113

Port: 2143

☐ 1:1 Direct connection

[Communication] dialog box is invoked as above.
Select [Ethernet] image in [Communication Settings] list.
The information to set for XGT Panel to be connected will appear below as in the figure.

In order to scan XGT Panel in the network, press “Scan XP” button.



Scan XGT Panel

IP	PORT	State
165.244.149.113	2143	<Ver 1.210> unnamed - RUN mode. Build Version 0

If you check the XGT Panel to connect in the list and press OK, it is applied to connection setting. In case of checking several XGT Panels, it is downloaded in order.

If XGT Panel is 1:1 connected to the computer by the cross cable, check the ☐ 1:1 Direct Connectio button and start download.

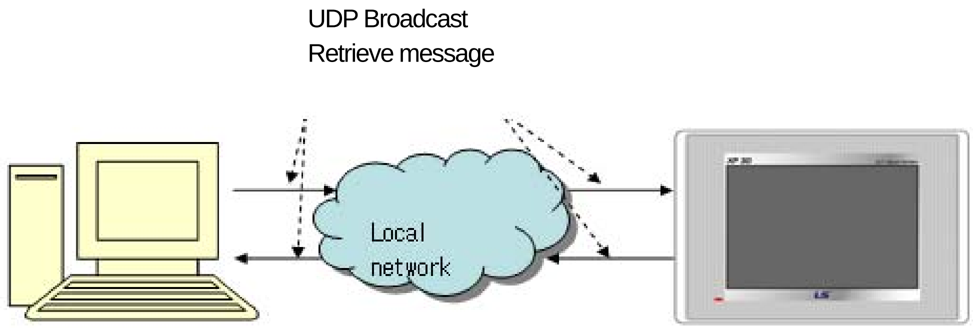
A device which is not on the XGT Panel list retrieved by XP-Builder can also be connected by entering yourself the network address in [Currently selected XGT Panel]. In such a case, you should correctly know the network information of XGT Panel to be connected.

The information of [selected XGT Panel] has the address at the time of the last download or upload. The illustration shows a case when the user last downloaded to XGT Panel at [165.244.149.113].

Note

(1) Automatic Search of XGT Panel Connected to Network

XP-Builder provides automatic search of the XGT Panel connected to the network.
UDP is used as the protocol for retrieval of XGT Panel.



Search Scope)

- XP-Builder uses UDP a Broadcast message to retrieve the connected XGT Panel. The Broadcast message sent from XP-Builder is transferred to 255.255.255.255. This message is only used in the local network, so the retrievable scope is limited to the local network.
- Even when it is connected in the local network area, if the gateway is between the computer executing XP-Builder and XGT Panel and if the gateway blocks the Broadcast message, retrieval might not work. In such a case, ask the network technician.

Note

(1) Troubleshooting When XGT Panel is Not Retrieved

(a) Check whether the network cable is correctly connected.
(b) Check that the monitor program is normally executed in XGT Panel.
(c) Check that the network address in XGT Panel is normally set. For smooth communication, it must be in the same subnet mask as the computer executing XP-Builder.
(d) In Window XP, personal firewall setting might block the UDP packet information. Make sure that personal firewall setting is ON in the control panel. To open the windows firewall, click on Start, Control Panel and double click on the Windows Firewall. Add XP-Builder in [Exceptions] in the dialog box [Windows Firewall].

If communication still does not work after the checks above, ask the service center.

Note

(1) 1:1 Connection by Cross Cable

In case of 1:1 connection between the computer and XGT Panel by the cross cable, if download through the Ethernet, check ☐ 1:1 Direct Connectio and start download. ☐ 1:1 Direct Connectio Makes access easier by allotting virtual IP of the subnet mask which is the same as the XGT Panel in windows.

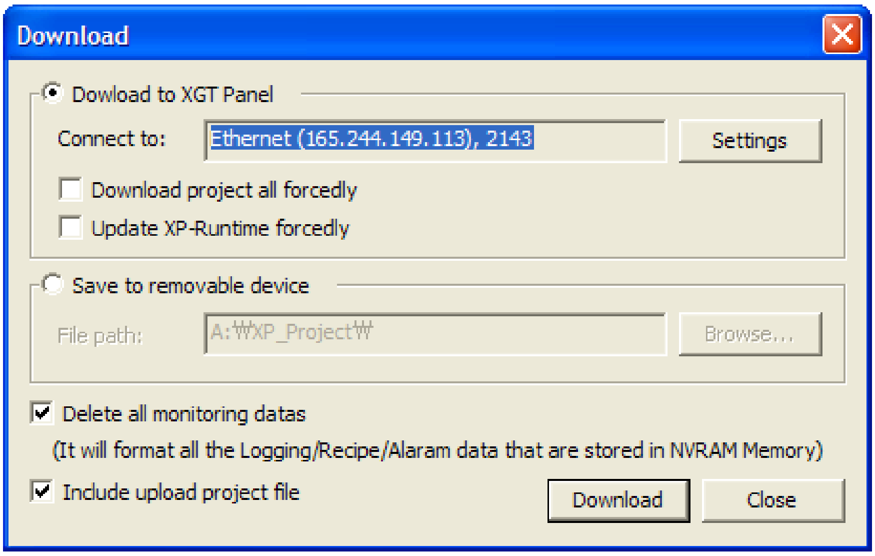
7.2 Project Transfer

This is making the entire project file edited in XP-Builder into HMI files and transferring them.

(1) Project Transfer

[Procedures]

(a) If you press the menu [Communication]-[Send] (or select the image of tool bar), the below dialog box to send project.



Download

● Dowload to XGT Panel

Connect to: Ethernet (165.244.149.113), 2143

☐ Download project all forcedly

☐ Update XP-Runtime forcedly

○ Save to removable device

File path: A:₩XP_Project₩

☑ Delete all monitoring datas

(It will format all the Logging/Recipe/Alaram data that are stored in NVRAM Memory)

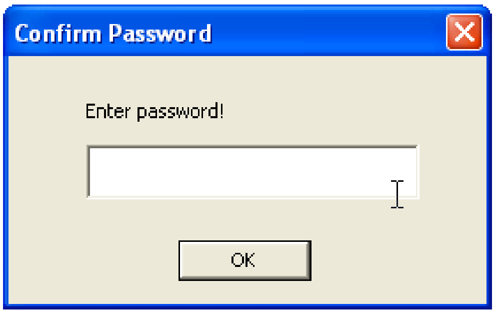
☑ Include upload project file

(b) Checking the object to be connected

Check if the information on connected object is correct. If it is wrong, press connection setting button to change the settings.

(c) Password setting

If a communication password is set in XGT Panel, a communication password check dialog box is invoked. Enter a correct password and press OK.



Confirm Password

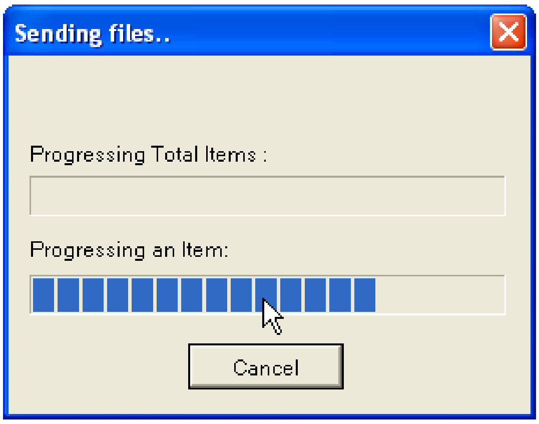
Enter password!

(d) Saving project

If the project has not been saved, a message box appears to tell you to save the project. Save the project and restart project transfer.

(e) Sending project

When the project transfer is executed, a progress dialog box appears.
If the project transfer is normally completed, the download dialog box is automatically closed.



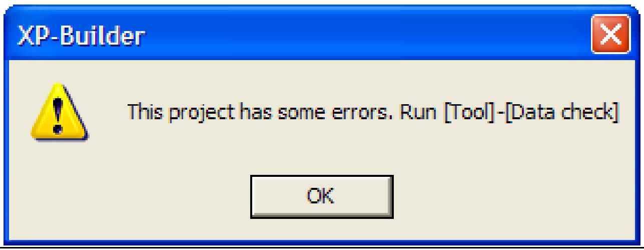
(2) [Send] Process

The following are a sequence of actions of XP-Builder when you press [Send].
If an error occurs during the process, the error is shown in the window and the process stops.

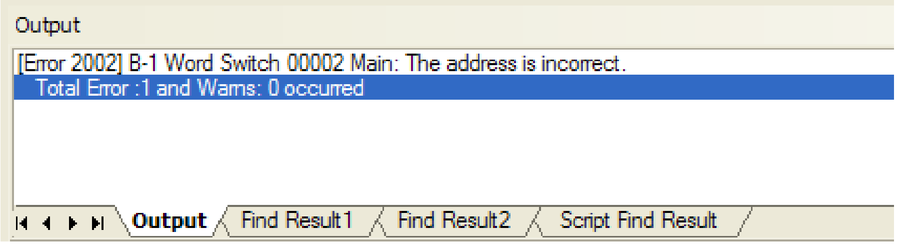
(a) In case that a password exists, input and check the password.
(b) After comparing equipment type, version with builder, judge if you stop Send process or transmit the whole or revised project including XP-Runtime.
(c) If the project is not saved, try to save the project.
(d) Check the memory size of the data to be downloaded.
(e) If necessary, download XP-Runtime.
(f) Download the whole project or revised part based on your judgment.
(g) If the option 'Including uploaded project file' is activated, download the compressed project file.

Note

(1) If there is some project error, download will be suspended with the following message. You can see the error and alarm history at output screen.


XP-Builder

This project has some errors. Run [Tool]-[Data check]



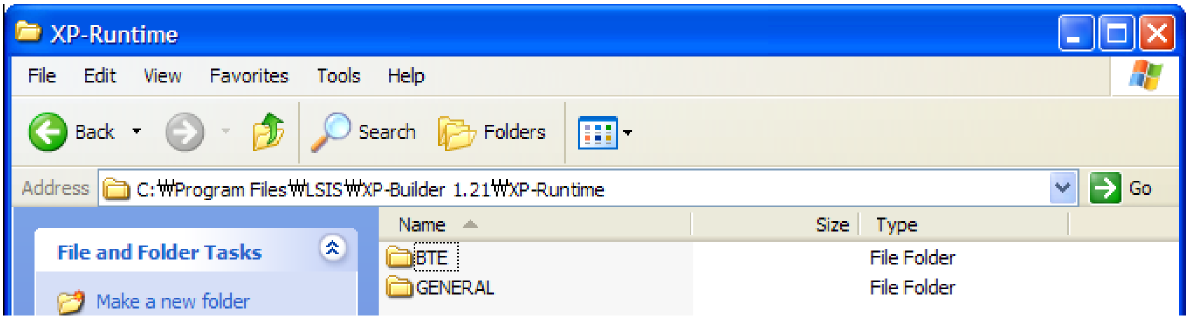
```
[Error 2002] B-1 Word Switch 00002 Main: The address is incorrect.
   Total Error :1 and Warns: 0 occurred
```

(2) Downloading the whole project or revised part under Project Sending.

If builder and device have the same project and project download is continuously performed for one device, proceed to download the revised one. Downloading revised part can remarkably reduce the time required with a small size. However, the whole project download should be exceptionally performed by XP-Builder for the below cases.

2.1) In case the project is downloaded to a device for the first time
2.2) In case the device's project ID is deleted due to communication error and comparing ID is not allowable.
2.3) In case the project properties have been changed, which can affect the whole project.
2.4) In case Sending whole project option is established.
2.5) In case you try to download the project with several HMIs (multi-download)
2.6) In case the project included to HMI is different from the version provided by XP-Builder.

(3) The position of XP-Runtime Folder
XGP Panel program is installed at XP-Runtime folder below XP-Builder depending on each device. In the case of BTE device, the program exists in BTE folder and for other devices, it is installed in GENERAL folder. You can also check the XP-Runtime version of the folder through 'Displaying XGT Panel file version of the selected folder of XGT Panel update dialog box.

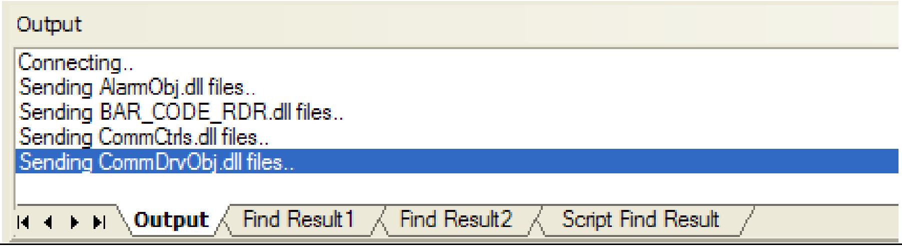


Address: C:₩Program Files₩LSIS₩XP-Builder 1.21₩XP-Runtime

Name	Size	Type
BTE		File Folder
GENERAL		File Folder

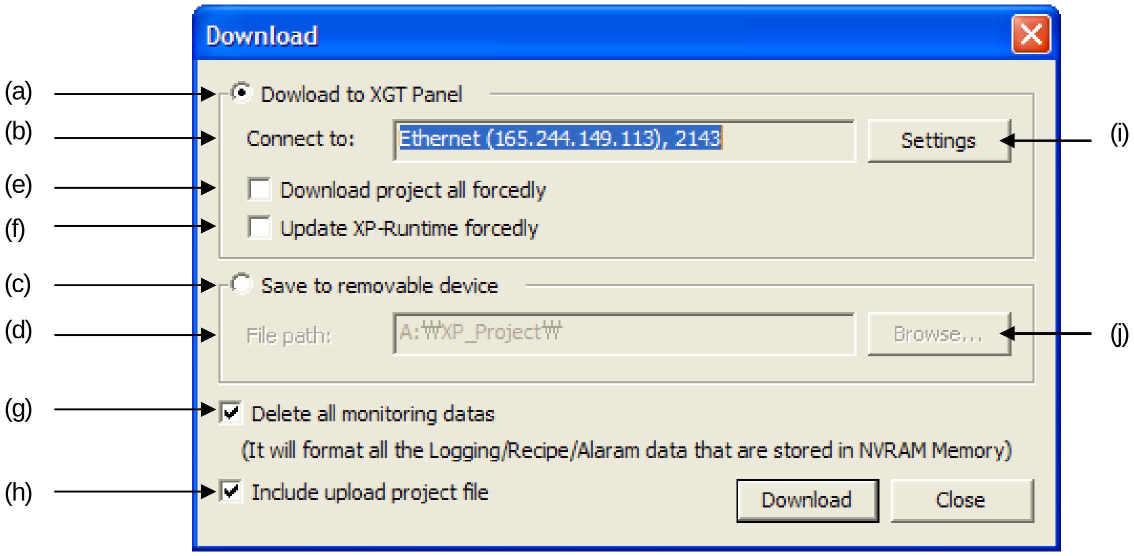
(4) Downloading XP-Runtime during Project Sending
If project download is not available since the version of a device and XP-Builder is different, try to proceed the task after download XP-Runtime that builder has and match with builder' version. Accordingly, XP-Runtime can be downgraded or upgraded compared with the current XP-Runtime version. However, if 'forcefully sending XP-Runtime' option is activated and the version of builder and XP-Runtime is the same, download XP-Runtime.

(5) Displaying the progress at output screen during SEND, RECEIVE
It displays the progress status at output screen during SEND, RECEIVE.



```
Connecting..
Sending AlarmObj.dll files..
Sending BAR_CODE_RDR.dll files..
Sending CommCtrls.dll files..
Sending CommDrvObj.dll files..
```

(3) [Download] Dialog Box Setting



● Dowload to XGT Panel

Connect to: Ethernet (165.244.149.113), 2143

☐ Download project all forcedly

☐ Update XP-Runtime forcedly

○ Save to removable device

File path: A:₩XP_Project₩

☑ Delete all monitoring datas

(It will format all the Logging/Recipe/Alaram data that are stored in NVRAM Memory)

☑ Include upload project file

Sending Items	Description
Download to XGT Panel (a)	The project can be transmitted to XGT Panel by online and the process is divided into 3 steps as below. (1) XP-Runtime Download If project download is not available since the version of device and XP-Builder is different, downgrade XP-Runtime of installed XP-Builder. However, if XP-Builder's version is lower than a device's one, ask a user about downgrade before download. (2) Downloading the revised part of project If the identical project is revised and continuously downloaded during Project Sending, the only revised part will be downloaded except the initial download with a device. (3) Communication Driver Download Compare HMI device's communication version with XP-Builder's driver version and update communication driver as the latest version.
Object to be connected (b)	It displays setting description of the object that is already designated.
Save to removable devices (c)	Data is not sent to XGT Panel through direct communication but it can be saved at USB, CF Card and realize offline sending by inserting the related devices to XGT Panel. If you designate the folder route for saving, the whole project and XP-Runtime will be saved at the folder. For details, refer to 7.5 Transmitting through Portable Storage Devices and manual.
File path (d)	It displays a saving route when the data is saved at external devices.
Download project all forcedly (e)	It does not send the revised part only but downloads the whole project.
Update XP-Runtime forcedly(f)	When sending a project, it updates XGT Panel of the object to be connected forcefully and transmit the project file. In the case of forceful download, if the XGT Panel version of XP-Runtime is different from the device version supported by XP-Builder, transmission will be terminated with an error message.
Delete all monitoring data (g)	The existing monitored data means recipe, logging, alarm history in SRAM of XGT Panel. The option is established, the device will delete SRAM data when it starts download.
Include upload project file (h)	In case the option is established, it compacts the project file and sends them to the device.
Settings (i)	It can change the object and contents to be connected.
Browse (j)	You can select the object to be transmitted. Under Ethernet, you can choose several objects and in this case, downloading the whole project is available only.

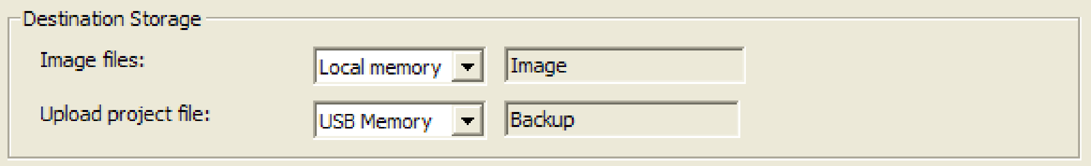
Note

(1) Checking memory capacity for Project Sending

It is activated before transmitting HMI device to prevent memory capacity from exceeding in advance during download. Before transmission, a user can compares the device's Flash and USB memory capacity with the data capacity to be sent and check previously if it exceeds limitation.

The whole flash memory of the device will be the basis to judge if download is allowable or not since downloading the whole is performed after removing all flash data.

In the case of downloading revised part, check available flash capacity that remains at the device and the external devices including USB, CF is bases on their available remaining capacity. Supposing that uploaded project is saved at USB, refer to the below calculation process to judge if it exceeds memory capacity.



Destination Storage

Image files: Local memory | Image

Upload project file: USB Memory | Backup

Capacity for the device's flash = File size of the while download-Uploaded project's capacity

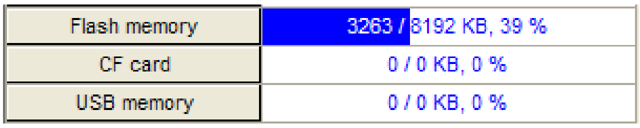
Capacity for the device's CF = Uploaded project's capacity

1.1) Downloading the whole project

If the whole flash capacity of the current device is bigger than the capacity for the device's flash and the current USB's available capacity is bigger than uploaded project size, download is allowable.

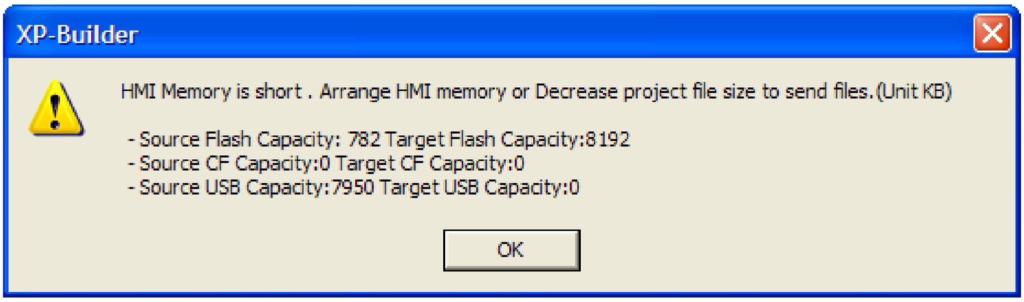
1.2) Downloading revised part

If the available flash capacity of the current device is bigger than the capacity for the device's flash and the current USB's available capacity is bigger than uploaded project size, download is allowable.



Flash memory	3263 / 8192 KB, 39 %
CF card	0 / 0 KB, 0 %
USB memory	0 / 0 KB, 0 %

(2) If download is not available, several messages will be shown as below and download will be suspended. It displays the current download memory capacity of the device with project capacity for a user's judgment.



XP-Builder

HMI Memory is short . Arrange HMI memory or Decrease project file size to send files.(Unit KB)

- Source Flash Capacity: 782 Target Flash Capacity:8192
- Source CF Capacity:0 Target CF Capacity:0
- Source USB Capacity:7950 Target USB Capacity:0

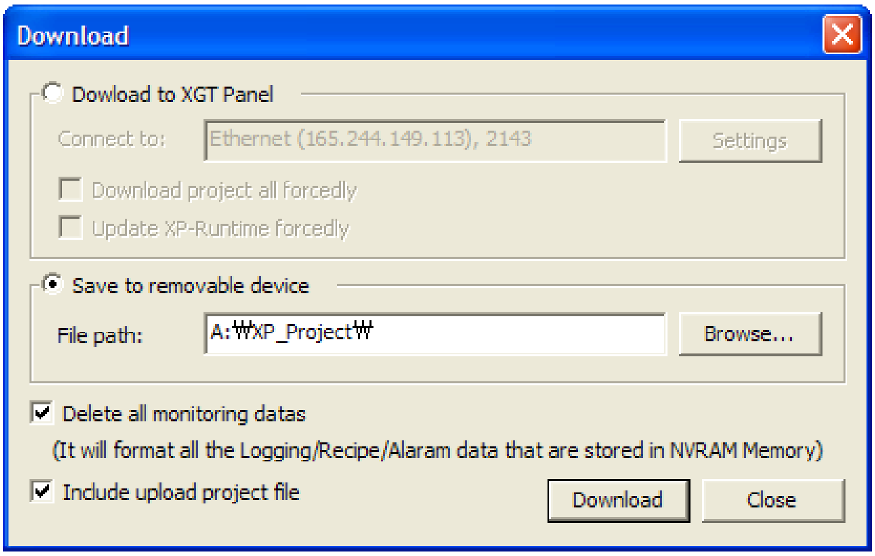
7.3 Transfers to Removable Device

Transmitting through Portable Storage Devices sends the project file to XGT Panel with portable storage devices. After XP-Builder saves the project file through portable storage devices, the saving equipment will be connected to XGT Panel and the project will be brought through the menu of XGT Panel.

(1) Executing Project Sending

[Procedures]

(a) Press the Menu [Communication]–[Send] Send... (or select a toolbar image .)



○ Dowload to XGT Panel

Connect to: Ethernet (165.244.149.113), 2143

☐ Download project all forcedly

☐ Update XP-Runtime forcedly

● Save to removable device

File path: A:₩XP_Project₩

☑ Delete all monitoring datas

(It will format all the Logging/Recipe/Alaram data that are stored in NVRAM Memory)

☑ Include upload project file

(b) Check the menu [Saving through external storage devices] ● Save to removable device and select the folder for project download at portable storage devices. Please make sure to select the drive including portable storage devices.
The project will be saved at the folder specified or input by a user under“XP_Project”of portable storage devices. If there is no route, it will be automatically created.

H:\XP_Project\ Folder for saving project

H: The drive indicates portable storage devices. In case of no portable storage devices, download is not allowable with warning message.

XP_Project: XP-Builder downloads a project to this folder. The folder should be at the top directory of portable storage devices and if it does not exist, it will be automatically created. The folder is the basis to search for the project from XGT Panel.

Folder for saving project: If a user input the name of folder for saving project, it will be created under XP_Project folder and save project data.

(c) Press‘Send’button.

(2) [Send] Process

If you press [Send] button, XP-Builder’s operation procedures is as below.
If error occurs during progress, the process will be suspended with notice at output screen.
(a) Check error of the project.
(b) In case that the project is not saved, try it again.
(c) Make XP-Runtime folder under the folder for saving project and copy the XGT Panel program.
(d) Save the project file to the folder for saving project.
(e) If the project has a file recipe, try to save it after checking the saving route with a user.

Note How to download through portable storage devices

[Transmitting through Portable Storage Devices] provides only sending the whole project and XP-Runtime forcefully. Furthermore, the options; Deleting all existing monitored data and Including uploaded project file are applied to the device like normal online project.

Note

(1) In case that download is not available through portable storage devices

If XP-Builder’s HMI version is different from XGT Panel version of XP-Runtime, transmission process will be terminated with error message for a user.

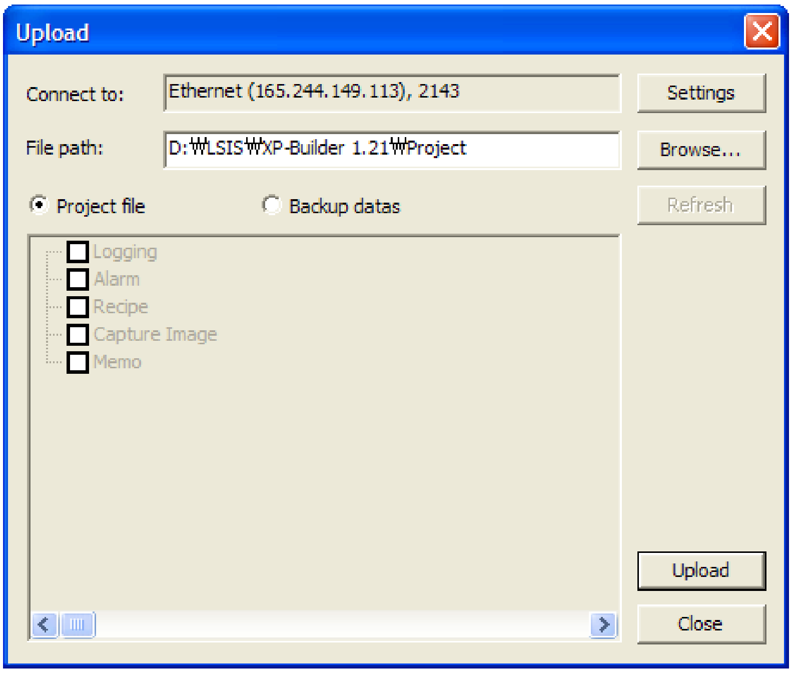
7.4 Receiving Project File

Receiving Project File is reading the project file from the XGT Panel.

1) Receiving Project file

[Sequence]

(a) Press [Communication] – [Receive] Receive... in the menu. (or select the toolbar image).



Upload

Connect to: Ethernet (165.244.149.113), 2143

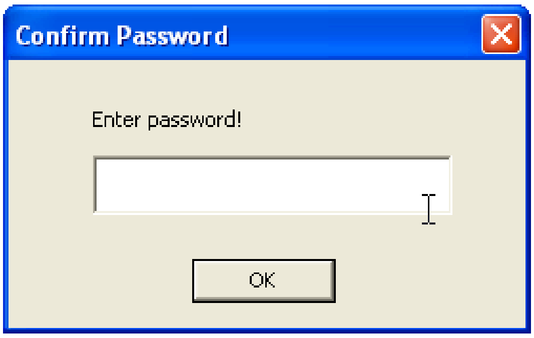
File path: D:₩LSIS₩XP-Builder 1.21₩Project

● Project file ○ Backup datas

☐ Logging
☐ Alarm
☐ Recipe
☐ Capture Image
☐ Memo

(b) Receiving after checking the target
Check I target is correct or not. If not, press “Settings” button and change the connection setting.
Press “Upload” button and start receiving the project.

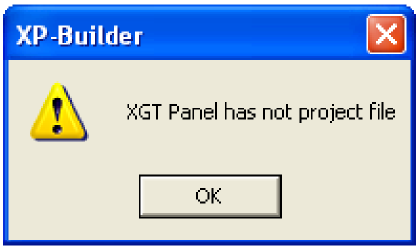
(c) If a communication password is set in XGT Panel, a communication password check dialog box is invoked. Enter a correct password and press OK.



Confirm Password

Enter password!

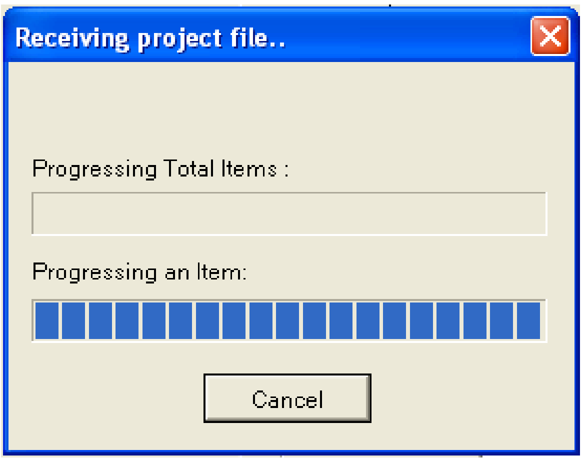
(d) If there is no project file downloaded in the HMI device, the following message will be invoked.



XP-Builder

XGT Panel has not project file

(e) If you execute project transfer, a progress dialog box will be invoked.



Receiving project file..

Progressing Total Items :

Progressing an Item:

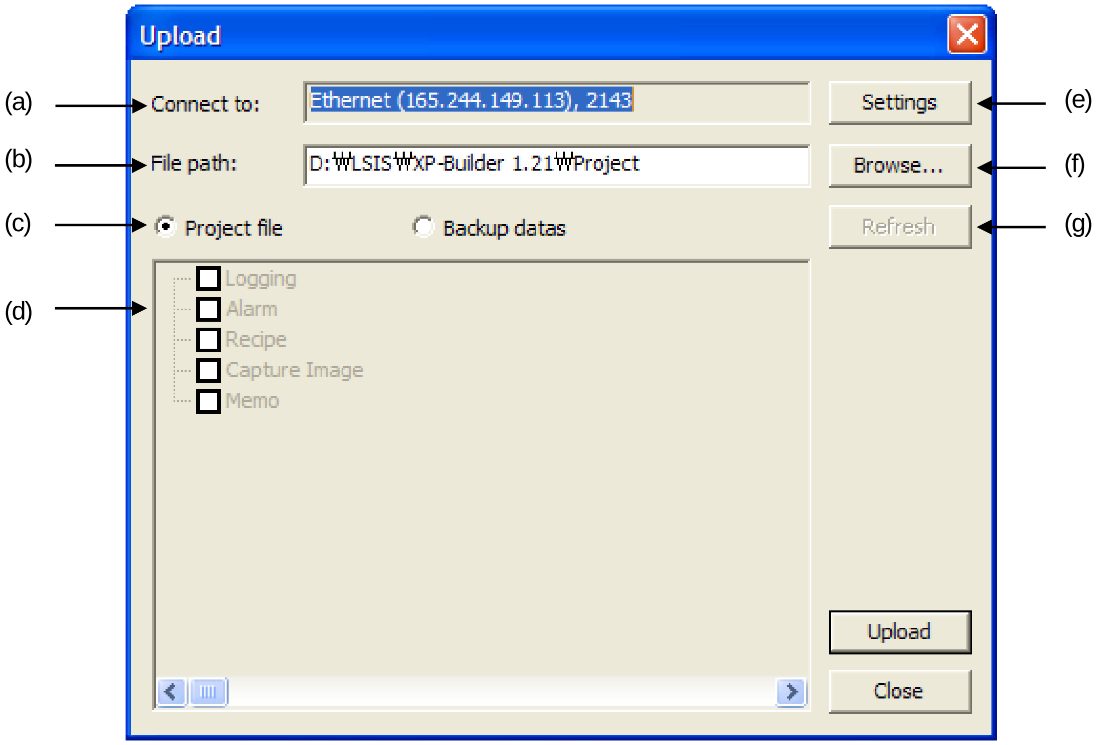
(f) If project reading is normally executed, XP-Builder closes the present project and opens the newly read project file.

2) [Receive] Process

The following are the sequence of actions of XP-Builder when you press [Read].
If an error occurs during the progress, the error is shown in the output window and the progress stops.

(a) Connect to XGT Panel
(b) Check the communication security password setting
(c) Read the XGT Panel information and check whether there is any project file
(d) Start receiving

3) [Download] Dialog Box Setting



Connect to: Ethernet (165.244.149.113), 2143

File path: D:₩LSIS₩XP-Builder 1.21₩Project

● Project file ○ Backup datas

☐ Logging
☐ Alarm
☐ Recipe
☐ Capture Image
☐ Memo

Receiving Items	Description
Connect to (a)	Displaying the contents of designated connection settings.
File path (b)	Displaying the saving route for interpreted data
Setting the object to be received (c)	Setting the object to be received : Select to receive project file or backup file
Backup data (d)	Displaying XGT Panel's backup data list.
Settings (e)	You can change XGT Panel to be connected.
Browse (f)	Designating the folder to save interpreted data
Refresh(g)	Refreshing backup data list

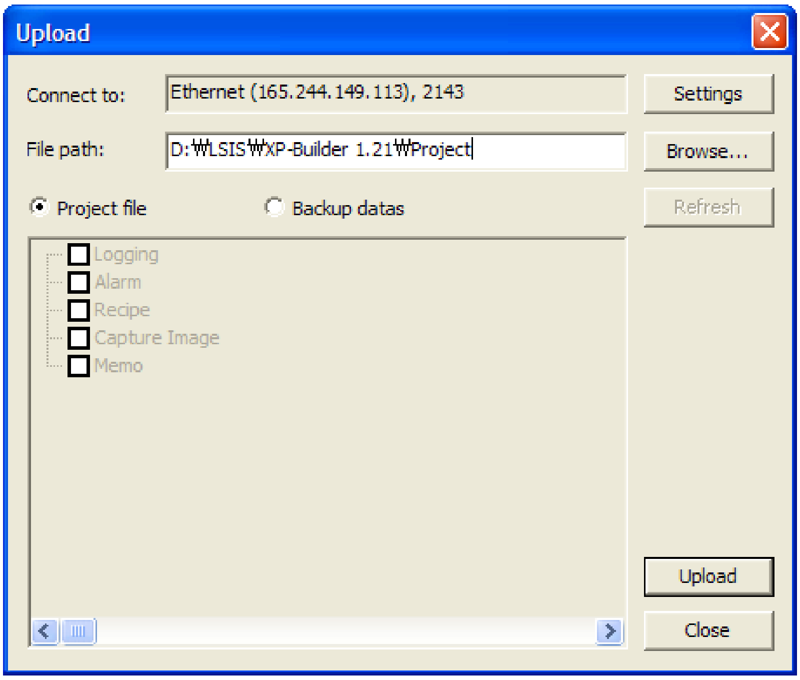
7.5 Receiving Backup

Backup data download is reading various backup files saved in XGT Panel and saving them in the computer.

1) Execution

[Sequence]

(a) Press [Communication] – [Receive] Receive... in the menu. (or select the toolbar image).



Upload

Connect to: Ethernet (165.244.149.113), 2143

File path: D:₩LSIS₩XP-Builder 1.21₩Project

● Project file ○ Backup datas

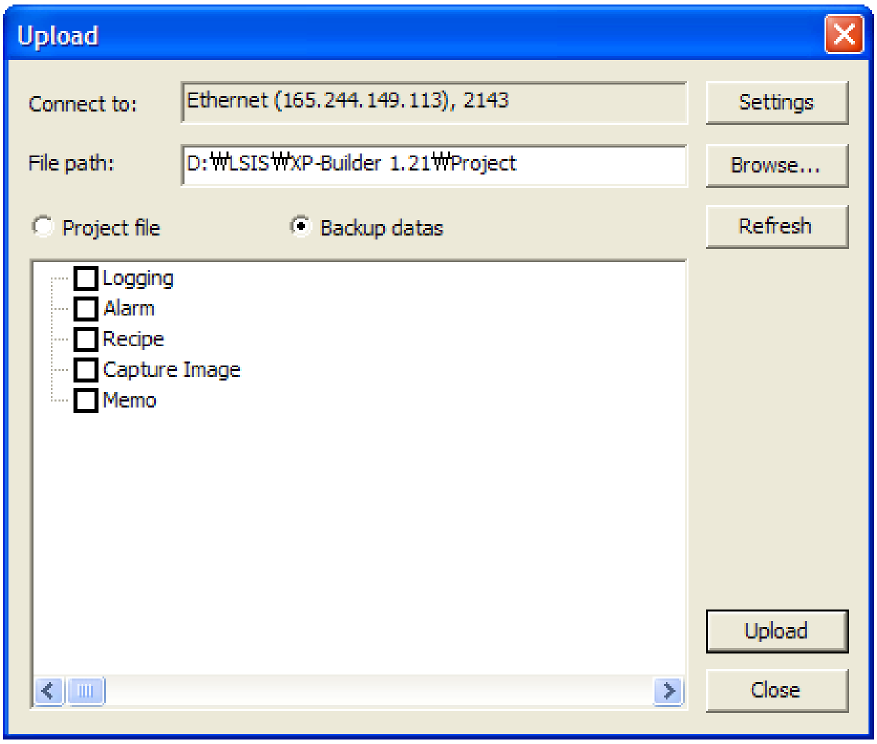
Settings
Browse...
Refresh
☐ Logging
☐ Alarm
☐ Recipe
☐ Capture Image
☐ Memo
Upload
Close

(b) Selecting backup data button

Select check-button ○ Backup datas.

If check-button ○ Backup datas is selected, XP-Builder reads backup data file list saved at XGT Panel and displays it at the screen.

The below picture is the example of reading backup data file list from [165.244.149.113] XGT Panel and displaying it at the screen.


Upload
Settings
Browse...
Refresh
Upload
Close

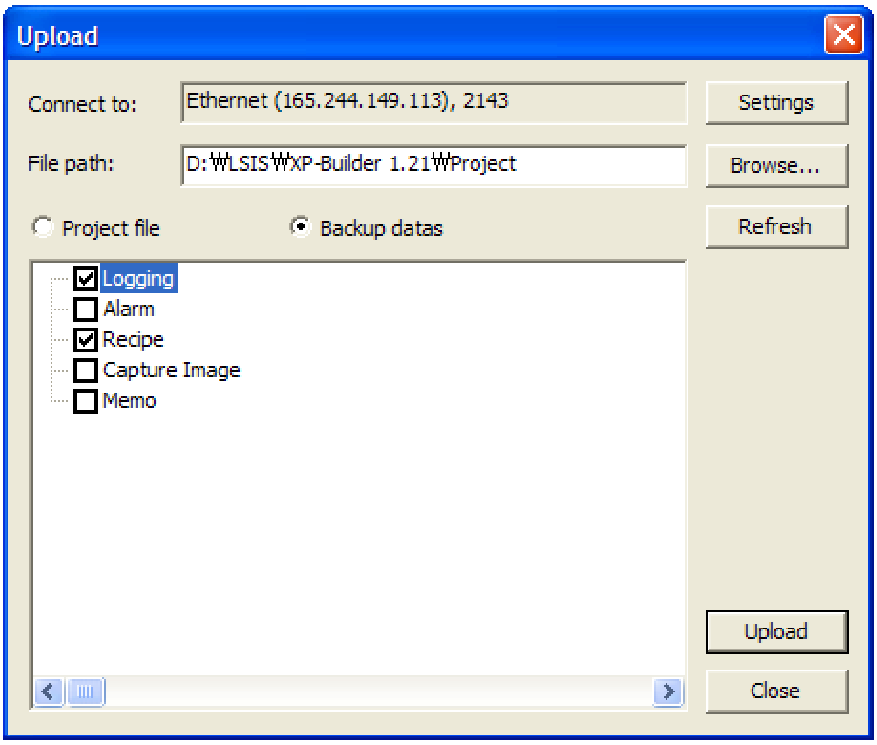
Connect to: Ethernet (165.244.149.113), 2143

File path: D:₩LSIS₩XP-Builder 1.21₩Project

○ Project file ● Backup datas

- ☐ Logging
- ☐ Alarm
- ☐ Recipe
- ☐ Capture Image
- ☐ Memo

(c) Select the backup data item to read and the folder to save the backup file.


Upload
Settings
Browse...
Refresh
Upload
Close

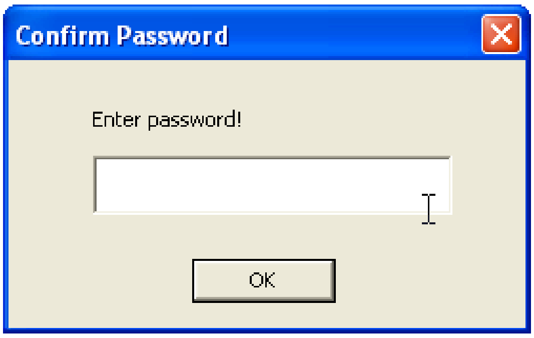
Connect to: Ethernet (165.244.149.113), 2143

File path: D:₩LSIS₩XP-Builder 1.21₩Project

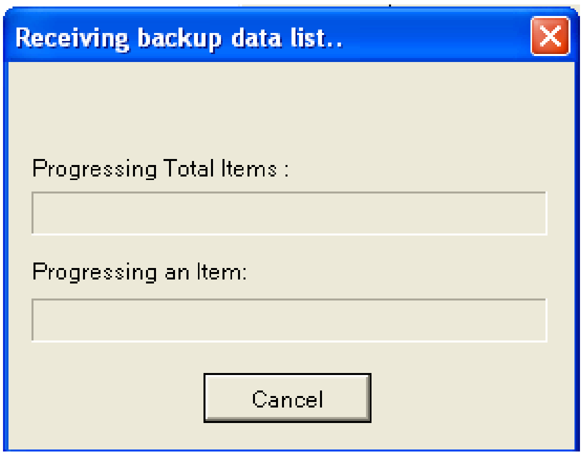
○ Project file ● Backup datas

- ☑ Logging
- ☐ Alarm
- ☑ Recipe
- ☐ Capture Image
- ☐ Memo

(d) If a communication password is set in XGT Panel, a communication password check dialog box is invoked. Enter a correct password and press OK.


Confirm Password
Enter password!
OK

(e) If backup file reading is normally executed, a following progress dialog box appears.


Receiving backup data list..
Progressing Total Items :
Progressing an Item:
Cancel

(f) When data download is completed, the read file is transformed into the CSV file format and copied in the folder designated by the user.

2) [Receiving] Process

The following are the sequence of actions of XP-Builder when you press [Read].
If an error occurs during the progress, the error is shown in the output window and the progress stops.

1) Connect to XGT Panel
2) Bring the backup data file items to read and display the data list in the reading item tree
3) Checking communication password setting in the XGT Panel. Display password dialog box to check password
4) Start receiving
5) Saves the file in the designated file path.

Note

(1) Over-Write message during receiving project file and backup data

If there are the same files as the receiving file in directory under reception communication, you can select 5 operation mode; ‘Yes’, ‘Yes to all’, ‘Cancel’, ‘Cancel all’, ’No, as other folder’.

Items	Description
Yes	It executes to over-write the related file only shown at the message.
Cancel	It cancels to over-write the related file only shown at the message.
Yes to all	It executes to over-write not only the related file but also all duplicate files to be generated in the future.
Cancel all	It cancels to over-write not only the related file but also all duplicate files to be generated in the future.
No, as other folder	A user can select other folder and all files will be saved as the folder changed by a user in the future.

(2) Backup data includes logging, alarm, recipe, screen capture, memo pad. While Logging, alarm, recipe is CSV file, memo pad and screen capture is BMP type.

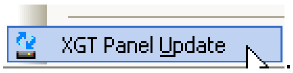
Select the items to read from the backup data tree list.
Designate the [Destination folder] folder to save the read files.

7.6 XGT Panel Update

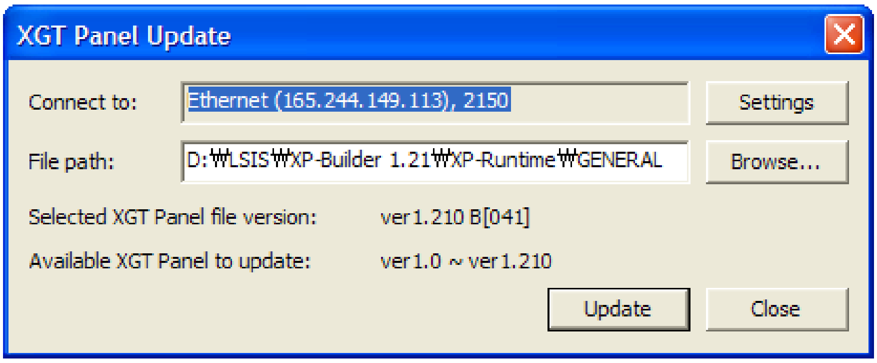
XGT Panel Update is upgrading XGT Panel SW executed in XGT Panel.

(1) Update of XGT Panel

[Sequence]

1. Press [Communication]-[XGT Panel Update]  .

2. Check the target. You can change the target by pressing the “Settings” button.



XGT Panel Update

Connect to: Ethernet (165.244.149.113), 2150

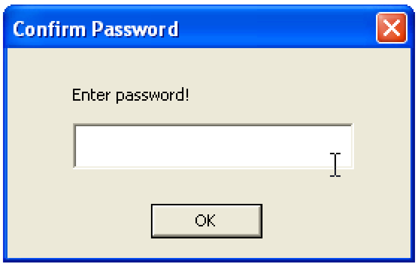
File path: D:₩LSIS₩XP-Builder 1.21₩XP-Runtime₩GENERAL

Selected XGT Panel file version: ver1.210 B[041]

Available XGT Panel to update: ver1.0 ~ ver1.210

3. Designate the location of the folder where the engine file you want send exists.

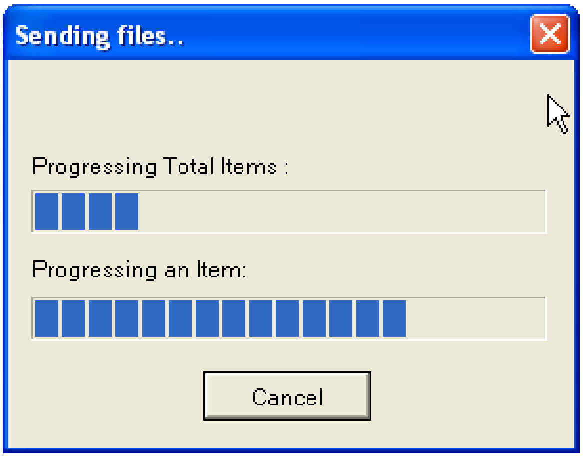
4. Press [Update].
   If a password is set, a password check dialog box is invoked.



Confirm Password

Enter password!

5. The progress dialog box is invoked.



Sending files..

Progressing Total Items :

Progressing an Item:

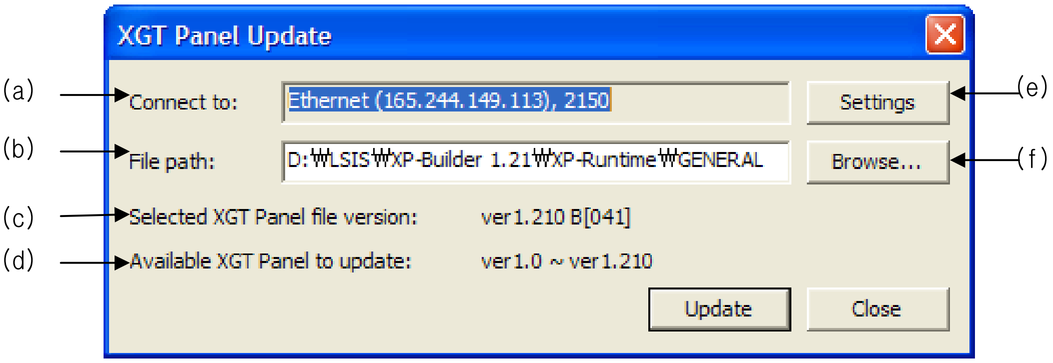
⚠ Caution

Cautions in Sending Engine File

The Sending engine file is an important function executing XGT Panel. If execution fails, A/S service is necessary and therefore caution is required. In program transfer, pay attention to the following.

1) Ending the XP-Builder during transfer
2) Deleting or shifting the program execution folder during transfer
3) Transfer of files on the Internet

(2) Setting [XGT Panel Update] dialog box



XGT Panel Update

Connect to: Ethernet (165.244.149.113), 2150

File path: D:₩LSIS₩XP-Builder 1.21₩XP-Runtime₩GENERAL

Selected XGT Panel file version: ver1.210 B[041]

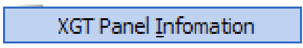
Available XGT Panel to update: ver1.0 ~ ver1.210

XGT Panel update items	Description
Connected object (a)	Displaying the contents of designated connection settings.
File path (b)	Displaying the file position of XGT Panel to be transmitted.
File version of selected XGT Panel (c)	Displaying the file version of XGT Panel in selected folder.
XGT Panel version that can be updated (d)	Displaying the version that can be updated into XGT Panel of selected folder.
Connection settings (e)	You can change XGT Panel to be connected.
Browse (f)	You can change the file position of XGT Panel

7.7 Change and Display of XGT Panel Information

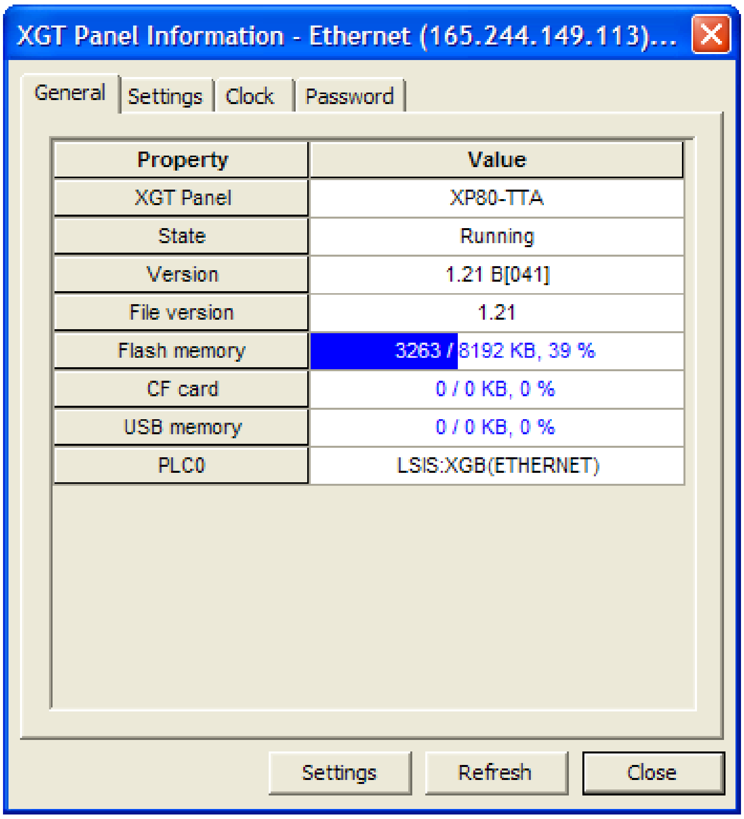
This is displaying XGT Panel information data or changing the time or connection password

[Sequence]

1. Press [Communication] – [XGT Panel Information]  in the menu and press Connected XGT Panel Tap.

XGT Panel Infomation

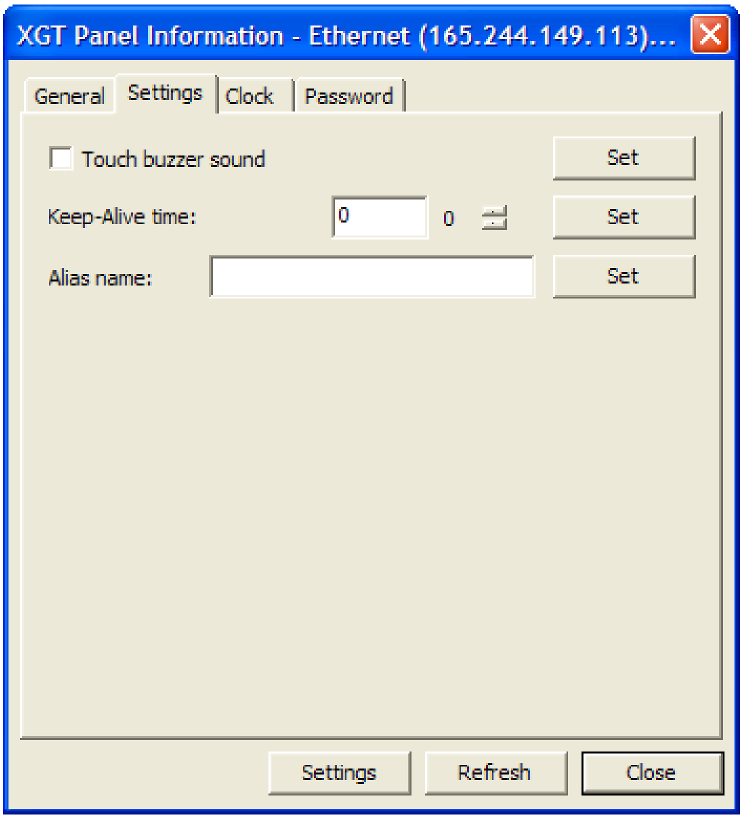
2. The following dialog box is invoked and the description of each state is as follows.



XGT Panel Information - Ethernet (165.244.149.113)...
General
Settings
Clock
Password
Settings
Refresh
Close

Property	Value
XGT Panel	XP80-TTA
State	Running
Version	1.21 B[041]
File version	1.21
Flash memory	3263 / 8192 KB, 39 %
CF card	0 / 0 KB, 0 %
USB memory	0 / 0 KB, 0 %
PLC0	LSIS:XGB(ETHERNET)

Device Information	Description
XGT Panel	Displaying the kinds of connected XGT Panel.
Operation status	Displaying the current status ; menu, operation, program update
Engine version	Displaying the engine version.
XP Builder version	Displaying the XGT Version supported by an engine
Flash memory	Displaying used capacity from the whole flash capacity.
CF Card	Displaying used capacity from the whole CF capacity
USB memory	Displaying used capacity from the whole USB capacity
PLC0 ~ PLC3	Displaying the name of PLC Driver that is under operation from connected XGT Panel.

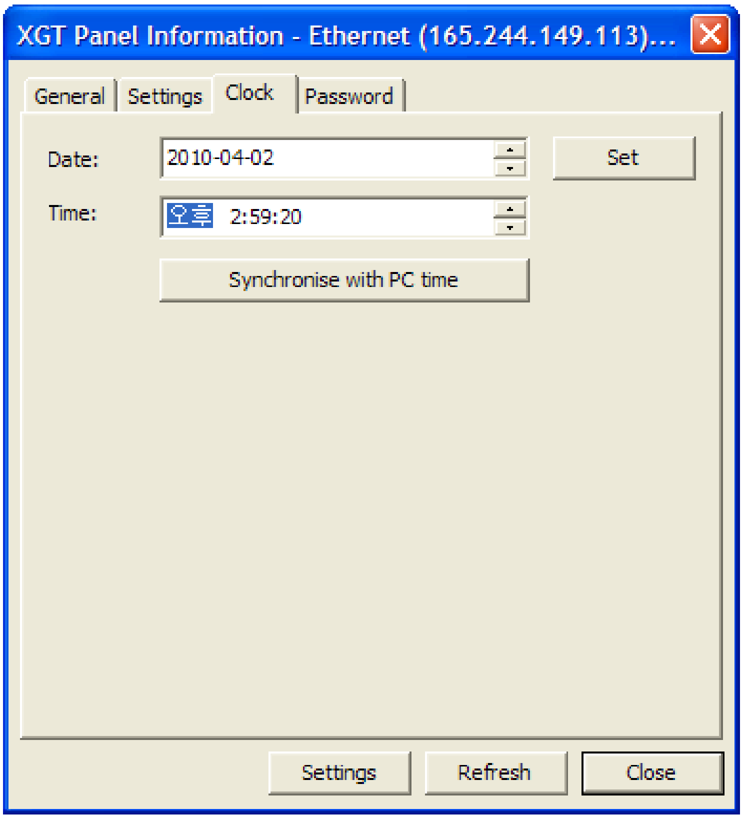

XGT Panel Information - Ethernet (165.244.149.113)...
General
Settings
Clock
Password
Set
Set
Set
Settings
Refresh
Close

☐ Touch buzzer sound

Keep-Alive time: 0 0

Alias name:

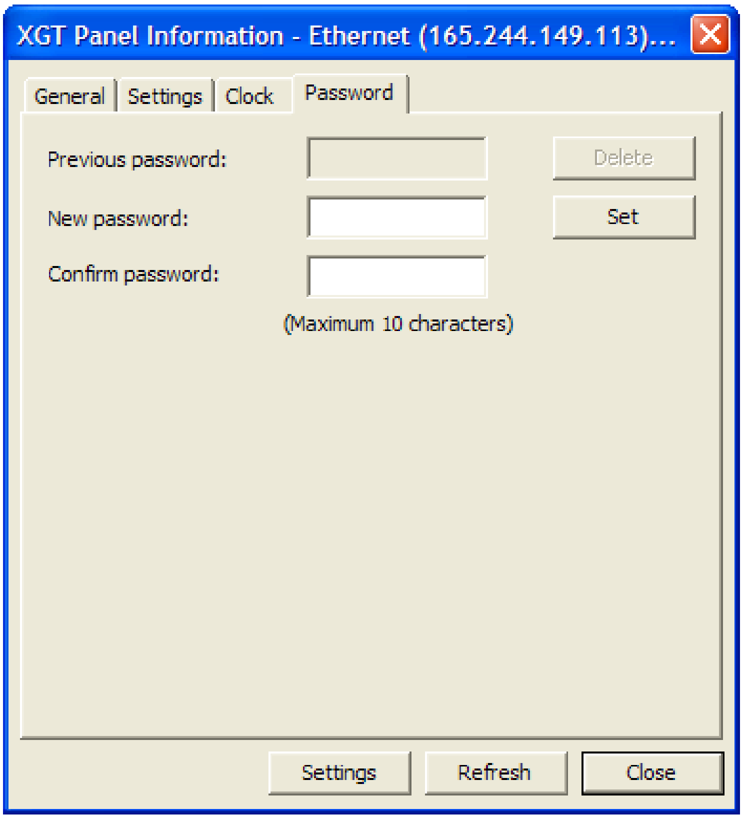
Device Information	Description
Buzzer Output	When pressing a buzzer at XGT Panel, you can select if the buzzer rings or not.
Basic time to keep connection	When XGT Panel is connected through controller and Ethernet, it sets up the time to judge the controller’s connection status. If there is no specific request from the controller during the fixed time, XGT Panel will regard the controller as not being connected and terminate connection.
Alias name	You can create the name of XGT Panel to distinguish easily several XGT Panels of network.


XGT Panel Information - Ethernet (165.244.149.113)...
General
Settings
Clock
Password
Set
Synchronise with PC time
Settings
Refresh
Close

Date: 2010-04-02

Time: 오후 2:59:20

Device Information	Description
Date, Time	It displays the date and time at the present. If you press [Read Again] button, correct time will be shown again.
Time setting	There are two methods to establish XGT Panel time. 1. Setting the time equally to the current PC 2. Setting specific date and time If you press [OK] button after setting the date, time through the above methods, XGT Panel's date and time will be changed.


XGT Panel Information - Ethernet (165.244.149.113)...
General
Settings
Clock
Password
Delete
Set
Settings
Refresh
Close

Previous password:

New password:

Confirm password:

(Maximum 10 characters)

Device Information	Description
Setting connection password	If you press [Apply] button after establishing the existing password and inputting new one, XGT Panel's connection password will be established. The password is needed to [Send] to XGT Panel. If you press Deletion button, password will be deleted. However, if there is no established password, you can not inputting previous password.

Note

(1) You can not see the device information right after completing to send project. Operation status is displayed but other information is not displayed.

7.8 Communication Errors and Troubleshooting

There are three communication error codes, which are the lower error during communication, upper error sent from XGT Panel and the error judged by the editor.
There are three error types that occur during communication.

(1) Project Error

Description	How To Deal with the Error
The project ID is not correct.	This occurs when the projects in the device and builder are different. Execute entire download.
Save the project first.	This appears when you attempt download without saving the project after creating the project first. Try again after saving the project.
There is an error in the project.	Check the message in the window.
The XGT Panel model does not match the model set in the editor.	This is shown when you download the project file of which the XGT model is not the same. Change the XGT model type in the project properties or transfer the file of which the model is the same.
Shift to the XGT Panel program update mode.	This is not the program update mode. Press program update button in the device.
The backup data you want to download is not in XGT Panel.	When there is no backup data
The compressed project file you want to download is not in the XGT Panel.	You last downloaded with the project file not included
File transformation error	Reading is impossible because of an error in the file read from the device. Download again.

(2) Data Management Error

Display	Description	How To Deal with the Error
XP-Builder	The previous project information is not available.	The previous project information cannot be found. Execute entire download.
	The backup path has been incorrectly designated.	The font or image download path is not correct. Check that the USB or CF is installed in the device and modify the download path in the project properties information.
	The file cannot be read. Check whether another program is being used.	The download file is locked. Check whether two projects of which the builders are the same are opened.
	The file is not writable. Check the disk memory.	The file cannot be created in the device. Check the memory.

(3) Communication Error

Description	How To Deal with the Error
No reply within the set period or disconnected	There is an error during data transfer. Check whether there is any problem with the cable or electric supply.
Disconnected. Try again after connection.	This is shown when the device is disconnected. Check the cable connection and whether the transfer environment setting matches the device.
Problem with data	Wrong data is included in transfer. Try again.

Chapter 8 Graphic/Object Library

With various images registered, the Graphic Library can be used as the background or object image. The Graphic Library is divided into the System Graphic Library and User Graphic Library.
The Object Library sets and registers frequently used objects so that the user can easily edit objects.

Note

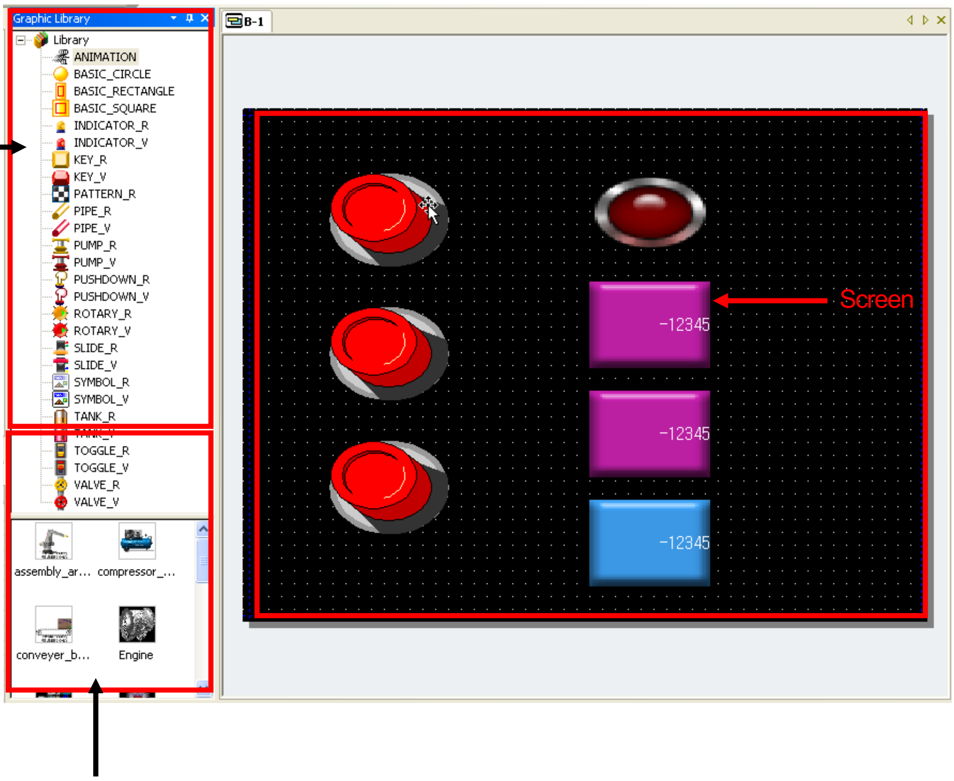
(1) The differences between the Graphic Library and Object Library are as follows.
   (a) The Graphic Library is saved in the form of an image file. It is used as an image element of Images or objects and created as a Image when drawn onto the screen.
   (b) The Object Library itself is saved as an object or figure, so has the original properties at the time of object registration and is created equally.

8.1 Graphic Library

Graphic Library is divided into System Graphic Library and User Graphic Library.

Type	Description
System Graphic Library	● About 1,000 images are put into and registered in 26 categories and the user can not edit them as they want. It is possible to select images according to projects by adding 256-color Raster Graphics library category available for 256-color device type(XP30-TTE) or 256-color mode. It is helpful in reducing drawing capacity by half since the image size is lowered by half than 65535 library and in mitigating image spread phenomenon in 256-color economic device or 256mode device. If the last caption of the category shows'256_R', it means that it is 256-color library.
User Graphic Library	● The user cannot register or delete the image and when it is saved, it is not saved in the Graphic Library but the present editing project. ● User Graphic Library can be used by invoking the User Graphic Library of another project in the present project. ● The User Graphic Library registered in the current project can be used in another project by transferring it.

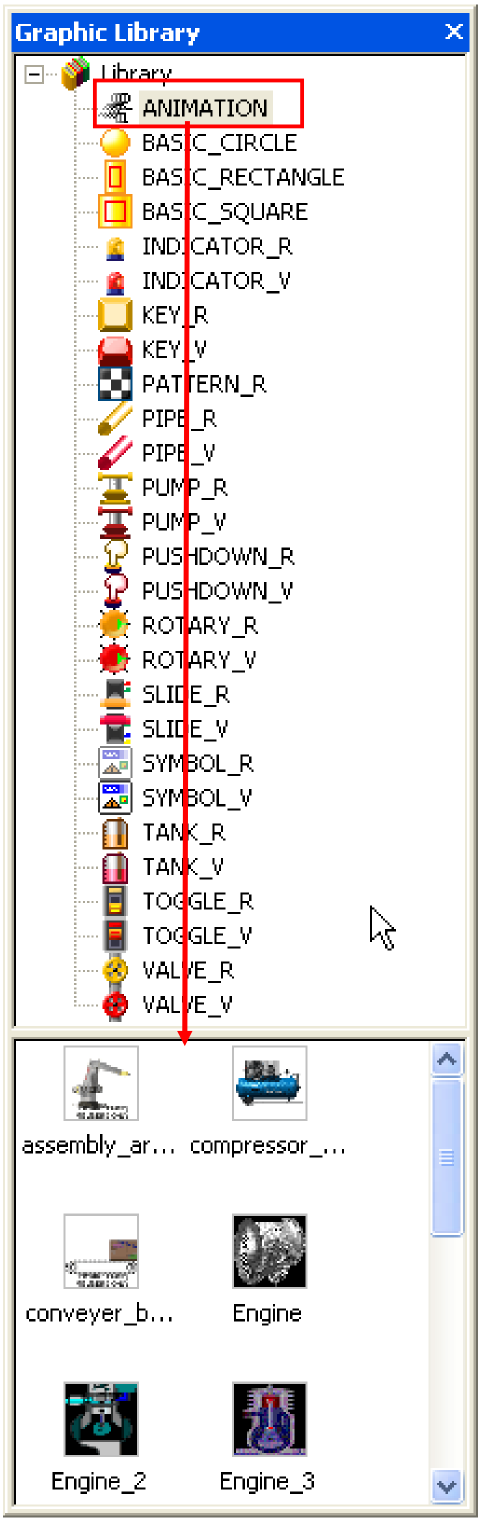
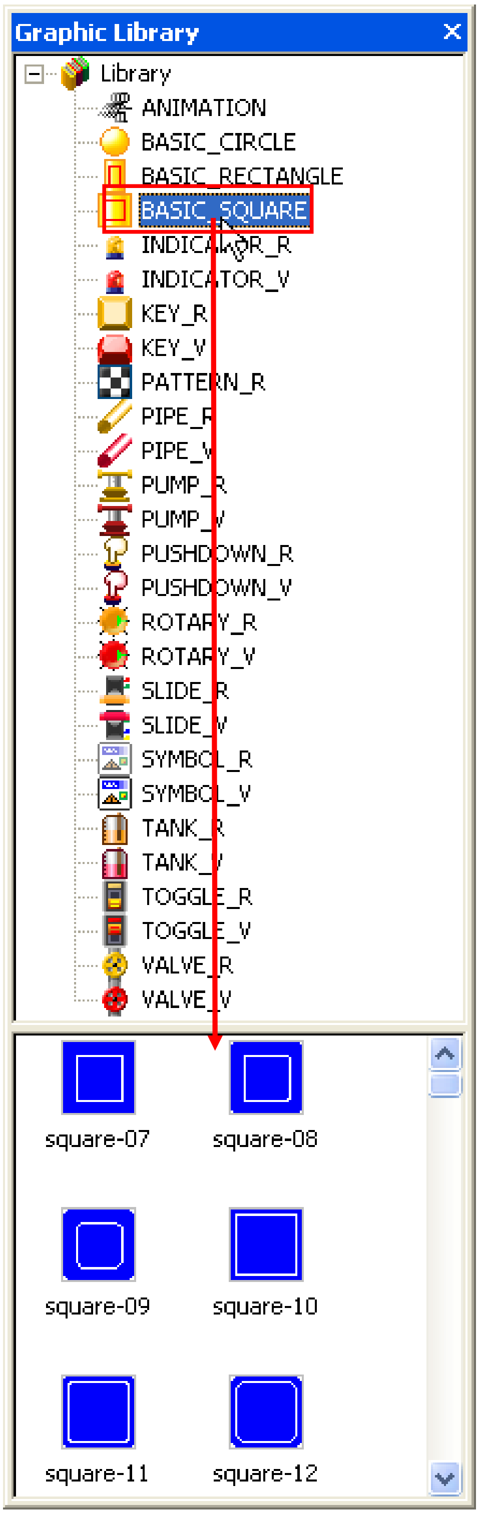
8.1.1 Graphic Library Window Composition


Graphic Library
Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
assembly_ar…
compressor_…
conveyer_b…
Engine
B-1
-12345
-12345
-12345

Library List

Screen

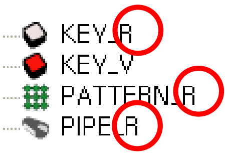
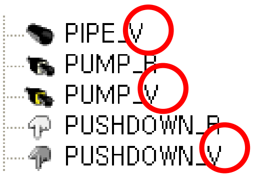
Image List Window

Type	Description
Library List	About 1,000 images are put into and registered in 26 categories and displayed in the list.
Image List Window	Displays the images registered in each list. If you click on an item, the image registered in it is displayed in the image list window.  Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V assembly_ar… compressor_… conveyer_b… Engine Engine_2 Engine_3 The image registered in ANIMATION list is displayed  Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V square-07 square-08 square-09 square-10 square-11 square-12 The image registered in BASIC_SQUARE list is displayed.

Type	Description
Screen	The Graphic Library registered in this can be inserted and edited.

Note

- The System Graphic Library is divided into the Raster Image List and Vector Image List. The differences and features are as follows.

Type	Features
Raster Image List	● Images are displayed in pixels as a bitmap image. ● An image can be damaged when it is zoomed in or out. ● If the Raster Image List is used as the background image in an object, the pattern and color cannot be changed and only the original copy must be used. ● The names of the Graphic Library list are followed by [_R].  KEY_R KEY_V PATTERN_R PIPE_R
Vector Image List	● Images are expressed by connected lines. ● Images are small and image information is not affected when the image is zoomed in or out. ● If the Vector Image List is used as the background image in an object, the pattern or color can be changed and applied. ● The names of the Graphic Library are followed by [_V].  PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V

8.1.2 Library Insertion, Editing and Background Image Setting

This provides the function of inserting, editing and setting the System Graphic Library or User Graphic Library as the background image of the window.

The method of selecting the desired image from the graphic list and inserting it in the window is as follows.

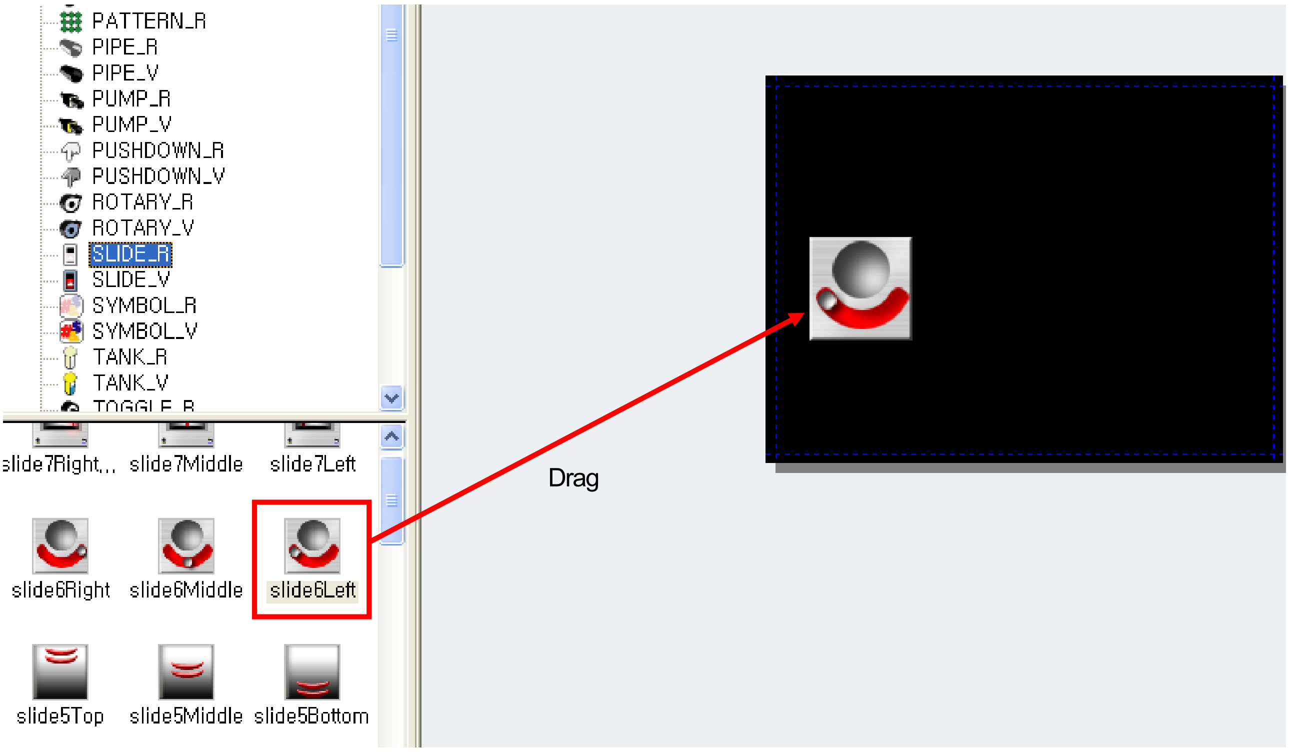
[How to Insert]

(1) Click on the desired list in the Graphic Library list.

(2) The images registered in the list are displayed in the image list window.

(3) Select the desired image, drag it to a desired place on the screen with the left button on the mouse pressed and release the button.

(4) An image is created on the screen.


PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
slide7Right...
slide7Middle
slide7Left
slide6Right
slide6Middle
slide6Left
slide5Top
slide5Middle
slide5Bottom

Drag

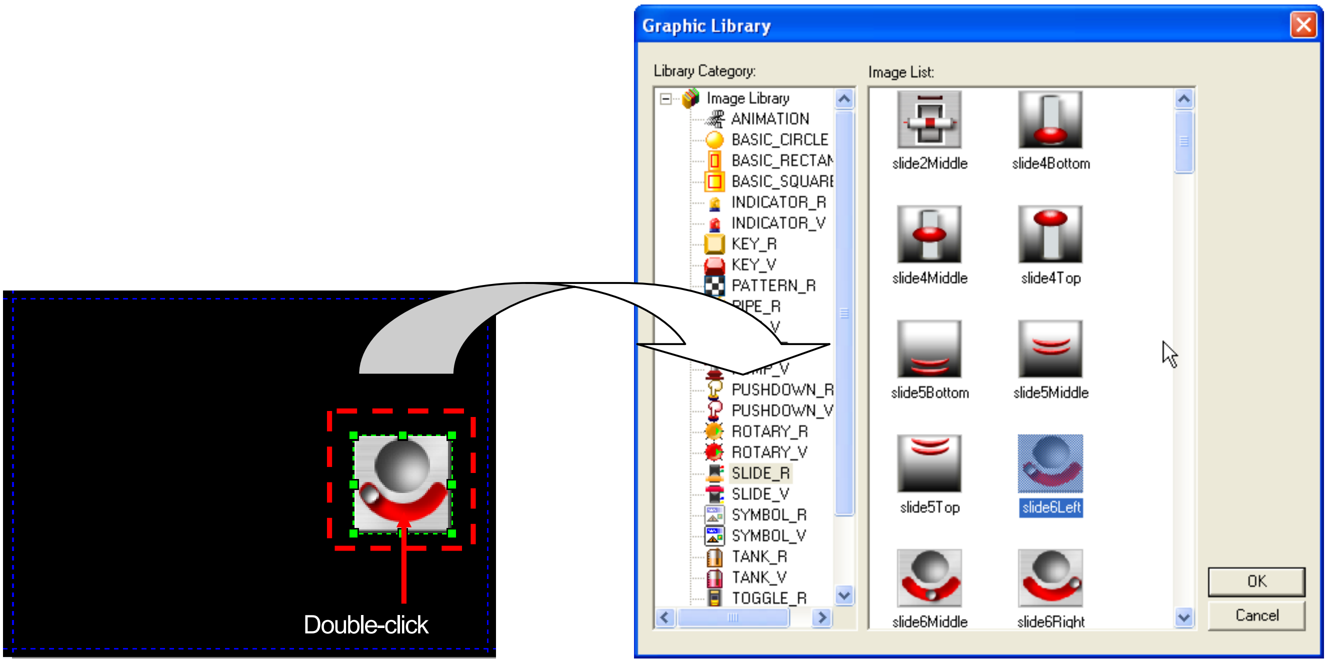
The method of selecting a desired image on a graphic list, creating it on the screen and editing it is as follows.

[How to Edit]

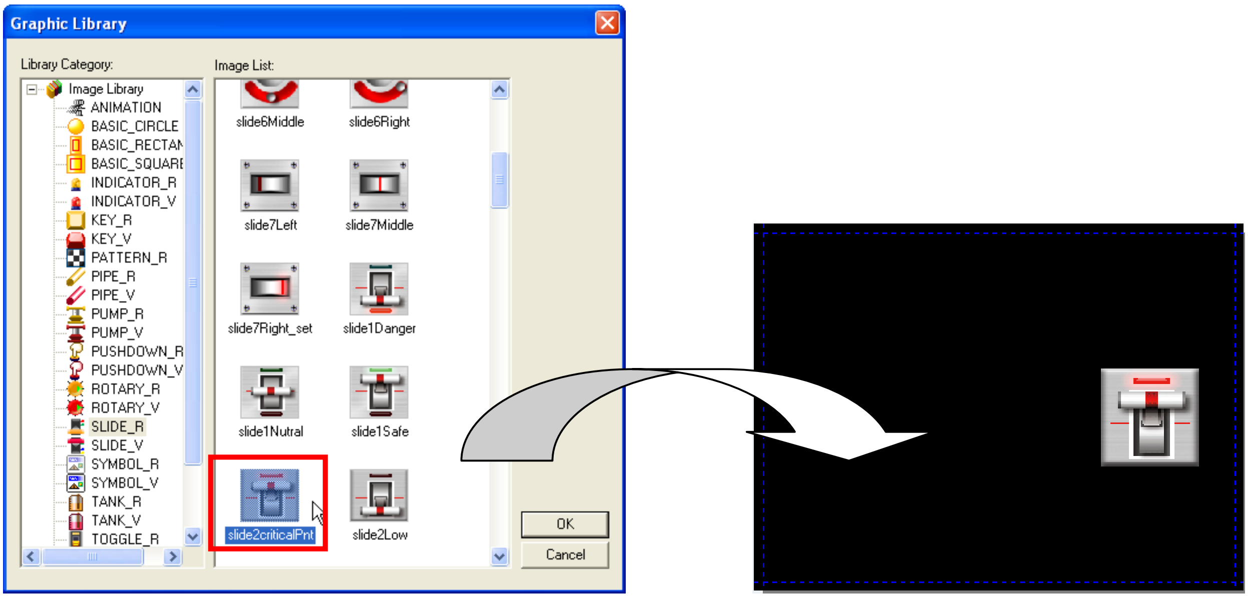
(1) If you want to modify a created image, double-click on it.

(2) An image list dialog box is invoked. Select the list and image you want to modify and click on [OK].

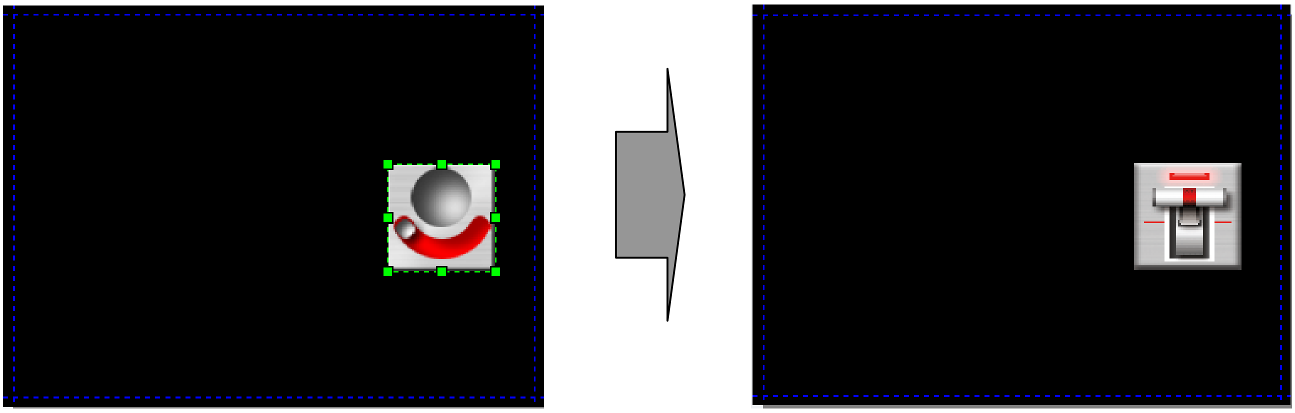
(3) The image has been changed.


Graphic Library
Library Category:
Image List:
Image Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTAN
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
slide2Middle
slide4Bottom
slide4Middle
slide4Top
slide5Bottom
slide5Middle
slide5Top
slide6Left
slide6Middle
slide6Right
OK
Cancel

Double-click


Graphic Library
Library Category:
Image Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTAN
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
Image List:
slide6Middle
slide6Right
slide7Left
slide7Middle
slide7Right_set
slide1Danger
slide1Nutral
slide1Safe
slide2criticalPnt
slide2Low
OK
Cancel

The result of changing Slide6Left image of SILDE_R list into Slide2criticalPnt is as follows.



You can set a desired image in a desired graphic list as the background image of the screen.

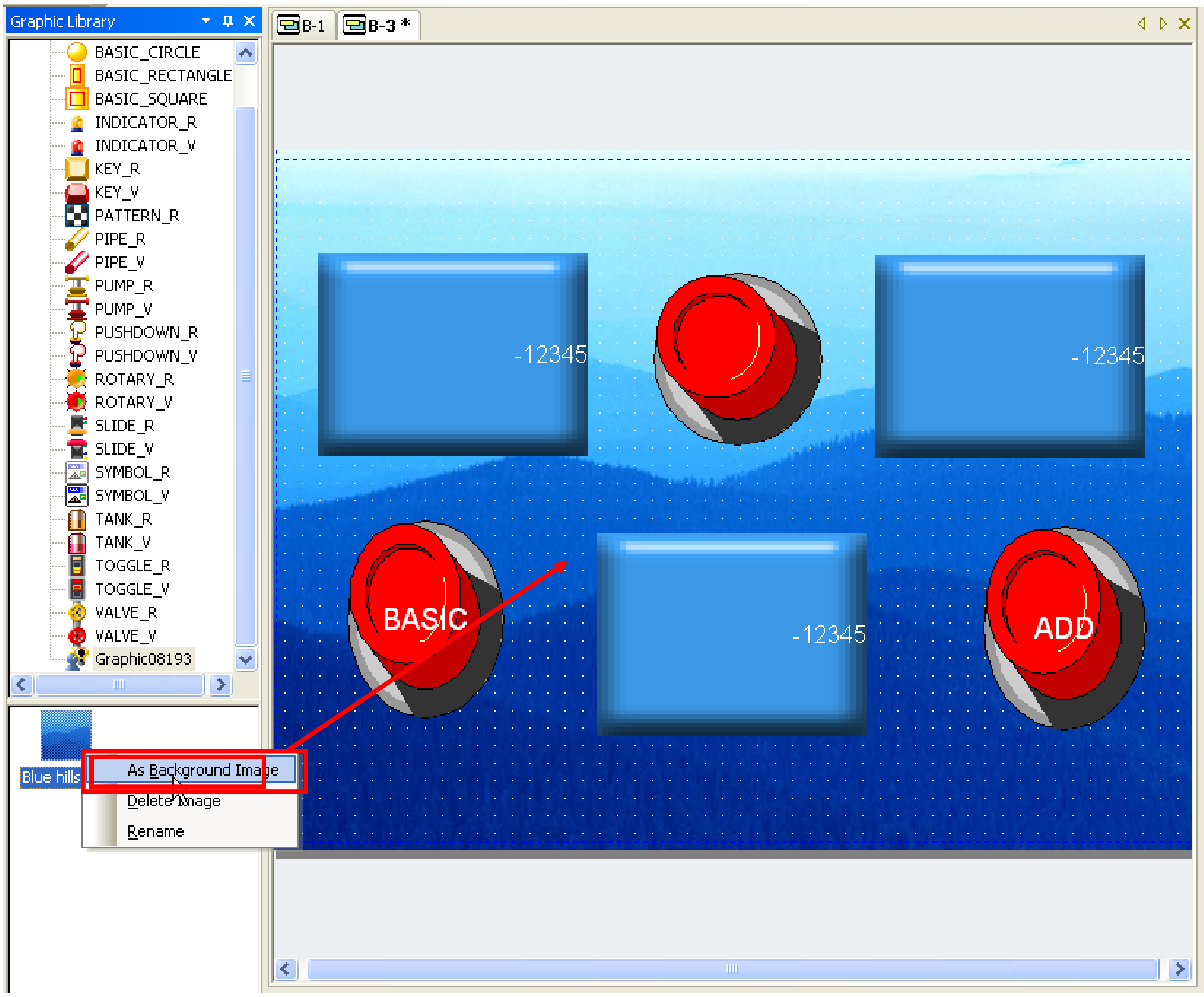
[How to Set as the Background Image]

(1) Click on the desired list in the Graphic Library list.

(2) The images registered in the list are invoked on the image list window.

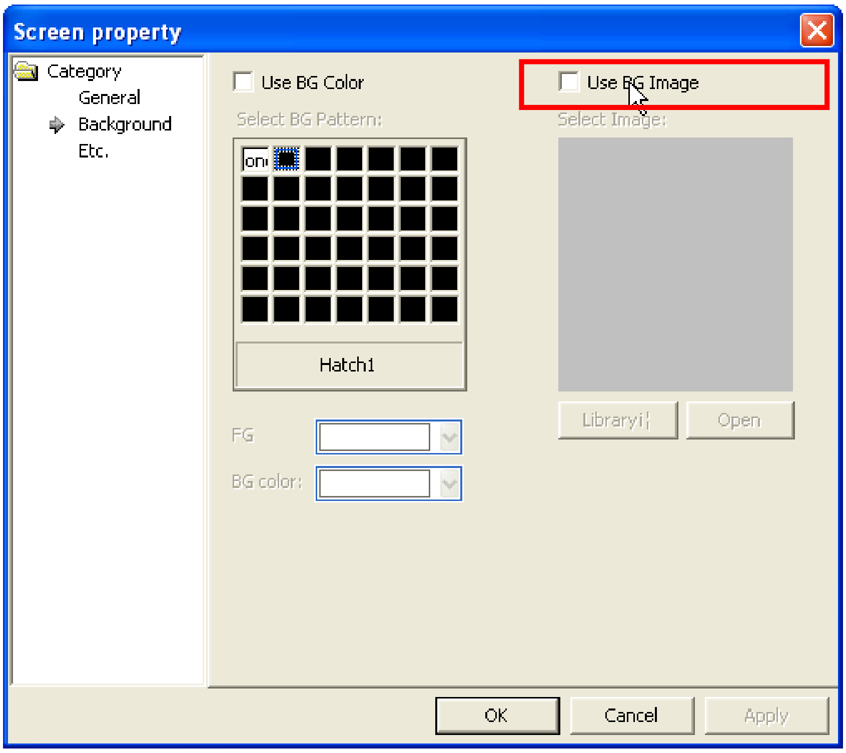
(3) Press the right button on the mouse on the desired image in the screen.

(4) Click on [As Background Image] or click on hot key B.


Graphic Library
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
Graphic08193
Blue hills
As Background Image
Delete Image
Rename
B-1
B-3 *
-12345
-12345
BASIC
-12345
ADD

Note

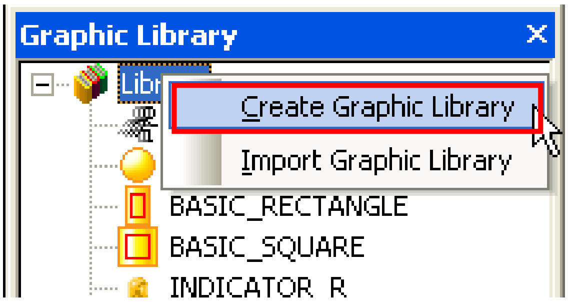
(1) You can remove the set background image as follows.
- (a) Press the right button on the mouse.
- (b) Click on [Screen Properties].
- (c) Click on [Background] in the screen registration information dialog box.
- (d) Uncheck [Use BG Image] setting.

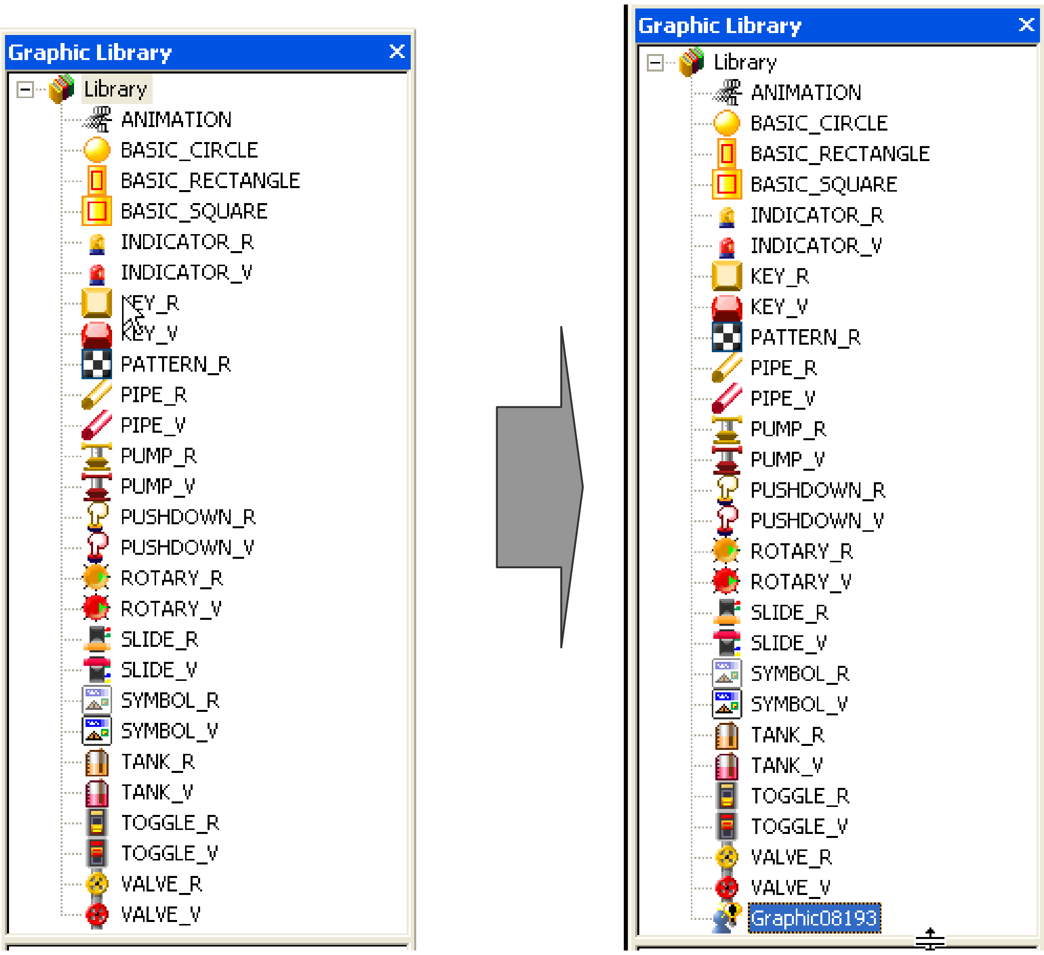

Screen property
Category
General
Background
Etc.
☐ Use BG Color
Select BG Pattern:
Hatch1
FG
BG color:
☐ Use BG Image
Select Image:
Library¦
Open
OK
Cancel
Apply

8.1.3 User Graphic Library List Creation, Deletion and Name Change

The User Graphic Library list refers to the list of the graphic category list added by the user as well as the graphic category list provided by the XP Builder system. That is, the user can register and delete lists other than the category list provided by XP Builder.

[How To Create User Library List]
- (1) Press the right button of the mouse on the Library.
- (2) Click on [Create User Library] or hot key C.
- (3) A list of which the name is Graphic08193 is created.


Graphic Library
Libr
Create Graphic Library
Import Graphic Library
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R

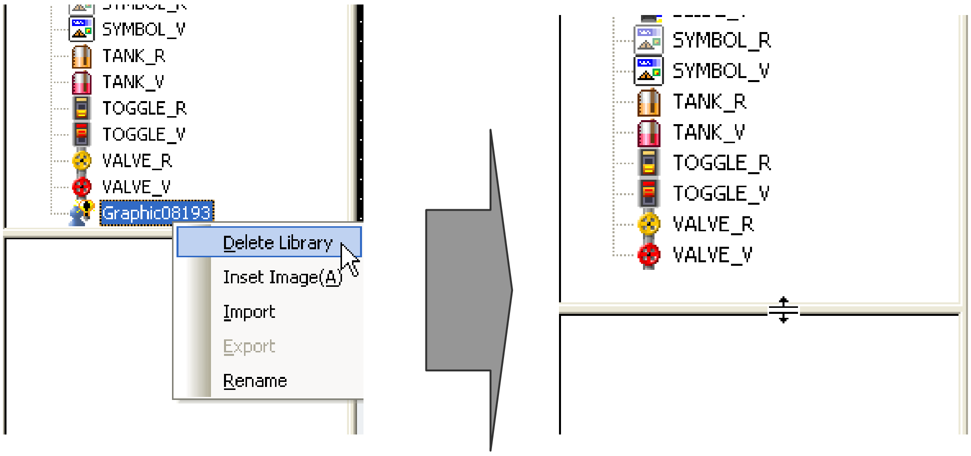

Graphic Library
Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
Graphic08193

[How to Delete User Library List]

(1) Click on the User Graphic Library list you want to change.

(2) Press the right button of the mouse in the selected list.

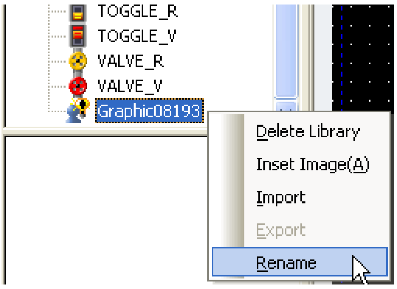
(3) Click on [Delete Library] or hot key D.


SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
Graphic08193
Delete Library
Inset Image(A)
Import
Export
Rename
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V

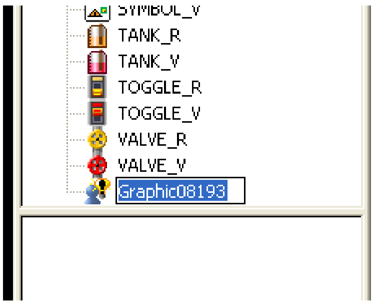
The User Graphic Library created by the user is given a random name. After adding the list, the user can change the name as he wants.

[How to Change User Graphic Library List Name]

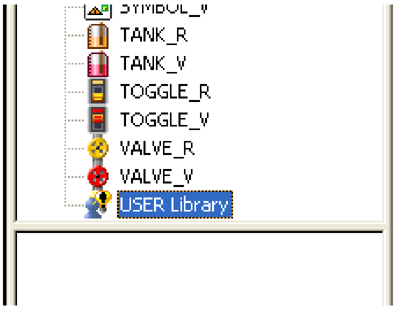
(1) Click on the User Graphic Library list you want to change.
(2) Press the right button of the mouse in the selected list.
(3) Click on [Rename] or hot key R.
(4) When the list name is changed into editing mode, change the name and press Enter.
(5) The name has been changed.


TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
Graphic08193
Delete Library
Inset Image(A)
Import
Export
Rename

Press the right button on mouse


SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
Graphic08193

Editing mode


SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
USER Library

List name changed

[How To Change User Graphic Library List Name 2]

(1) Click on the User Graphic Library list you want to change.
(2) Click on the selected list once again, and then it changed into the editing mode.
(3) Then change the name and press Enter.
(4) The name has been changed.

Note

(1) List number of user graphic library is from 2094 to 4095, 2047 categories can be made.
(2) If the user first adds a graphic list, the list name begins with Graphic08193. From then, every time the user adds another graphic list, the number increases by 1, with the second list name being Graphic08194. That is, the graphic list name is given with the 5 digit number following Graphic increasing.
(3) The name of the System Graphic Library cannot be changed.
(4) User graphic library category is aligned in ascending order when creating or changing user graphic library.

8.1.4 Registration and Deletion of User Graphic Library

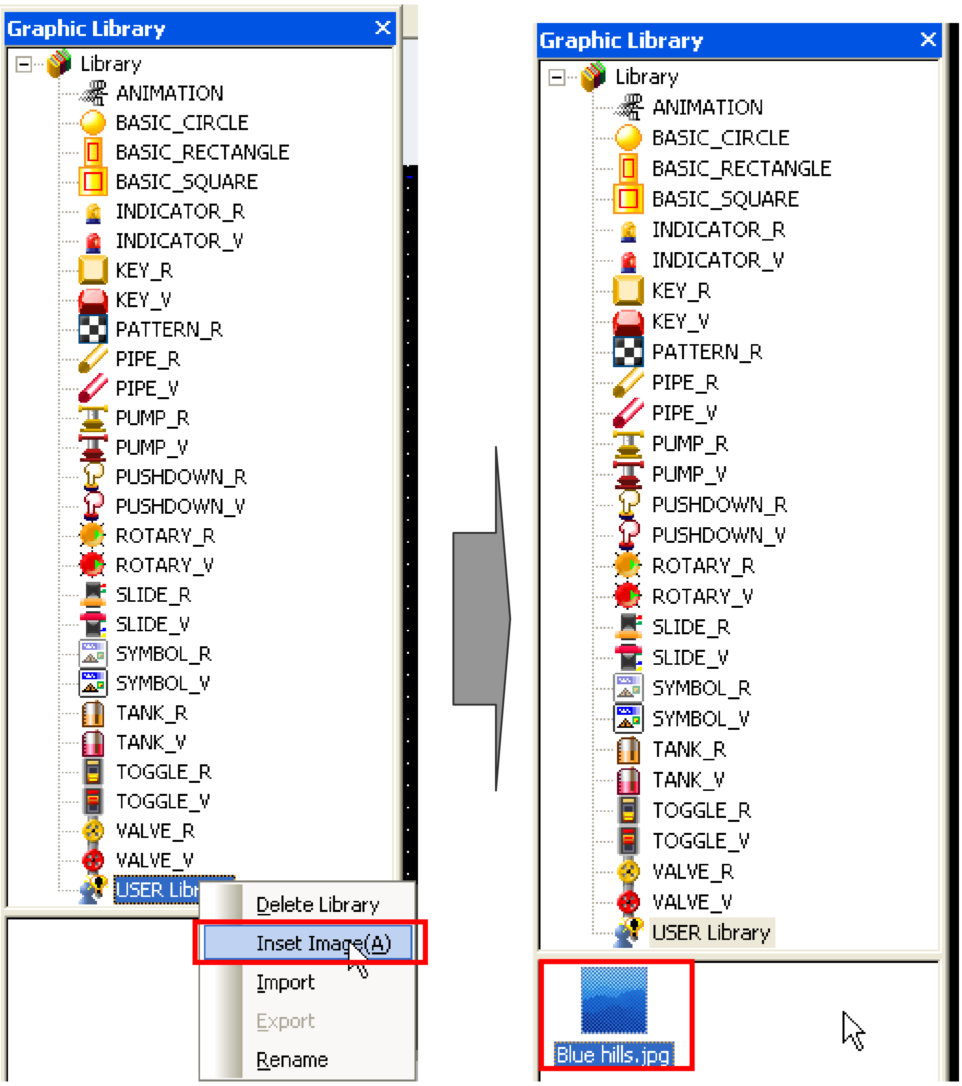
User Graphic Library refers to the graphic image created by the user other than the graphic image provided by XP Builder. That is, the user can register and delete Images other than the images provided by XP Builder.

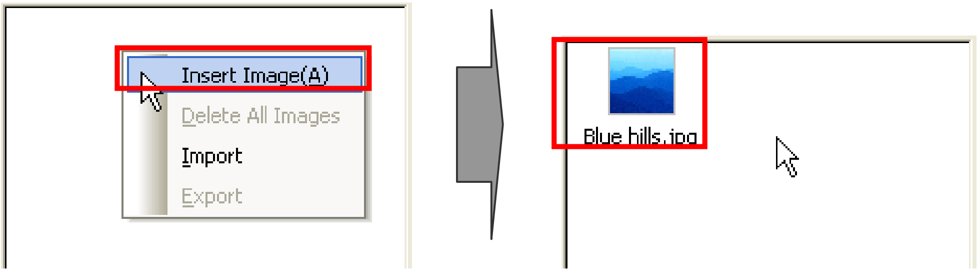
The System Graphic Library provided by XP Builder cannot add any image and the lists in which an image can be added are as follows.

Addable Graphic Library List	Description
List created by the user	The user creates the Graphic Library list and adds images to the list.
The USER list of the XP Builder graphic lists	Images are added to the USER list previously created to the Graphic Library of XP Builder.

The two lists have the same image adding methods, but in case of the former, you should add the user library list and then add an image.

There are two ways of adding an image as follows.

How To Add Image	Description
In Category List	1. Select the list created by the user or USER list and press the right button of the mouse. 2. Click on [Insert Image] or hot key A. 3. Select the desired image in the folder where it exists.  Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V USER Library Delete Library Inset Image(A) Import Export Rename Blue hills.jpg

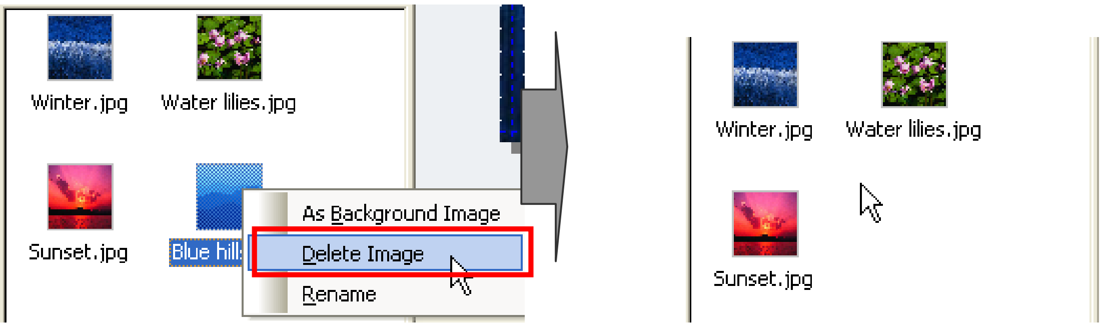
How To Add Image	Description
In Image List Window	1. Select the list created by the user or USER list 2. The images registered in the list are displayed in the image list window. 3. Press right button of mouse on a point in the image list window. 4. Click on [Insert Image] or hot key A. 5. Select the desired image in the folder where it exists. 

Insert Image(A)
Delete All Images
Import
Export
Blue hills.jpg

You can also delete the image added as above. You can delete it only in the image list window.

[How To Delete Image]

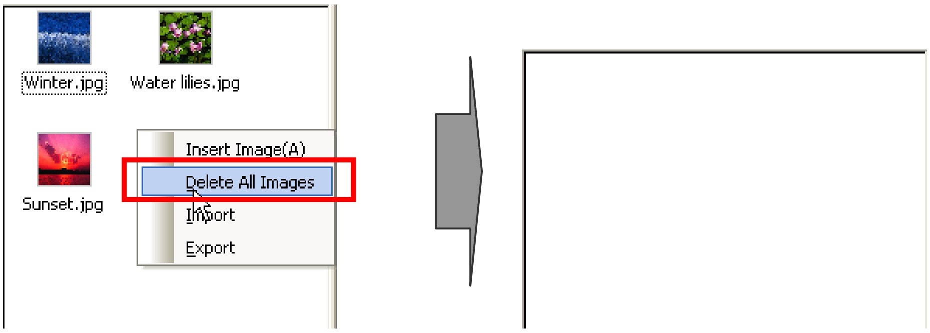
(1) Select the image you want to delete in the image list window.
(2) Press the right button on the mouse on the selected image.
(3) Click on [Delete Image] or hot key D.
(4) The image has been deleted in the image list window.
(You can also delete the image by pressing Delete key on the keyboard with the image clicked on)


Winter.jpg
Water lilies.jpg
Sunset.jpg
Blue hill:
As Background Image
Delete Image
Rename
Winter.jpg
Water lilies.jpg
Sunset.jpg

You can also delete all the images registered in the USER list or added by you at a time. You can delete images only in the image list window.

[How To Delete All Images]

(1) Press the right button of the mouse in the image list window.
(2) Click on [Delete All Images] or hot key D.
(3) All the images in the image list window have been deleted.


Winter.jpg
Water lilies.jpg
Sunset.jpg
Insert Image(A)
Delete All Images
Import
Export

Note

The following cautions should be made when adding images depending on device types. For more detail, refer to the chapter 13

(1) In case that the device is not an economic-type device(XP30-BTE, XP30-TTE), available image types when adding pictures are BMP, JPG, GIF, TGA, PNG, TIF, WMF, ICO and PCX. But, for economic devices, available images types are limited to BMP, GIF, JPG and WMF

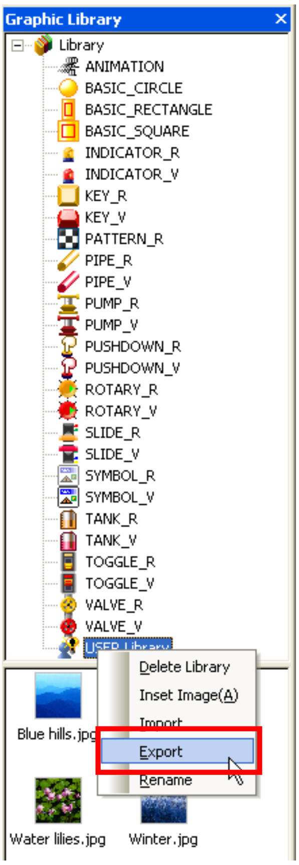
(2) When the user's images are registered, for black-white device (XP30-BTE, XP30-BTA), image is converted into black-white image and for 256 device (XP30-TTE) and device where 256 mode ☑ 256 Color mode is selected, image is converted into 256 color image.

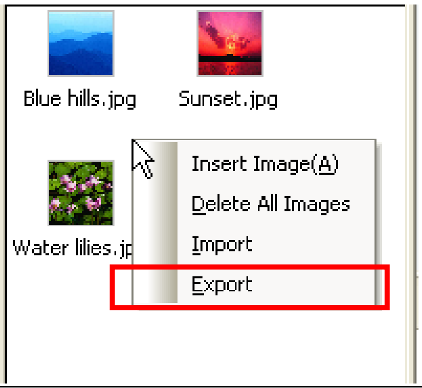
(3) If 65535 color device type is changed to economic device (E.g. XP30-TTA->XP30-TTE) and [Communication]-[Send] or [Tool]-[Data Check] is pressed when setting the project, error message will be displayed on the output window if images other than BMP, GIF, JPG and WMF are included.

8.1.5 User Graphic Library Import/Export

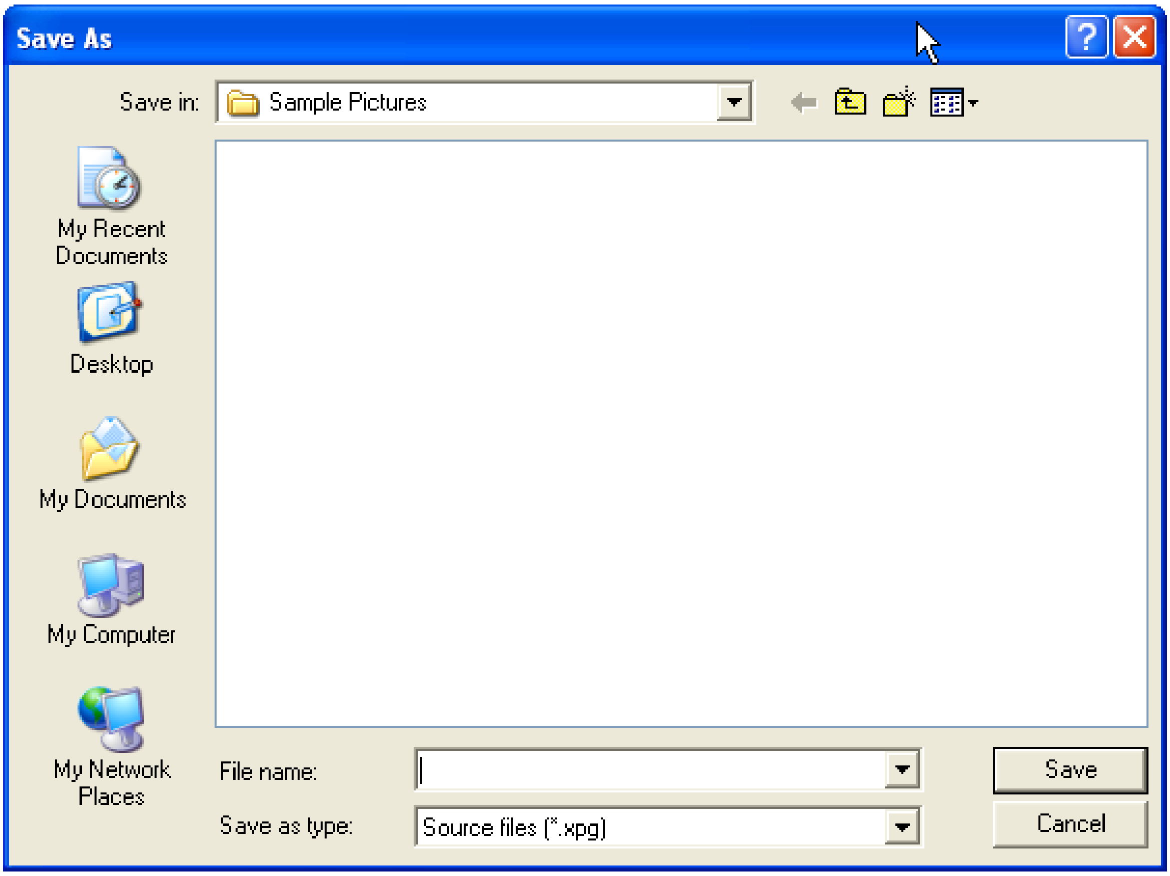
These are necessary for sharing User Graphic Library images between projects.
That is, you can export the images for another project to reuse the user image or invoke the send out files from another project.

User Graphic Library Export is saving the Graphic Library list and images registered by the user in a file.
There are two ways to export User Graphic Library as follows.

Export	Description
In the category list	1. Select the Graphic Library list you want to export. 2. Press the right button on the mouse on the selected list. 3. Click on [Export] or hot key E.  Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V USER Library Delete Library Inset Image(A) Import Export Rename Blue hills.jpg Water lilies.jpg Winter.jpg

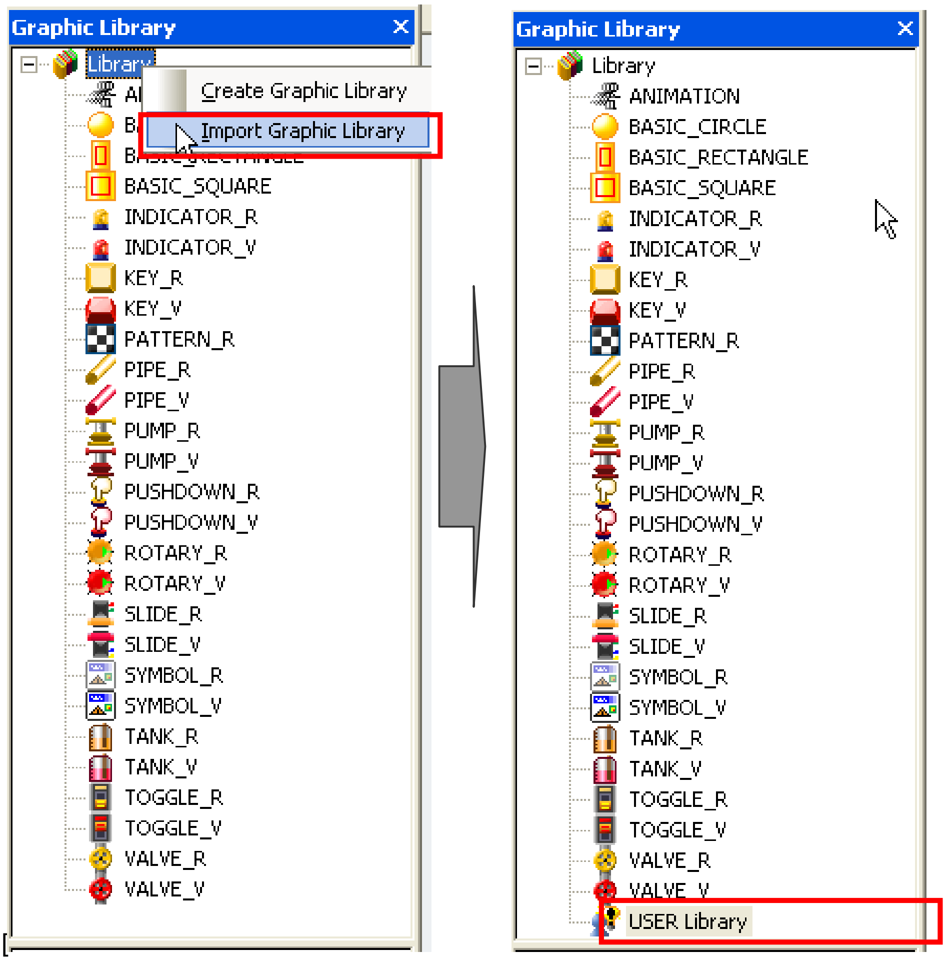
Export	Description
In the image list window	1. Select the list created by the user or USER list. 2. The image registered in the list is displayed in the image list window. 3. Press the right button on the mouse at any point in the image list window. 4. Click on [Export] or hot key E.  Blue hills.jpg Sunset.jpg Water lilies.jp Insert Image(A) Delete All Images Import Export

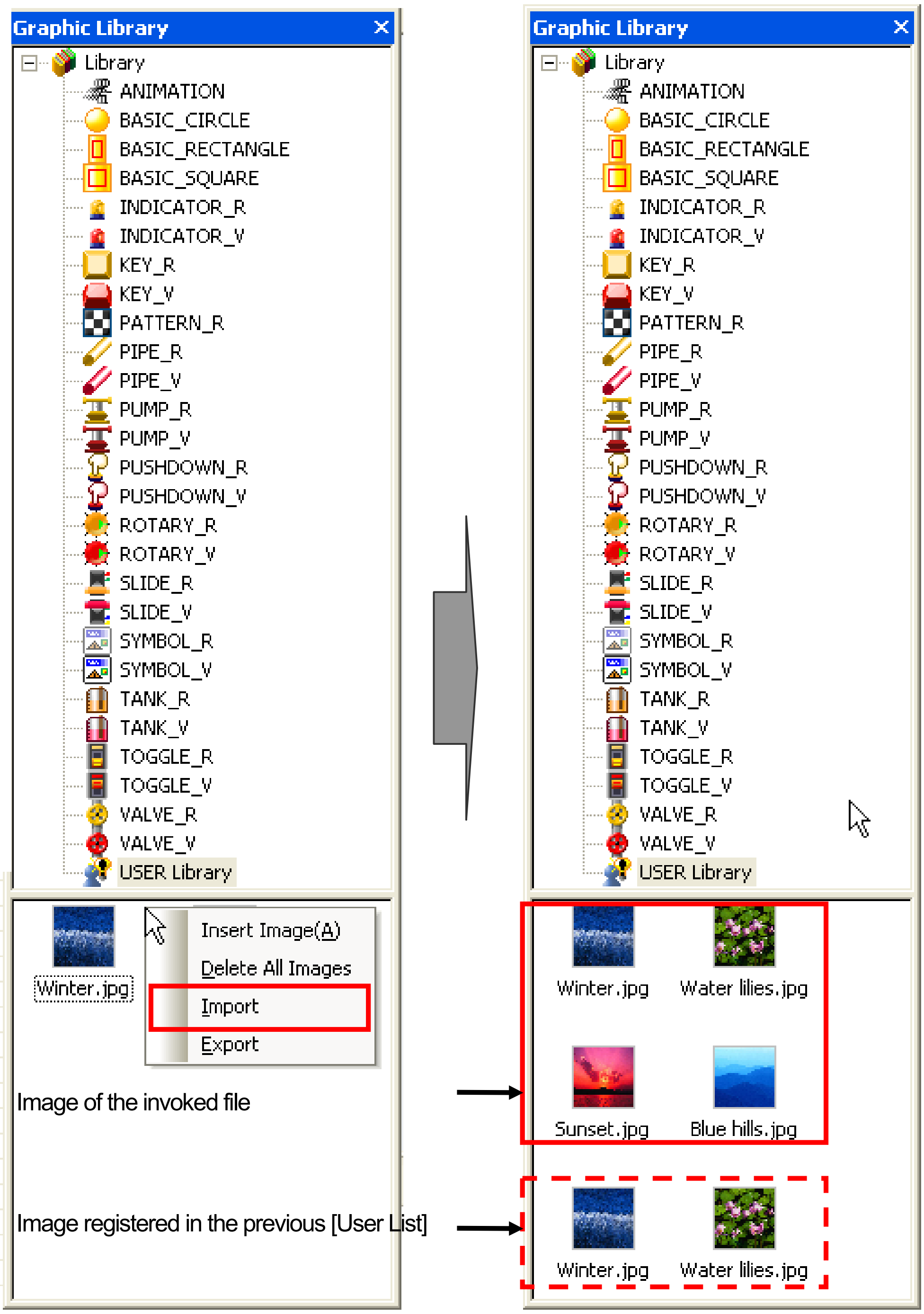
If you choose export as above, the User Graphic Library is saved in the form of a file and the saving path and file should be selected.

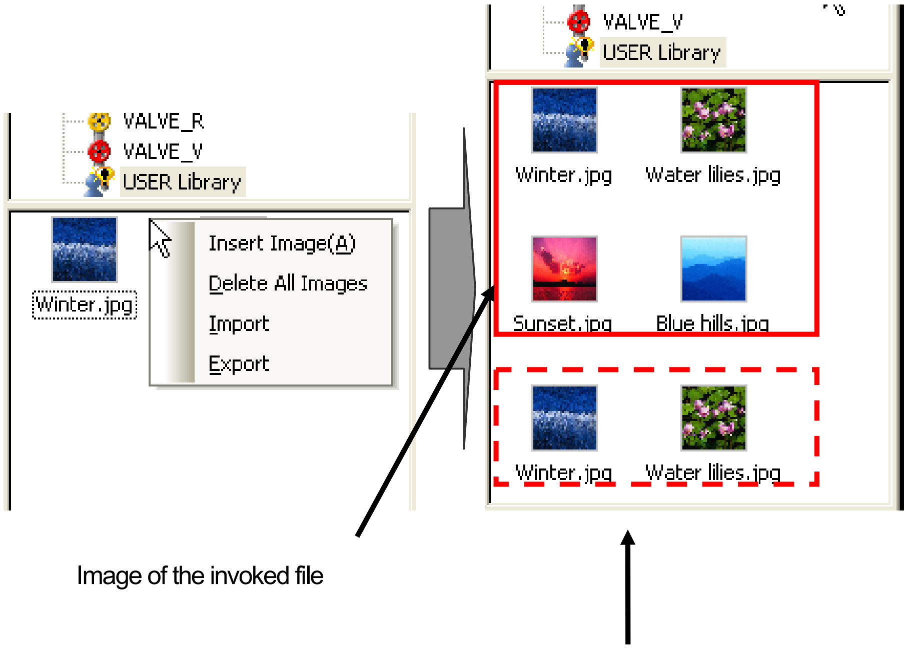

Save As
Save in:
Sample Pictures
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
File name:
Save as type:
Source files (*.xpg)
Save
Cancel

The following is the process of invoking the file which has been exported to the User Graphic Library list from a new project. User Graphic Library Import refers to reusing the User Graphic Library saved in a file by inserting it in the current project.

There are three methods of importing User Graphic Library and the results vary according to the method.

Import	Description
In the category route list	1. Select a category route list. 2. Press the right button on the mouse in the route list. 3. Click on [Import Graphic Library] or hot key I. 4. Select the desired file name in the path of the file to import. 5. A new User Graphic Library list has been created.  Graphic Library Library Create Graphic Library Import Graphic Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V USER Library In this case, a new User Graphic Library list has been created.
In the selected category list	If you execute [Import] in a selected category list, it is tantamount to adding the image of the file invoked to the present category. 1. Select the list to which to add an image. 2. Press the right button on the mouse in the selected list. 3. Click on [Import] or hot key I. 4. Select the desired file name in the path of the file to invoke. 5. An image has been added to the present list without a new list added.

Import	Description
	 Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V USER Library Winter.jpg Insert Image(A) Delete All Images Import Export Winter.jpg Water lilies.jpg Sunset.jpg Blue hills.jpg Winter.jpg Water lilies.jpg Image of the invoked file Image registered in the previous [User List]

Import	Description
In the image list window	1. Select the user-created list or USER list. 2. The image registered in the list is displayed in the image list window. 3. Press the right button on the mouse at a point in the image list window. 4. Click on [Import] or hot key I. 5. Select the desired file name in the path of the file to import. 6. An image has been added to the present list without a new list added.  VALVE_R VALVE_V USER Library Winter.jpg Insert Image(A) Delete All Images Import Export VALVE_V USER Library Winter.jpg Water lilies.jpg Sunset.jpg Blue hills.jpg Winter.jpg Water lilies.jpg Image of the invoked file Image registered in the previous [User List]

Note

(1) In case of adding the user graphic library, it is added to project data transferred to XGT Panel. So register the image used in the screen data to reduce the project data capacity.

Note

1) When an image has not been added to the User Graphic Library list, you cannot set the [Export] function.
2) In [Export], the basic extension is xpg and if you do not enter the extension, it is automatically given.
3) The User Graphic Library list added by [Import] begins with Graphic08193 regardless of the file name. If the user invokes another graphic list, the number increases by 1 and the name becomes Graphic08194. That is, the name of the graphic list added by [Import] is given with the five digit number following Graphic increasing.
4) With respect to [Import] in the category list, the difference is as follows.

[Import] from the category list route	A new User Graphic Library list is created.
[Import] from the selected list	A new list is not created but the image registered in the selected list is added.

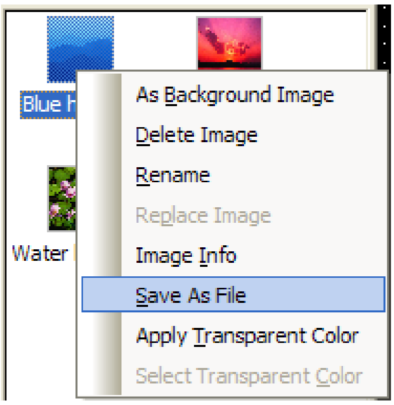
5) If you bring data to the same category through [Import] after [Export], ID may be occupied by other image. In this case, ID can not be duplicated due to the existing image and new ID will be allocated·added. Accordingly, if you copy the object or image from other projects, the image may be different from the original one.

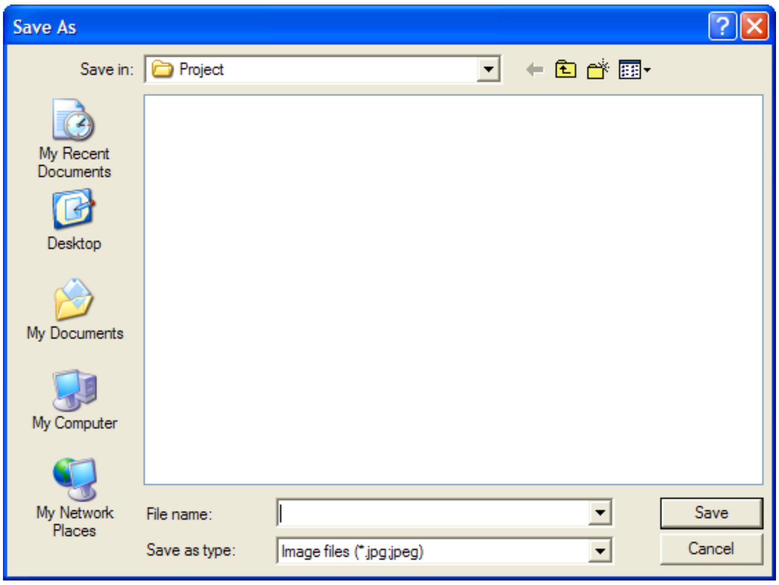
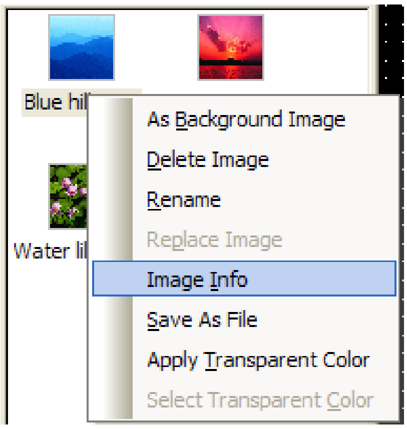
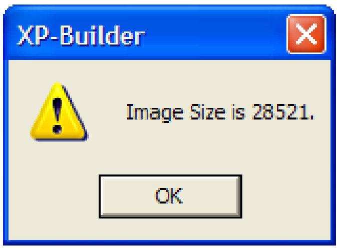
8.1.6 User graphic library; Saving image/Image information/ Changing image/Applying transparency

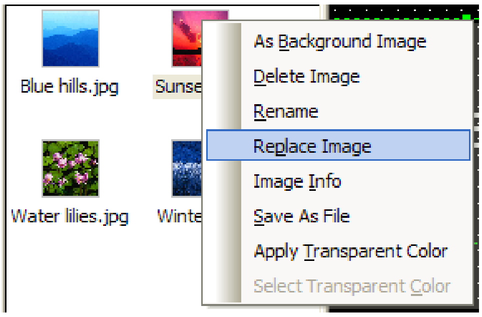
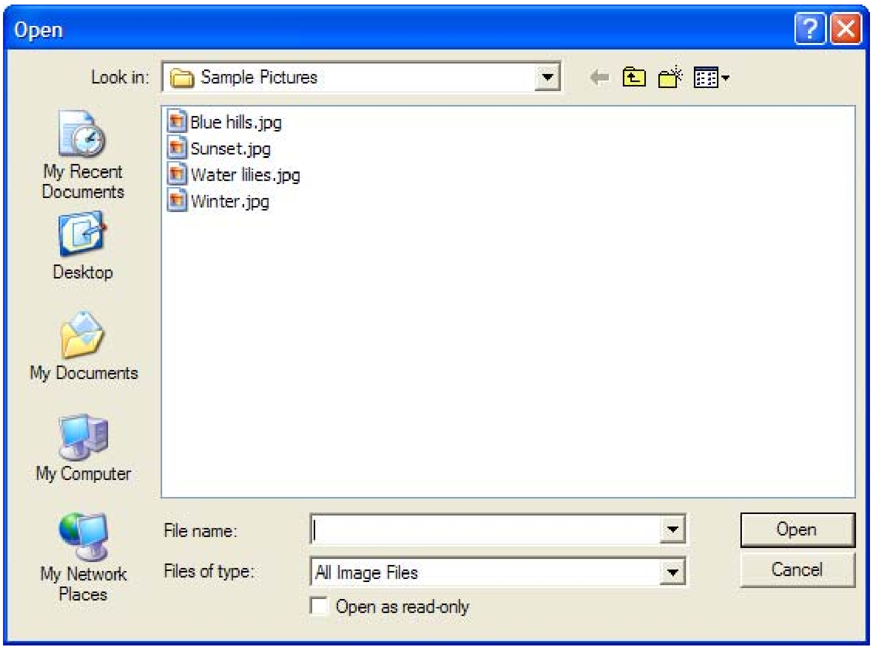
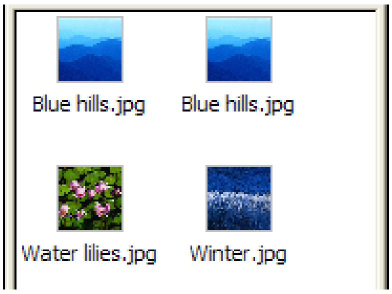
User graphic library image file provide the functions; Saving image/Image information/ Changing image/Applying transparency for a user to edit control the image. Saving image provides the function to save the registered image as a file and it is also useful when you try to register the image to user library again after changing it.

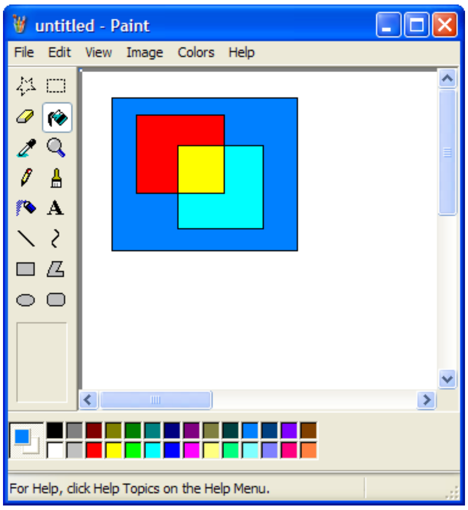
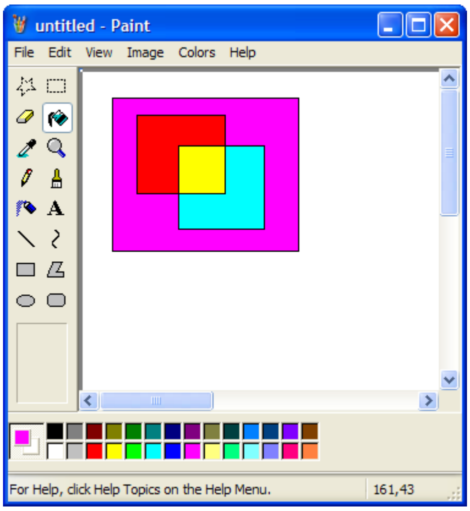
Image Information function gives the current image's size, namely, BYTE data. When download is not available due to HMI capacity since too big image size is registered, through Image Information, you can check the image size and delete or re-register it. When too many objects are registered at user library and you delete the existing image and add new one, the ID will be changed and you need to adjust the object image newly. In this case, through Changing Image function, you can just change the image easily at user library without repeating adjusting procedural all over again; therefore it is very useful function.

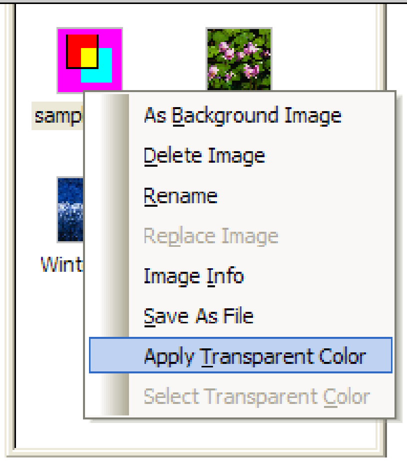
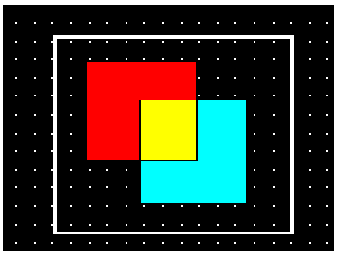
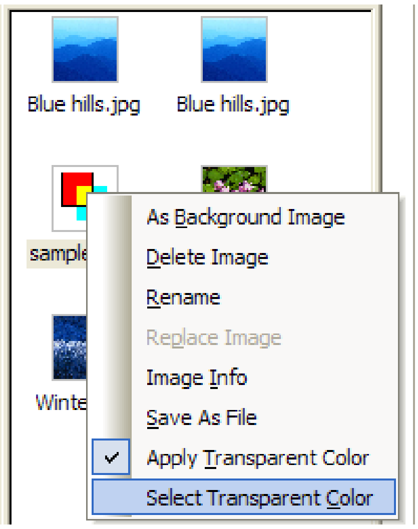
In the meanwhile, when you register the picture at a library and place it to the screen, you may want some area to be transparent. In this case, if you replace the area into RGB (2, 5, 2) color at image editor (ex: drawing board) and register it at a library after saving, you can see the intended area will be transparent.

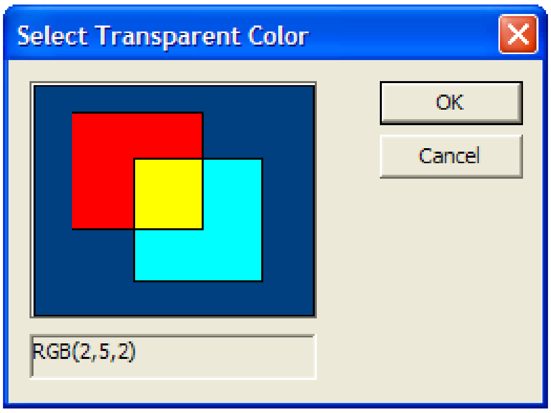
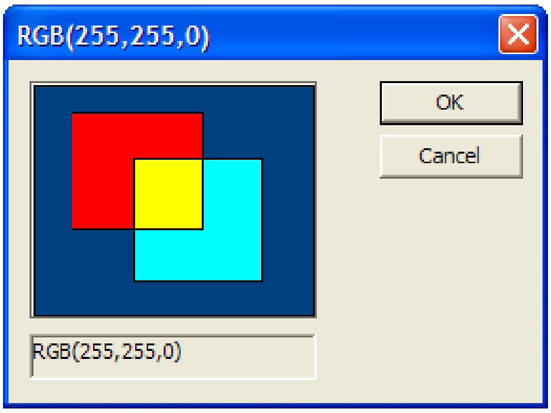
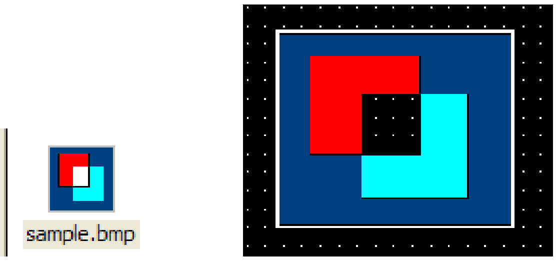
Item	Description
Save as a file	Save the registered imaged as a file. (1) For the registered image at user library, press a right button and select the menu [Save as file].  Blue H Water As Background Image Delete Image Rename Replace Image Image Info Save As File Apply Transparent Color Select Transparent Color (2) Then, the below file dialog will be shown and you can see the file type of original image at file format. After selecting the route and inputting file name, save it at right place.

Item	Description
	 Save As Save in: Project My Recent Documents Desktop My Documents My Computer My Network Places File name: Save as type: Image files (*.jpg.jpeg) Save Cancel (3) You can edit image file and re-use for your own purpose with image making tools including drawing board.
Image Information	It displays the information on image size, namely BYTE. (1) For the registered image at user library, press the right button and select the menu [Image Information].  Blue hil Water lil As Background Image Delete Image Rename Replace Image Image Info Save As File Apply Transparent Color Select Transparent Color (2) The information on the image size will be displayed as BYTE as below.  XP-Builder OK Image Size is 28521.

Item	Description
Changing Image	It changes the image into other one. (1) For the registered image at user library, press the right button and select the menu [Changing Image].  Blue hills.jpg Sunse Water lilies.jpg Winte As Background Image Delete Image Rename Replace Image Image Info Save As File Apply Transparent Color Select Transparent Color (2) If a file dialog is shown, select the image to be changed and press Open button.  Open My Recent Documents Desktop My Documents My Computer My Network Places Open Cancel Look in: Sample Pictures Blue hills.jpg Sunset.jpg Water lilies.jpg Winter.jpg File name: Files of type: All Image Files ☐ Open as read-only (3) You can see user graphic image of the related position has been changed with the objects registered to the screen provided that the image is applied.  Blue hills.jpg Blue hills.jpg Water lilies.jpg Winter.jpg

Item	Description
Applying transparency	If you use the function, the area applied default value RGB (2, 5, 2) will be transparent. This property is not activated as a default value. If you want to designate other transparent color instead of RGB (2, 5, 2), refer to the below explanation to select transparent color. 1) Open the intended image file at a drawing board.  untitled - Paint File Edit View Image Colors Help For Help, click Help Topics on the Help Menu. 2) Change the area to be transparent with RGB(2,5,2) function and save it.  untitled - Paint File Edit View Image Colors Help For Help, click Help Topics on the Help Menu. 161,43 3) After registering it to a library, check ‘Apply Transparent Color’.

Item	Description
	 samp Wint As Background Image Delete Image Rename Replace Image Image Info Save As File Apply Transparent Color Select Transparent Color 4) Register it to the screen and check if the area where RGB(2,5,2) is applied seems to be transparent. 
Selecting transparent color	The default value for the above transparent color is RGB(2,5,2). However, when a user tries to apply other transparent color to the existing image, refer to the following. (1) After register image and select 'Apply transparent color', click the menu 'Selecting transparent color'  Blue hills.jpg Blue hills.jpg sample Winte As Background Image Delete Image Rename Replace Image Image Info Save As File ✓ Apply Transparent Color Select Transparent Color 1) If the dialog box to select transparent color is shown, the RGB value of current color will be displayed at the bottom.

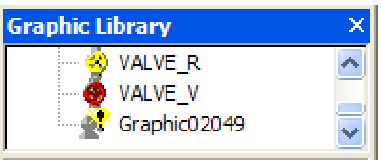
Item	Description
	 Select Transparent Color RGB(2,5,2) 2) Click the transparent color of intended area and press 'OK' button.  RGB(255,255,0) RGB(255,255,0) 3) Accordingly, Preview for the related graphic image library and RGB(255,0,255) area of inserted image will be displayed as transparent color. 

8.1.7 Registering the selected figure to graphic library as WMF format

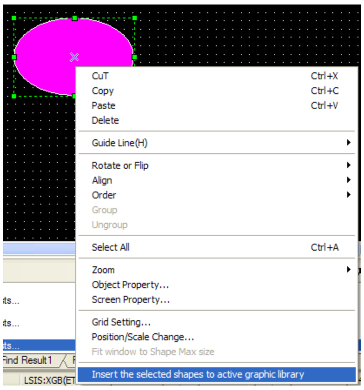
Through the function, figures registered by a user can be entered into a graphic library as WMF image format used for XP Panel only. A user can make WMF format at the device and edit·save·re-use unbroken image regardless of magnification, reduction since WMF can realize graphic computation with vector format.

[How to register the selected figure to graphic library as WMF format]

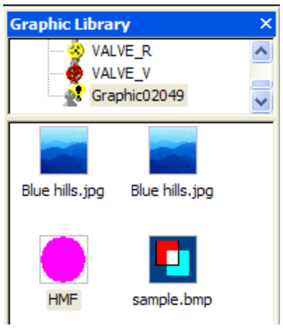
(a) Create one user category at graphic library.


Graphic Library
VALVE_R
VALVE_V
Graphic02049

(b) Place the figure at the screen and click right mouse button to select the menu [Insert the selected shapes to active graphic library].


CuT Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete
Guide Line(H)
Rotate or Flip
Align
Order
Group
Ungroup
Select All Ctrl+A
Zoom
Object Property...
Screen Property...
Grid Setting...
Position/Scale Change...
Fit window to Shape Max size
Insert the selected shapes to active graphic library
Find Result1
LSIS:XGB(ET

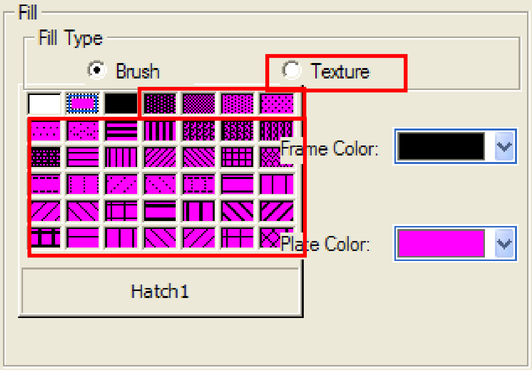
(c) Through the above category, the figures will be registered to graphic library as WMF format.


Graphic Library
VALVE_R
VALVE_V
Graphic02049
Blue hills.jpg
Blue hills.jpg
HMF
sample.bmp

Note

(1) When registering a figure as WMF format, object and string can not available.

(2) If some brush and texture marked with a red box are elected for colorfill of the figure, please be noted that registration is not available. In the case of WMF registration, the below restricted figure image, brush, texture require much data during saving, so they are limited.


Fill
Fill Type
Brush
Texture
Frame Color:
Plate Color:
Hatch1

(3) In the case of unregisterable figure due to the above restrictions, the menu will be disable and the message will be shown at status bar.

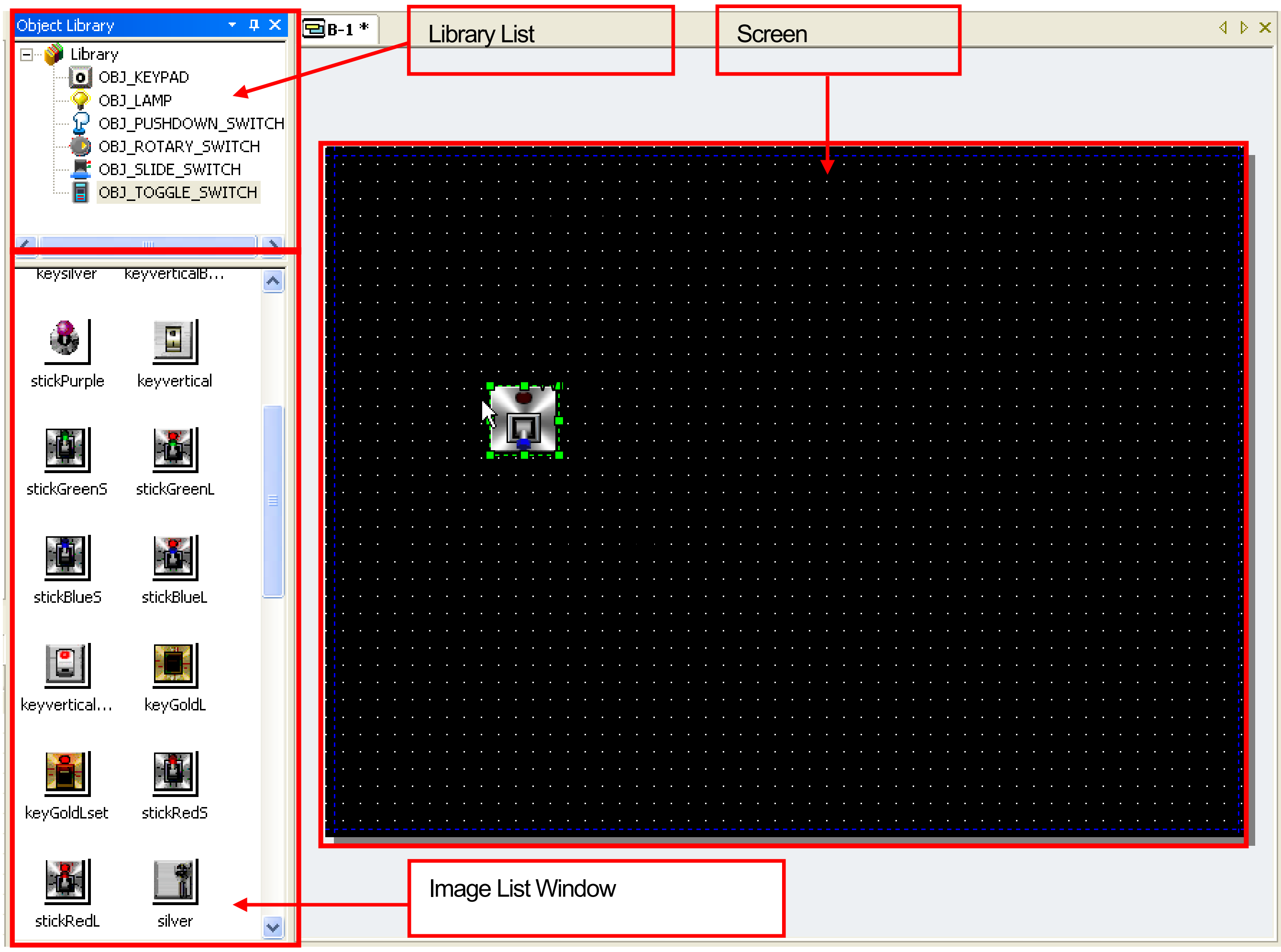
8.2 Object Library

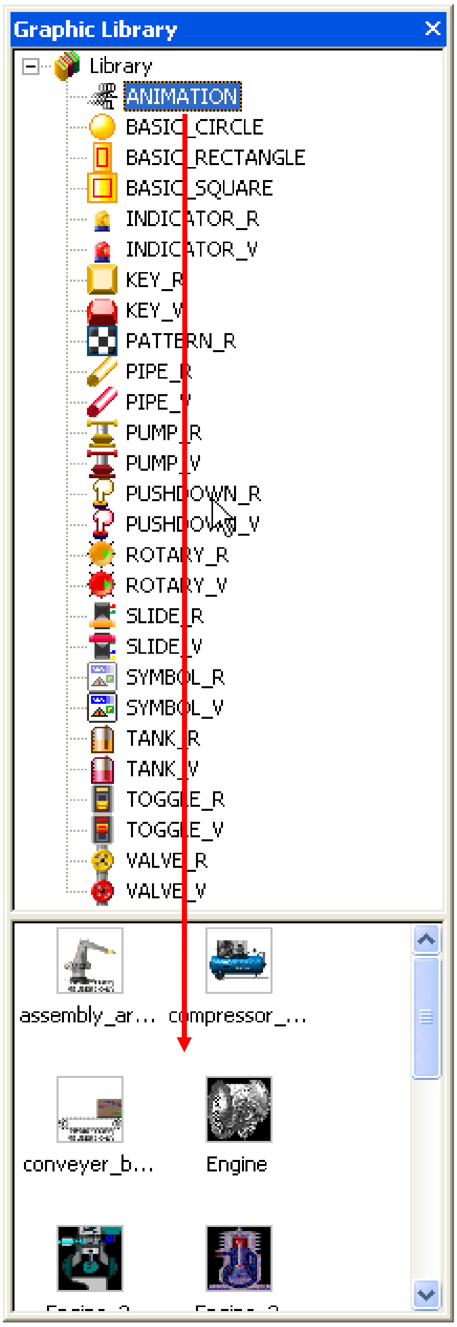
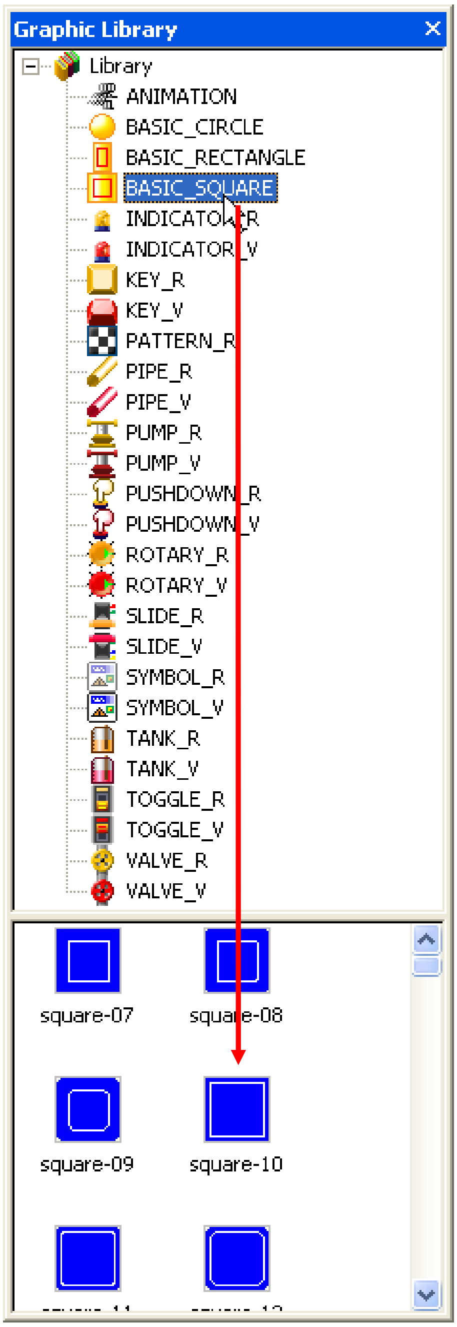
In Object Library, frequently used objects and figures can be made into a library and reused. Like Graphic Library, Object Library has the System Graphic Library and User Graphic Library and can register and delete the User Graphic Library only.

The Object Library is divided into the system Object Library and user Object Library.

Type	Description
System Object Library	● Frequently used objects with the switch and lamp are registered in 7 categories and the user can not edit them.
User Object Library	● The user can register and delete the objects and when saved, they are not saved in the Object Library but in the present editing project. ● The user Object Library of another project can be invoked and used from the present project. ● The user Object Library registered in the present project can be sent out to another project so that it can be used there.

8.2.1 Library Window


Object Library
B-1 *
Library List
Screen
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
keysilver
keyverticalB...
stickPurple
keyvertical
stickGreenS
stickGreenL
stickBlueS
stickBlueL
keyvertical...
keyGoldL
keyGoldLset
stickRedS
stickRedL
silver
Image List Window

Type	Description
Library List	About 1,000 images are put into 26 categories and displayed in lists.
Image List Window	Images registered in each list are displayed. If you click on a list, the images registered in the list are displayed in the image list window.  Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V assembly_ar… compressor_… conveyer_b… Engine Images registered in the ANIMATION list  Graphic Library Library ANIMATION BASIC_CIRCLE BASIC_RECTANGLE BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R TOGGLE_V VALVE_R VALVE_V square-07 square-08 square-09 square-10 Images registered in the BASIC_SQUARE list
Window	You can insert and edit the object Library.

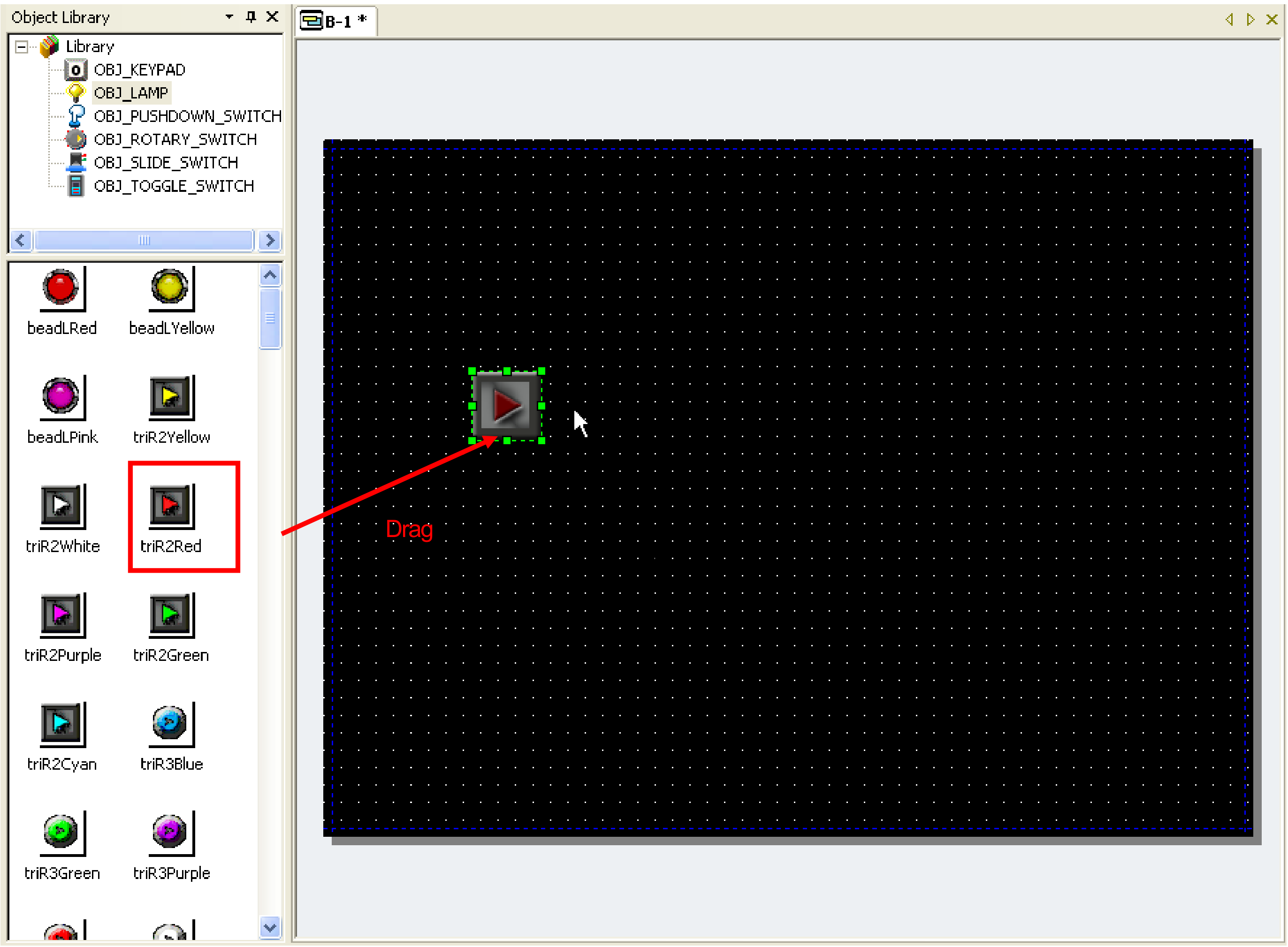
8.2.2 Library Insertion and Editing

This is the function of inserting and editing in the windows the system Object Library or user Object Library.

The method of selecting an object in the desired object list and inserting it in the window is as follows.

[How To Insert]

(1) Click on the desired list in the Object Library list.
(2) The objects registered in the list are displayed in the object list window.
(3) Select a desired object, drag it to a desired place with the left button on the mouse pressed and then release the left button.
(4) The object has been created in the window.


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
beadLRed
beadLYellow
beadLPink
triR2Yellow
triR2White
triR2Red
triR2Purple
triR2Green
triR2Cyan
triR3Blue
triR3Green
triR3Purple
B-1 *
Drag

The method of selecting an object in the desired object list, creating it in the window and editing it is as follows.

[How To Edit]

(1) If you want to change the created object, double-click on the object.

(2) The object dialog box is invoked. Change the properties as you want and click on [OK].

(3) In the following, if you have changed the object image properties, the image has been changed.

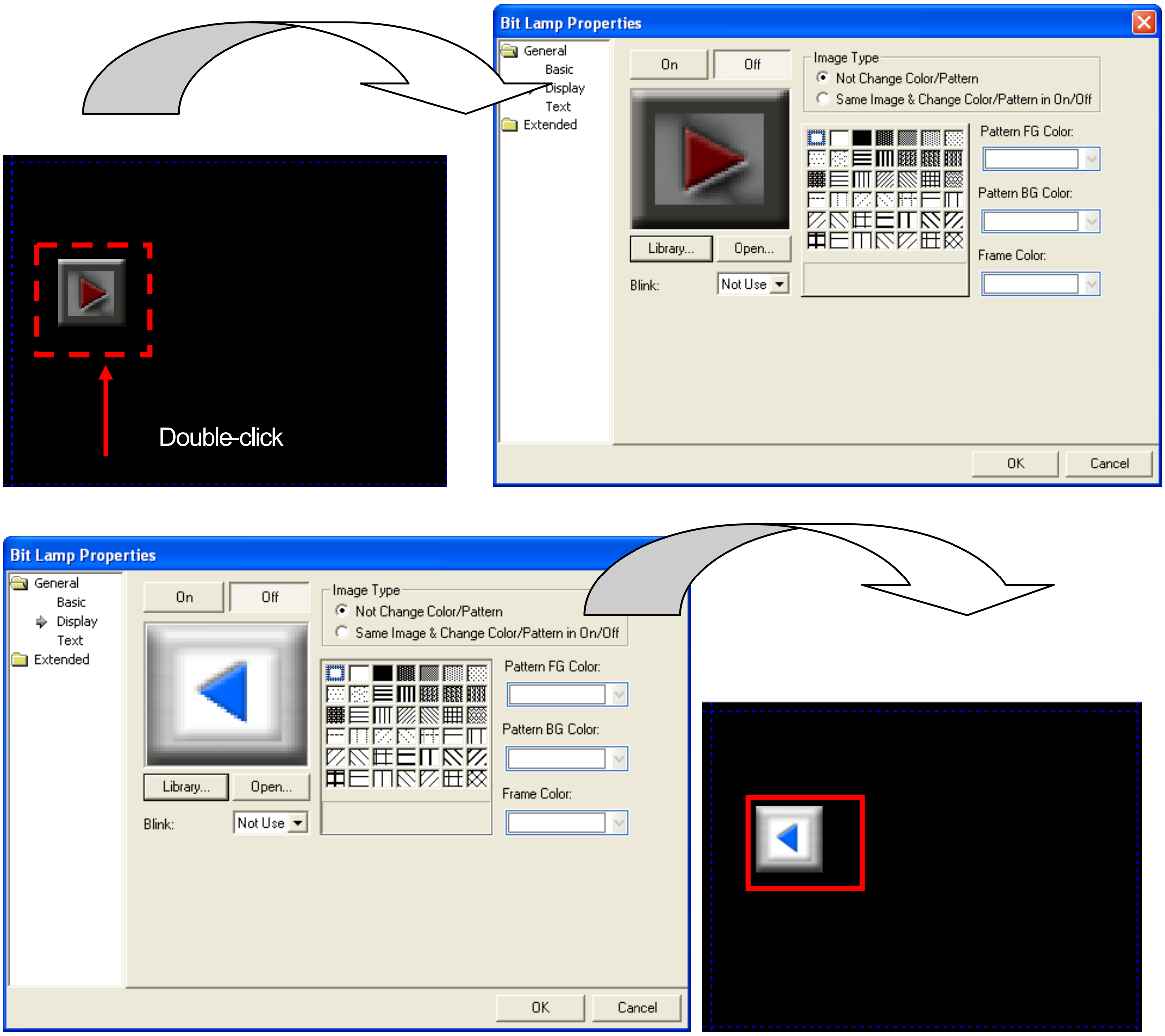

Double-click
Bit Lamp Properties
General
Basic
Display
Text
Extended
On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Pattern in On/Off

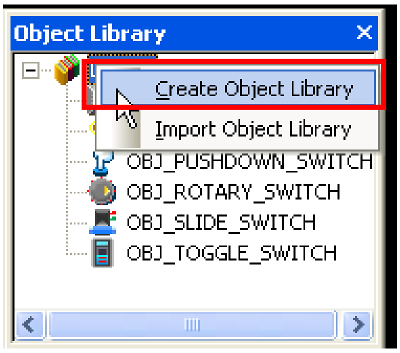
Blink: Not Use

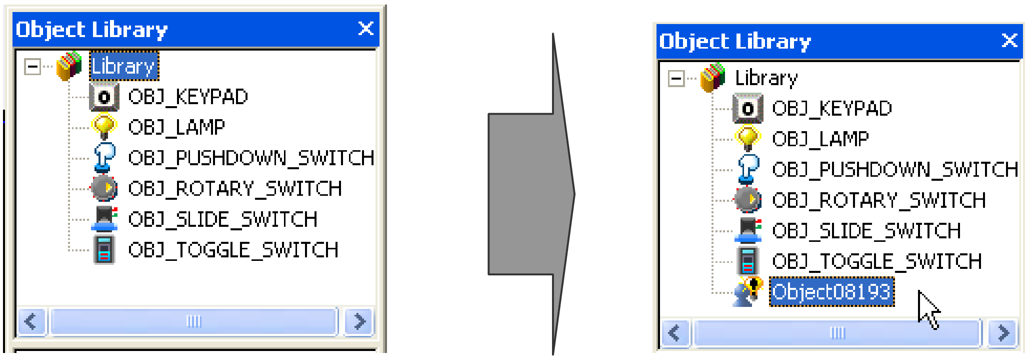
8.2.3 User Object Library list Creation, Deletion and Name Change

The User Object Library refers to the object category list added by the user other than the object category list provided by XP Builder. That is, the user can register and delete the lists other than the category list provided by XP Builder.

[How to create the user Object Library list]

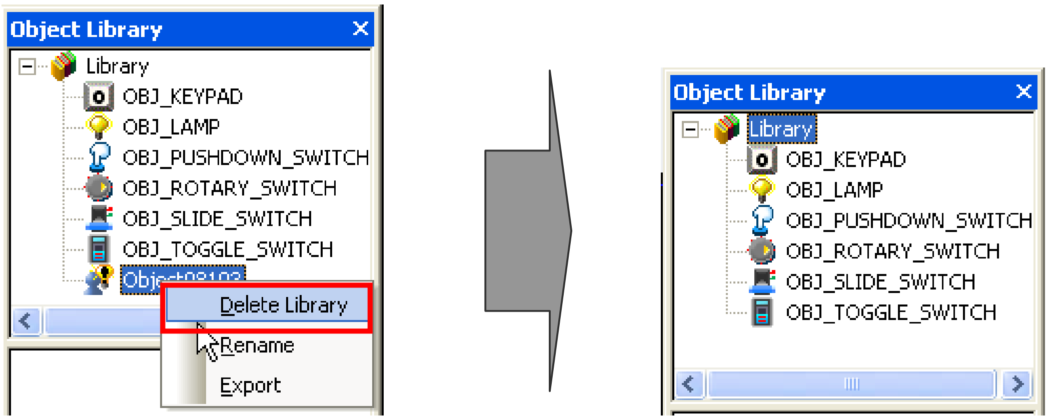
(1) Press the right button on the mouse in the Object Library route.
(2) Click on [Create Object Library] or hot key C.
(3) A list of which the name is Object08193 has been created.


Object Library
Create Object Library
Import Object Library
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Object08193

[How to delete the user Object Library list]

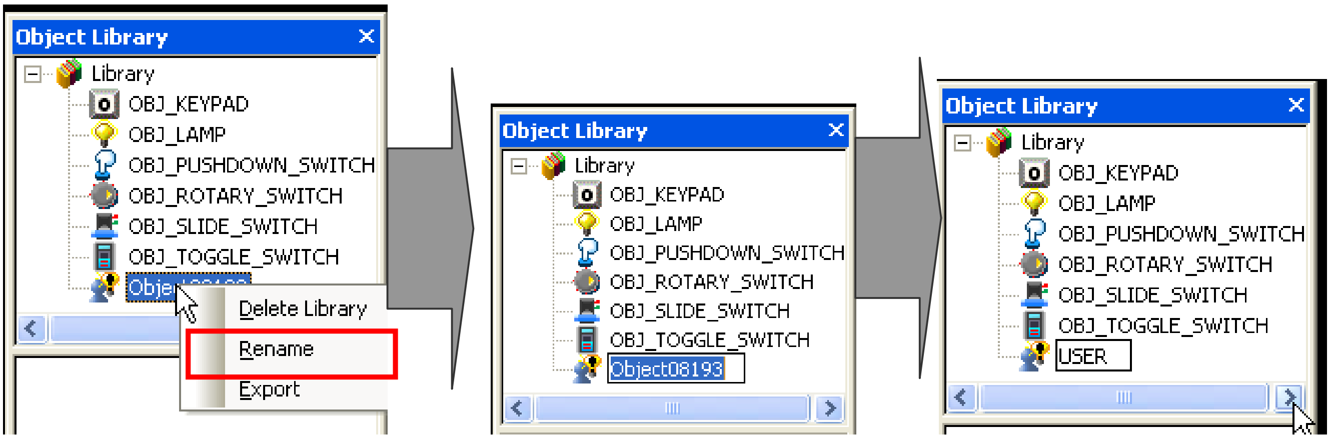
(1) Click on the user Object Library list you want to delete.
(2) Press the right button on the mouse in the selected list.
(3) Click on [Delete library] or hot key D.


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Object08193
Delete Library
Rename
Export
Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH

The user Object Library list created by the user is given a random name. The user can change the list name after adding the list.

[How to change the User Object Library list name]

(1) Click on the User Graphic Library list you want to change.
(2) Press the right button on the mouse in the selected list.
(3) Click on [Rename] or hot key R.
(4) When the list name becomes the editing mode, change the name and press Enter.
(5) The name has been changed.


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Delete Library
Rename
Export
Object08193
USER

Press the right button on the mouse Editing mode List name changed

[How to change the User Object Library list name 2]

(1) Select the User Object Library list you want to change.
(2) If you click on the selected list once more, it turns into the editing mode.
(3) When the list name becomes the editing mode, change the name and press Enter.
(4) The name has been changed.

Note

1) List number of user object library is from 8193 to 65535. 57343 categories can be made.
2) When the user first adds an object list, the list name begins with Object08193. Every time the user adds another graphic list, the number increases by 1 and the name becomes Object08194. That is, the name of the graphic list is given with the increasing five digit number.
3) The System Object Library name cannot be changed.
4) User object library category is aligned in ascending order when creating and changing name.

8.2.4 User Object Library Registration, Deletion and Icon Change

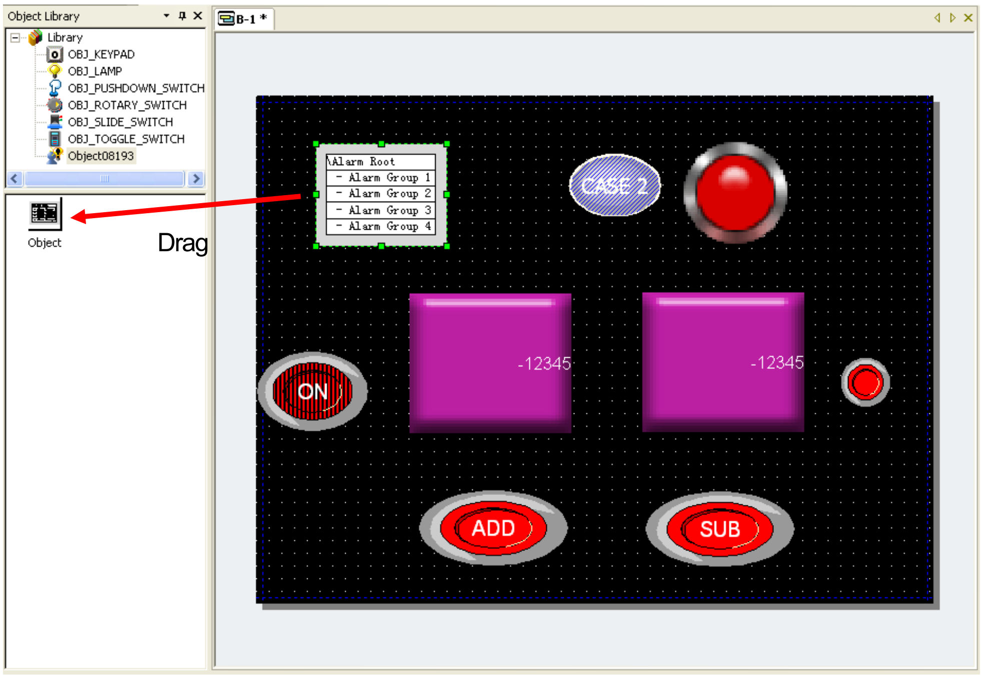
The User Object Library is the objects created by the user other than the objects provided by XP Builder system. That is, the user can register and delete objects other than the objects provided by XP Builder system.

The objects cannot be added to the System Object Library provided by XP Builder and the lists to which objects can be added are as follows.

List of addable Graphic Libraries	Description
List created by the user	The user creates the Object Library list and adds an object to the list.
USER list of XP Builder object lists	An object is added to the previously created USER list in the Object Library of XP Builder.

The two methods above are equal, but in case of the former, the user should add an Object Library list before adding an object.

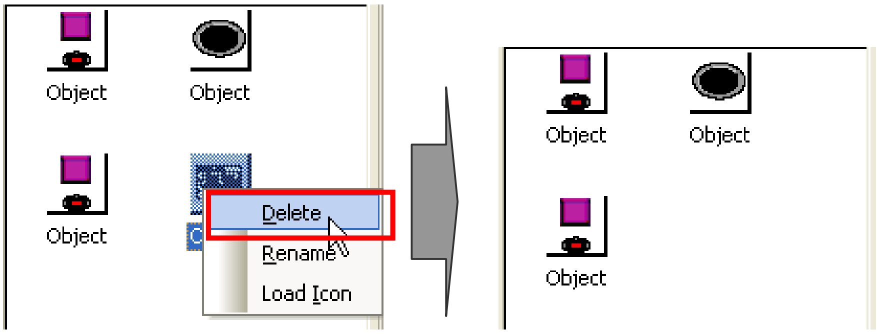
Objects can be added as follows.

How to add object	Description
In image list window	1. Edit the object in XP Builder windows. 2. Select the list created by the user or USER list. 3. The object registered in the list is displayed in the object list window. 4. Drag the object to register in the XP Builder windows with the left button on the mouse to the object list item.  Object Library Library OBJ_KEYPAD OBJ_LAMP OBJ_PUSHDOWN_SWITCH OBJ_ROTARY_SWITCH OBJ_SLIDE_SWITCH OBJ_TOGGLE_SWITCH Object08193 Object Drag B-1 * Alarm Root Alarm Group 1 Alarm Group 2 Alarm Group 3 Alarm Group 4 CASE 2 ON -12345 -12345 ADD SUB

You can delete the object added as above. Deletion is possible only in the image list window.

[How to delete image]

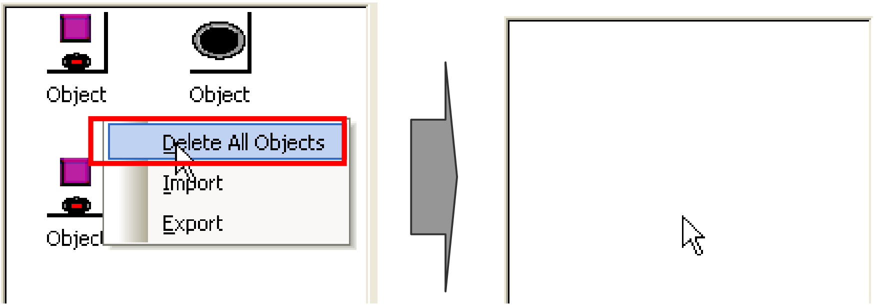
(1) Select an image to delete in the object list window.
(2) Press the right button on the mouse on the selected object.
(3) Click on [Delete] or hot key D.
(4) The object has been deleted in the object list window.
(You can also delete an object using the Delete key on the keyboard with the object selected)



You can delete all the objects registered in the list added by the user or USER list. Deletion of all objects is possible in the image list window only.

[How to delete all objects]

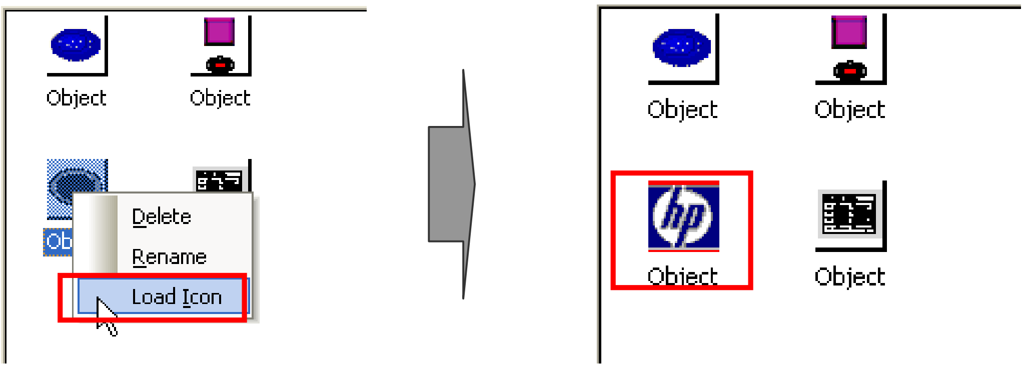
(1) Press the right button on the mouse in the object list window.
(2) Click on [Delete All Objects] or hot key D.
(3) All the images have been deleted in the object list window.



You can transform the images of the objects registered in the list added by the user or USER list for the user to easily recognize them. That is, the images of the objects can be transformed into icons as follows.

[How to transform the object image into an icon]

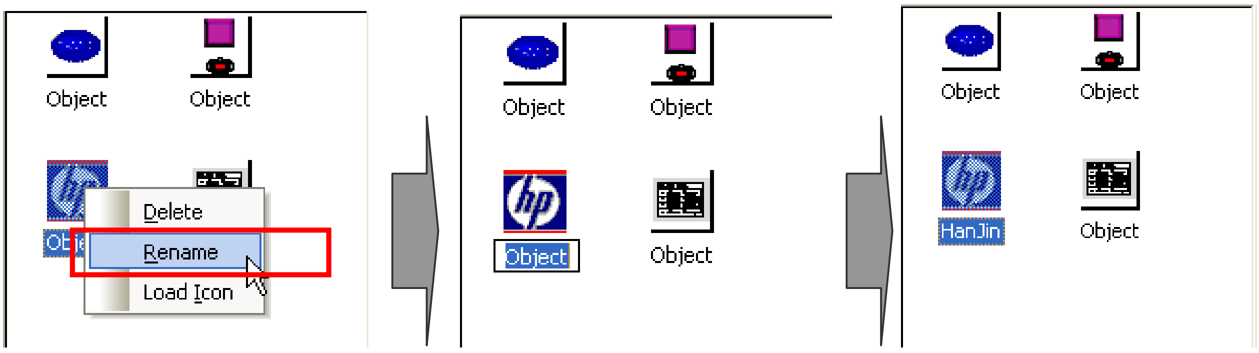
(1) Select the object to transform into an icon in the object list window.
(2) Press the right button on the mouse and select [Load Icon] or hot key I.
(3) The object has been transformed into an icon in the object list window.


Object
Object
Ob
Delete
Rename
Load Icon
Object
Object
Object
Object

The name of the object added by the user is given a random name of Object. The user can change the automatically created object name as follows.

[How to change the added object name 1]

(1) Click on the object to change in the object list window.
(2) Press the right button on the mouse on [Rename] or hot key R.
(3) Change the name after the object name turns into the editing mode and press Enter.
(4) The name has been changed.


Object
Object
Ob
Delete
Rename
Load Icon
Object
Object
Object
Object
Object
Object
HanJin
Object

Press the right button on the mouse

Editing mode

List name changed

[How to change the added object name 2]

(1) Click on the object you want to change in the object list window.
(2) Click on the list once more and it turns into the editing mode.
(3) When the list name becomes the editing mode, change the name and then press Enter.
(4) The name has been changed.

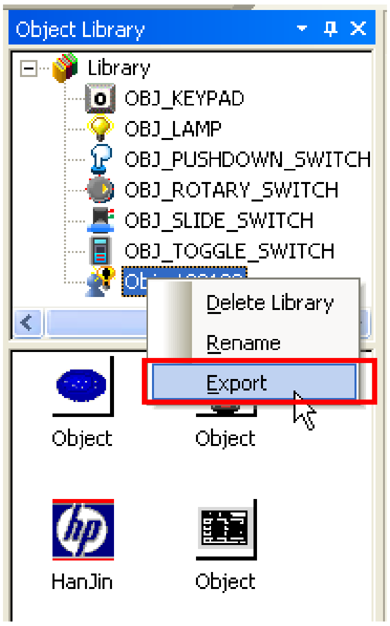
Note

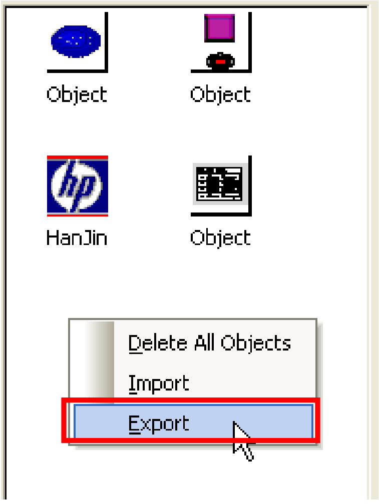
1) When the user first adds an object list, the list name begins with Graphic08193. Every time the user adds another graphic list, the number increases by 1 and the name becomes Graphic08194. That is, the name of the graphic list is given with the increasing five digit number.
2) The name of the System Graphic Library cannot be changed.

8.2.5 User Object Library Export/Import

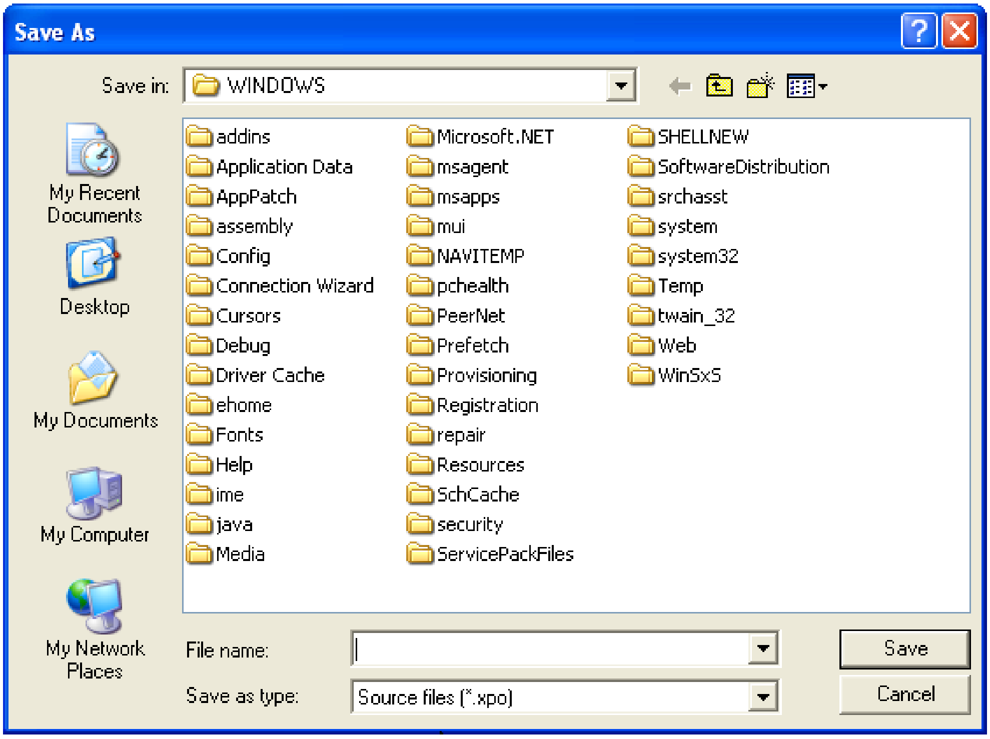
This is the function for sharing the user library objects between projects.
That is, you can export an object or inport such a file from another project for the present project to reuse the user object of another project.

Export of the user object library refers to saving the Object Library list and the object registered by the user in a file.
You can export the User Graphic Library in two ways as follows.

Export	Description
In the category list	1. Select the Object Library list to send out. 2. Press the right button on the mouse on the selected list. 3. Click on [Export] or hot key E.  Object Library Library OBJ_KEYPAD OBJ_LAMP OBJ_PUSHDOWN_SWITCH OBJ_ROTARY_SWITCH OBJ_SLIDE_SWITCH OBJ_TOGGLE_SWITCH Delete Library Rename Export Object Object HanJin Object
In image list window	1. Select the list created by the user or USER list. 2. The image registered in the list is displayed in the object list window. 3. Press the right button on the mouse on a point in the object list window. 4. Click on [Export] or hot key E.

Export	Description
	 Object Object HanJin Object Delete All Objects Import Export

In such a case as above, the User Object Library is saved in a file and the saving path and file should be set.

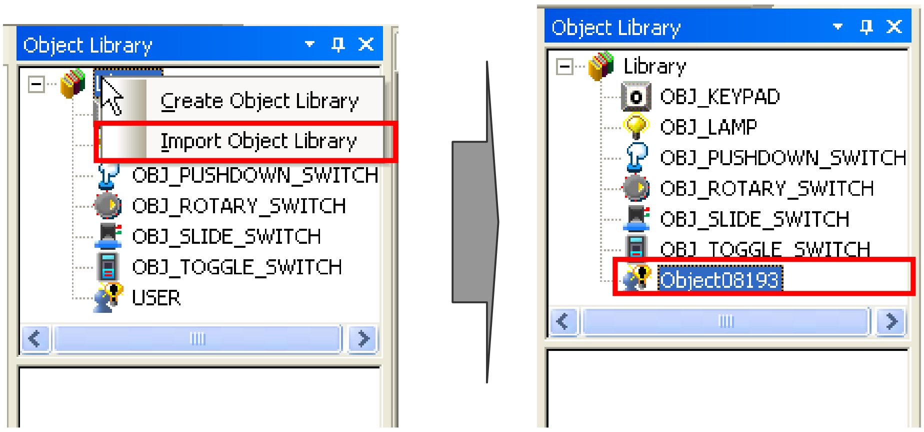


Save As
Save in: WINDOWS
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
addins
Application Data
AppPatch
assembly
Config
Connection Wizard
Cursors
Debug
Driver Cache
ehome
Fonts
Help
ime
java
Media
Microsoft.NET
msagent
msapps
mui
NAVITEMP
pchealth
PeerNet
Prefetch
Provisioning
Registration
repair
Resources
SchCache
security
ServicePackFiles
SHELLNEW
SoftwareDistribution
srchasst
system
system32
Temp
twain_32
Web
WinSxS
File name:
Save as type:
Save
Cancel

Save as type: Source files (*.xpo)

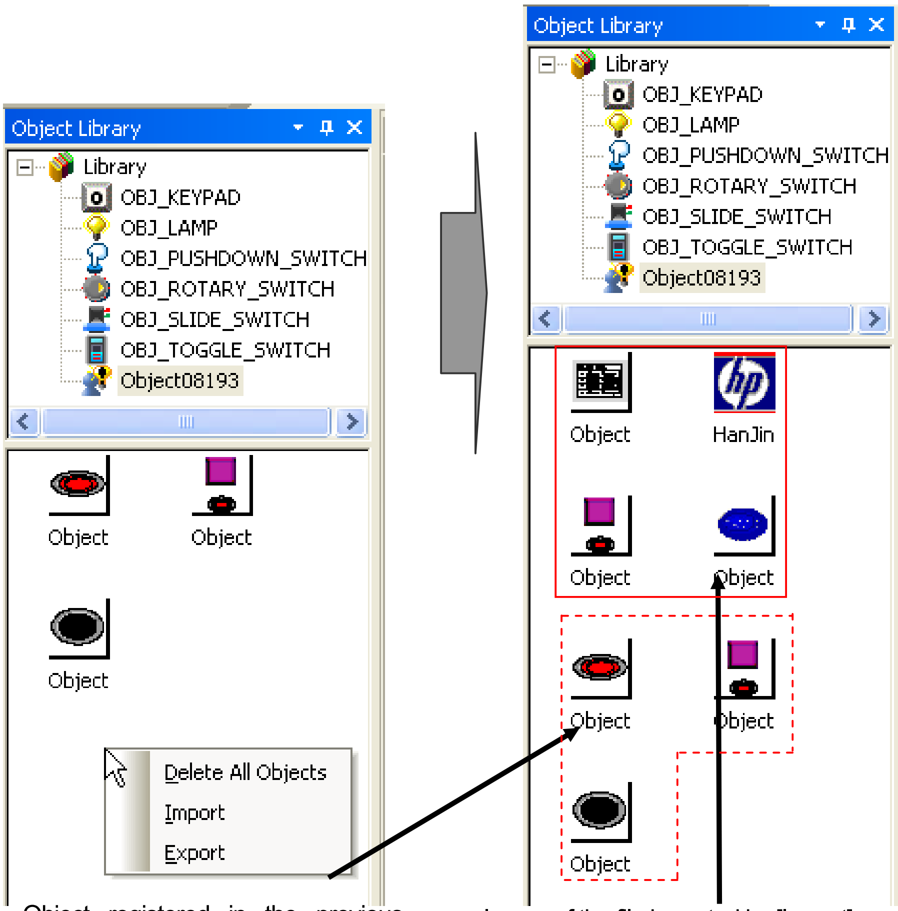
The following is the process of importing the file which has been exported to the user project from a new project. User Graphic Library invocation refers to inserting the User Object Library saved in a file into the present project for reuse.

You can import the User Graphic Library in two ways as follows and the results vary according to the method.

Import	Description
In category route list	1. Select the category route list. 2. Press the right button on the mouse on the route list. 3. Click on [Import Object Library] or hot key I. 4. Select the desired file name in the path of the file to invoke. 5. A new User Object Library list has been created.  Object Library Create Object Library Import Object Library OBJ_PUSHDOWN_SWITCH OBJ_ROTARY_SWITCH OBJ_SLIDE_SWITCH OBJ_TOGGLE_SWITCH USER Object Library Library OBJ_KEYPAD OBJ_LAMP OBJ_PUSHDOWN_SWITCH OBJ_ROTARY_SWITCH OBJ_SLIDE_SWITCH OBJ_TOGGLE_SWITCH Object08193 In this case, a new User Object Library list has been created.

<table>
<tr><th>Import</th><th>Description</th></tr>
<tr><td>In the image list window</td><td>

1. Select the list created by the user or USER list.
2. The objects registered in the list are displayed in the image list window.
3. Press the right button on the mouse on a point in the image list window.
4. Click on [Import] or hot key I.
5. Select the desired file name in the path of the file to import.
6. The object has been added to the present list without a new list added.


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Object08193
Object
Object
Object
Delete All Objects
Import
Export
Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Object08193
Object
HanJin
Object
Object
Object
Object
Object

Object registered in the previous 'user object'

Image of the file imported by [Import]

</td></tr>
</table>

Note

1) In case of Export, the basic extension is xpg and if you do not enter an extension, it is automatically given.

2) When the user first adds a user object list by [Import], the list name begins with Object08193 regardless of the file name. Every time the user imports another graphic list, the number increases by 1 and the name becomes Object 08194. That is, the name of the graphic list added by [Import] is given with the five digit number following Graphic increasing.

3) The difference in [Import] in the category list is as follows.

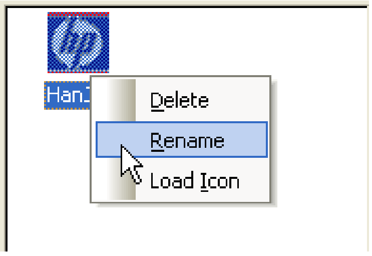
[Import Object Library] in the category list route	A new User Graphic Library list is created.
[Import] from the selected list	A new list is not created and the image registered in the selected list is added.

8.2.6 Name Change of the Object User Library

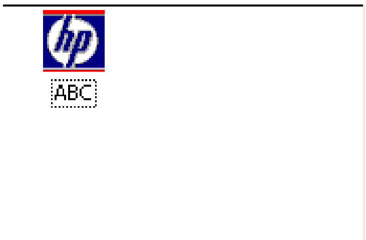
The Object Library has no file name, so requires the function of changing the caption into a name that can be memorized unlike the Graphic Library.

[Sequence]

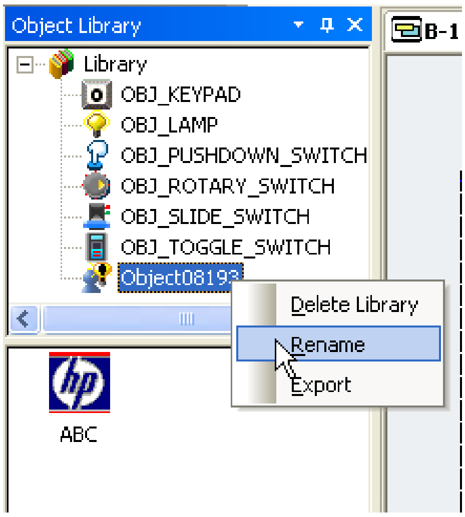
(1) Select the tree with the library of which the name you want to change and select [Rename] in the context menu of the object you want to change.


Han
Delete
Rename
Load Icon

(2) When the library label turns into the edit mode, change the caption and press Enter. Name change has been completed. If you change the name into the same name as another category or entered unchangeable characters, a message appears to tell you that you cannot change the name.



The name of the category can also be renamed in the same way as changing the name of each item of the library.


Object Library
Library
OBJ_KEYPAD
OBJ_LAMP
OBJ_PUSHDOWN_SWITCH
OBJ_ROTARY_SWITCH
OBJ_SLIDE_SWITCH
OBJ_TOGGLE_SWITCH
Object08193
Delete Library
Rename
Export
ABC
B-1

Chapter 9 Useful Tools

The editor has a variety of functions that help you edit conveniently in many ways.

9.1 Finding and Replacing Devices

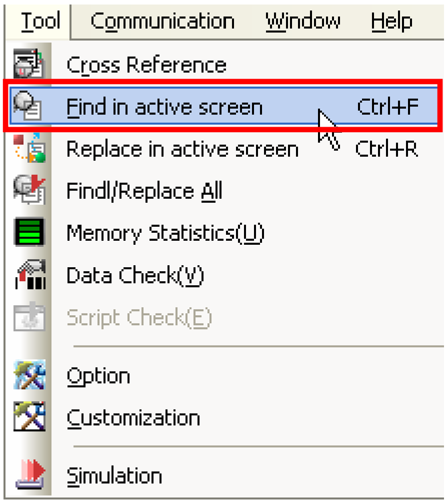
This function is finding the addresses of objects in an opened window and displaying them in the form of being selected in the window.

The following is the procedure of finding for addresses.

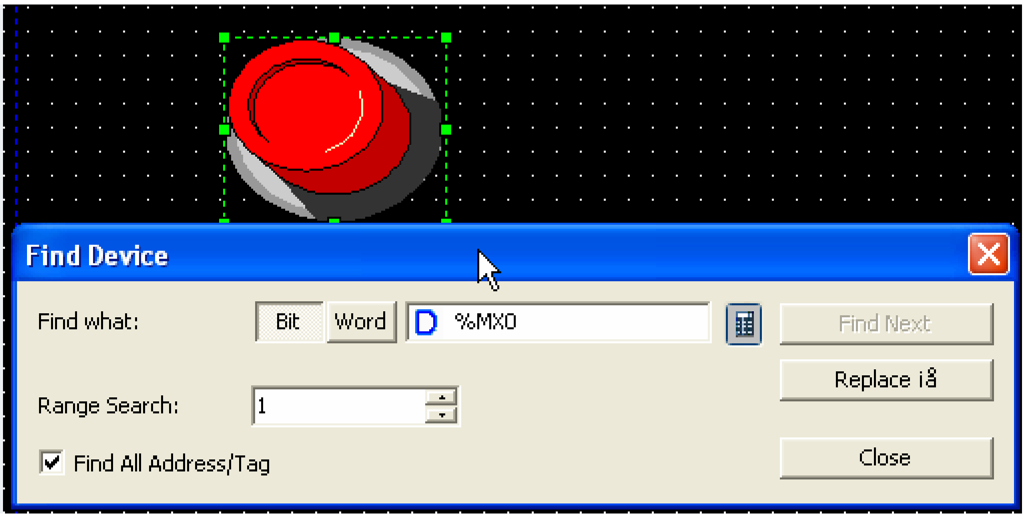
[Procedure]

(a) Register two word lamps and enter HS0000 as their addresses in the basic tab.

(b) Select [Tool] - [Find in active screen].


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

(c) The Find Device dialog box is invoked on the screen. If an object is selected, the address of the selected object is displayed in the text box of the device in the dialog box as shown below.

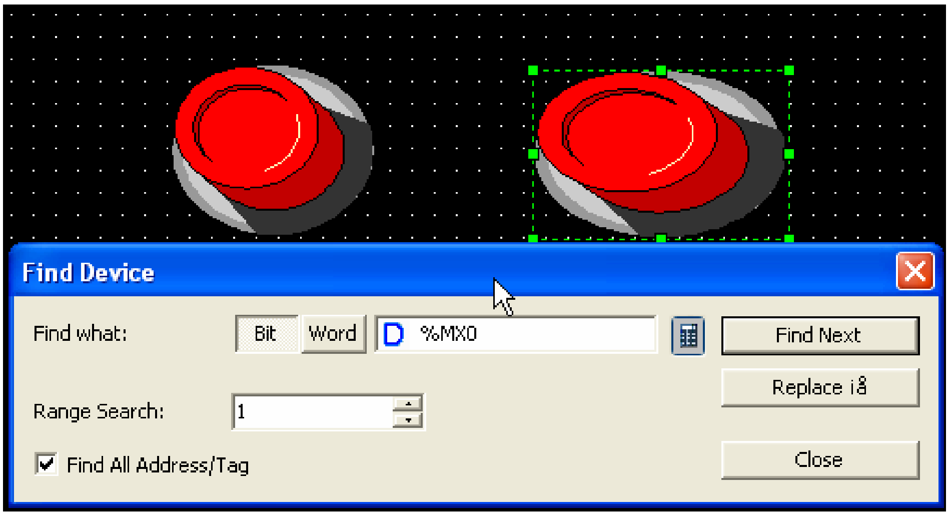

Find Device
Find what:
Bit
Word
Find Next
Replace i음
Close

Find what: D %MX0

Range Search: 1

☑ Find All Address/Tag

(d) Click on the Find Next button.
As there is another lamp object with the same address, the second lamp object is displayed in the form of being selected as shown below.


Find Device
Bit
Word
Find Next
Replace
Close

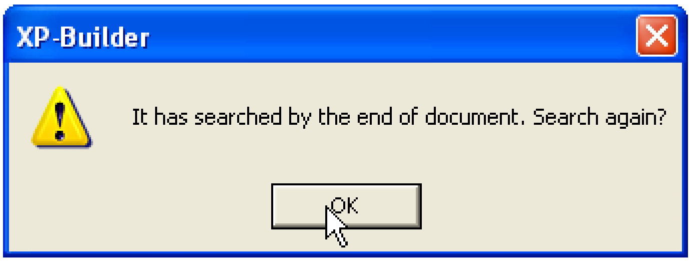
Find what: D %MX0

Range Search: 1

☑ Find All Address/Tag

Note

(1) If there is no device to find, the following message is issued reading that it has searched by the end of document. Search again?


XP-Builder
OK

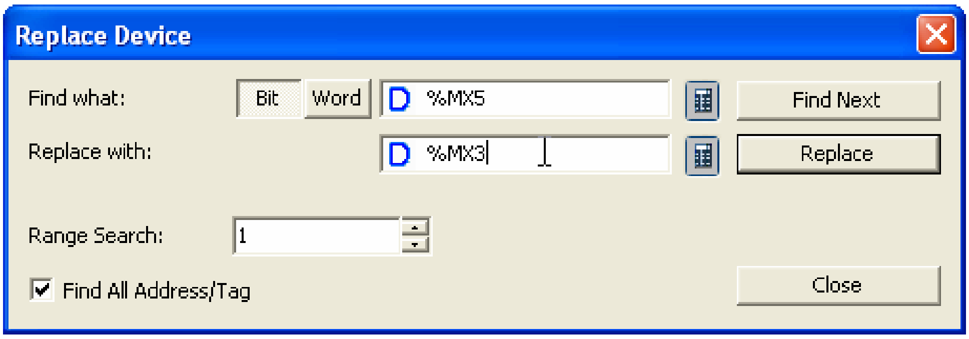
It has searched by the end of document. Search again?

(2) When search of the objects of all windows is finished, the object that was first searched for is searched for again.

The following procedure is changing the address.

[Procedure]

(a) If you click on the Replace button, a text box is activated where you can enter the desired address.


Replace Device
Bit
Word
Find Next
Replace
Close

Find what: D %MX5

Replace with: D %MX3

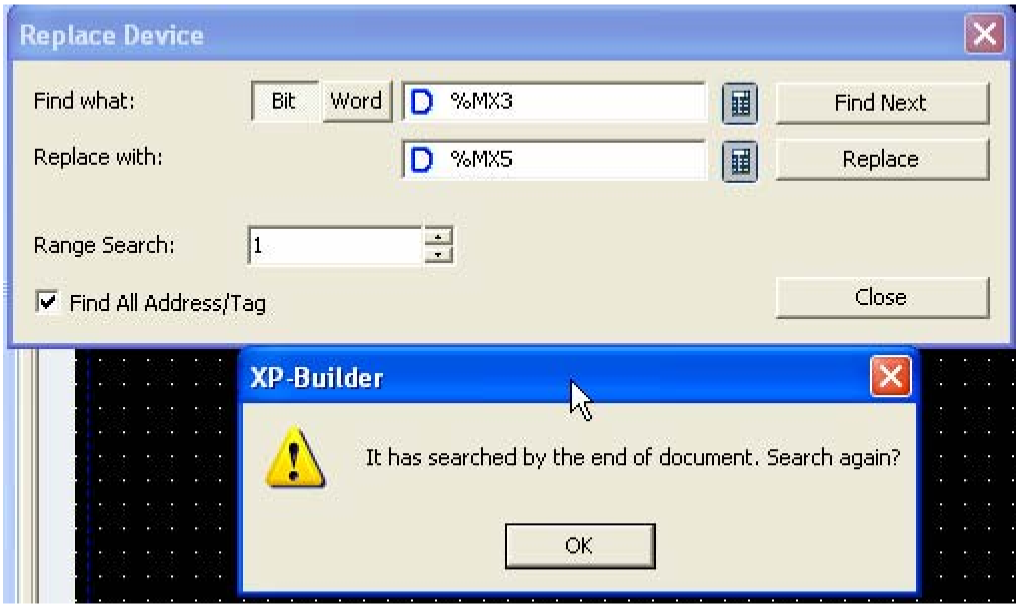
Range Search: 1

☑ Find All Address/Tag

(b) Enter the desired address and click on the Replace button.

Then the address of the selected object is changed as you specified and the object is retrieved which has the next address you are going to change is displayed as the Selection Mode.

If you click on the Replace button, the address of the selected object is changed and the “It has searched b the end of document. Search again?” message is issued because there are no more objects that have an address to be changed in the screen.



Find what: D %MX3

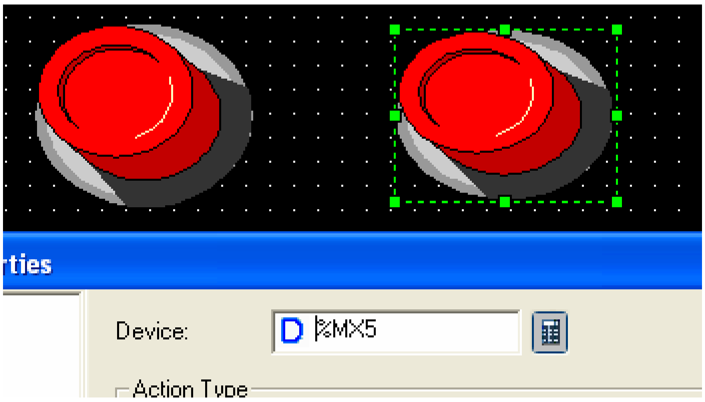
Replace with: D %MX5

Range Search: 1

☑ Find All Address/Tag

It has searched by the end of document. Search again?

(c) Confirm that the address has been changed by opening the dialog box.

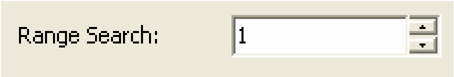


Device: D %MX5

Note

(1) There are options of the address retrieving the direct address or tag or both of them in Find/Replace Device. That is, if the option of finding both the direct address and tag is selected, both are searched for regardless of whether the address being searched for is a tag or direct address. With this option released, if the address being searched for is a tag, the tag is found and if the direct address, it is also found.

(2) There is also the option of finding the consecutive device. If you do not use this option, only one address you want to find is searched for.
If you use the consecutive device option and enter the number of consecutive devices, this option retrieves or changes all the address within the entered range from the address that you want to find or replace.



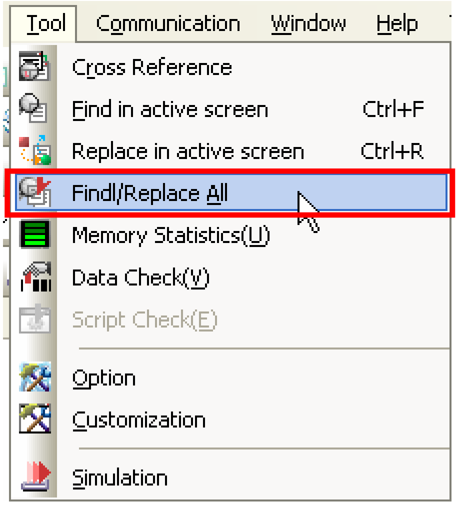
Range Search: 1

9.2 Finding/Replacing All Devices

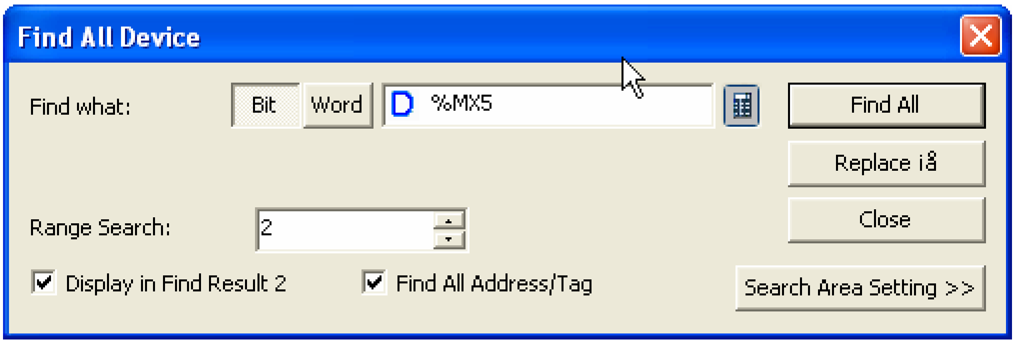
This function is for the user to find or replace the address of all the objects in the selected range.

9.2.1 Find All

[Procedure]
(a) Register two word lamps in the display and enter all the addresses as HSO in the basic tab.
(b) Select [Tool]–[Find/Replace All].


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

(c) The dialog box for finding/replacing all is invoked as follows. If an object has been selected, the address of the selected object address is shown in the 'Find what' device text box.

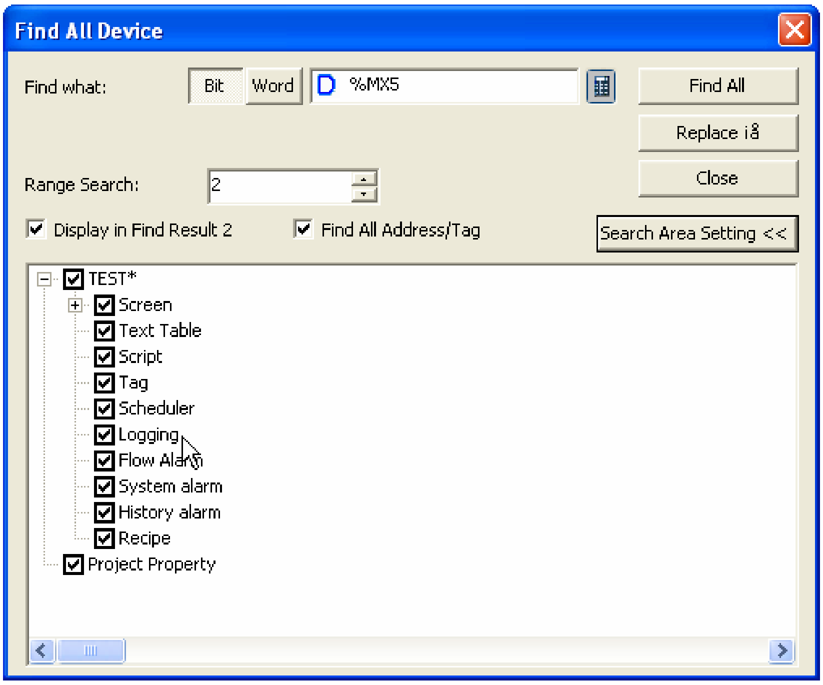

Find All Device
Find All
Replace iå
Close
Search Area Setting >>

Find what: Bit Word D %MX5

Range Search: 2

☑ Display in Find Result 2 ☑ Find All Address/Tag

(d) Click on the Search Area Setting button and check the retrieval area to find. The entire project is selected by default.


Find All Device
Bit
Word
Find All
Replace i8
Close
Search Area Setting <<

Find what: %MX5

Range Search: 2

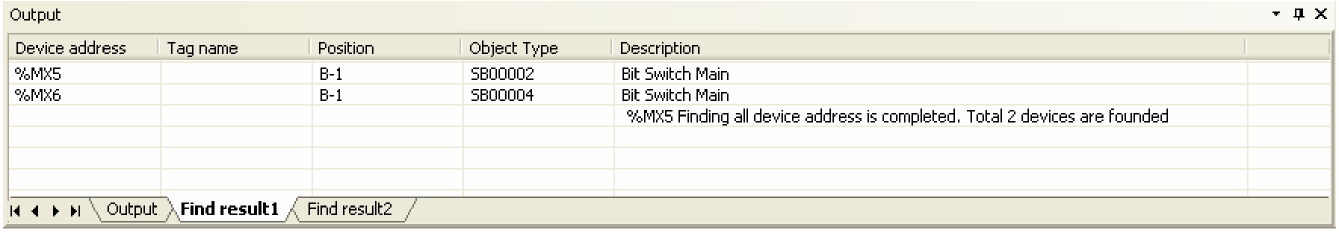
☑ Display in Find Result 2

☑ Find All Address/Tag

- ☑ TEST*
  - ☑ Screen
  - ☑ Text Table
  - ☑ Script
  - ☑ Tag
  - ☑ Scheduler
  - ☑ Logging
  - ☑ Flow Alarm
  - ☑ System alarm
  - ☑ History alarm
  - ☑ Recipe
- ☑ Project Property

(e) Click on the Find All button.

(f) The output window is activated and the information on the retrieved address is shown.


Output
Output
Find result1
Find result2

Device address	Tag name	Position	Object Type	Description
%MX5		B-1	SB00002	Bit Switch Main
%MX6		B-1	SB00004	Bit Switch Main
				%MX5 Finding all device address is completed. Total 2 devices are founded

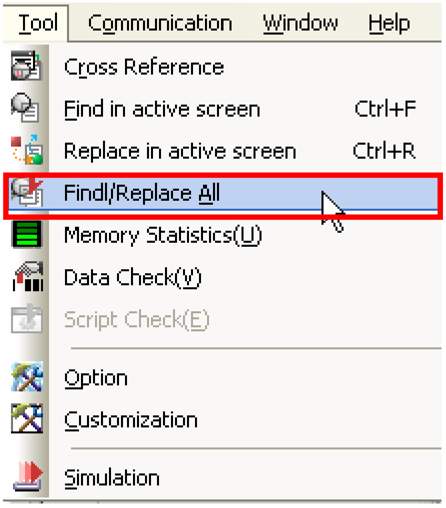
(g) If you double click on a particular column of Find result in the output window, the corresponding display and object are activated.

9.2.2 Replace All

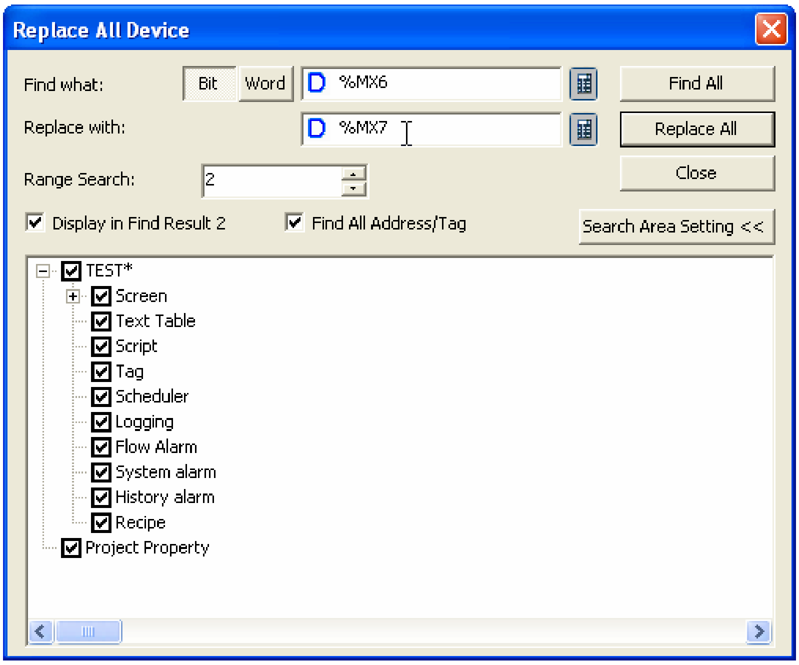
[Procedure]

(a) Register two word lamps and enter all the addresses as HS0000 in the basic tab.

(b) Select [Tool]–[Find/Replace All].


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

(c) The dialog box for finding/replacing all is invoked as follows. Set the address and retrieval area to change and click on the Replace All button.


Replace All Device
Bit
Word
Find All
Replace All
Close
Search Area Setting <<

Find what: D %MX6

Replace with: D %MX7

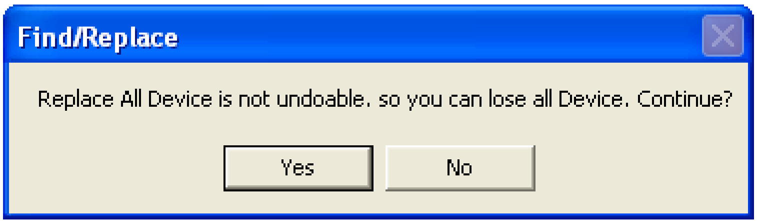
Range Search: 2

☑ Display in Find Result 2

☑ Find All Address/Tag

- ☑ TEST*
  - ☑ Screen
  - ☑ Text Table
  - ☑ Script
  - ☑ Tag
  - ☑ Scheduler
  - ☑ Logging
  - ☑ Flow Alarm
  - ☑ System alarm
  - ☑ History alarm
  - ☑ Recipe
- ☑ Project Property

A message saying that the execution cannot be cancelled is issued and if you click on Yes, Replace All is executed.



Replace All Device is not undoable. so you can lose all Device. Continue?

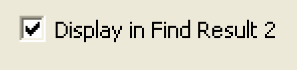
(d) Confirm that Replace All has been successfully executed by double clicking on each object.

Note

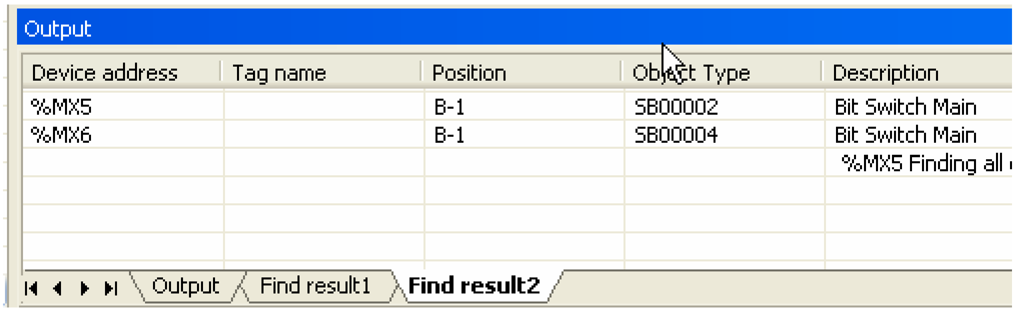
(1) What is displayed in the output window as a result of Find All is shown in the order of the address, tag name, display name, object ID and description.

(2) You can use the extension function by using which you can find or change all the address within the range. For example, if you want to find or change all the address in the address range between HS0 and HS5, enter as shown below.

(3) In Find All and Replace All, there is the 'Display in Find Result 2' option, which is the option displaying the result in Find 2 window.



☑ Display in Find Result 2



Device address	Tag name	Position	Object Type	Description
%MX5		B-1	SB00002	Bit Switch Main
%MX6		B-1	SB00004	Bit Switch Main
				%MX5 Finding all

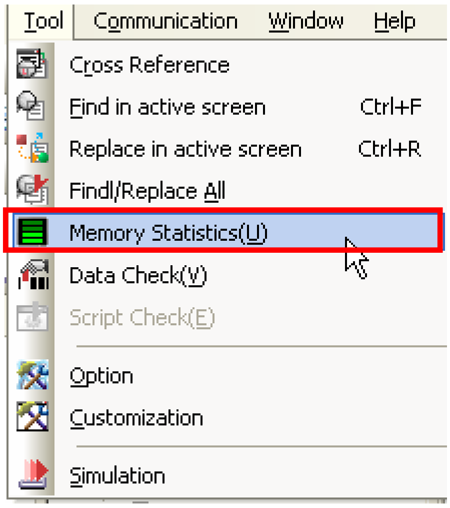
9.3 Memory Use Status

If the current project data is transferred to XGT Panel, the extension is saved and transferred as files ending with HMI. The size of a HMI file must not exceed the memory limit of XGT Panel, so it is important to know the size of the HMI file and each component of the current project.

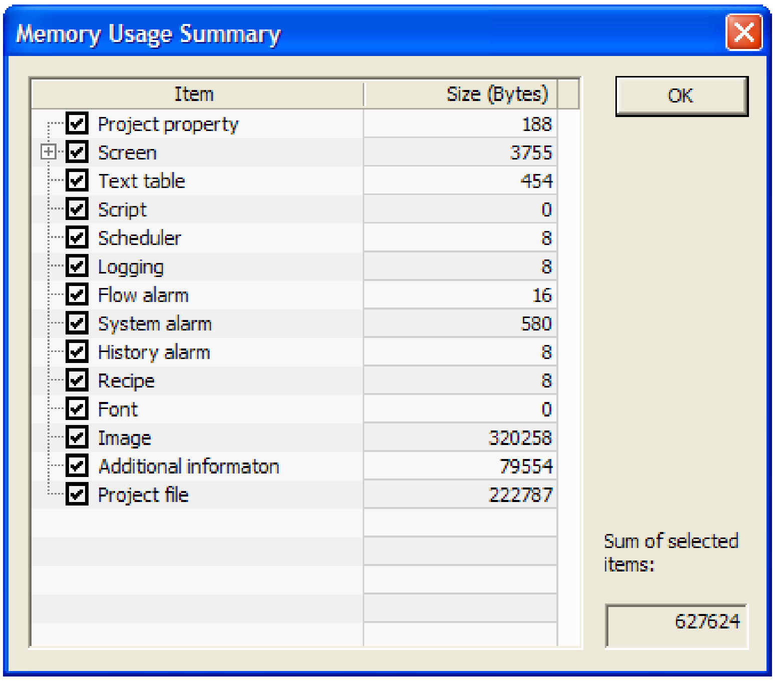
[Procedure]

(a) Create a project and arrange objects or figures on the screen.

(b) Select [Tool]-[Memory Statistics].


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

Each memory size is displayed in the window from the screen to the common items as follows.


Memory Usage Summary
OK

Item	Size (Bytes)
☑ Project property	188
☑ Screen	3755
☑ Text table	454
☑ Script	0
☑ Scheduler	8
☑ Logging	8
☑ Flow alarm	16
☑ System alarm	580
☑ History alarm	8
☑ Recipe	8
☑ Font	0
☑ Image	320258
☑ Additional informaton	79554
☑ Project file	222787

Sum of selected items: 627624

Note

(1) The Memory Statistics does not include images but only figures and objects. The image and font displays the total use. If images are overlapped, only one of them is transferred to XGT Panel.

(2) If the memory being used of the image or font is very large, it can also be set to be saved in an external storage unit of XGT Panel.

(3) Additional information included size of communication driver module.

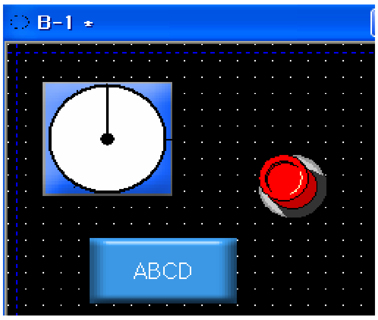
(4) The font includes not only the font used in the XGT but also code page used in multi-language display function of Text Display object.

9.4 Device Cross Reference

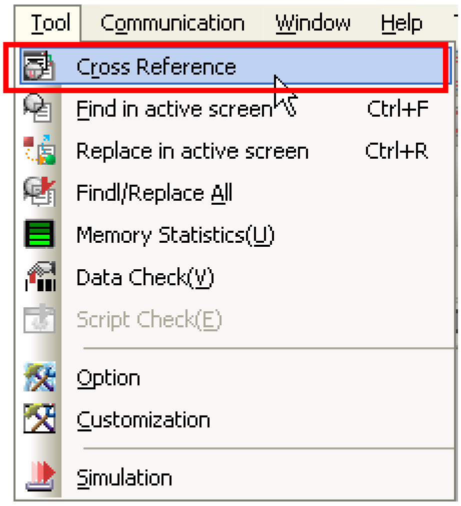
Device cross reference has the same function as Find All Devices, but is different in that it retrieves and displays all the device addresses of the entire project in the output window rather than a specific area.

[Procedure]

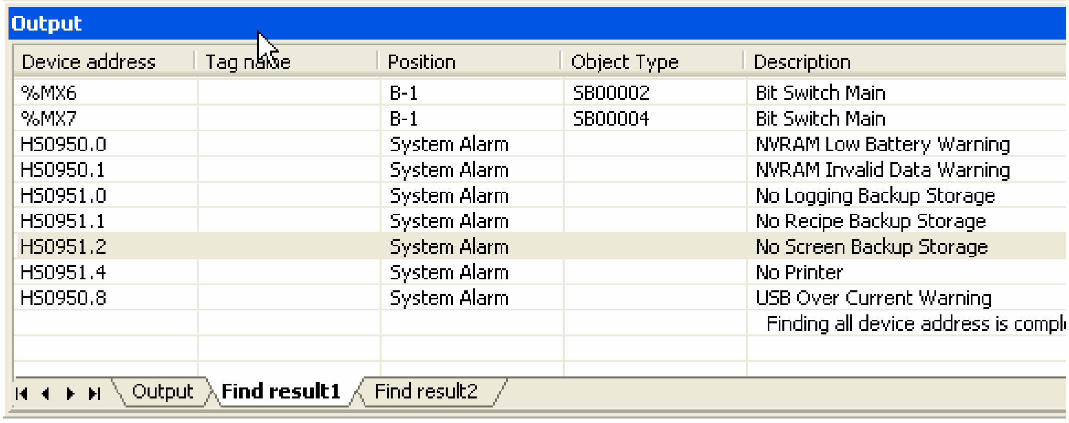
(a) Register objects as shown below and enter the address of each of them.



(b) Select [Tool]-[Cross Reference].


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

The contents of the cross reference are displayed in the output window showing all the addresses in the project. If you double click on a certain column, the screen or object where the address is activated.

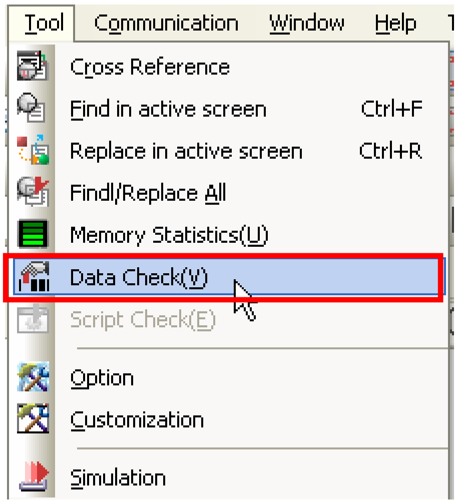

Output
Output
Find result1
Find result2

Device address	Tag name	Position	Object Type	Description
%MX6		B-1	SB00002	Bit Switch Main
%MX7		B-1	SB00004	Bit Switch Main
HS0950.0		System Alarm		NVRAM Low Battery Warning
HS0950.1		System Alarm		NVRAM Invalid Data Warning
HS0951.0		System Alarm		No Logging Backup Storage
HS0951.1		System Alarm		No Recipe Backup Storage
HS0951.2		System Alarm		No Screen Backup Storage
HS0951.4		System Alarm		No Printer
HS0950.8		System Alarm		USB Over Current Warning
				Finding all device address is compl

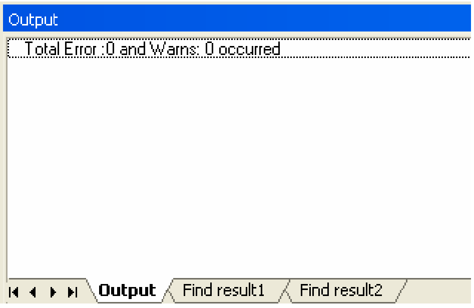
9.5 Data Check

Project data check is the function of checking the components of which an error might occur in XGT Panel when an HMI file is transferred to XGT Panel.
You can check that the deleted image number, tag, display number or address exists and the errors unique to each object or common item are filtered.
For the messages issued in Data Check and the trouble shooting, see Trouble Shooting.

[Procedure]
(a) Register a bit switch in screen1 and a meter graph in screen 2.
(b) Select [Tool]-[Data Check].


Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

(c) The error number and description are displayed in the output window as shown below.
That is, messages are issued saying that there is no error


Output

```
Total Error :0 and Warns: 0 occurred
```

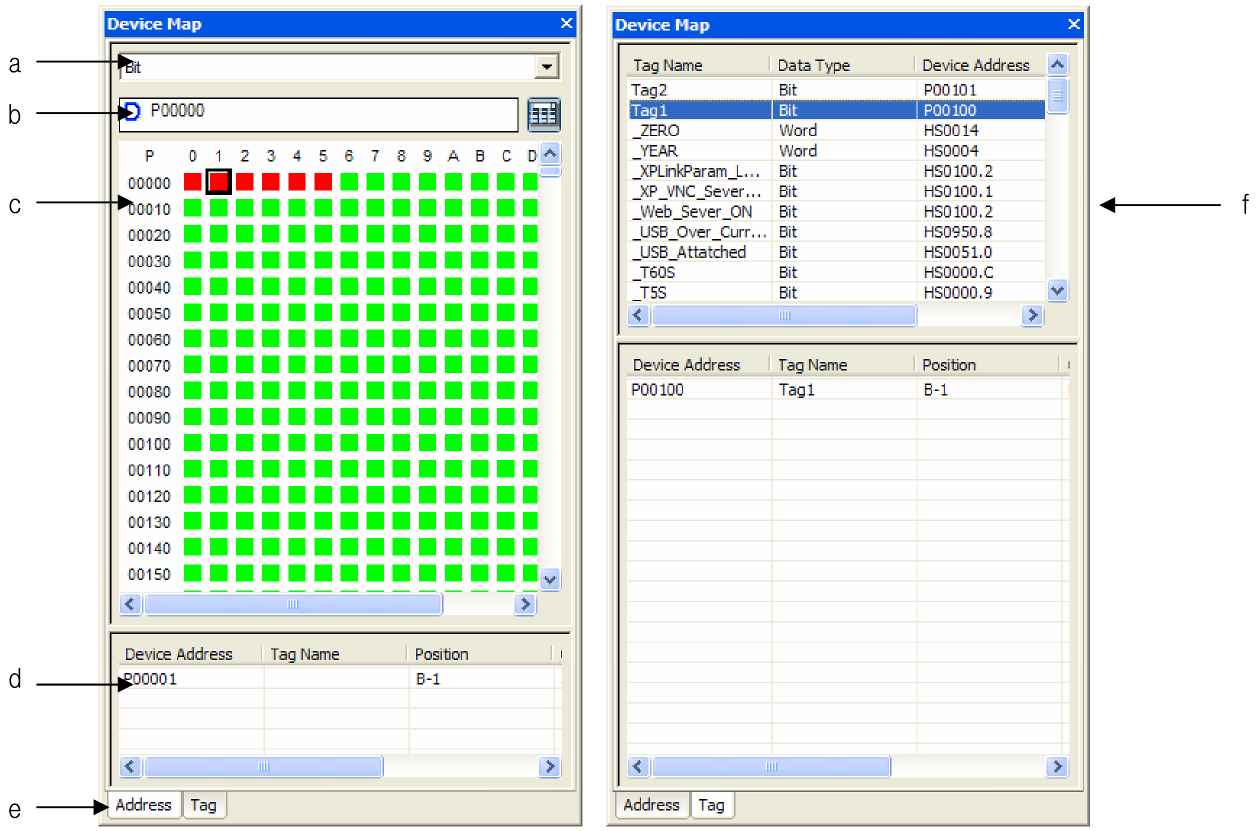
Output
Find result1
Find result2

If you close all the windows and double click on a certain column, the screens and objects corresponding to the errors of the output window are activated and you can modify them.

9.6 Viewing Device Map

The function displays the device information used for drawing as a picture for user's convenience. Device searching function that is the same as [Too]-[Device Cross Reference] indicates whether reference is applied or not.

[Screen composition of Device Map]



P	0	1	2	3	4	5	6	7	8	9	A	B	C	D
00000	🟥	🟥	🟥	🟥	🟥	🟥	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00010	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00020	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00030	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00040	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00050	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00060	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00070	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00080	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00090	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00100	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00110	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00120	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00130	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00140	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
00150	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩

Device Address	Tag Name	Position
P00001		B-1

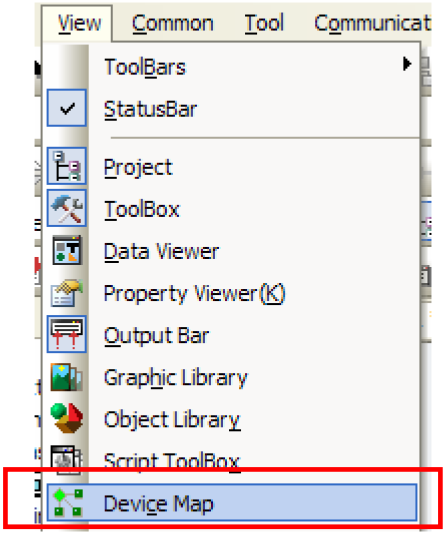
Tag Name	Data Type	Device Address
Tag2	Bit	P00101
Tag1	Bit	P00100
_ZERO	Word	HS0014
_YEAR	Word	HS0004
_XPLinkParam_L...	Bit	HS0100.2
_XP_VNC_Sever...	Bit	HS0100.1
_Web_Sever_ON	Bit	HS0100.2
_USB_Over_Curr...	Bit	HS0950.8
_USB_Attatched	Bit	HS0051.0
_T60S	Bit	HS0000.C
_T5S	Bit	HS0000.9

Device Address	Tag Name	Position
P00100	Tag1	B-1

Item	Description
Device type(a)	Inputting the device type to be searched; Bit/Word.
Device Searching(b)	Input the device address to be searched. After inputting device and pressing Enter key, it will move to the related device.
Device Map(c)	Displaying Device Map for user's convenience.
Device Reference List (d)	Arranging all position using the current devices selected by Device Map
Selecting direct address/tag view(e)	Moving to the tab using direct address or tag
Tag List(f)	Displaying tag list registered to tag table.

[Show]

(a) Select [View]-[Device Map screen] from the menu.


View
Common
Tool
Communicat
ToolBars
StatusBar
Project
ToolBox
Data Viewer
Property Viewer(K)
Output Bar
Graphic Library
Object Library
Script ToolBox
Device Map

(b) When Device Map screen is shown, input the device area to be checked

(c) If the device is selected, the position that uses the selected device will be shown at device reference list in the bottom of the screen

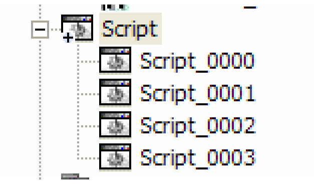
(d) If you select one of reference list and double-click a mouse button, it will move to the using position.

9.7 Script Cross Reference

Script Cross Reference function displays the object or common properties used for script at output screen. When the project is executed in XGT Panel, unexpected computation results may sometimes occur and it is likely to be the script executed in a certain position of the project. In this case, the function supports debugging of the device by catching the position used for script without complicated processes; opening and checking every property screen where all object, common data, global·local script are applied.

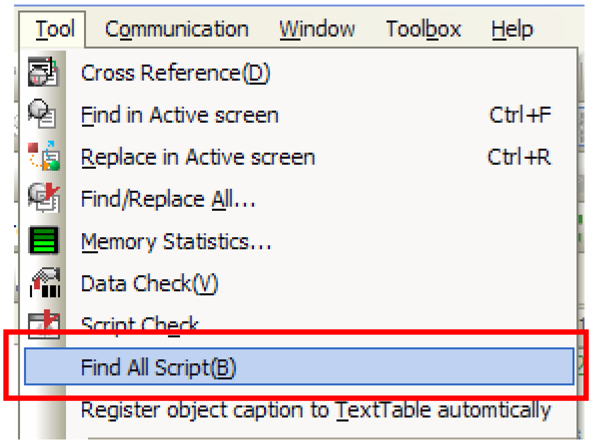
[Procedures]

(a) Register the scripts of 4 projects as below.

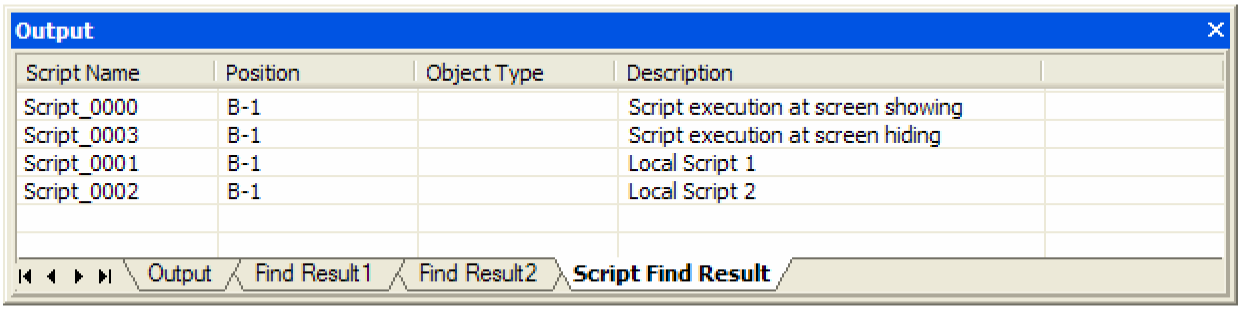

Script
Script_0000
Script_0001
Script_0002
Script_0003

(b)If you register global script as script_0001 and No. 1 screen is shown, register script_0002. Add pie graph object to No.1 screen and register script_0003 to manipulation page with adding number input unit. Then, activate 'Using input script' at the manipulation page for number input unit and register script_0004.

(c) Select [Tool]-[Searching all script] from the menu.


Tool
Communication
Window
Toolbox
Help
Cross Reference(D)
Find in Active screen Ctrl+F
Replace in Active screen Ctrl+R
Find/Replace All...
Memory Statistics...
Data Check(V)
Script Check
Find All Script(B)
Register object caption to TextTable automtically

(c) You can see script name, position, object format and explanation will be shown at output screen. The above all registered scripts will be also shown.


Output
Output
Find Result1
Find Result2
Script Find Result

Script Name	Position	Object Type	Description
Script_0000	B-1		Script execution at screen showing
Script_0003	B-1		Script execution at screen hiding
Script_0001	B-1		Local Script 1
Script_0002	B-1		Local Script 2

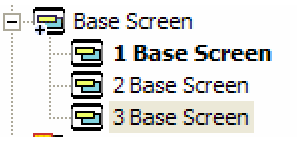
In the same way as other Search functions, if you double-click a certain line, you can see it will move to the object or screen where the related script exists.

9.8 Moving to Next/Previous Screen

Moving to Next/Previous screen provides plainly easy screen conversion function for edition; from the activated screen currently, while you press Previous button (⇦), the previous screen will be activated, you press Next button(⇨), the next screen will be activated.

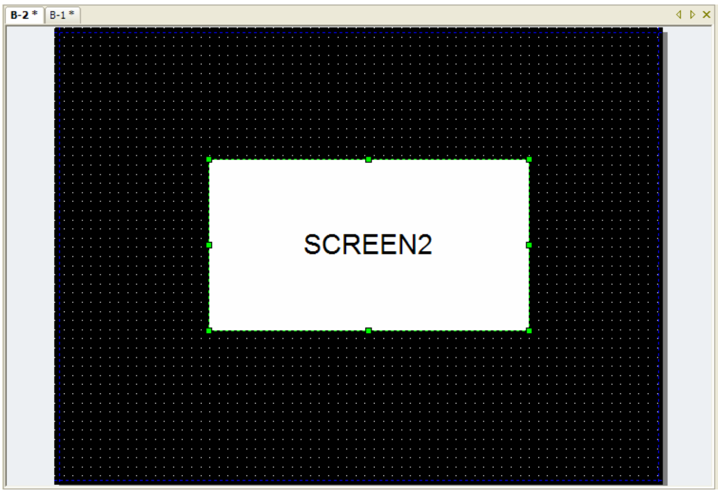
[Procedures]

(a) Register 3 screens as below.

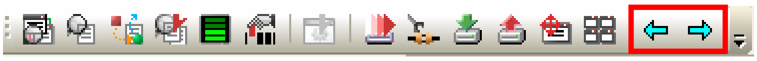


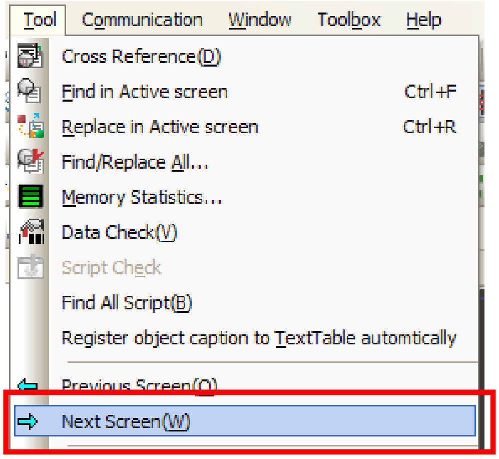
Base Screen
1 Base Screen
2 Base Screen
3 Base Screen

(b) Open the screens in order [B-2], [B-1] and arrange them.

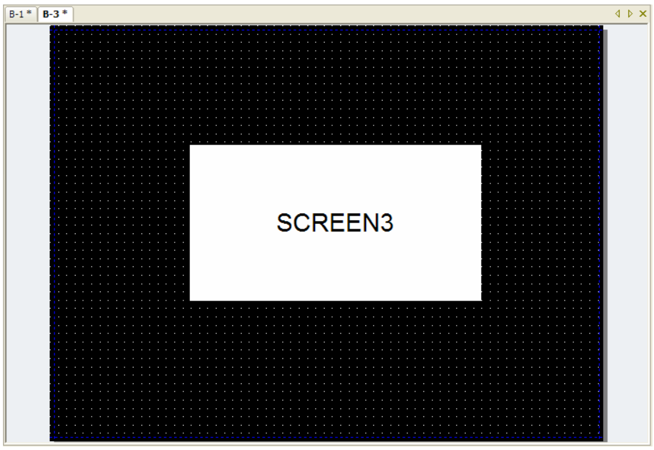


(c) Select [Tool]-[Next/Previous] from the menu or [Next/Previous] from toolbar.

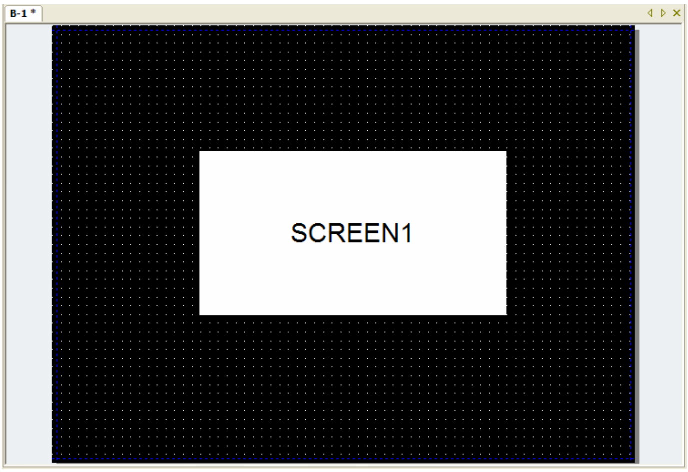



Tool
Communication
Window
Toolbox
Help
Cross Reference(D)
Find in Active screen Ctrl+F
Replace in Active screen Ctrl+R
Find/Replace All...
Memory Statistics...
Data Check(V)
Script Check
Find All Script(B)
Register object caption to TextTable automtically
Previous Screen(Q)
Next Screen(W)

(d) If you select [Next], the existing [B-2] position will be replaced into [B-3] screen tab and [B-3] screen will be activated.


B-1 *
B-3 *
SCREEN3

(e) If you select [Previous], the screen will be replaced into [B-1] that has already existed in [B-3] tab and [B-1] screen will be activated.



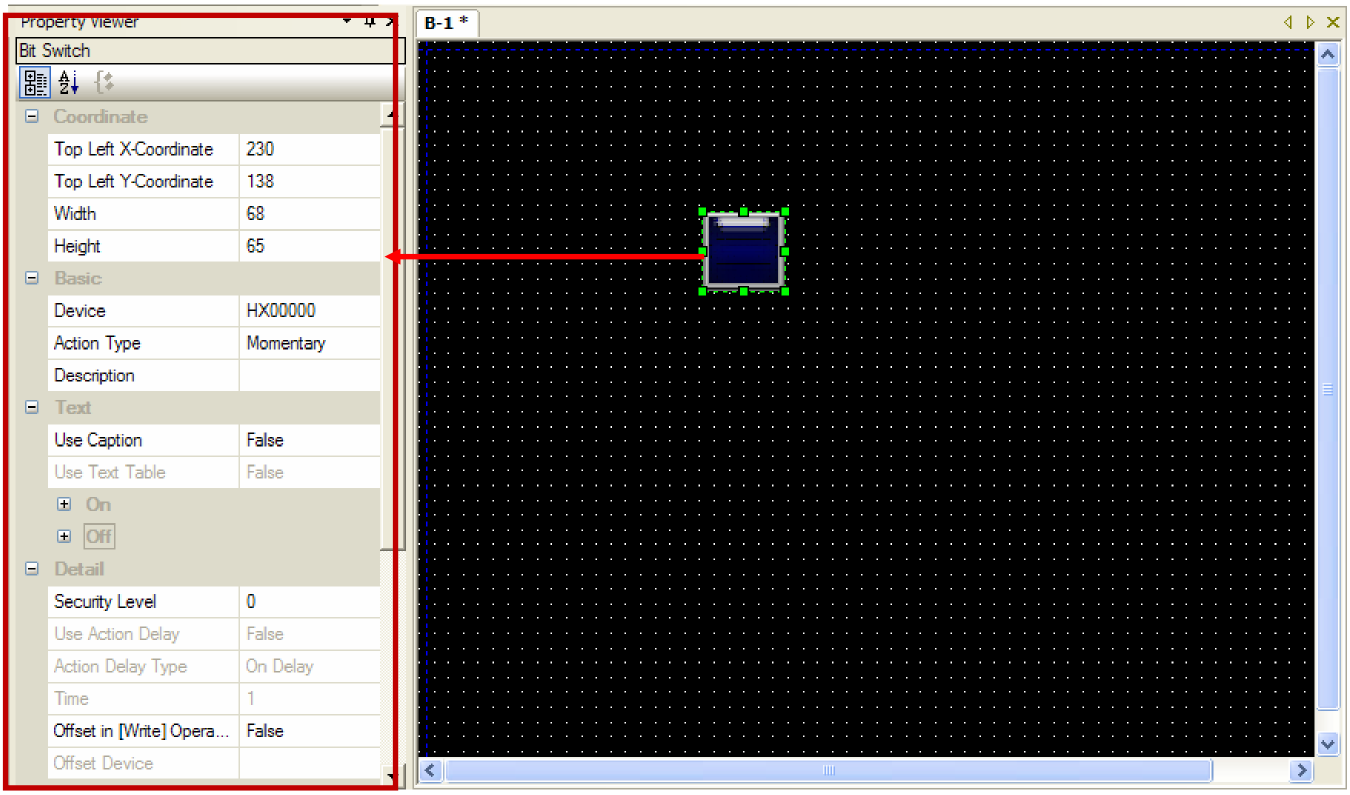
Note

(1) The function for moving screen is also applied to Home·Windows·Secondary screen equally.

(2) While the activated screen is the last one of the project, [Next] tool or menu are not available, the activated screen is the first one of the project, [Previous] tool or menu are not available.

9.9 Property Screen

Through the function, a user can check and change easily(Home·Windows·Secondary) Screen information, the properties of object, figure without opening a dialog box. Furthermore, the properties of two identical objects·figures or more can be displayed without opening a dialog box and a user can easily change them at once.



Bit Switch

Coordinate	
Top Left X-Coordinate	230
Top Left Y-Coordinate	138
Width	68
Height	65
Basic	
Device	HX00000
Action Type	Momentary
Description	
Text	
Use Caption	False
Use Text Table	False
On	
Off	
Detail	
Security Level	0
Use Action Delay	False
Action Delay Type	On Delay
Time	1
Offset in [Write] Opera...	False
Offset Device	

[In case of selecting number output unit, displaying the properties at a property screen]

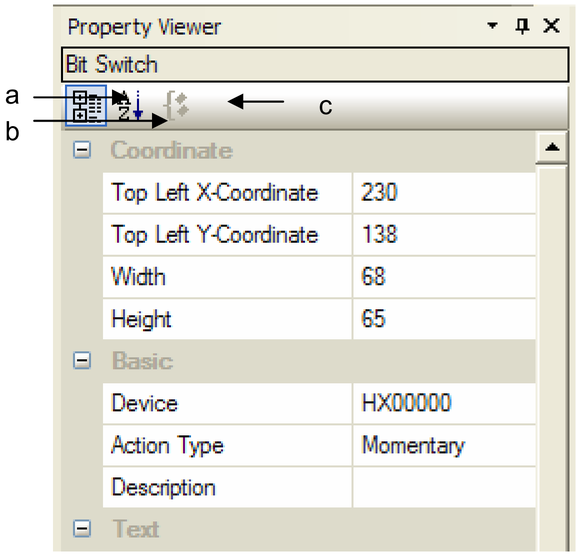
[[Procedure]

(a) Create the object or figure at a (Home·Windows·Secondary) screen.

(b) If you select [Tool]-[Property Screen] from the menu, property docking screen.

(c) If you select the object or figure to be checked, the properties will be shown at a property screen.

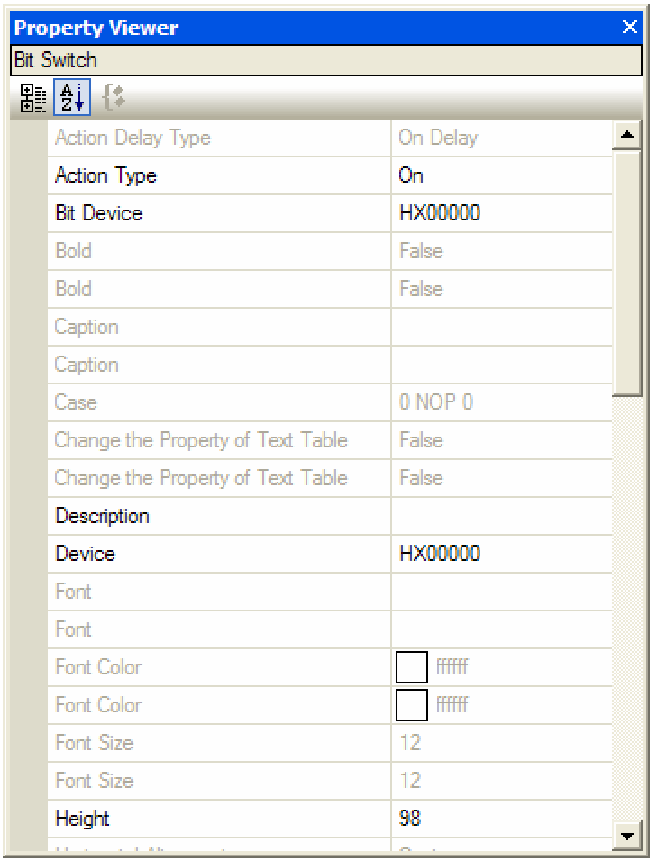
(d) The properties of two identical object·figure or more will be shown. In case of other objects, nothing will be shown at a property screen.

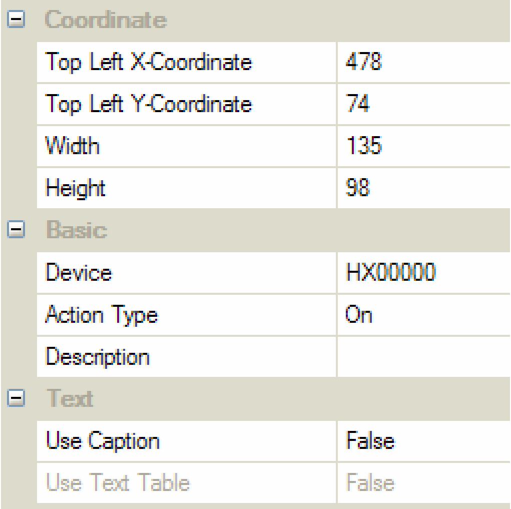


Property Viewer

Bit Switch

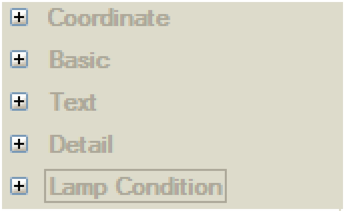
Coordinate	
Top Left X-Coordinate	230
Top Left Y-Coordinate	138
Width	68
Height	65
Basic	
Device	HX00000
Action Type	Momentary
Description	
Text	

Item	Description
Tree type(a)	They are displayed as major items, sub-items. For example, sub-items(X-coordinate, Y-coordinate, width, height) belong to major items (coordinate) organizationally.
Ascending(b)	All items are aligned in ascending order [A,B,C]  Property Viewer Bit Switch Action Delay Type: On Delay Action Type: On Bit Device: HX00000 Bold: False Bold: False Caption: Caption: Case: 0 NOP 0 Change the Property of Text Table: False Change the Property of Text Table: False Description: Device: HX00000 Font: Font: Font Color: ffffff Font Color: ffffff Font Size: 12 Font Size: 12 Height: 98
Extension or Reduction (c)	It extends or reduces all items.



Coordinate	
Top Left X-Coordinate	478
Top Left Y-Coordinate	74
Width	135
Height	98
Basic	
Device	HX00000
Action Type	On
Description	
Text	
Use Caption	False
Use Text Table	False

[Extension Status]

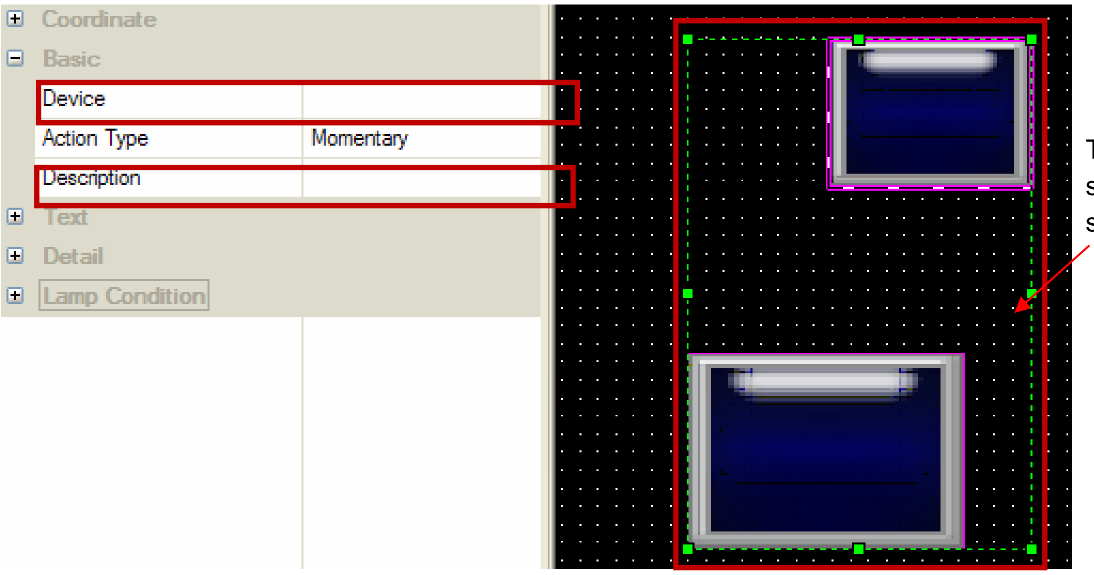


- Coordinate
- Basic
- Text
- Detail
- Lamp Condition

[Reduction Status]

Note

(1) If you select two objects or more, each property will be displayed at the screen and the value of different properties are shown as a blank.



- Coordinate
- Basic

Device	
Action Type	Momentary
Description	

- Text
- Detail
- Lamp Condition

Two bit switches selected

If you select two number output units that have the same properties except only device address and explanation as above, identical items will be shown. However, the device address and explanation will be displayed as a blank.

(2) If you change the properties at a property screen, the related property of selected screen, figure, object will be reflected immediately.

(3) [Display] and [Conditions] of the object are not shown at a property screen.
(4) (1) ~ (3) are applied to the group composed of identical object or figure.

9.10 Font Export/Installation

When you try to apply XP-Builder project that adopts special font for other PC, font error can occur. In this case, through Font Export/Installation function, install the using font to your PC to solve the error.

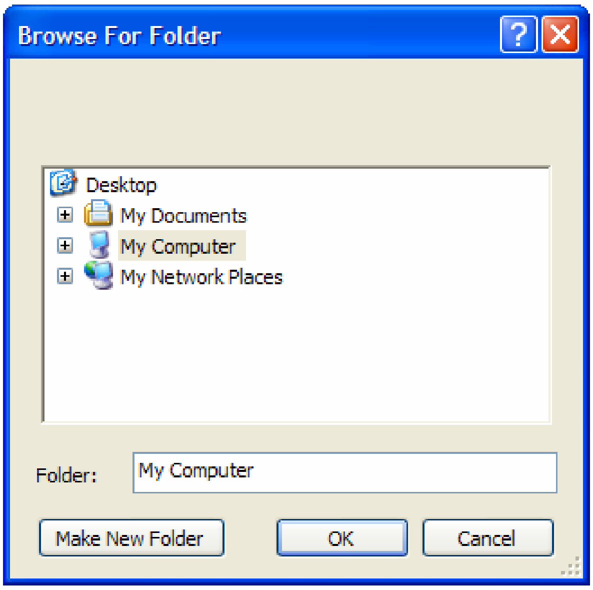
9.10.1 Font Export

The font that is applied for XP-Builder can be exported.

[Procedures]

(a) Select [Tool]-[Font Export] from the menu.

(b) Select the folder for saving font and press [OK] button to execute Font Export.


Browse For Folder
Desktop
My Documents
My Computer
My Network Places
Make New Folder
OK
Cancel

Folder: My Computer

9.10.2 Font Installation

You can install the font that has been already exported to your PC.

[Procedures]

(a) Select [Tool]-[Font Installation] from the menu.

(b) Select the folder where the font file exists and press [OK] button to execute Font Export.

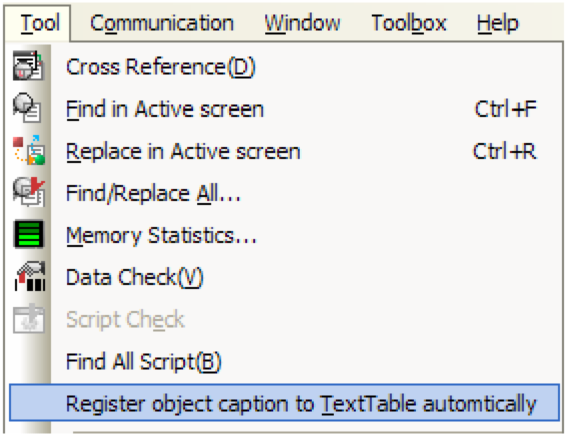
9.11 Automatically Registering string into string table

'Automatically Registering string into string table' function creates string table and add the project's strings and object's static captions to string table. This convenient function provides multi-language through string table.

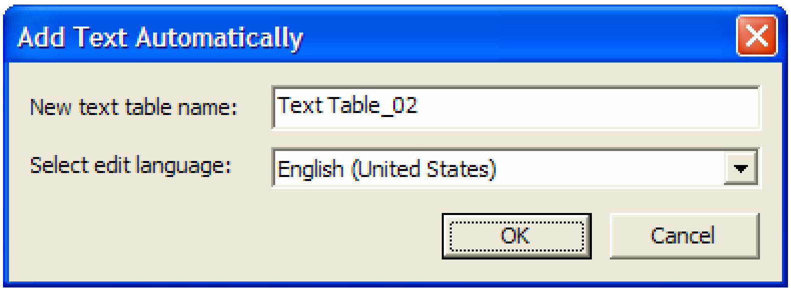
[Procedures]

(a) Create a project and arrange the object with various static captions and string.

(b) Select [Too]-[Automatically Registering string into string table] from the menu.


Tool
Communication
Window
Toolbox
Help
Cross Reference(D)
Find in Active screen Ctrl+F
Replace in Active screen Ctrl+R
Find/Replace All...
Memory Statistics...
Data Check(V)
Script Check
Find All Script(B)
Register object caption to TextTable automtically

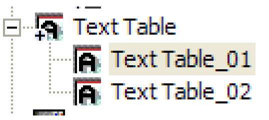
(c) Input ·Select the name of string table with edition language to be added.

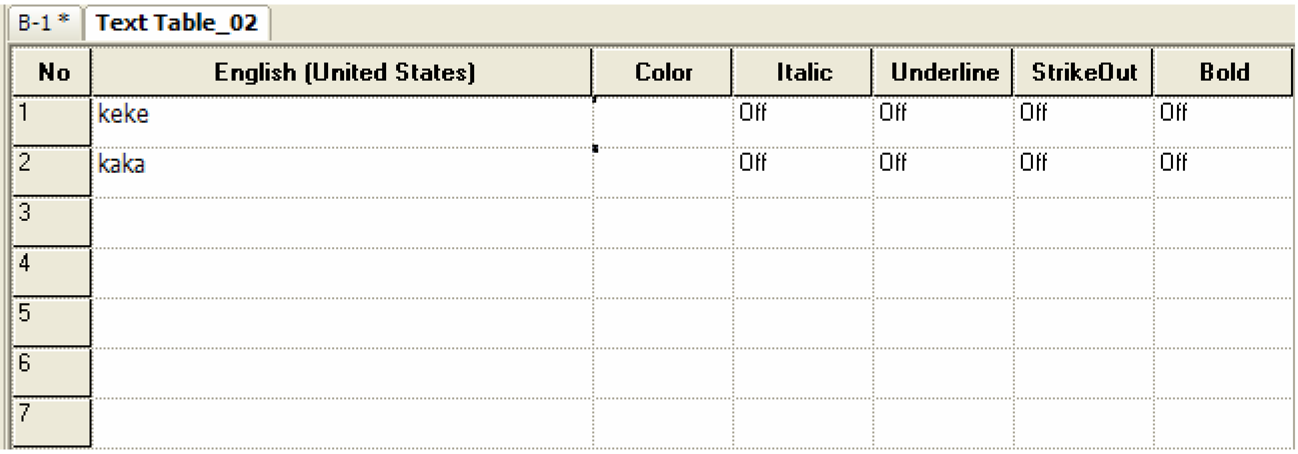

Add Text Automatically
OK
Cancel

New text table name: Text Table_02

Select edit language: English (United States)

(d) Check if the input string table is created and static string is added properly.

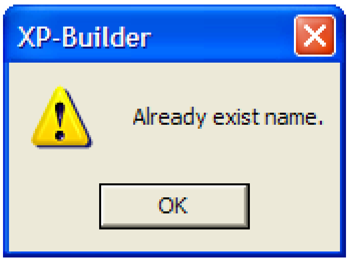

Text Table
Text Table_01
Text Table_02



No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	keke		Off	Off	Off	Off
2	kaka		Off	Off	Off	Off
3						
4						
5						
6						
7						

Note

(1) If the input string name is duplicate with the existing name, the below warning message will be show.



Already exist name.

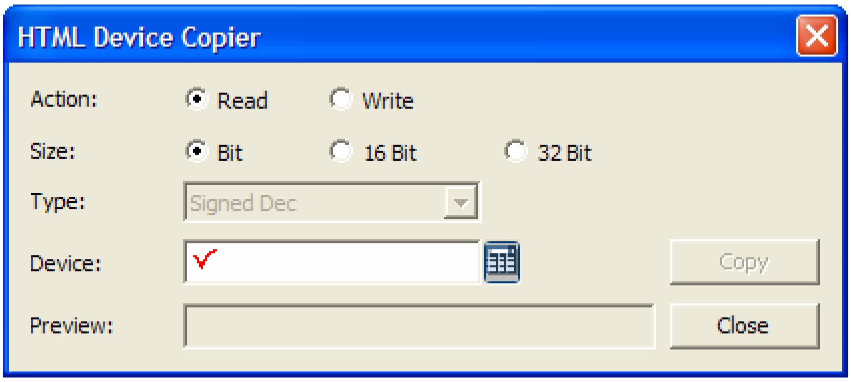
(2) The string can be added up 1000pcs per string table so in case that more strings are added, new string table will be created under the name of incremental number ; '_01', '_02'. However, if the number of strings to be registered is around 1000pcs limit, although there are some spaces in the added sting table, new string table will be created with being registered from the first index.

9.12 HTML Device Copier

You can monitor the device of the XGT Panel on the Internet. Write the HTML Web page and copy the address of the device to be monitored by using this HTML device copier. And then paste it to the HTML.

[Sequence]

(a) Create the project.
(b) Select [Tool] -]HTML device copier] on the menu
(c) Select the action and size of the device to be copied.
(d) Input the device.
(e) Copy it by pressing [Copy] button
(f) Paste it to HTML editor


HTML Device Copier
Action: ● Read ○ Write
Size: ● Bit ○ 16 Bit ○ 32 Bit
Type: Signed Dec
Device:
Copy
Preview:
Close

[Description on the dialog box]

Items	Description
Action (a)	Select Read or Write
Size (b)	Select the size of the device.
Type (c)	Select the type of the device to be read or written
Device (d)	Input the target device
Preview (e)	Displays the character string to be copied
Copy (f)	Copies the character string on the Preview into the clipboard

Note

(1) HTML grammar

Function	Description
GetXPData	Reads the value of the device and return it with character string
Parameter 1	4byte device address. Hexadecimal expression
Parameter 2	Device size (1: bit, 2: 16 bit, 3: 32 bit)
Parameter 3	Return data type 1: Signed decimal 2: Unsigned decimal 3: Octal 4: Hex 5: Bin 6: BCD 7: Real

Function	Description
SetXPData	Writes the value to device.
Parameter 1	4byte device address. 16 hexadecimal expression
Parameter 2	Device size (1: bit, 2: 16 bit, 3: 32 bit)
Parameter 3	Return data type 1: Signed decimal 2: Unsigned decimal 3: Octal 4: Hex 5: Bin 6: BCD 7: Real

(2) For detail on the HTML grammar, refer to “Web Server” of the XGT Panel manual.

Chapter 10 Project Printing

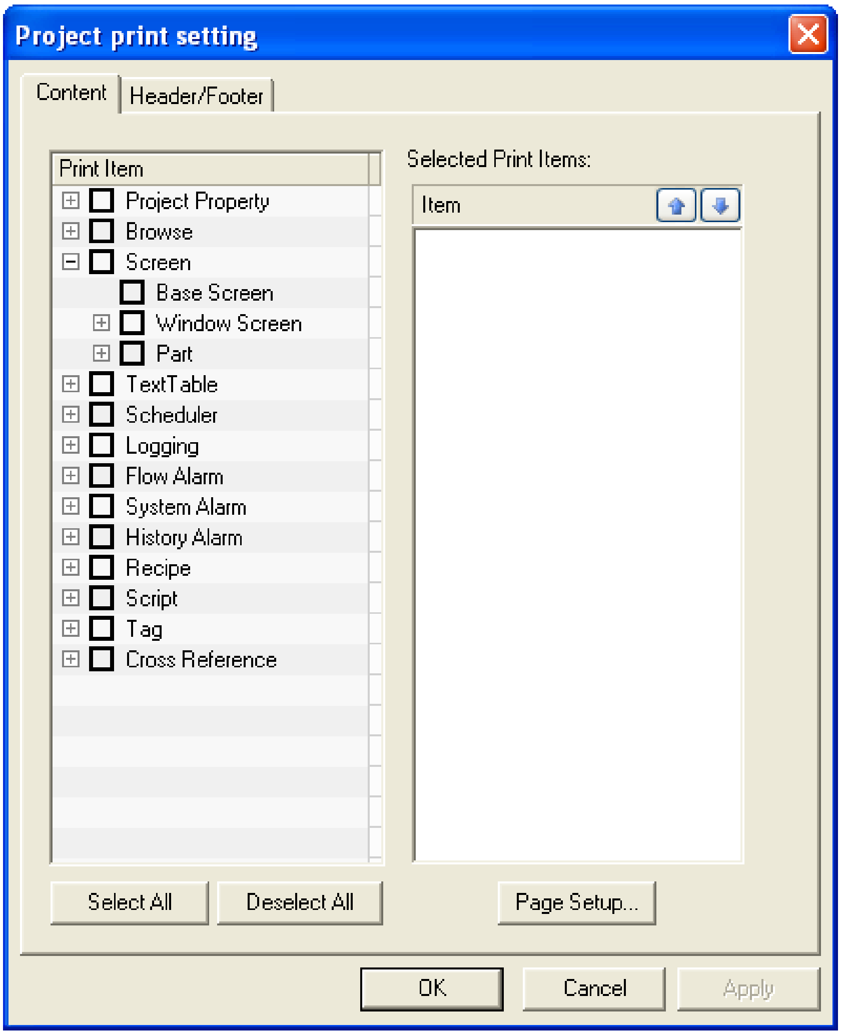
Project printing is aimed at making user data editing smoother by printing out the items of the project, that is, the contents of the project tree items through Excel. You can take advantage of data rearrangement, excel resources and window resources by printing data in Excel.

10.1 Print Setting

If you select [Project]-[Print Project], a dialog box is invoked where you can set printing.

10.1.1 List

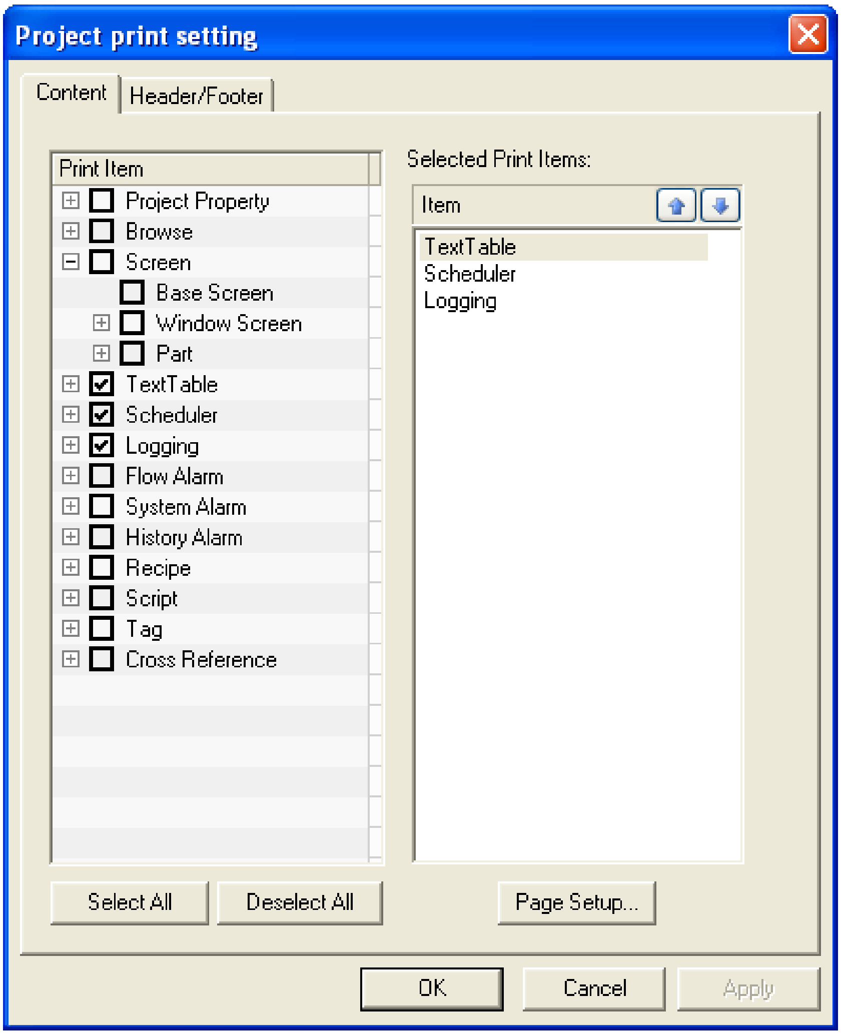
You can choose the items to print and change their order in the list dialog box.


Project print setting
Content
Header/Footer
Print Item
☐ Project Property
☐ Browse
☐ Screen
☐ Base Screen
☐ Window Screen
☐ Part
☐ TextTable
☐ Scheduler
☐ Logging
☐ Flow Alarm
☐ System Alarm
☐ History Alarm
☐ Recipe
☐ Script
☐ Tag
☐ Cross Reference
Selected Print Items:
Item
Select All
Deselect All
Page Setup...
OK
Cancel
Apply

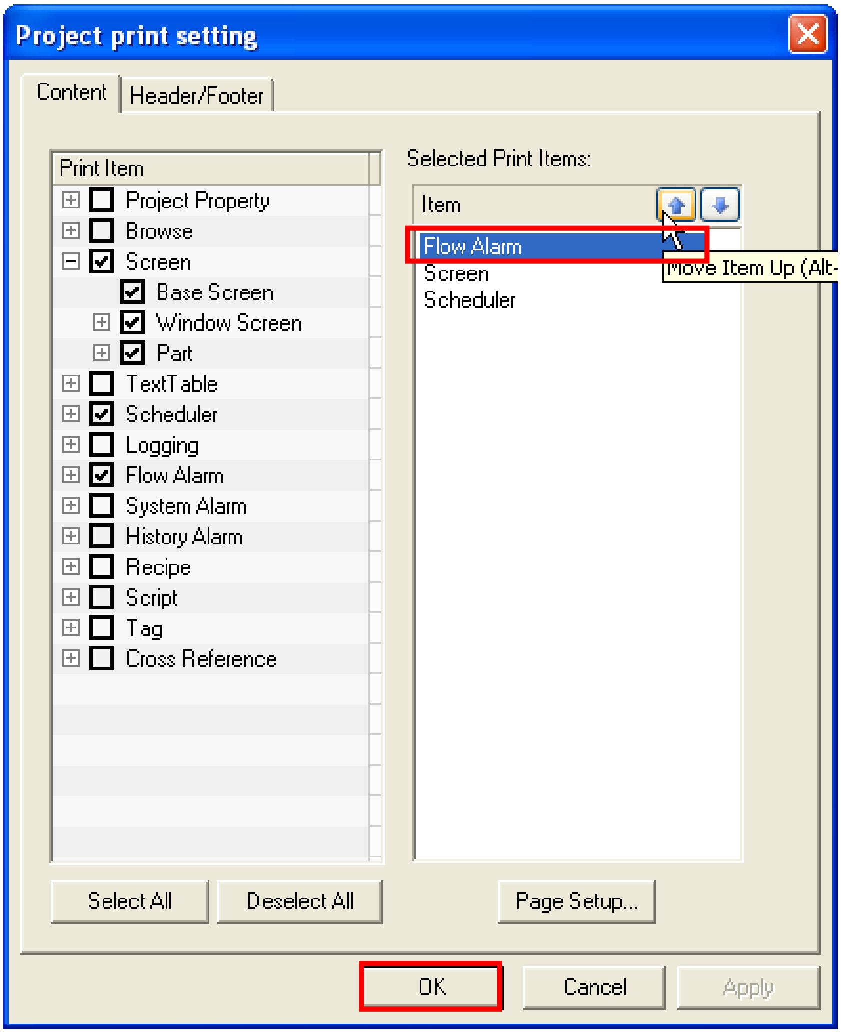
Item	Description
Print items	The items in the project tree. They are in check boxes which turn into the ‘Selected Print Item’ as soon as you check them.
Select all	Selects all the items.
Deselect all	Unchecks the check boxes of all the selected items and deletes items from the selected print item list.
Selected print items	The area where the selected items are displayed on the left

[Procedure] <Example of adding print items and changing the order>

(a) Select the Text Table, Scheduler and Logging items in the list.


Project print setting
Content
Header/Footer
Print Item
☐ Project Property
☐ Browse
☐ Screen
☐ Base Screen
☐ Window Screen
☐ Part
☑ TextTable
☑ Scheduler
☑ Logging
☐ Flow Alarm
☐ System Alarm
☐ History Alarm
☐ Recipe
☐ Script
☐ Tag
☐ Cross Reference
Selected Print Items:
Item
TextTable
Scheduler
Logging
Select All
Deselect All
Page Setup...
OK
Cancel
Apply

(b) Change the order as follows by clicking on the Up (⬆) and Down (⬇) buttons.



Project print setting

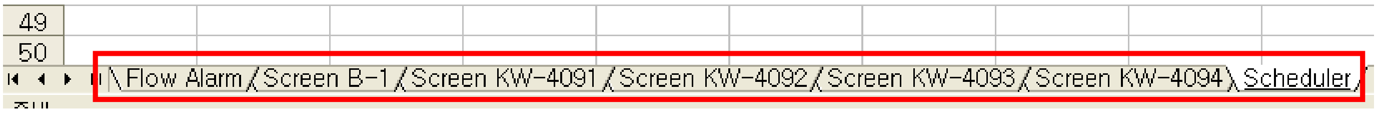
Print Item
- ☐ Project Property
- ☐ Browse
- ☑ Screen
  - ☑ Base Screen
  - ☑ Window Screen
  - ☑ Part
- ☐ TextTable
- ☑ Scheduler
- ☐ Logging
- ☑ Flow Alarm
- ☐ System Alarm
- ☐ History Alarm
- ☐ Recipe
- ☐ Script
- ☐ Tag
- ☐ Cross Reference

Selected Print Items:

Item
- Flow Alarm
- Screen
- Scheduler

Content
Header/Footer
Move Item Up (Alt-
Select All
Deselect All
Page Setup...
OK
Cancel
Apply

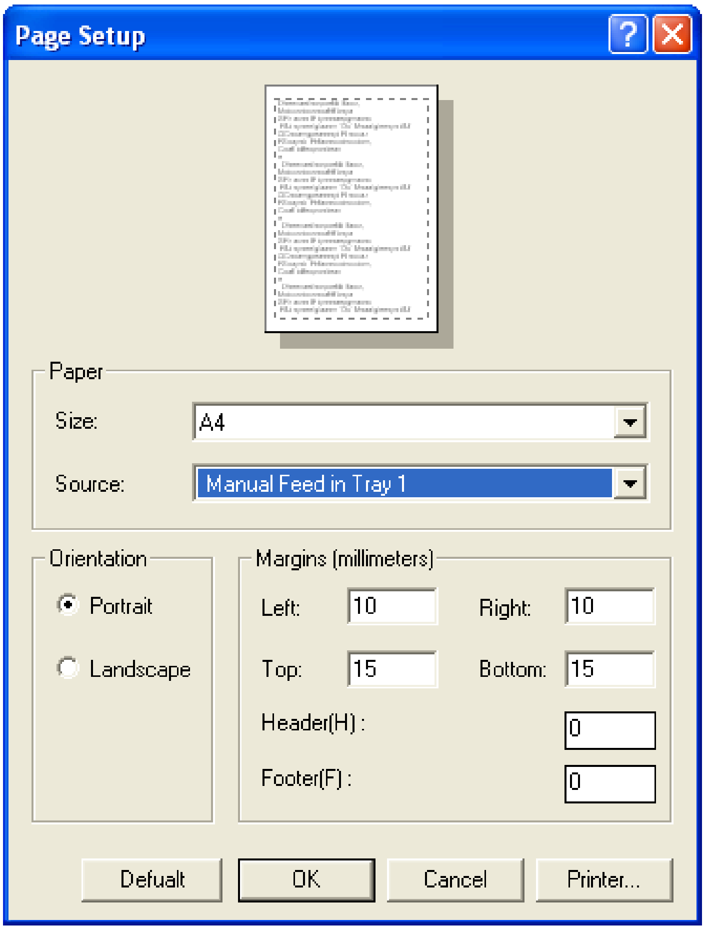
(c) Click on the OK button. The Excel tabs are displayed in the order of print items specified above.



49
50
Flow Alarm
Screen B-1
Screen KW-4091
Screen KW-4092
Screen KW-4093
Screen KW-4094
Scheduler

10.1.2 Page Setting

You can set the pages to print.



Page Setup

Paper

Size: A4

Source: Manual Feed in Tray 1

Orientation

● Portrait

○ Landscape

Margins (millimeters)

Left: 10

Right: 10

Top: 15

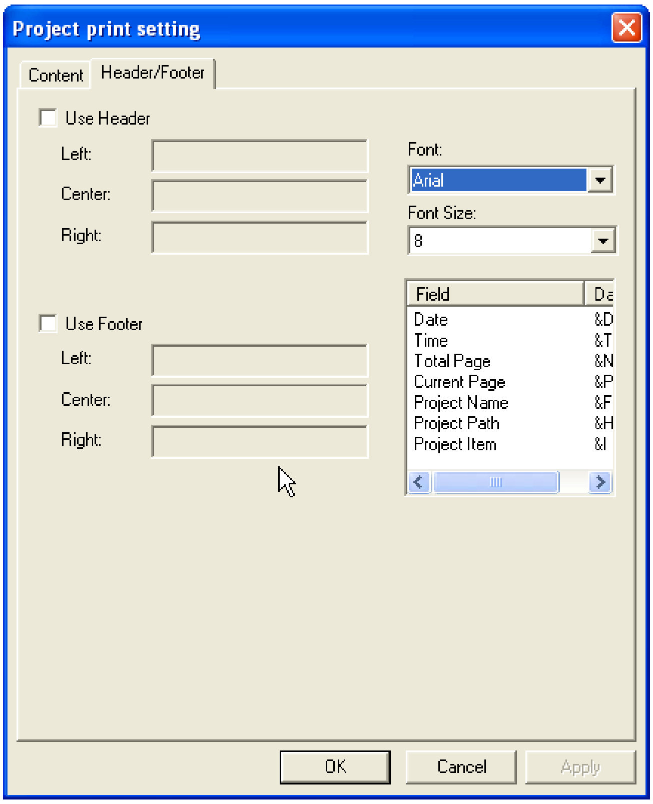
Bottom: 15

Header(H) : 0

Footer(F) : 0

Item	Description
Size	Sets the size of the paper.
Source	This is fixed so you do not have to select this.
Orientation	You can choose between Portrait and Landscape.
Margins	You can set the space at the top, bottom, right, left, header and footer of the paper.
Printer	Sets the printer.

10.1.3 Header/Footer



☐ Use Header

Font: Arial

Font Size: 8

☐ Use Footer

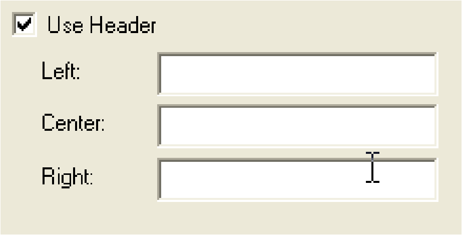
Field	Da
Date	&D
Time	&T
Total Page	&N
Current Page	&P
Project Name	&F
Project Path	&H
Project Item	&I

You can insert a header and footer on the left, center and right at the top and bottom of the paper respectively. The header and footer may include the following.

Item	Description
Date	You can insert the present date.
Time	You can insert the present time.
Total page	You can insert the total page.
Current page	You can insert the current page.
Project name	You can insert the project name.
Project path	You can insert the project path.
Project item	You can insert the project items. For example, if you want to print the character string among the project elements, the character string table is printed.
User specific	You can enter what you want to print.

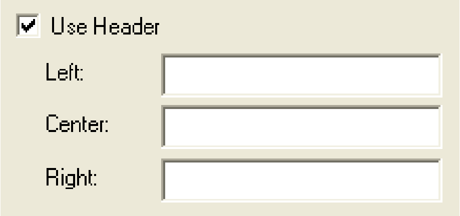
[Procedure] < Example of adding and printing a header/footer >
Open a project and add the project properties in the print setting dialog box. Set the header and footer in the following procedure.

(a) Click on the Use Header check box.



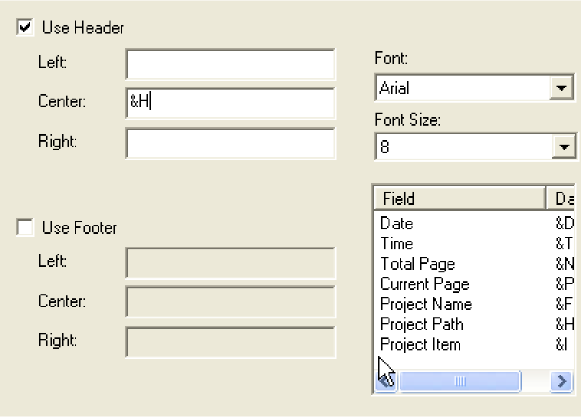
☑ Use Header
Left:
Center:
Right:

(b) Click on the Center of the header.



☑ Use Header
Left:
Center:
Right:

(c) Double click on the project path.



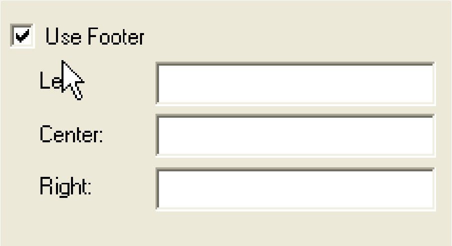
☑ Use Header
Left:
Center: &H
Right:

Font: Arial
Font Size: 8

☐ Use Footer
Left:
Center:
Right:

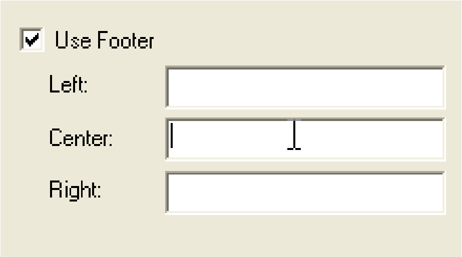
Field	Da
Date	&D
Time	&T
Total Page	&N
Current Page	&P
Project Name	&F
Project Path	&H
Project Item	&I

(d) Click on the Use Footer check box.



☑ Use Footer
Left:
Center:
Right:

(e) Click on the Center of the footer.



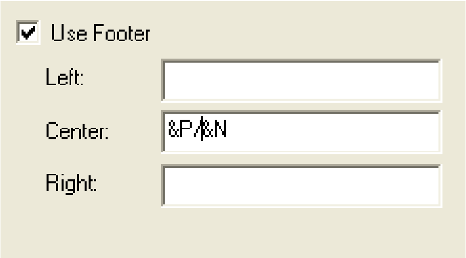
☑ Use Footer

Left:

Center:

Right:

(f) Double click on the current page and total pages as follows and place '/' between them.



☑ Use Footer

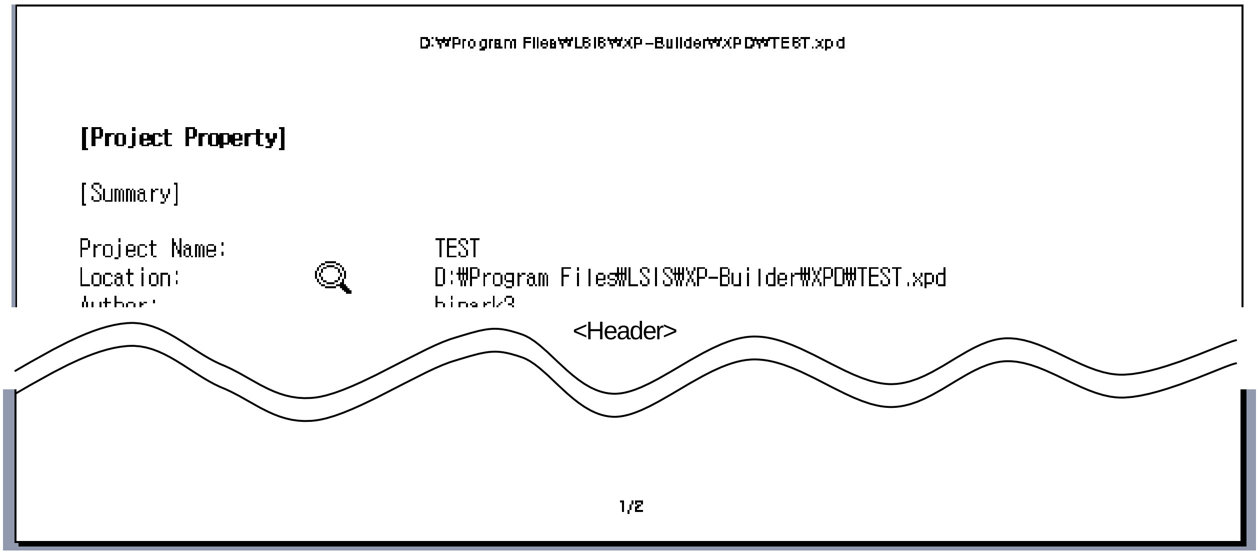
Left:

Center: &P/&N

Right:

(g) Click on the OK button.

(h) Click on Preview Print in the Excel menu to check whether the header and footer have been printed out as you set.



D:₩Program Files₩LSIS₩XP-Builder₩XPD₩TEST.xpd

[Project Property]

[Summary]

Project Name: TEST

Location: D:₩Program Files₩LSIS₩XP-Builder₩XPD₩TEST.xpd

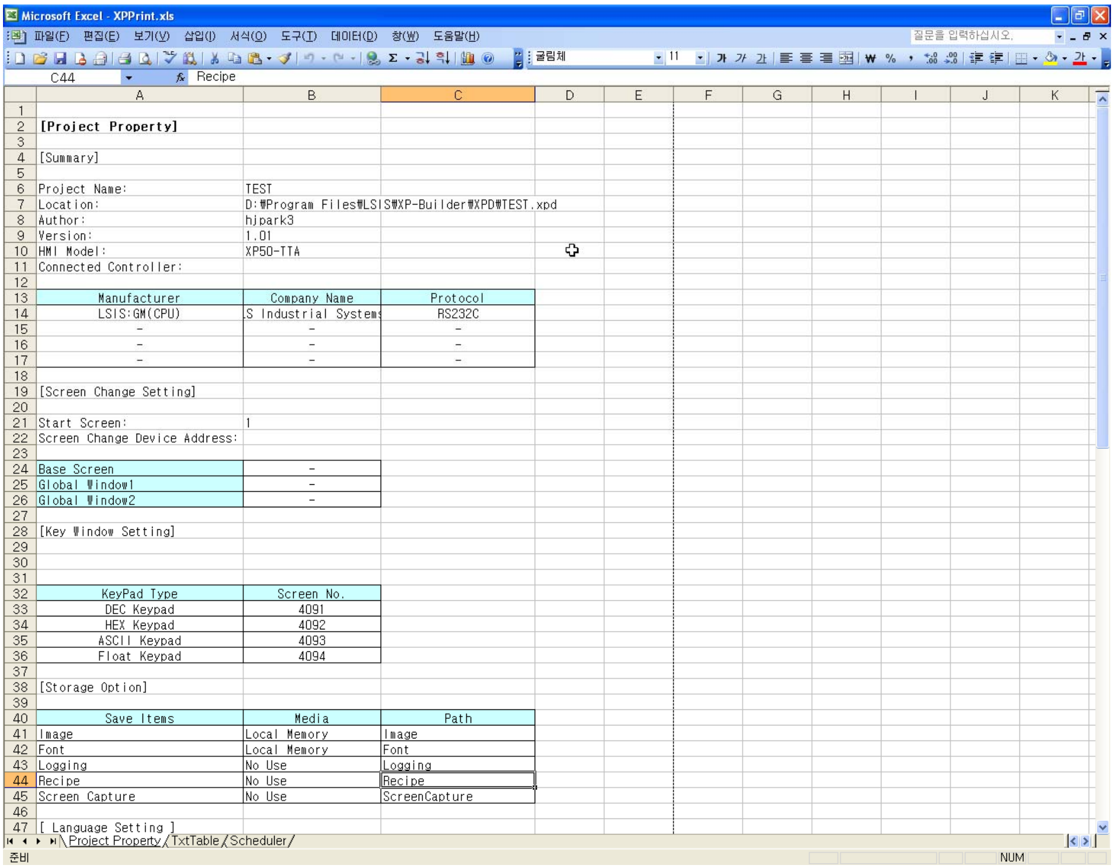
<Header>

1/2

<Footer>

10.2 Print Contents

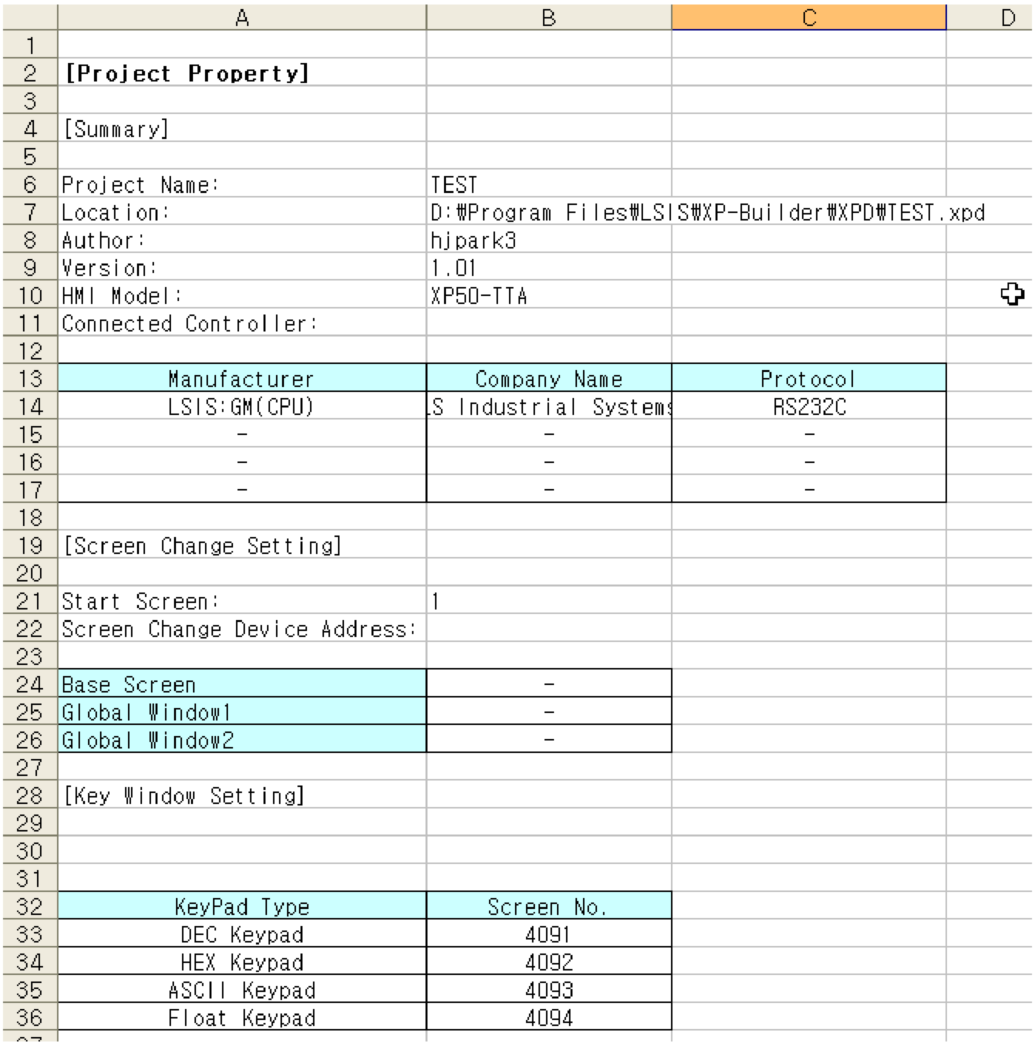
If you select all the print items in the print setting dialog box and click on the OK button, Excel starts as follows and the print items are displayed in each tab of Excel.


Microsoft Excel - XPPrint.xls
파일(F) 편집(E) 보기(V) 삽입(I) 서식(O) 도구(T) 데이터(D) 창(W) 도움말(H)
굴림체
11
C44
Recipe
Project Property
TxtTable
Scheduler
준비
NUM

	A	B	C
1			
2	**[Project Property]**		
3			
4	[Summary]		
5			
6	Project Name:	TEST	
7	Location:	D:₩Program Files₩LSIS₩XP-Builder₩XPD₩TEST.xpd	
8	Author:	hjpark3	
9	Version:	1.01	
10	HMI Model:	XP50-TTA	
11	Connected Controller:		
12			
13	Manufacturer	Company Name	Protocol
14	LSIS:GM(CPU)	S Industrial System	RS232C
15	-	-	-
16	-	-	-
17	-	-	-
18			
19	[Screen Change Setting]		
20			
21	Start Screen:	1	
22	Screen Change Device Address:		
23			
24	Base Screen	-	
25	Global Window1	-	
26	Global Window2	-	
27			
28	[Key Window Setting]		
29			
30			
31			
32	KeyPad Type	Screen No.	
33	DEC Keypad	4091	
34	HEX Keypad	4092	
35	ASCII Keypad	4093	
36	Float Keypad	4094	
37			
38	[Storage Option]		
39			
40	Save Items	Media	Path
41	Image	Local Memory	Image
42	Font	Local Memory	Font
43	Logging	No Use	Logging
44	Recipe	No Use	Recipe
45	Screen Capture	No Use	ScreenCapture
46			
47	[Language Setting]		

10.2.1 Project Property

This is summarizing and printing out the contents of the project properties dialog. Therefore, you can see the project settings displayed in tables as they are.



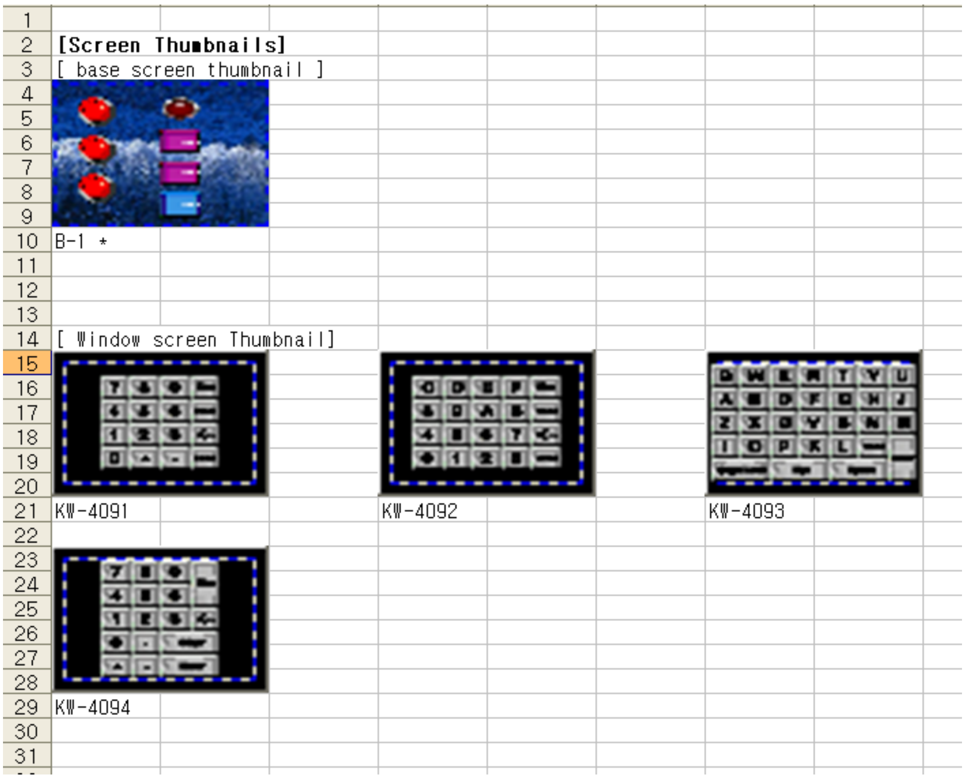
	A	B	C	D
1				
2	**[Project Property]**			
3				
4	[Summary]			
5				
6	Project Name:	TEST		
7	Location:	D:₩Program Files₩LSIS₩XP-Builder₩XPD₩TEST.xpd		
8	Author:	hjpark3		
9	Version:	1.01		
10	HMI Model:	XP50-TTA		
11	Connected Controller:			
12				
13	Manufacturer	Company Name	Protocol	
14	LSIS:GM(CPU)	S Industrial System	RS232C	
15	-	-	-	
16	-	-	-	
17	-	-	-	
18				
19	[Screen Change Setting]			
20				
21	Start Screen:	1		
22	Screen Change Device Address:			
23				
24	Base Screen	-		
25	Global Window1	-		
26	Global Window2	-		
27				
28	[Key Window Setting]			
29				
30				
31				
32	KeyPad Type	Screen No.		
33	DEC Keypad	4091		
34	HEX Keypad	4092		
35	ASCII Keypad	4093		
36	Float Keypad	4094		

The project print items are as follows.

Item	Description
Summary	The project name, storage location, author's name, version, HMI model name and connection control are printed.
Screen Change setting	The start screen, screen change by the device and screen change switch device are printed.
Key window setting	The key window numbers by hexadecimal number (HEX), character (ASCII), real number (FLOAT) and decimal number (DEC) are printed.
Storage Option	The use of media such as the image, font logging, recipe, screen capture and path name are printed.
Language setting	The default execution language, default editing language, language switching device, editing language list and execution language list are printed.
Global script setting	The set global script list is printed.
ETC.	The printing direction, screen capture output and system alarm viewer are printed.

10.2.2 Screen Thumbnails

This is summarizing and displaying the base, window and part screens on the screen in thumbnails.



[Screen Thumbnails]

[base screen thumbnail]

B-1 *

[Window screen Thumbnail]

KW-4091

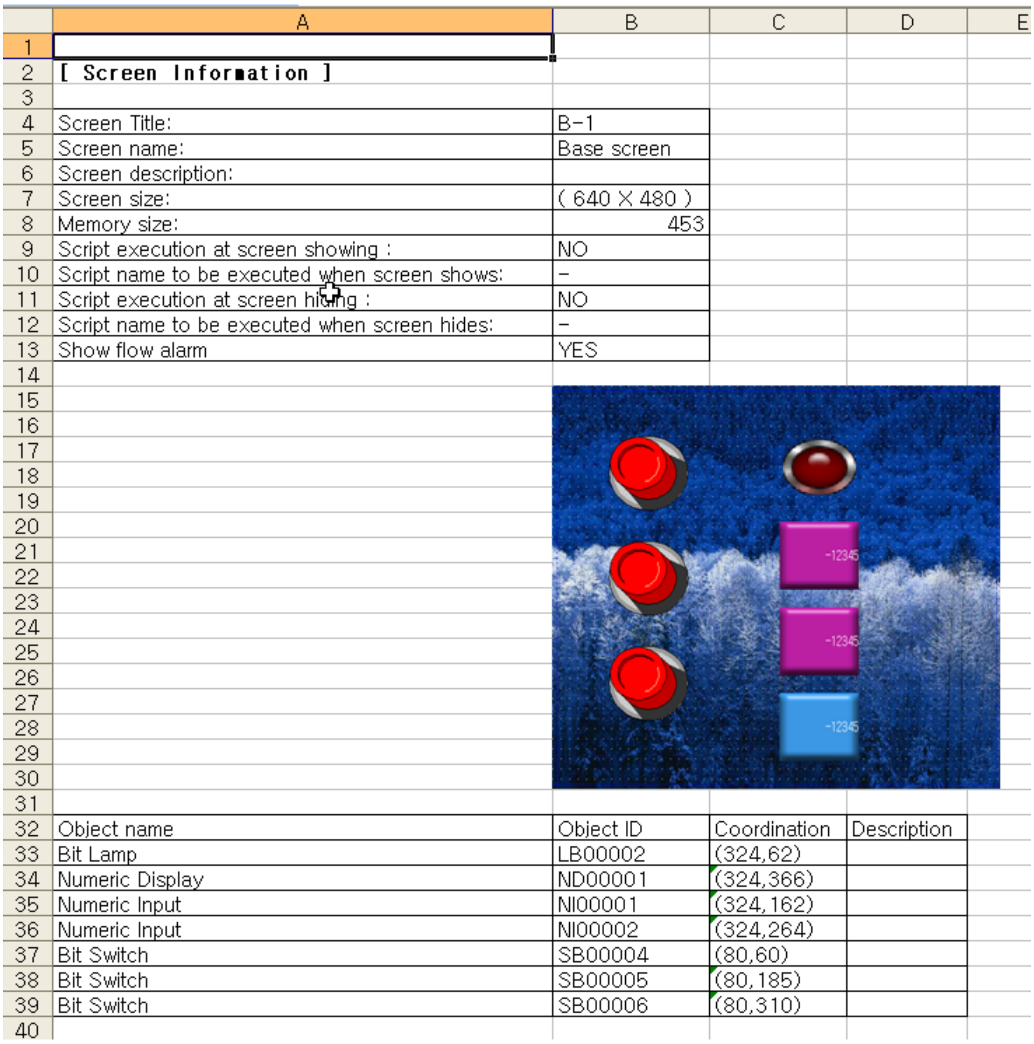
KW-4092

KW-4093

KW-4094

10.2.3 Screen

The edited contents are displayed in a sheet of Excel in detail.



[Screen Information]

Screen Title:	B-1
Screen name:	Base screen
Screen description:	
Screen size:	(640 X 480)
Memory size:	453
Script execution at screen showing :	NO
Script name to be executed when screen shows:	-
Script execution at screen hiding :	NO
Script name to be executed when screen hides:	-
Show flow alarm	YES

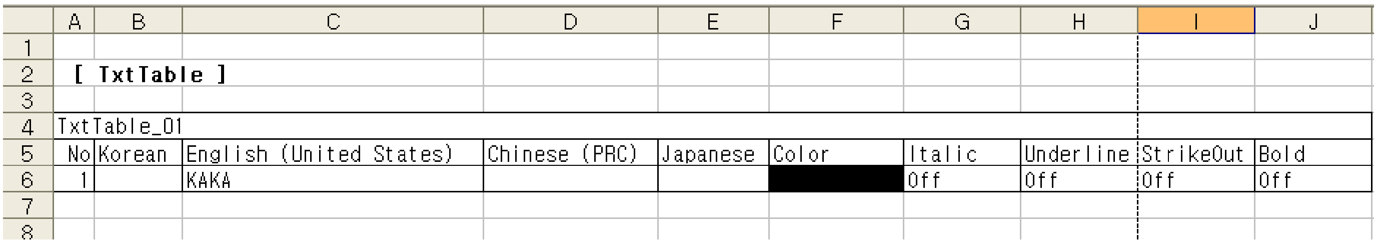
Object name	Object ID	Coordination	Description
Bit Lamp	LB00002	(324,62)	
Numeric Display	ND00001	(324,366)	
Numeric Input	NI00001	(324,162)	
Numeric Input	NI00002	(324,264)	
Bit Switch	SB00004	(80,60)	
Bit Switch	SB00005	(80,185)	
Bit Switch	SB00006	(80,310)	

Detail of each item is as follows.

Item	Description
Summary	Prints screen name, description, size, script, whether to show flow alarm.
Screen capture	Prints entire screen in detail.
Object list	Prints object name, object ID, object coordination and description.

10.2.4 TextTable

The text table used in the present project is printed out along with the text properties.



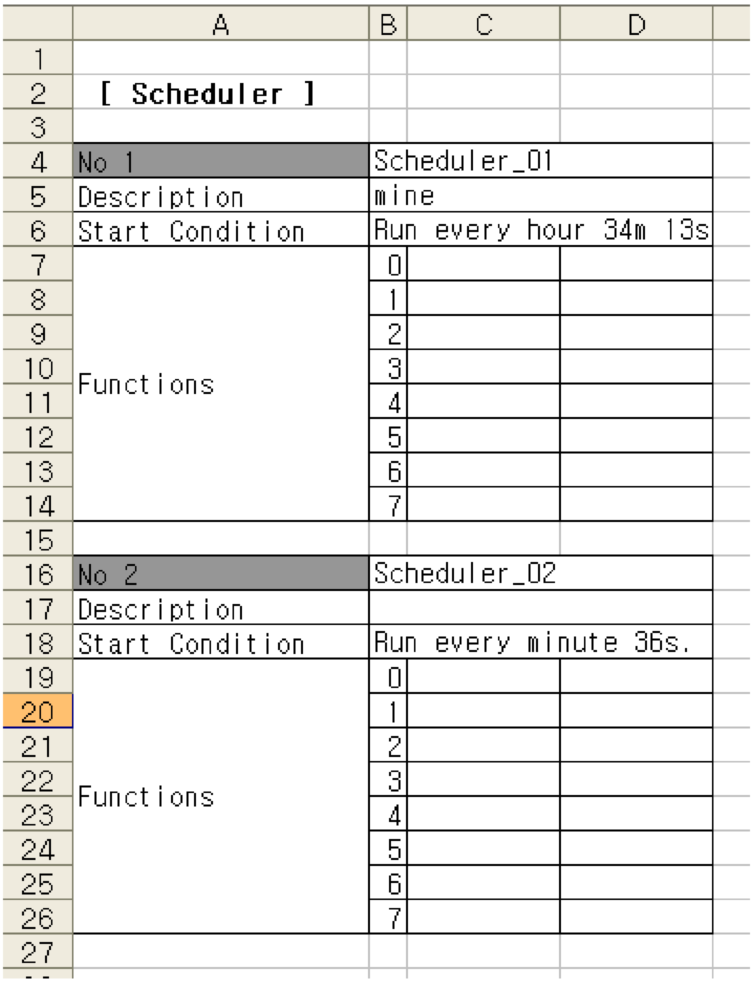
[TxtTable]

TxtTable_01

No	Korean	English (United States)	Chinese (PRC)	Japanese	Color	Italic	Underline	StrikeOut	Bold
1		KAKA			■	Off	Off	Off	Off

10.2.5 Scheduler

The information of the scheduler set in the present project is printed.

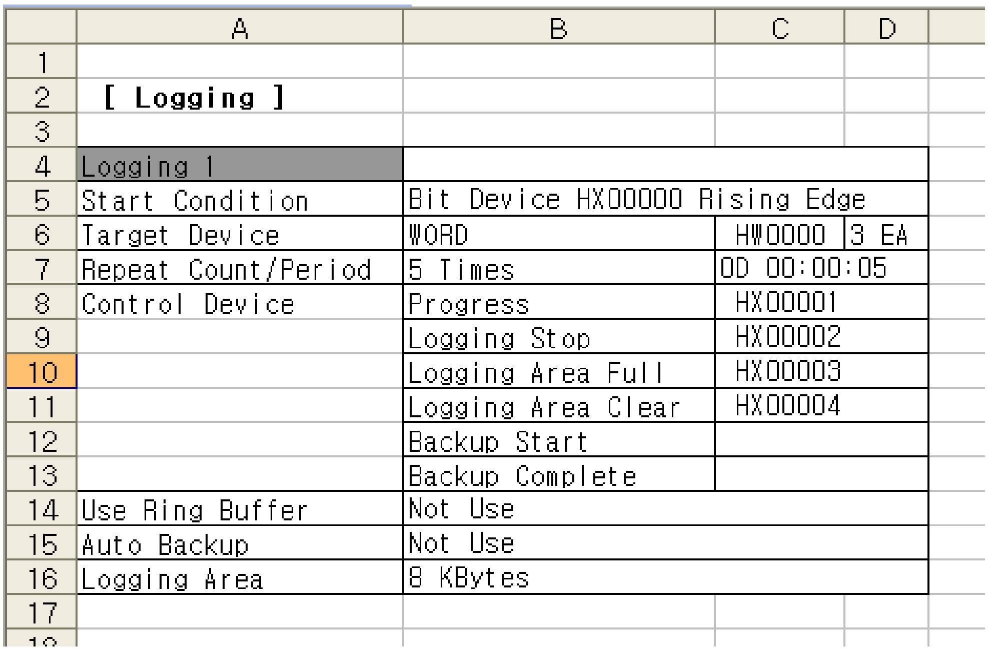


[Scheduler]

No 1	Scheduler_01		
Description	mine		
Start Condition	Run every hour 34m 13s		
Functions	0		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
No 2	Scheduler_02		
Description			
Start Condition	Run every minute 36s.		
Functions	0		
	1		
	2		
	3		
	4		
	5		
	6		
	7		

10.2.6 Logging

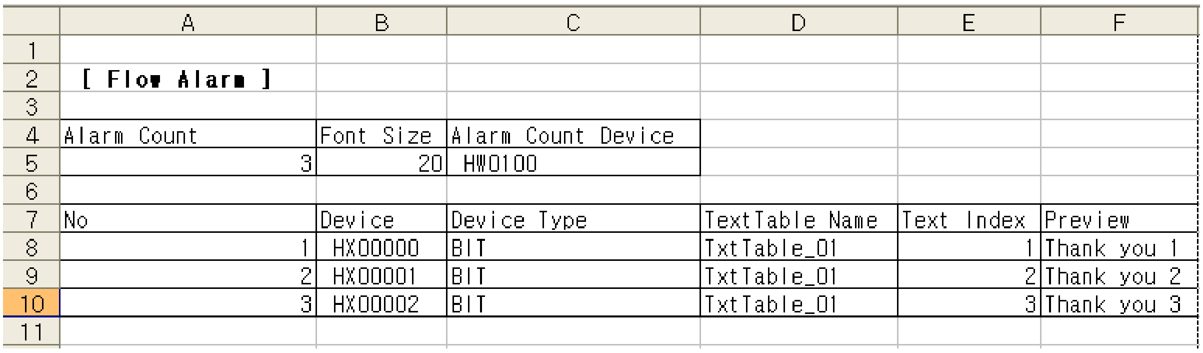
The information of the logging set in the present project is printed.



	A	B	C	D
1				
2	**[Logging]**			
3				
4	Logging 1			
5	Start Condition	Bit Device HX00000 Rising Edge		
6	Target Device	WORD	HW0000	3 EA
7	Repeat Count/Period	5 Times	0D 00:00:05	
8	Control Device	Progress	HX00001	
9		Logging Stop	HX00002	
10		Logging Area Full	HX00003	
11		Logging Area Clear	HX00004	
12		Backup Start		
13		Backup Complete		
14	Use Ring Buffer	Not Use		
15	Auto Backup	Not Use		
16	Logging Area	8 KBytes		
17				

10.2.7 Flow Alarm

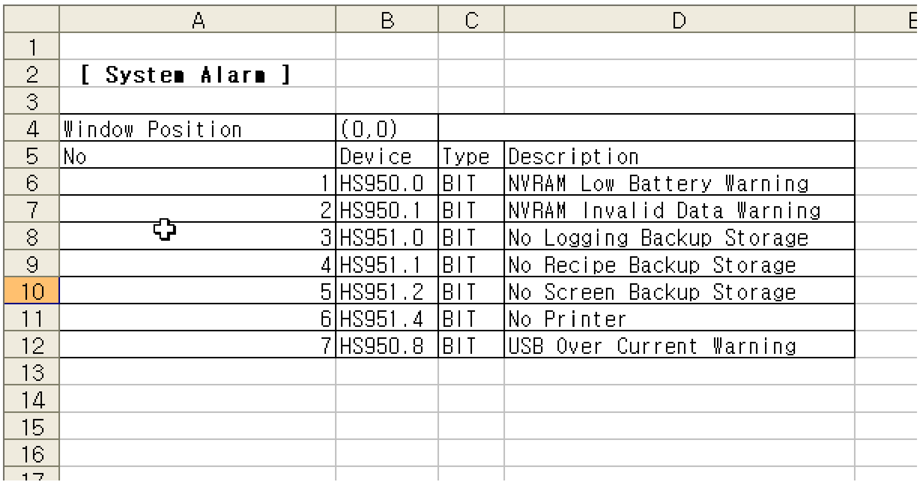
The settings of the flow alarm (number of alarms, font size, alarm number storage device and details of each alarm) are printed.



	A	B	C	D	E	F
1						
2	**[Flow Alarm]**					
3						
4	Alarm Count	Font Size	Alarm Count Device			
5	3	20	HW0100			
6						
7	No	Device	Device Type	TextTable Name	Text Index	Preview
8	1	HX00000	BIT	TxtTable_01	1	Thank you 1
9	2	HX00001	BIT	TxtTable_01	2	Thank you 2
10	3	HX00002	BIT	TxtTable_01	3	Thank you 3
11						

10.2.8 System Alarm

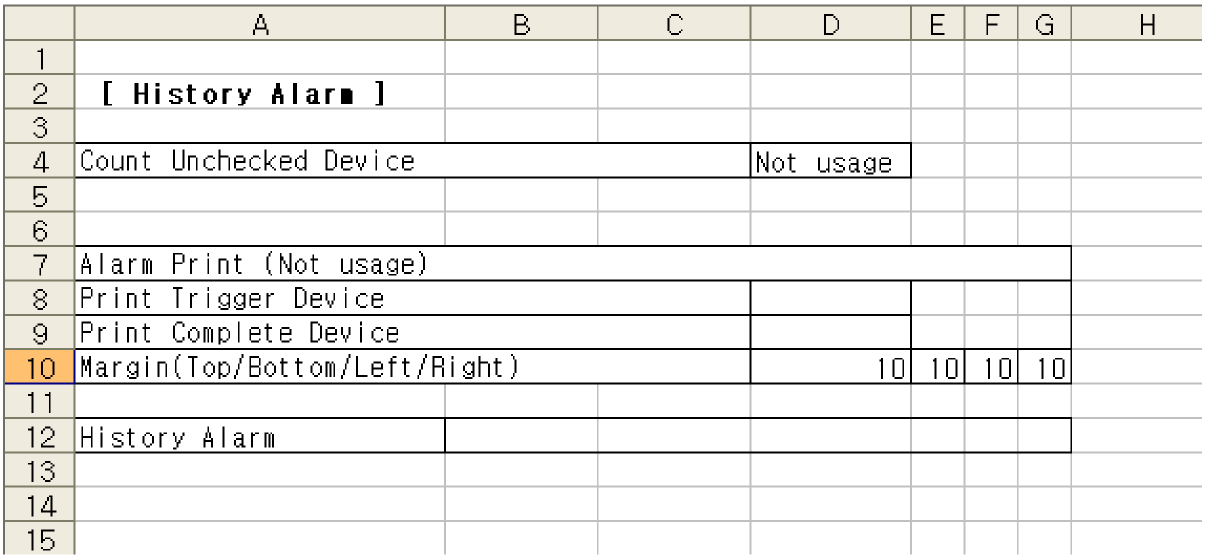
The system alarm settings are printed as they are.



	A	B	C	D
1				
2	[System Alarm]			
3				
4	Window Position	(0,0)		
5	No	Device	Type	Description
6	1	HS950.0	BIT	NVRAM Low Battery Warning
7	2	HS950.1	BIT	NVRAM Invalid Data Warning
8	3	HS951.0	BIT	No Logging Backup Storage
9	4	HS951.1	BIT	No Recipe Backup Storage
10	5	HS951.2	BIT	No Screen Backup Storage
11	6	HS951.4	BIT	No Printer
12	7	HS950.8	BIT	USB Over Current Warning
13				
14				
15				
16				

10.2.9 History Alarm

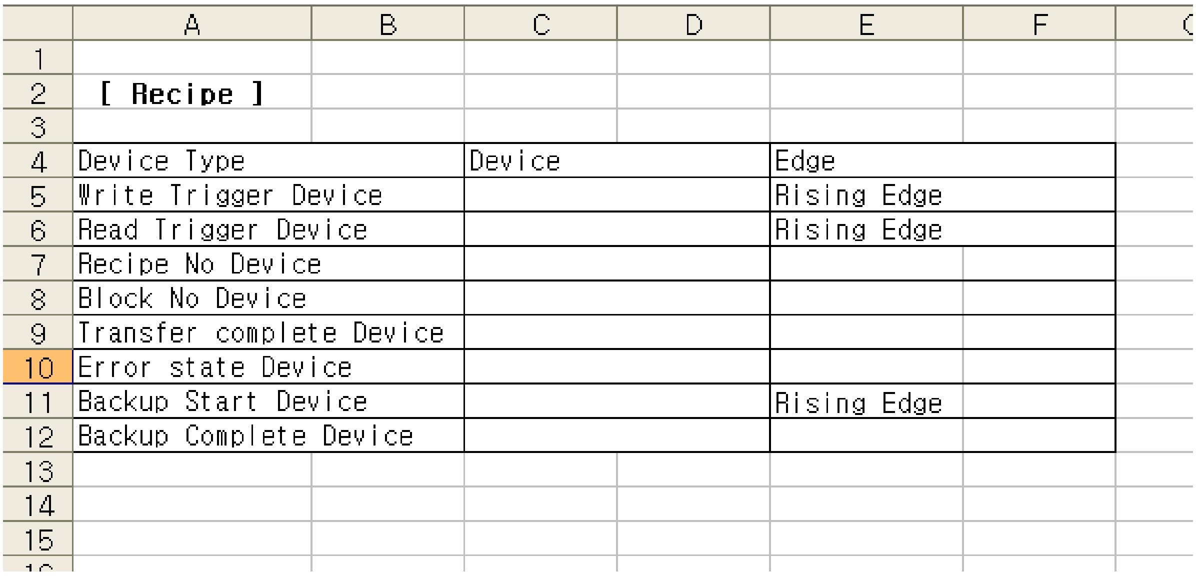
The total properties, tree structure, group and list of the history alarm are printed in this order.



	A	B	C	D	E	F	G	H
1								
2	[History Alarm]							
3								
4	Count Unchecked Device			Not usage				
5								
6								
7	Alarm Print (Not usage)							
8	Print Trigger Device							
9	Print Complete Device							
10	Margin(Top/Bottom/Left/Right)			10	10	10	10	
11								
12	History Alarm							
13								
14								
15								

10.2.10 Recipe

The properties of the recipe and recipe list are printed.

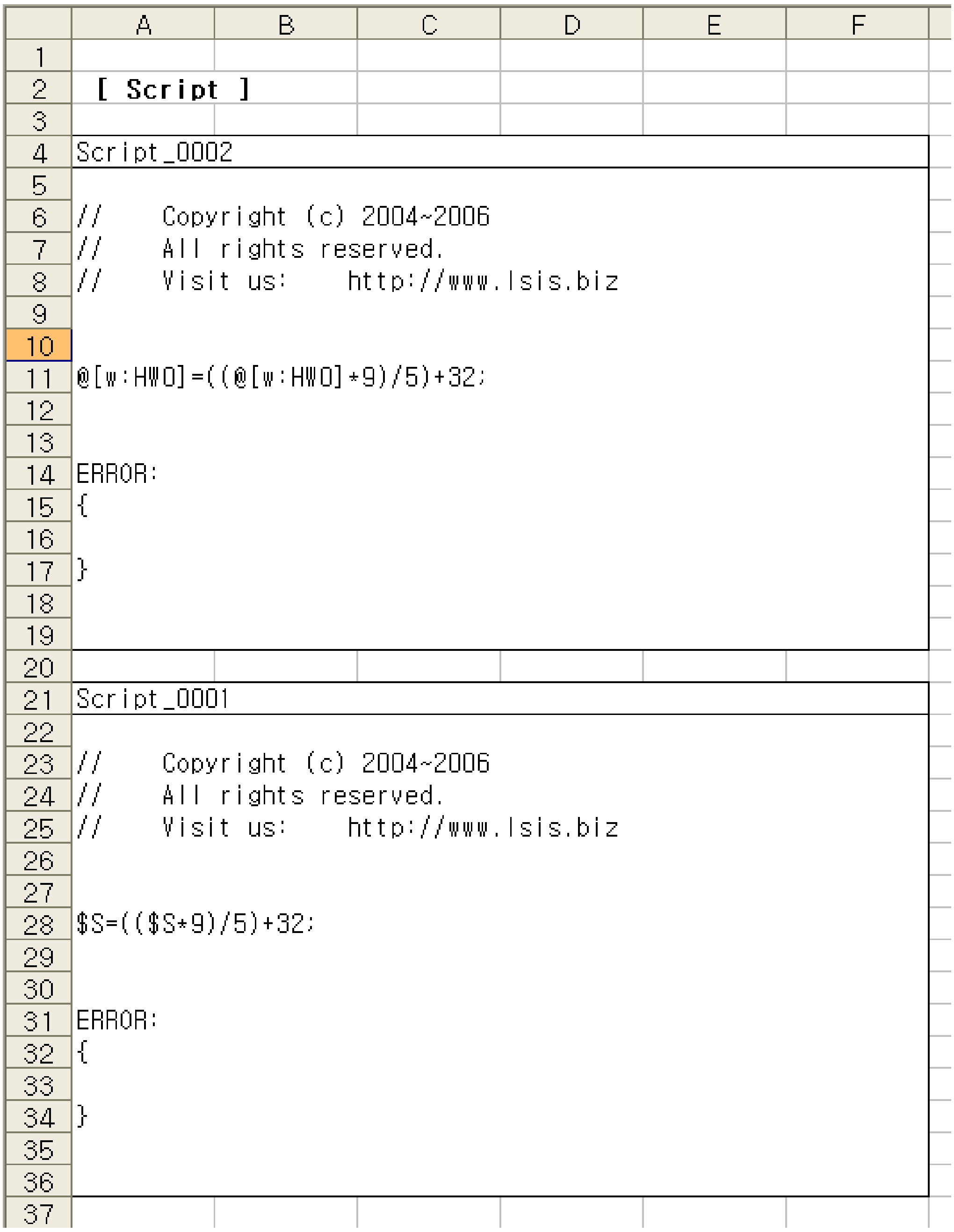


[Recipe]

Device Type	Device	Edge
Write Trigger Device		Rising Edge
Read Trigger Device		Rising Edge
Recipe No Device		
Block No Device		
Transfer complete Device		
Error state Device		
Backup Start Device		Rising Edge
Backup Complete Device		

10.2.11 Script

As many script names as the number of scripts registered in the order of the contents are printed.



[Script]

Script_0002

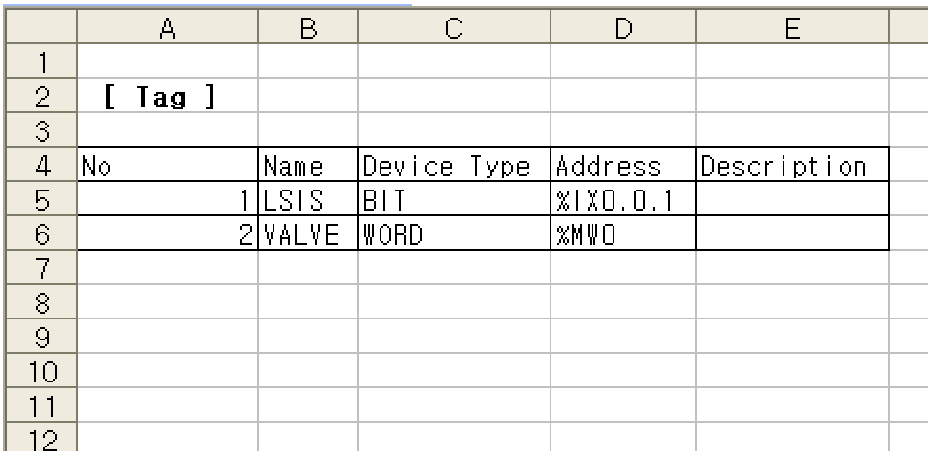
```

//    Copyright (c) 2004~2006
//    All rights reserved.
//    Visit us:    http://www.lsis.biz


@[w:HW0]=((@[w:HW0]*9)/5)+32;


ERROR:
{

}
```

Script_0001

```

//    Copyright (c) 2004~2006
//    All rights reserved.
//    Visit us:    http://www.lsis.biz


$S=(($S*9)/5)+32;


ERROR:
{

}
```

10.2.12 Tag

The contents of the tag table are printed as they are. The tag lists are printed in the order of the tag name, device type, address and description.

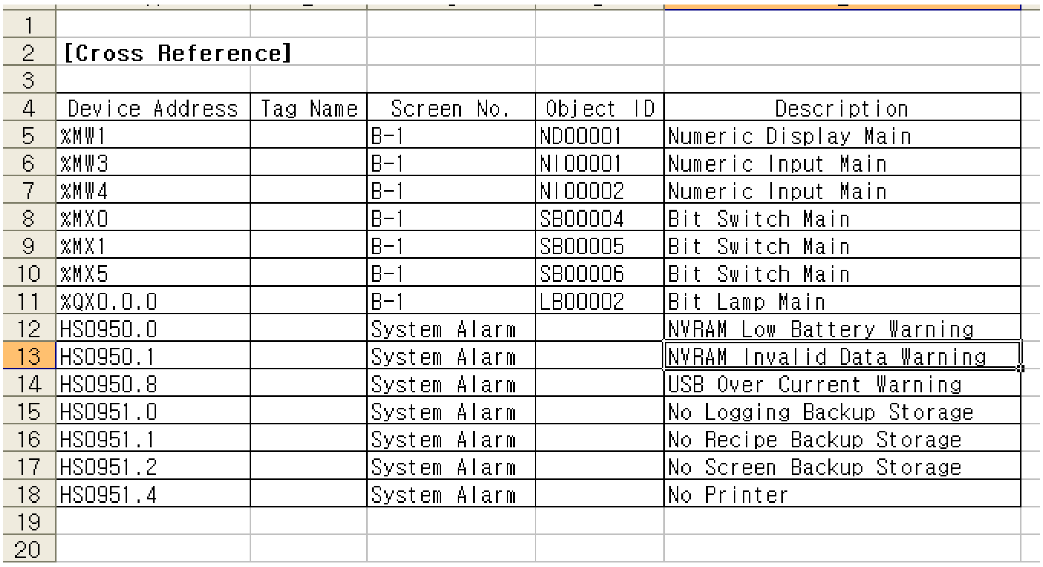


[Tag]

No	Name	Device Type	Address	Description
1	LSIS	BIT	%IX0.0.1	
2	VALVE	WORD	%MW0	

10.2.13 Cross Reference

The same contents as displayed in the output window when you click on cross reference in the menu are printed.
The devices referred to in the entire project are printed in the order of the device name, tag name, screen number, object ID and description.



[Cross Reference]

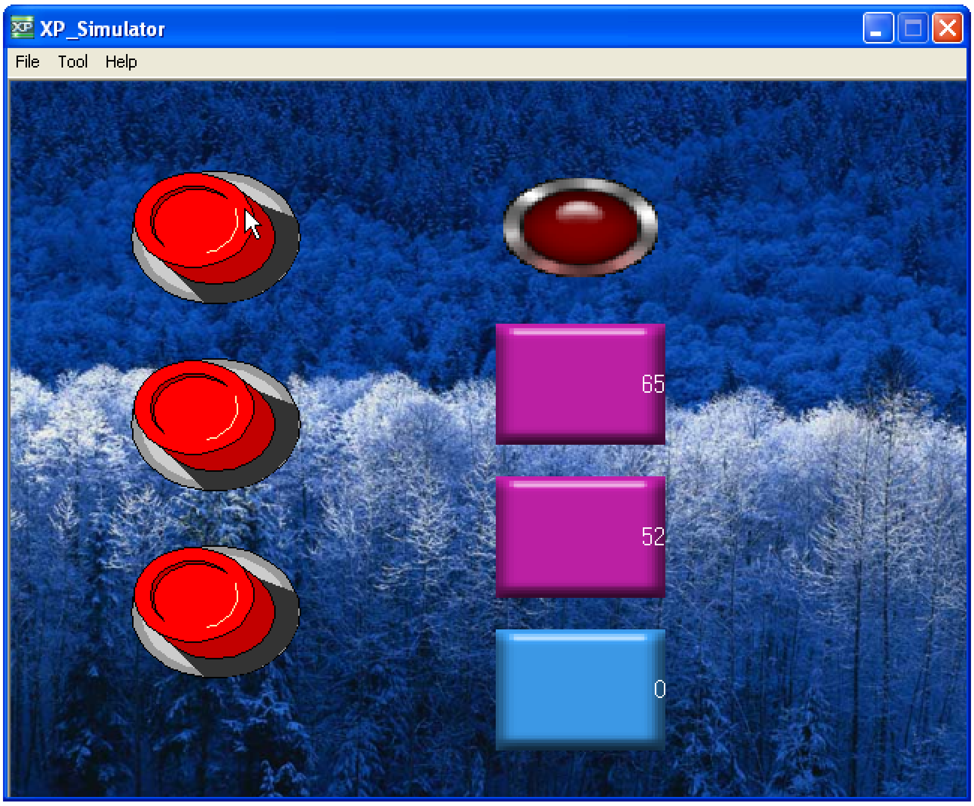
Device Address	Tag Name	Screen No.	Object ID	Description
%MW1		B-1	ND00001	Numeric Display Main
%MW3		B-1	NI00001	Numeric Input Main
%MW4		B-1	NI00002	Numeric Input Main
%MX0		B-1	SB00004	Bit Switch Main
%MX1		B-1	SB00005	Bit Switch Main
%MX5		B-1	SB00006	Bit Switch Main
%QX0.0.0		B-1	LB00002	Bit Lamp Main
HS0950.0		System Alarm		NVRAM Low Battery Warning
HS0950.1		System Alarm		NVRAM Invalid Data Warning
HS0950.8		System Alarm		USB Over Current Warning
HS0951.0		System Alarm		No Logging Backup Storage
HS0951.1		System Alarm		No Recipe Backup Storage
HS0951.2		System Alarm		No Screen Backup Storage
HS0951.4		System Alarm		No Printer

Note

(1) If printing does not work, check the following.
(a) Check the physical connection with the printer.
(b) Check whether the printing connection is correct.
(c) Check whether the printer driver has been correctly set up.

Chapter 11 Simulation

You can simulate the data you have edited in the XP Builder editor and check the operation before you transfer them to XGT Panel.

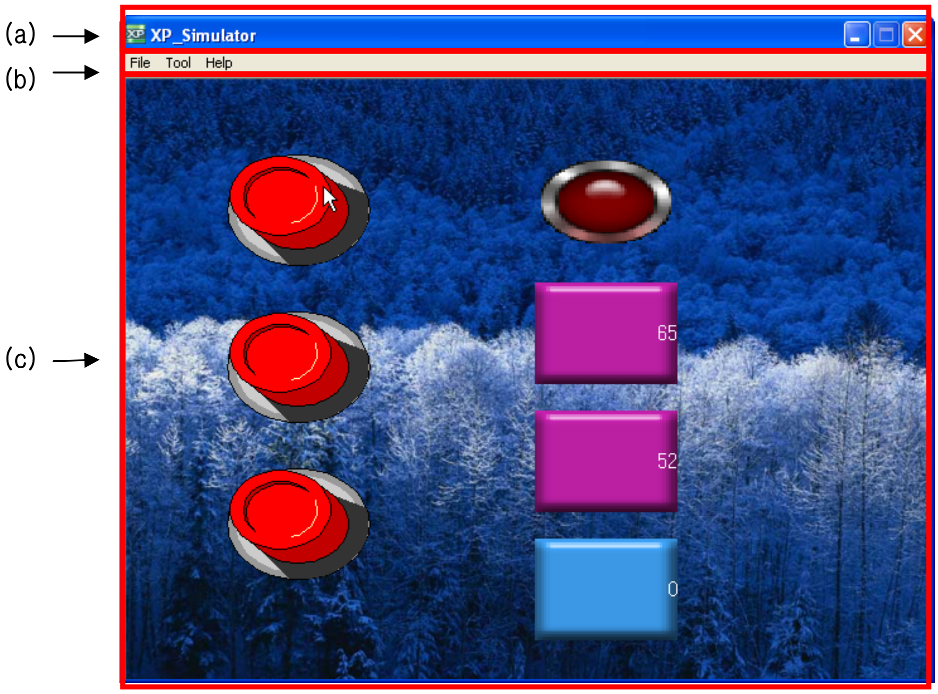


In this chapter, we are going to learn the simulation.

Note

(1) The simulation function provides virtual PLC manipulation in your computer. The speed of the simulation might be different from the actual operation carried out by the connected PLC.

11.1 Simulation Display



Item	Description
Title bar(a)	Displays the screen of XP-Builder.
Menu bar(b)	The menu consists of File, Tool and Help.
Display(c)	The edited contents are displayed in the same screen size and colors as the XGT Panel type (XP30-TTA, XP30-BTA, etc.) set in XP Builder.

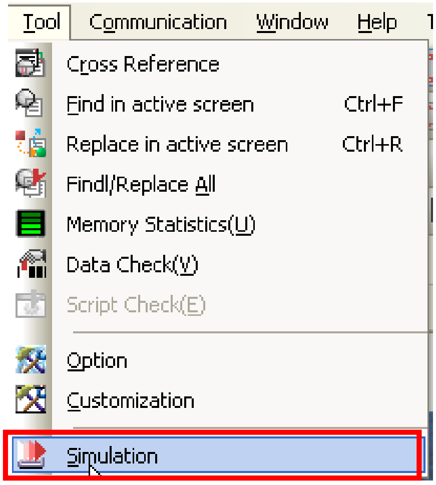
Menu	Submenu	Function
File	Exit	Ends the simulation being currently carried out.
Tool	Virtual Device Start	Starts or stops the check of all the devices edited in XP Builder. ☞ **See 11.1.2 Device Monitoring**
Help	XP_Simulator information	You can check the version information.

11.1.1 Starting Simulation

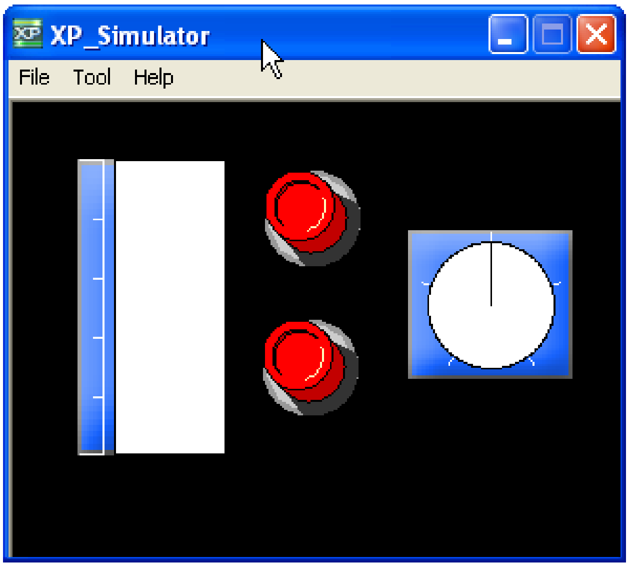
This function is inputting the data to operate in the XGT Panel series into the XP Builder editor and saving the edited data.

[Procedure]

(a) Edit the data to operate in XGT Panel in the XP Builder editor.
(b) Save the edited display.
(c) Select [Tool]-[Simulation] in the menu.

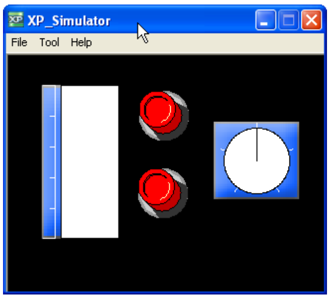

Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

If you have edited a switch increasing the bar graph, pie graph and word device by 10 and decreasing the word device by 10 using XP30-TTA, the result is displayed as follows.

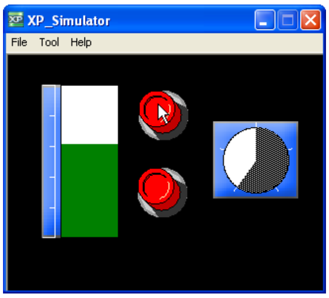

XP_Simulator
File
Tool
Help

If the following display, if you click on the switch increasing the word device by 10, you can simulate the graph being filled according to the change of the value.

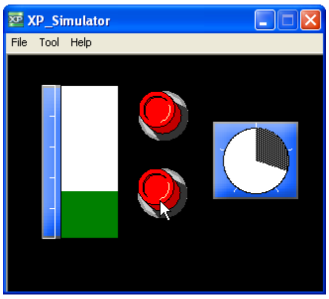
The result of the simulation in which you operate the switch increasing by 10 and the switch decreasing by 10 with your mouse is as follows.


XP_Simulator
File Tool Help

Initial display


XP_Simulator
File Tool Help

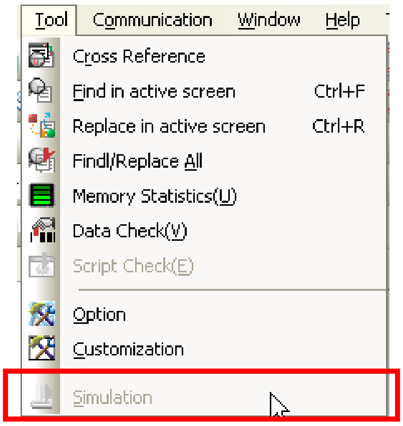
When you press the switch increasing by 10


XP_Simulator
File Tool Help

When you press the switch decreasing by 10

Note

(1) While the simulator is operating, you can neither start another simulator nor select the simulation menu as follows.

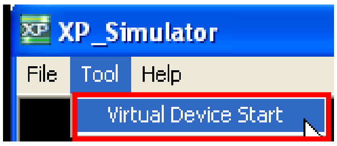

Tool
Communication
Window
Help
Cross Reference
Find in active screen Ctrl+F
Replace in active screen Ctrl+R
Findl/Replace All
Memory Statistics(U)
Data Check(V)
Script Check(E)
Option
Customization
Simulation

(2) The total size of the simulator screen differs according to the XGT Panel type set in XP Builder.

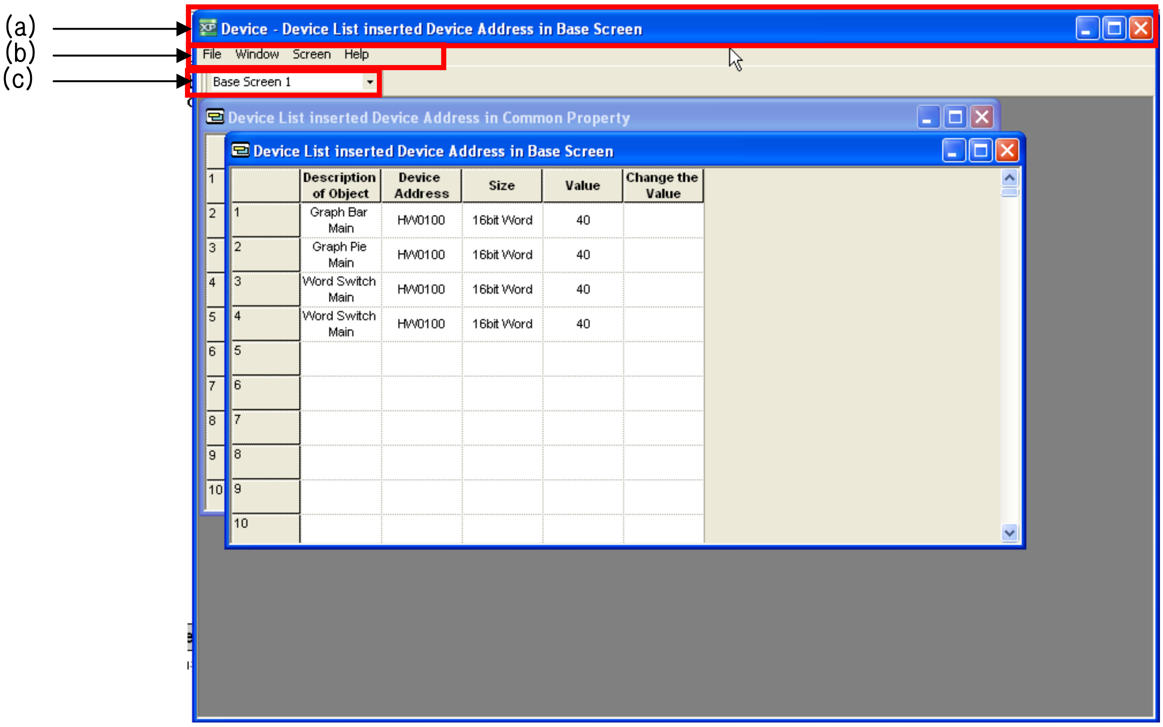
11.1.2 Device Monitoring

You can check or change the list, size, type and value of all the devices edited in XP Builder by using device monitoring.

[Procedure]
(a) Start the simulator.
(b) Select [Tool]-[Virtual Device Start] in the simulator tool bar.


XP_Simulator
File
Tool
Help
Virtual Device Start

If you click on the Virtual Device Start button in the device list, the following window is invoked to show the device list.


(a)
(b)
(c)
Device - Device List inserted Device Address in Base Screen
File
Window
Screen
Help
Base Screen 1
Device List inserted Device Address in Common Property
Device List inserted Device Address in Base Screen

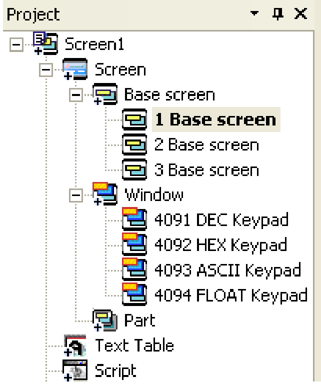
	Description of Object	Device Address	Size	Value	Change the Value
1	Graph Bar Main	HW0100	16bit Word	40	
2	Graph Pie Main	HW0100	16bit Word	40	
3	Word Switch Main	HW0100	16bit Word	40	
4	Word Switch Main	HW0100	16bit Word	40	
5					
6					
7					
8					
9					
10					

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Title bar (a)</td><td>The name of the device list currently activated is displayed.
The currently monitored device list such as the device list registered in device (the device list or device registered in each screen) common setting is displayed.</td></tr>
<tr><td>Menu bar (b)</td><td>The menu consists of File, Window, Display and Help.
<table>
<tr><th>Menu</th><th>Submenu</th><th>function</th></tr>
<tr><td>File</td><td>Exit</td><td>Ends the currently operating device monitor.</td></tr>
<tr><td rowspan="5">Window</td><td>Cascade</td><td>Displays the device list window in cascade.</td></tr>
<tr><td>Tile</td><td>Displays the device list window in tile.</td></tr>
<tr><td>Icons</td><td>Displays the device list window in icons.</td></tr>
<tr><td>Common device list</td><td>Activates and displays the device list window set in the common data such as the history alarm, recipe and logging script in the XP Builder editor.</td></tr>
<tr><td>Screen device list</td><td>Activates and displays the device list window set in all the objects edited in the base screen and window screen of XP Builder.</td></tr>
<tr><td>Help</td><td>Information</td><td>You can check the version information.</td></tr>
</table>
</td></tr>
</table>

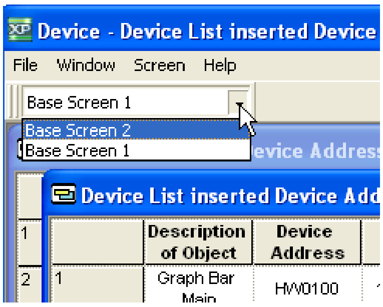
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Screen number setting (c)</td><td>

All the basic and window screens where the objects other than the devices edited in the common data exist are in the combo box.

For example, create three base screens as follows and edit the object in which the device is used in screen 1, 2.


Project
Screen1
Screen
Base screen
1 Base screen
2 Base screen
3 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script

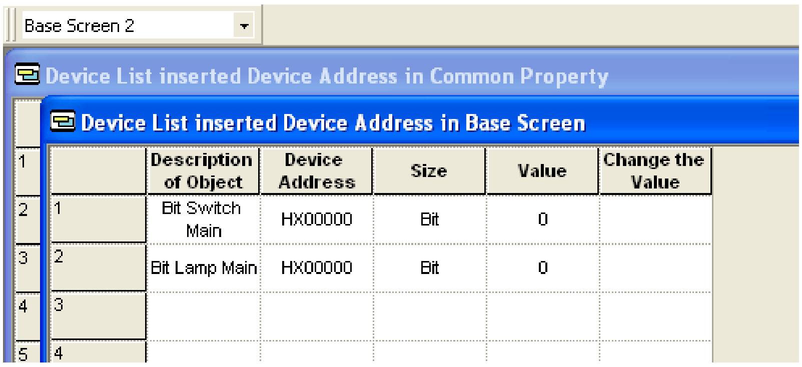
The object in which the device is used is edited in screen 1, 2. You can choose from the 2 types of screen in the combo box and the device address of the object used in the selected screen is shown in the list window.


Device - Device List inserted Device
File
Window
Screen
Help
Base Screen 1
Base Screen 2
Base Screen 1
evice Addres
Device List inserted Device Add

<table>
<tr><th></th><th></th><th>Description of Object</th><th>Device Address</th></tr>
<tr><td>2</td><td>1</td><td>Graph Bar Main</td><td>HW0100</td></tr>
</table>

If you select the type and number of the screen you want to monitor, you can check the object name, device address, device size and device value in the screen.

If there are two objects in which the device was used in base screen 2, they are shown as follows.

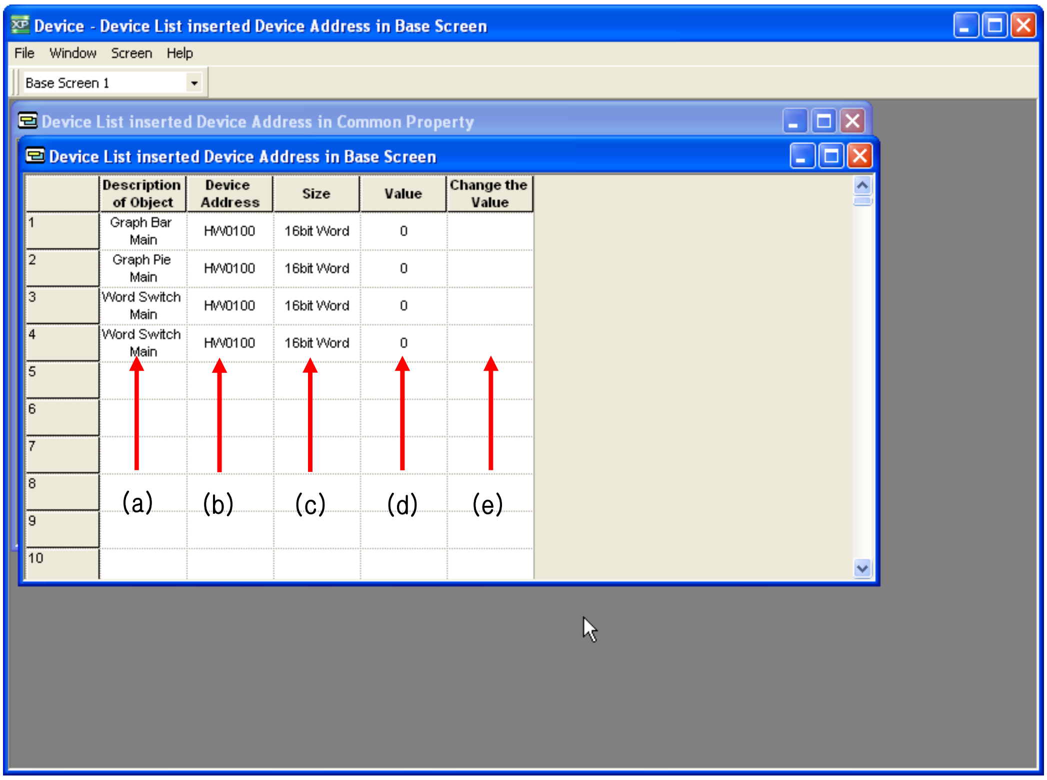

Base Screen 2
Device List inserted Device Address in Common Property
Device List inserted Device Address in Base Screen

<table>
<tr><th></th><th></th><th>Description of Object</th><th>Device Address</th><th>Size</th><th>Value</th><th>Change the Value</th></tr>
<tr><td>2</td><td>1</td><td>Bit Switch Main</td><td>HX00000</td><td>Bit</td><td>0</td><td></td></tr>
<tr><td>3</td><td>2</td><td>Bit Lamp Main</td><td>HX00000</td><td>Bit</td><td>0</td><td></td></tr>
<tr><td>4</td><td>3</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5</td><td>4</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

</td></tr>
</table>

You can check all the object names, device addresses, device sizes and device values edited in XP Builder in the device list window.

Edit a switch increasing the bar graph, meter graph and device value by 10, another switch decreasing the device value by 10 and a numeric display in base screen 1. Edit a numeric display in window 4091.
If you select [Simulation]-[Virtual Device Start]-[Basic Screen 1] in XP Builder, the following is displayed.

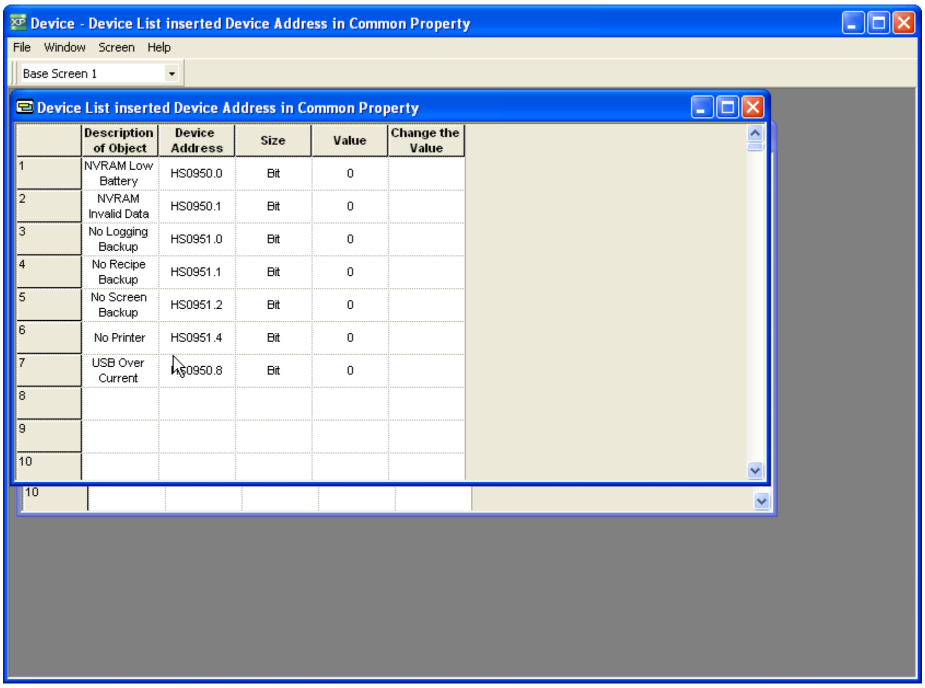

Device - Device List inserted Device Address in Base Screen
File
Window
Screen
Help
Base Screen 1
Device List inserted Device Address in Common Property
Device List inserted Device Address in Base Screen
(a)
(b)
(c)
(d)
(e)

	Description of Object	Device Address	Size	Value	Change the Value
1	Graph Bar Main	HW0100	16bit Word	0	
2	Graph Pie Main	HW0100	16bit Word	0	
3	Word Switch Main	HW0100	16bit Word	0	
4	Word Switch Main	HW0100	16bit Word	0	
5					
6					
7					
8					
9					
10					

When basic display 1 has been selected

Type	Function
Description of Object (a)	The object name of the set device is displayed.
Device address (b)	The set device address is displayed.
Size (c)	The set device size is displayed. Size type: bit, 16 bit (word), 32bit (word)
Value (d)	The currently set device value is displayed.
Change the value (e)	Click on this if you want to change the set device value.

If you select [Simulation]-[Virtual Device Start]-[Device List inserted Device Address in Common Property] in XP Builder, the following list is displayed with the device set in the common data (logging, recipe, history alarm, etc.).


Device - Device List inserted Device Address in Common Property
File Window Screen Help
Base Screen 1
Device List inserted Device Address in Common Property

	Description of Object	Device Address	Size	Value	Change the Value
1	NVRAM Low Battery	HS0950.0	Bit	0	
2	NVRAM Invalid Data	HS0950.1	Bit	0	
3	No Logging Backup	HS0951.0	Bit	0	
4	No Recipe Backup	HS0951.1	Bit	0	
5	No Screen Backup	HS0951.2	Bit	0	
6	No Printer	HS0951.4	Bit	0	
7	USB Over Current	HS0950.8	Bit	0	
8					
9					
10					

11.1.3 Device Value Change

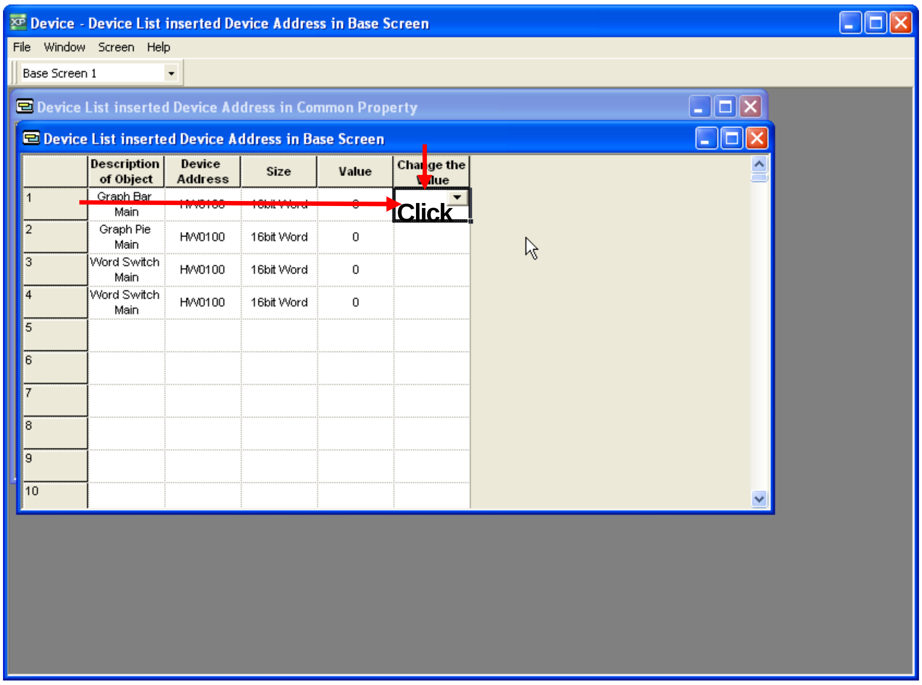
You can directly change the device value and simulate the value in the device list window.
In the case of a bit device, you can only change the On/Off state and as for a word device, you can directly enter the device value.

[Procedure]

(a) Click on the Value Change cell of the device line you want to change in the device list window.

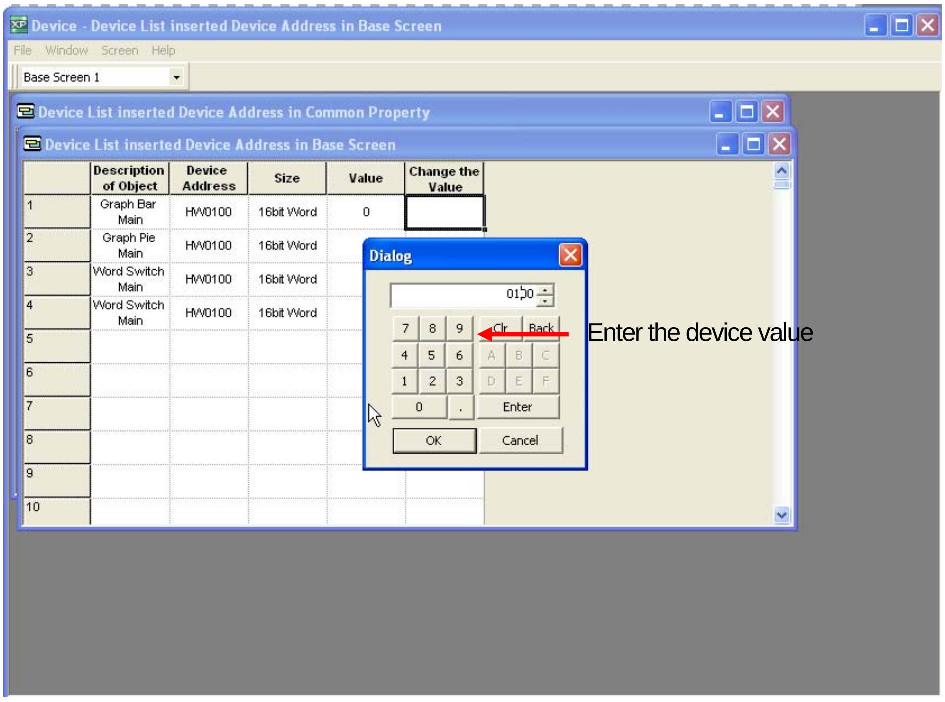
1) Word Device

If you change the device value of the reference device HW0100 of the bar graph from 40 to 100, the procedure is as follows.


Device - Device List inserted Device Address in Base Screen
File Window Screen Help
Base Screen 1
Device List inserted Device Address in Common Property
Device List inserted Device Address in Base Screen
Click

	Description of Object	Device Address	Size	Value	Change the Value
1	Graph Bar Main	HW0100	16bit Word	0	
2	Graph Pie Main	HW0100	16bit Word	0	
3	Word Switch Main	HW0100	16bit Word	0	
4	Word Switch Main	HW0100	16bit Word	0	
5					
6					
7					
8					
9					
10					

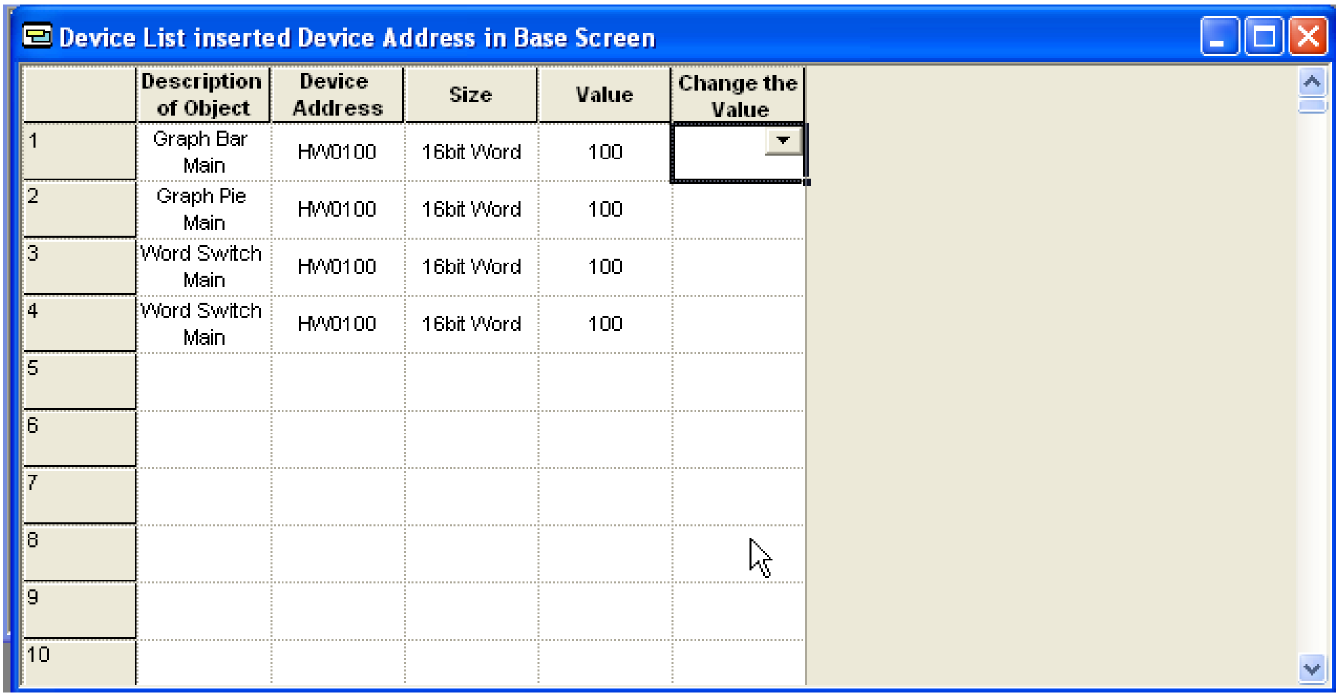
If you click on the cell, another window is invoked where you can enter the device. Enter the desired device value by using the window.


Device - Device List inserted Device Address in Base Screen
File Window Screen Help
Base Screen 1
Device List inserted Device Address in Common Property
Device List inserted Device Address in Base Screen
Dialog
0100
7 8 9 Clr Back
4 5 6 A B C
1 2 3 D E F
0 . Enter
OK
Cancel

	Description of Object	Device Address	Size	Value	Change the Value
1	Graph Bar Main	HW0100	16bit Word	0	
2	Graph Pie Main	HW0100	16bit Word		
3	Word Switch Main	HW0100	16bit Word		
4	Word Switch Main	HW0100	16bit Word		
5					
6					
7					
8					
9					
10					

Enter the device value

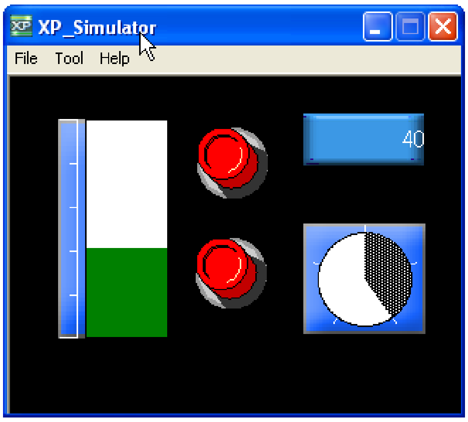
If you change the device value of HW0100 from 40 to 100, the values of all the object data that have HW0100 are changed into 100.


Device List inserted Device Address in Base Screen

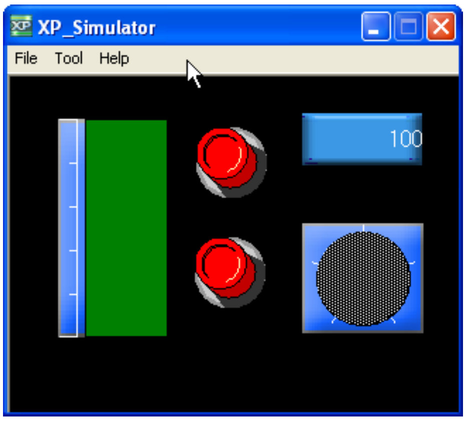
	Description of Object	Device Address	Size	Value	Change the Value
1	Graph Bar Main	HW0100	16bit Word	100	
2	Graph Pie Main	HW0100	16bit Word	100	
3	Word Switch Main	HW0100	16bit Word	100	
4	Word Switch Main	HW0100	16bit Word	100	
5					
6					
7					
8					
9					
10					

Device list window after the device value has been changed into 100

The value is reflected in the simulation as follows and the change of the value in the device list can also be simulated.


XP_Simulator
File Tool Help
40

Simulation before the device value is changed


XP_Simulator
File Tool Help
100

Simulation after the device value is changed into 98

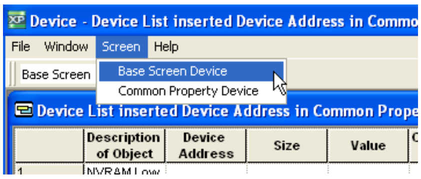
2) Bit Device

You can change the value in the same way as the word device, but no window is invoked where you can change the value but the On/Off state changes whenever you press Change Value.

The change state is reflected and displayed in the simulator display and device view list window as the word device value change is.

11.1.4 Screen Viewer of Device List

If you click on the [Screen] menu in the device list window, the selected window is displayed the furthest to the front.

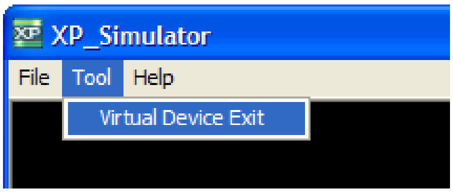

Device - Device List inserted Device Address in Commo
File Window Screen Help
Base Screen
Base Screen Device
Common Property Device
Device List inserted Device Address in Common Prope
Description of Object
Device Address
Size
Value
1
NVRAM Low

(1) If you select the Base Screen Device, the Base Screen Device list existing in the basic display or widow display is shown on the top.

(2) If you select the Common Property Device, the Common Property Device list set in the common editing such as the flow alarm, recipe and logging is shown on the top.

Note

(1) While device list window is executed, you can select only ‘Virtual Device Exit’.


XP_Simulator
File Tool Help
Virtual Device Exit

(2) If you close the simulation window, the device list window is also closed.

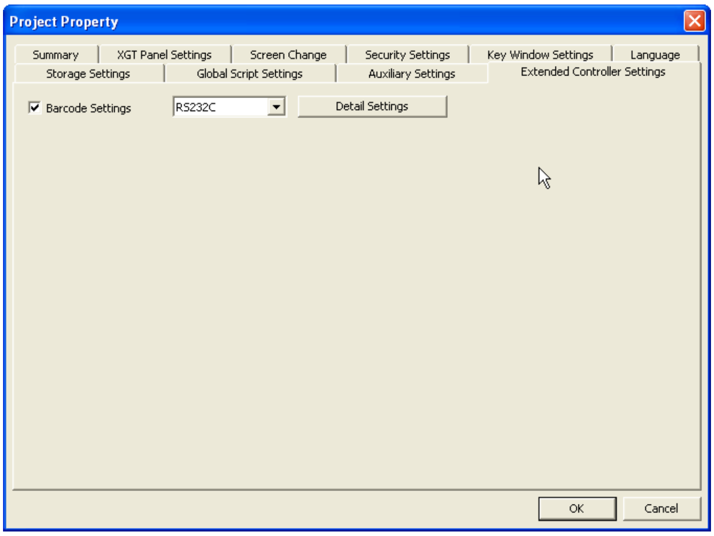
Chapter 12 Bar Code Setting

You can connect a bar code reader to XGT Panel by using the RS-232C port (COM2).

12.1 Use and Setting Procedure

[Procedure]

(a) Select [Common]-[Project Properties]-[Extended Controller Settings].

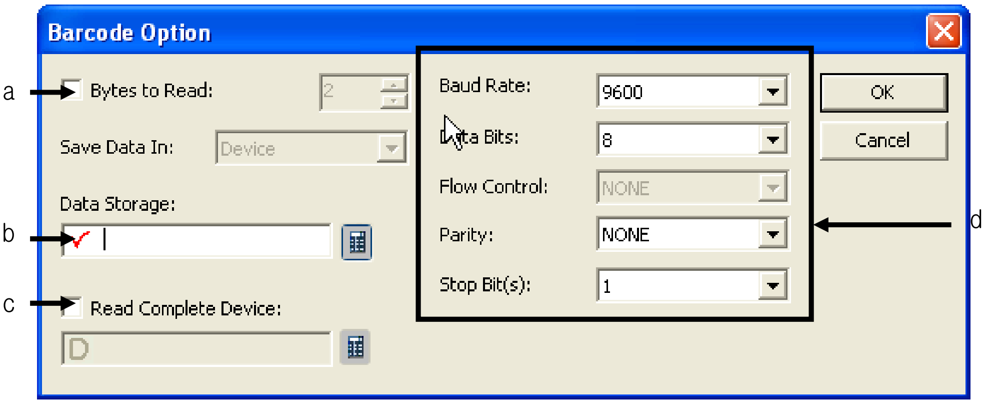

Project Property
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Detail Settings
OK
Cancel

☑ Barcode Settings RS232C

(b) Check [Barcode Settings].

(c) You can change the detailed connection setting of the bar code by using [Detail Settings].

[Dialog Box]


Barcode Option
a
b
c
d
OK
Cancel

☐ Bytes to Read: 2

Save Data In: Device

Data Storage:

☐ Read Complete Device: D

Baud Rate: 9600

Data Bits: 8

Flow Control: NONE

Parity: NONE

Stop Bit(s): 1

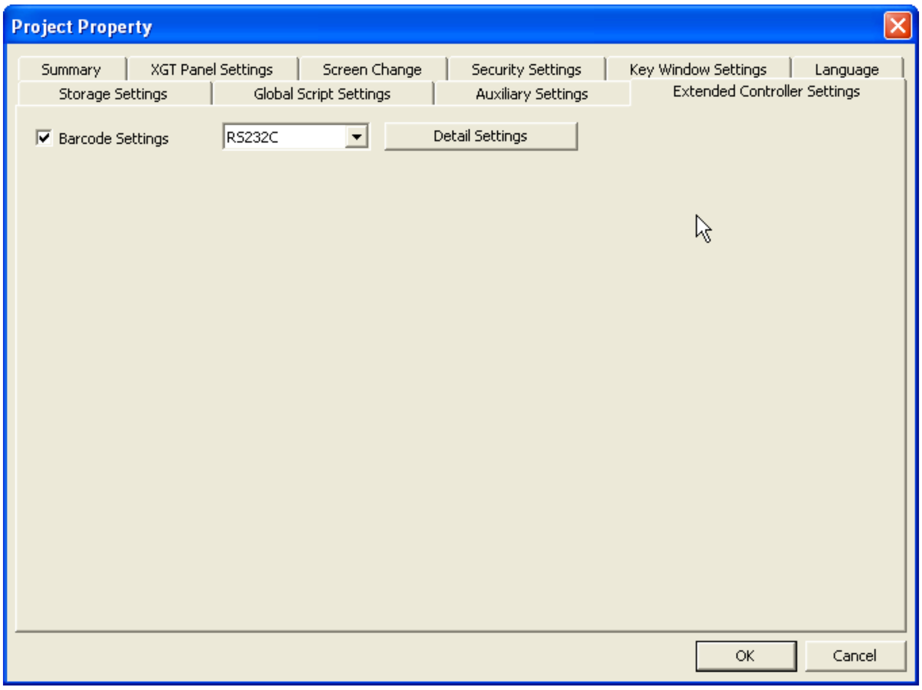
Item	Description
Bytes to Read (a)	Sets the length of the transfer from the data read in the bar code to the device. If not set, all the data of up to 255 characters from the bar code are transferred.
Data Storage (b)	Enters the first device to save the data read from the bar code.
Read complete device (c)	Turns ON the set device when the data read from the bar code has been saved.
Set communication (d)	Sets the RS-232C communication the same as bar code setting.

12.2 Example of Use of Bar Code

The following example shows checking the data from the bar code with the text display by using the bar code.

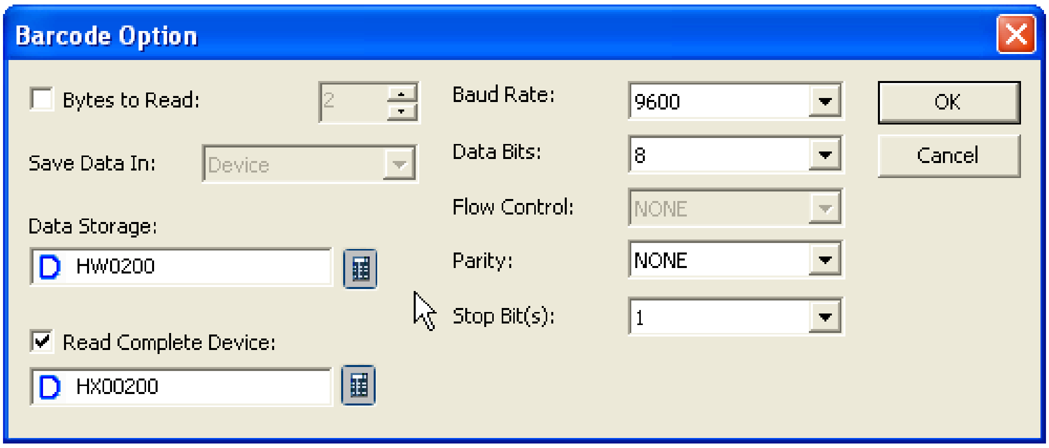
[Procedure]

(a) Select the use of Bar Code in [Common]-[Project Properties]-[Extended Controller Settings].


Project Property
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Detail Settings
OK
Cancel

☑ Barcode Settings RS232C

(b) Click on [Detail Settings] and set the input device and the set communication value as shown below.


Barcode Option
OK
Cancel

☐ Bytes to Read: 2

Save Data In: Device

Data Storage: HW0200

☑ Read Complete Device: HX00200

Baud Rate: 9600

Data Bits: 8

Flow Control: NONE

Parity: NONE

Stop Bit(s): 1

(c) Place the text display, bit switch and bit lamp object in the base screen and set them as below.

1) Text display

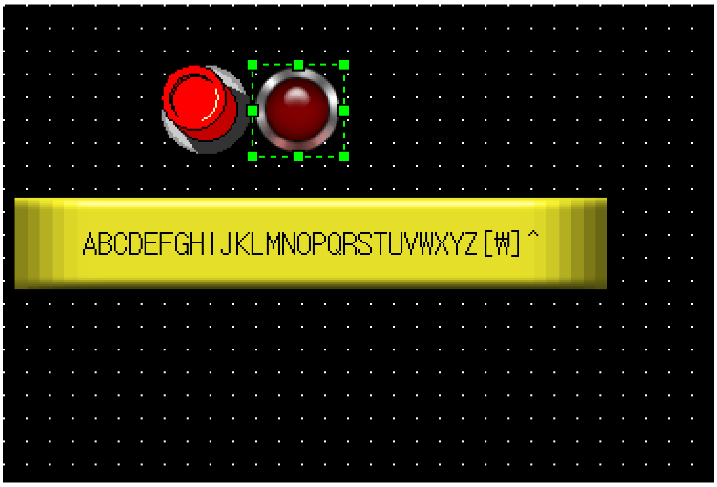
: device – HW0200

2) Bit switch

: device – HX00200, action type- alternative

3) Bit lamp

: device – HX00200



(d) Check whether the entered data is correctly displayed in the text display by downloading the project data to the XGT Panel, starting the program and operating the bar code and whether the Read Complete Device bit turns ON by using the bit lamp.

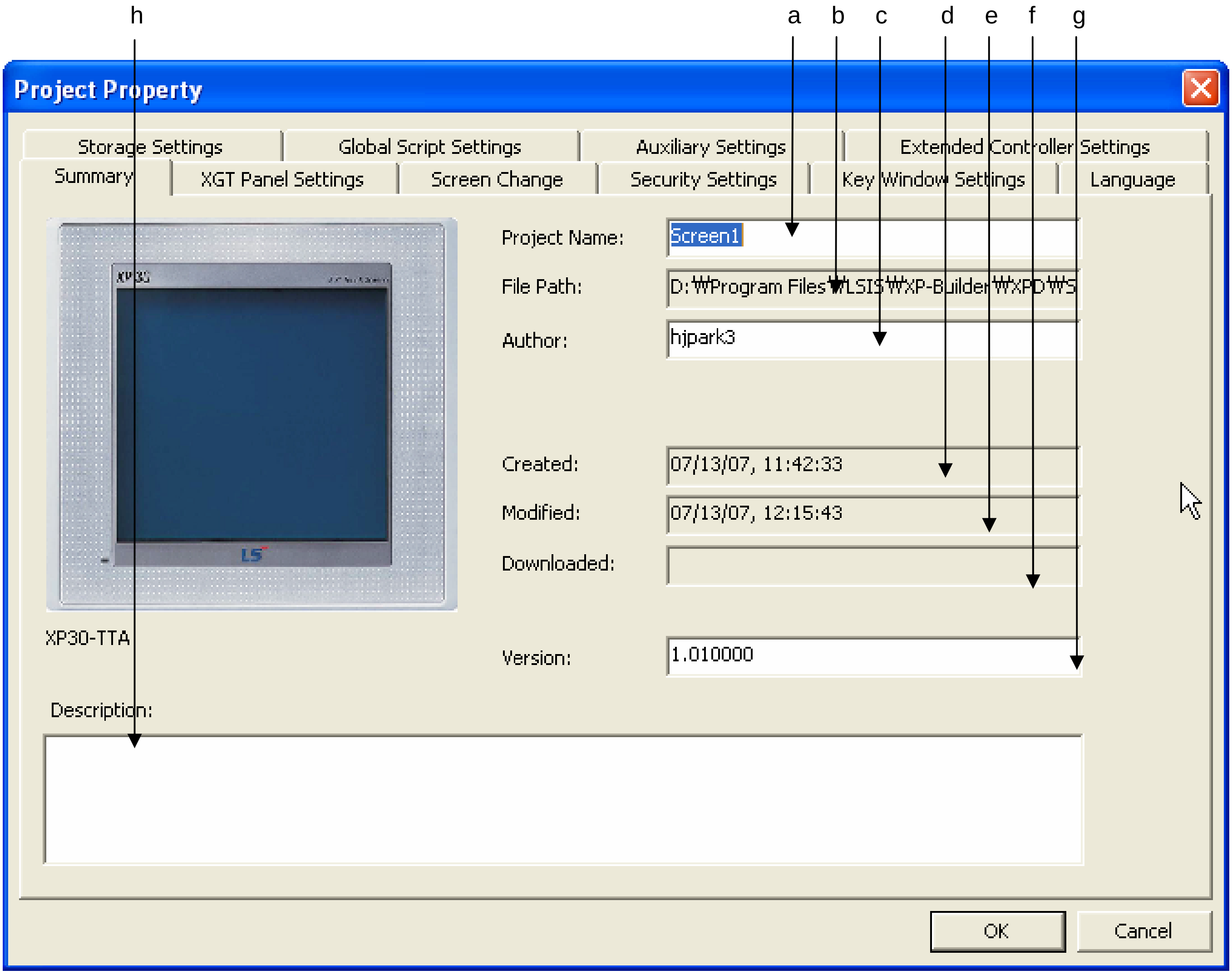
Chapter 13 Project Properties

The properties commonly applied to XP Builder projects are set.
The project properties include the following information.

Information	Description
Summary	Basic information on the project file such as the project name and author
XGT Panel settings	The XGT Panel information set in the project
Screen Change	The screen change option is set.
Security settings	The right to use XGT Panel is set.
Key window settings	Key window is designated.
Language	The editing language and runtime language are set.
Storage settings	The mobile storage unit of XGT Panel is designated.
Global script settings	Global script items are set.
Auxiliary settings	Printing, screen capture and system alarm view properties are set.
Extended controller settings	Settings about barcode

13.1 Summary

The basic information on the project such as the project name, file path, author, creation date, modification date, last download date, version and project description and so on is described.


h
a
b
c
d
e
f
g
Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
XP30
LS
OK
Cancel

Project Name: Screen1

File Path: D:₩Program Files₩LSIS₩XP-Builder₩XPD₩S

Author: hjpark3

Created: 07/13/07, 11:42:33

Modified: 07/13/07, 12:15:43

Downloaded:

XP30-TTA

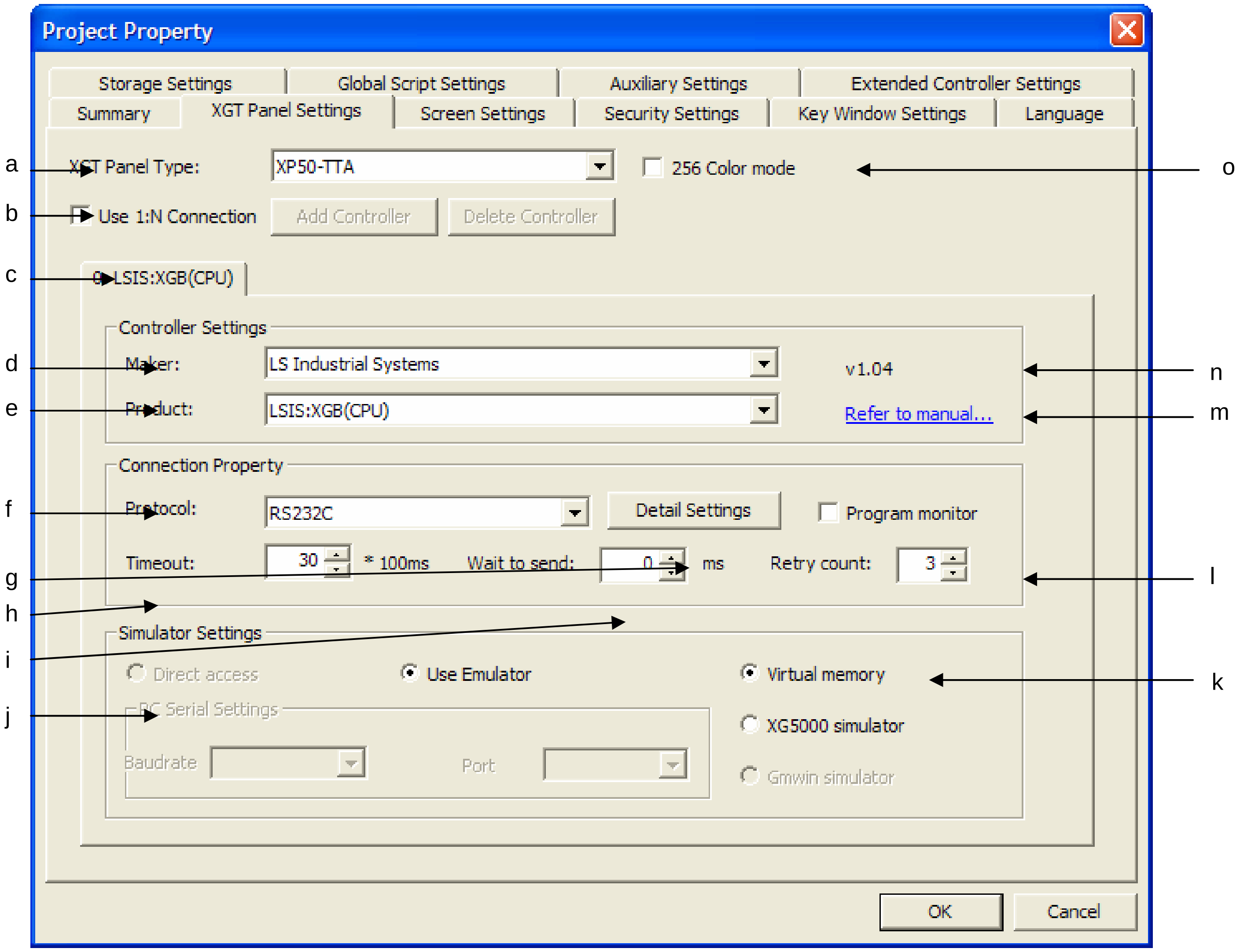
Version: 1.010000

Description:

Items	Description
Project name (a)	Changes the project name. The project name can be set differently from the file of the project. If the project name is changed, the name of the highest node name of the project tree is also changed into the changed project name.
File Path (b)	Indicates the location of the file where the project is saved.
Author (c)	Enters the author.
Created (d)	Saves the time when the project file was first created.
Modified (e)	Indicates the date when the project was last modified.
Downloaded (f)	Indicates the date of the last download to XGT Panel.
Version (g)	Indicates the project version. The user enters this for distinction of the version.
Description (h)	Enters a brief description of the project.

13.2 XGT Panel Settings

It sets the information on the XGT Panel type and connection to the connected controller.
It sets the method and option of communication of XGT Panel with the controller.



Project Property

XGT Panel Type: XP50-TTA
☐ 256 Color mode
☐ Use 1:N Connection

0-LSIS:XGB(CPU)

Controller Settings
Maker: LS Industrial Systems
Product: LSIS:XGB(CPU)
v1.04

Connection Property
Protocol: RS232C
☐ Program monitor
Timeout: 30 * 100ms
Wait to send: 0 ms
Retry count: 3

Simulator Settings
○ Direct access
● Use Emulator
● Virtual memory
○ XG5000 simulator
○ Gmwin simulator

Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
Refer to manual...
Detail Settings
PC Serial Settings
Baudrate
Port
OK
Cancel
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o

Items	Description
XGT Panel Type (a)	Selects the XGT Panel type. As in the following illustration, the XGT Panel type and connection PLC selected in the project wizard when the project is created is displayed in the initial display of the XGT Panel setting window. XGT Panel provides two models, which are in black and white and in color. That is, XGT Panel can be changed into the XGT Panel providing the same kind of color as the XGT Panel selected in Wizard. Although change of a 65536 XGT Panel in black and white into another XGT Panel in black and white or change of a 65536 XGT Panel in color into another XGT Panel in color is possible, change from color to black and white or change from black and white is not possible.
Use 1:N connection (b)	The XP series provides connection to up to 4 PLC at a time with communication ports such as RS232, RS485/422 and Ethernet. All these four ports can be used at the same time. PLC 1, PLC 2 and PLC 3 can be connected to RS232, RS485/422 and Ethernet ports respectively. If you select the

Items	Description
	multi-connection support checkbox, the Add/Delete Device button at the bottom of the window is activated.
Controller settings (c)	Connecting device properties page: selects the properties of the PLC connected to XGT Panel.
Maker (d)	Selects the maker of the PLC connected to XGT Panel.
Product (e)	If you select the maker in (d), the lists of products of the maker are displayed. Of them, select the PLC to connect to XGT Panel.
Protocol (f)	Designates the connection method between the XGT Panel and selected PLC. For correct connection, be sure to check the hardware connection between the protocol and XGT Panel selected for normal connection.
Detail Settings (g)	Sets the connection method between the XGT Panel and selected PLC in detail. If the PLC is selected, it is set in the default values, but selects it when you need to change it according to the properties of the PLC device. A dialog box is invoked according to the properties of communication.
Time out (h)	Decides the network time out during communication.
Wait to send (i)	Sets the waiting time between unit data transfers during communication between XGT Panel and the controller.
Simulator settings (j)	Sets whether to use the simulator or not
Direct access	Uses direct access. Communicates with controller (not supported now)
Use Emulator	Uses an emulator. This function connects a virtual device supported program or controller supported simulator.
Virtual memory/XG5000 simulator (k)	Selects one between virtual memory and XG5000 simulator
Retry count (l)	When communication error occurs during communication between XGT Panel and controller, sets retry count.
Refer to manual (m)	You can see PLC communication driver manual.
Communication driver version (n)	You can see PLC driver version
256 color mode (o)	Creates a project as 256 color mode. Black-and-white type, economic type doesn't support.

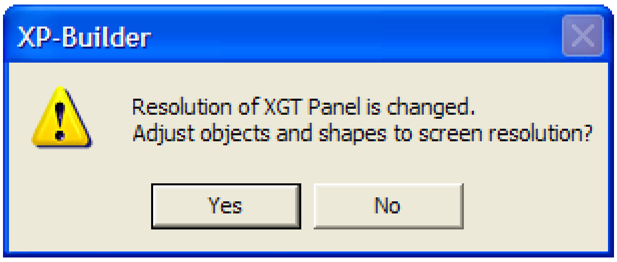
(1) XGT Panel Type Selection

[XGT Panel device type and properties]

Type	Resolution	Color
XP30-TTA	320 X 240	65,535
XP30-BTE	320 X 240	8
XP30-TTE	320 X 240	256
XP30-BTA	320 X 240	8
XP50-TTA	640 X 480	65,535
XP70-TTA	640 X 480	65,535
XP80-TTA	800 X 600	65,535
XP90-TTA	1024 X 768	65,535

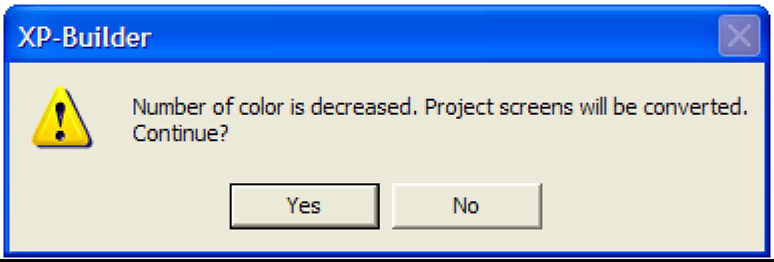
Note

(1) Change of setting of XGT Panel is possible only to the mode supporting the same colors.
(2) When changing XGT Panel type, height and width of object/diagram varies according to resolution. At this time, height/width of object whose height/width doesn't change (history alarm viewer, data list viewer, logging viewer) and font size is not affected by change of type.
(3) When changing resolution, the following message appears. If you press "Yes", all objects and diagrams of project get larger or smaller.



Resolution of XGT Panel is changed.
Adjust objects and shapes to screen resolution?

(4) If 65535 color device type is changed to economic device(E.g. XP30-TTA->XP30-TTE) or 256mode Properties are checked(☑ 256 Color mode) when setting the project, the following message will appear and if 'Yes' is selected, the factors(E.g. wall paper color, object's pattern color, etc) using the project colors will be changed to the closest ones to XP's 256 Palette



Number of color is decreased. Project screens will be converted.
Continue?

Note

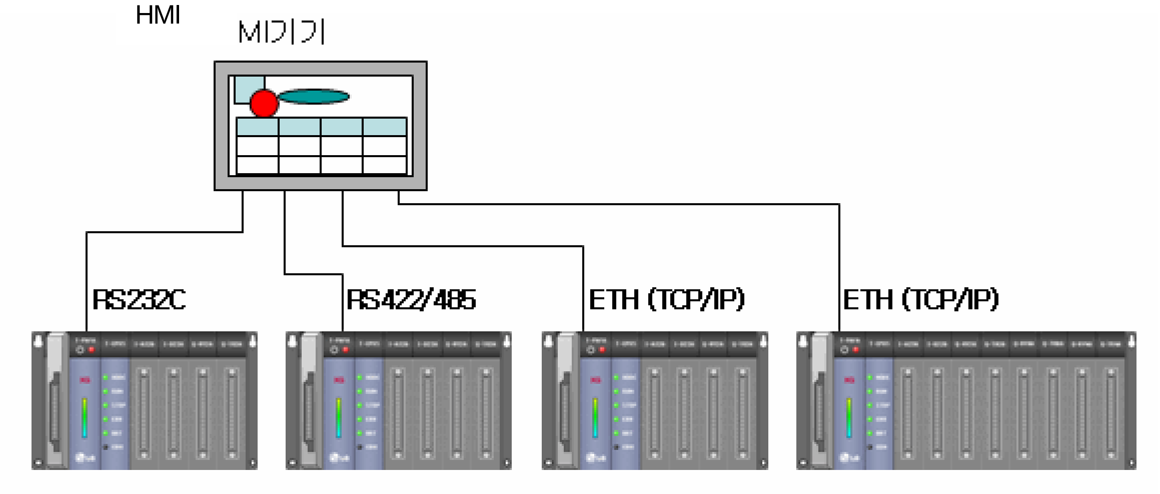
The following cautions should be made when adding images depending on device types:

(1) In case that the device is not an economic-type device(XP30-BTE, XP30-TTE), available image types when adding pictures are BMP, JPG, GIF, TGA, PNG, TIF, WMF, ICO and PCX. But, for economic devices, available images types are limited to BMP, GIF, JPG and WMF
(2) When the user's images are registered, black and white images for black and white device type(XP30-BTE, XP30-BTA) and 256-color images for 256 device type(XP30-TTE) and 256 mode(☑ 256 Color mode) are registered.
(3) If 65535 color device type is changed to economic device (E.g. XP30-TTA->XP30-TTE) and [Communication]-[Send] or [Tool]-[Check Data] is pressed when setting the project, error message will be displayed on the output window if images other than BMP, GIF, JPG and WMF are included.

(2) Use Multi-Connection

This is the function of monitoring multiple PLC in a single XGT Panel. The XP series supports connection of up to four different protocols (RS-232C, RS-422/485, and Ethernet). The number, between 0 to 3, is given according to the sequence of the connected PLC. This number is referred to as the connection number. When multiple PLC is set, the PLC is allotted by the connection number.

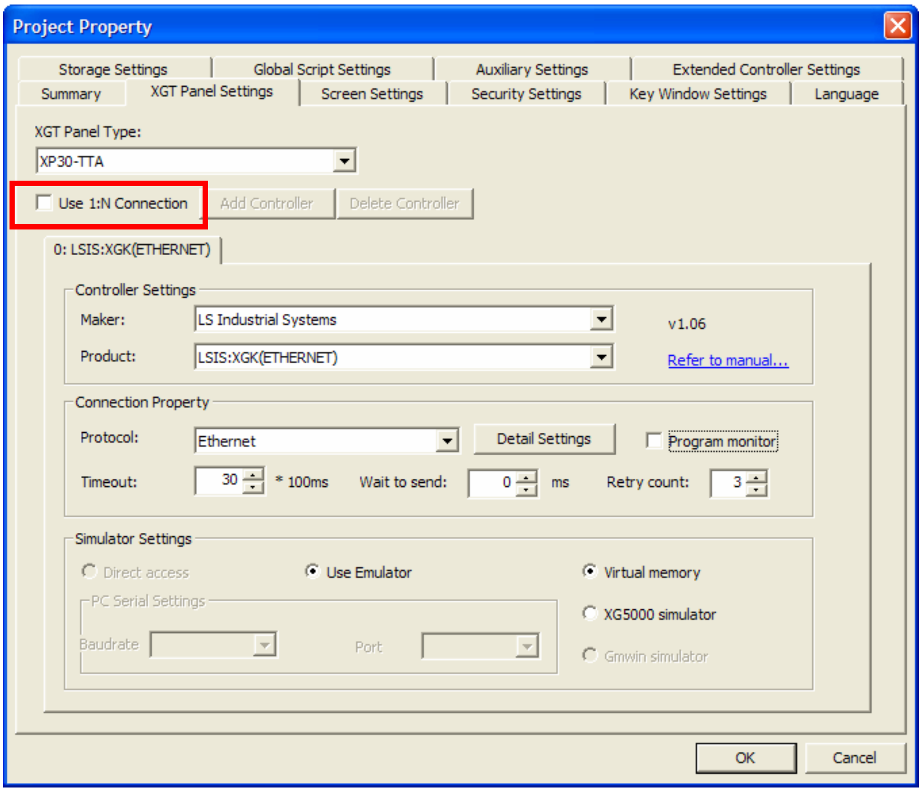
RS232, RS422/485 has one port and so can be set only once with the connection protocol. Ethernet can be set twice or more.


HMI
RS232C
RS422/485
ETH (TCP/IP)
ETH (TCP/IP)

[How to set multiple PLC]

Check the checkbox [Use 1:N Connection] and [Add Controller] button is activated. Click on [Add Controller]. A PLC type is added and displayed in the window.

(a) Select ‘Use 1:N Connector’


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
Refer to manual...
Detail Settings
OK
Cancel

XGT Panel Type: XP30-TTA

☐ Use 1:N Connection

0: LSIS:XGK(ETHERNET)

Controller Settings

Maker: LS Industrial Systems   v1.06

Product: LSIS:XGK(ETHERNET)

Connection Property

Protocol: Ethernet   ☐ Program monitor

Timeout: 30 * 100ms   Wait to send: 0 ms   Retry count: 3

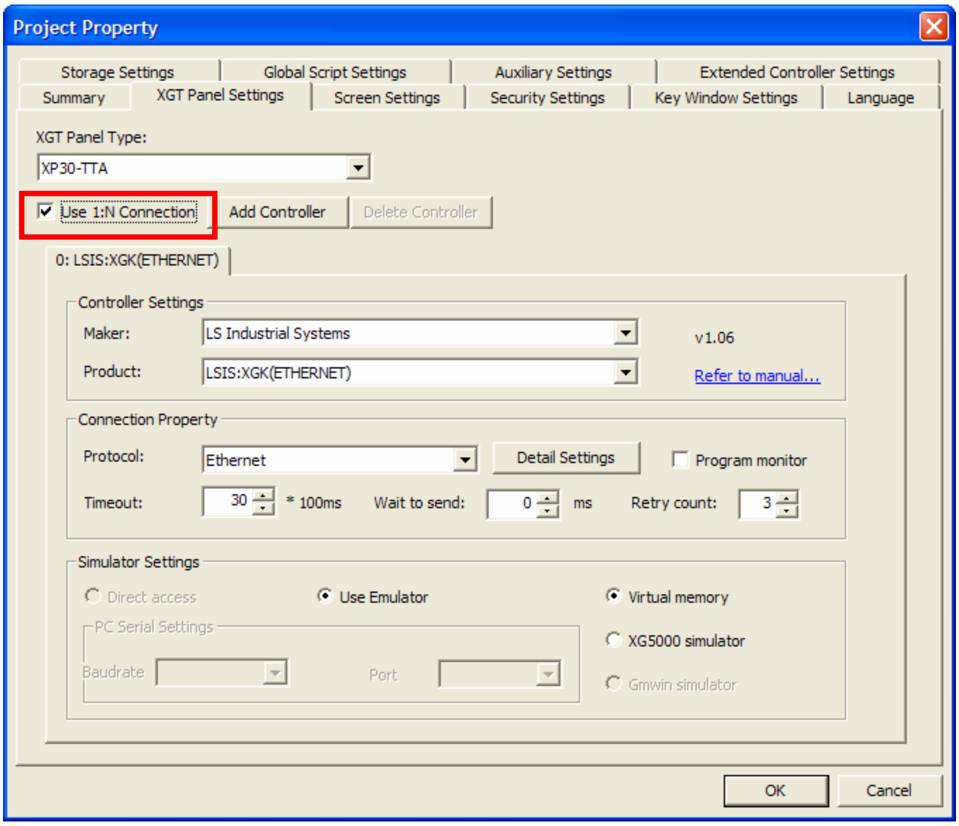
Simulator Settings

○ Direct access   ● Use Emulator   ● Virtual memory

PC Serial Settings   ○ XG5000 simulator

Baudrate   Port   ○ Gmwin simulator

(b) Select ‘Add Controller’


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:XGK(ETHERNET)
Controller Settings
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
OK
Cancel

XGT Panel Type: XP30-TTA

☑ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:XGK(ETHERNET)

v1.06

Protocol: Ethernet

☐ Program monitor

Timeout: 30 * 100ms

Wait to send: 0 ms

Retry count: 3

○ Direct access

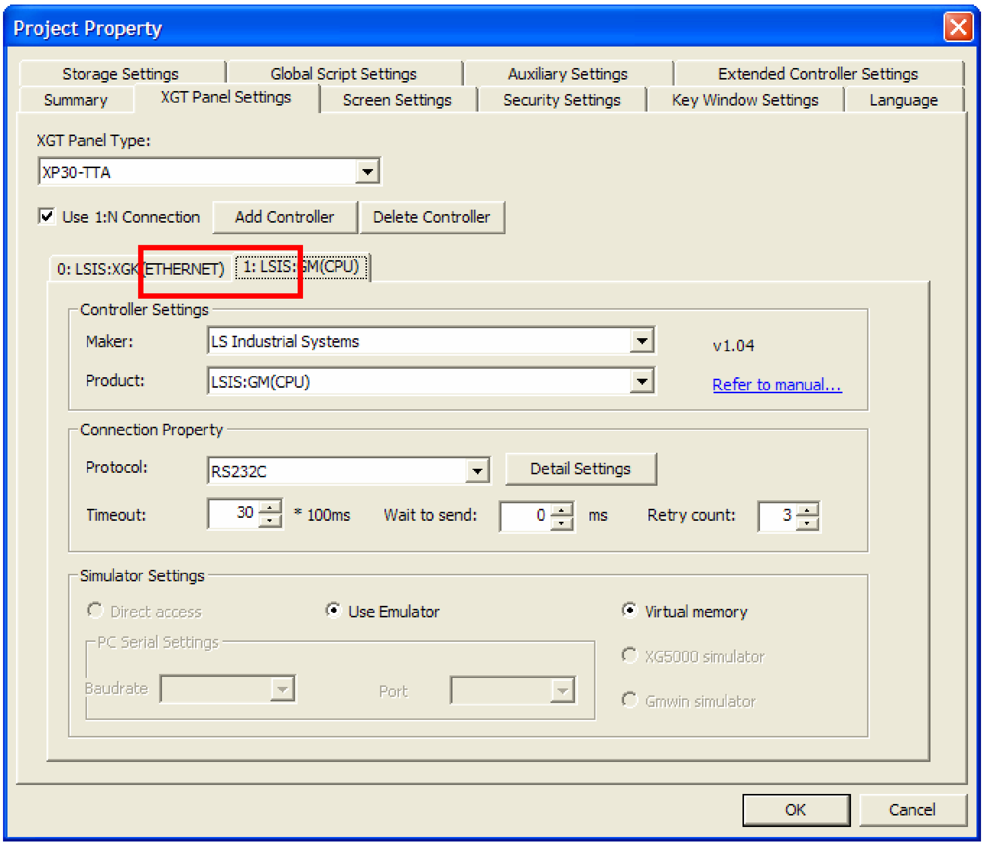
● Use Emulator

● Virtual memory

○ XG5000 simulator

○ Gmwin simulator

(c) New controller is added


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:XGK(ETHERNET)
1: LSIS:GM(CPU)
Controller Settings
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
OK
Cancel

XGT Panel Type: XP30-TTA

☑ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:GM(CPU)

v1.04

Protocol: RS232C

Timeout: 30 * 100ms

Wait to send: 0 ms

Retry count: 3

○ Direct access

● Use Emulator

● Virtual memory

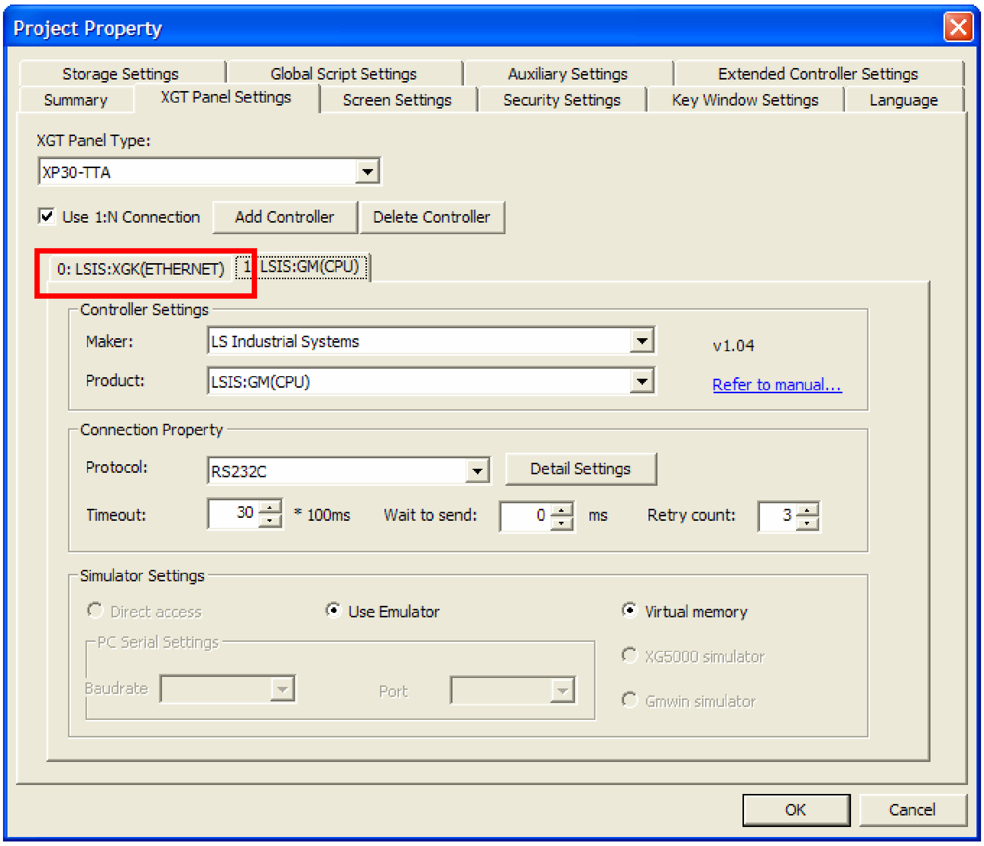
○ XG5000 simulator

○ Gmwin simulator

Change the properties of the newly added XGT Panel. Numbers beginning in 0 are given in the tap header.

[Delete connection PLC]

(a) This is deleting the PLC setting which is being used. If two or more PLC is set, [Delete Controller] button is activated. Select the XGT Panel properties tap to delete in the device properties tap. The tap is displayed at the top of the window.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:XGK(ETHERNET)
1: LSIS:GM(CPU)
Controller Settings
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
OK
Cancel

XGT Panel Type: XP30-TTA

☑ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:GM(CPU)

v1.04

Refer to manual...

Protocol: RS232C

Timeout: 30 * 100ms

Wait to send: 0 ms

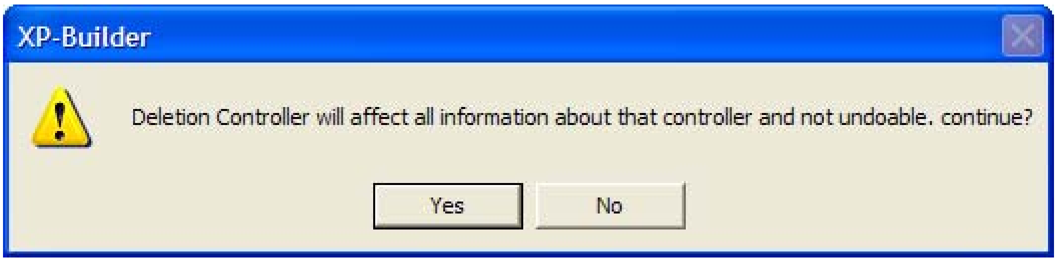
Retry count: 3

○ Direct access ● Use Emulator ● Virtual memory

○ XG5000 simulator

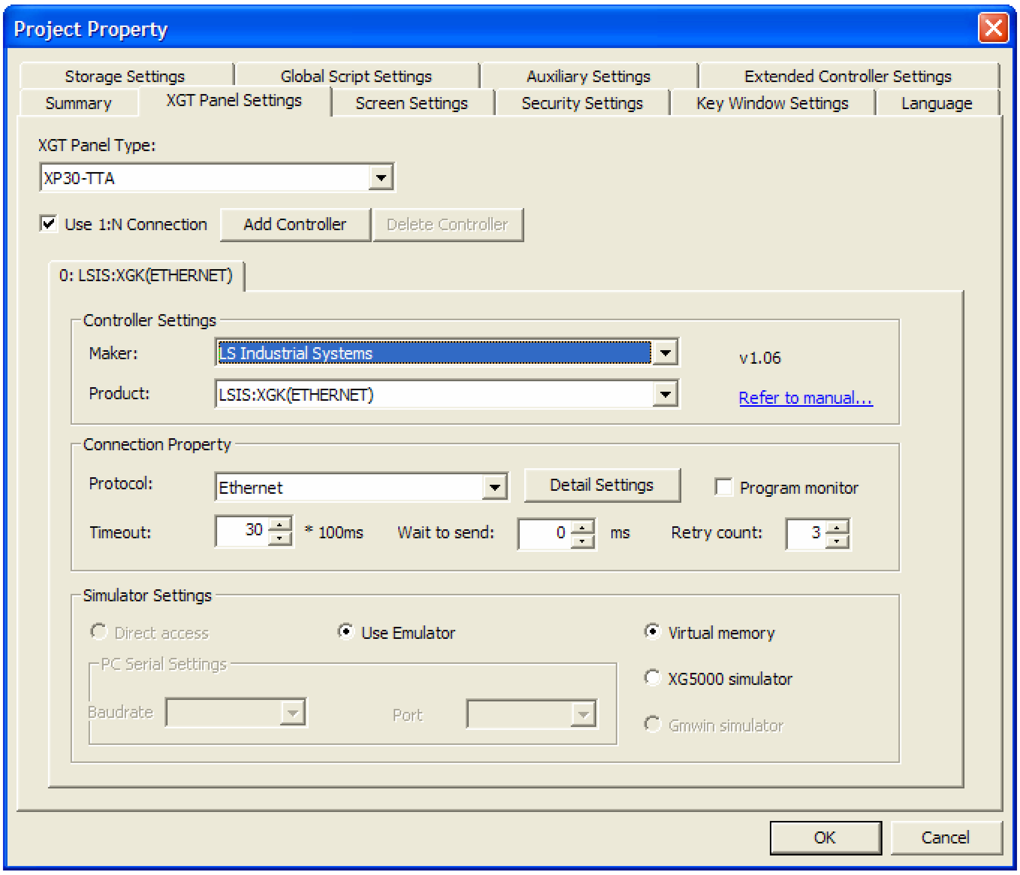
○ Gmwin simulator

(b) Click on [Delete Controller] button.


XP-Builder
Yes
No

Deletion Controller will affect all information about that controller and not undoable. continue?

(c) Press 'Yes' button, then the selected controller is deleted.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:XGK(ETHERNET)
Controller Settings
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
OK
Cancel

XGT Panel Type: XP30-TTA

☑ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:XGK(ETHERNET)

v1.06

Protocol: Ethernet

☐ Program monitor

Timeout: 30 * 100ms

Wait to send: 0 ms

Retry count: 3

○ Direct access

● Use Emulator

● Virtual memory

○ XG5000 simulator

○ Gmwin simulator

Note

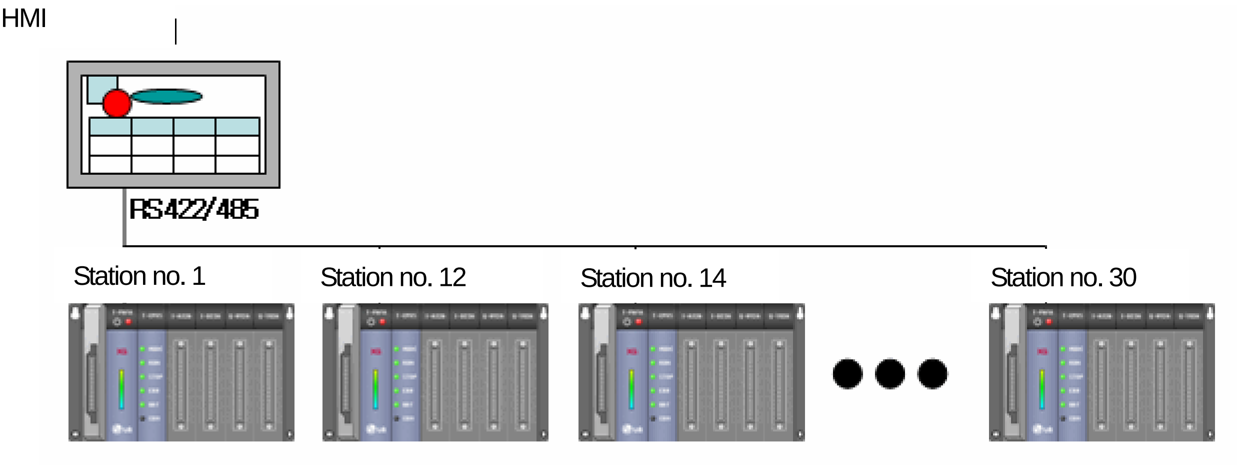
(1) Connection numbers between 0 and 3 are given in PLC connection. If connection 1 is deleted, 2 shift to the place 1 so that no connection is empty. Note that the numbers are allotted from 0 at all times.

(2) If you uncheck [Use 1:N connection], all settings are deleted except connection 0. Be sure to check whether the setting is correct before or after deletion.

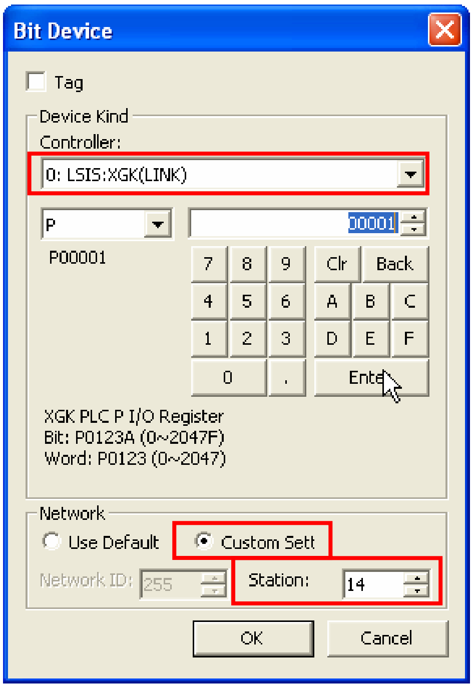
[RS-422/485 1:N Communication]

RS-422/485 supports 1:N communication as the protocol providing multidrop. Although the HMI device has only one communication port, you can connect more PLC at a time by using 1:N communication.

If you set 1:N communication, each PLC is allotted an station number and each PLC can be connected by changing the station number when you set the device.


HMI
RS422/485
Station no. 1
Station no. 12
Station no. 14
Station no. 30

You can set the device station number in RS-422/485 connection as follows.



Bit Device

☐ Tag

Device Kind

Controller: 0: LSIS:XGK(LINK)

P 00001

P00001

XGK PLC P I/O Register
Bit: P0123A (0~2047F)
Word: P0123 (0~2047)

Network

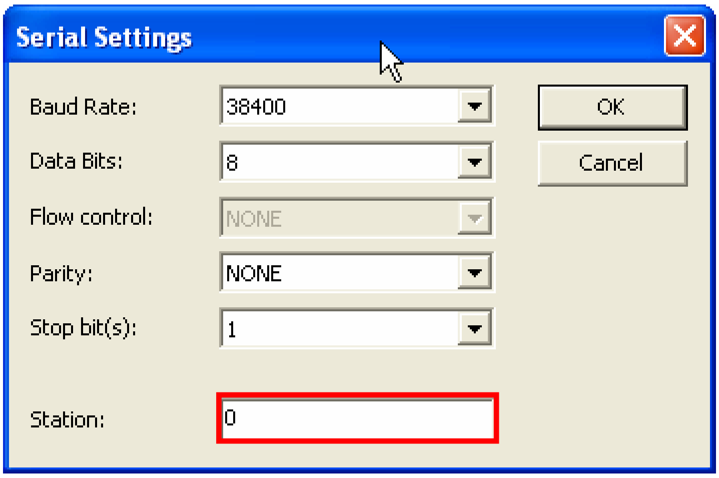
○ Use Default ● Custom Sett

Network ID: 255 Station: 14

7
8
9
Clr
Back
4
5
6
A
B
C
1
2
3
D
E
F
0
.
Enter
OK
Cancel

If the connection device is connected to LINK as shown above, the network setting at the bottom is activated. If you connect another station number, select [Custom Setting] and enter the station number at the bottom of the window.

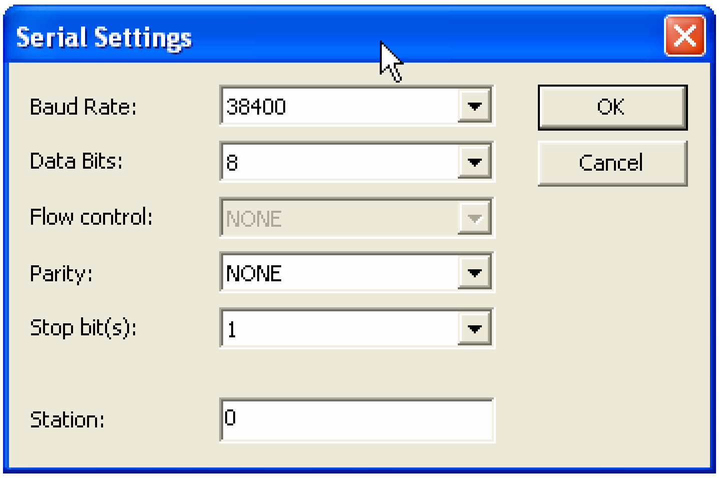
If you select [Use Default] (○ Use Default), the PLC is connected by using the default connection station number set in the project properties as in the following illustration.


Serial Settings
OK
Cancel

Baud Rate: 38400
Data Bits: 8
Flow control: NONE
Parity: NONE
Stop bit(s): 1
Station: 0

(3) Detailed Setting of PLC Connection Properties

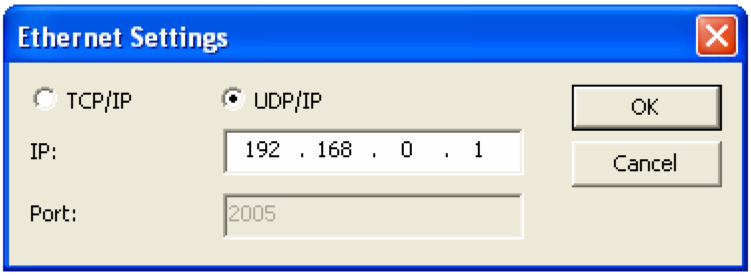
[Serial properties setting]


Serial Settings
OK
Cancel

Baud Rate: 38400
Data Bits: 8
Flow control: NONE
Parity: NONE
Stop bit(s): 1
Station: 0

RS232, RS422/485 connection properties are set.

[Ethernet properties setting]


Ethernet Settings
OK
Cancel

○ TCP/IP ● UDP/IP
IP: 192 . 168 . 0 . 1
Port: 2005

Ethernet use options are set. You can choose between use of TCP or UDP.

Note

(1) In case of connecting to LSIS FEnet module, you don't need to set Ethernet port. But when connecting to other company's PLC, you should set Ethernet port.

(4) Simulator Setting

XP-Builder (Ver.1.05 or more) provides a simulator to check operation without downloading drawn program to controller directly. If the simulator of selected controller is installed, controller's simulator can be used. If there is no simulator, you can perform device monitoring through virtual memory that is basically supplied.

(* XP-Builder 1.05 does not support direct connection for controller.)

(*There are some controller simulated LSIS XGT Series, LSIS XGB Series supported by XP-Builder 1.05.)

[Executing Simulate]

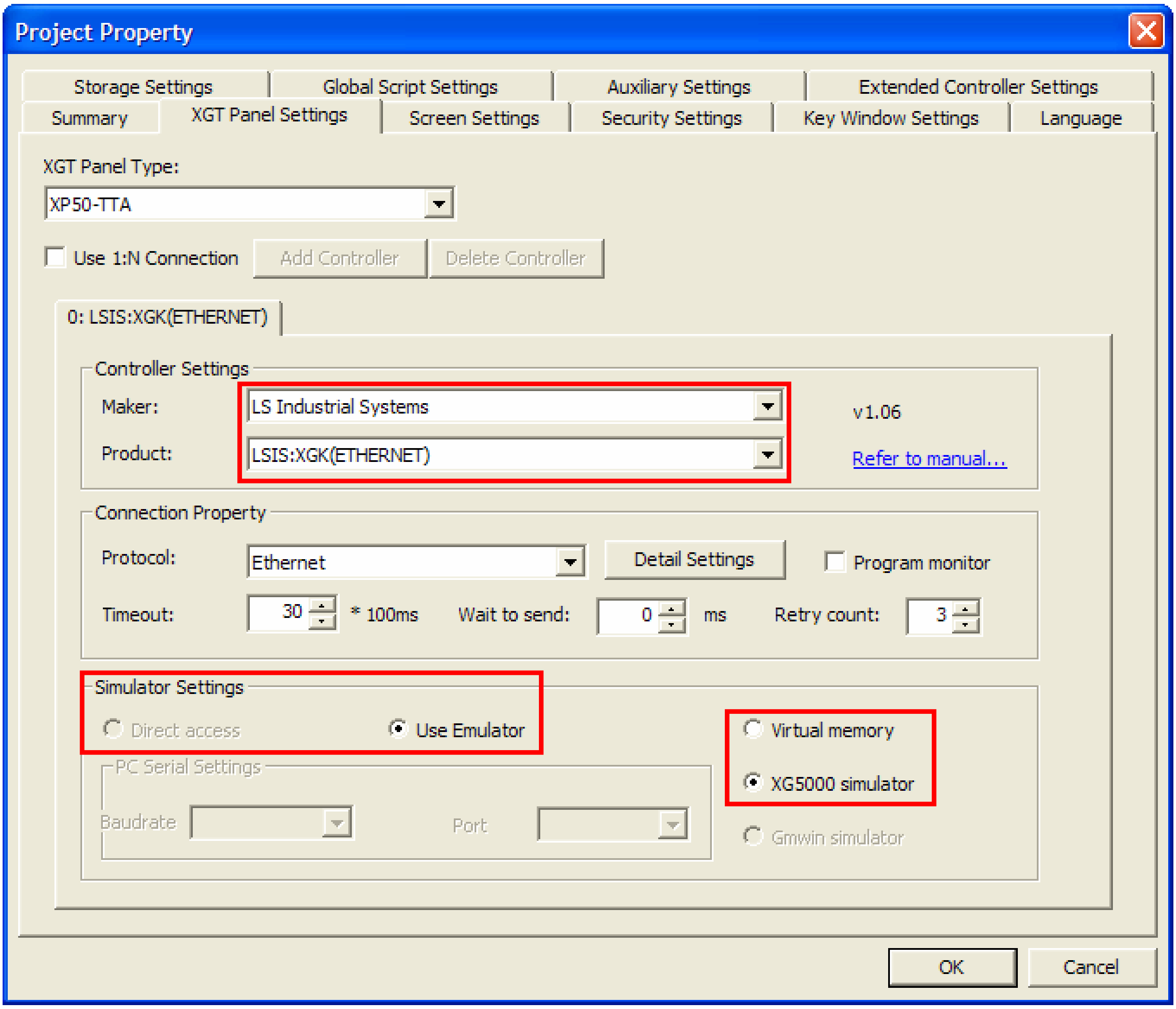
1) Test through virtual memory

Start a new program.

Select connection controller as LSIS:XGK(Ethernet)

Select Simulator indirect connection/ using XG5000 simulator from the mechanical setting screen of project property screen.

After drawing, save it.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
0: LSIS:XGK(ETHERNET)
Controller Settings
v1.06
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
OK
Cancel

XGT Panel Type: XP50-TTA

☐ Use 1:N Connection

Maker: LS Industrial Systems

Product: LSIS:XGK(ETHERNET)

Protocol: Ethernet

☐ Program monitor

Timeout: 30 * 100ms

Wait to send: 0 ms

Retry count: 3

○ Direct access ● Use Emulator

○ Virtual memory

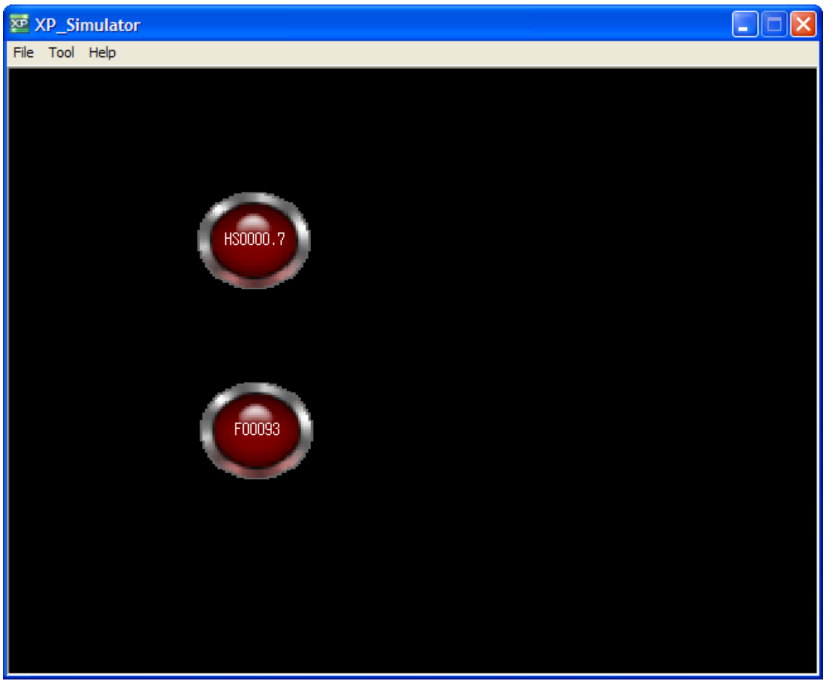
● XG5000 simulator

○ Gmwin simulator

Execute XG5000. Open XGK Series project file and execute simulator.

After checking if XG5000 simulator is executed, select [Tool]-[Simulation] from the menu.

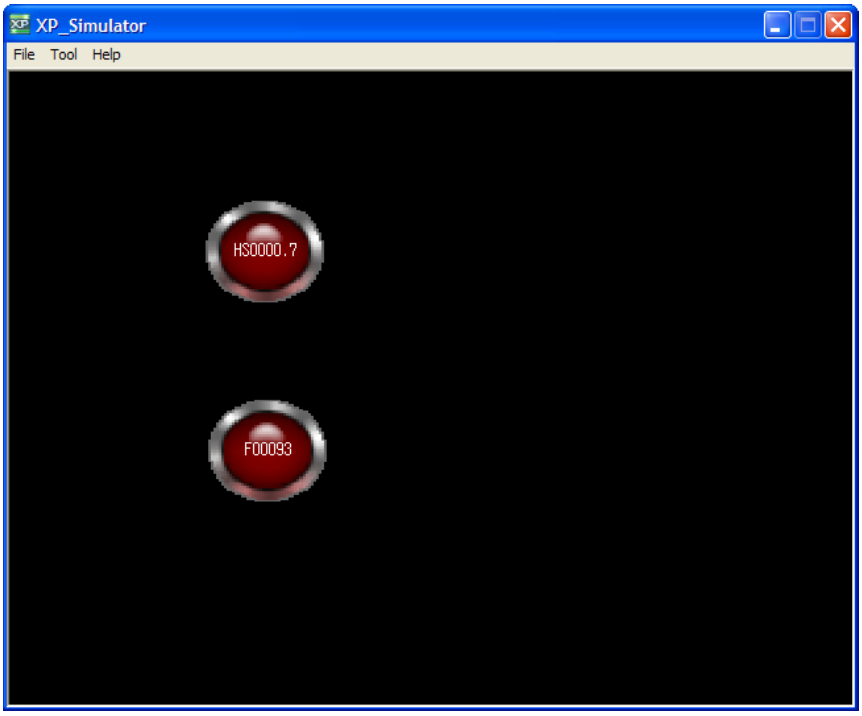
Simulation


XP_Simulator
File
Tool
Help
HS0000.7
F00093

When XP_Simulator is executed, it reads device value from XG5000 simulator.

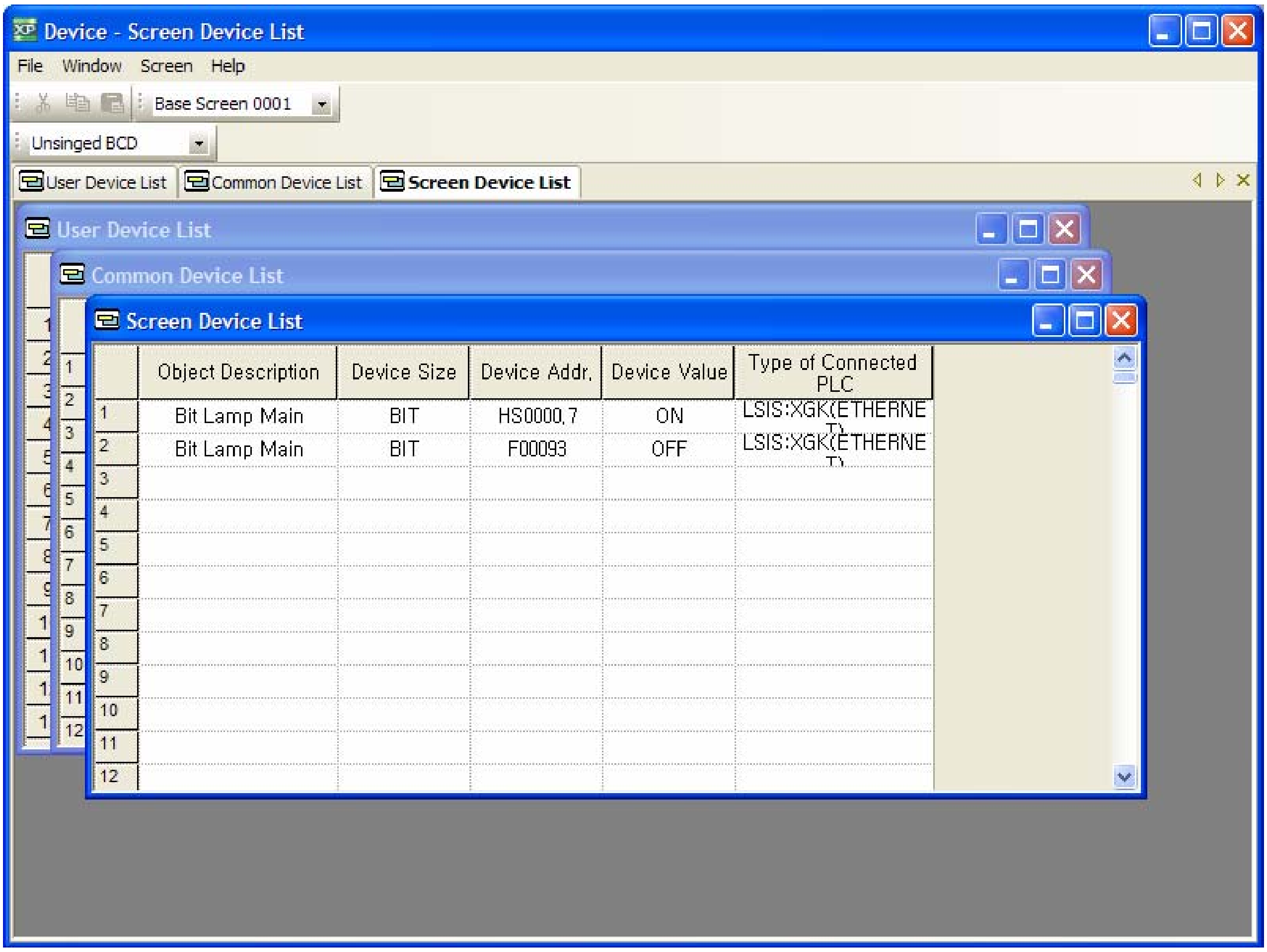
2) Test through virtual memory
Start a new program.
Select LSIS:XGK(Ethernet) for connected controller.
Select using Emulator/using virtual memory from the mechanical setting of project property screen.
After drawing, save it.

Select [Tool]-[Simulation] ( ) from the menu.
Simulation


XP_Simulator
File
Tool
Help
HS0000.7
F00093

The XP_Simulator of XP-Builder is executed.
In the case of simulation through virtual memory, basic virtual memory program will be executed without specified designation.

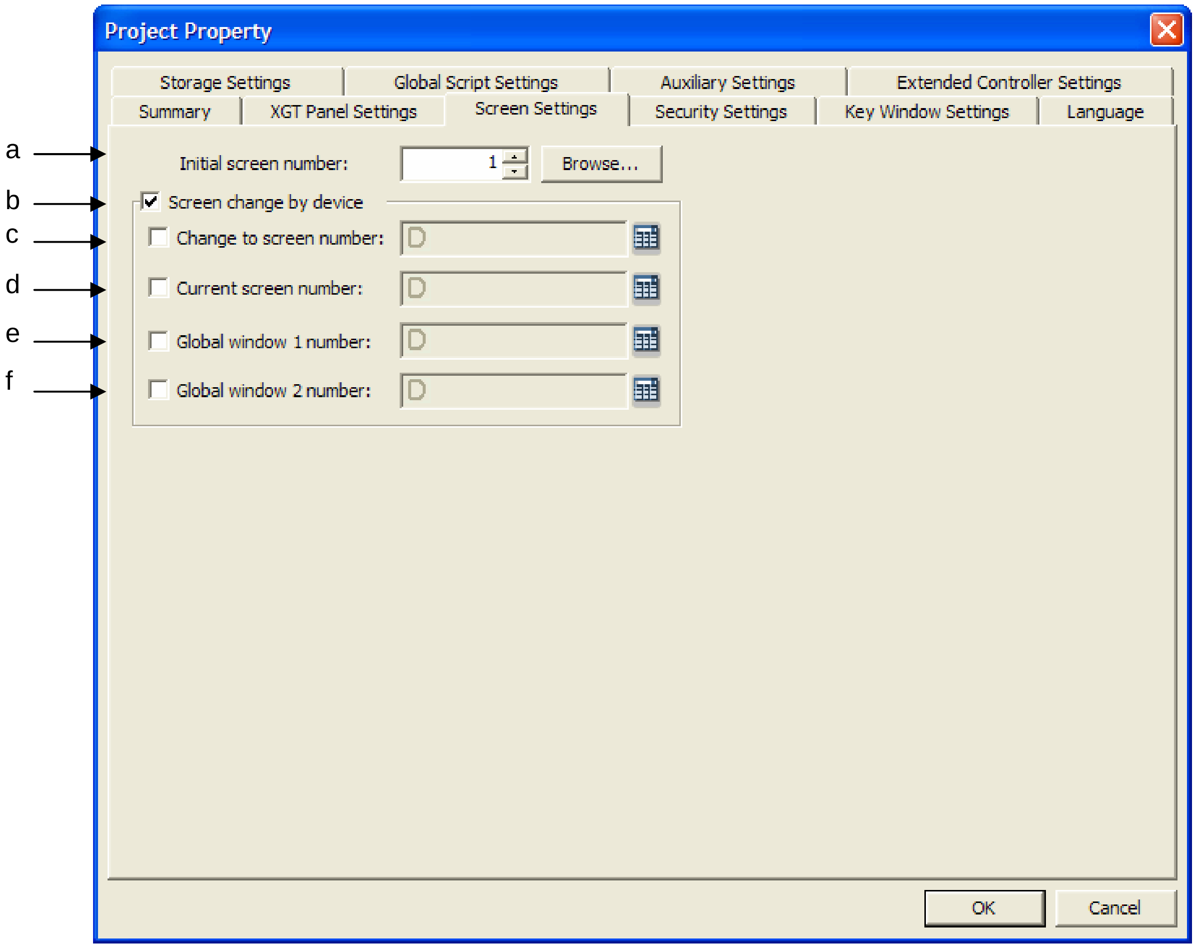
If you select [Tool]-[Start Monitoring Device], used device list will be shown at the screen for a user to edit the values.


Device - Screen Device List
File
Window
Screen
Help
Base Screen 0001
Unsinged BCD
User Device List
Common Device List
Screen Device List

	Object Description	Device Size	Device Addr.	Device Value	Type of Connected PLC
1	Bit Lamp Main	BIT	HS0000.7	ON	LSIS:XGK(ETHERNET)
2	Bit Lamp Main	BIT	F00093	OFF	LSIS:XGK(ETHERNET)
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

13.3 Screen Change

You can set the initial screen of XGT Panel so that the screen is switched according to the device value.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Browse...
OK
Cancel
a
b
c
d
e
f

Initial screen number: 1

☑ Screen change by device

☐ Change to screen number: D

☐ Current screen number: D

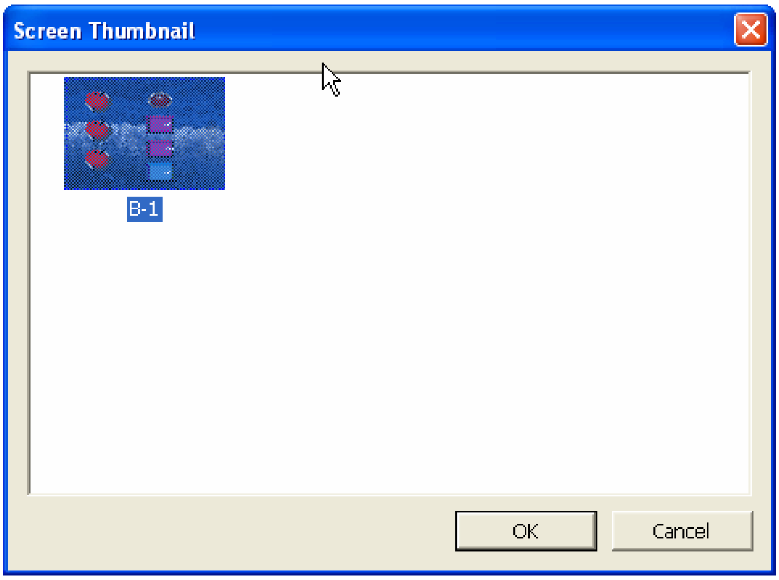
☐ Global window 1 number: D

☐ Global window 2 number: D

Items	Description
(a) Initial Screen No.	Sets the initial screen number used when XGT Panel starts, or when monitoring starts after download. The user can designate the number of the screen you have made. An error is displayed when there is no window of the corresponding number in download.
(b) Screen Change by Device	You can decide whether to use the display switch function by the device.
(c) Change to screen number	Setting the device to designate basic screen No. If the device value is changed, it will move to the related screen No. that the device value (no sign 16 bit) indicates.
(d) Current screen number	Saving the current screen No.
(e) Global window 1 number	Setting the device to designate Windows screen No. 1. If the device value is changed, it will move to the related screen No. that the device value (no sign 16 bit) indicates.
(f) Global window 2 number	Setting the device to designate Windows screen No. 2. If the device value is changed, it will move to the related screen No. that the device value (no sign 16 bit) indicates.

[Select initial screen number]

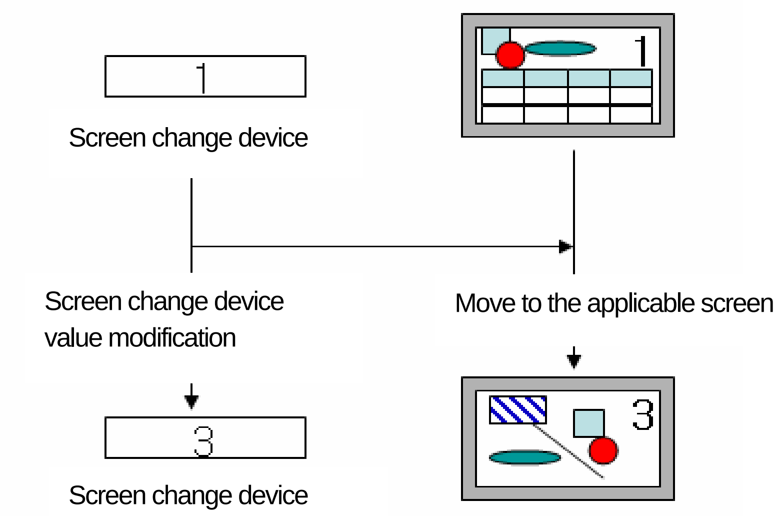
Sets the initial screen number. Press Browse... (Browse) on the right. The list of the settable base screens is shown in a small size as follows.


Screen Thumbnail
B-1
OK
Cancel

Select the screen you want to designate as the default screen and press OK.

[Screen change by device – base screen]
The window corresponding to the Base Window device value is displayed. If there is no window corresponding to the Base Window device value, screen change does not occur.
If you do not use the screen change device, the device value is changed by the screen change device.

[Screen change by device – window display 1/2]
The window corresponding to the device value of Window 1 is displayed. If there is no window corresponding to the device value, the window is not displayed in the screen.

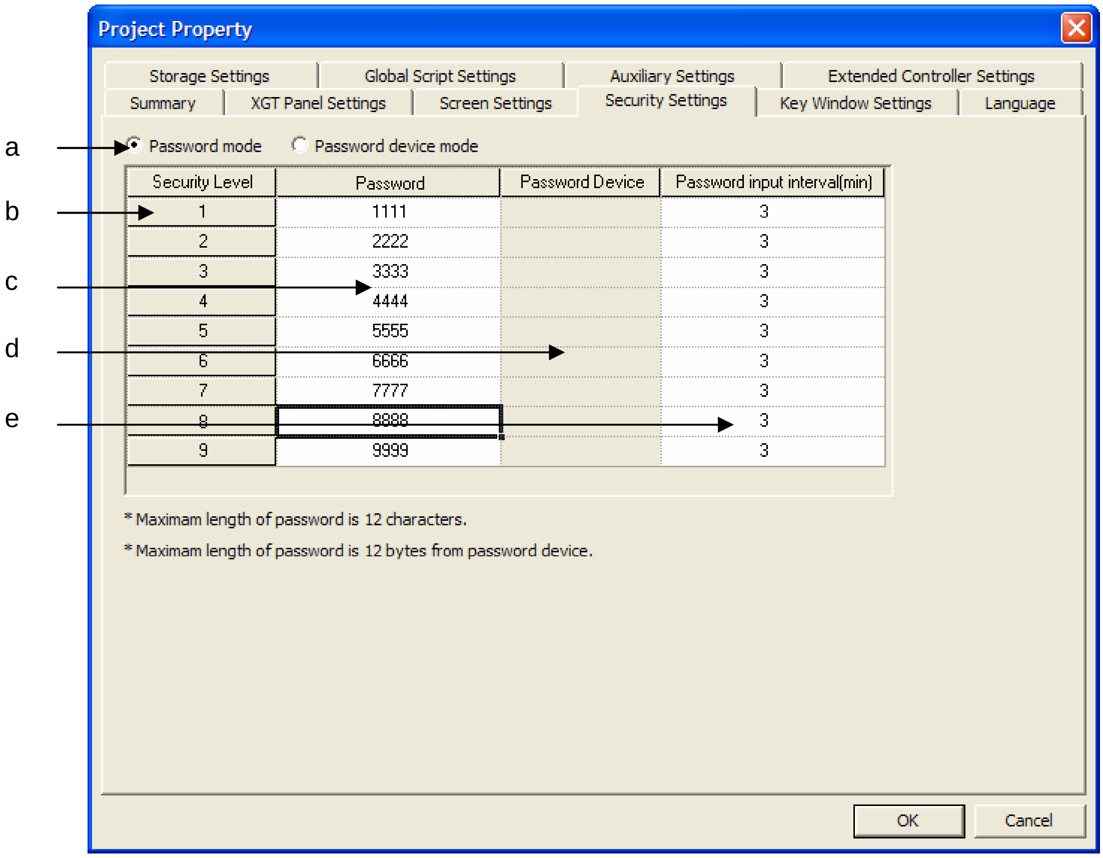

1
Screen change device
Screen change device value modification
3
Screen change device
1
Move to the applicable screen
3

13.4 Security Settings

XGT Panel enables PLC device control by the user through objects such as a switch or input or output devices. XGT Panel provides security levels so that only the authorized user can control it.
XGT Panel supports 10 security levels in total.

Security level 0	The level with no access All users can control the level.
. . .	⇩
Security level 9	The highest level

Level 0 has no limit to access and can be controlled by all users. All the other levels are accessible when the user is authorized in the control object. Level 9 is the highest level.
The security level of XGT Panel operates as follows. The password of a lower level is accessible to the password of a higher level. After the user operates XGT Panel at a particular level, the level is accessible for a certain period of time further. That is, in the control object of the level or its lower levels is controllable without the password for a certain period of time. After the time period, the session is terminated and the password is required again.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
a
b
c
d
e
OK
Cancel

● Password mode ○ Password device mode

Security Level	Password	Password Device	Password input interval(min)
1	1111		3
2	2222		3
3	3333		3
4	4444		3
5	5555		3
6	6666		3
7	7777		3
8	8888		3
9	9999		3

* Maximam length of password is 12 characters.
* Maximam length of password is 12 bytes from password device.

Item	Description
Password Mode(a)	There are password mode and password device mode. Password mode is the one in which password is directly entered. For password device mode, the number in 12 bytes from designated password devices is password
Security Level List(b)	The security level list is displayed.
Password(c)	Enter password. Up to 12 digits can be designated. Capital/small letters can be distinguished.
Password Device(d)	Designate password device. For password device, word device shall be entered and the number in 12 bytes from designated password devices is password
Security Level Retention Time (e)	Set security level retention time. If the user executes the button that is protected by a security level, the last entered and executed password is memorized. With this information, this password is cleared during the next operation. The entered password will be deleted as time passes and it is necessary to enter the password once again to execute the operation for which a certain security level is set. The default unit is ‘minute” and up to 30 minutes can be set.

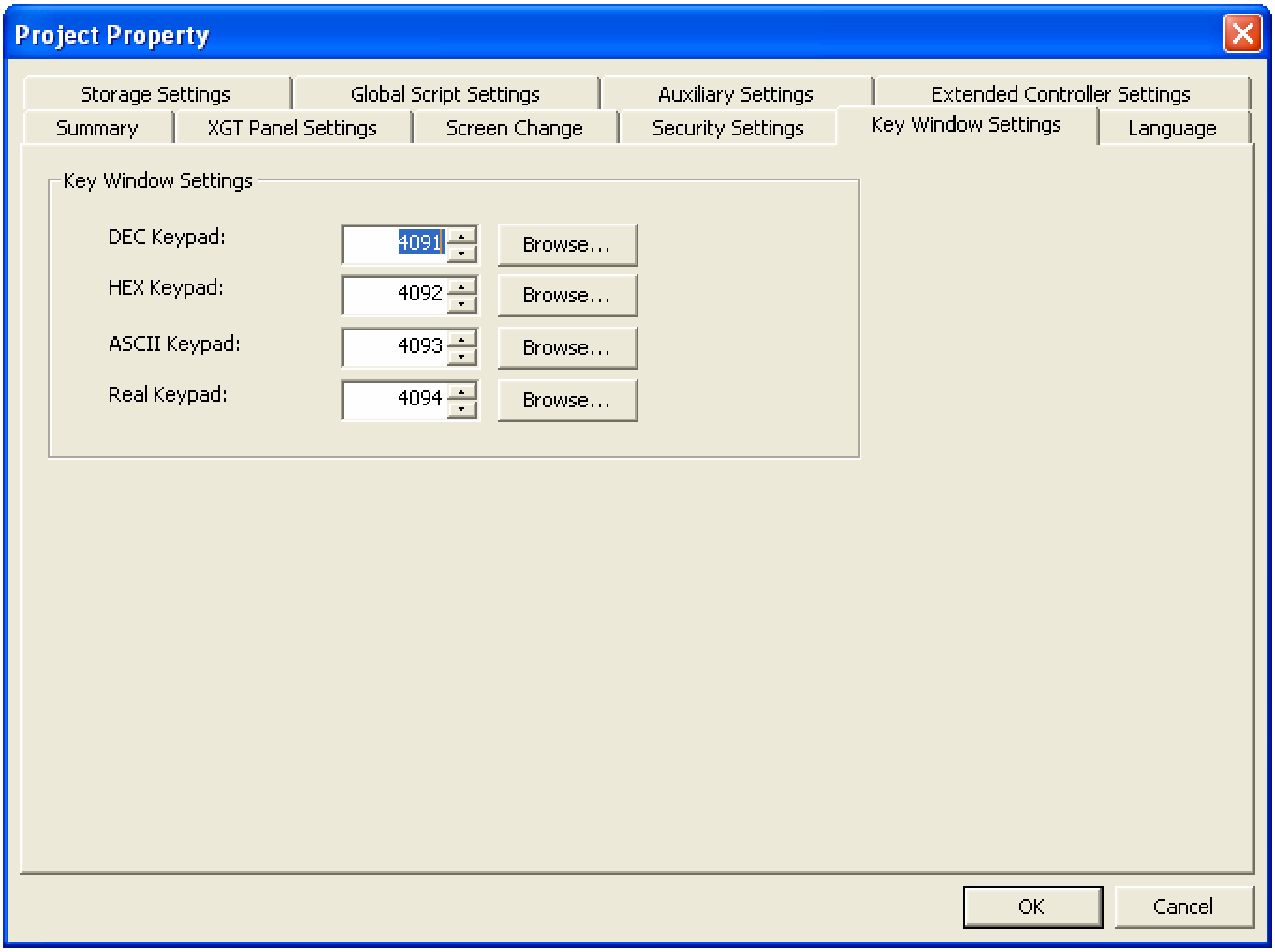
Note Safety lock interval

(1) When setting the time to keep security level as 0, you need to check the password for all operations where security is applied.
(2) Although before duration time has passed, you need to check the password for the operations where upper level security is applied.
(3) You are requested to establish small value of security duration time for the operations that need strict security control.

[Security level application object]
Switch, numeric input, text input

13.5 Key Window Settings

This sets the key window to be used in the input device in the screen according to the data type input.
The key window set here is applied as the default key window of all objects.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Key Window Settings
Browse...
Browse...
Browse...
Browse...
OK
Cancel

DEC Keypad: 4091

HEX Keypad: 4092

ASCII Keypad: 4093

Real Keypad: 4094

13.6 Language

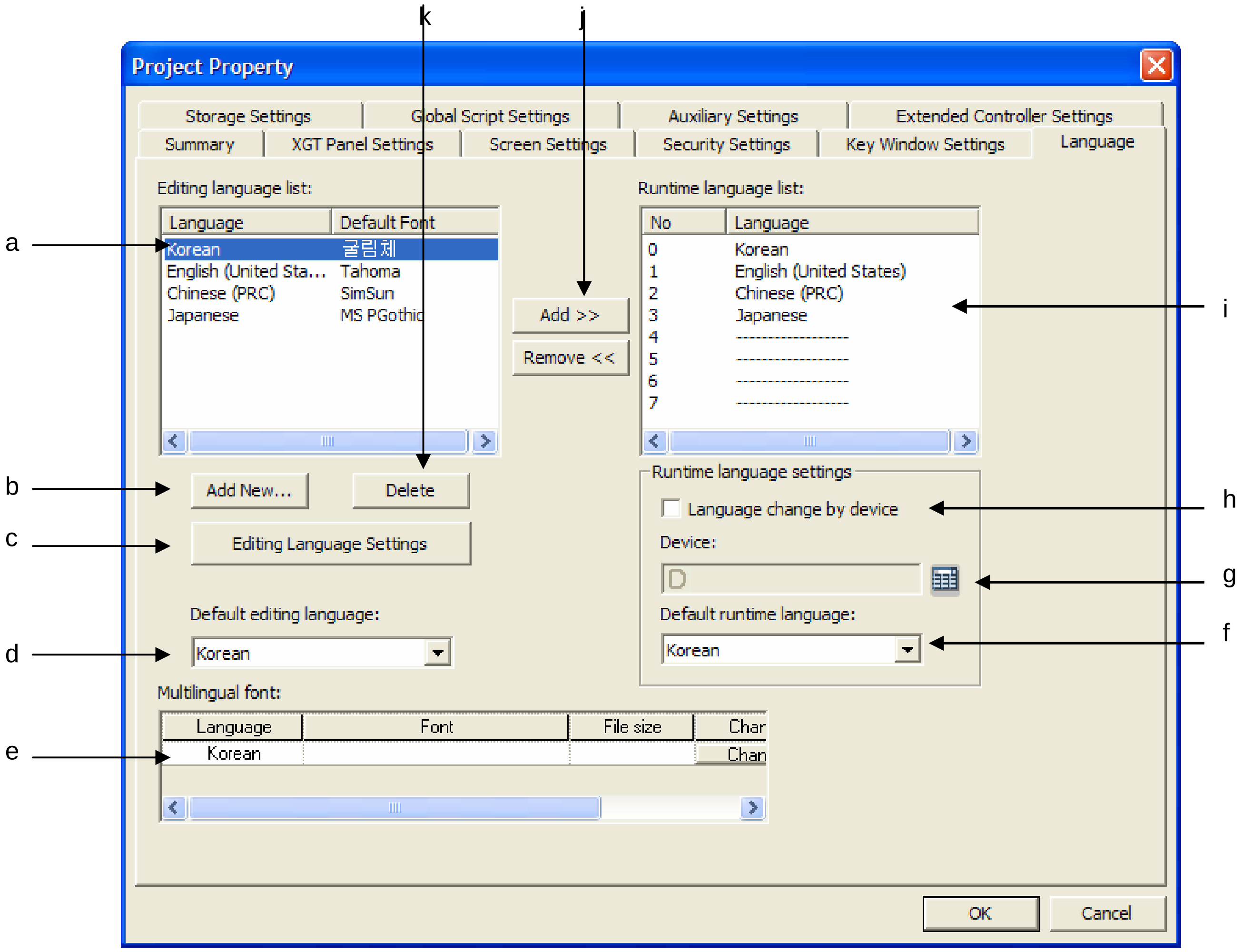
This is designating the language to use when the editing language and project used for building the display in XP Builder is downloaded to XGT Panel.

(1) Editing Language

The editing language decides how many languages to use to construct the display. You can build a table of each editing language in making the text table.

(2) Runtime Language

The runtime language is the language included in the project data during the project download and going down to the HMI device. To download the language selected in the project, build a font file for each language font (true type font file, TTF) for the font used in the project to be displayed in the screen. The lists selected as the editing languages are saved in the file but font files are created only when they are selected as the runtime language. Up to 8 are supported.


k
j
Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add >>
Remove <<
Add New...
Delete
Editing Language Settings
OK
Cancel
a
b
c
d
e
f
g
h
i

Editing language list:

Language	Default Font
Korean	굴림체
English (United Sta...	Tahoma
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime language list:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese
4	------------------
5	------------------
6	------------------
7	------------------

Runtime language settings

☐ Language change by device

Device: D

Default runtime language: Korean

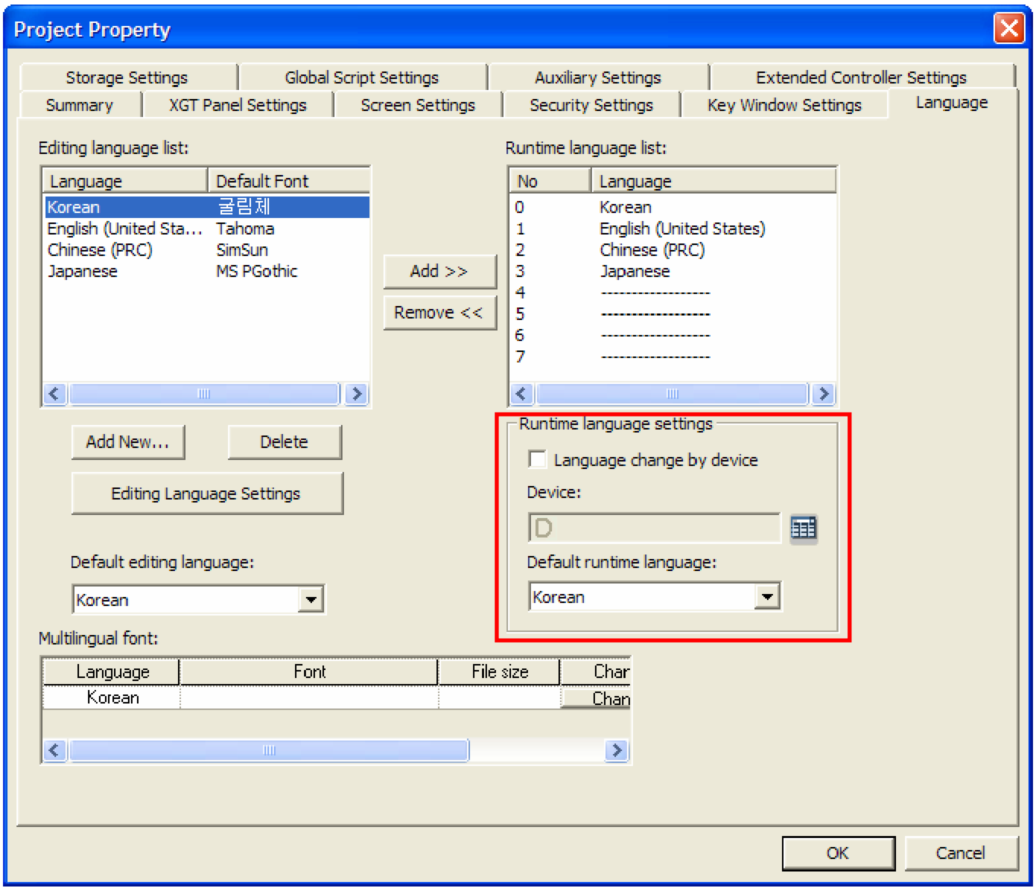
Default editing language: Korean

Multilingual font:

Language	Font	File size	Char
Korean			Chan

Items	Description
Editing language list (a)	This is the list of the languages to be used for editing. The language structure in the text table is composed of the editing languages set here.
Add New… (d)	This is adding an editing language. A dialog displaying all the lists provided by the system is invoked.
Editing language settings (c)	Changes the default editing language per language. The contents are applied after restart of XP-Builder.
Default editing language (d)	Selects one among editing language lists. Determines the default value of editing language combo box shown at XP-Builder toolbar.
Multilingual font(e)	To be displayed as Korean in Text Display, downloads the selected entire font. It may not be downloaded according to font file size. For detail XGT Panel memory, refer to XGT Panel user manual Ch3.2.
Default runtime language (f)	This is designating the language to display when language change by the device is not used.
Language change device (g)	Language changes according to value of device
Language change by device (h)	XGT Panel supports language change by the device. This is setting the language change word device to display the language number. XGT Panel reads the proper device value and displays the windows in the language of the number displayed by the device. Numbers are given in 0, 1, 2 and 3 from the highest language in (b) (runtime language list).
Runtime language list (i)	This is the list of the languages selected as the runtime language.
Add/Remove (j)	These buttons add or delete a runtime language to or from the editing language.
Delete (k)	This is deleting the language selected as the editing language. If the language to delete is included in the runtime language, too, it is also deleted from the runtime language.

[Language change by device]



Project Property

Storage Settings | Global Script Settings | Auxiliary Settings | Extended Controller Settings | Summary | XGT Panel Settings | Screen Settings | Security Settings | Key Window Settings | Language

Editing language list:

Language	Default Font
Korean	굴림체
English (United Sta…	Tahoma
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime language list:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese
4	------------------
5	------------------
6	------------------
7	------------------

Add >> | Remove << | Add New… | Delete | Editing Language Settings

Default editing language: Korean

Runtime language settings

☐ Language change by device

Device: D

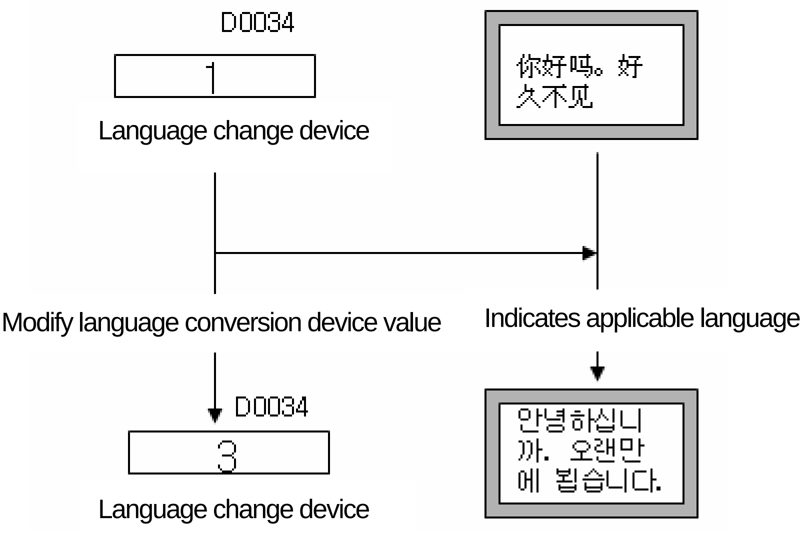
Default runtime language: Korean

Multilingual font:

Language	Font	File size	Char
Korean			Chan

OK | Cancel

Check of Language change by Device and Language Change Device Setting


D0034
1
Language change device
你好吗。好久不见
Modify language conversion device value
Indicates applicable language
D0034
3
Language change device
안녕하십니까. 오랜만에 뵙습니다.

Note

(1) The font used for the text is given according to the default value of the editing language displayed in [Project Properties] and [Language]. Note that the text might not be displayed in XGT Panel when what is written in the string cannot be displayed in the default font.

(2) In case of language change by using the language change device, when the language corresponding to the device value is not designated, it is not displayed in XGT Panel.

E.g.) If the device value is 4 in the example above, the language is not displayed in XGT Panel because the set runtime language is not registered.

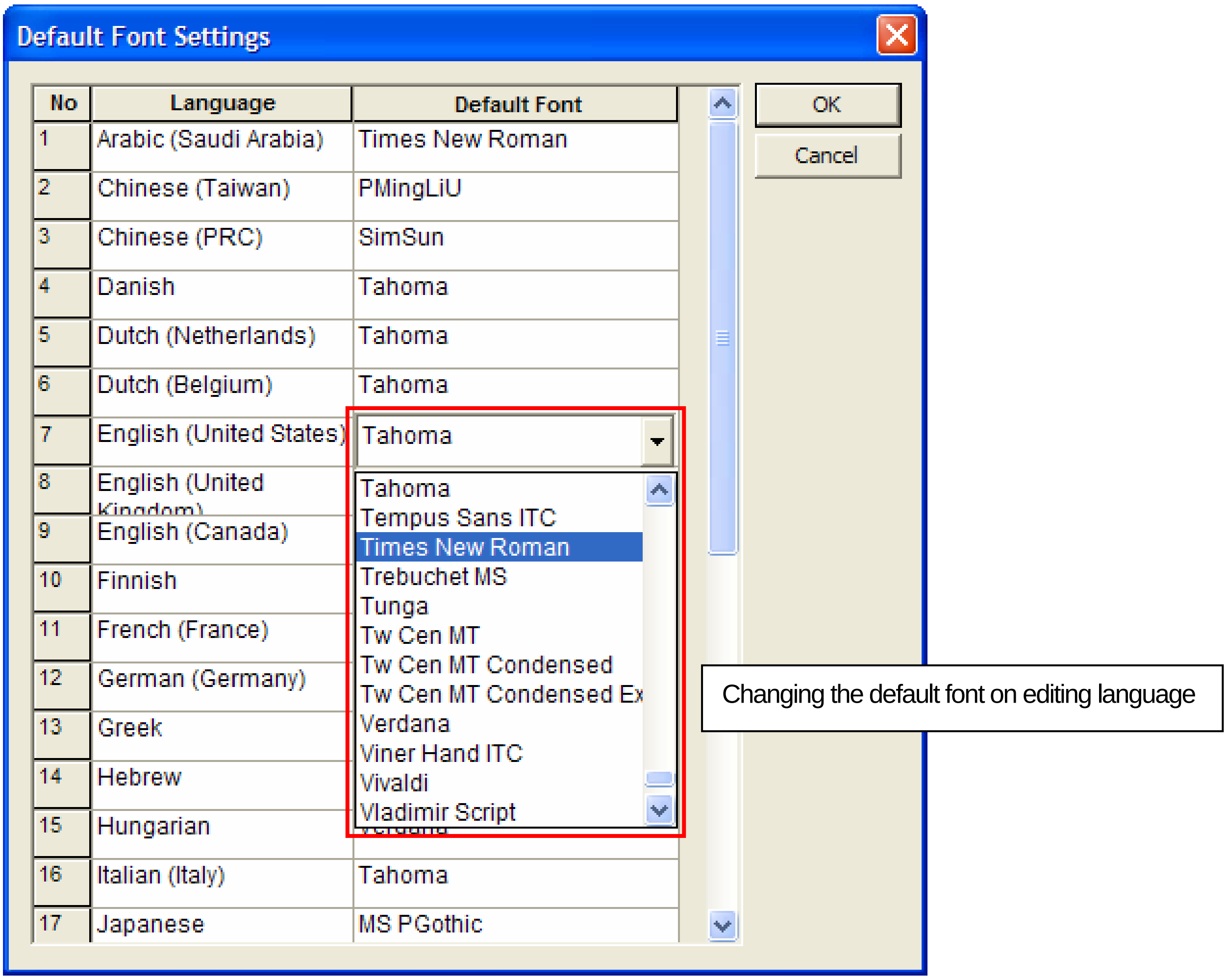
[Changing edition language for text table]

You can designate the font for each language at the default font setting screen.

Note Caution for edition language

(1) Every font includes available language data. If the font data is different, proper character expression may not be allowed in XGT Panel so pay attention to installation.

Ex.) Tahoma font can be used for English or Latin but can not express combined languages (Korean, Japanese, and Chinese). Accordingly, Tahoma or Courier New is applied to words written Chinese characters such Korean or Chinese, such languages registered at string may not be shown properly in XGT Panel.


Default Font Settings
OK
Cancel
Tahoma
Tempus Sans ITC
Times New Roman
Trebuchet MS
Tunga
Tw Cen MT
Tw Cen MT Condensed
Tw Cen MT Condensed Ex
Verdana
Viner Hand ITC
Vivaldi
Vladimir Script

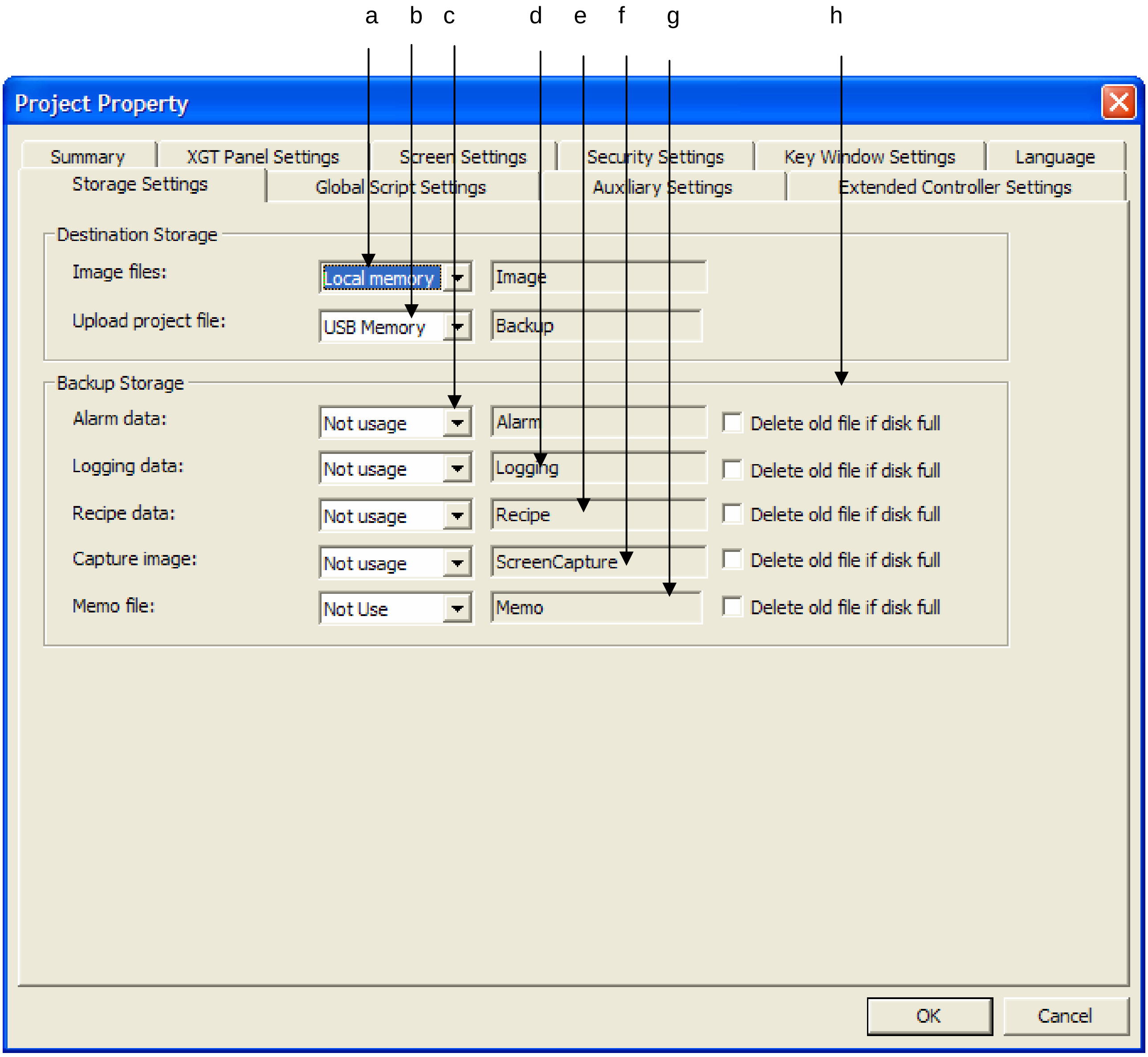
No	Language	Default Font
1	Arabic (Saudi Arabia)	Times New Roman
2	Chinese (Taiwan)	PMingLiU
3	Chinese (PRC)	SimSun
4	Danish	Tahoma
5	Dutch (Netherlands)	Tahoma
6	Dutch (Belgium)	Tahoma
7	English (United States)	Tahoma
8	English (United Kingdom)	
9	English (Canada)	
10	Finnish	
11	French (France)	
12	German (Germany)	
13	Greek	
14	Hebrew	
15	Hungarian	
16	Italian (Italy)	Tahoma
17	Japanese	MS PGothic

Changing the default font on editing language

13.7 Storage settings

This is setting the use of the mobile storage unit connected to XGT Panel.
This is for designating the locations of the image files and font files taking up a lot of capacity when downloaded.

This is also aimed at designating the location of the mobile storage unit for backing up the logging data, recipes, screen captured images that accumulate during program execution in XGT Panel.


a
b
c
d
e
f
g
h
Project Property
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
OK
Cancel

Destination Storage

Image files:	Local memory	Image
Upload project file:	USB Memory	Backup

Backup Storage

Alarm data:	Not usage	Alarm	☐ Delete old file if disk full
Logging data:	Not usage	Logging	☐ Delete old file if disk full
Recipe data:	Not usage	Recipe	☐ Delete old file if disk full
Capture image:	Not usage	ScreenCapture	☐ Delete old file if disk full
Memo file:	Not Use	Memo	☐ Delete old file if disk full

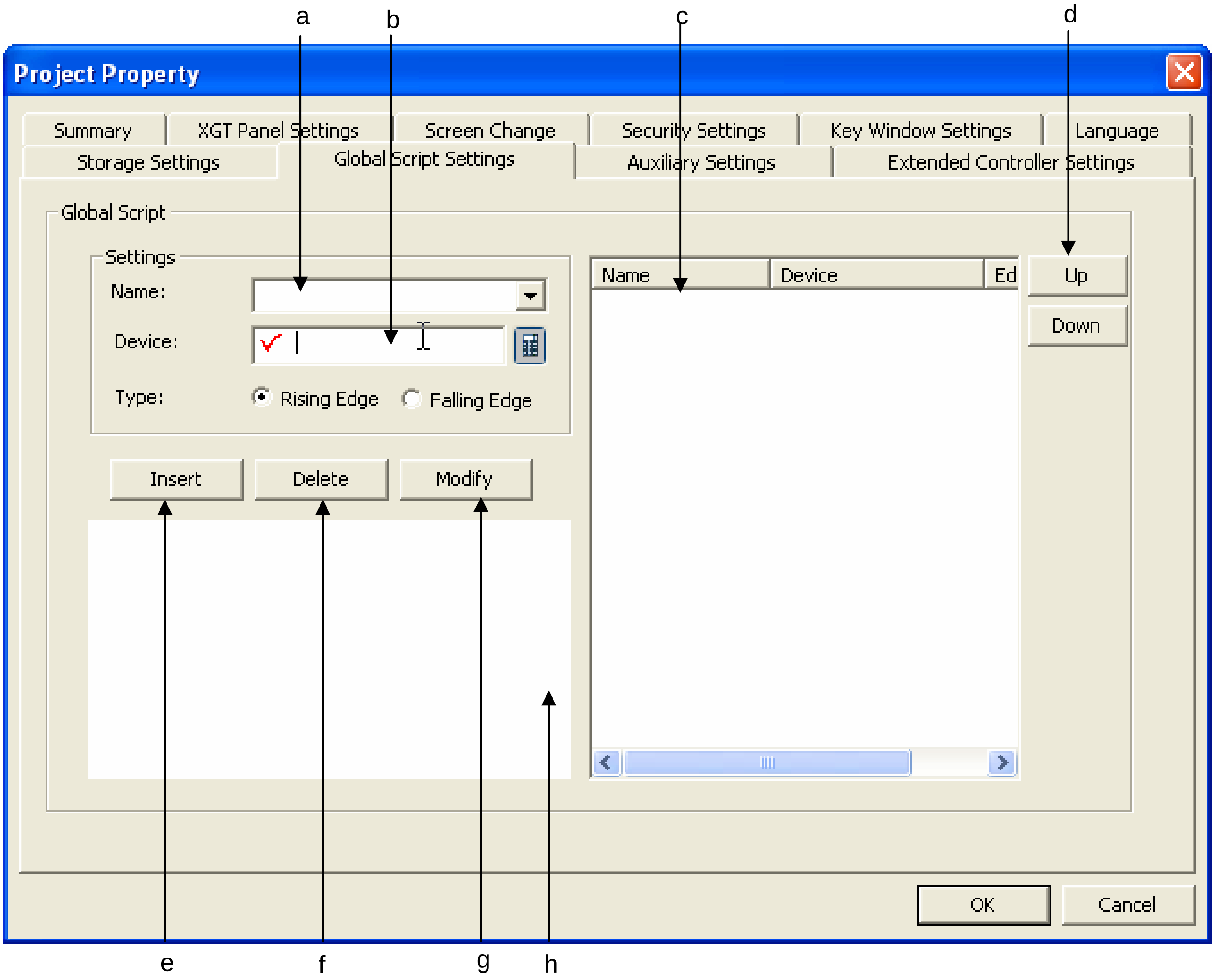
Items	Description
Image Files (a)	XGT Panel has a fixed size of the area for saving project files. If the user wants to download XGT Panel data larger than the designated size, he can designate the image file which take up much of the project file so that it is saved in the mobile storage unit instead of the basic project file storage unit. The user designates the file location in XGT Panel with the entire path included.
Upload project file (b)	In case of downloading upload project file, specifies where to save.
Alarm data (c)	This is for deciding the external storage unit type in which the alarm data is going to be backed up and the location of the saved file is displayed.
Logging Data (d)	This is for deciding the external storage unit type in which the logging data is going to be backed up and the location of the saved file is displayed.
Recipe Data (e)	This is for deciding the external storage unit type in which the recipe data is going to be backed up and the location of the saved file is displayed.
Capture Image (f)	This is for deciding the external storage unit type in which the captured image is going to be backed up and the location of the saved file is displayed.
Memo file (g)	This is for deciding the external storage unit type in which the memo file is going to be backed up and the location of the saved file is displayed.
Delete old file if disk full (h)	When backup area is full, deletes old file.

Note

XGT Panel supports two types of removable storage device (USB and CF card)
However, X30-BTE (TTE) does not support CF card.

13.8 Global Script Settings

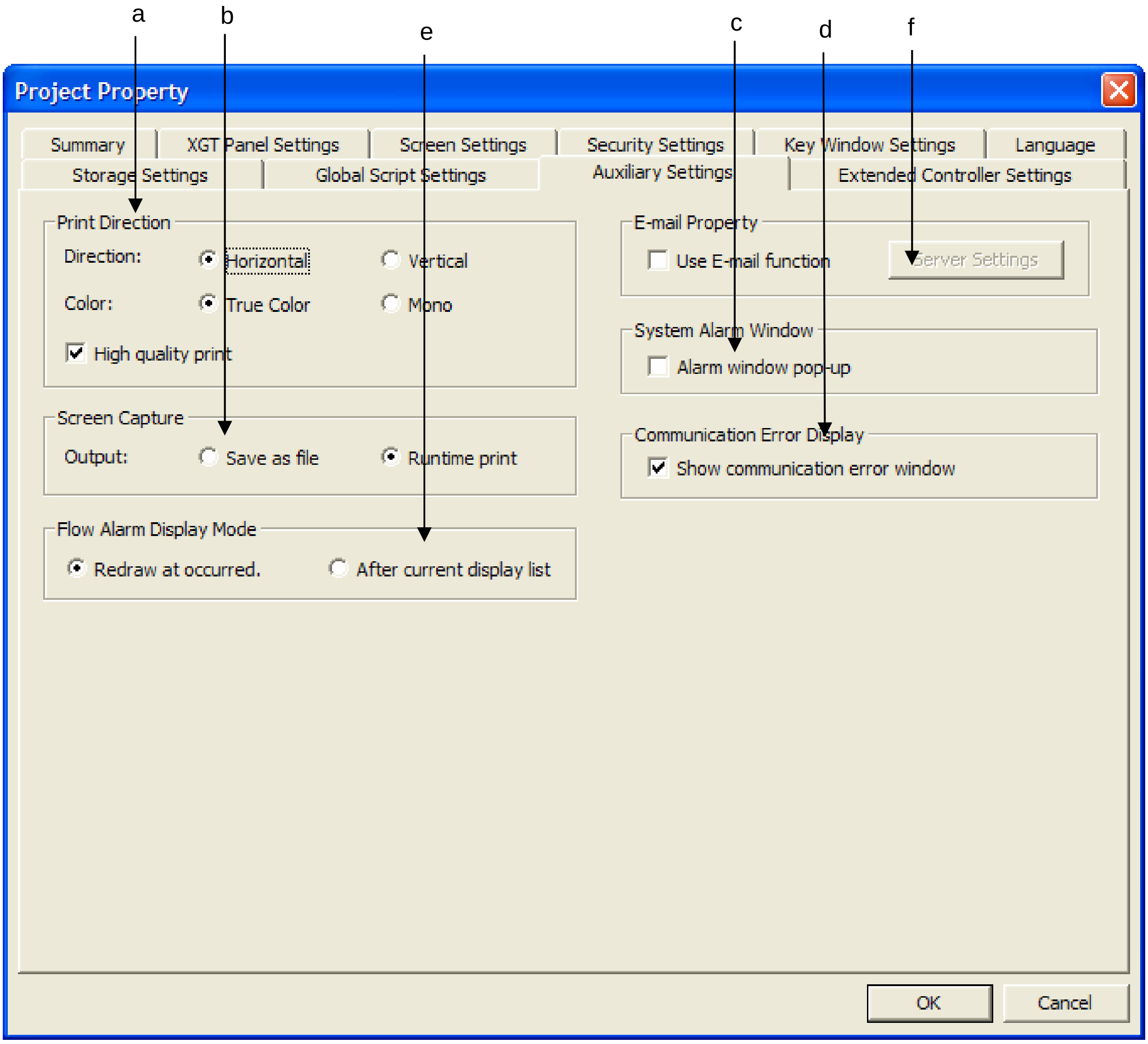
The global script is monitored throughout XGT Panel monitoring and executed if the conditions are met. Up to 8 global scripts can be registered. If two or more conditions are simultaneously met, the execution priority is determined.


a
b
c
d
Project Property
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Global Script
Settings
Name:
Device:
Type:
Rising Edge
Falling Edge
Insert
Delete
Modify
Name
Device
Ed
Up
Down
OK
Cancel
e
f
g
h

Items	Description
Script name (a)	Selecting the script name to be registered as the global script.
Trigger device (b)	Setting the bit device meeting the requirements to execute the script and deciding the device edge as the execution condition.
Script list (c)	This is the list of the functions registered as the global script.
List Up/Down (d)	If two or more conditions of the global script are simultaneously met, the execution priority is determined.
Insert (e)	This is for adding the set script function name, device and edge actions in the script list.
Delete (f)	This is for deleting the script selected as the global script.
Modify (g)	If you select a script in the script list, the set value is displayed in the script settings on the left. If you modify the script settings and press Modify button, the script you selected is changed into the set value.
Preview Script (h)	The script you selected in the script list is displayed.

13.9 Auxiliary Settings

You can set the printing direction, locations of saved screen captured images and system alarm display properties.


a
b
e
c
d
f
Project Property
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Server Settings
OK
Cancel

Print Direction

Direction: ● Horizontal ○ Vertical

Color: ● True Color ○ Mono

☑ High quality print

Screen Capture

Output: ○ Save as file ● Runtime print

Flow Alarm Display Mode

● Redraw at occurred. ○ After current display list

E-mail Property

☐ Use E-mail function

System Alarm Window

☐ Alarm window pop-up

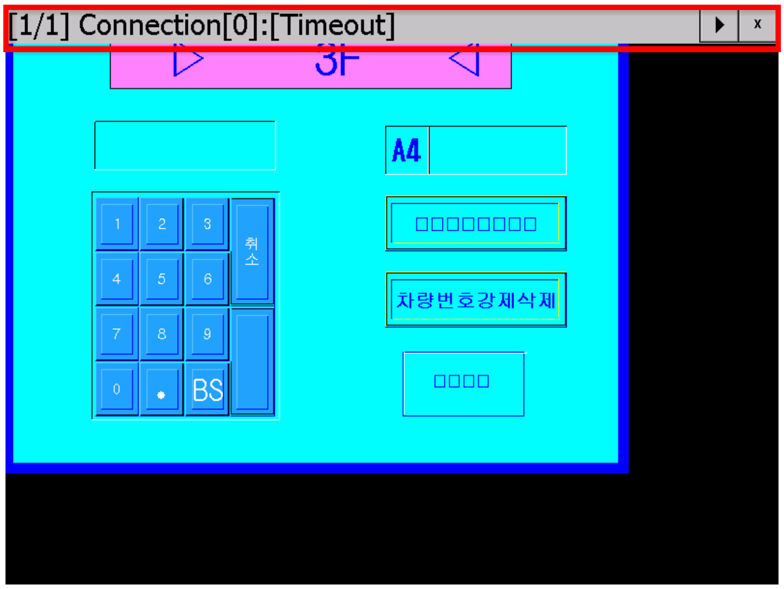
Communication Error Display

☑ Show communication error window

Items	Description
(a) Printing option	This is deciding the print option Determines direction, color, whether to use the high quality print When using high quality print, quality of print is improved.
(b) Screen Capture	This sets the action when the screen image is captured in XGT Panel. You can save them in a file or set the captured image printing.
(c) System Alarm Window	This decides whether to display a system alarm message.
(d) Communication Error Display	This decides whether to display communication error window.
(e) Flow Alarm Display Mode	Specifies how to change alarm message when the number of flow alarm changes
(f) E-Mail property	Specifies E-Mail function.

[Communication Error Display]

Shows the communication error window which appears at the top of screen when error occurs and displays error contents


[1/1] Connection[0]:[Timeout]

3F
A4
1
2
3
취소
4
5
6
7
8
9
0
•
BS
□□□□□□□□
차량번호강제삭제
□□□□
x

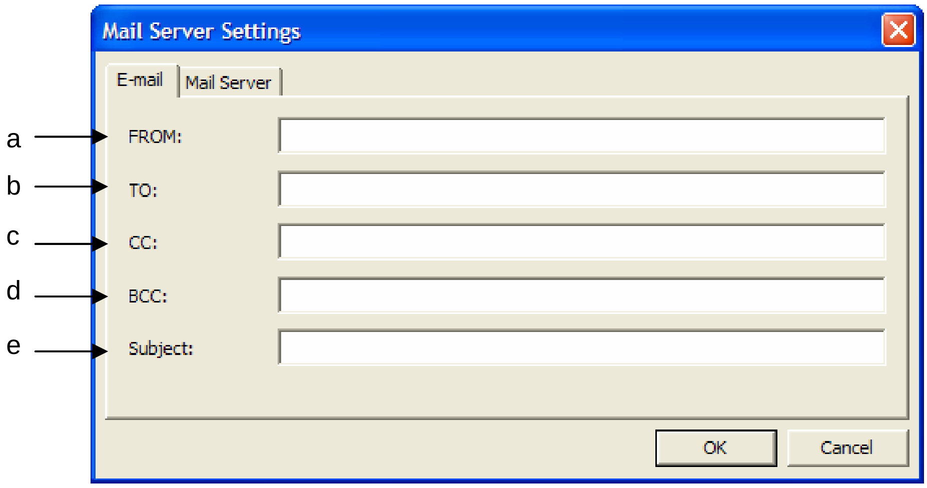
[Flow Alarm Display]

Sets how to display the flow alarm message at bottom of screen

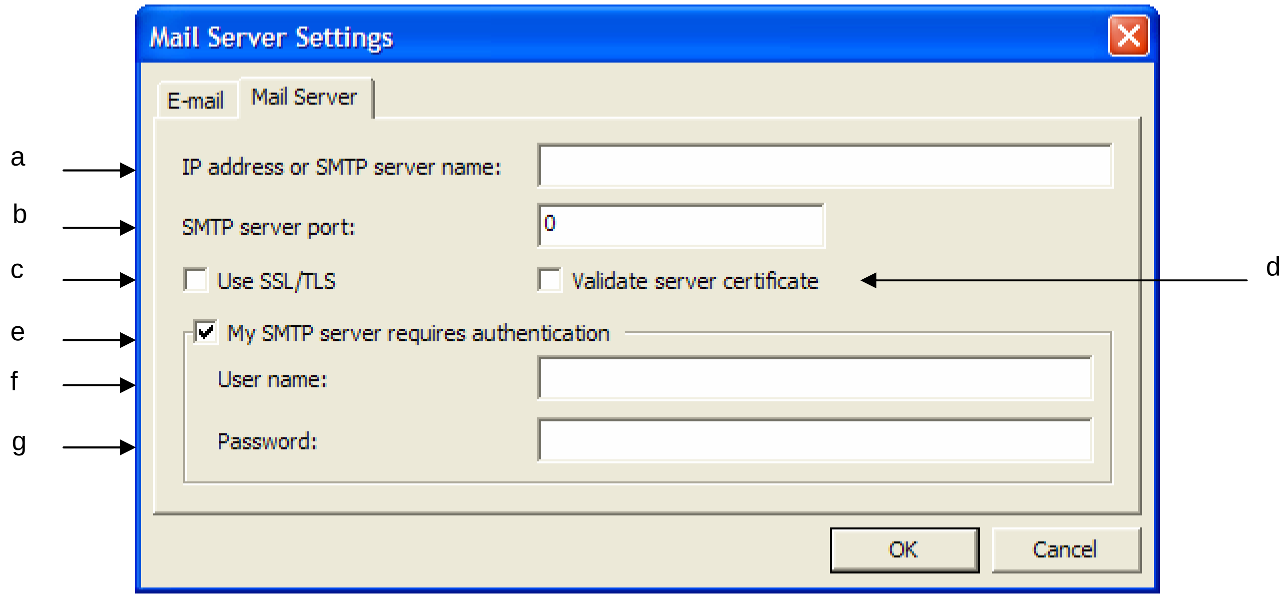
Redraw at occurred: when flow alarm occurs and is restored during being displayed, immediately deletes the current message and displays new message.
After current display list: The message currently being displayed continues showing. And newly occurred or restored alarm is reflected from next message.

[E-Mail function setting]

When some condition is met, XGT Panel transmits the E-Mail to the designated address. Inputs information on mail server and recipient


Mail Server Settings
E-mail
Mail Server
a
b
c
d
e
FROM:
TO:
CC:
BCC:
Subject:
OK
Cancel

Item	Description
From (a)	Specifies the sender
To (b)	Specifies the recipient. You can register many recipient by using ';'. Same message is transmitted to all recipients.
CC (c)	Specifies the reference recipient. You can register many recipient by using ';'. Same message is transmitted to all recipients.
BCC (d)	Specifies the reference recipient. But, there recipients are not shown at the recipient list. You can register many recipient by using ';'. Same message is transmitted to all recipients.
Subject (e)	Specifies the subject of E-mail. You can up to 128 words (number and alphabet)


a
b
c
e
f
g
d
Mail Server Settings
E-mail
Mail Server
IP address or SMTP server name:
SMTP server port:
☐ Use SSL/TLS
☐ Validate server certificate
☑ My SMTP server requires authentication
User name:
Password:
OK
Cancel

SMTP server port: 0

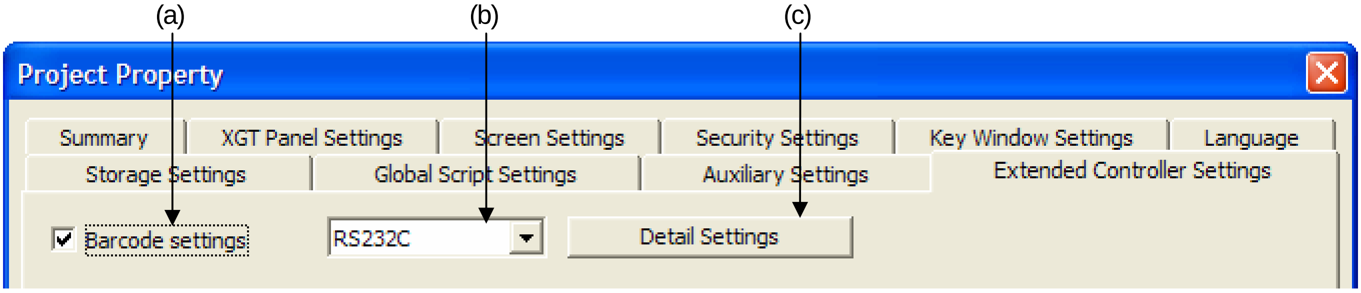
Item	Description
IP address or SMTP server name (a)	Input the mail server IP address or server name
SMTP server port (b)	Input SMTP server port. When using "Anonymous SMTP" in the Intranet, port number is 25.
Use SSL/TLS(c)	When transmitting, data is coded.
Validate server certificate (d)	Validates server certificate.
My SMTP server requires authentication (e)	When not using Anonymous SMTP in the Intranet, authentication on the user information is needed.
User name (f)	When you check [My SMTP server requires authentication] input the user account.
Password(g)	When you check [My SMTP server requires authentication] input the password.

Note Caution for setting the E-mail server

(1) When you don't use the user authentication (Anonymous SMTP), mail server has to exist in the same intranet as XGT Panel. At this time, port number should be 25, basic port of Anonymous SMTP service.
(2) When using URL instead of inputting the server IP, you should set DNS server IP at the XGT Panel start menu.
(3) The transmitted mail is encoded with Unicode.

13.10 Extended Controller Settings

Sets the extended controller to be connected to XGT Panel

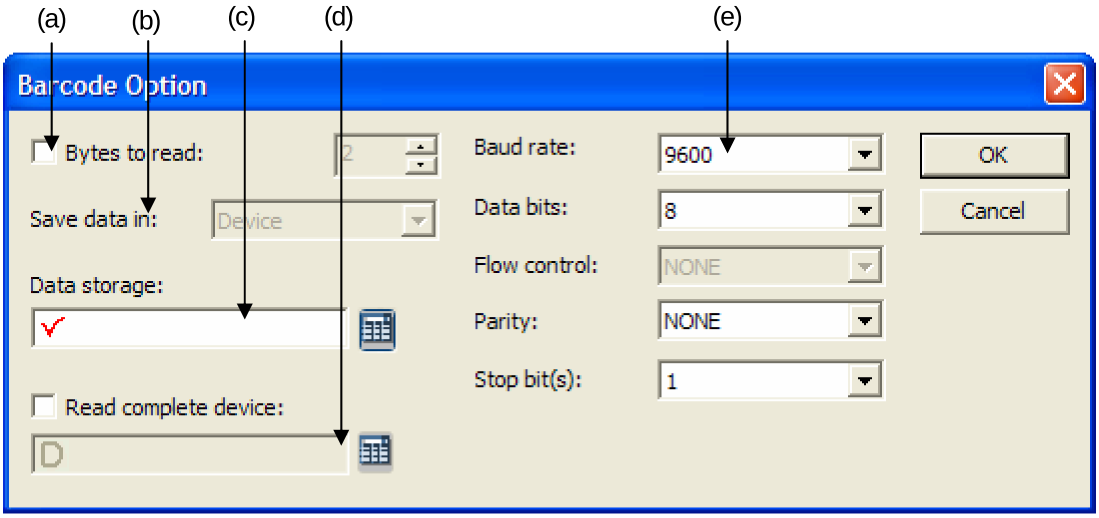

(a)
(b)
(c)
Project Property
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Detail Settings

☑ Barcode settings

RS232C

Item	Description
(a) Barcode settings	Connects barcode reader to XGT Panel
(b) Connection property	Connects to barcode by using RS-232C protocol
(c) Detail connection option	Sets detail connection option

Sets detail option of barcode. Refer to manual of barcode.


(a)
(b)
(c)
(d)
(e)
Barcode Option
OK
Cancel

☐ Bytes to read: 2

Save data in: Device

Data storage:

☐ Read complete device: D

Baud rate: 9600

Data bits: 8

Flow control: NONE

Parity: NONE

Stop bit(s): 1

Item	Description
Bytes to read (a)	Specifies size of data to read from barcode. If you set the number of byte, XGT Panel reads data as many as the specified byte number. If you don't set the number of byte, XGT Panel reads data until it reads '\0'
Save data in (b)	Specifies where to save the data. Data is saved from the specified device continuously.
Data storage (c)	Specifies the device to save the data. Data is saved from the specified device continuously. So the user should consider the number of byte of data and check consecutive devices from the specified device is used to save the barcode data.
Read complete device (d)	Specifies the device, which notifies completion of reading the data.
RS-232C communication parameter setting (e)	Specifies the RS-232C communication parameter.

Chapter 14 Common Data

Common data refers to the data commonly used not only in a single window but also in the entire project. This kind of data neither builds a window nor is displayed in the window, but is used to designate the action executed by each requirement.

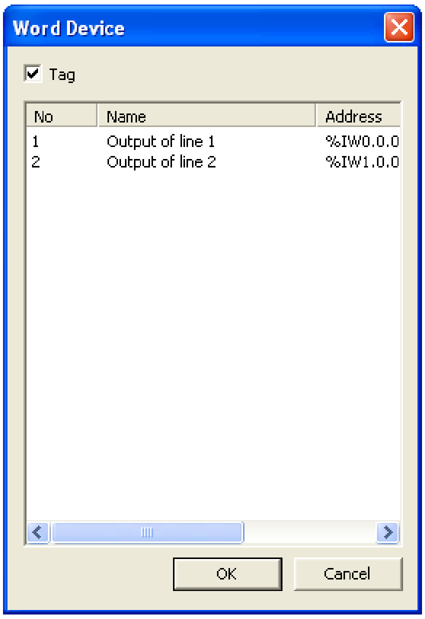
Type	Description	Count
Tag	The function of registering in advance the device address and type frequently used and managing the device.	The number of tag is 10000 per tag group. There is no limit on the number of tag group.
Text Table	Puts together and registers commonly used texts. Can display the texts registered through the object.	The number of text is 10000 per text table. There is no limit on the number of text table.
Logging	Set to record and save monitored data in the file.	32
Recipe	Used to write or read the value set according to the conditions by the user.	The number of device of recipe is 10000. The number of basic/file recipe is 255.
Flow Alarm	Displays the conditions of each text streaming at the bottom of the screen when a certain condition is met.	The number of flow alarm device is 10000.
History Alarm	Saves the status when a certain condition is met.	No limit on the number
Scheduler	Specifies operation differently according to time.	32
Script	Inputs the operation to be conducted by the user in texts.	No limit on the number

14.1 Tag

A tag refers to the function of registering a frequently used device address and type (Bit, Word) with the name and easily and conveniently managing the device. The device address can be displayed in the name known by the user.

E.g.)

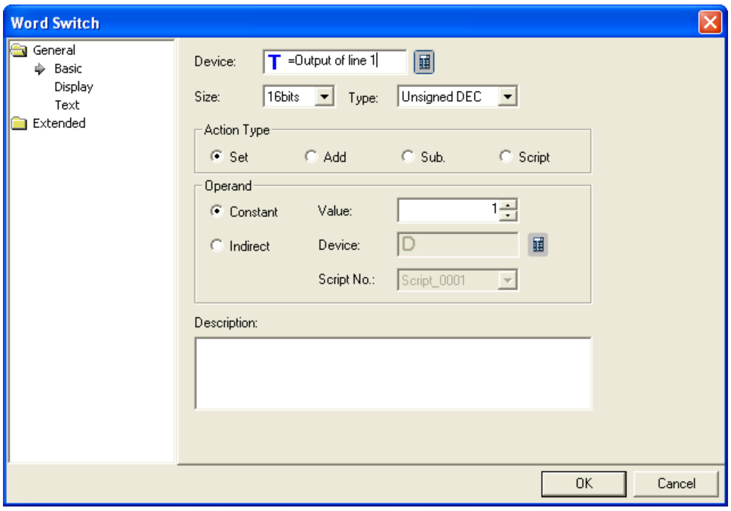
Name	Device Type	Device Address	Description
Output of line 1	Word	%IW0.0.0	The device value of %IW0.0.0 indicates the output of line 1.
Output of line 2	Word	%IW1.0.0	The device value of %IW1.0.0 indicates the output of line 2.
Lamp failure of line 3	Bit	%QX0.0.0	%QX0.0.0 device value indicates the lamp failure.
Screw shortage of line 3	Bit	%QX0.0.2	In case of screw shortage in line 3, %QX0.0.0 device value is On.



☑ Tag

No	Name	Address
1	Output of line 1	%IW0.0.0
2	Output of line 2	%IW1.0.0

Set the device easily using the tag to check the output of line 1.



Device: T =Output of line 1

Size: 16bits

Type: Unsigned DEC

Action Type: ● Set ○ Add ○ Sub. ○ Script

Operand: ● Constant ○ Indirect

Value: 1

Device: D

Script No.: Script_0001

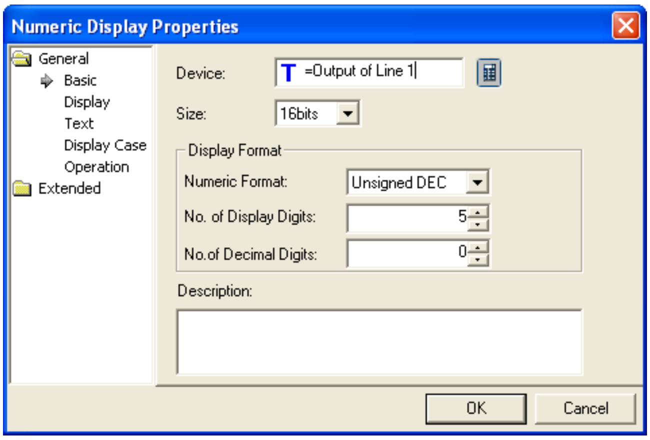
Description:

Let's assume that the device address indicating the output of line 1 has been changed. If you do not use the tag, you should change the device values of all the objects that use IW0.0.0. However, if you use the tag as shown above, and if you change the device address in the tag, the results are reflected in all objects.

14.1.1 Use of Tag

(1) Object

Name	Device Type	Device Address	Description
Output of line 1	Word	%IW0.0.0	The device value of %IW0.0.0 indicates the output of line 1.
Output of line 2	Word	%IW1.0.0	The device value of %IW1.0.0 indicates the output of line 2.
Lamp failure of line 3	Bit	%QX0.0.0	%QX0.0.0 device value indicates the lamp failure.
Screw shortage of line 3	Bit	%QX0.0.2	In case of screw shortage in line 3, %QX0.0.0 device value is On.



Device: =Output of Line 1

Size: 16bits

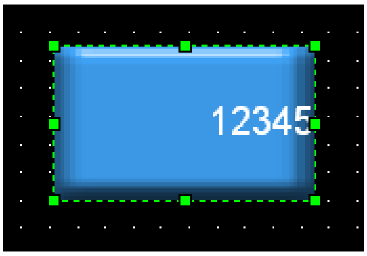
Display Format

Numeric Format: Unsigned DEC

No. of Display Digits: 5

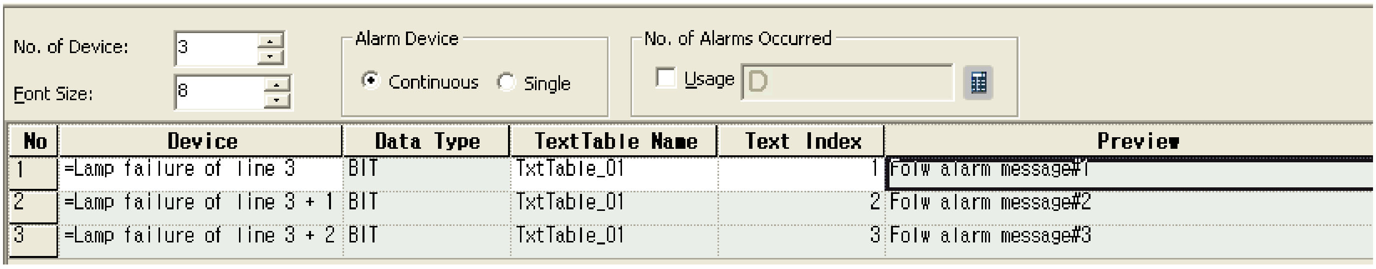
No.of Decimal Digits: 0

Description:



(2) Flow Alarm

Name	Device Type	Device Address	Description
Output of line 1	Word	%IW0.0.0	The device value of %IW0.0.0 indicates the output of line 1.
Output of line 2	Word	%IW1.0.0	The device value of %IW1.0.0 indicates the output of line 2.
Lamp failure of line 3	Bit	%QX0.0.0	%QX0.0.0 device value indicates the lamp failure.
Screw shortage of line 3	Bit	%QX0.0.2	In case of screw shortage in line 3, %QX0.0.0 device value is On.



No. of Device: 3

Font Size: 8

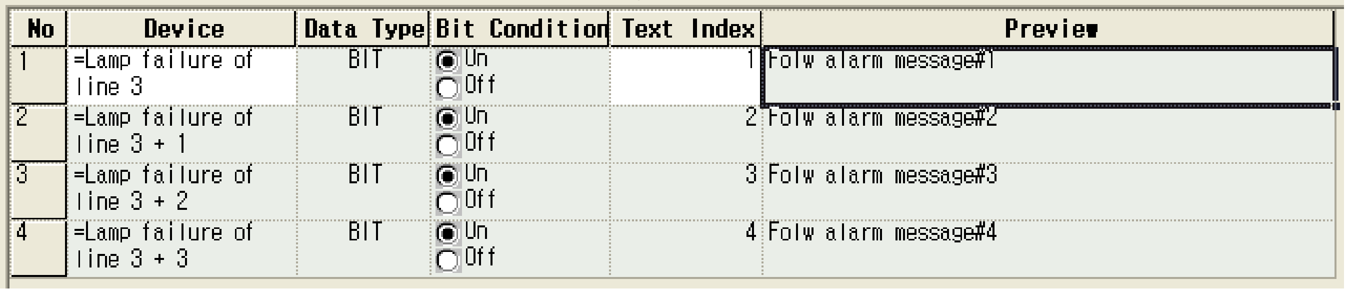
Alarm Device: ● Continuous ○ Single

No. of Alarms Occurred: ☐ Usage D

No	Device	Data Type	TextTable Name	Text Index	Preview
1	=Lamp failure of line 3	BIT	TxtTable_01	1	Folw alarm message#1
2	=Lamp failure of line 3 + 1	BIT	TxtTable_01	2	Folw alarm message#2
3	=Lamp failure of line 3 + 2	BIT	TxtTable_01	3	Folw alarm message#3

(3) History Alarm

Name	Device Type	Device Address	Description
Output of line 1	Word	%IW0.0.0	The device value of %IW0.0.0 indicates the output of line 1.
Output of line 2	Word	%IW1.0.0	The device value of %IW1.0.0 indicates the output of line 2.
Lamp failure of line 3	Bit	%QX0.0.0	%QX0.0.0 device value indicates the lamp failure.
Screw shortage of line 3	Bit	%QX0.0.2	In case of screw shortage in line 3, %QX0.0.0 device value is On.

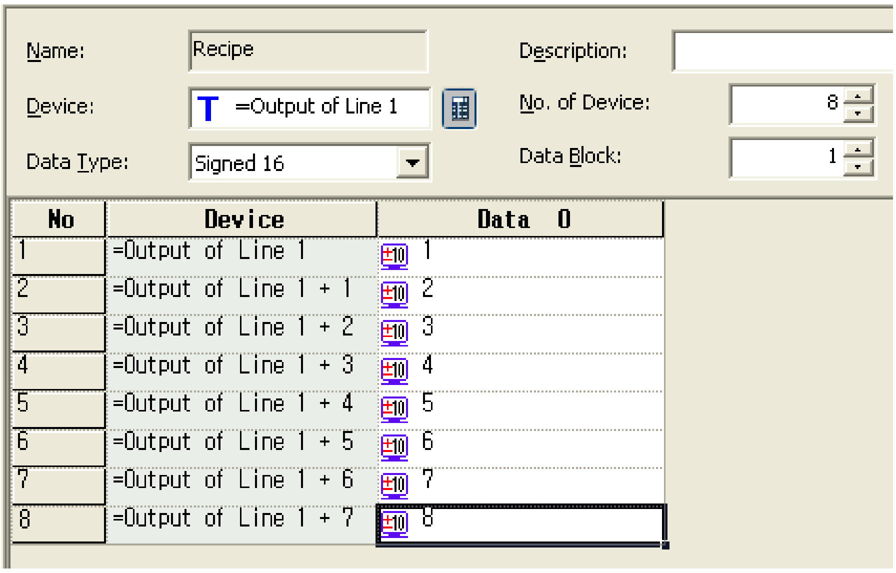


No	Device	Data Type	Bit Condition	Text Index	Preview
1	=Lamp failure of line 3	BIT	● On ○ Off	1	Folw alarm message#1
2	=Lamp failure of line 3 + 1	BIT	● On ○ Off	2	Folw alarm message#2
3	=Lamp failure of line 3 + 2	BIT	● On ○ Off	3	Folw alarm message#3
4	=Lamp failure of line 3 + 3	BIT	● On ○ Off	4	Folw alarm message#4

Select Tag as the device to supervise the history alarm.
When View Device is consecutively used, it is expressed in "= tag name + number" as shown above.

(4) Recipe

Name	Device Type	Device Address	Description
Output of line 1	Word	%IW0.0.0	The device value of %IW0.0.0 indicates the output of line 1.
Output of line 2	Word	%IW1.0.0	The device value of %IW1.0.0 indicates the output of line 2.
Lamp failure of line 3	Bit	%QX0.0.0	%QX0.0.0 device value indicates the lamp failure.
Screw shortage of line 3	Bit	%QX0.0.2	In case of screw shortage in line 3, %QX0.0.0 device value is On.



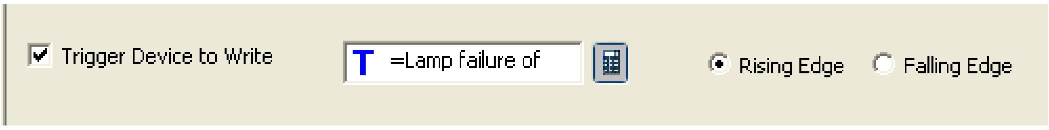
Name: Recipe
Description:
Device: T =Output of Line 1
No. of Device: 8
Data Type: Signed 16
Data Block: 1

No	Device	Data 0
1	=Output of Line 1	1
2	=Output of Line 1 + 1	2
3	=Output of Line 1 + 2	3
4	=Output of Line 1 + 3	4
5	=Output of Line 1 + 4	5
6	=Output of Line 1 + 5	6
7	=Output of Line 1 + 6	7
8	=Output of Line 1 + 7	8

Select the word tag as the recipe object device. The recipe uses consecutive devices, so it is expressed in "= tag name + number" as shown above.

(5) Others

A tag is available everywhere a device can be input.



☑ Trigger Device to Write | T =Lamp failure of | ● Rising Edge ○ Falling Edge

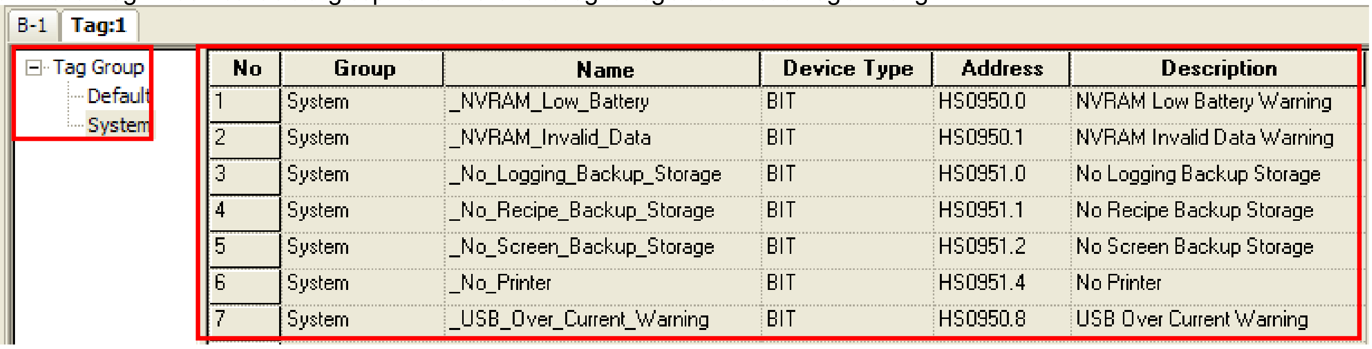
However, tag setting is not possible in the project properties information.

14.1.2 Tag Setting

The following is how to register the tag.

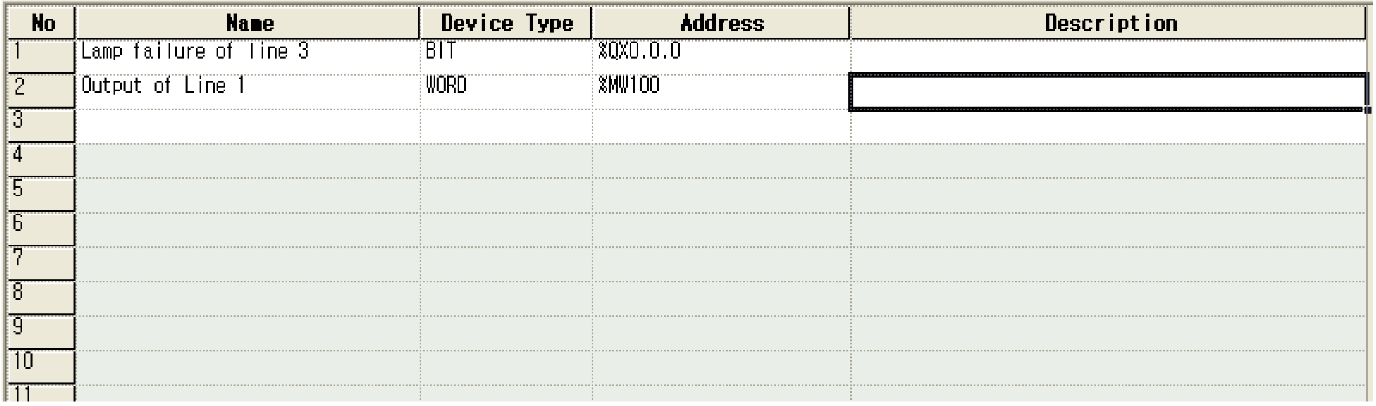
[Sequence]

(a) Select [Common]-[Tag] in the menu or press the right button of the mouse in [Tag] of the project tree item and then select [Open] in the context menu. Tag window consists of group tree at the left and tag list registered in each tag at the right.



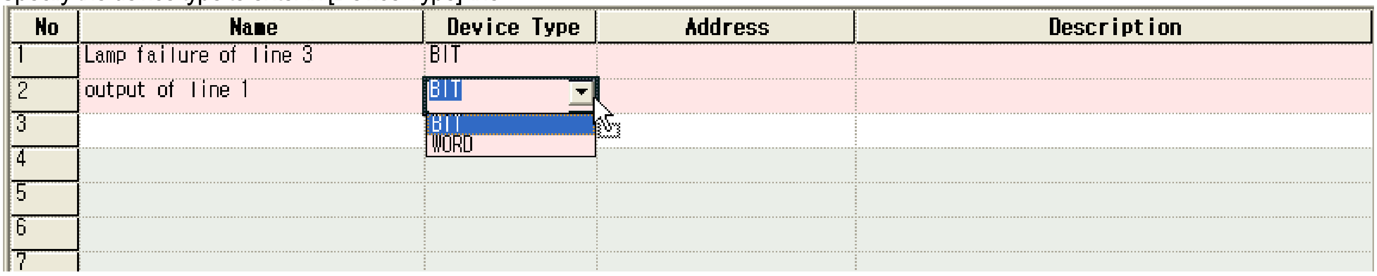
No	Group	Name	Device Type	Address	Description
1	System	_NVRAM_Low_Battery	BIT	HS0950.0	NVRAM Low Battery Warning
2	System	_NVRAM_Invalid_Data	BIT	HS0950.1	NVRAM Invalid Data Warning
3	System	_No_Logging_Backup_Storage	BIT	HS0951.0	No Logging Backup Storage
4	System	_No_Recipe_Backup_Storage	BIT	HS0951.1	No Recipe Backup Storage
5	System	_No_Screen_Backup_Storage	BIT	HS0951.2	No Screen Backup Storage
6	System	_No_Printer	BIT	HS0951.4	No Printer
7	System	_USB_Over_Current_Warning	BIT	HS0950.8	USB Over Current Warning

(b) Select 'Default' in the left group tree and select the cell in [Name] line and enter the name to use.



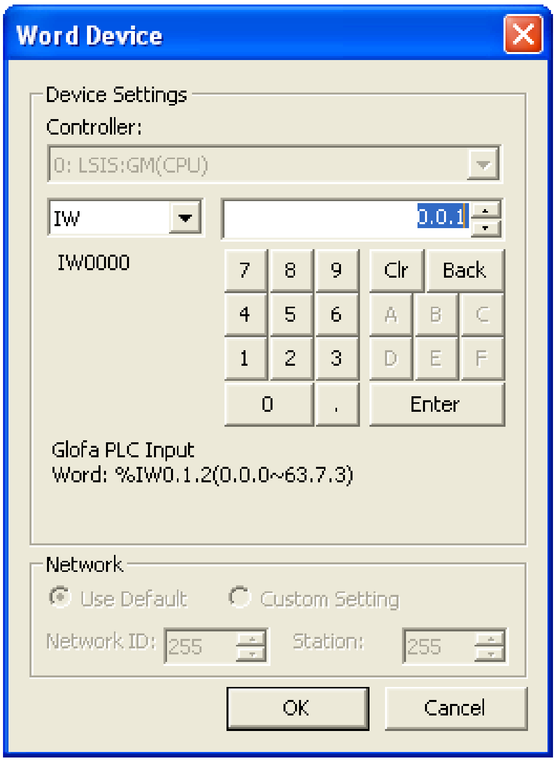
No	Name	Device Type	Address	Description
1	Lamp failure of line 3	BIT	%QX0.0.0	
2	Output of Line 1	WORD	%MW100	
3				
4				
5				
6				
7				
8				
9				
10				
11				

(c) Specify the device type to enter in [Device Type] line.



No	Name	Device Type	Address	Description
1	Lamp failure of line 3	BIT		
2	output of line 1	BIT		
3				
4				
5				
6				
7				

(d) If you select a cell in [Address] line, a button is displayed. Press the button to enter the device address.



Word Device

Device Settings

Controller: 0: LSIS:GM(CPU)

IW 0.0.1

IW0000

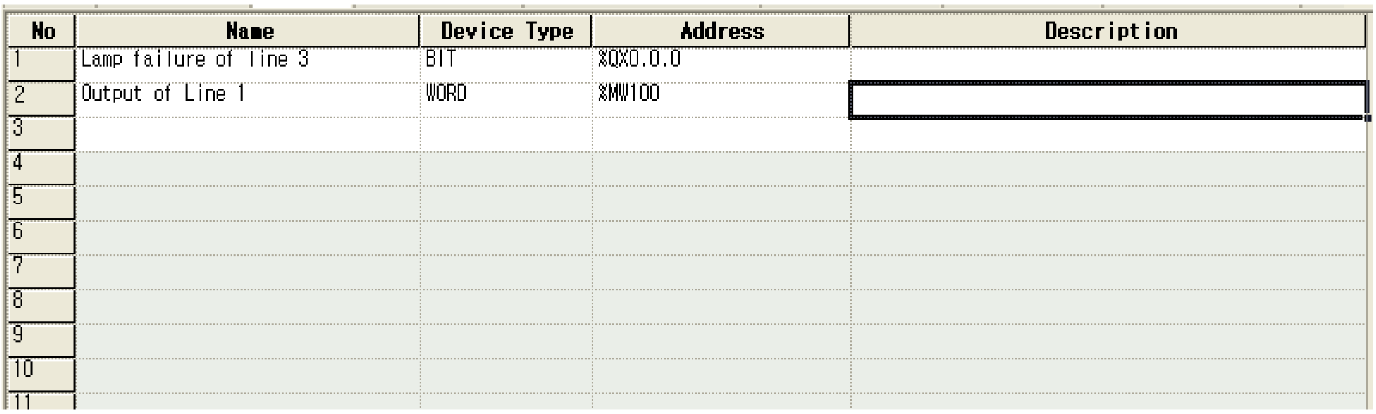
Glofa PLC Input
Word: %IW0.1.2(0.0.0~63.7.3)

Network

● Use Default ○ Custom Setting

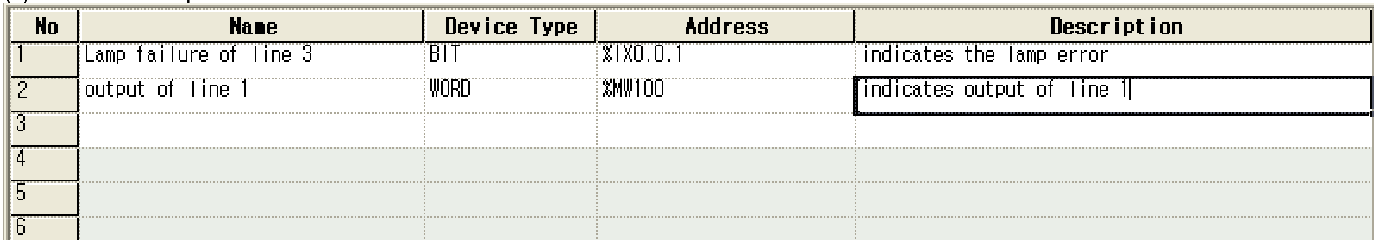
Network ID: 255 Station: 255

Select a device as shown above.



No	Name	Device Type	Address	Description
1	Lamp failure of line 3	BIT	%QX0.0.0	
2	Output of Line 1	WORD	%MW100	
3				
4				
5				
6				
7				
8				
9				
10				
11				

(e) Enter the description of each name.

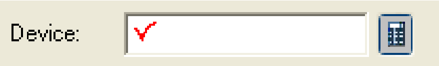


No	Name	Device Type	Address	Description
1	Lamp failure of line 3	BIT	%IX0.0.1	indicates the lamp error
2	output of line 1	WORD	%MW100	indicates output of line 1
3				
4				
5				
6				

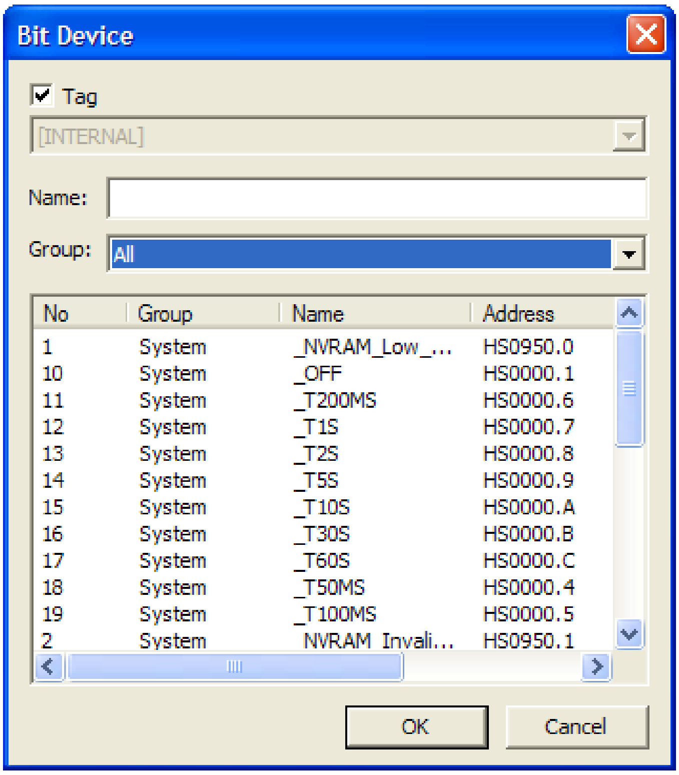
14.1.3 Entry of Device Address by Tag

1) Tag Selection Dialog Box

Enter a tag in the device entry window of the object item or common setting item (history alarm or flow alarm).



Press the button ▦. If you press the button, the following device selection dialog box appears. Choose ☑ Tag at the top.



☑ Tag

[INTERNAL]

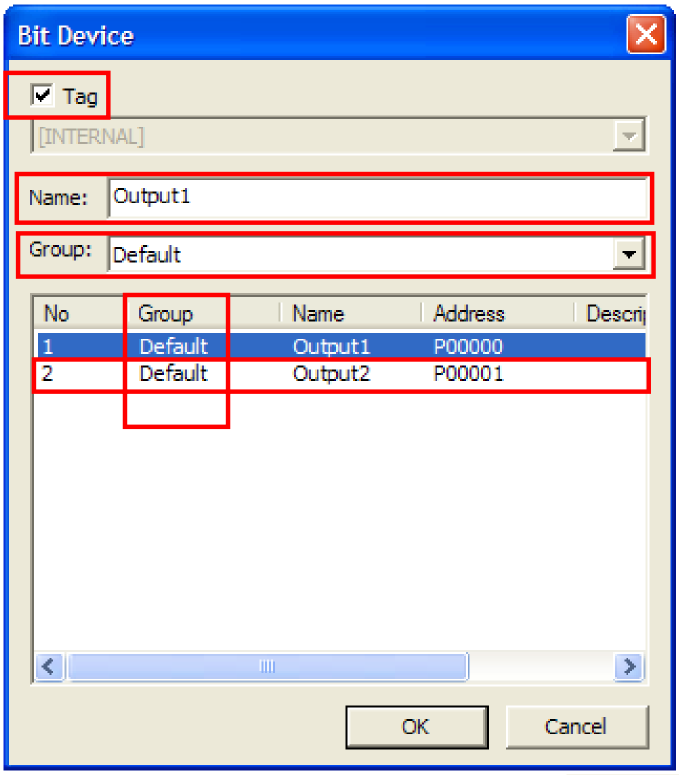
Name:

Group: All

No	Group	Name	Address
1	System	_NVRAM_Low_…	HS0950.0
10	System	_OFF	HS0000.1
11	System	_T200MS	HS0000.6
12	System	_T1S	HS0000.7
13	System	_T2S	HS0000.8
14	System	_T5S	HS0000.9
15	System	_T10S	HS0000.A
16	System	_T30S	HS0000.B
17	System	_T60S	HS0000.C
18	System	_T50MS	HS0000.4
19	System	_T100MS	HS0000.5
2	System	_NVRAM_Invali…	HS0950.1

I

n the dialog box, the list of available tags is displayed among the tag lists set by the user.
Choose the tag to use.
Sorting by group is available and you can input name directly.



☑ Tag

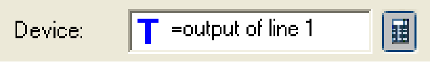
[INTERNAL]

Name: Output1

Group: Default

No	Group	Name	Address	Descri
1	Default	Output1	P00000	
2	Default	Output2	P00001	

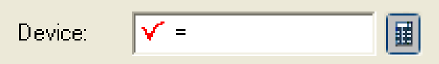
Double-click on the selected tag or choose the tag and then press OK.
The tag selected by the user is entered in the device entry box.



Device: T =output of line 1

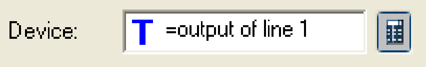
The tag name entered by the user is “output of line 1”, but the tag name displayed in the device address entry box is displayed with ‘=’ before it. This indicates that the currently entered address is referring to the tag list. In the program, the name with ‘=’ removed among the currently entered texts is inspected in compile.

(2) Direct Entry
If you exactly know the tag name, enter the tag name in the address entry box.
When you directly enter the tag name, enter ‘=’ first, which indicates the tag entry start.



Device: ✓ =

Enter the tag name to use. When you finish entry, press Enter key to report entry completed.

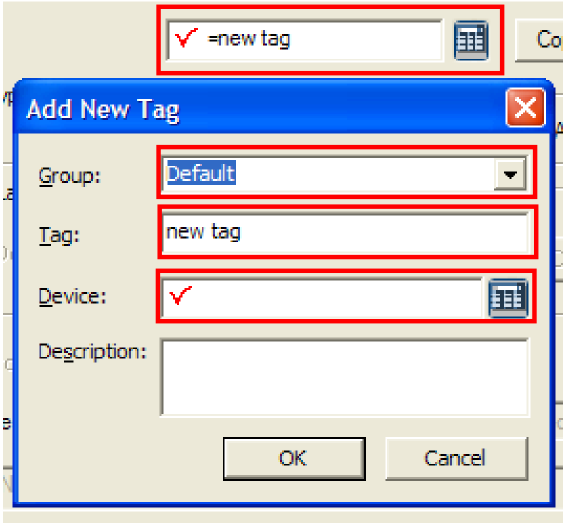


Device: T =output of line 1

The image of the address entry box turns into a tag as shown above.

(3) Tag Registration in Address Entry Box

If the user enters a wrong tag name or a name which is not in the tag list, the program judges that a new tag is being registered. In such a case, a warning (buzzer) is released to the user and a dialog box where the user can enter a new tag is invoked.



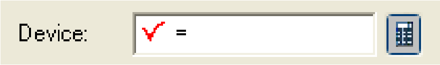
=new tag

Group: Default

Tag: new tag

Device: ✓

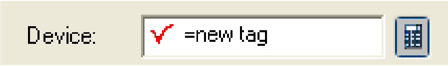
[Add New Tag] dialog box has an address entry box where you can enter the device address and a tag description entry window.

You cannot enter a tag in the device address entry window  , but only the address.

Device: ✓ =

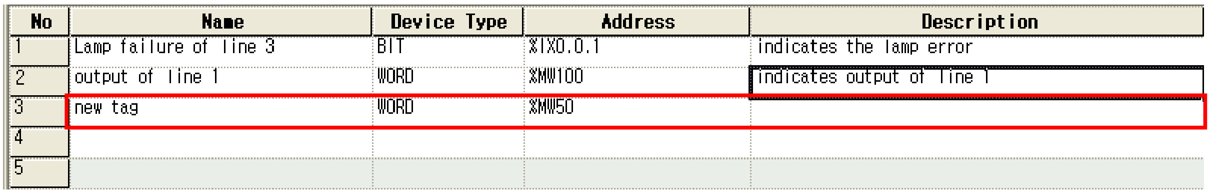
Enter the new address in the device entry box and press .

The name of the newly registered tag is displayed in the address entry box.



Device: ✓ =new tag

You can confirm and modify the newly registered tag in the tag registration display.



No	Name	Device Type	Address	Description
1	Lamp failure of line 3	BIT	%IX0.0.1	indicates the lamp error
2	output of line 1	WORD	%MW100	indicates output of line 1
3	new tag	WORD	%MW50	
4				
5				

14.1.4 Tag Name Rule

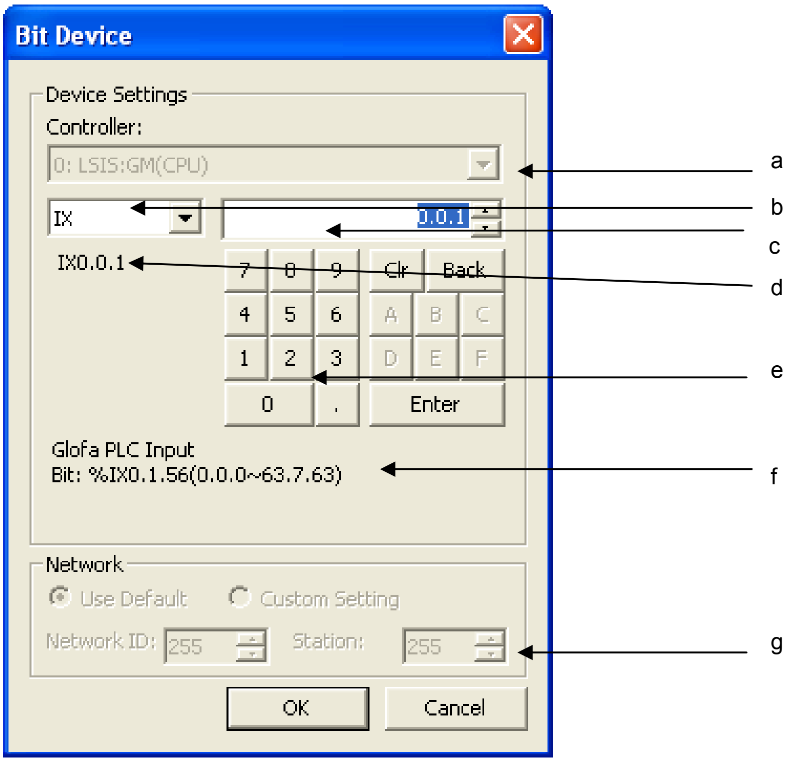
Each tag name is unique in a project and special characters cannot be used. The following is a list of tag name rules.

Number	A name cannot begin with a number. (E.g. 3ABCD)
Special character	Special characters cannot be used with an exception of'_'.
Blank character	A blank character placed before or after a name is not recognized as a name.
Device name	A device address expression of the connection PLC cannot be used as a name(E.g. D0012, %MW123)
Hexadecimal number	A hexadecimal number such as H234 cannot be used as a name.

14.1.5 Tag Entry Window Device Setting

(1) Entry in Device Setting Dialog Box

If you select an entry cell in the [Address] line of the tag entry window with the mouse, the cell such as is chosen and a button is displayed on the right. Press the button to invoke the device setting dialog box.



Controller: 0: LSIS:GM(CPU)

IX 0.0.1

IX0.0.1

Glofa PLC Input
Bit: %IX0.1.56(0.0.0~63.7.63)

Network ● Use Default ○ Custom Setting

Network ID: 255 Station: 255

Items	Description
(a) Controller	Selects the PLC to bring the data of the devices connected to XGT Panel.
(b) Device name	List of devices available of PLC devices
(c) Device address	Sets the Device offset
(d) Preview	Preview the entered device text
(e) Input Key	Address Entry button
(f) Example	Description of the device selected in (b)
(g) Station number	Used to set the station number when the PLC is connected to RS422/485.

Note

(1) Tag registration is provided in only one table. When the device is registered by using the tag in an object, if the additional tag is modified, all the objects that used the tag are affected.

(2) If the correct device is not entered during device cell editing, the entered device text is not displayed.

(3) If you press ESC during cell editing, the value goes back to the previous value.

(4) If you specify the device address of the object with the tag, the consecutive copy operation is not applied.

(2) Direct Address Entry
Click on the entry cell in the [Address] line of the tag entry window and enter the device address. Methods of entering the device address vary according to the connected PLC, so refer to the PLC device setting manual.

E.g. If you want to enter Glofa Series of LG Electronics, enter“%MW110”in the entry box.
If the text you entered is not a correct device address entry method, the contents of the entry cell is not changed and a blank appears.

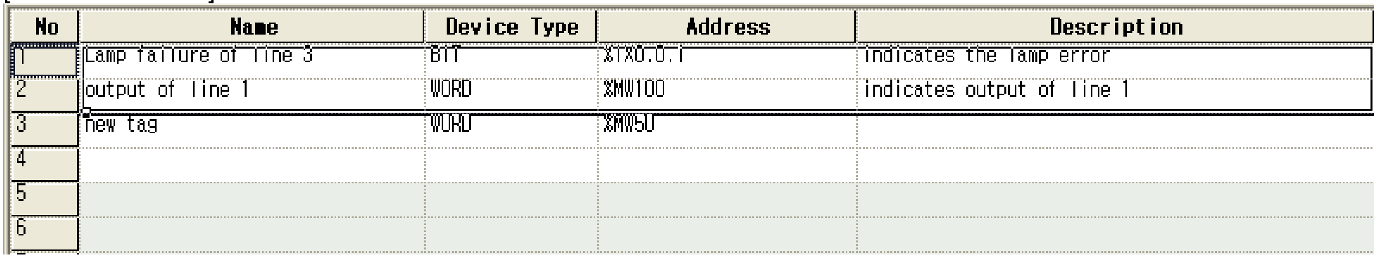
14.1.6 Deletion of Tag

The tag of the area selected in the declared tag list is deleted.

[Sequence]
(a) Select the area to delete. To delete it, select all the header of the line to delete.
(b) Select [Edit]-[Delete].

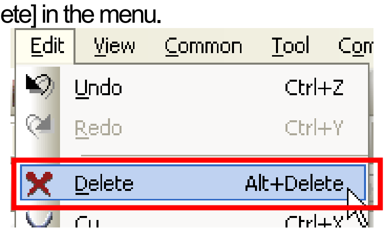
Delete the tag of which the entire line is selected in the area selected with the mouse. If the tag is being referred to and used in the object or common item, it is not deleted and a warning is released. The location of the tag you want to delete is displayed in [Find result] window. To delete a tag which was referred to elsewhere, modify the selected tag so that it is not used.

[Select Line to Delete]



No	Name	Device Type	Address	Description
1	Lamp failure of line 3	BIT	%IX0.0.1	indicates the lamp error
2	output of line 1	WORD	%MW100	indicates output of line 1
3	new tag	WORD	%MW50	
4				
5				
6				

Select [Delete] in the menu.



14.1.7 Changing Tag Type

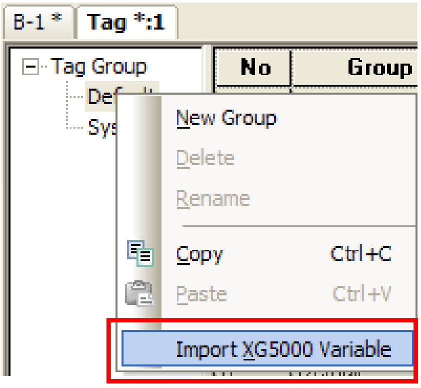
When the other screen's object or common setting items refer to a tag and its data type is BIT->WORD or WORD->BIT, it will be shown as error device through [Data Check]. For download, move to device setting areas and revise the device.

14.1.8 Importing XG5000 Symbol

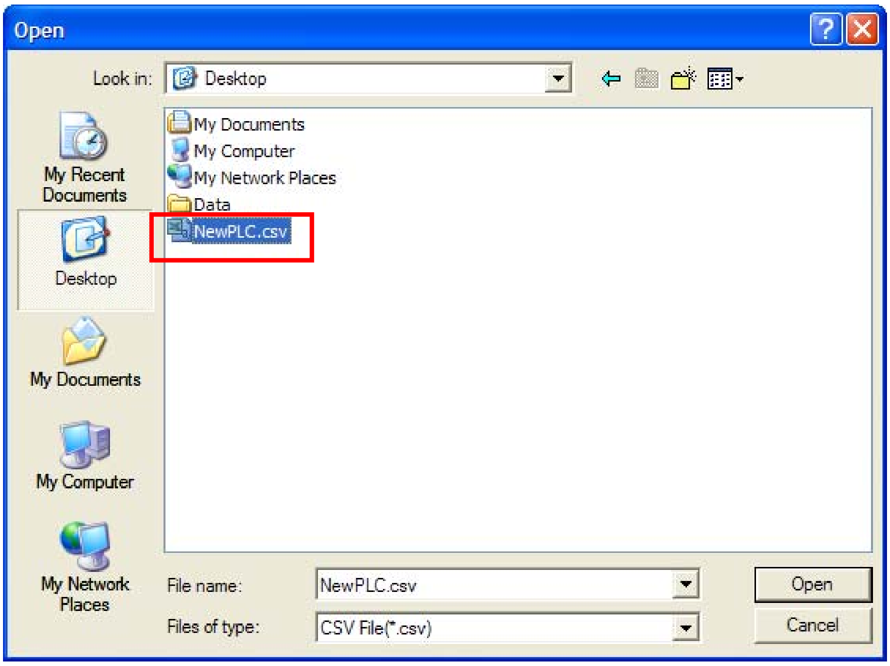
You can import the symbol declared at XG5000 that is PLC contorl program of LS Industrial Systems and the symbo can be used for XP-Builder.

[Procedures]

(a) Click the right mouse button at a tag group screen.


B-1 *
Tag *:1
Tag Group
Def
Sys
No
Group
New Group
Delete
Rename
Copy Ctrl+C
Paste Ctrl+V
Import XG5000 Variable

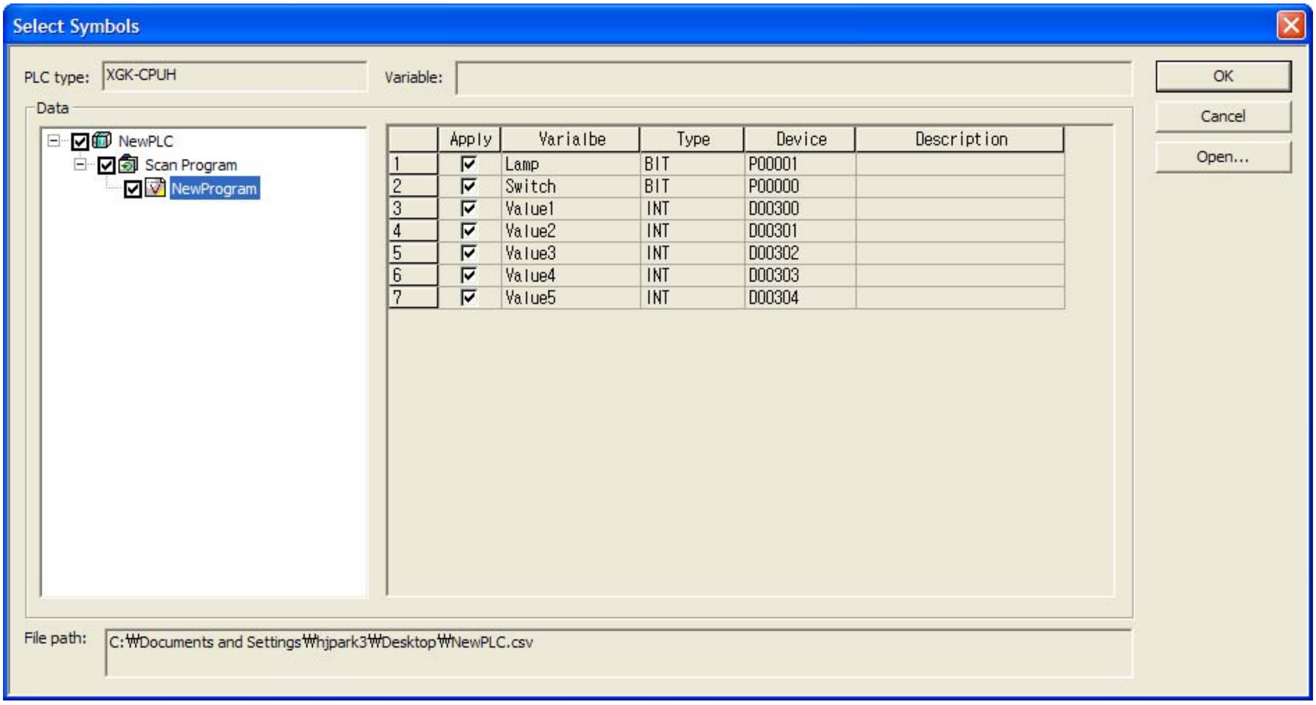
(b) Select the menu [Import XG50000 symbol].


Open
Look in: Desktop
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
My Documents
My Computer
My Network Places
Data
NewPLC.csv
Open
Cancel

File name: NewPLC.csv

Files of type: CSV File(*.csv)

(c) Select the symbol file(*.csv) exported from XG5000 and press ‘Open’ button.



Select Symbols
OK
Cancel
Open...
Data
☑ NewPLC
☑ Scan Program
☑ NewProgram

PLC type: XGK-CPUH

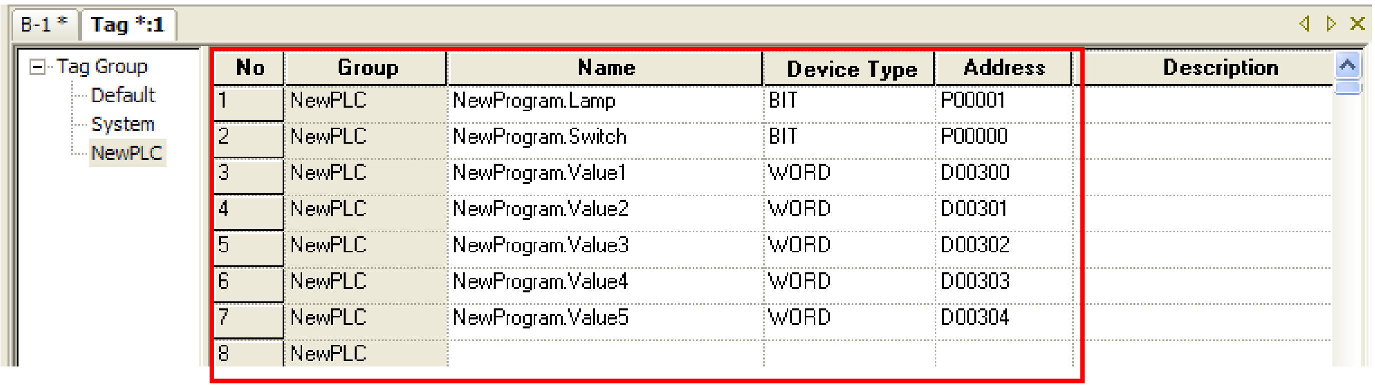
Variable:

	Apply	Varialbe	Type	Device	Description
1	☑	Lamp	BIT	P00001	
2	☑	Switch	BIT	P00000	
3	☑	Value1	INT	D00300	
4	☑	Value2	INT	D00301	
5	☑	Value3	INT	D00302	
6	☑	Value4	INT	D00303	
7	☑	Value5	INT	D00304	

File path: C:₩Documents and Settings₩hjpark3₩Desktop₩NewPLC.csv

(d) Select the symbol list to be imported and press ‘OK’ button to execute ‘Import’.

(e) Then, the tag will be added under the name of “NewPLC” as below.



B-1 *
Tag *:1
Tag Group
Default
System
NewPLC

No	Group	Name	Device Type	Address	Description
1	NewPLC	NewProgram.Lamp	BIT	P00001	
2	NewPLC	NewProgram.Switch	BIT	P00000	
3	NewPLC	NewProgram.Value1	WORD	D00300	
4	NewPLC	NewProgram.Value2	WORD	D00301	
5	NewPLC	NewProgram.Value3	WORD	D00302	
6	NewPLC	NewProgram.Value4	WORD	D00303	
7	NewPLC	NewProgram.Value5	WORD	D00304	
8	NewPLC				

Note

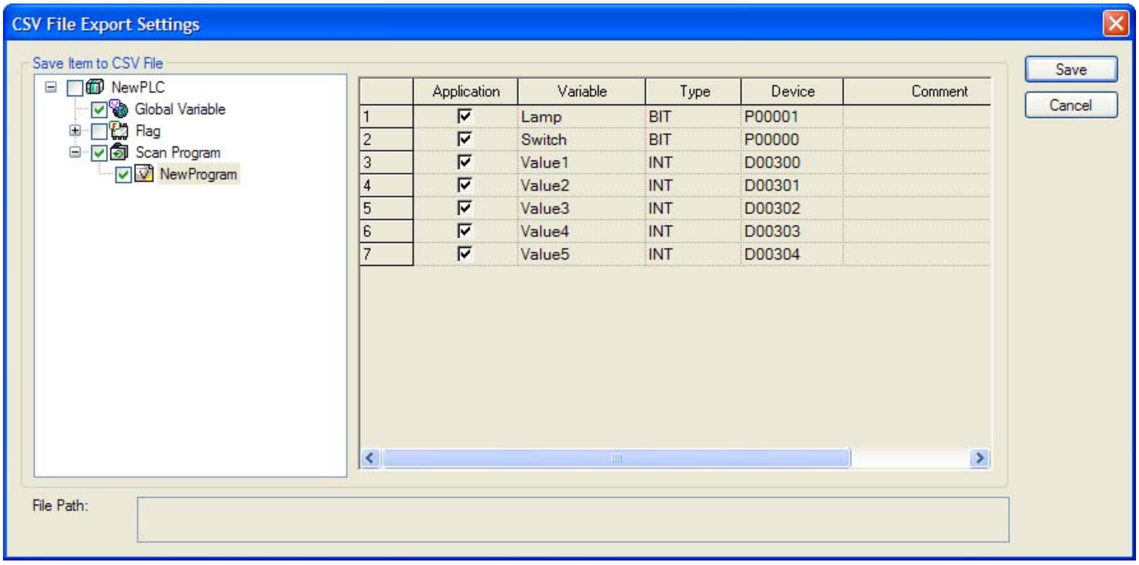
(1) Symbol Export from XG5000

[Procedures]

(a) Execute XG5000 whose version is 3.0 or more.

(b) Select [Project]-[Save as Variable/Comment] from the menu.

(c) After selecting the variable to be saved, press [OK] button to save the file.



CSV File Export Settings

Save Item to CSV File

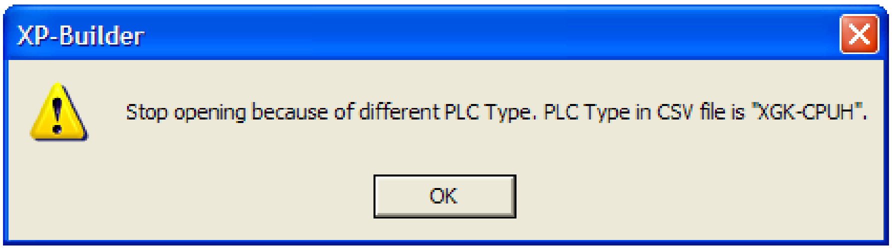
- ☐ NewPLC
  - ☑ Global Variable
  - ☐ Flag
  - ☑ Scan Program
    - ☑ NewProgram

	Application	Variable	Type	Device	Comment
1	☑	Lamp	BIT	P00001	
2	☑	Switch	BIT	P00000	
3	☑	Value1	INT	D00300	
4	☑	Value2	INT	D00301	
5	☑	Value3	INT	D00302	
6	☑	Value4	INT	D00303	
7	☑	Value5	INT	D00304	

File Path:

(2) In case of applying different PLC type

If you have different PLC type when importing the file from XP-Builder, the below message will be shown.



XP-Builder

Stop opening because of different PLC Type. PLC Type in CSV file is "XGK-CPUH".

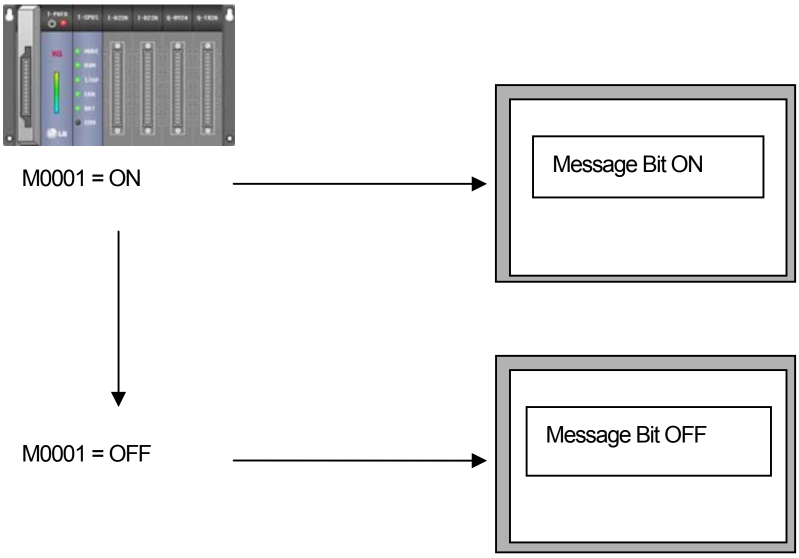
14.2 Text Table

This is the function of putting together in advance the text to be used by the user and registering them.
If the text table consists of multiple tables, the appropriate text table can be selected with a number in each table.
You can make as many text tables as you want in a project. You can register up to 10,000 text tables in each text table.
Text entry by using the text table enables language change in runtime. It is recommended that you enter a text using the text table in a project which requires language change.

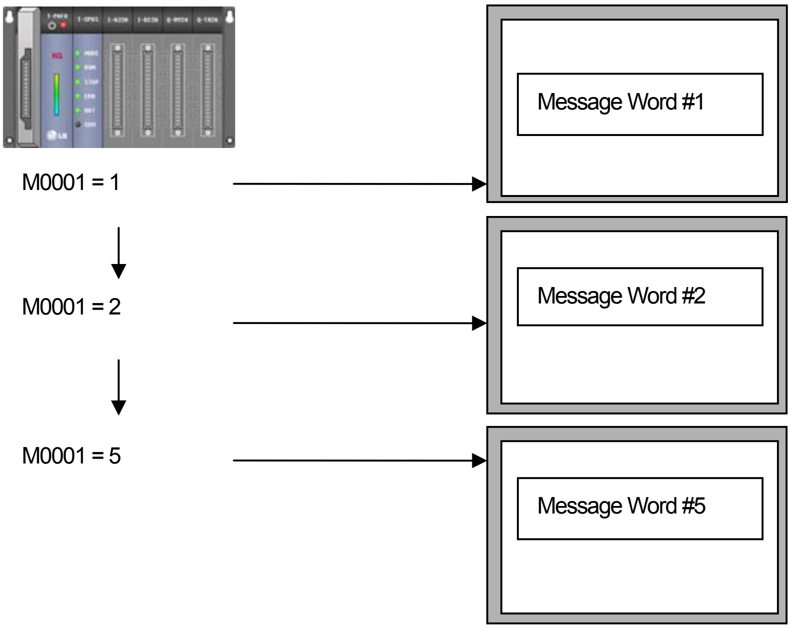
14.2.1 Text Table

(1) Bit/Word Message, Object Caption

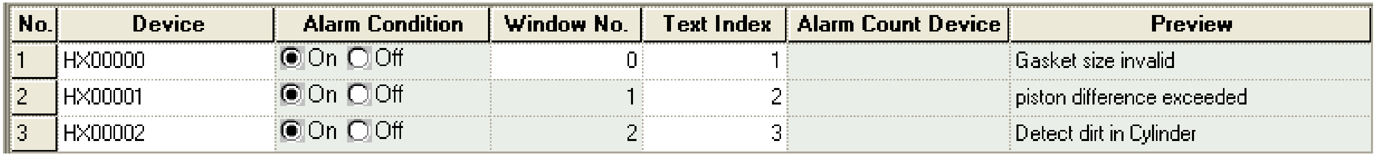
You can set texts varying according to the status (On/Off) of the setting device (e.g. M0001) as in the bit message.
You can set texts varying according to the status (On/Off) of the connection device when you select the object caption in the text table.



You can set texts differently according to the value of the setting device (e.g. M0001) as in the word message.

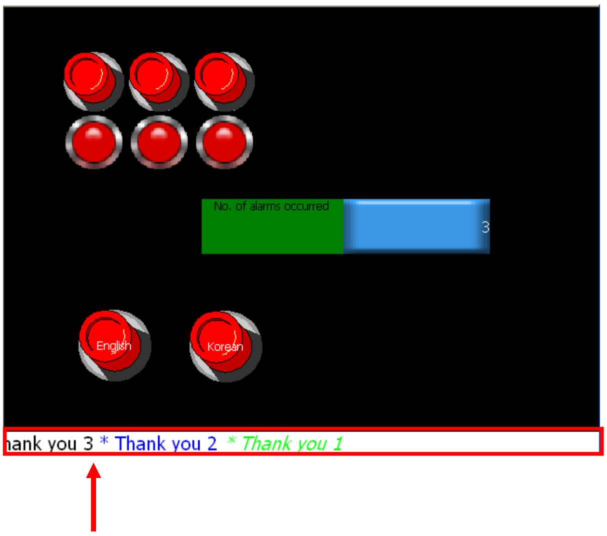

M0001 = 1
M0001 = 2
M0001 = 5
Message Word #1
Message Word #2
Message Word #5

(2) Flow Alarm



No.	Device	Alarm Condition	Window No.	Text Index	Alarm Count Device	Preview
1	HX00000	● On ○ Off	0	1		Gasket size invalid
2	HX00001	● On ○ Off	1	2		piston difference exceeded
3	HX00002	● On ○ Off	2	3		Detect dirt in Cylinder

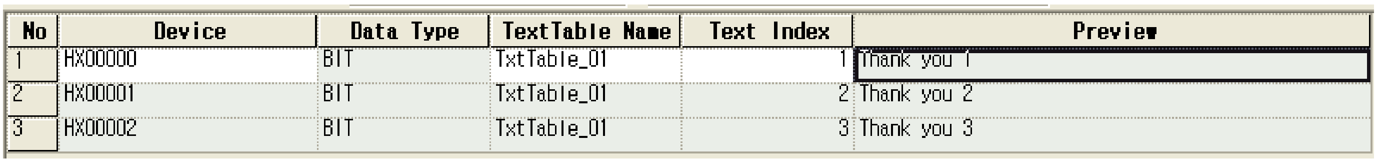
Flow Alarm Message


No. of alarms occurred
3
English
Korean

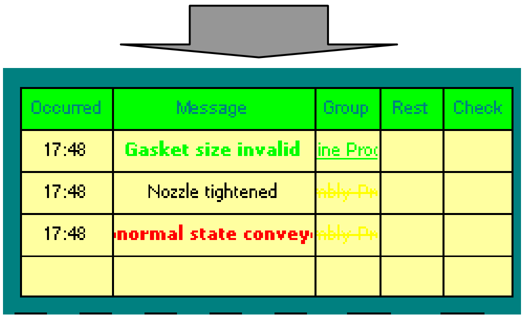
hank you 3 * Thank you 2 * Thank you 1

Flow Alarm

(3) History Alarm

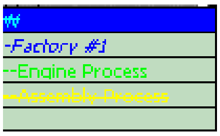


No	Device	Data Type	TextTable Name	Text Index	Preview
1	HX00000	BIT	TxtTable_01	1	Thank you 1
2	HX00001	BIT	TxtTable_01	2	Thank you 2
3	HX00002	BIT	TxtTable_01	3	Thank you 3



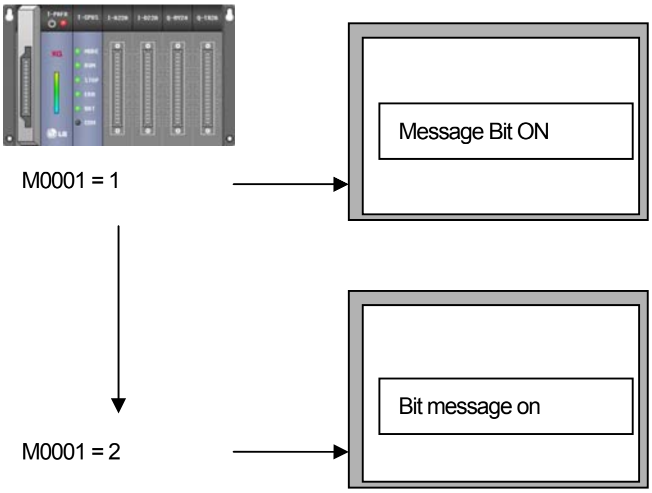
Occurred	Message	Group	Rest	Check
17:48	Gasket size invalid	ine Proc		
17:48	Nozzle tightened	nbly Pr		
17:48	normal state convey	nbly Pr		

(4) Alarm Navigator



(5) Language Change (Device)

Language change device:
M0001
1: English
2: Korean

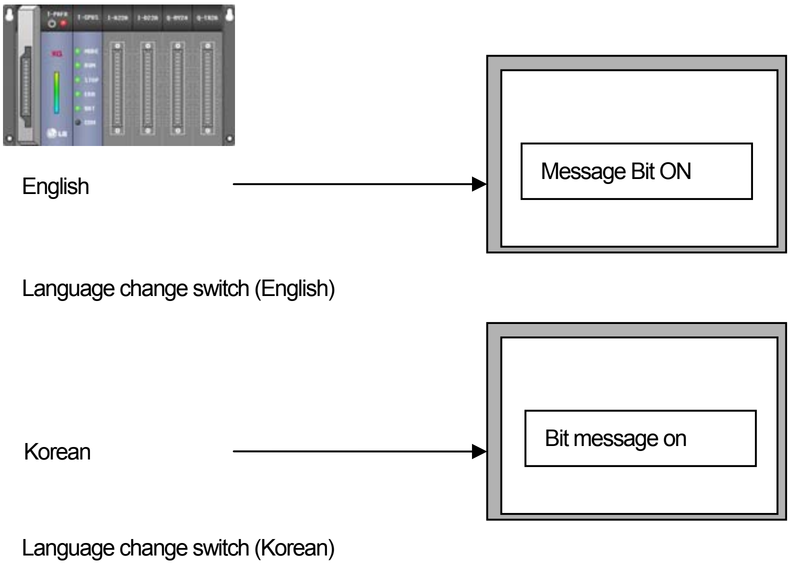

M0001 = 1

Message Bit ON

M0001 = 2

Bit message on

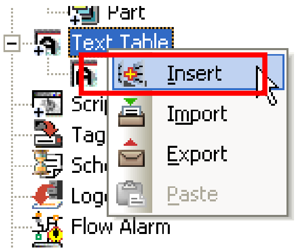
(6) Language change (Language Change Switch)


English
Message Bit ON
Language change switch (English)
Korean
Bit message on
Language change switch (Korean)

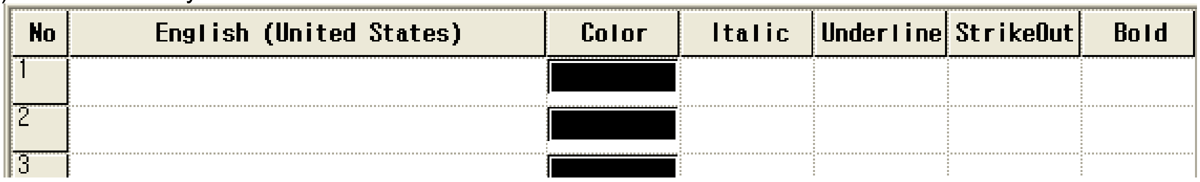
14.2.2 Text Table Setting

[Sequence]

(a) Press the right button on the mouse on [Text Table] item in the project tree. If you press [Insert] in the context menu, the text table display is invoked.


Part
Text Table
Insert
Import
Export
Paste
Scri
Tag
Sch
Log
Flow Alarm

(b) The text table entry window is invoked.

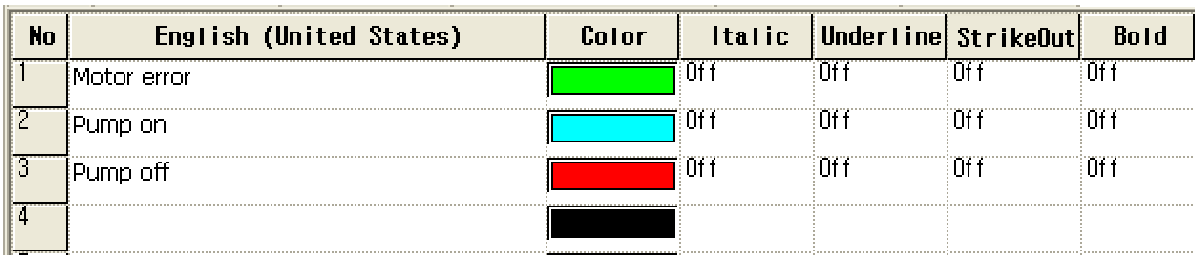


No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1		■				
2		■				
3		■				

(c) Enter the Text in the [English(United States)] row.

(d) Select the Text color of the color row.

(e) Set the Italic, Underline, Strikeout and Bold.



No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Motor error	🟩	Off	Off	Off	Off
2	Pump on	🟦	Off	Off	Off	Off
3	Pump off	🟥	Off	Off	Off	Off
4		⬛				

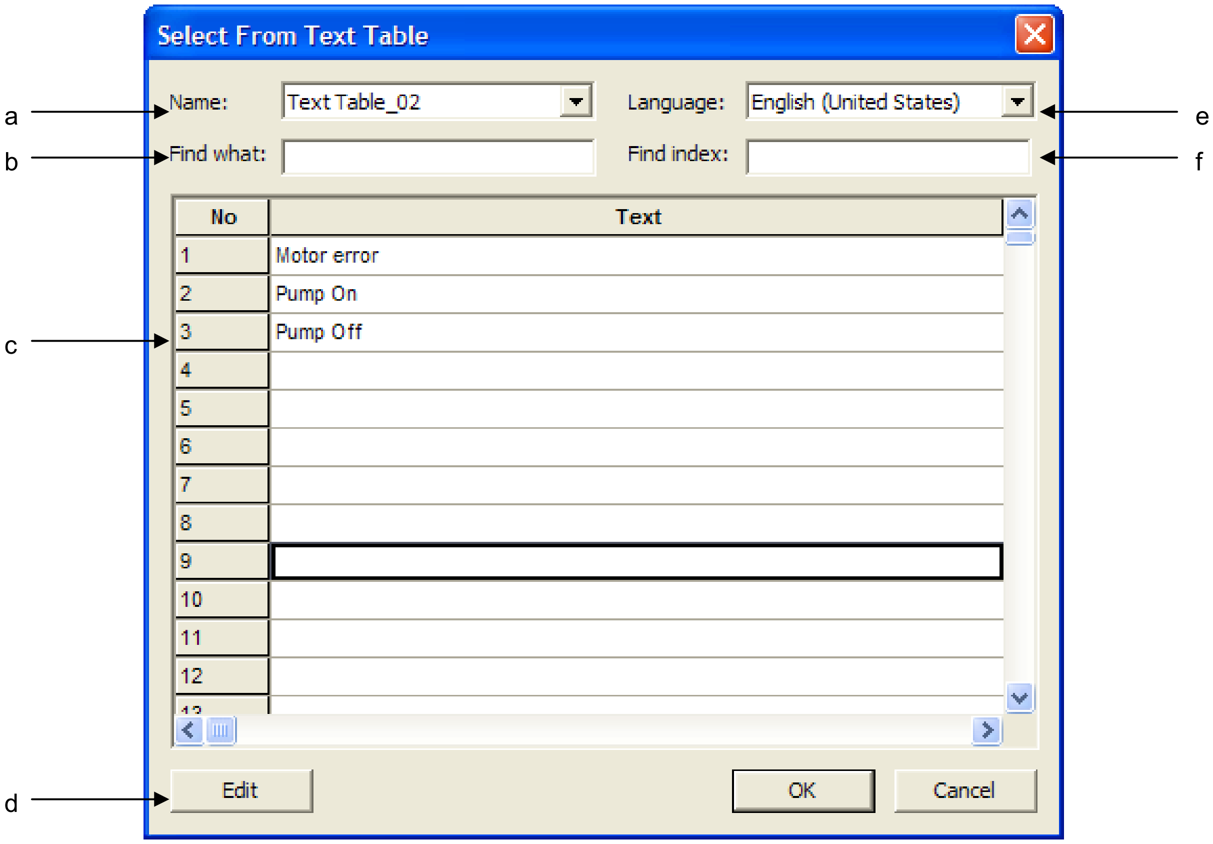
14.2.3 Text Selection Dialog Box

[Sequence]

(a) Create [Bit Message] object in the window.

(b) Shift to [Text] setting tap in the [Bit Message] object properties window.

(c) If you press Text Table at the left bottom, the following text table selection dialog box is invoked.



Name: Text Table_02

Language: English (United States)

Find what:

Find index:

No	Text
1	Motor error
2	Pump On
3	Pump Off
4	
5	
6	
7	
8	
9	
10	
11	
12	

Item	Description
Text table name (a)	Text table name
Find what (b)	Input text to find at the text table and press ‘Enter’
Text (c)	Text to be inputted
Edit (d)	You can edit the text at the text table. If you delete the text, it will be deleted.
Language (e)	Current editing language
Find index (f)	Input index to find at the text table and press ‘Enter’

14.2.4 Bit Message Setting

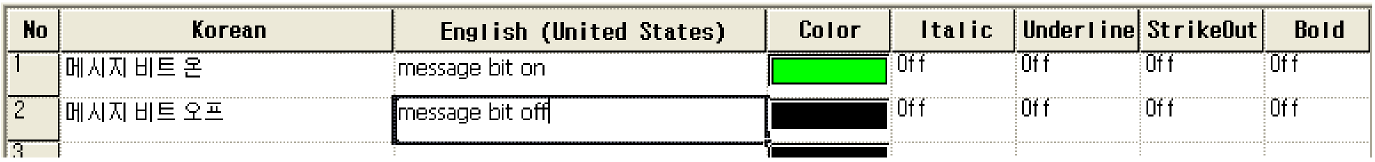
[Sequence]

(a) Add a text table.

(b) Select a newly created text table in the text table item of the project tree.

(c) Select Rename in the mouse context menu and change the text table name into “MessageBit”.

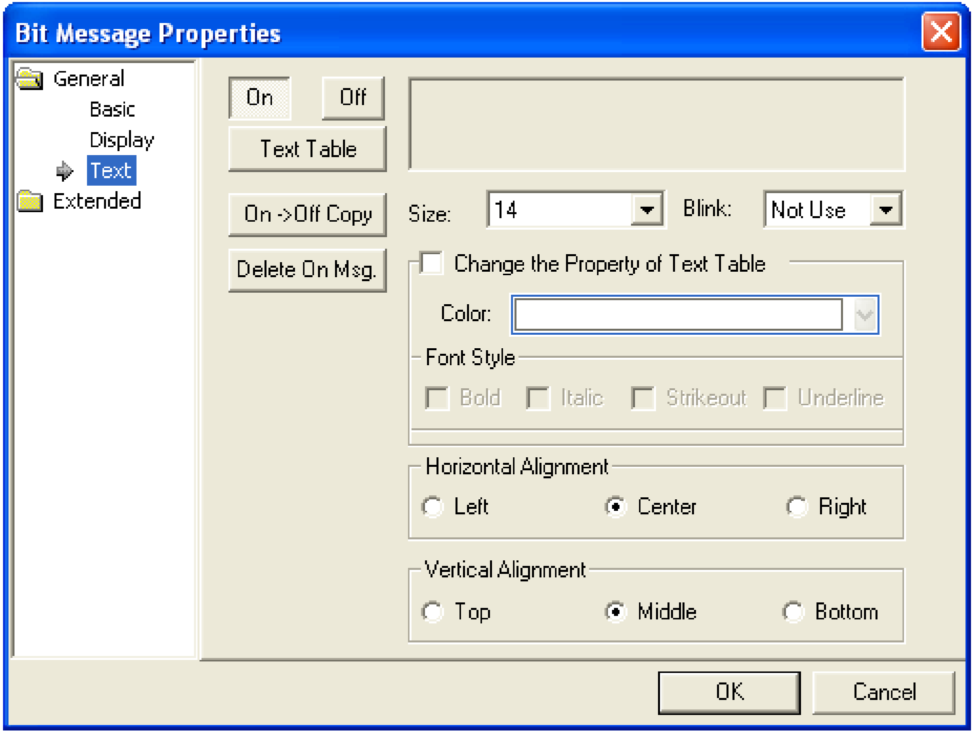
(d) Fill in the [English(United States)] and [Korean] rows in the “MessageBit” text table entry window.



No	Korean	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	메시지 비트 온	message bit on	🟩	Off	Off	Off	Off
2	메시지 비트 오프	message bit off	■	Off	Off	Off	Off
3							

(e) Create a bit message object in the screen

(f) Move to [Text] properties in the bit message object properties window.


Bit Message Properties
General
Basic
Display
Text
Extended
On
Off
Text Table
On ->Off Copy
Delete On Msg.
OK
Cancel

Size: 14

Blink: Not Use

☐ Change the Property of Text Table

Color:

Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

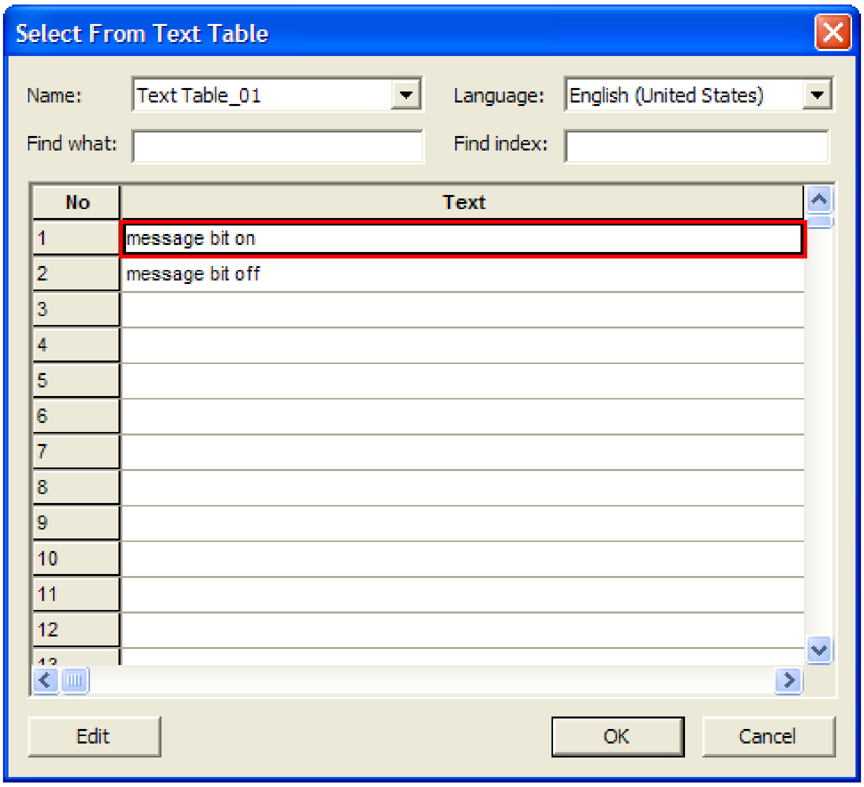
○ Left ● Center ○ Right

Vertical Alignment

○ Top ● Middle ○ Bottom

(g) Check whether On button is pressed.

(h) Press Text Table on the upper right to display the text selection dialog box.



Select From Text Table

Name: Text Table_01

Language: English (United States)

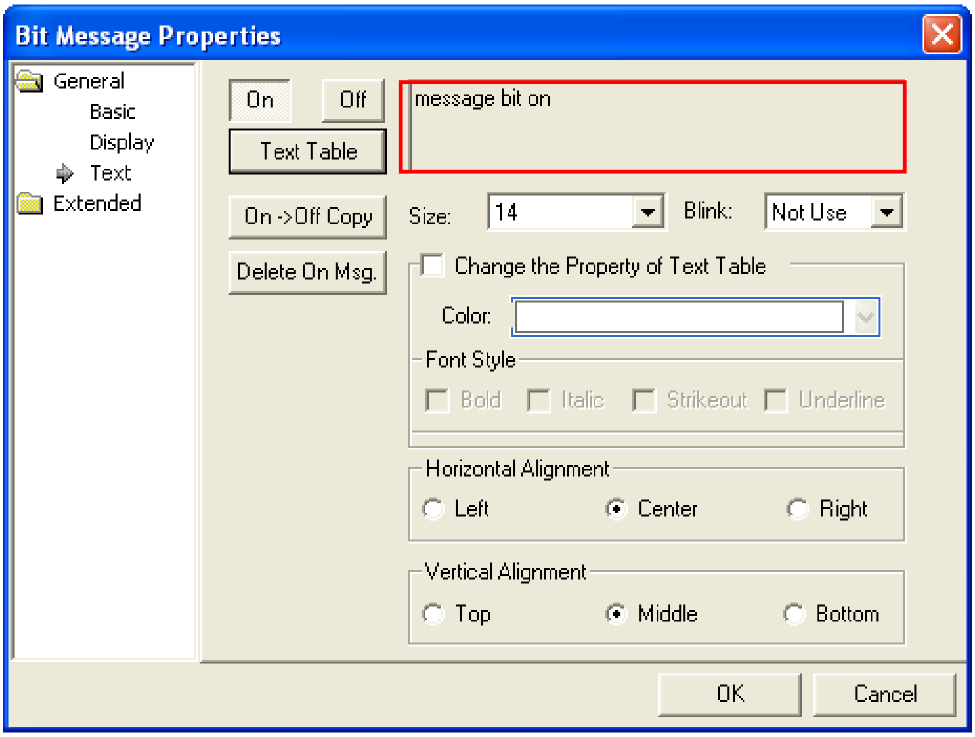
Find what:

Find index:

No	Text
1	message bit on
2	message bit off
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Edit
OK
Cancel

(i) Select On status message in [Select from Text Table] dialog box.



Bit Message Properties

message bit on

Size: 14

Blink: Not Use

☐ Change the Property of Text Table

Color:

Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

○ Left ● Center ○ Right

Vertical Alignment

○ Top ● Middle ○ Bottom

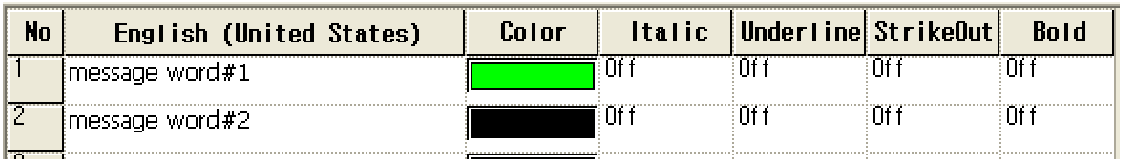
General
Basic
Display
Text
Extended
On
Off
Text Table
On ->Off Copy
Delete On Msg.
OK
Cancel

(j) Check whether the contents selected by the user is displayed in the window.

(k) Press On Off in the same way and select the Off status message.

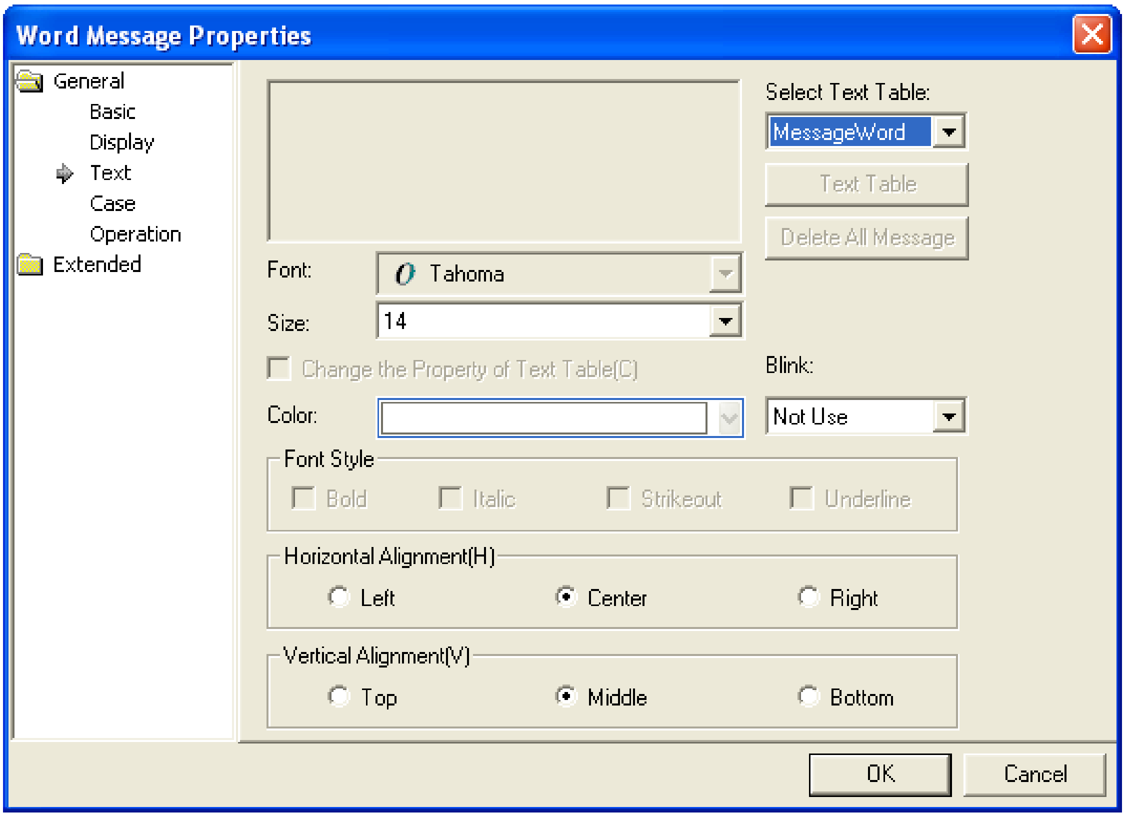
14.2.5 Word Message Setting

[Sequence]
(a) Add a text table.
(b) Select a newly created text table in the text table item of the project tree.
(c) Select in the mouse context menu and change the text table name into “MessageBit”.
(d) Fill in the [English(United States)] in the “MessageBit” text table entry window.



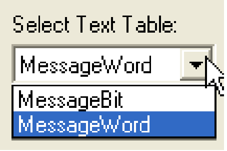
No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	message word#1	🟩	Off	Off	Off	Off
2	message word#2	⬛	Off	Off	Off	Off

(e) Create [Word Message] object in the window.
(f) Move to [Text] tap in the word message object properties window.



Word Message Properties
General
Basic
Display
Text
Case
Operation
Extended
Text Table
Delete All Message
OK
Cancel

Select Text Table: MessageWord
Font: Tahoma
Size: 14
☐ Change the Property of Text Table(C)
Blink: Not Use
Color:
Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline
Horizontal Alignment(H): ○ Left ● Center ○ Right
Vertical Alignment(V): ○ Top ● Middle ○ Bottom

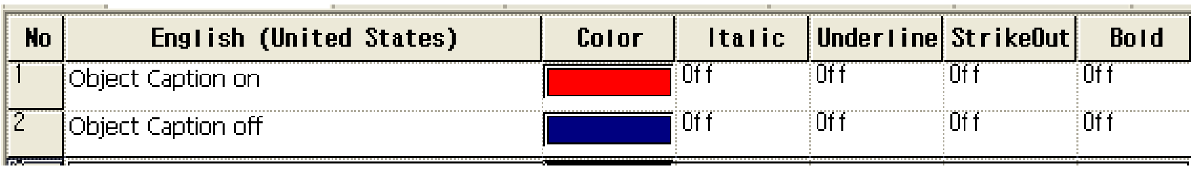
7) Select the text table (MessageWord) in the 

Select Text Table:
MessageWord
MessageBit
MessageWord

 combo on the upper right.

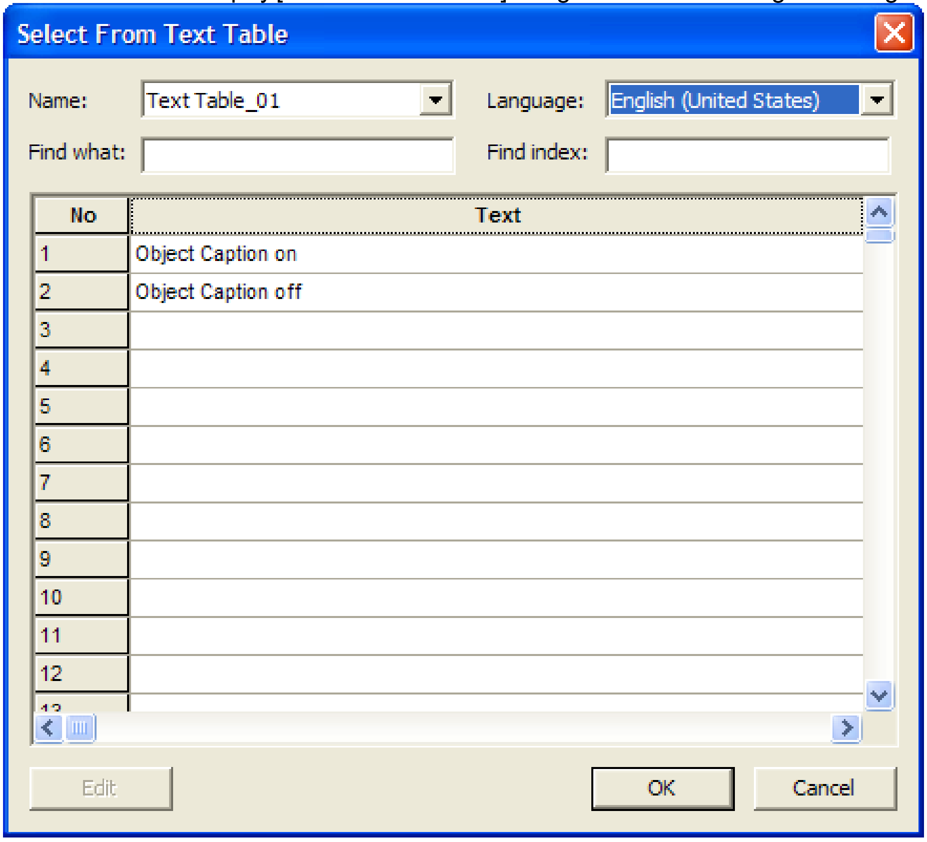
14.2.6 Object Caption

[Sequence]
(a) Add a text table.
(b) Select a newly created text table in the text table item of the project tree.
(c) Select Rename in the mouse context menu and change the text table name into 'object caption'.
(d) Fill in the [English(United States)] in the "object caption" text table entry window.



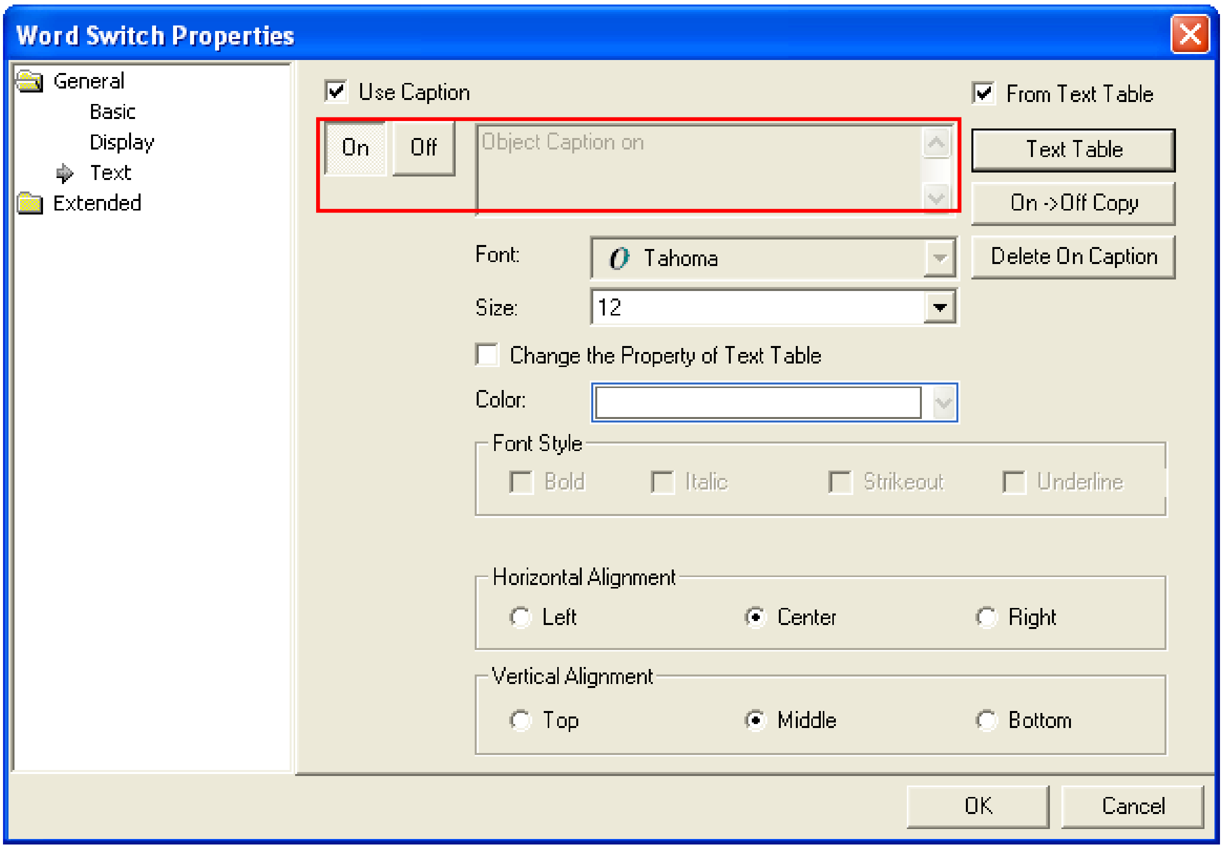
No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Object Caption on	🟥	Off	Off	Off	Off
2	Object Caption off	🟦	Off	Off	Off	Off

(e) Create an object in the window and shift to [Text] properties in the properties window.
(f) Check ☑ Use Caption. Check ☑ From Text Table as well to activate Text Table button.
(g) Press Text Table to display [Select from Text Table] dialog box. Select a message according to the status.



Name: Text Table_01
Language: English (United States)
Find what:
Find index:

No	Text
1	Object Caption on
2	Object Caption off
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	


Word Switch Properties
General
Basic
Display
Text
Extended
On
Off
Text Table
On ->Off Copy
Delete On Caption
Font Style
Horizontal Alignment
Vertical Alignment
OK
Cancel

☑ Use Caption

☑ From Text Table

Object Caption on

Font: Tahoma

Size: 12

☐ Change the Property of Text Table

Color:

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

(h) Check whether the selected message is displayed.

14.2.7 Flow Alarm

[Sequence]

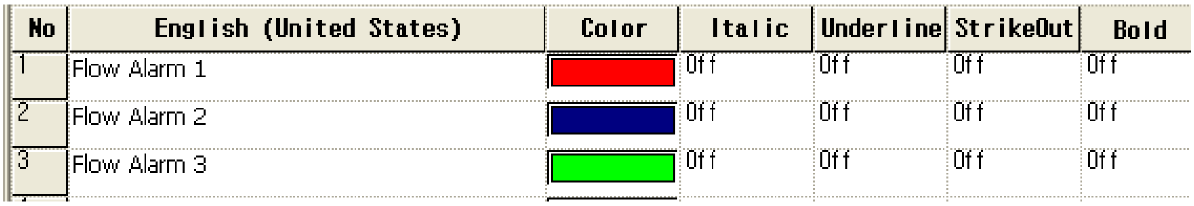
(a) Add a text table.

(b) Select a newly created text table in the text table item of the project tree.

(c) Select Rename in the mouse context menu and change the text table name into 'flow alarm contents'.

(d) Fill in the [Korean] in the "flow alarm contents" text table entry window.

Set the color and properties of texts to display.



No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Flow Alarm 1	🟥	Off	Off	Off	Off
2	Flow Alarm 2	🟦	Off	Off	Off	Off
3	Flow Alarm 3	🟩	Off	Off	Off	Off

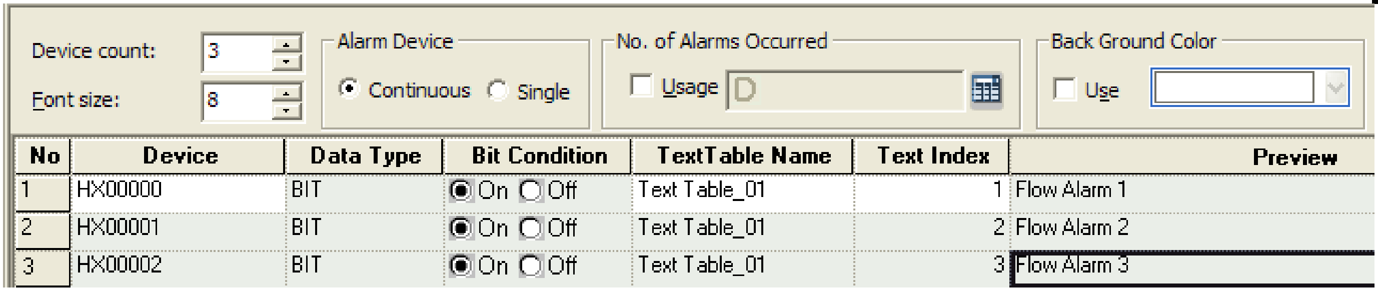
(e) Double-click on the flow alarm item of the project tree to display the entry window.

(f) Enter 3 as the number of alarm devices.

(g) Set Continuous as the device allotment method.

(h) Set the Bit Condition.

(i) Select the alarm device, click on the text table name row and select the "flow alarm contents" text table. Enter text start number 1 in the text number row. Check whether what you entered in the text table is displayed in Preview.



Device count: 3

Font size: 8

Alarm Device: ● Continuous ○ Single

No. of Alarms Occurred: ☐ Usage D

Back Ground Color: ☐ Use

No	Device	Data Type	Bit Condition	TextTable Name	Text Index	Preview
1	HX00000	BIT	● On ○ Off	Text Table_01	1	Flow Alarm 1
2	HX00001	BIT	● On ○ Off	Text Table_01	2	Flow Alarm 2
3	HX00002	BIT	● On ○ Off	Text Table_01	3	Flow Alarm 3

14.2.8 History Alarm Contents/Alarm Navigator

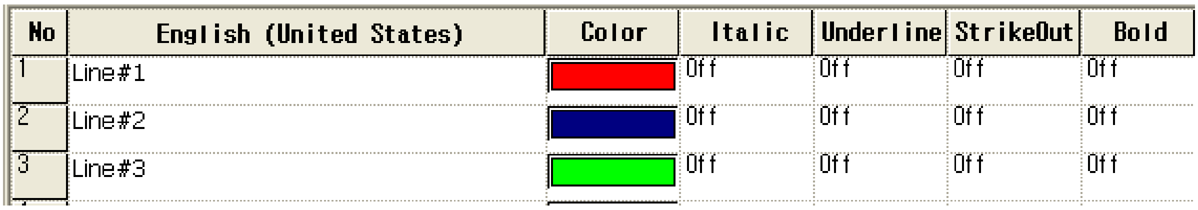
1) Add a text table.

2)) Select a newly created text table in the text table item of the project tree.

3) Select in the mouse context menu and change the text table name into “history alarm group.”

4) Fill in the [English] row in the “history alarm group” text table entry window.

5) Set the color and properties of texts to display.



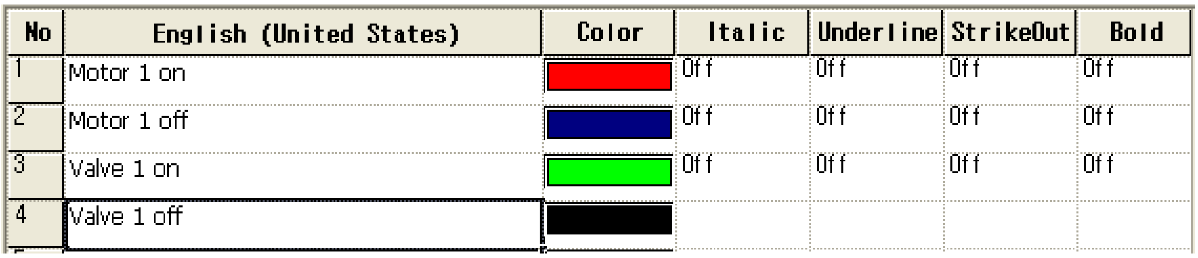
No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Line#1	🟥	Off	Off	Off	Off
2	Line#2	🟦	Off	Off	Off	Off
3	Line#3	🟩	Off	Off	Off	Off

6) Create another text table used in the history alarm list.

7) Select in the mouse context menu and change the text table name into “history alarm group.”

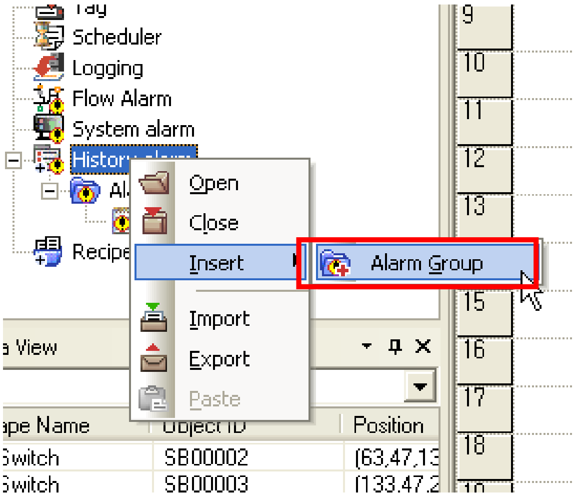
8) Fill in the [English] row in the “history alarm group” text table entry window.

9) Set the color and properties of text to display.

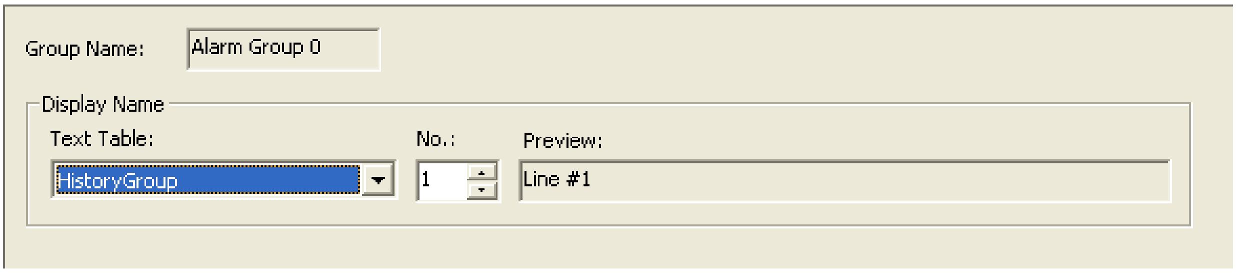


No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Motor 1 on	🟥	Off	Off	Off	Off
2	Motor 1 off	🟦	Off	Off	Off	Off
3	Valve 1 on	🟩	Off	Off	Off	Off
4	Valve 1 off	⬛				

Display the mouse context menu in the history alarm item of the project tree.


Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Insert
Alarm Group
Import
Export
Paste
View
Type Name
Object ID
Position
Switch
SB00002
(63,47,13
Switch
SB00003
(133,47,2
9
10
11
12
13
15
16
17
18

Select Alarm Group menu and insert the alarm group.


Group Name: Alarm Group 0

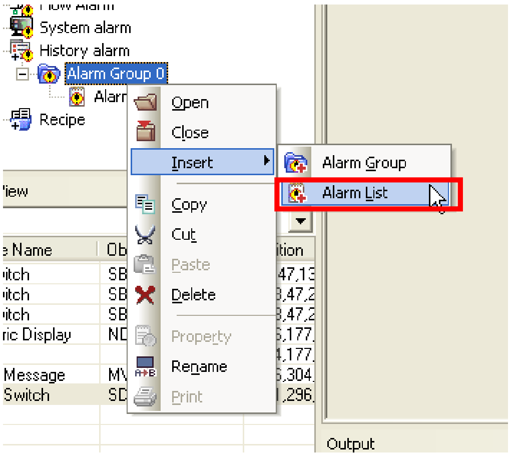
Display Name

Text Table: HistoryGroup

No.: 1

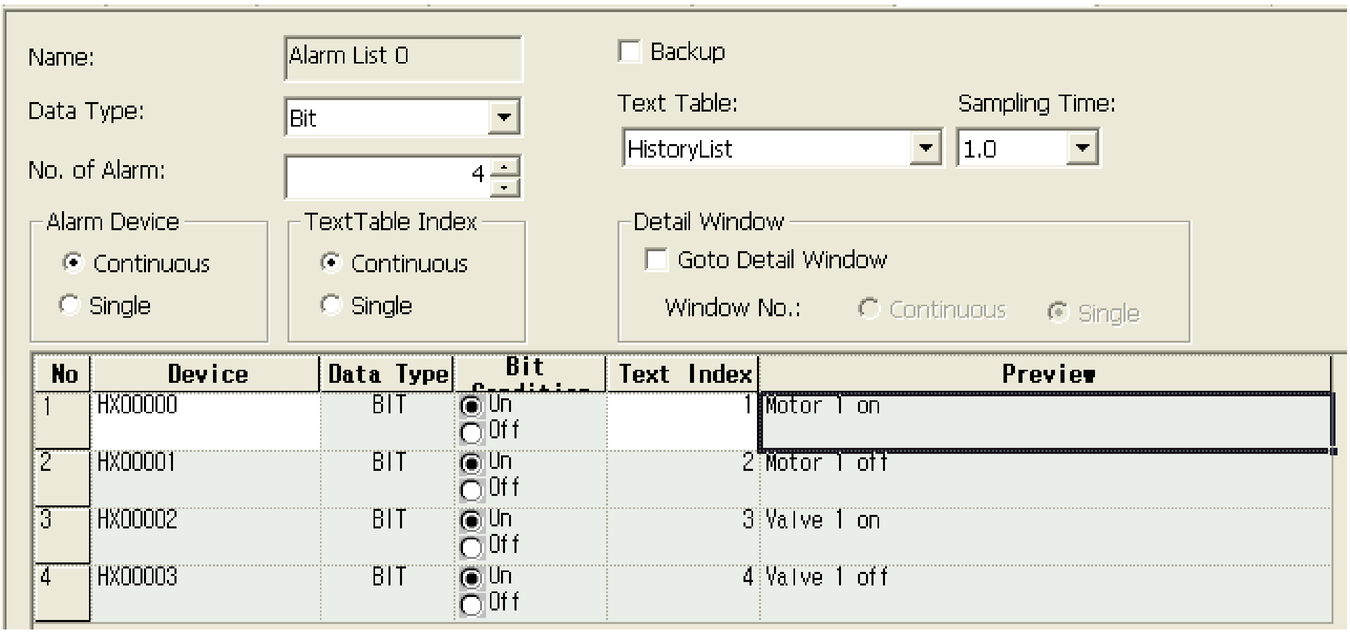
Preview: Line #1

Select the text table and text number used as the window display name of the alarm group properties window.
The mouse context menu is displayed in the newly created alarm group of the project tree.


Flow Alarm
System alarm
History alarm
Alarm Group 0
Alarm
Recipe
Open
Close
Insert
Alarm Group
Alarm List
Copy
Cut
Paste
Delete
Property
Rename
Print
View
Name
Output

Select Alarm List in the menu and add an alarm list.
The alarm list setting display is invoked in the screen.

Set the number of alarms and open the [Text Table] combo to select the text table to use in the alarm list.
Enter the text number to use in the [TEXT Index] in the table below.



Name: Alarm List 0

Data Type: Bit

No. of Alarm: 4

☐ Backup

Text Table: HistoryList

Sampling Time: 1.0

Alarm Device: ● Continuous ○ Single

TextTable Index: ● Continuous ○ Single

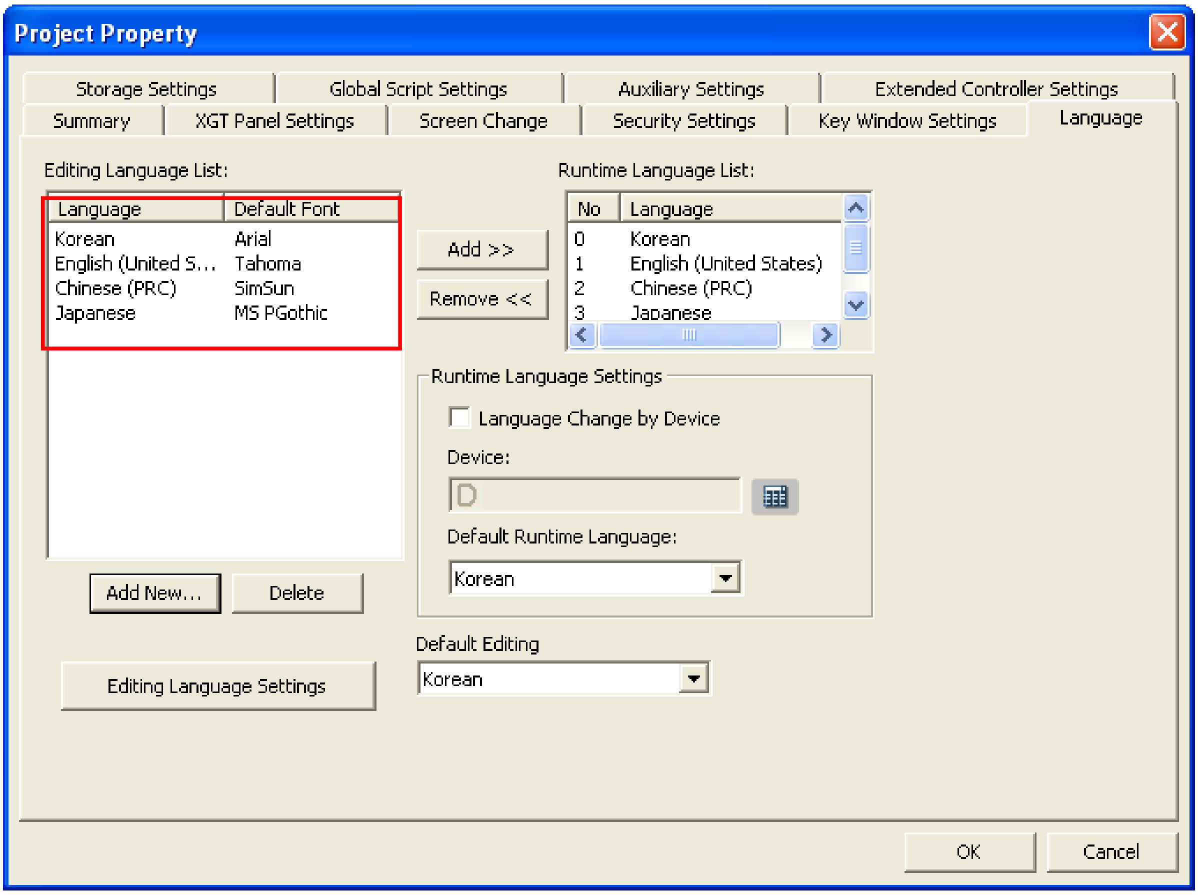
Detail Window: ☐ Goto Detail Window

Window No.: ○ Continuous ● Single

No	Device	Data Type	Bit Condition	Text Index	Preview
1	HX00000	BIT	● On ○ Off	1	Motor 1 on
2	HX00001	BIT	● On ○ Off	2	Motor 1 off
3	HX00002	BIT	● On ○ Off	3	Valve 1 on
4	HX00003	BIT	● On ○ Off	4	Valve 1 off

14.2.9 Multilanguage Entry Setting (Editing Language)

(1) The text table supports Multilanguage entry and display language change during operation.
(2) Change the language setting of [Project Property] to enter Multilanguage.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Add >>
Remove <<
Add New...
Delete
Editing Language Settings
OK
Cancel

Editing Language List:

Language	Default Font
Korean	Arial
English (United S...	Tahoma
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime Language List:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese

Runtime Language Settings

☐ Language Change by Device

Device: D

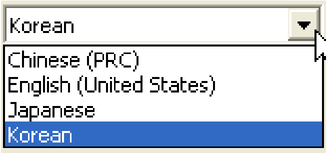
Default Runtime Language: Korean

Default Editing: Korean

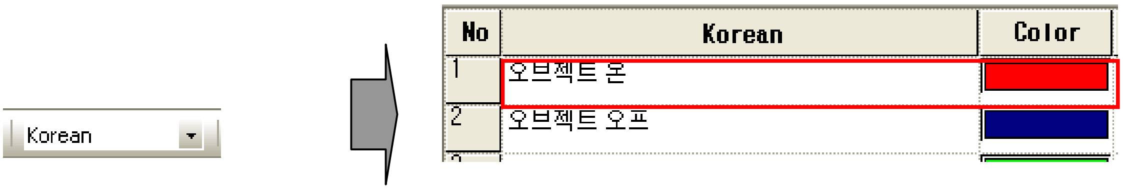
The illustration above shows the language setting tap of the project properties setting dialog box. The list in the text table editing language selection list on the left shows the languages that can be used in XP Builder.

If you want to add an editing language, press Add >> to add a language.

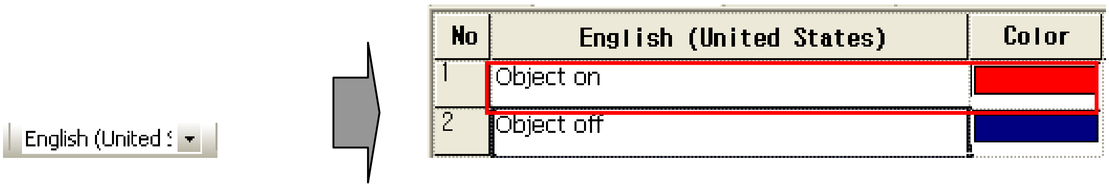
When editing language selection is finished, open the editing language list in the XP Builder toolbar and you will see the language list that has been set.


Korean
Chinese (PRC)
English (United States)
Japanese
Korean

If you change the editing language in the toolbar, you can check that the entry heading in the text table entry window is changed into the language you selected.



No	Korean	Color
1	오브젝트 온	🟥
2	오브젝트 오프	🟦


English (United S

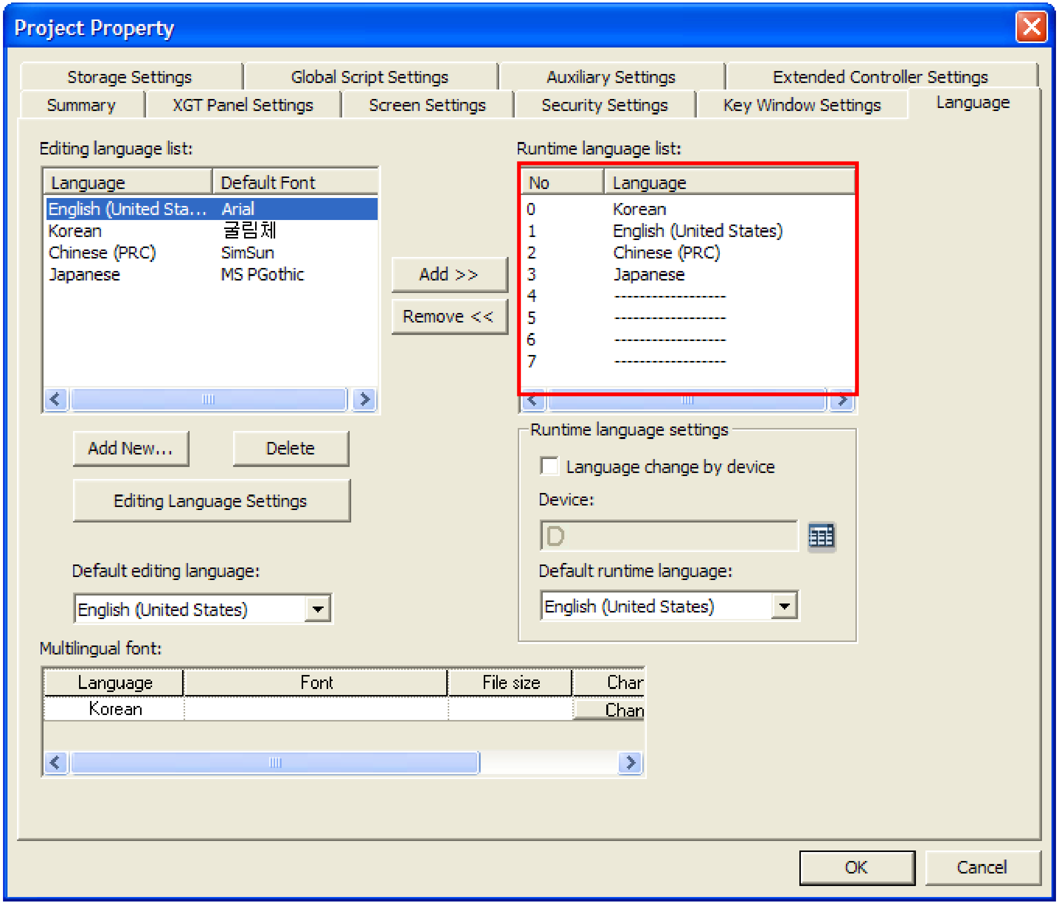
No	English (United States)	Color
1	Object on	🟥
2	Object off	🟦

14.2.10 Runtime Language Setting

(1) The runtime language shows the list of languages available in XGT Panel.

(2) When the user chooses Korean, English or Chinese as the runtime language, the device can display the contents of the text table in Korean, English or Chinese.

(3) Up to 4 runtime languages can be selected in the editing language list.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add >>
Remove <<
Add New...
Delete
Editing Language Settings
OK
Cancel

Editing language list:

Language	Default Font
English (United Sta...	Arial
Korean	굴림체
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime language list:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese
4	-----------------
5	-----------------
6	-----------------
7	-----------------

Runtime language settings

☐ Language change by device

Device: D

Default runtime language: English (United States)

Default editing language: English (United States)

Multilingual font:

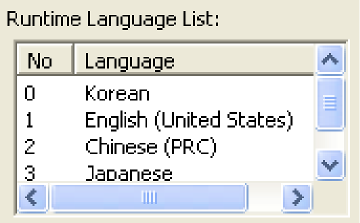
Language	Font	File size	Char
Korean			Chan

The illustration above shows the language setting properties of the project properties setting dialog box. The list on the upper right is the runtime language list that can be displayed in the device.

[Add Runtime Language]

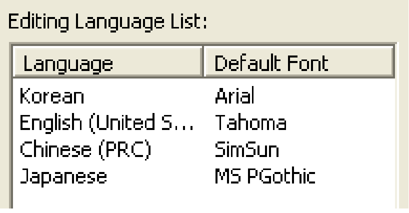
(a) Select the location to add the runtime language in the runtime language list.

(b) Select the language to add in the editing language list on the left.



Runtime Language List:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese

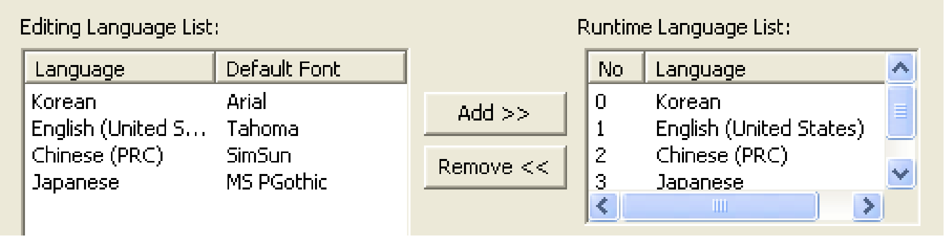


Editing Language List:

Language	Default Font
Korean	Arial
English (United S...	Tahoma
Chinese (PRC)	SimSun
Japanese	MS PGothic

(c) Press Add >> between the two language lists.

(d) Check that the runtime language has been added as shown below.



Editing Language List:

Language	Default Font
Korean	Arial
English (United S...	Tahoma
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime Language List:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese

Note

(1) The runtime language only applies to the contents entered in the text table. Language change is not provided for the contents directly entered by the user without referring to the text table in the figure text or object caption.

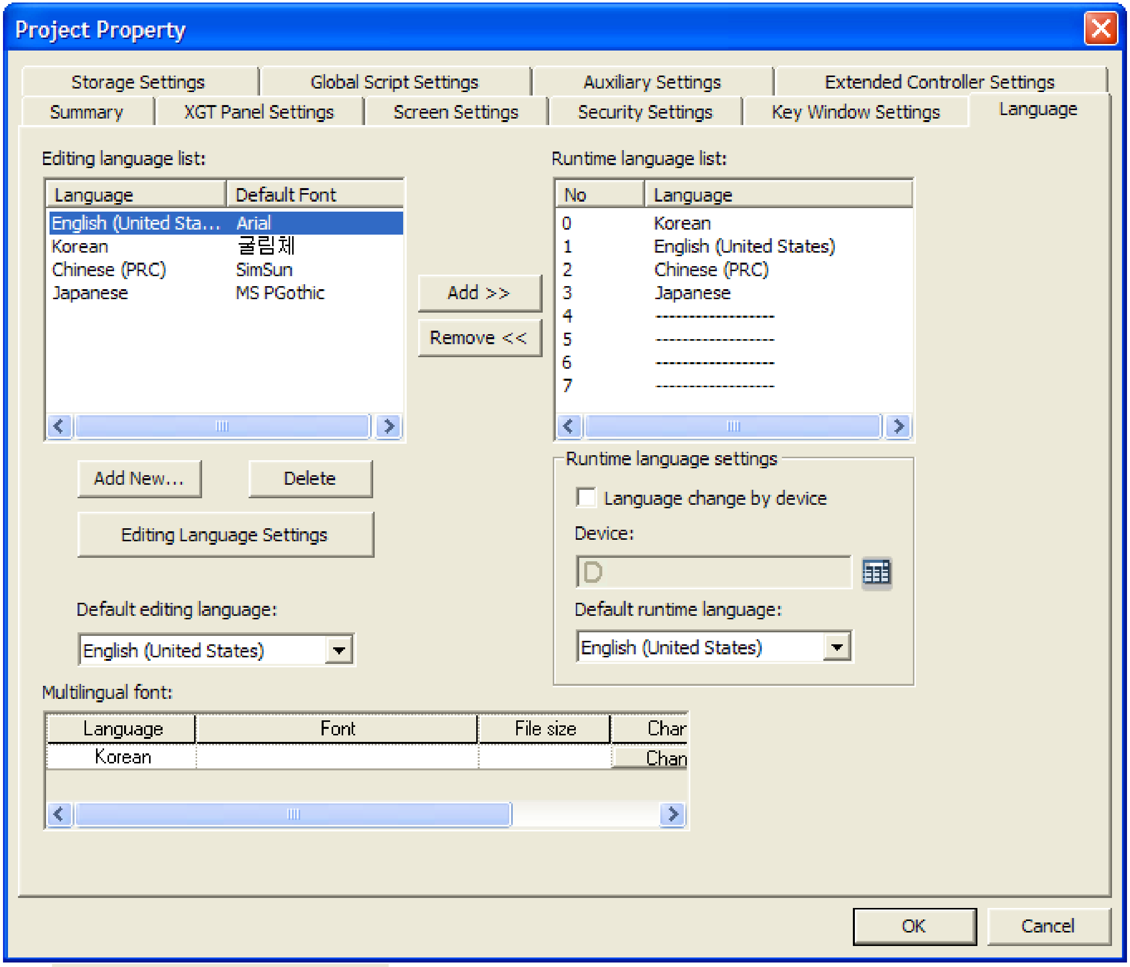
14.2.11 Language Change

(1) Language Change (Device)

You can change the language during the program operation of the device. Language change is possible by the device value or language change switch between the runtime languages set in the [Language] tap in the [Project Property] dialog box.

The following is the language change setting by the device.

(a) Shift to [Language] properties in the [Project Property] dialog box.



Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language

Editing language list:

Language	Default Font
English (United Sta...	Arial
Korean	굴림체
Chinese (PRC)	SimSun
Japanese	MS PGothic

Add >>
Remove <<
Add New...
Delete
Editing Language Settings

Runtime language list:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese
4	------------------
5	------------------
6	------------------
7	------------------

Runtime language settings

☐ Language change by device

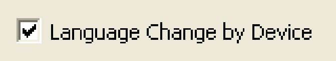
Device: D

Default runtime language: English (United States)

Default editing language: English (United States)

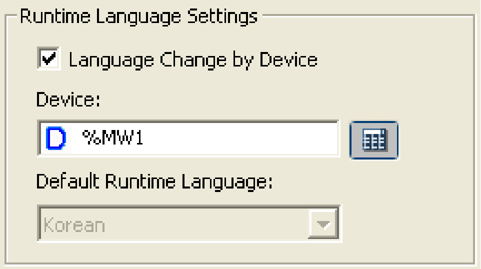
Multilingual font:

Language	Font	File size	Char
Korean			Chan



(b) Check ☑ Language Change by Device in [Runtime Language Settings].

(c) The [Runtime Language Change Device] entry window is activated. Set the word device to specify the language number.



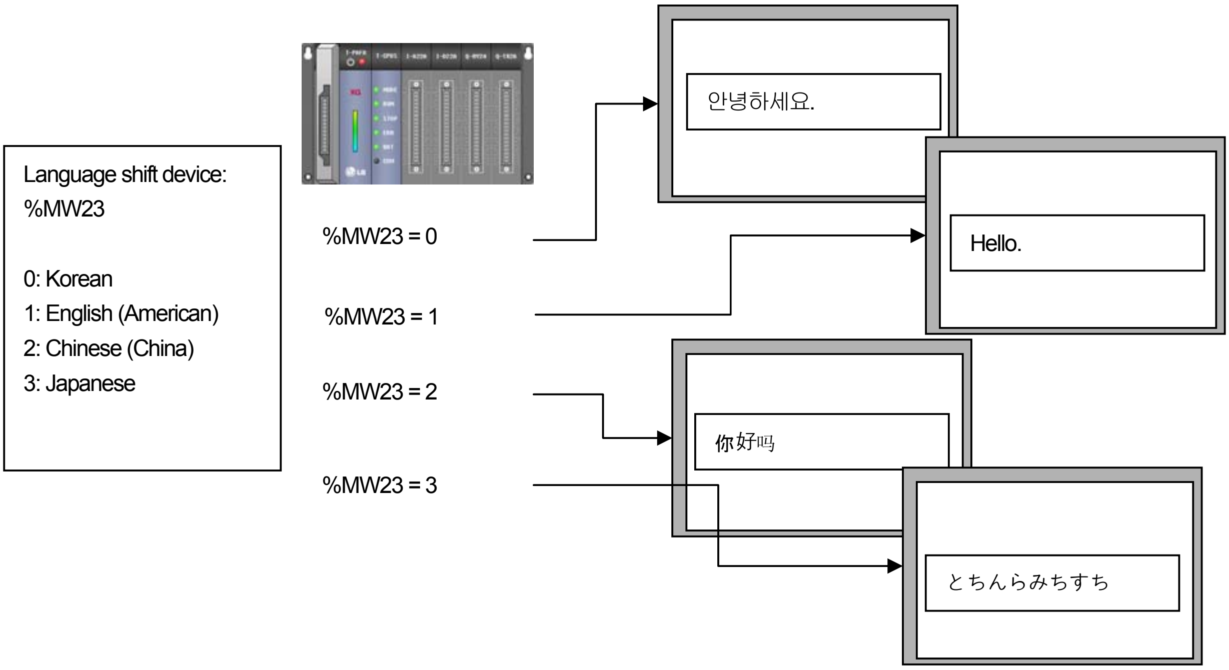
Runtime Language Settings

☑ Language Change by Device

Device: D %MW1

Default Runtime Language: Korean

The following shows the language change of the device.


Language shift device:
%MW23
0: Korean
1: English (American)
2: Chinese (China)
3: Japanese
%MW23 = 0
%MW23 = 1
%MW23 = 2
%MW23 = 3
안녕하세요.
Hello.
你好吗
とちんらみちすち

If the language change device %MW23 value equals the value set in the runtime language, the contents of the screen are displayed in the language corresponding to the value.
If %MW23 is 0, 1, 2 and 3, the display is in Korean, English, Chinese and Japanese respectively.

Note

(1) Exceptions of language change by the device value are as follows.

If the language change device %MW23 value is a value which is not in the runtime language list, language change is not possible. Even if it has a value between 0 and 3, when the runtime language is not set in the corresponding number, language change is not supported either.

The following list displays the runtime language table.

Number	Language
0	
1	Korean
2	English(American)
3	

If the language change device is set when the program starts in the device, the language change device value is read.

Normal Case 1) The language change device value which is first read is in the runtime language list.

%MW23 = 1: text language is set as Korean.
%MW23 = 2: The text displaying language is set as “English (American)”.

Exception 1) The language change device value is not in the runtime language list.

%MW23 = 0: For the initial text display language, the lowest value of the runtime language list is set as the basic value. In the example, Korean, No. 1, is specified.
%MW23 = 45: For the initial text display language, the lowest value of the runtime language list is set as the basic value. In the example, Korean, No. 1, is specified.

Normal Case 2) The %MW23 value is changed into a value which is in the runtime language list.

%MW23 = 1: The text display language is set as Korean.
%MW23 = 2: The text display language is set as English (United States).

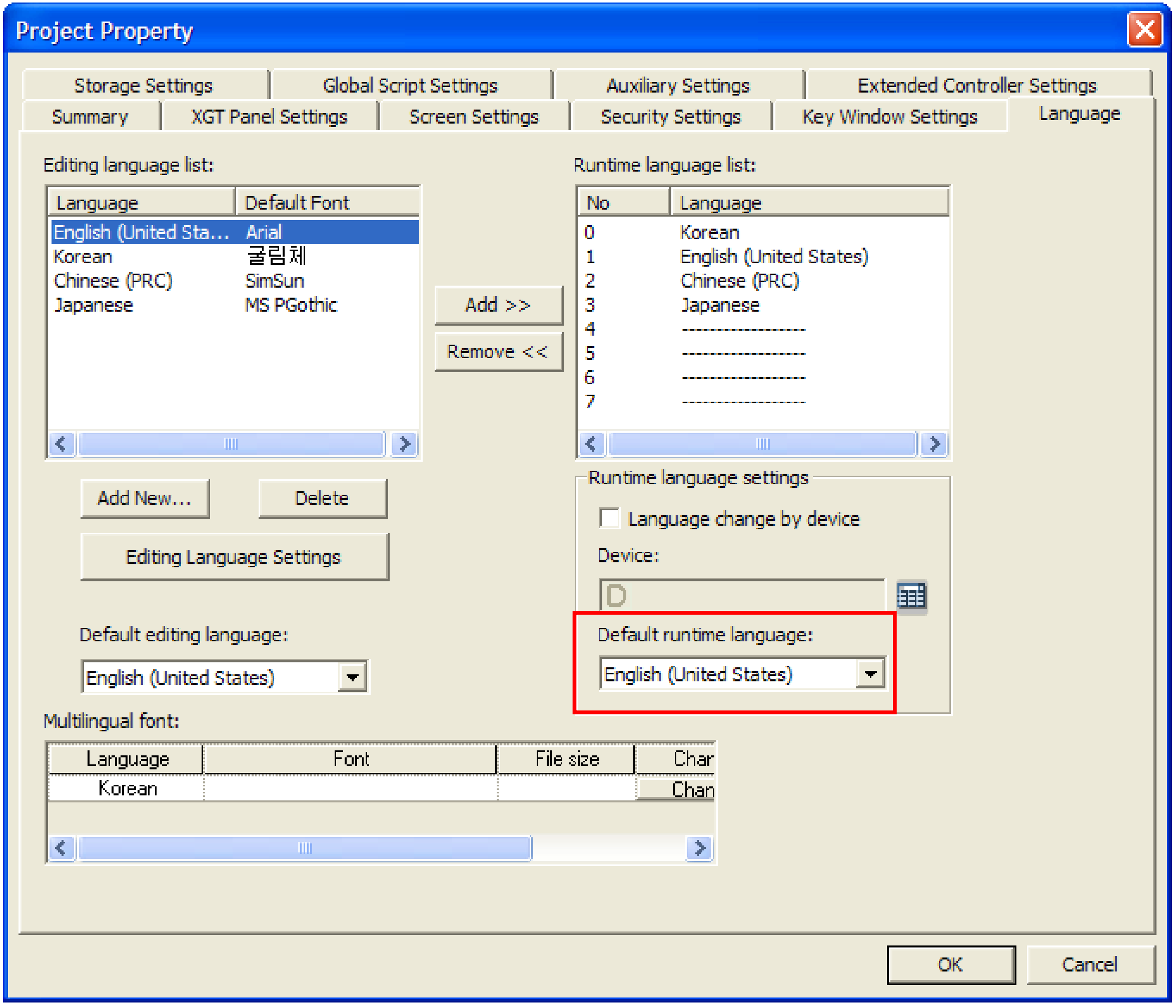
Exception 2) The %MW23 value is changed into a value which is not in the runtime language list.

%MW23 = 3: Language change is not working. The currently displayed language is maintained.
%MW23 = 45: Language change is not working. The currently displayed language is maintained.

(2) Language change (Language Change Switch (Special Switch))

Shift to [Language] tap in the [Project Property] dialog box.

If you do not use the language change device, the language to be used as the basic runtime language is selected.


Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add >>
Remove <<
Add New...
Delete
Editing Language Settings
OK
Cancel

Editing language list:

Language	Default Font
English (United Sta...	Arial
Korean	굴림체
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime language list:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese
4	-----------------
5	-----------------
6	-----------------
7	-----------------

Runtime language settings

☐ Language change by device

Device: D

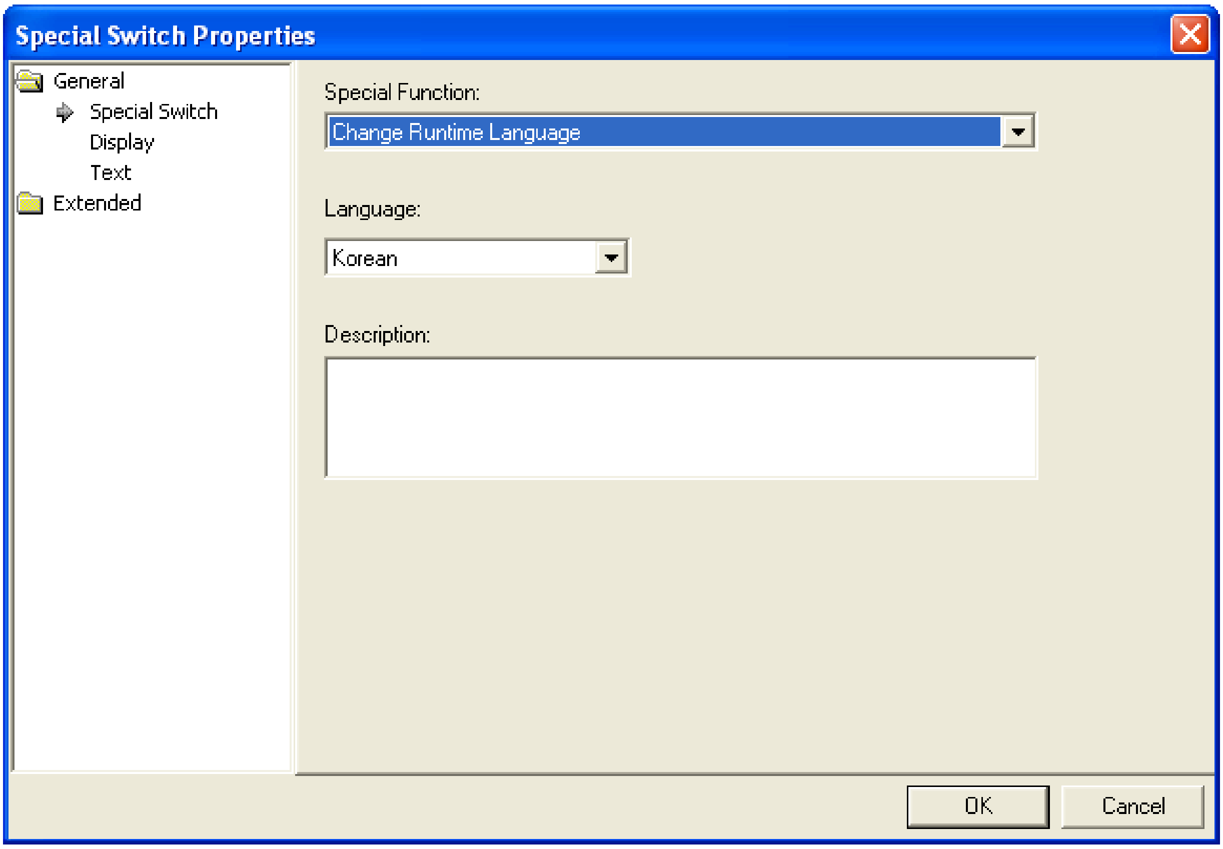
Default runtime language: English (United States)

Default editing language: English (United States)

Multilingual font:

Language	Font	File size	Char
Korean			Chan

Create a base screen, select [Special Switch] in [Object] tap of the [Tool Box] and create it in the window.


Special Switch Properties
General
Special Switch
Display
Text
Extended
OK
Cancel

Special Function: Change Runtime Language

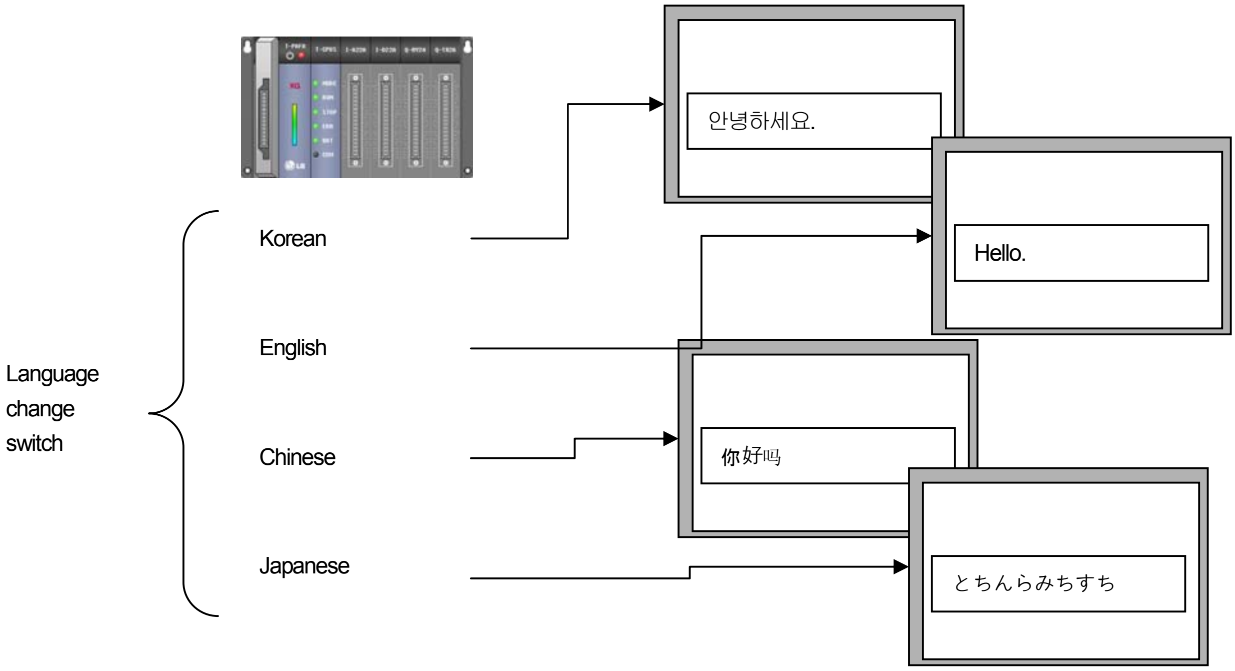
Language: Korean

Description:

Select [Change Runtime Language] in the Special Function: combo at the top of the window.

Select the language to change when the key works in the language selection combo at the bottom of the window.

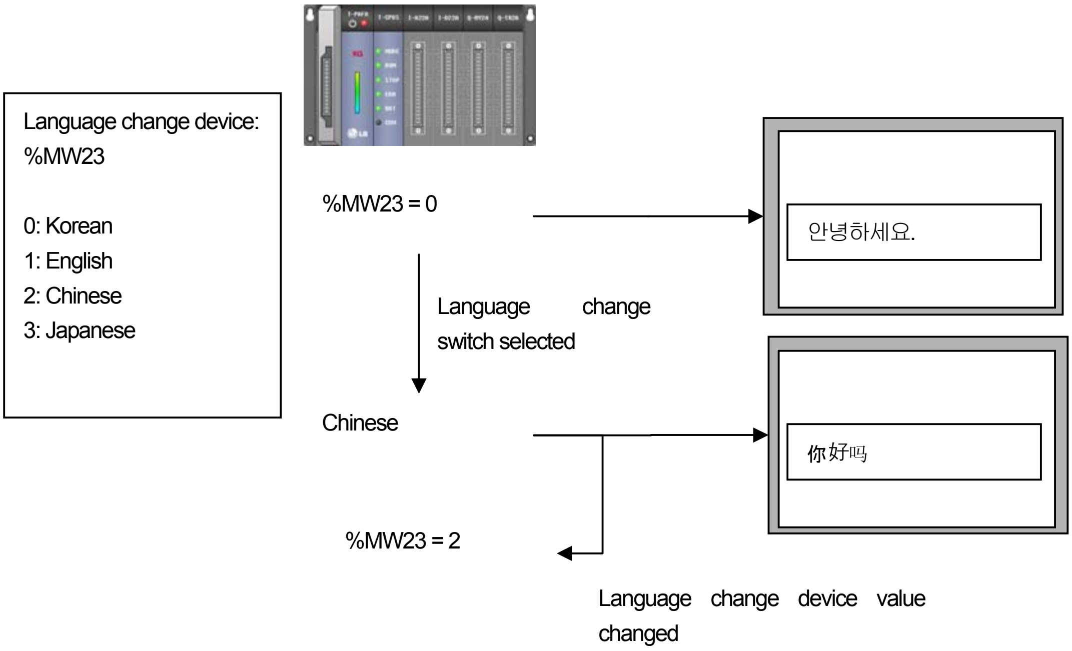
The following is the language change in XGT Panel.


Language
change
switch
Korean
English
Chinese
Japanese
안녕하세요.
Hello.
你好吗
とちんらみちすち

(3) Use of Language Change Device and Switch

(a) You can change the language by setting the language change by the device and creating the language change special switch in the window. If you use the two functions at a time, both works.

(b) However, the device value is changed by setting the language change device value at the time of the language change switch (special switch) as the value which is displayed in the runtime language list.

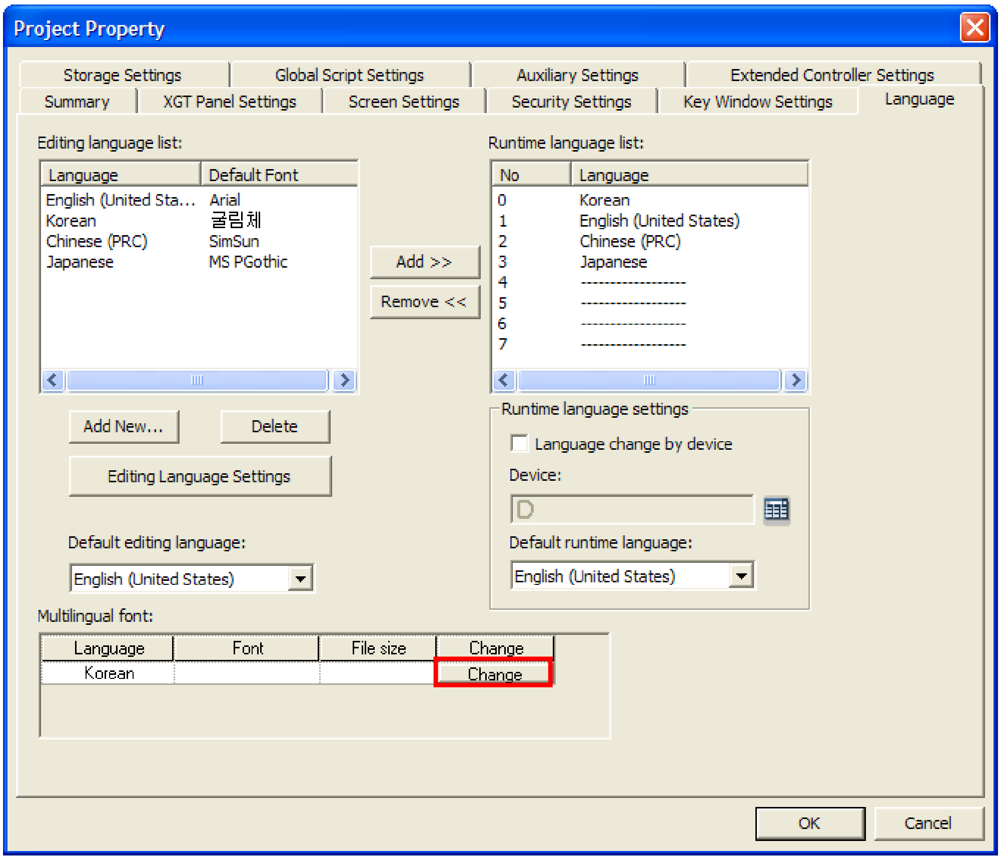

Language change device:
%MW23
0: Korean
1: English
2: Chinese
3: Japanese
%MW23 = 0
안녕하세요.
Language change switch selected
Chinese
你好吗
%MW23 = 2
Language change device value changed

14.2.12 Multi-Language Supporting Font

When other languages including Korean, Chinese are applied for string indicator except English, to display every character properly, you need to download the whole font for each language.

(1) Adding Multi-Supporting Font

(a) Press 'Change' button to designate the font.



Project Property

Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language

Editing language list:

Language	Default Font
English (United Sta…	Arial
Korean	굴림체
Chinese (PRC)	SimSun
Japanese	MS PGothic

Runtime language list:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese
4	-----------------
5	-----------------
6	-----------------
7	-----------------

Add >>
Remove <<
Add New...
Delete
Editing Language Settings

Runtime language settings

☐ Language change by device

Device: D

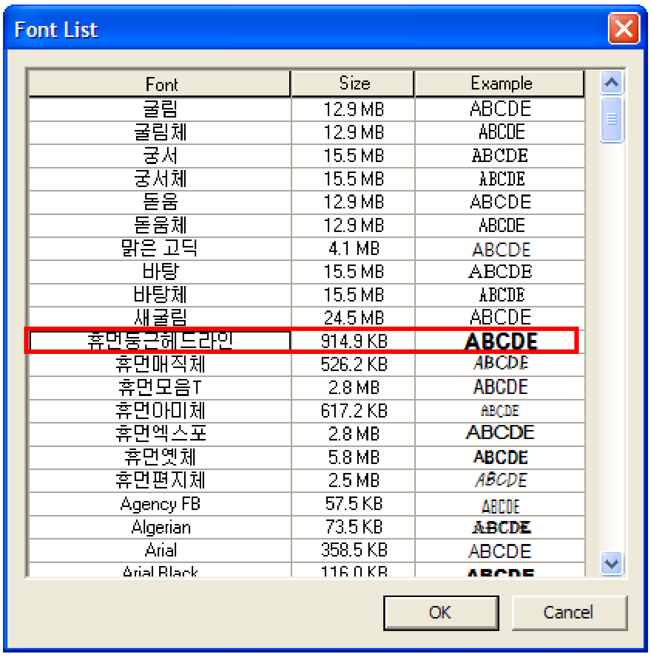
Default editing language: English (United States)

Default runtime language: English (United States)

Multilingual font:

Language	Font	File size	Change
Korean			Change

(b) After selecting the font, press ‘OK’ button.



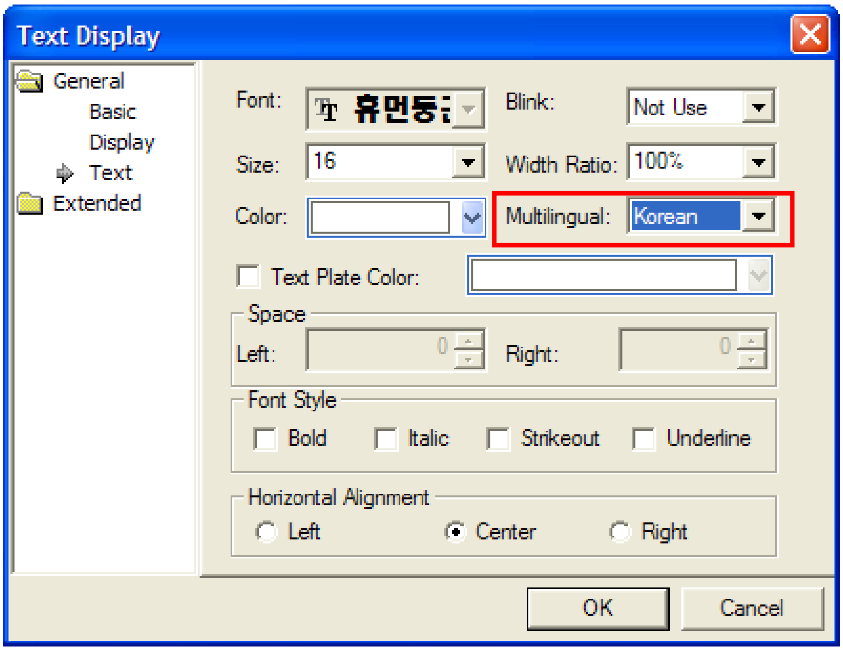
Font List

Font	Size	Example
굴림	12.9 MB	ABCDE
굴림체	12.9 MB	ABCDE
궁서	15.5 MB	ABCDE
궁서체	15.5 MB	ABCDE
돋움	12.9 MB	ABCDE
돋움체	12.9 MB	ABCDE
맑은 고딕	4.1 MB	ABCDE
바탕	15.5 MB	ABCDE
바탕체	15.5 MB	ABCDE
새굴림	24.5 MB	ABCDE
휴먼둥근헤드라인	914.9 KB	ABCDE
휴먼매직체	526.2 KB	ABCDE
휴먼모음T	2.8 MB	ABCDE
휴먼아미체	617.2 KB	ABCDE
휴먼엑스포	2.8 MB	ABCDE
휴먼옛체	5.8 MB	ABCDE
휴먼편지체	2.5 MB	ABCDE
Agency FB	57.5 KB	ABCDE
Algerian	73.5 KB	ABCDE
Arial	358.5 KB	ABCDE
Arial Black	116.0 KB	ABCDE

(c) The selected font file will be downloaded.

(2) Applying for string indicator

Select not English but other language at 'Multi-Language Display' of [String Indicator]-[String] tab.


Text Display
General
Basic
Display
Text
Extended
OK
Cancel

Font: 휴먼둥

Blink: Not Use

Size: 16

Width Ratio: 100%

Color:

Multilingual: Korean

☐ Text Plate Color:

Space

Left: 0

Right: 0

Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

○ Left ● Center ○ Right

Note

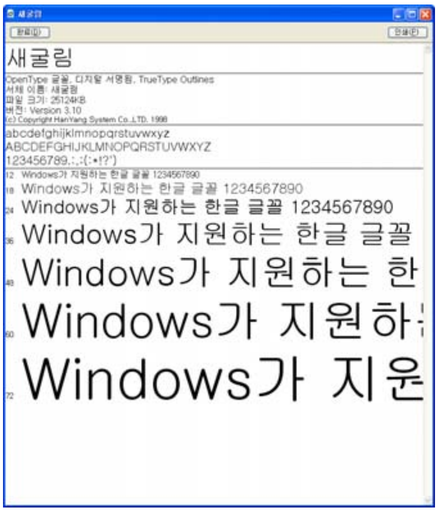
(1) This version supports Korean only for Multi-Language mode.

14.2.13 Font

XP-Builder can display various fonts in the object or text table during editing. Fonts variable apply only to True Type Font installed in the computer operating XP Builder.

The following is the description on how the font information is transferred and applied to the HMI device.

Texts made during editing



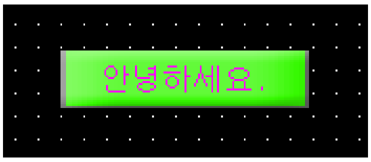
새굴림

OpenType 글꼴, 디지털 서명됨, TrueType Outlines
서체 이름: 새굴림
파일 크기: 25124KB
버전: Version 3.10
(c) Copyright HanYang System Co.,LTD. 1998

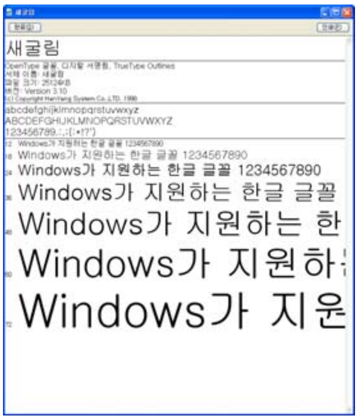
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
123456789.:,;(:*!?')

12 Windows가 지원하는 한글 글꼴 1234567890
18 Windows가 지원하는 한글 글꼴 1234567890
24 Windows가 지원하는 한글 글꼴 1234567890
36 Windows가 지원하는 한글 글꼴
48 Windows가 지원하는 한
60 Windows가 지원하
72 Windows가 지운

‘SAEGULIM’ font file installed in the system



Only necessary information to display the used characters is extracted.



새굴림

OpenType 글꼴, 디지털 서명됨, TrueType Outlines
서체 이름: 새굴림
파일 크기: 25124KB
버전: Version 3.10
(c) Copyright HanYang System Co.,LTD. 1998

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
123456789.:,;(:*!?')

12 Windows가 지원하는 한글 글꼴 1234567890
18 Windows가 지원하는 한글 글꼴 1234567890
24 Windows가 지원하는 한글 글꼴 1234567890
36 Windows가 지원하는 한글 글꼴
48 Windows가 지원하는 한
60 Windows가 지원하
72 Windows가 지운

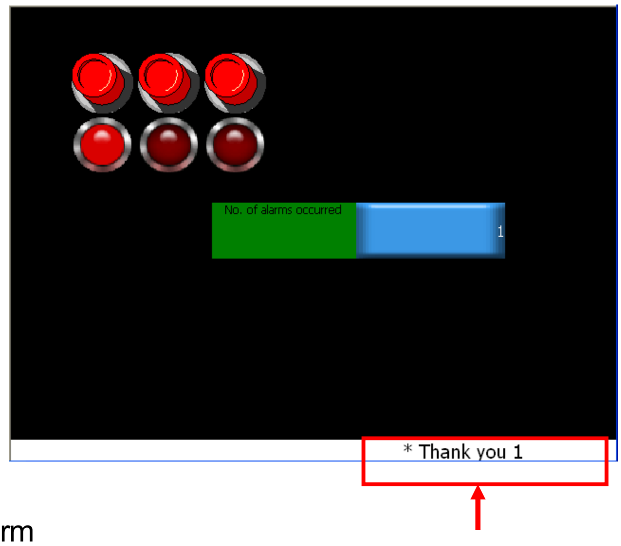
Extracted font files to download to XGT Panel => Transferred to XPT Panel when downloading

The texts used for building are collected and the text information is created. On the basis of the text information made like this, the font file for transfer from the system font list is created. If project transfer is executed, the newly created font file is transferred.

When you have specified and used a font which is not installed in the system, a warning message is released during [Data Check]. Choose from the font list currently installed in the system. Otherwise, texts might not be normally displayed during operation of XGT Panel.

14.3 Flow Alarm

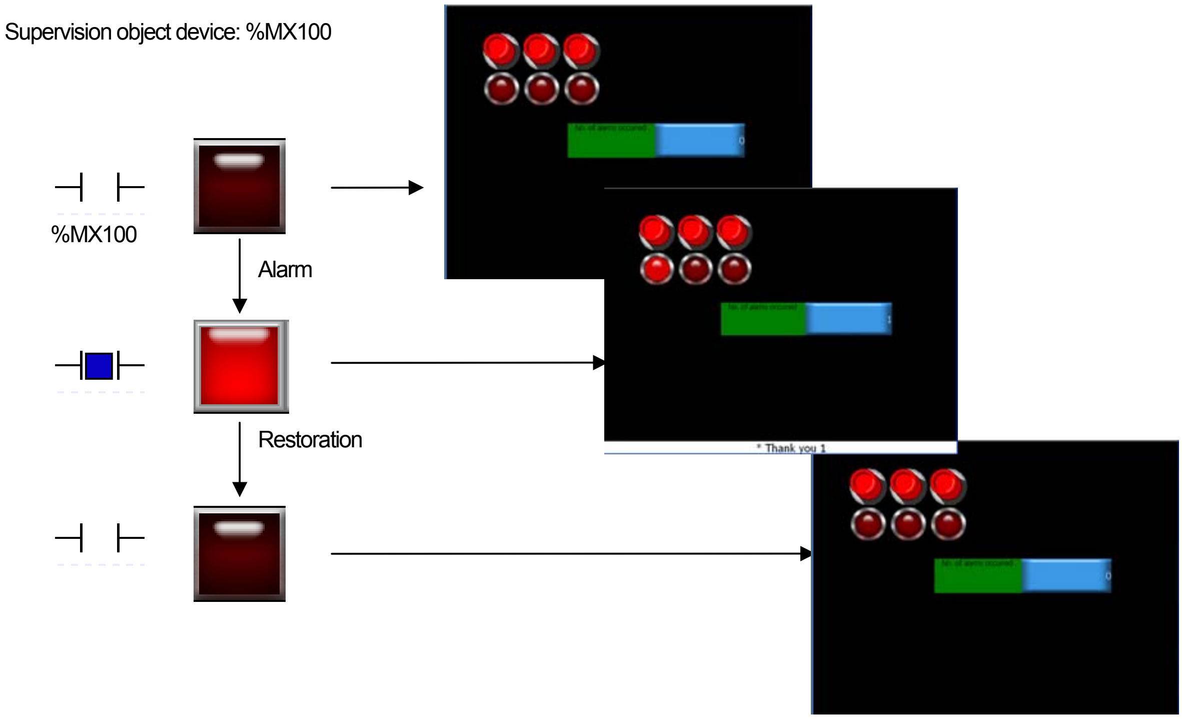
The flow alarm is the alarm displaying the text table alarm contents streaming at the bottom of the screen when the alarm condition is met.


No. of alarms occurred
1
* Thank you 1

Flow Alarm

14.3.1 Use of Flow Alarm

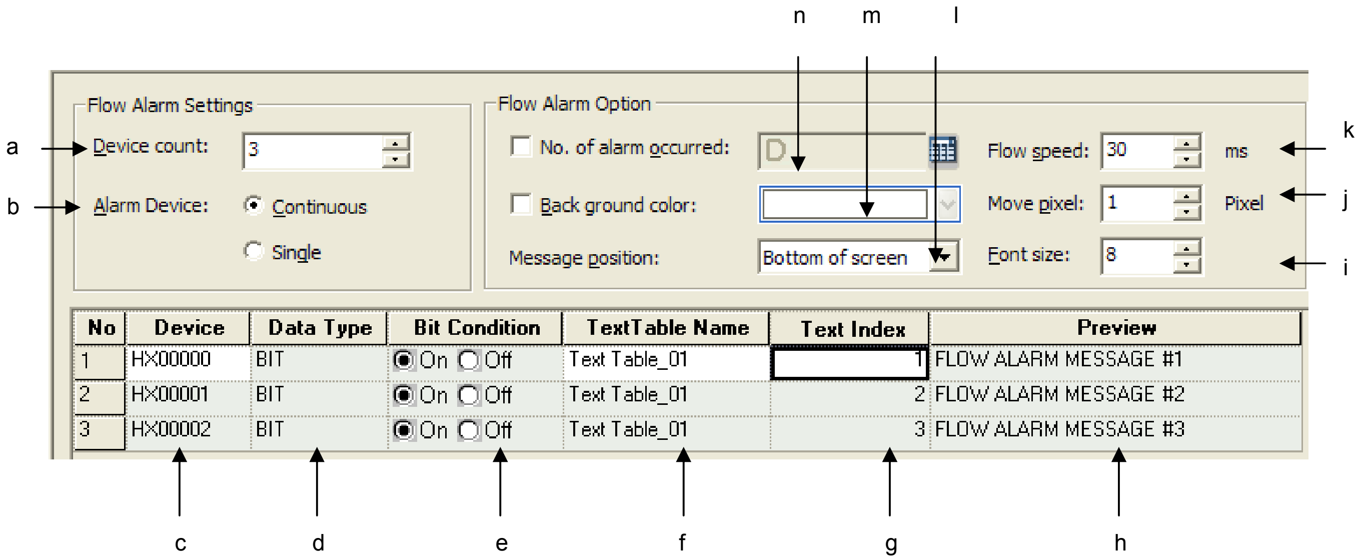
(1) When the supervisory device is ON, a flow alarm occurs.
(2) In case of an alarm, an alarm message is displayed in a text streaming from right to left at the bottom of the screen.
(3) If the supervisory device is OFF, the alarm has been restored and the alarm message is gone.


Supervision object device: %MX100
%MX100
Alarm
Restoration
No. of alarms occurred
0
No. of alarms occurred
1
* Thank you 1
No. of alarms occurred
0

14.3.2 Flow Alarm Setting

The following is the setting items of the flow alarm.

[Flow Alarm Entry Display]



Flow Alarm Settings

Device count: 3

Alarm Device: ● Continuous ○ Single

Flow Alarm Option

☐ No. of alarm occurred: D

☐ Back ground color:

Message position: Bottom of screen

Flow speed: 30 ms

Move pixel: 1 Pixel

Font size: 8

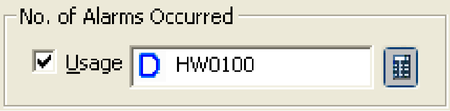
No	Device	Data Type	Bit Condition	TextTable Name	Text Index	Preview
1	HX00000	BIT	● On ○ Off	Text Table_01	1	FLOW ALARM MESSAGE #1
2	HX00001	BIT	● On ○ Off	Text Table_01	2	FLOW ALARM MESSAGE #2
3	HX00002	BIT	● On ○ Off	Text Table_01	3	FLOW ALARM MESSAGE #3

Items	Description
(a) No. of devices	The number of alarm devices to supervise
(b) Alarm Device	Decides whether to use the alarm device to supervise as the consecutive device.
(c) Device	Specifies the size of the alarm message to be displayed at the bottom of the screen.
(d) Data type	Specifies the data type of the flow alarm device. If read-only, only the current bit device can be registered as the alarm device.
(e) Bit Condition	Specifies condition of alarm occurrence. On/Off indicates status of bit device
(f) Name of text table	Sets the message to be used for each alarm. Selects the text table number used for the alarm.
(g) text table index	Displays the text number in the text table.
(h) Preview	Previews the message in the text table where the number is shown.
(i) Font size	Enters the device to be supervised by the user. Only the bit device can be registered as the flow alarm.
(j) Move pixel	Moving unit of flow alarm message. The bigger the number is, the faster flow speed is.
(k) Flow speed	Renewal frequency of flow alarm. The less the number is, the faster flow speed is.
(l) Message position	Specifies the position of follow alarm message
(m) Back Ground Color	Specifies the background color of flow alarm area
(n) No. of alarm occurred	Decides whether to use the device to save the number of alarms. If the word device to save the number of alarms, the number of alarms caused by the flow alarms is saved.

(1) Alarm Device Setting
- (a) To set the device to supervise as a flow alarm, (a) No. of devices is set in the flow alarm entry window.
- (b) If the number of devices is set, the number of entry lines in the table list changes into the set number of devices.
- (c) Registers the device to supervise in the device lines rows of each line. Address can be directly entered or otherwise the tag can be entered.
- (d) The device to supervise as the flow alarm is supervised at all times during the operation of the device and up to 10,000 can be registered.
- (e) The device to supervise as the flow alarm is the bit device. ‘On’ is alarm occurring and ‘Off’ is alarm restoration.

(2) Setting of Device to Save Number of Alarms
- (a) This is the function of saving the number of alarms caused by the flow alarm in the device.
- (b) Set (d) as Use in the flow alarm entry window and register the device.

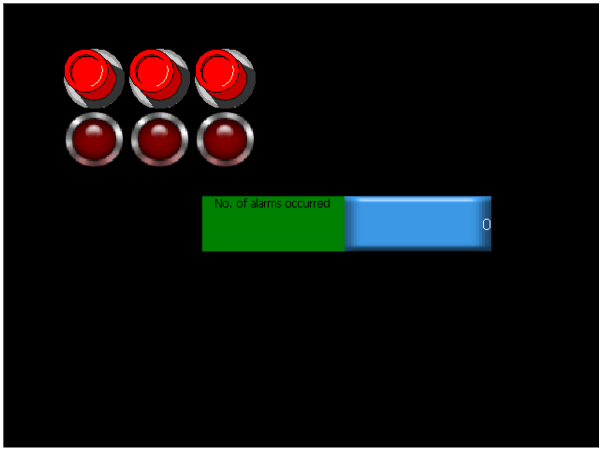
(c) The following is an example of setting the device to save the number of alarms.



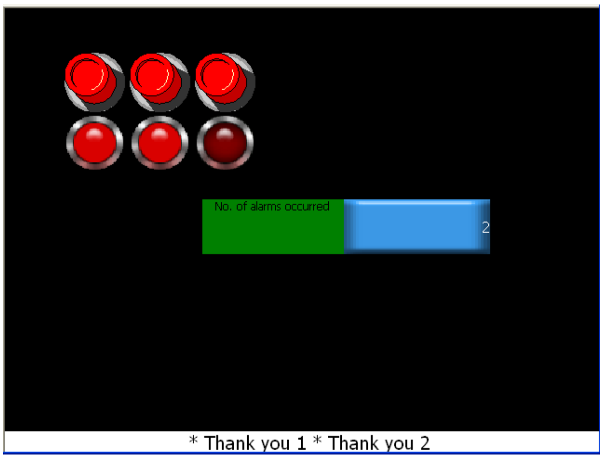
No. of Alarms Occurred

☑ Usage D HW0100

In case of a flow alarm, the current number of alarms is entered in [No. of Alarms Occurred].

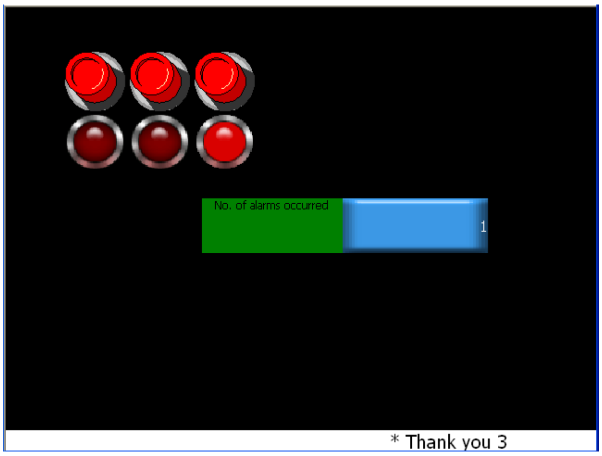

No. of alarms occurred
0

<When there is no alarm>


No. of alarms occurred
2

* Thank you 1 * Thank you 2

<When 2 alarms have occurred>


No. of alarms occurred
1

* Thank you 3

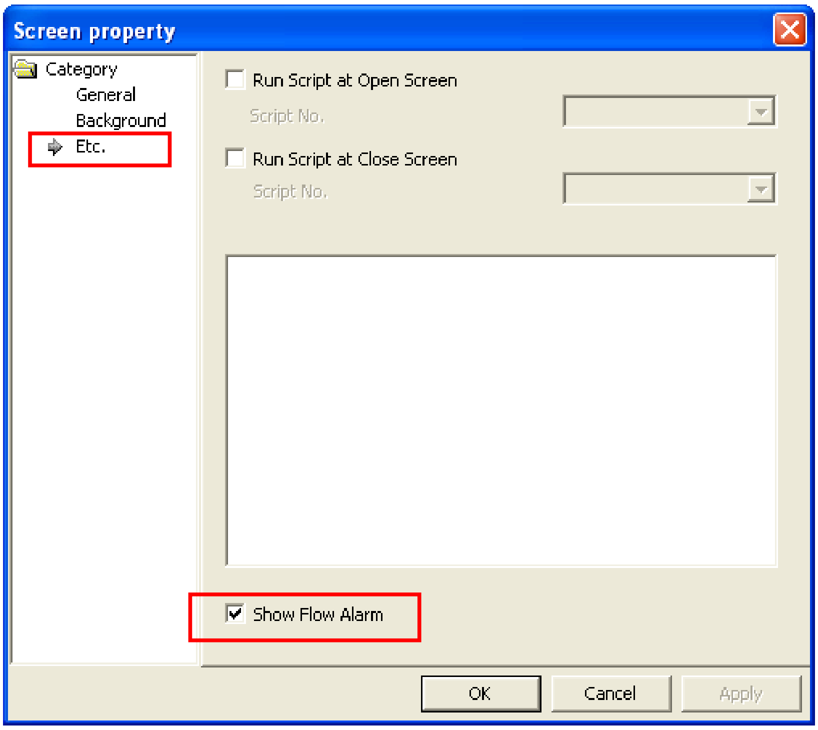
<When there is one alarm with the other restored>

(3) Decision of Alarm Message and Size: Addition of Change in Case of Language Change
- (a) Set (c) alarm text size in the flow alarm entry display.
- (b) The alarm text size determines the size of the alarm text displayed at the bottom of the screen.

(4) Flow Alarm View Properties Setting by Window

The flow alarm is a device supervised in all windows during operation of XGT Panel. Therefore, regardless of the window, in case of an alarm, it can be displayed anywhere. In some windows, it is necessary to have the flow alarm hidden. To this end, you should decide whether to display the flow alarm in each window. The window where [Show Flow Alarm] has not been set, an alarm is not displayed in the window even if it occurs.
The basic value is Display Flow Alarm.

- (a) Press the right button of the mouse in the base screen. Choose [Screen Property] in the menu. If the display properties dialog box appears, move to [Etc.].
- (b) Set [Screen Property] item at the bottom of the dialog box.



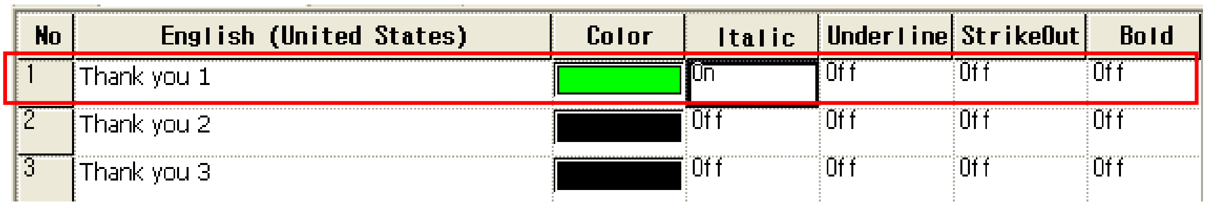
☐ Run Script at Open Screen

☐ Run Script at Close Screen

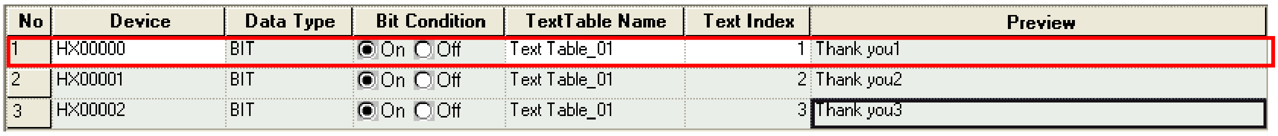
☑ Show Flow Alarm

14.3.3 Display of Details of Flow Alarm

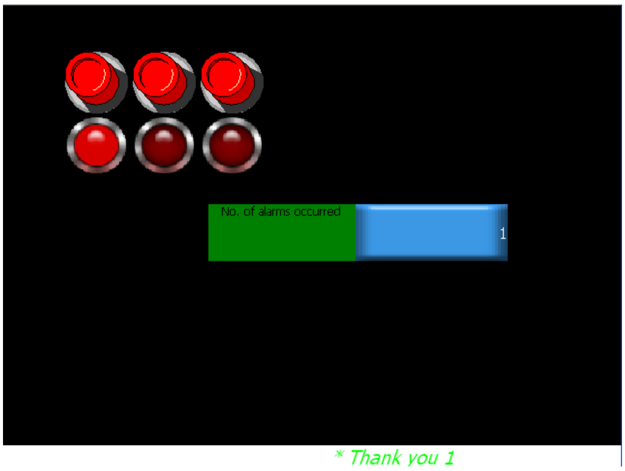
(1) A flow alarm message is set in the text table and the text table set in the alarm setting window is referred to.
(2) You can specify properties such as the color and sloped type in the text table.
(3) In the device display, the appropriate alarm message is displayed in the properties specified in the text table and the text size entered in the flow alarm setting display.



No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Thank you 1	🟩	On	Off	Off	Off
2	Thank you 2	⬛	Off	Off	Off	Off
3	Thank you 3	⬛	Off	Off	Off	Off



No	Device	Data Type	Bit Condition	TextTable Name	Text Index	Preview
1	HX00000	BIT	● On ○ Off	Text Table_01	1	Thank you1
2	HX00001	BIT	● On ○ Off	Text Table_01	2	Thank you2
3	HX00002	BIT	● On ○ Off	Text Table_01	3	Thank you3

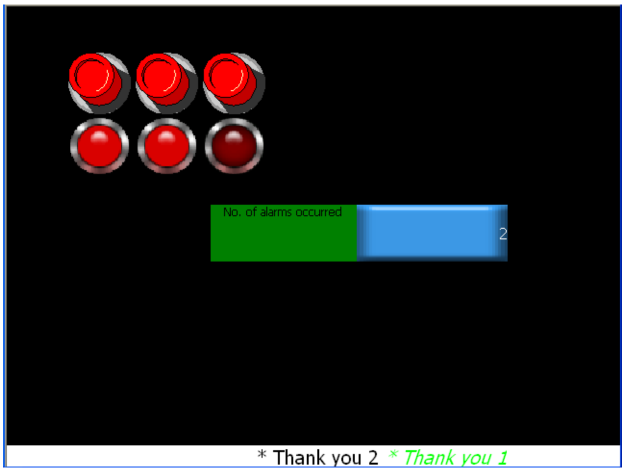


* *Thank you 1*

The illustration above is the message displayed in case of an alarm with Flow Alarm#1(HX0000) ON.

The message is with the color (🟩) and the sloped type (Italic On) set in the text table.

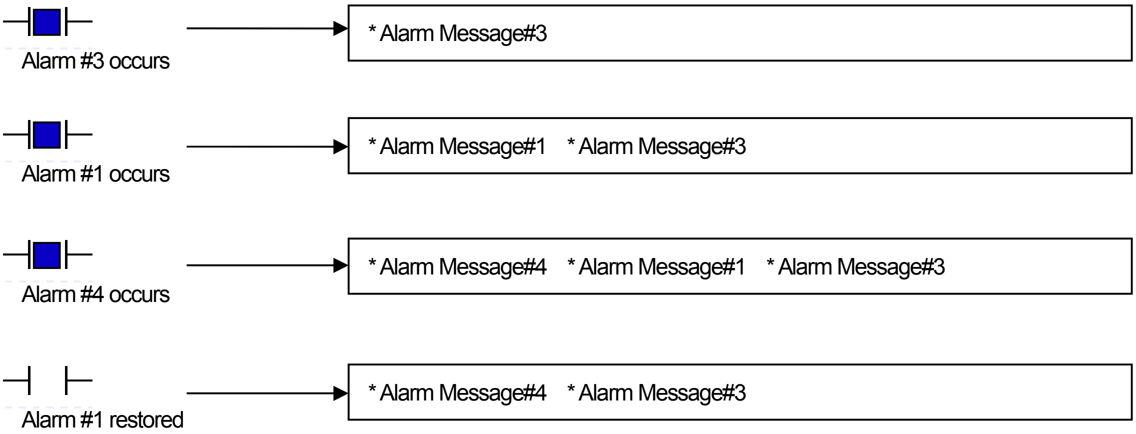
Two or more flow alarms might occur simultaneously. In such a case, the alarm message at the bottom of the window displays two parallel messages. For distinction of alarm messages, "*" is placed before each message.



* Thank you 2 * *Thank you 1*

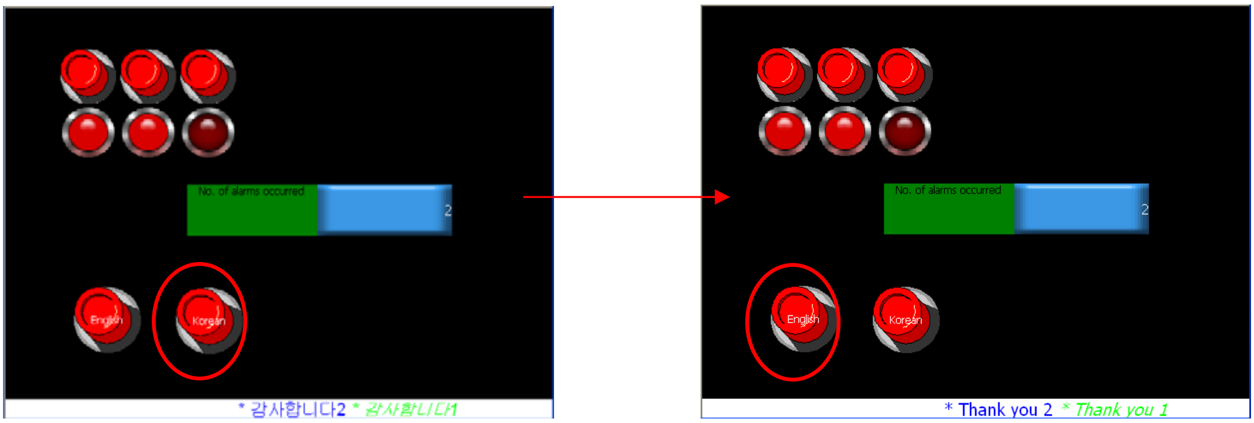
The latest alarm message comes first. When a message is restored and gone, the sequence maintains.

Alarm #1	"Alarm message #1"
Alarm #2	"Alarm message #1"
Alarm #3	"Alarm message #1"
Alarm #4	"Alarm message #1"


Alarm #3 occurs
* Alarm Message#3
Alarm #1 occurs
* Alarm Message#1 * Alarm Message#3
Alarm #4 occurs
* Alarm Message#4 * Alarm Message#1 * Alarm Message#3
Alarm #1 restored
* Alarm Message#4 * Alarm Message#3

- The sequence of messages is maintained with the exception of restored messages.

A flow alarm message invokes the contents of the pertinent language from the text table according to the present language setting of XGT Panel.


No. of alarms occurred
2
English
Korean
No. of alarms occurred
2
English
Korean

* 감사합니다2 * 감사합니다1

* Thank you 2 * Thank you 1

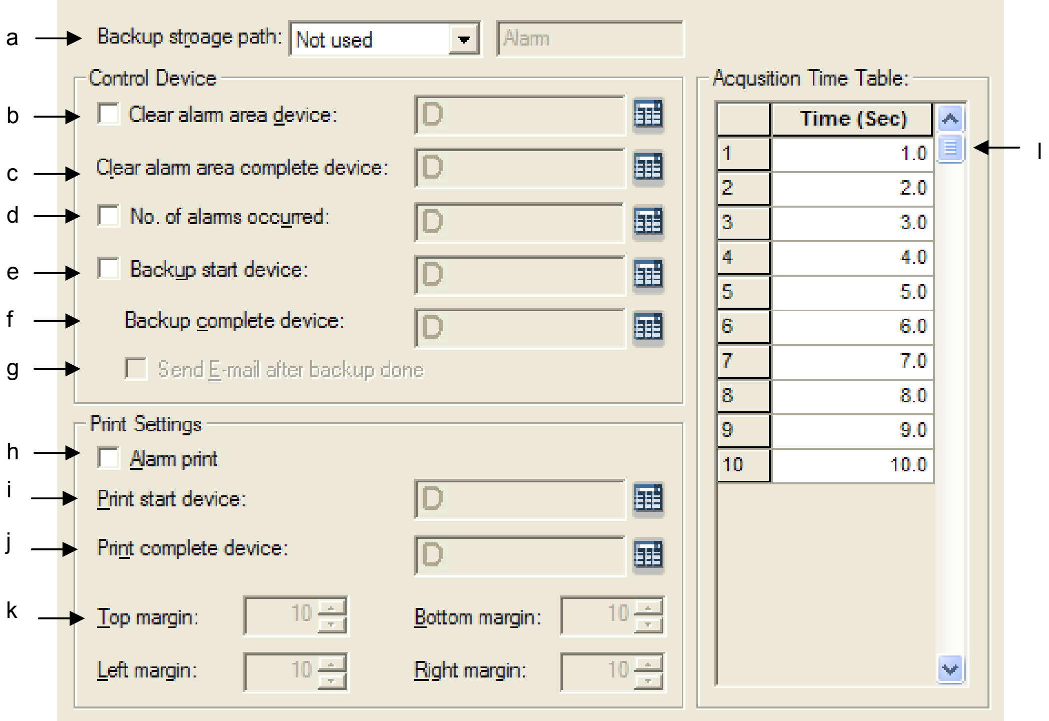
14.4 History Alarm

The contents of a history alarm are saved in a file so that the contents can be checked later. If the alarm device to supervise meets the setting condition, the time, device and contents are saved in a non-volatile memory.

14.4.1 Alarm History Setting

(1) History alarm global setting

Double click [History Alarm] in the [Project] window


a
b
c
d
e
f
g
h
i
j
k
l
Backup stroage path:
Not used
Alarm
Control Device
☐ Clear alarm area device:
Clear alarm area complete device:
☐ No. of alarms occurred:
☐ Backup start device:
Backup complete device:
☐ Send E-mail after backup done
Print Settings
☐ Alarm print
Print start device:
Print complete device:
Top margin: 10
Bottom margin: 10
Left margin: 10
Right margin: 10
Acqusition Time Table:

	Time (Sec)
1	1.0
2	2.0
3	3.0
4	4.0
5	5.0
6	6.0
7	7.0
8	8.0
9	9.0
10	10.0

Item	Description
Backup storage path (a)	Change history alarm backup location.
Clear alarm area device(b)	Initialize the history alarm area of NVRAM.
Clear alarm area complete Device(c)	After initializing the history alarm of NVRAM and it shows its completion.
No. of alarms occurred (d)	Device to save the number of unrecovered alarms.
Backup start device(e)	Device to start backup operation. But, backup is carried out only if backup data location (a) is specified with USB or CF card.
Backup Complete Device (f)	Show the completion of backup.
Send e-mail after backup done (g)	After backup, send e-mail to the designated address on [Project Properties]-[Auxiliary settings]-[E-Mail Function]
Alarm Print(h)	Set history alarm print properties.
Print Start Device(i)	Start printing history alarm
Print Complete Device(i)	Show that printing history alarm is completed
Margin(k)	Set top, bottom, left and right margins
Acquisition Time table(l)	Available to change the interval of collecting history alarm.

(2) Bit Alarm Setting

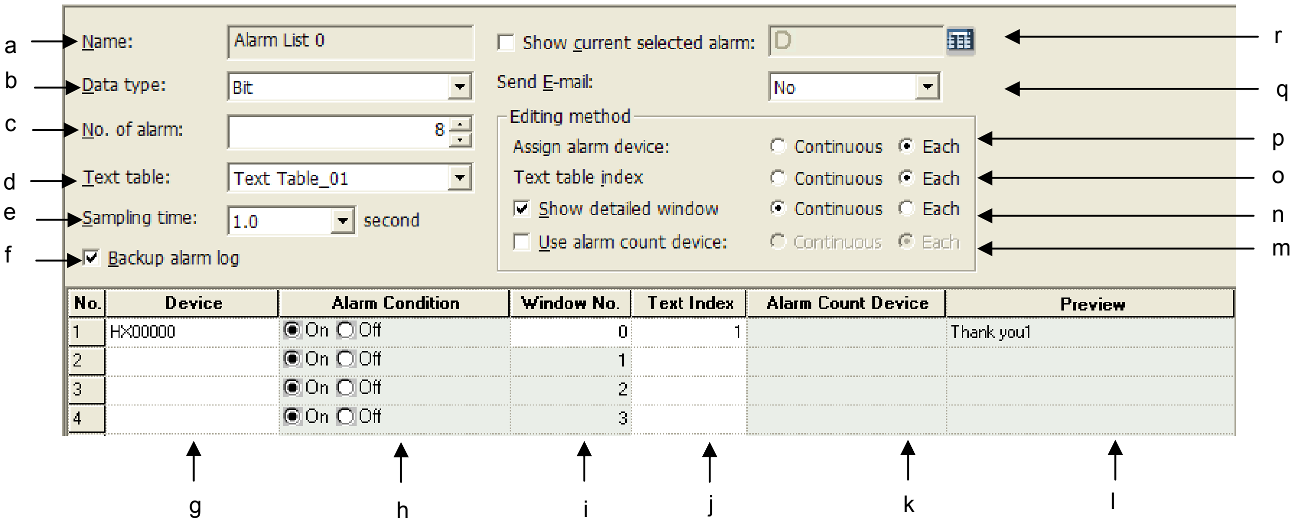
Select [History Alarm] of [Project] tree.

Select [Project]-[Insert Alarm Group] from the menu. Select the group added newly.

If you activate the menu, [Insert Alarm List] will be shown. Select [Insert Alarm List].

The alarm list will be created under a new group.

Select “Bit” for data type.



Name: Alarm List 0

Data type: Bit

No. of alarm: 8

Text table: Text Table_01

Sampling time: 1.0 second

☑ Backup alarm log

☐ Show current selected alarm: D

Send E-mail: No

Editing method

Assign alarm device: ○ Continuous ● Each

Text table index ○ Continuous ● Each

☑ Show detailed window ● Continuous ○ Each

☐ Use alarm count device: ○ Continuous ● Each

No.	Device	Alarm Condition	Window No.	Text Index	Alarm Count Device	Preview
1	HX00000	● On ○ Off	0	1		Thank you1
2		● On ○ Off	1			
3		● On ○ Off	2			
4		● On ○ Off	3			

Items	Description
Name(a)	The name of current screen (The name displayed at a project screen)
Data type(b)	Fixing alarm monitoring device type
The number of Alarms(c)	Selecting the number of alarms. (Max. 10000pcs)
Text table(d)	Designating the text table to be used for the alarm list that is under edition now.
Sampling time (e)	The cycle to check alarm occurrence conditions (Max. 10 seconds)
Backup alarm log (f)	When alarm backup device of alarm property is ON, alarm device value will be saved as CSV file.
Device (g)	Setting alarm monitoring device.
Alarm Conditions(h)	When the data type of alarm monitoring device is Bit, On/Off, in case of no Bit, you can input word condition expression. It indicates alarm occurrence conditions including device status value.
Windows Screen No. (i)	When [Windows View] (n) is applied, it is activated. When you click a special switch [Alarm History List View]-[Windows View] button, it will show you the appropriate screen. Refer to Chap. 14.4.8.
Text Index(i)	Designating text index in the text table selected from (d).
Alarm Count Device (k)	Device saving the how many time alarm occurs.
Preview (ㅣ)	Indicating the selected alarm displayed string. Edition is available only at the related text table.
Use alarm count device (m)	You can select if you will use the device to save occurrence frequency with changing the methods to designate device.
Show detailed window (n)	You can select if you will use Windows View with changing the methods to designate device.
Text table index (o)	Changing the methods to designate string table No.
Assign alarm device n(p)	Changing the method to designate device
E-Mail Function(q)	It judges the conditions for sending E-Mail based on alarm occurrence conditions. You can exclude E-Mail option and establish the E-mailing conditions for both alarm occurrence/recovery.

Items	Description
Show current selected alarm (r)	You can designate the device that displays the last alarm No. selected from alarm history view object.

(2) Word Alarm

Select [History Alarm] of [Project] tree.

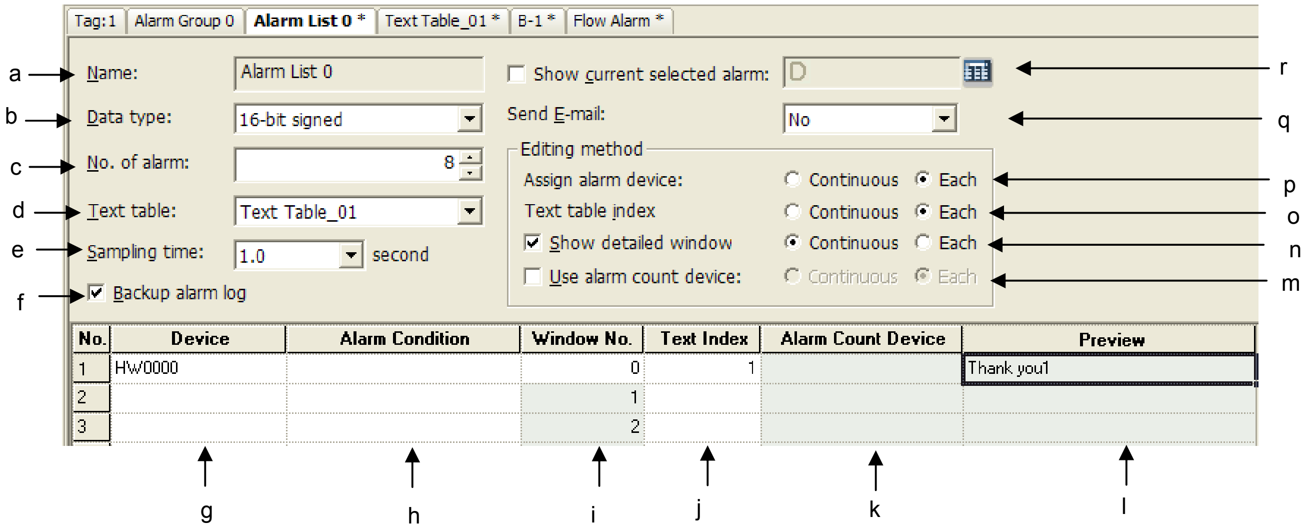
Select [Project]-[Insert alarm history group] from the menu. Select the group added newly.

If you activate the menu, [Insert Alarm List] will be shown. Select [Insert Alarm List].

The alarm list will be created under a new group.

Select available data type as below.

Data type
Signed16 Bit
Unsigned 16 Bit
Signed 32 Bit
Unsigned 32 Bit
BCD 16 Bit
BCD 32 Bit



Name: Alarm List 0

Data type: 16-bit signed

No. of alarm: 8

Text table: Text Table_01

Sampling time: 1.0 second

☑ Backup alarm log

☐ Show current selected alarm: D

Send E-mail: No

Editing method

Assign alarm device: ○ Continuous ● Each

Text table index ○ Continuous ● Each

☑ Show detailed window ● Continuous ○ Each

☐ Use alarm count device: ○ Continuous ● Each

No.	Device	Alarm Condition	Window No.	Text Index	Alarm Count Device	Preview
1	HW0000		0	1		Thank you1
2			1			
3			2			

Items	Description
Name(a)	The name of current screen (The name displayed at a project screen)
Data type(b)	Fixing alarm monitoring device type
The number of Alarms(c)	Selecting the number of alarms. (Max. 10000pcs)
Text table(d)	Designating the text table to be used for the alarm list that is under edition now.
Sampling time (e)	The cycle to check alarm occurrence conditions (Max. 10 seconds)
Backup alarm log (f)	When alarm backup device of alarm property is ON, alarm device value will be saved as CSV file.
Device (g)	Setting alarm monitoring device.
Alarm Conditions(h)	When the data type of alarm monitoring device is Bit, On/Off, in case of no Bit, you can input word condition expression. It indicates alarm occurrence conditions including device status value.
Windows Screen No. (i)	When [Windows View] (n) is applied, it is activated. When you click a special switch [Alarm History List View]-[Windows View] button, it will show you the appropriate screen. Refer to Chap. 14.4.8.

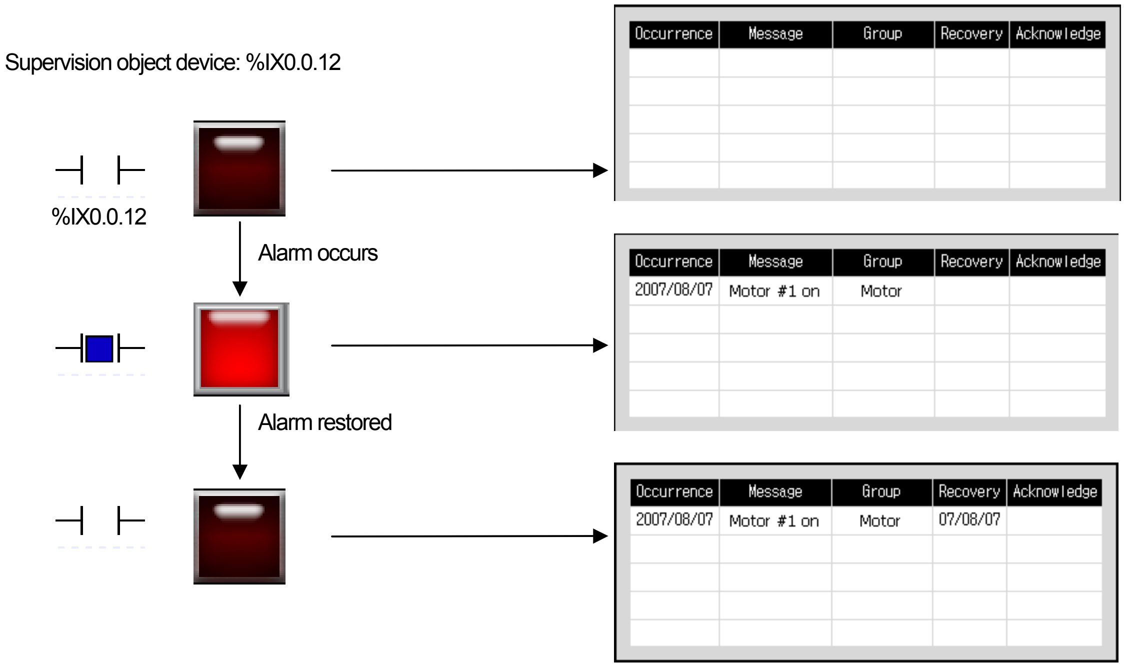
Items	Description
Text Index(i)	Designating text index in the text table selected from (d).
Alarm Count Device (k)	Device saving the how many time alarm occurs.
Preview (ㅣ)	Indicating the selected alarm displayed string. Edition is available only at the related text table.
Use alarm count device (m)	You can select if you will use the device to save occurrence frequency with changing the methods to designate device.
Show detailed window (n)	You can select if you will use Windows View with changing the methods to designate device.
Text table index (o)	Changing the methods to designate string table No.
Assign alarm device n(p)	Changing the method to designate device
E-Mail Function(q)	It judges the conditions for sending E-Mail based on alarm occurrence conditions. You can exclude E-Mail option and establish the E-mailing conditions for both alarm occurrence/recovery.
Show current selected alarm (r)	You can designate the device that displays the last alarm No. selected from alarm history view object.

14.4.2 Use of History Alarm

(1) Bit Alarm

With the device to supervise ON, a history alarm occurs. If the alarm occurs, the time and contents are displayed in the history alarm view object in the screen. With the device to supervise OFF, the alarm is deemed to have been restored and the restoration time is displayed with that it has been restored displayed in the history alarm view object. Now the time, message and group are displayed in the history alarm view object. If the device to supervise turns OFF, the alarm is deemed to have been restored and the restoration time is displayed and that it has been restored is displayed in the history alarm view object.

If the supervision object device is set as the bit device, with the device ON, an alarm has occurred. Now the time, message and group are displayed in the alarm view object. If the device to supervise turns OFF, the alarm is deemed to have been restored.



Occurrence	Message	Group	Recovery	Acknowledge

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor		

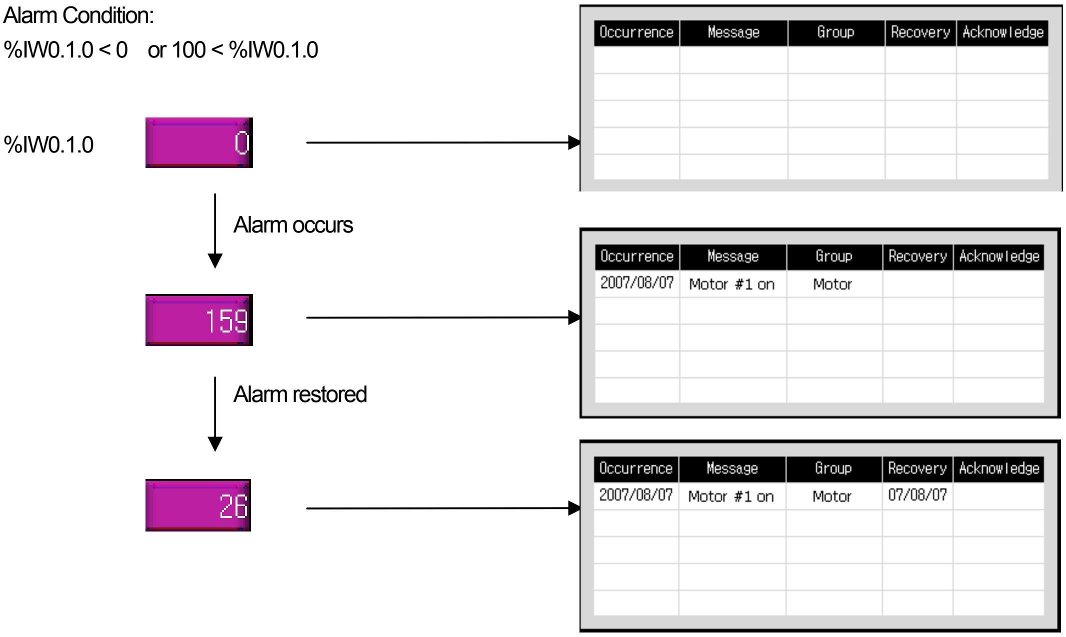
Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	

(2) Word Alarm

If the device to supervise is set as the word device and if the device meets the entered condition, an alarm has occurred. Now the time, message and group are displayed in the alarm view object. The alarm that has occurred due to a word device is deemed to have been restored unless it meets the alarm condition.

Supervision object device: %IW0.1.0

Alarm Condition:
%IW0.1.0 < 0 or 100 < %IW0.1.0



Occurrence	Message	Group	Recovery	Acknowledge

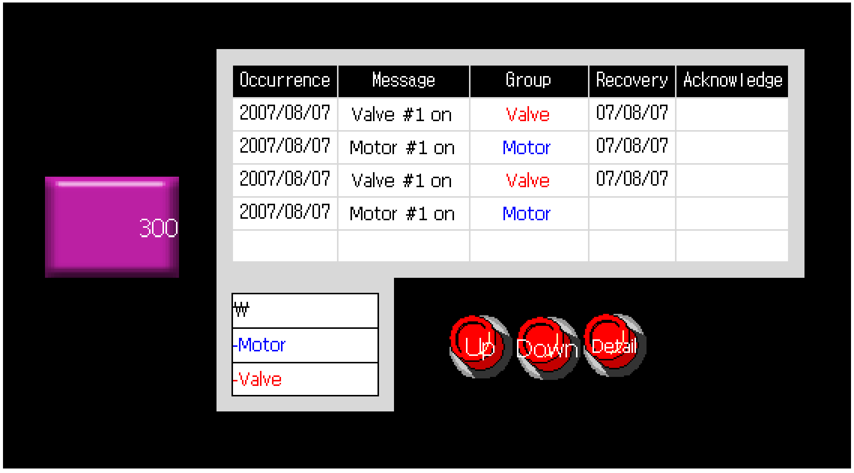
Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor		

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	

(3) History Alarm Viewer/ Alarm Navigator Object

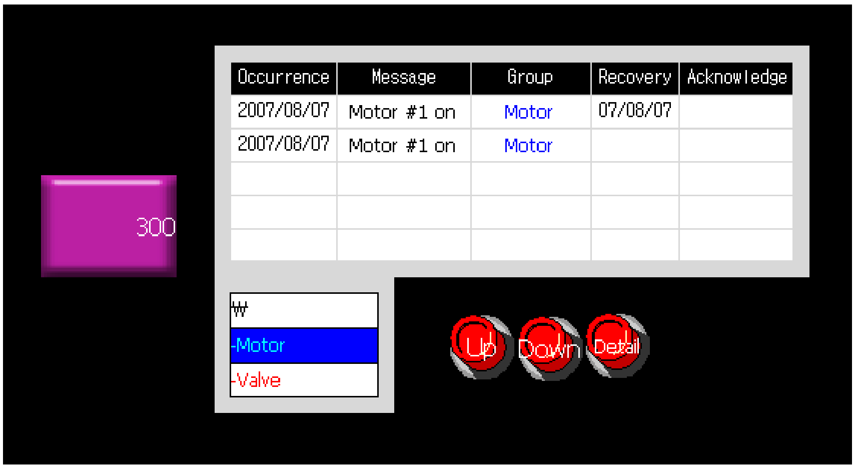
The history alarm viewer object displays the list of history alarms that have occurred. It provides the functions of storing the list of alarms that have occurred during operation of the program and enabling the user to check and manage the list of alarms that have occurred.

The history alarm list provides the list of all the alarms that have occurred. When you want to refer to only the alarm list of a certain group because there are too many alarms, you can have only desired group alarms arranged through the alarm navigator object.



Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Valve #1 on	Valve	07/08/07	
2007/08/07	Motor #1 on	Motor	07/08/07	
2007/08/07	Valve #1 on	Valve	07/08/07	
2007/08/07	Motor #1 on	Motor		

₩
-Motor
-Valve

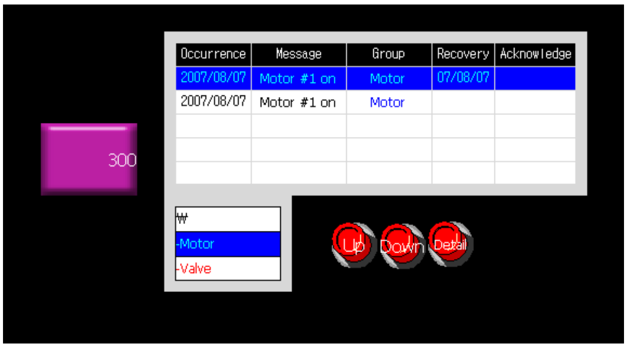


Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	
2007/08/07	Motor #1 on	Motor		

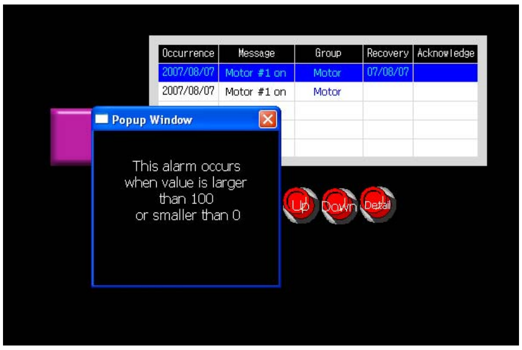
If you choose “Motor” in the alarm navigator at the bottom of the screen, it displays the alarm in the Motor group.

(4) Detailed Display

This is registering a detailed display to check the details of the alarms that have occurred. Select the alarm of which details you want to check in the alarm view object. Click on Go to History Alarm Viewer Detail among the special switches in the window. A window is invoked to display details of it. You can use this function to display details of an alarm.



Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	
2007/08/07	Motor #1 on	Motor		



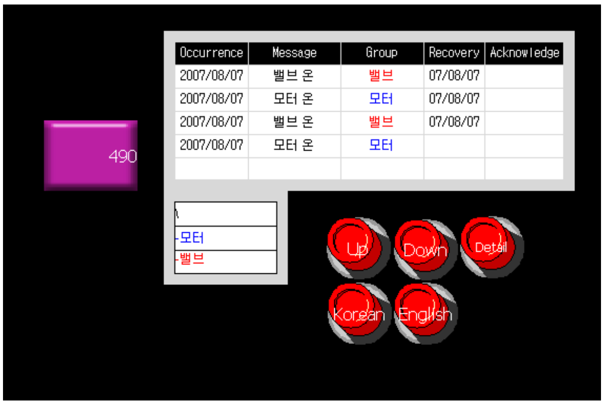
Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	
2007/08/07	Motor #1 on	Motor		

Popup Window

This alarm occurs when value is larger than 100 or smaller than 0

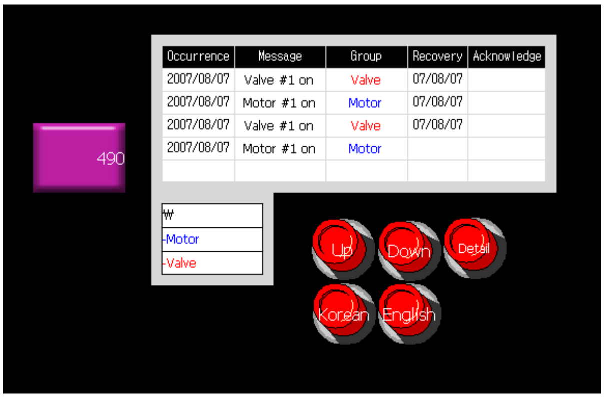
(5) Use of Text Table

Alarm messages of a history alarm are used by referring to the settings of the text table. So are the color and font properties of the text set in the text table. Multiple languages can be used and language change is possible during the runtime by referring to the contents of the text table.



Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	밸브 온	밸브	07/08/07	
2007/08/07	모터 온	모터	07/08/07	
2007/08/07	밸브 온	밸브	07/08/07	
2007/08/07	모터 온	모터		

[Display in Korean]

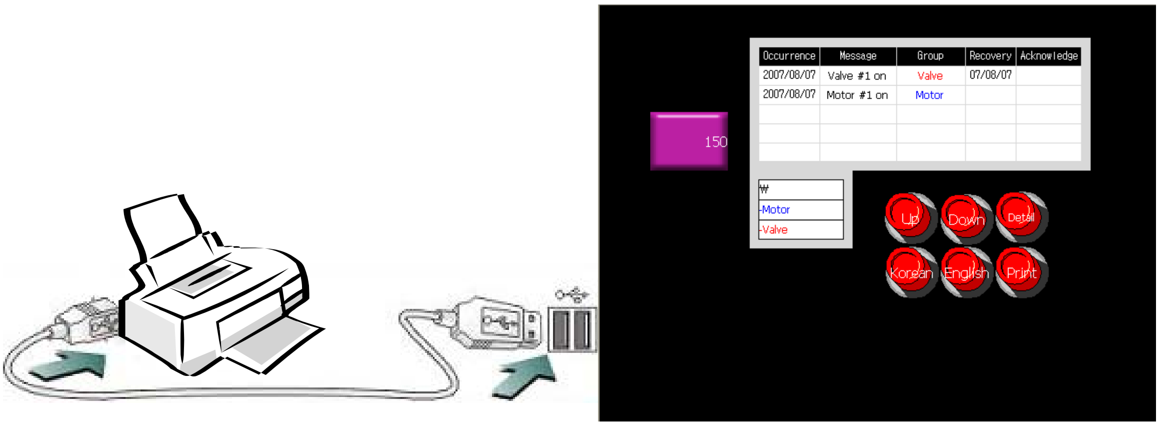


Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Valve #1 on	Valve	07/08/07	
2007/08/07	Motor #1 on	Motor	07/08/07	
2007/08/07	Valve #1 on	Valve	07/08/07	
2007/08/07	Motor #1 on	Motor		

[Display in English]

(6) History Alarm Printing

You can print out the list of history alarms by using the special switches. If a USB wide-use printer is plugged into the device, the list of the group specified in the special switch among the history alarms that have occurred after the present program started is printed.

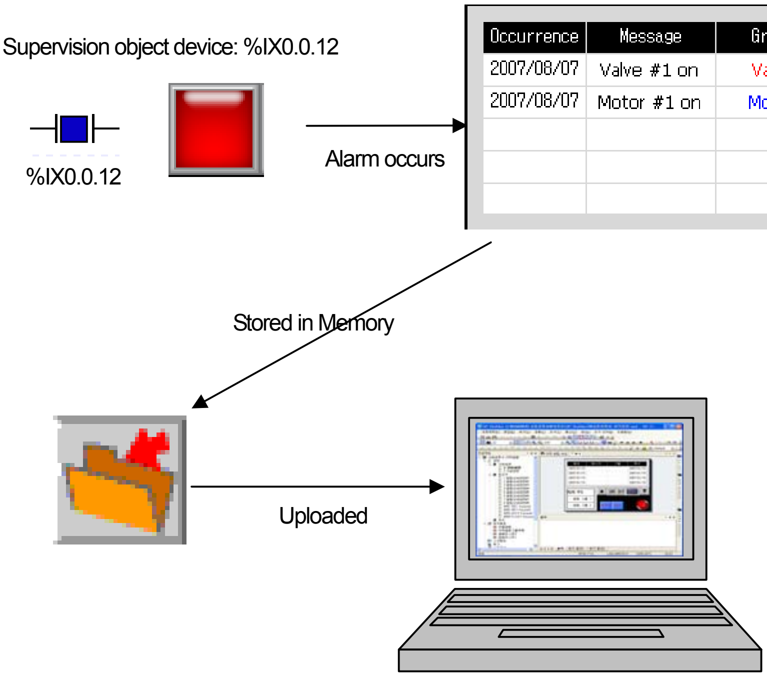


Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Valve #1 on	Valve	07/08/07	
2007/08/07	Motor #1 on	Motor		

150
₩
Motor
Valve
Up
Down
Detail
Korean
English
Print

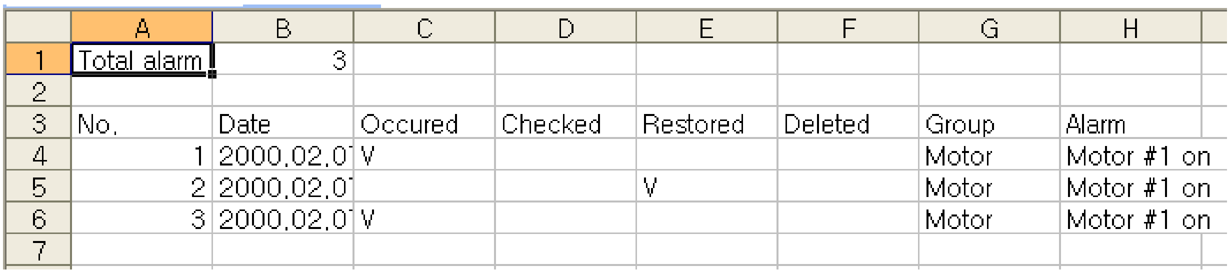
(7) History Alarm Backup

If an alarm occurs, the alarm is saved in a non-volatile memory of the device. The list of alarms is not deleted even the device is severed from the power supply. The list of alarms saved in a non-volatile memory can be uploaded to the computer through XP Builder. The uploaded data can be easily edited by the user in the form of CSV file.



Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Valve #1 on	Valve	07/08/07	
2007/08/07	Motor #1 on	Motor		

Supervision object device: %IX0.0.12
%IX0.0.12
Alarm occurs
Stored in Memory
Uploaded

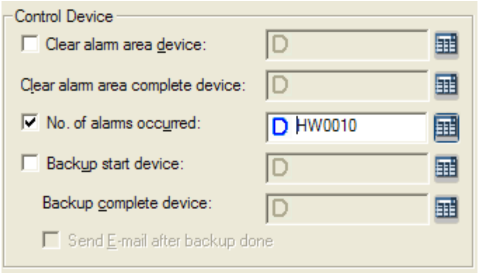


	A	B	C	D	E	F	G	H
1	Total alarm	3						
2								
3	No.	Date	Occured	Checked	Restored	Deleted	Group	Alarm
4	1	2000.02.0	V				Motor	Motor #1 on
5	2	2000.02.0			V		Motor	Motor #1 on
6	3	2000.02.0	V				Motor	Motor #1 on
7								

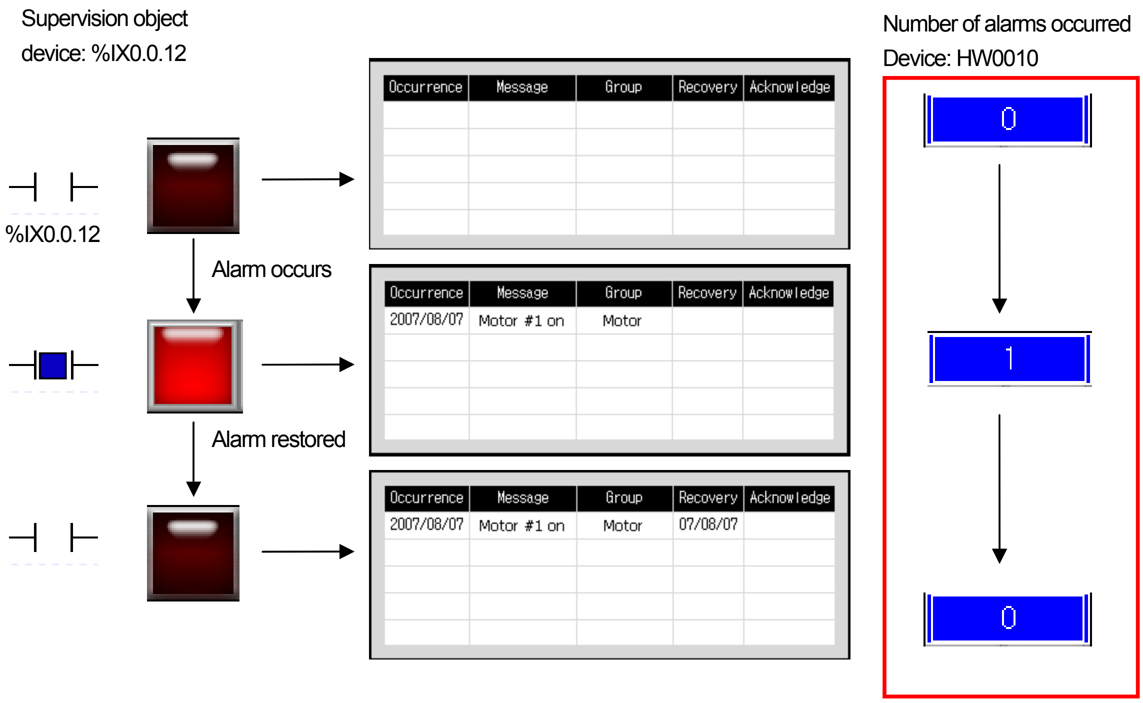
14.4.3 Setting of No. of Alarms Occurred

The number of alarms occurred is checked and the value is entered in the device specified by the user.

The history alarm properties setting window is displayed in the history alarm item of the project tree.
Check ‘Use’ of No. of Alarms Occurred on the upper left.
Set the word device to store the no. of alarms occurred.



Control Device
☐ Clear alarm area device: D
Clear alarm area complete device: D
☑ No. of alarms occurred: D HW0010
☐ Backup start device: D
Backup complete device: D
☐ Send E-mail after backup done



Supervision object
device: %IX0.0.12
%IX0.0.12
Alarm occurs
Alarm restored
Number of alarms occurred
Device: HW0010
0
1
0

Occurrence	Message	Group	Recovery	Acknowledge

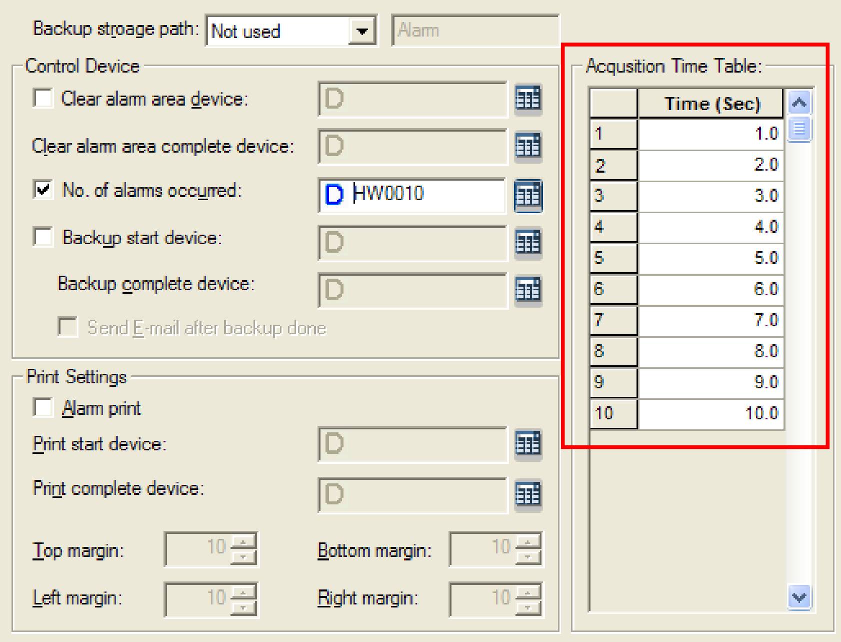
Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor		

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	

14.4.4 Setting of History Alarm Sampling Time

All the devices registered as a history alarm are always monitored during operation of the program.
The change of some device values should be frequently checked while others have only to be checked every come minutes or hours, which depends on the purpose of the device. The monitoring cycle of a device, which are different from each other, is called Sampling Time and XP Builder provides the function of setting the Sampling Time of each alarm list differently.

XP Builder can set the different Sampling Time of 10.
There is a table for setting the Sampling Time at the left bottom of the history alarm common setting window.



Backup stroage path: Not used

Control Device

☐ Clear alarm area device: D

Clear alarm area complete device: D

☑ No. of alarms occurred: D HW0010

☐ Backup start device: D

Backup complete device: D

☐ Send E-mail after backup done

Print Settings

☐ Alarm print

Print start device: D

Print complete device: D

Top margin: 10 Bottom margin: 10

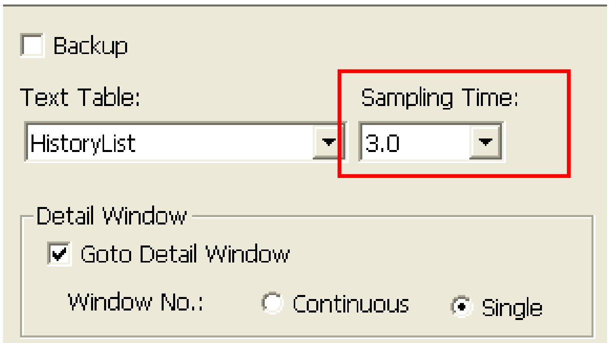
Left margin: 10 Right margin: 10

Acqusition Time Table:

	Time (Sec)
1	1.0
2	2.0
3	3.0
4	4.0
5	5.0
6	6.0
7	7.0
8	8.0
9	9.0
10	10.0

The Sampling Time setting unit is second(s) and you can set it to the first decimal place, so the minimum unit scale of setting is 100ms.
In the table above, the Sampling Time is registered by being divided into 1 sec, 2 sec and 3sec.…

In each alarm list, the user can choose one of the Sampling Times registered by the user and set the device data monitoring cycle.
At the top of the alarm list setting window is a combo box for setting the Sampling Time.



☐ Backup

Text Table: HistoryList

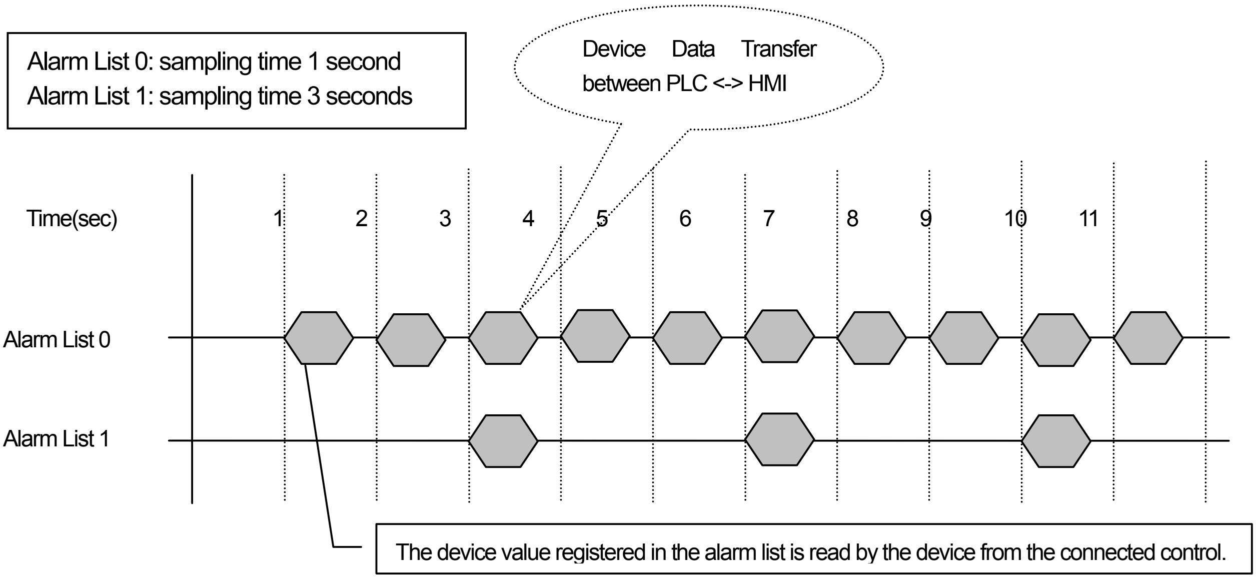
Sampling Time: 3.0

Detail Window

☑ Goto Detail Window

Window No.: ○ Continuous ● Single

The example above shows an alarm list of which the Sampling Time is set at 3 seconds.
The following shows the sequence of invoking device data according to the Sampling Time.


Alarm List 0: sampling time 1 second
Alarm List 1: sampling time 3 seconds
Device Data Transfer between PLC <-> HMI
Time(sec)
1
2
3
4
5
6
7
8
9
10
11
Alarm List 0
Alarm List 1
The device value registered in the alarm list is read by the device from the connected control.

Note

(1) How to apply the acquisition cycle related to alarm history performance

XGT Panel outs together the alarm list with the same acquisition cycle and inspects them at once. For example, the acquisition cycle of 10 alarm history lists with 100 alarm devises are set as 1.0 second, total 1000 alarms will be treated as one task unit. However, among the alarm list, if 5pcs have 1.0 second of acquisition cycle and another 5pcs have 2.0 of second acquisition cycle, 500pcs will be respectively inspected at the same time.

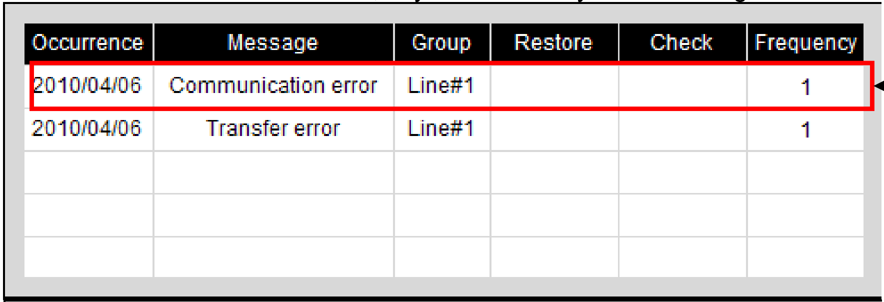
Therefore, one acquisition cycle has 1000 alarms or more, monitoring performance will fall off. To apply XGT Panel's alarm history monitoring function effectively, please make sure that the number of alarm history belongs to one acquisition cycle does not exceed 500pcs.

14.4.5 History Alarm Occurrence and Restoration

(1) Alarm Message Storage

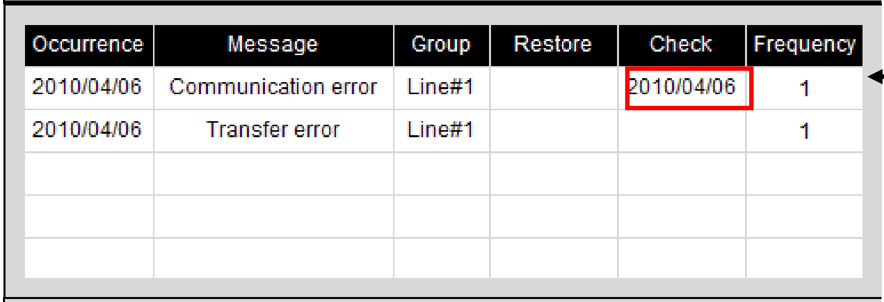
The history alarm that occurred first is stored first.

If identical alarms occur more than twice, they are saved many times according to the time they occurred.



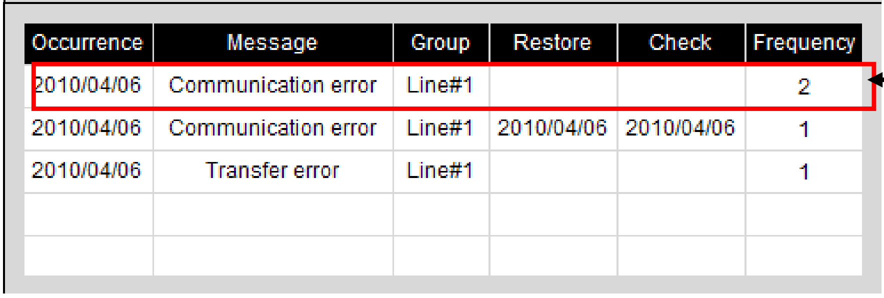
Occurrence	Message	Group	Restore	Check	Frequency
2010/04/06	Communication error	Line#1			1
2010/04/06	Transfer error	Line#1			1

Communication error occurs



Occurrence	Message	Group	Restore	Check	Frequency
2010/04/06	Communication error	Line#1		2010/04/06	1
2010/04/06	Transfer error	Line#1			1

Checks communication error



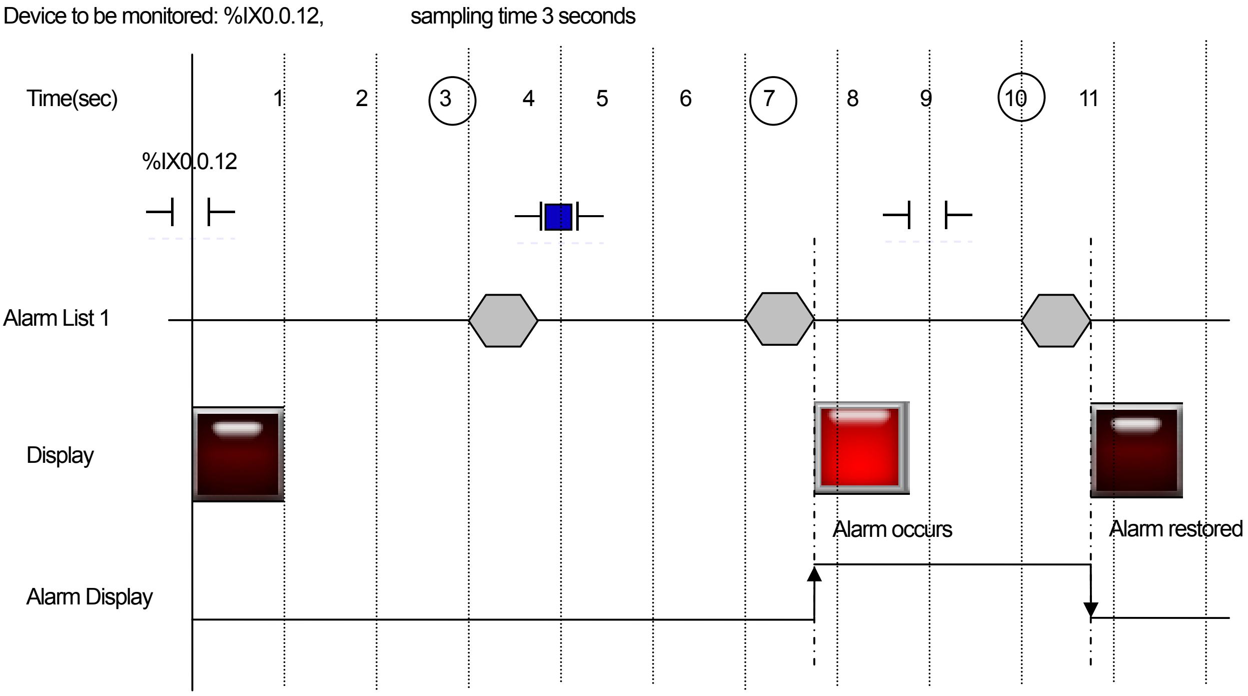
Occurrence	Message	Group	Restore	Check	Frequency
2010/04/06	Communication error	Line#1			2
2010/04/06	Communication error	Line#1	2010/04/06	2010/04/06	1
2010/04/06	Transfer error	Line#1			1

Communication error occurs again

(2) Bit Alarm

If a bit device is set as the alarm device and the pertinent bit device is ON, an alarm is deemed to have occurred and if OFF, restored. The Sampling Time of each history alarm list and the number of registered devices are different, so the timing of alarms might be different.

The following table shows the times when an alarm occurs.

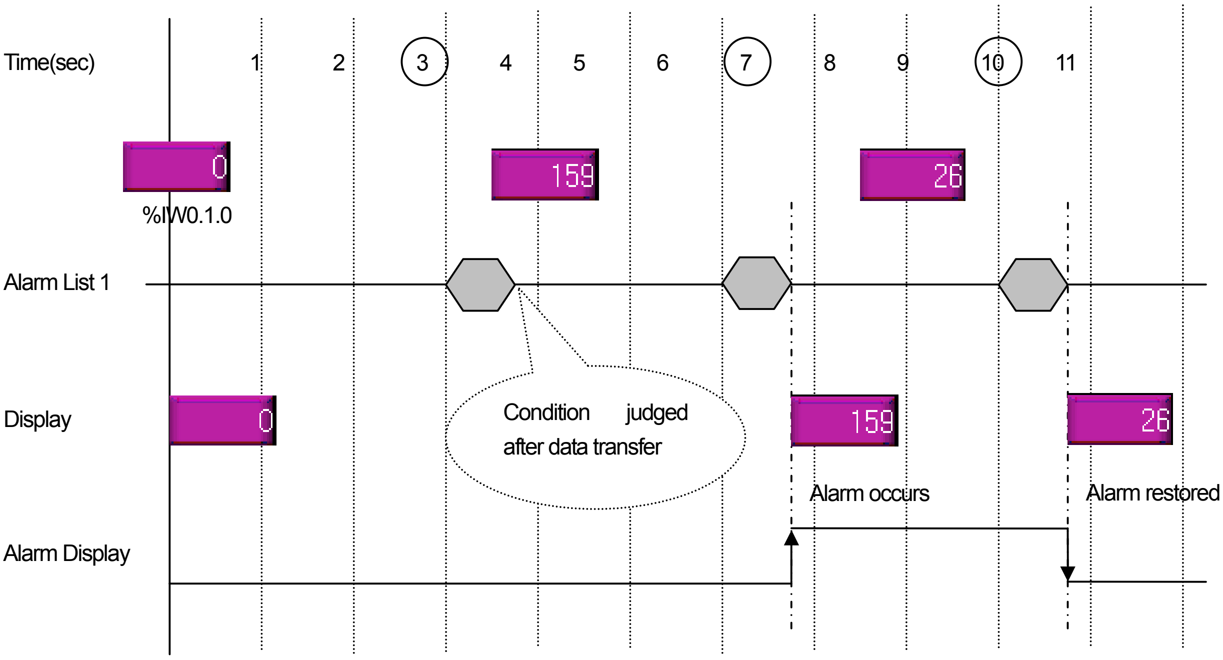

Device to be monitored: %IX0.0.12,
sampling time 3 seconds
Time(sec)
1
2
3
4
5
6
7
8
9
10
11
%IX0.0.12
Alarm List 1
Display
Alarm occurs
Alarm restored
Alarm Display

(3) Word Alarm

If a word device is set as the alarm device, when the word device meets the condition specified by the user, the alarm is deemed to have occurred and when the word device fails to meet the condition, the alarm is deemed to have been restored. The Sampling Time of each history alarm list and the number of registered devices are different, so the timing of alarms might be different. The following table shows the times when an alarm occurs.

Device to be monitored: %IW0.1.0 sampling time 3 seconds

Alarm condition: when %IW0.1.0 < 0 or 100 < %IW0.1.0


Time(sec)
1
2
③
4
5
6
⑦
8
9
⑩
11
0
%IW0.1.0
159
26
Alarm List 1
Display
0
Condition judged after data transfer
159
26
Alarm occurs
Alarm restored
Alarm Display

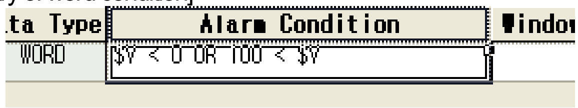
(4) Word Alarm Condition Setting

If a word device is set as the alarm monitoring device, the condition to be recognized as an alarm should be entered.
The alarm condition is a single conditional expression consisting of two or three terms (And, Or conditions).
[Word condition entry rule]
With respect to entry of word conditions, if only two or three term (And/Or) conditions can be entered, it is a single term condition.
Each term should be separated by ‘ ‘ (blank).
The standard device is expressed by ‘$V’. If ‘$V’ is entered, it is automatically recognized as the standard device during download.
Each conditional expression should have at least one device variable.
The standard device must be included at least once in the expression.

[Word condition operator]
The following operators are available.

<	<=	>	>=	=	!=

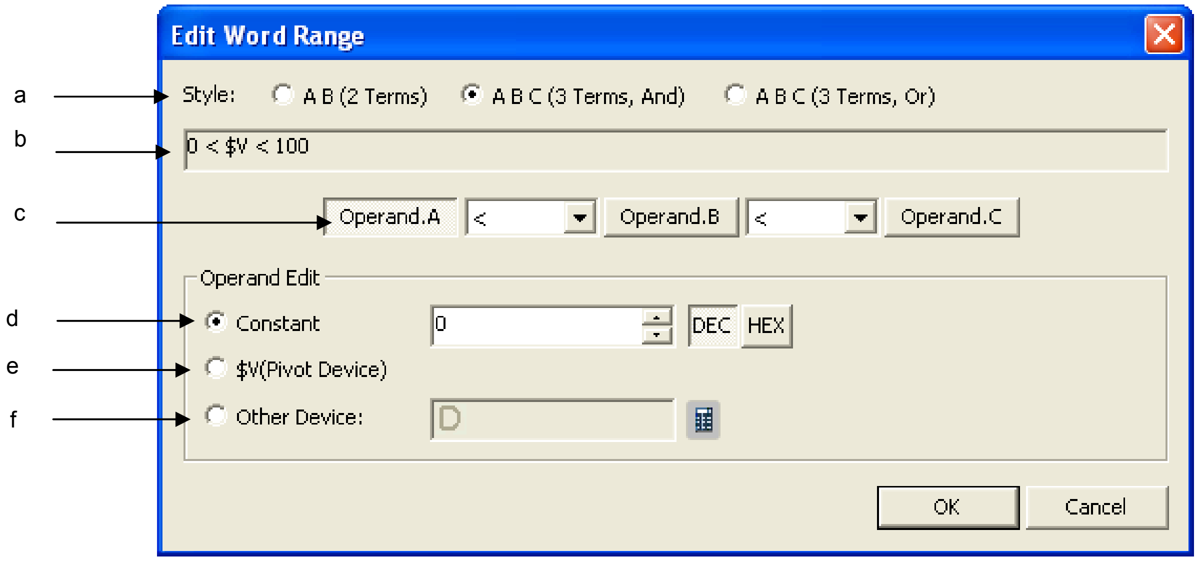
[Direct entry of word condition]



.ta Type	Alarm Condition	Windo
WORD	$V < 0 OR 100 < $V	

Fill in the alarm range entry box of the word alarm list according to the rule.

[Alarm range entry dialog box]



Edit Word Range

Style: ○ A B (2 Terms) ● A B C (3 Terms, And) ○ A B C (3 Terms, Or)

0 < $V < 100

Operand Edit

● Constant 0

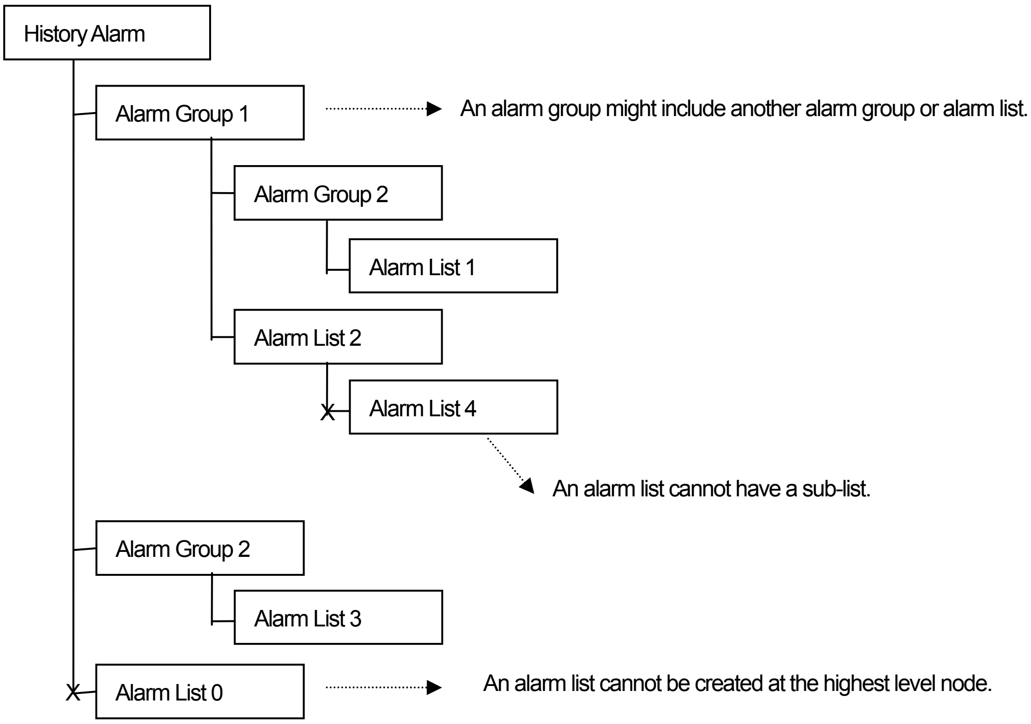
○ $V(Pivot Device)

○ Other Device: D

Items	Description
conditional expression form (a)	Choose from 2 or 3 term condition expressions.
Preview Conditional Sentence (b)	Combines the items selected by the user and displays the contents of the conditional expression in a text that can be easily recognized.
Conditional expression editing item (c)	Choose the item you want to modify.
Operand constant value setting (d)	Set the operand type at a fixed value.
Use the operand standard device (e)	Uses the device set in the alarm in the operand type. Displayed as $V in b(Preview).
Use other operand device. (f)	Sets the operand as the device. Reads and judges the value from the device set when the operating expression was identified. The data type is the device type in the alarm list setting window.

14.4.6 History Alarm Structure

(1) A history alarm is displayed in a tree structure for the sake of convenience of editing. It is divided into the alarm group and alarm list. The former has an alarm group or alarm list as a child. The latter, a terminal node which cannot have a child, registers a device to supervise.
(2) An alarm group is a unit to manage the alarms in a logical structure. You can retrieve and check the alarms that have occurred by group unit in the alarm search panel. An alarm group is the unit of alarm printing.
(3) An alarm list is a set of alarms sharing the same characteristics. An alarm list has the same data type and Sampling Time. In addition, a text table is specified and used as the alarm contents.



An alarm group might include another alarm group or alarm list.

An alarm list cannot have a sub-list.

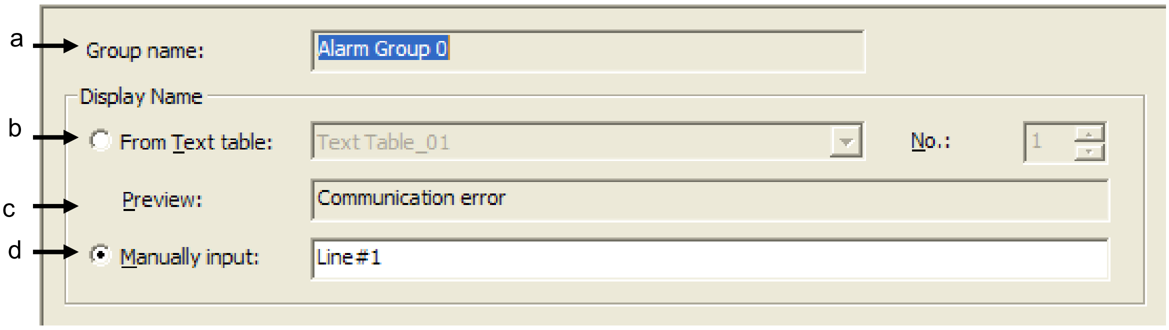
An alarm list cannot be created at the highest level node.

If you choose [Alarm Group 2] in the alarm search panel, only the alarms that occurred in [Alarm List 1], which is a sub-item of [Alarm Group 2], are displayed.

If you choose [Alarm Group 1], only the alarms that occurred in [Alarm List 1] and [Alarm Group 2], which are a sub-item of [Alarm Group 1].

14.4.7 History Alarm Group Setting

The history alarm group can specify the text to display the group.



Group name: Alarm Group 0

Display Name

○ From Text table: Text Table_01 No.: 1

Preview: Communication error

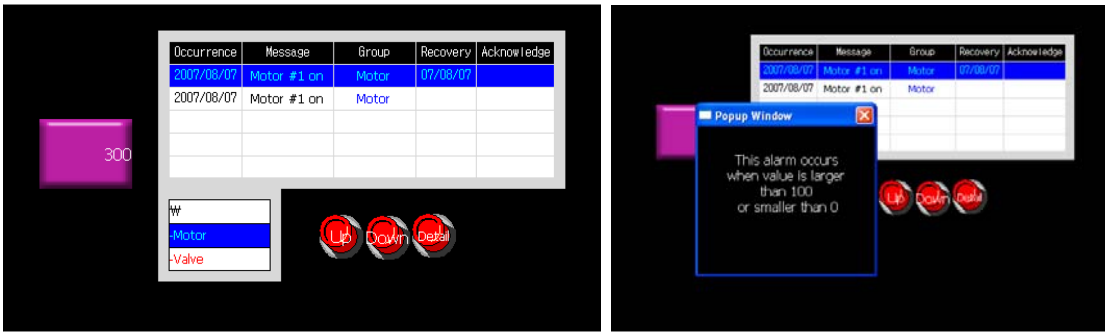
● Manually input: Line#1

Items	Description
Group name(a)	The name of alarm history displayed at a project screen.
From Text Table(b)	The alarm group name to be displayed at alarm history view object can be referred from text table.
Preview(c)	Previewing the string input at sting table
Direct input (d)	You can edit and input the name of alarm history group.
No.(e)	String No. of string table

14.4.8 Setting of Detailed Display of History Alarm

(1) The detailed history alarm display is the function of specifying the page where details of an alarm, which the user wants to know, are displayed.

(2) The detailed alarm display can be set in the window and displayed in the screen in the form of a pop-up.

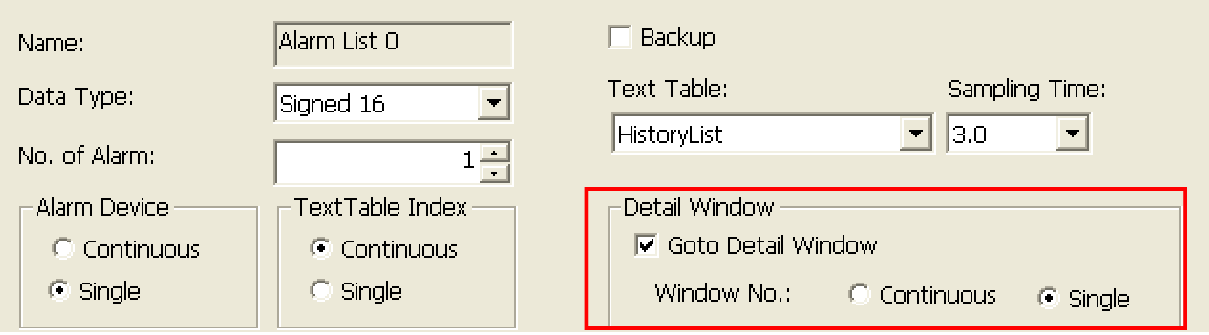


Occurrence	Message	Group	Recovery	Acknowledge
2007/08/07	Motor #1 on	Motor	07/08/07	
2007/08/07	Motor #1 on	Motor		

This alarm occurs when value is larger than 100 or smaller than 0

Display in Window

To use the detailed display, check Use of the detailed display in each alarm list.



Name: Alarm List 0

Data Type: Signed 16

No. of Alarm: 1

☐ Backup

Text Table: HistoryList

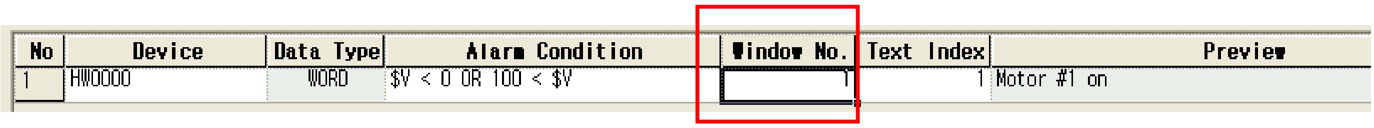
Sampling Time: 3.0

Alarm Device
○ Continuous
● Single

TextTable Index
● Continuous
○ Single

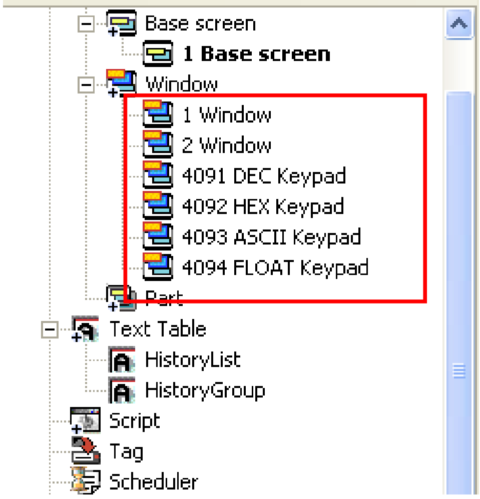
Detail Window
☑ Goto Detail Window
Window No.: ○ Continuous ● Single

If you check [Goto Detail Window], a row appears where you can set the detailed screen numbers in the alarm list setting table. Enter the window screen number to display in the screen when the alarm occurs.



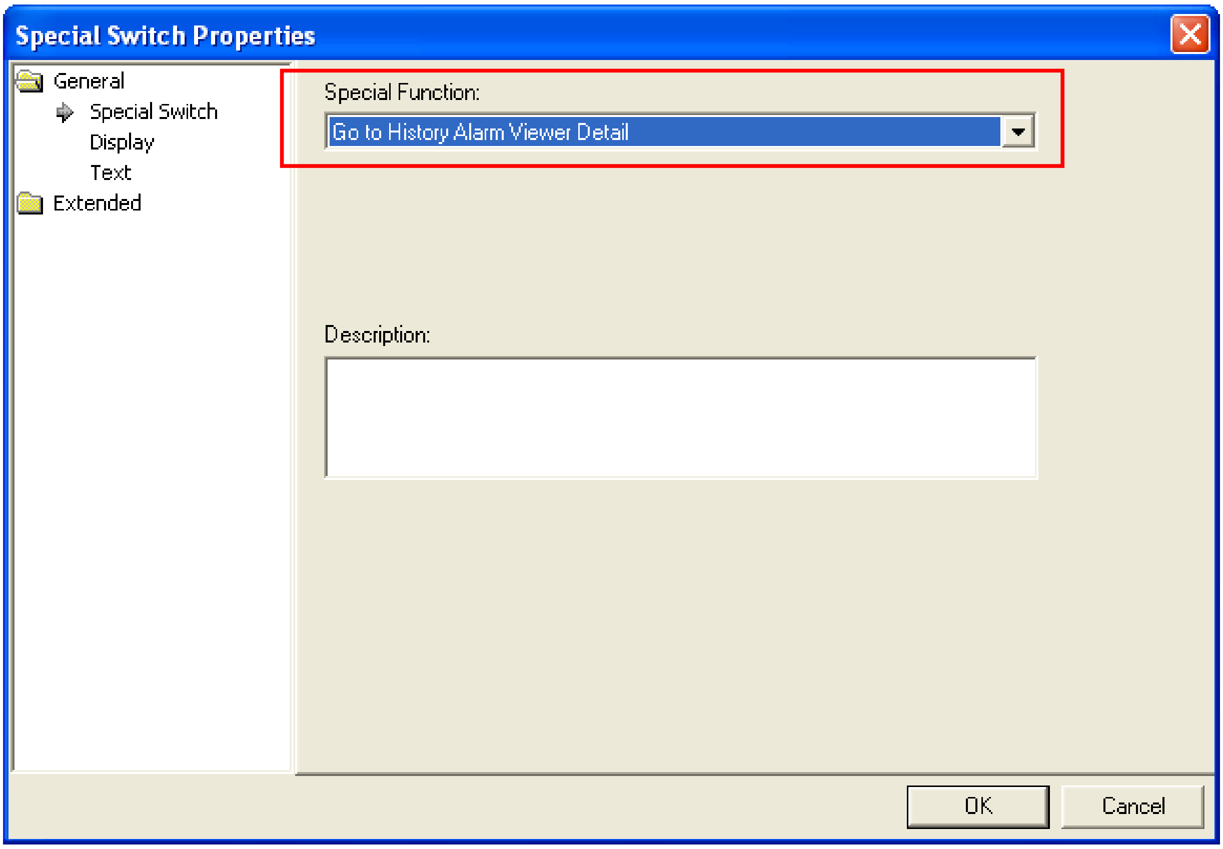
No	Device	Data Type	Alarm Condition	Window No.	Text Index	Preview
1	HW0000	WORD	$V < 0 OR 100 < $V	1	1	Motor #1 on

Edit the window in detail in the project tree.



- Base screen
  - 1 Base screen
- Window
  - 1 Window
  - 2 Window
  - 4091 DEC Keypad
  - 4092 HEX Keypad
  - 4093 ASCII Keypad
  - 4094 FLOAT Keypad
- Part
- Text Table
  - HistoryList
  - HistoryGroup
- Script
- Tag
- Scheduler

Create a special switch in the editing window where the alarm list is and set the function of the properties window as ‘Go to History Alarm Viewer Detail’.



Special Switch Properties
General
Special Switch
Display
Text
Extended
OK
Cancel

Special Function: Go to History Alarm Viewer Detail

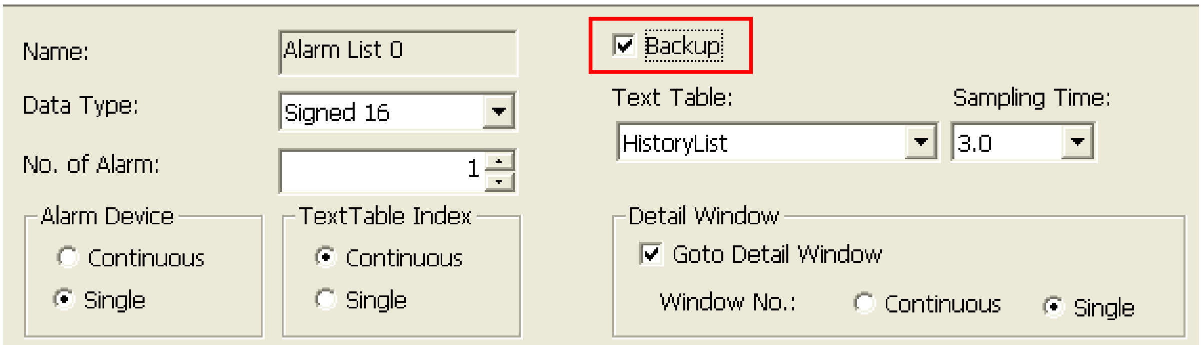
Description:

If you want to view the detailed display of an alarm that has occurred, choose the alarm in [History Alarm Viewer] object and press the special switch [Go to History Alarm Viewer Detail].

14.4.9 Saving History Alarm Data

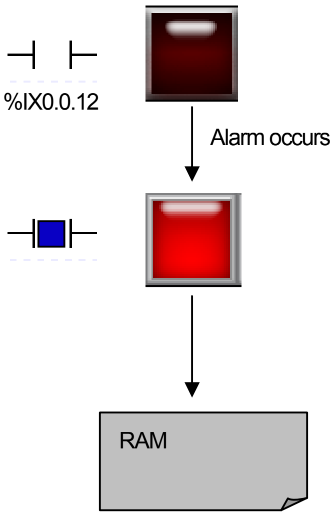
A history alarm is first saved in the memory when an alarm occurs. When the program monitor ends, the data saved in the memory disappear. Save the history alarm in NVRam to keep it safe in case of an interruption of power supply or sudden end of the program.

[Set NVRam Saving]
(a) Set [Backup] on the supper right in the alarm list setting window.

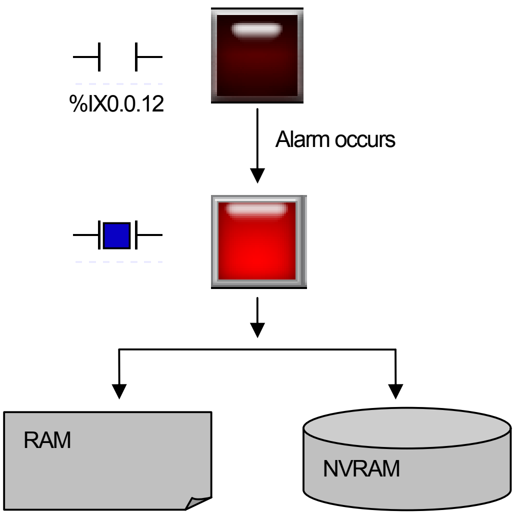


Name: Alarm List 0
Data Type: Signed 16
No. of Alarm: 1
☑ Backup
Text Table: HistoryList
Sampling Time: 3.0
Alarm Device: ○ Continuous ● Single
TextTable Index: ● Continuous ○ Single
Detail Window: ☑ Goto Detail Window
Window No.: ○ Continuous ● Single

Alarm List Backup Not Used



Alarm List Backup Used

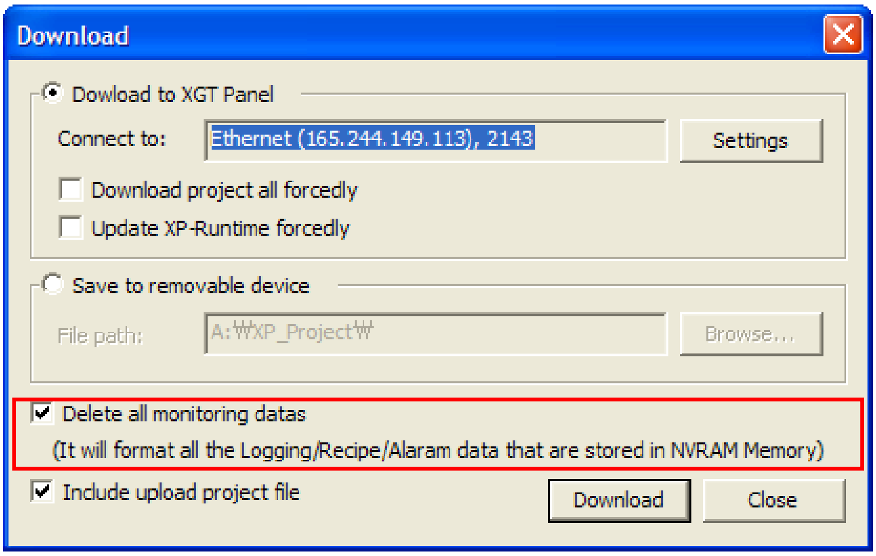


When use of the alarm backup is set, the alarm data that occurred in the volatile and non-volatile memories are saved in case of an alarm.

The alarm data of the non-volatile memory (NVRam) executes deletion in two circumstances, which are alarm data upload and download by “previous monitoring data deletion” option in project download.

If the alarm data is uploaded through XP Builder, all the saved alarm data are deleted.

If you check ☑ Delete all the monitoring data when downloading the project, all the memory area is deleted before a new program is executed. The alarm history saved executes deletion, too.



● Dowload to XGT Panel

Connect to: Ethernet (165.244.149.113), 2143

☐ Download project all forcedly

☐ Update XP-Runtime forcedly

○ Save to removable device

File path: A:₩XP_Project₩

☑ Delete all monitoring datas

(It will format all the Logging/Recipe/Alaram data that are stored in NVRAM Memory)

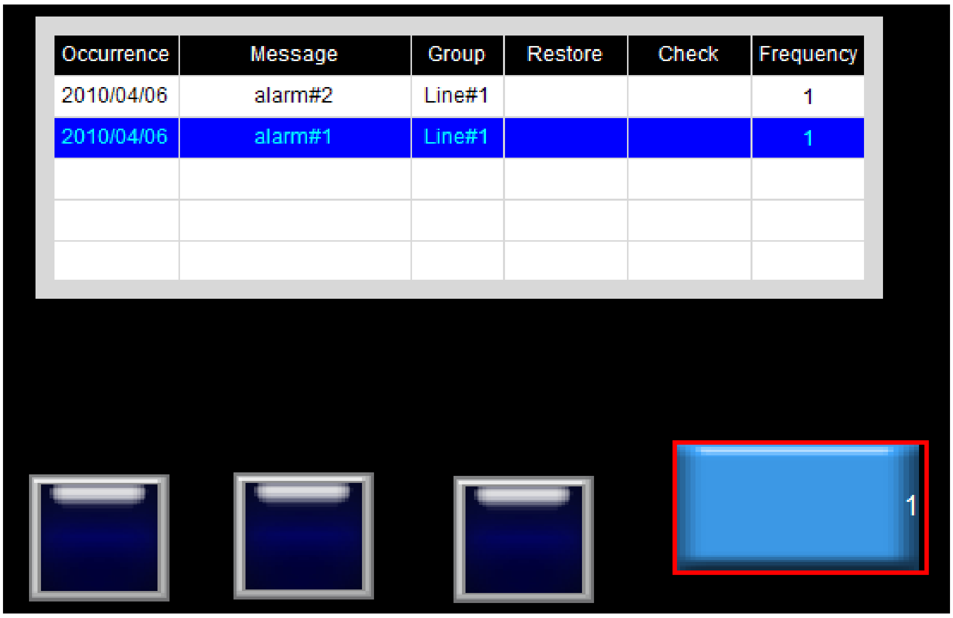
☑ Include upload project file

[NVRAM Area Data Management]

The size of the NVRAM area for alarm recording is 64 KB.

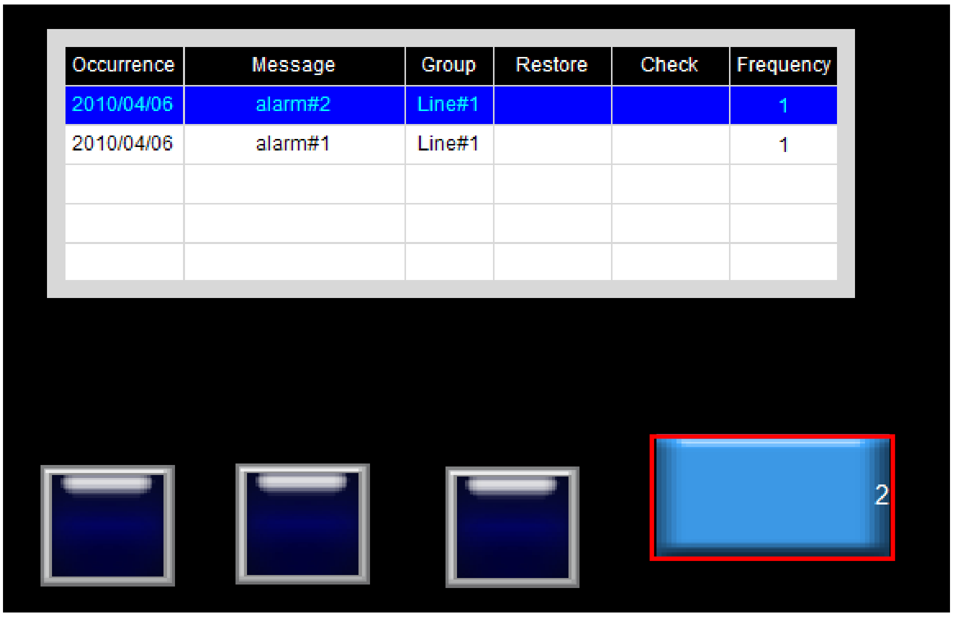
14.4.10 Device displaying selected alarm

It indicates the device to save alarm No. selected alarm history object. If you designate the alarm occurred at alarm history object, the appropriate alarm will be selected and the No. will be input to the selected alarm display device.



Occurrence	Message	Group	Restore	Check	Frequency
2010/04/06	alarm#2	Line#1			1
2010/04/06	alarm#1	Line#1			1

1



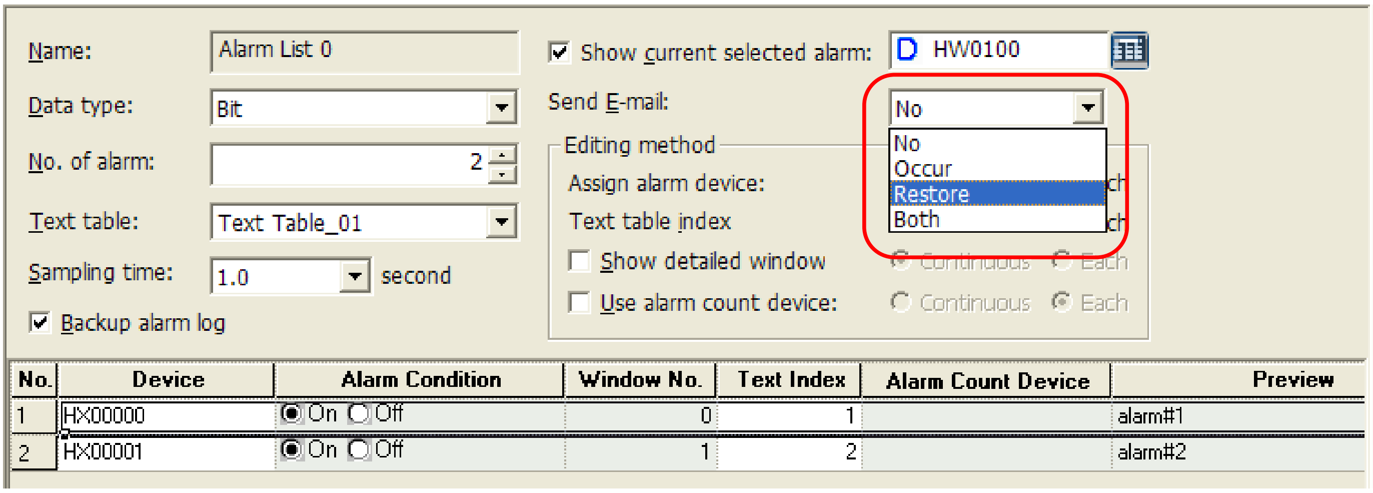
Occurrence	Message	Group	Restore	Check	Frequency
2010/04/06	alarm#2	Line#1			1
2010/04/06	alarm#1	Line#1			1

2

14.4.11 Function to send alarm data via E-Mail

It can send the data to the user's address via E-Mail during Alarm history occurrence/recovery/backup.
For setting mail server and address, you can refer to [Project Property]-[Other setting]-[E-Mail functions setting].

[Mailing function during alarm occurrence /recovery]
When alarm history occurs or recovers, a mail will be sent.

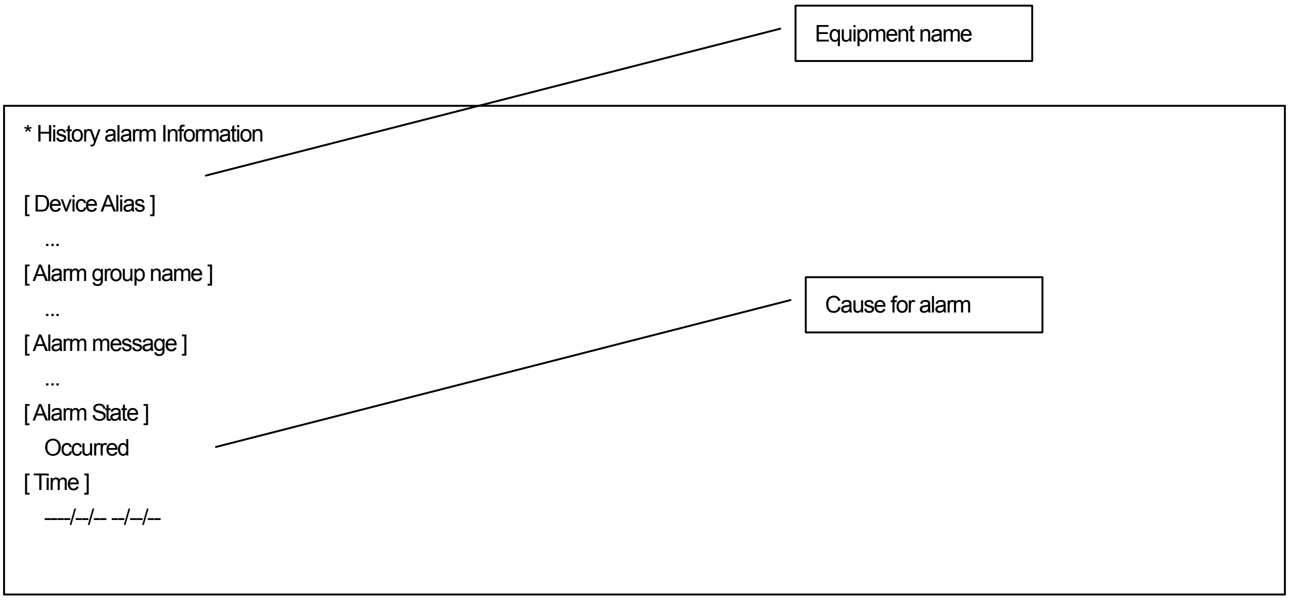


Name: Alarm List 0
Data type: Bit
No. of alarm: 2
Text table: Text Table_01
Sampling time: 1.0 second
☑ Backup alarm log
☑ Show current selected alarm: HW0100
Send E-mail: No

No
Occur
Restore
Both
Editing method
Assign alarm device:
Text table index
☐ Show detailed window ○ Continuous ○ Each
☐ Use alarm count device: ○ Continuous ● Each

No.	Device	Alarm Condition	Window No.	Text Index	Alarm Count Device	Preview
1	HX00000	● On ○ Off	0	1		alarm#1
2	HX00001	● On ○ Off	1	2		alarm#2

When alarm occurs or recovers, the transmitted mail format is as below.



Equipment name
Cause for alarm

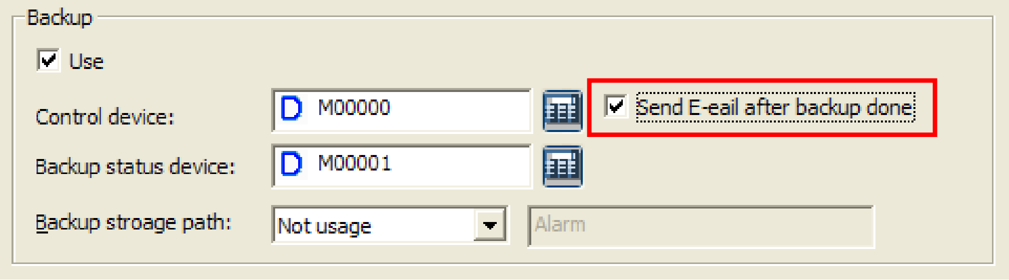
* History alarm Information

[Device Alias]
...
[Alarm group name]
...
[Alarm message]
...
[Alarm State]
Occurred
[Time]
—/–/– –/–/–

[Mailing during alarm backup]

When alarm history is back-upped, a mail will be sent.

You can establish mailing option for alarm backup at [Alarm History Property] page.



Backup

☑ Use

Control device: M00000

☑ Send E-eail after backup done

Backup status device: M00001

Backup stroage path: Not usage

Alarm

The sent mail format is as below during alarm backup.

```
* Alarm data has saved as CSV.

[ Device alias ]
   .....

[ File Path ]
   .....
```

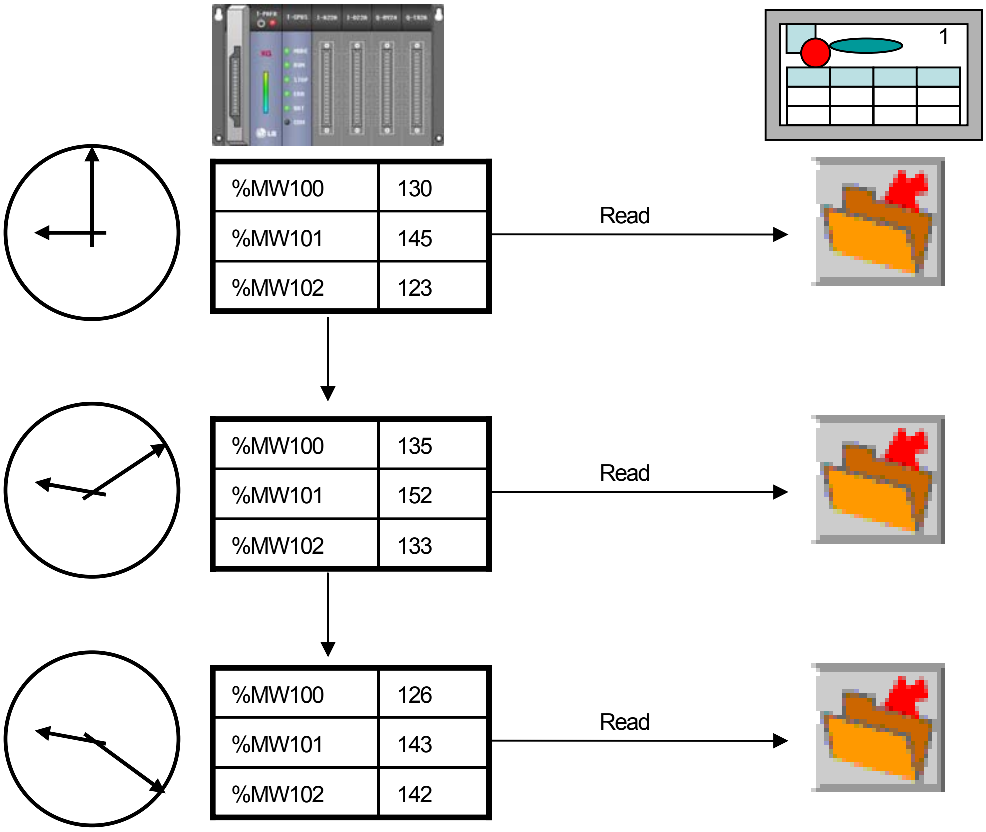
14.5 Logging

Logging is the function of recording the desired device value in a file when the condition specified by the user is met. Logging is used to trace the trend of the device.

14.5.1 Use of Logging

(1) Periodical Logging (Time)

Logging gets started at a specific time and executed periodically as many times as specified.
The following example shows start of logging at 9:00 and execution three times every 10 minutes.



%MW100	130
%MW101	145
%MW102	123

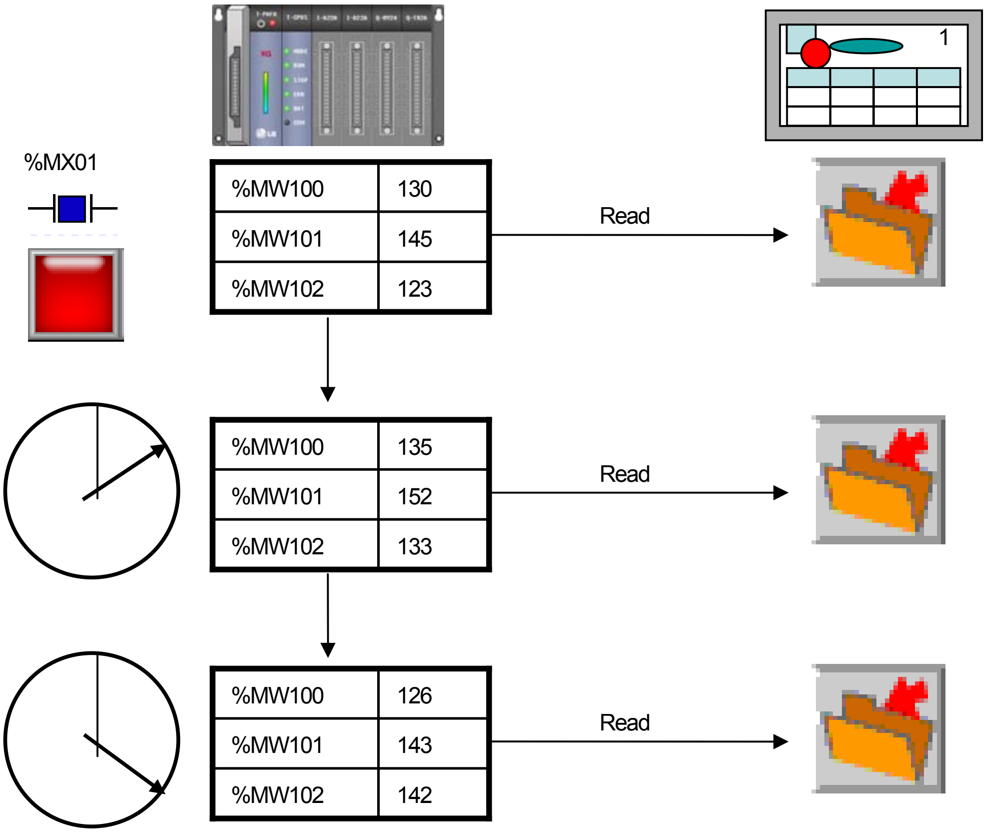
%MW100	135
%MW101	152
%MW102	133

%MW100	126
%MW101	143
%MW102	142

(2) Periodical Logging (Bit Device)

With the logging start device ON, logging gets started and executed periodically as many times as specified.

The following example shows start and execution of logging three times every 10 minutes when %MX01 is ON.



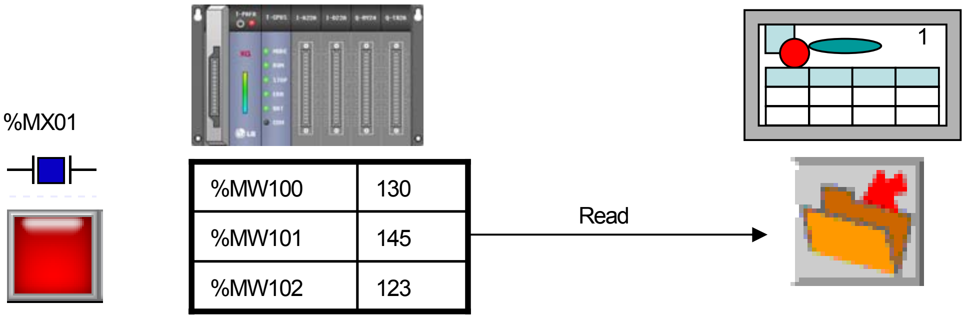
%MW100	130
%MW101	145
%MW102	123

%MW100	135
%MW101	152
%MW102	133

%MW100	126
%MW101	143
%MW102	142

(3) Conditional Logging (Bit Device)

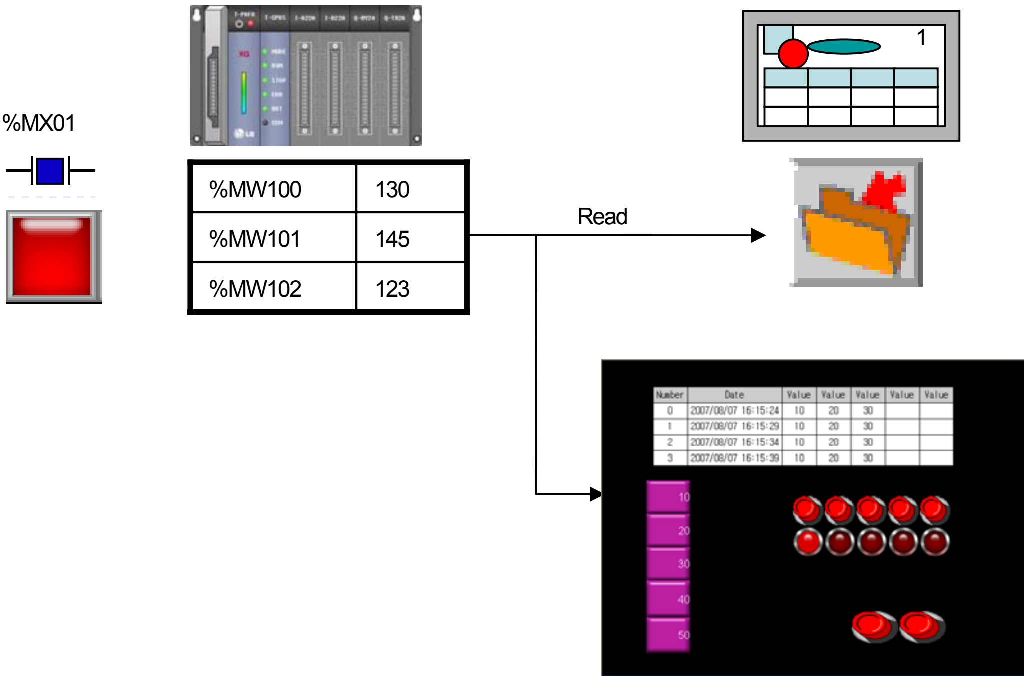
Logging starts when the logging start device is ON. It does not repeat, so it operates the same as the logging of which the periodical logging (bit device) repetition is set at 1.



%MW100	130
%MW101	145
%MW102	123

(4) Logging Viewer Object

The device value read by logging is displayed in the screen. Specify the logging number and arrange the information on the logging.

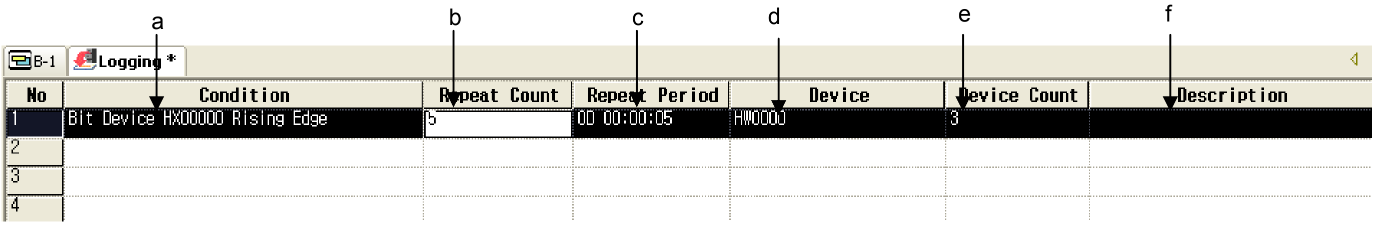


%MW100	130
%MW101	145
%MW102	123

14.5.2 Logging Setting Display

Select [Open] in the menu that is invoked when you press the right button on the mouse in the logging item or when you double-click on the logging item in the project tree.

[Logging Editing Display]

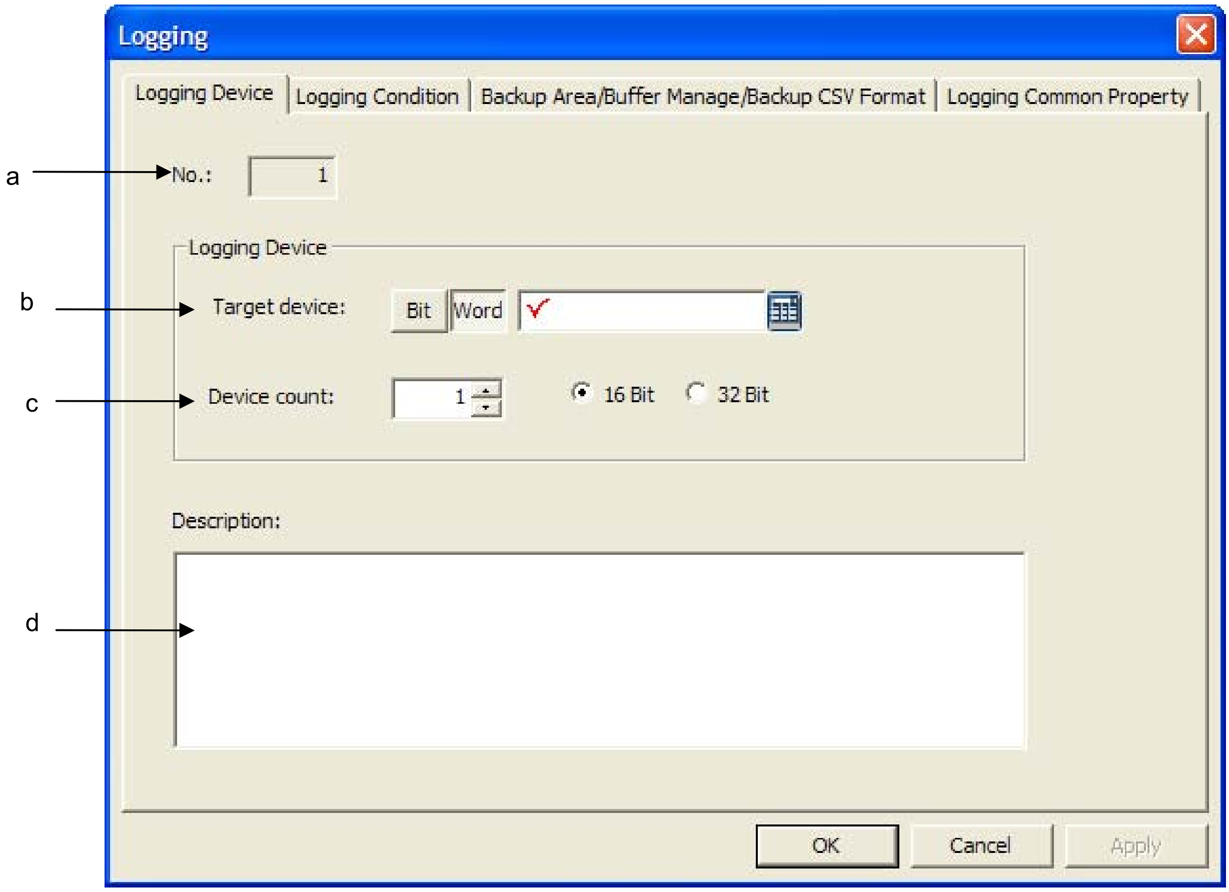


No	Condition	Repeat Count	Repeat Period	Device	Device Count	Description
1	Bit Device HX00000 Rising Edge	5	0D 00:00:05	HW0000	3	
2						
3						
4						

Item	Description
(a) Condition	Displays the logging start condition. Summarizes and displays the values displayed in the logging setting dialog box.
(b) Repetition Count	In case of periodical logging, sets the repetition of logging and logging start condition.
(c) Repetition Period	Displays the logging repetition cycle of periodical logging.
(d) Device	Device to log
(e) Device Count	Number of devices to log
(f) Description	Brief description of the logging

The logging editing display shows summarized loggings. Loggings can be edited in the properties windows of each logging. To add a logging, double-click in an empty row in the list or press the right button on the mouse in the row where you want to enter the logging to select [Insert New] in the menus that are invoked.

[Logging Property Dialog Box-Basic Logging setting]
You can establish the basic property of logging.


a
b
c
d
Logging
Logging Device
Logging Condition
Backup Area/Buffer Manage/Backup CSV Format
Logging Common Property
Logging Device
Bit
Word
Description:
OK
Cancel
Apply

No.: 1

Target device:

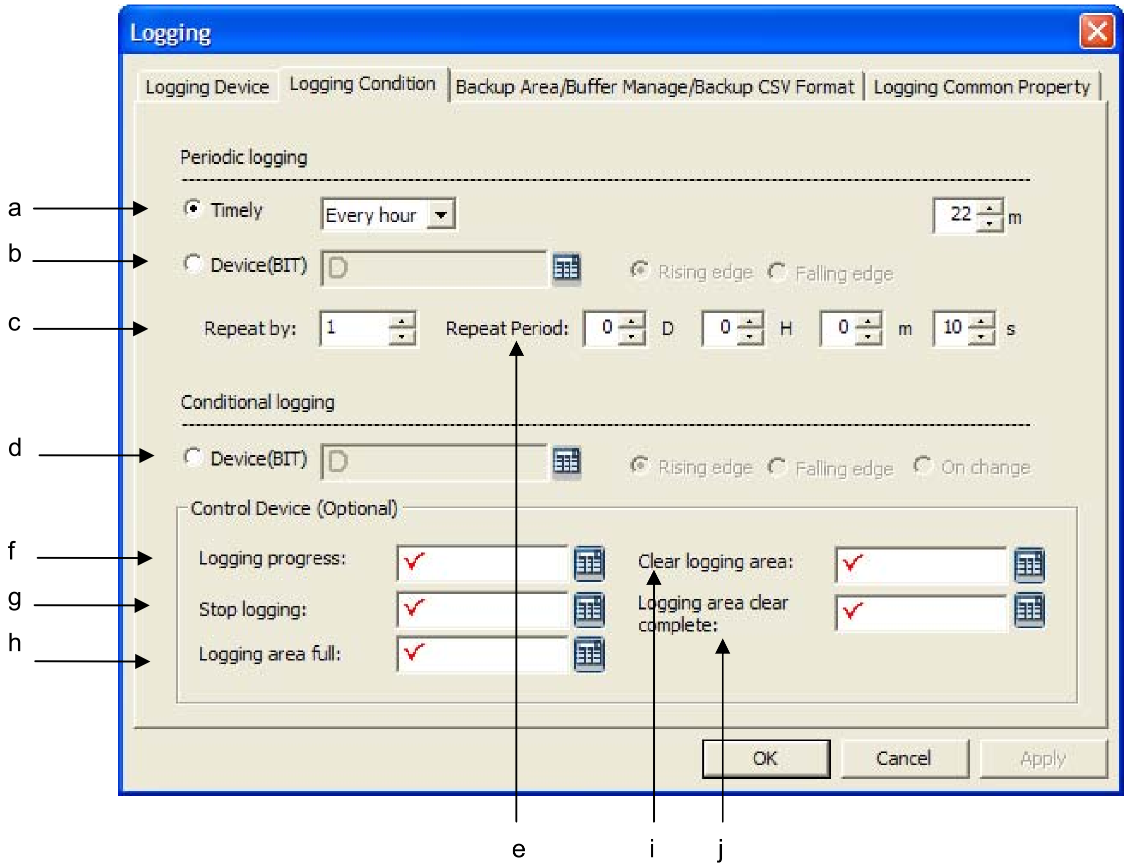
Device count: 1

● 16 Bit ○ 32 Bit

Items	Description
Logging No.(a)	Logging identification No. that is referred at logging view object.
Target Device (b)	Displaying logging device to be read.
The number of Logging Device (c)	Indicating the number of devices to be read from logging device starting address.(Max. 32)
Description(d)	Inputting the explanation on logging.

[Logging Property Dialog Box-Logging Conditions Setting]

You can establish logging conditions.



Periodic logging

● Timely Every hour 22 m

○ Device(BIT) D ● Rising edge ○ Falling edge

Repeat by: 1 Repeat Period: 0 D 0 H 0 m 10 s

Conditional logging

○ Device(BIT) D ● Rising edge ○ Falling edge ○ On change

Control Device (Optional)

Logging progress:

Stop logging:

Logging area full:

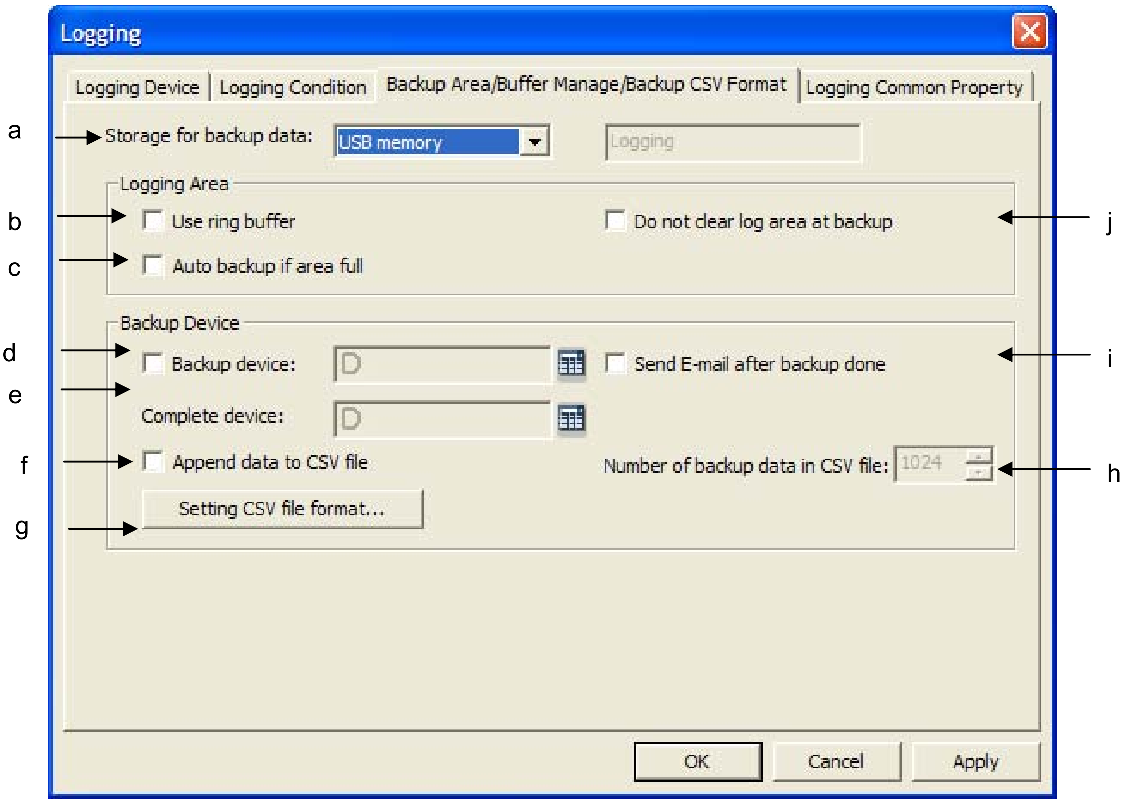
Clear logging area:

Logging area clear complete:

Items	Description
Periodic Logging Time(a)	You can start and operating logging based on fixed time setting. Starting type: Time setting based on each conditions ; every time, every day, every week, every month, once.
Periodic Logging device(b)	Logging conditions Bit device. If the device meets the set operations(raising·falling edge), it records the device value to be logged to the file.
Repeat by (c)	Indicating record frequency after logging time and reading the device value every time it records. (Max. 100times)
Conditional Logging Device(d)	If the device meets the set operations(raising·falling edge or change), it records the device value to be logged to the file.
Repeat period (e)	If logging conditions are fulfilled under periodic logging, it designates the file recording cycle.
Device displaying Logging progress(f)	Selecting the device that will display logging progress.
Device stopping logging (g)	Designating the device to suspend ongoing logging forcefully. Logging will stop as soon as input device value is ON.
Logging area full device (h)	The area allocated for logging is totally occupied, the set device will be 'ON'
Device deleting logging area (i)	If the set device is 'ON', the allocated area will be deleted.
Finish deleting area (j)	If logging are deletion process is finished, the related Bit will be'On'

[Logging Property Dialog Box-Saving are/Logging backup/CSV Format]

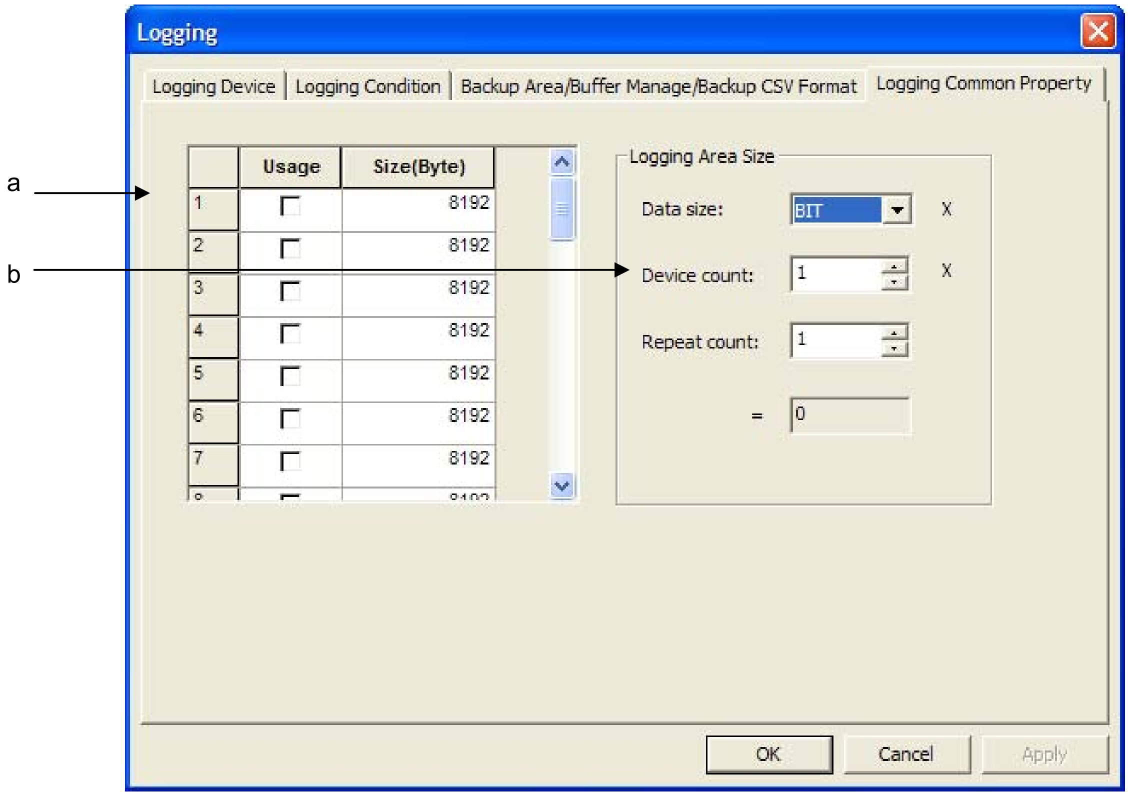
It designates the methods to use logging saving area, backup with backup data display mode.


Logging
Logging Device
Logging Condition
Backup Area/Buffer Manage/Backup CSV Format
Logging Common Property
a
Storage for backup data:
USB memory
Logging
Logging Area
b
☐ Use ring buffer
c
☐ Auto backup if area full
☐ Do not clear log area at backup
j
Backup Device
d
☐ Backup device:
D
e
Complete device:
D
☐ Send E-mail after backup done
i
f
☐ Append data to CSV file
Number of backup data in CSV file:
1024
h
g
Setting CSV file format...
OK
Cancel
Apply

Items	Description
Storage for backup data (a)	In case logging backup is activated, logging data will move to the set position. You can see it from the tab [Project Property]-[Storage setting].
Use ring buffer (b)	If logging area is totally occupied, it records new data with deleting the existing data from the oldest one. It can not be used together with [Auto backup if area full] (b)
Auto backup if area full (c)	When logging area is totally occupied, you can judge whether saved data will move to the designated storage devices. It can not be used together with [Use ring buffer] (a)
Backup device (d)	You can select control device to move the logging data saved internal memory to portable saving equipment. If input device is 'On', logging data will move to the storage device.
Backup complete device (e)	If data backup is completed, the input device will be 'On'.
Append data to CSV file (f)	When CSV file is back-upped, it is added to the end of previous backup file. .
Setting CSV file format (g)	When logging data is back-upped, it is saved as CSV format and you can designate data display format.
Number of backup data in CSV file (h)	Sets the number of logging to be saved in a CSV file. Up to 65000 is available.
Send E-Mail after backup done(i)	If logging backup is completed, the backup information will be sent to user's E-Mail address. For setting the address, refer to 'E-Mail Setting' of [Project Property]-[Auxiliary Settings].
Do not clear log area at backup (i)	When logging data moves to backup saving equipment, it will be deleted by logging backup device. However, if you set this option, logging data will not be deleted even after backup. When applying the option for logging trend graph, you can see logging history.

[Logging Property Dialog Box-Logging Common Property]

You can designate common property applied to all loggings.


Logging
Logging Device
Logging Condition
Backup Area/Buffer Manage/Backup CSV Format
Logging Common Property
a
b
Usage
Size(Byte)
Logging Area Size
X
X
=
OK
Cancel
Apply

	Usage	Size(Byte)
1	☐	8192
2	☐	8192
3	☐	8192
4	☐	8192
5	☐	8192
6	☐	8192
7	☐	8192

Data size: BIT

Device count: 1

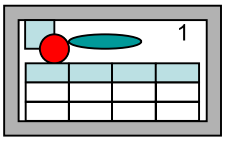
Repeat count: 1

= 0

Items	Description
Logging area setting (a)	Setting the size of data saving area for each logging.
Calculating logging size (b)	Calculating the size of area required to save logging data.

14.5.3 Setting of Device to Log

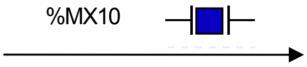
(1) Specify the device to log. The device to log can be in the bit or word unit.
(2) Up to 32 devices can be specified for a logging.
(3) As many as consecutive devices to log as the number of logging devices are specified from the start device.



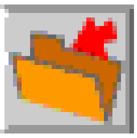
- Word logging -
Logging Device: %MW100
Number of devices: 6

Start condition:
Conditional logging
Device: %MX10 On

%MW100	130
%MW101	145
%MW102	132
%MW103	155
%MW104	117
%MW105	123



Logging started: read/record

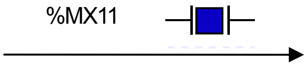


- Bit logging -
Logging Device: %MX200

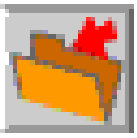
Number of devices: 8

Start condition:
Conditional logging
Device: %MX11 On

%MX200	1
%MX201	0
%MX202	0
%MX203	1
%MX204	1
%MX205	1
%MX206	0
%MX207	1



Logging started: read/record



14.5.4 Periodical Logging (Time) Setting

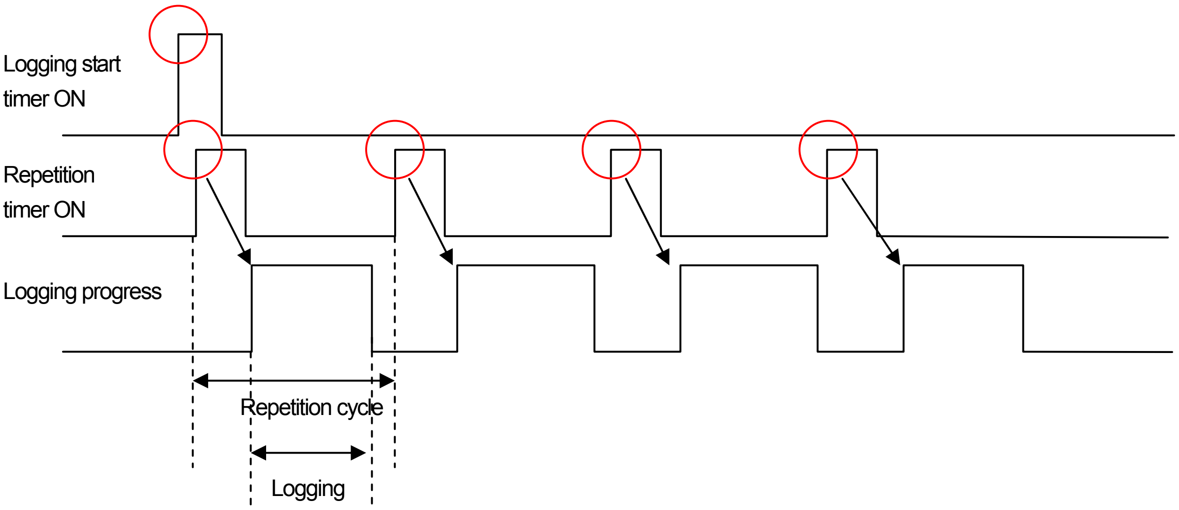
The device value is read and saved at the time specified by the user.

The times available are as follows.

Hourly: the minute when the logging starts
Daily: the hour and minute when the logging starts
Weekly: the date, hour and minute when the logging starts
Monthly: the day, hour and minute when the logging starts
Yearly: the month, day, hour and minute when the logging starts
Once: the year, month, day, hour and minute when the logging starts

For periodical logging (time), the number of repetitions can be specified. At the specified time, the logging starts and repeats itself as many times as specified.

[Example of Cyclical Conditional Operation]
Setting: repeated 4 times

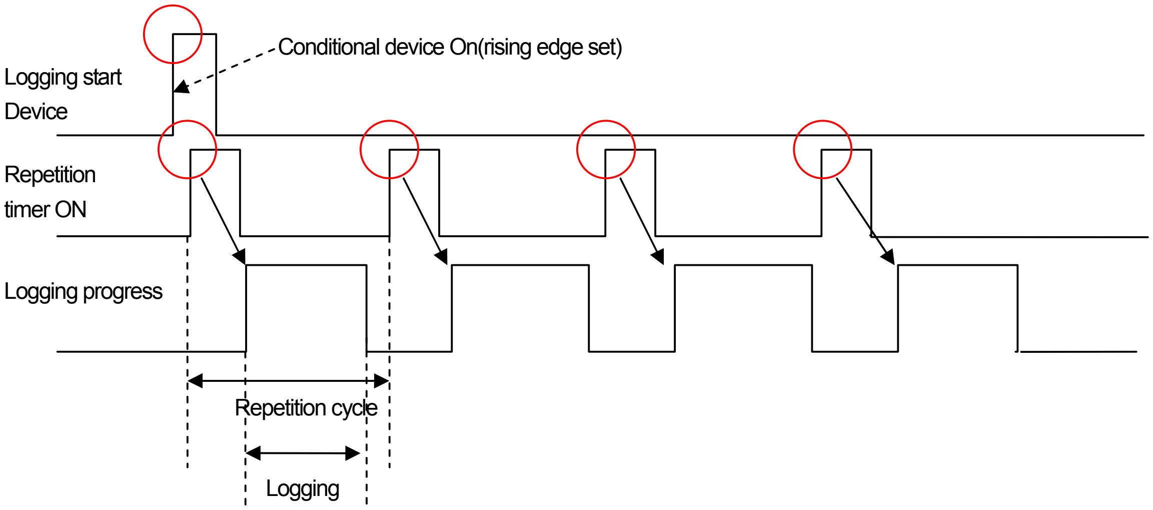


The repetition timer starts when the operation start timer turns ON.
When the repetition timer turns ON as many times as the specified number of repetitions, the device reads the device value and saves it in the file.

14.5.5 Periodical Logging (Bit Device) Setting

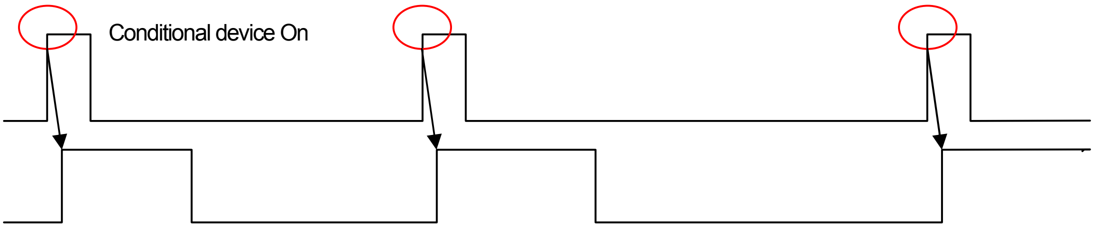
Logging gets started when the condition bit value is on or off.
Logging occurs according to the repetition cycle as many times as the number of repetitions after the device is on or off.

[Example of Cyclical Conditional Operation]
Setting: repeated 4 times


Conditional device On(rising edge set)
Logging start
Device
Repetition
timer ON
Logging progress
Repetition cycle
Logging

14.5.6 Conditional Logging Setting

Conditional logging starts when the conditional device is on or off. There is no repetition in conditional logging.


Conditional device On

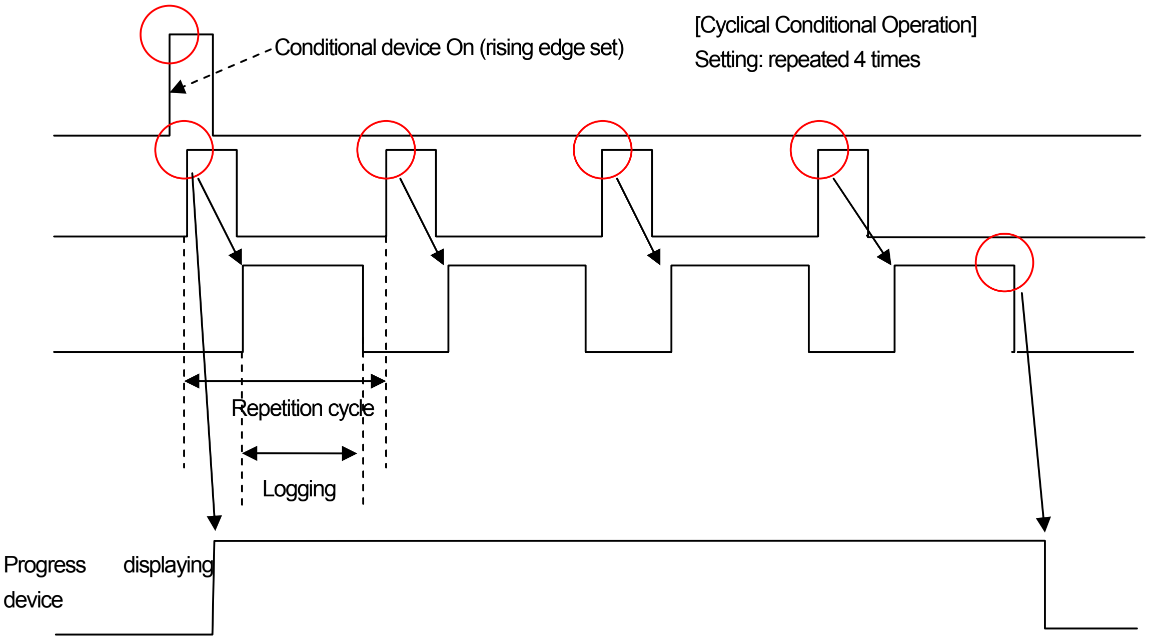
14.5.7 Logging Control Device Setting

The control device, which is selective, can be used on demand of the user.

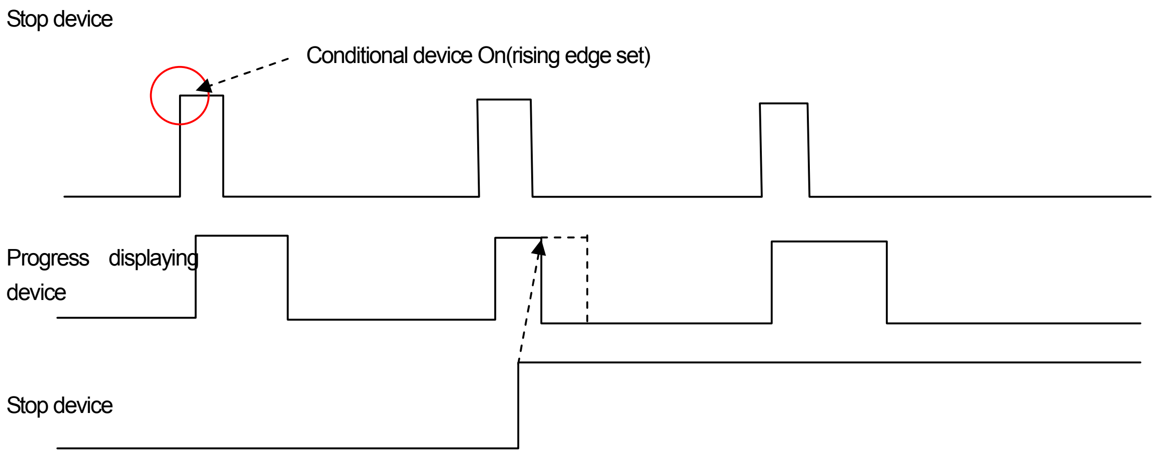
Items	Description
Progress	Displays the logging progress. The progress displaying device displays the status from when the logging condition is met to when the entire logging(repetition) is completed. It turns OFF when the whole logging is completed or is turned OFF by the logging stop device.
Stop	Stops the logging in progress. The stopped logging is activated by the next logging start condition. A stopped logging does not operate in the repetition cycle/condition. The logging stop device operates in the rising edge.
Storage Full	Shows that the entire memory area allotted to the logging has been used. It turns OFF when the logging area is backed up or deleted.
Storage Clear	Deletes the contents of the area. Starts storage at the initial place of the memory area when the next logging occurs.
Storage Clear complete	Indicates completion of clearing storage.

(1) Progress displaying device

Progress displaying device


Conditional device On (rising edge set)
[Cyclical Conditional Operation]
Setting: repeated 4 times
Repetition cycle
Logging
Progress displaying device

(2) Stop device


Stop device
Conditional device On(rising edge set)
Progress displaying device
Stop device

Logging stops when the stop device turns On. Logging turns Off into the progress indicating device. Logging resumes when the next logging condition is met.

(3) Storage Full

The area pool device turns ON when the entire area allotted to the logging has been used. In such a case, enough space should be made by deleting the logging area or executing backup. Otherwise the logging data might be lost.

(4) Storage Clear

Allots the memory to store data to each logging. When the area deletion device turns ON, the area allotted to the relevant logging is deleted. If the logging is in progress, the part which has been completed is deleted and the remaining of the progress is newly recorded in the deleted area. Explicit deletion of the logging area might cause loss of it, so be sure to do backup before deleting it.

(5) Storage Clear complete device
It becomes on when clearing logging is complete

Note

(1) Note the following about logging area deletion.

(a) When you execute project download of the logging area in XP Builder, you can delete it by setting the “Delete All Previous Monitor Data” option. In such a case, the logging area is also deleted because all the previous memory area is deleted before a project is carried out.

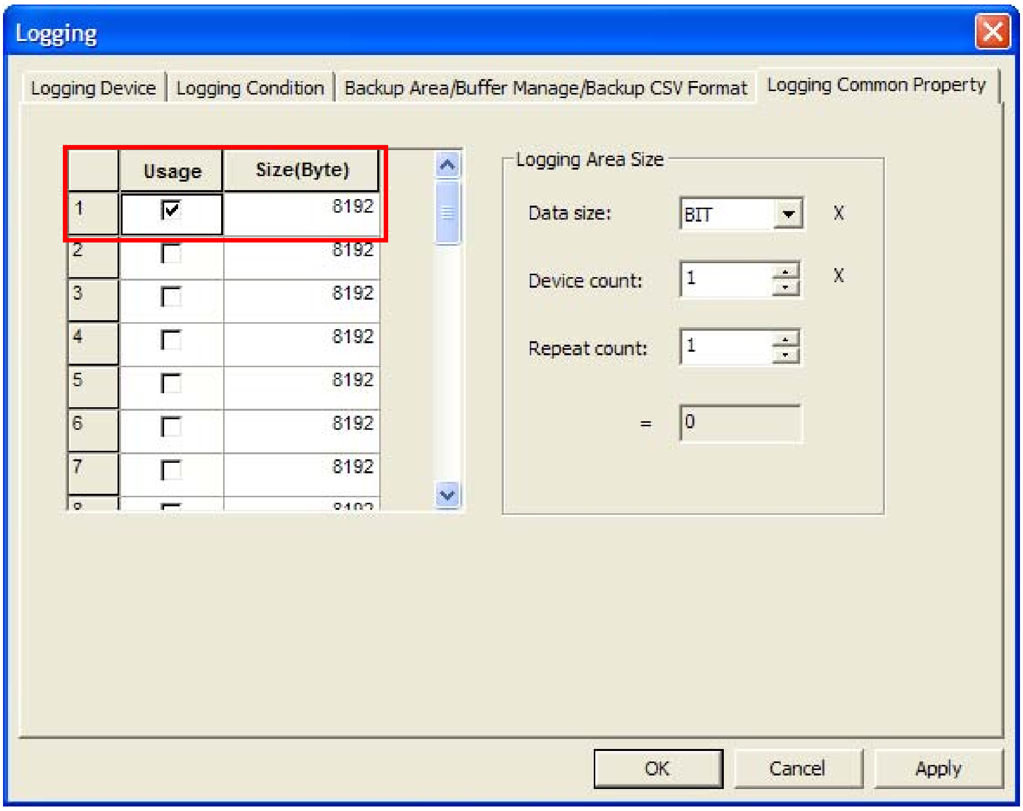
(b) You can delete the logging area by changing the logging area size properties. Up to 32 loggings can be registered and an area is allotted to each logging. If there is a change in the area, the previous monitor data is lost. When the logging area is changed, download the backup data through [Communication]-[Upload] menu before execution.

14.5.8 Logging Area Setting

Each logging is allotted an area to save data.

Max logging area is 256Kbyte.

Each logging can be allotted an individual logging area. The minimum size of the area allotted to each logging is 1 KB and the total of all the logging areas should not be bigger than the logging area by type.


Logging
Logging Device
Logging Condition
Backup Area/Buffer Manage/Backup CSV Format
Logging Common Property
Logging Area Size
X
X
OK
Cancel
Apply

	Usage	Size(Byte)
1	☑	8192
2	☐	8192
3	☐	8192
4	☐	8192
5	☐	8192
6	☐	8192
7	☐	8192

Data size: BIT
Device count: 1
Repeat count: 1
= 0

Logging area can be calculated by the number and size, frequency of devices.
The minimum header information for one logging is 16Bytes and each logging data will be saved after header information. Therefore, the calculation for required area is as below.

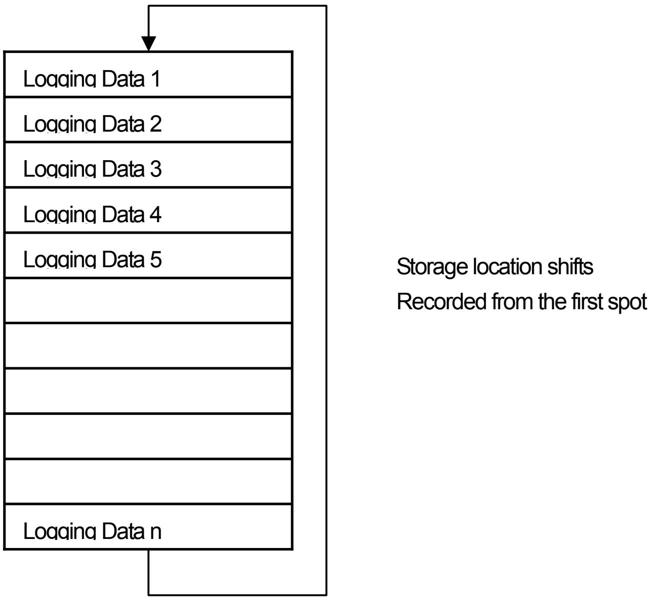
Bit: (16(Header Information) + 8(Fixed size for saving bit)) * (Frequency+ 1).
Word: (16 + 2 * Device size) * (Frequency + 1).
Double word: (16 + 4 * Device size) * (Frequency + 1).

14.5.9 Logging Data Saving

Decides how to use the storage memory.

(1) Use of storage area circulating buffer
The previous data is overwritten and saved from the first place when all the allotted storage area has been used.

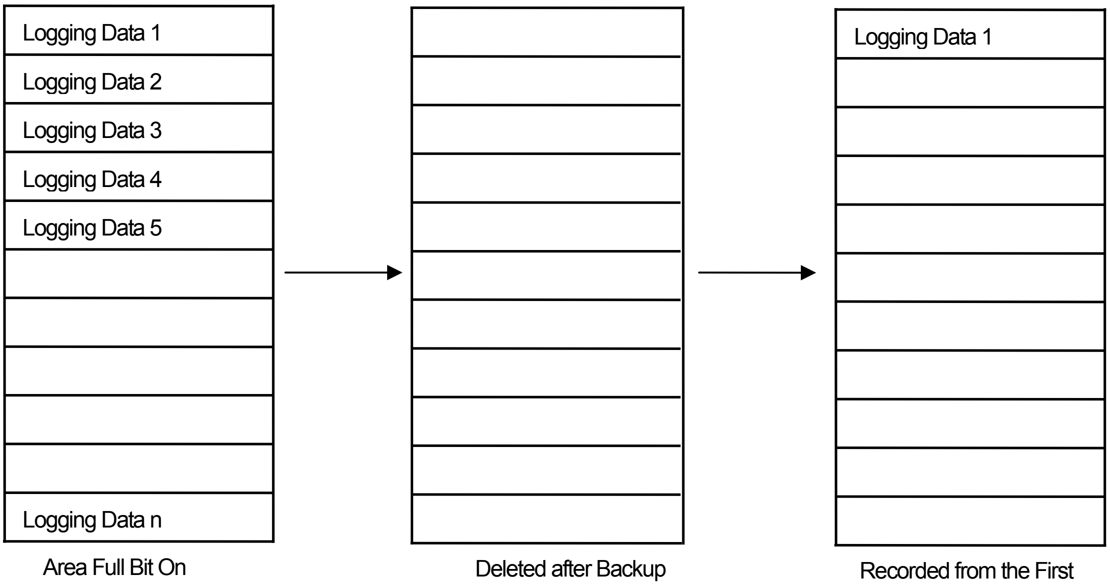
[Use of storage area circulating buffer]


Logging Data 1
Logging Data 2
Logging Data 3
Logging Data 4
Logging Data 5
Logging Data n
Storage location shifts
Recorded from the first spot

(2) Automatic backup when all the storage area has been used

The data is backed up in the backup area specified in the project properties when all the storage area has been used.

[Automatic backup when all the storage area has been used]


Logging Data 1
Logging Data 2
Logging Data 3
Logging Data 4
Logging Data 5
Logging Data n
Area Full Bit On
Deleted after Backup
Logging Data 1
Recorded from the First

14.5.10 Logging Data Backup

The backup function can be used when there is an external storage unit such as a USB or CF card.

(1) Backup device

With the backup device ON, the HMI device shifts the data in the logging area to the external storage media. When backup is completed, the logging area is automatically deleted and recorded from the first place when the next logging is launched.

(2) Backup completion device:

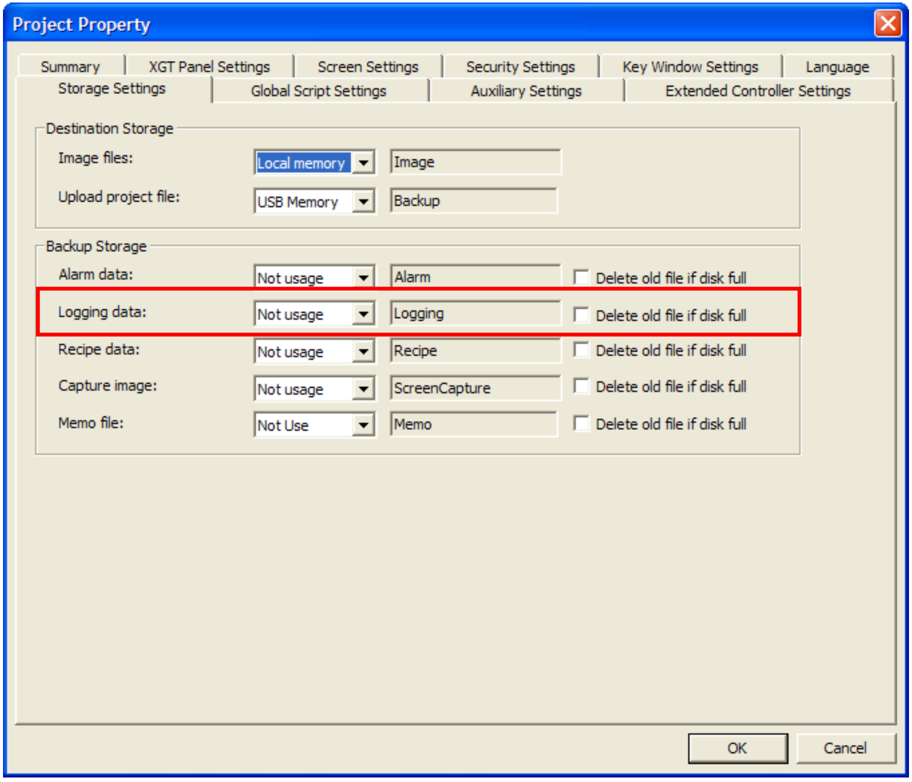
turns ON when logging backup is completed.

[Backup Path Setting]

The logging backup path is set in [Project Properties].

Select [Common]-[Project Properties] in the menu.

Move to [Storage Settings] in the project property dialog box.



Project Property

Destination Storage

Image files: Local memory, Image

Upload project file: USB Memory, Backup

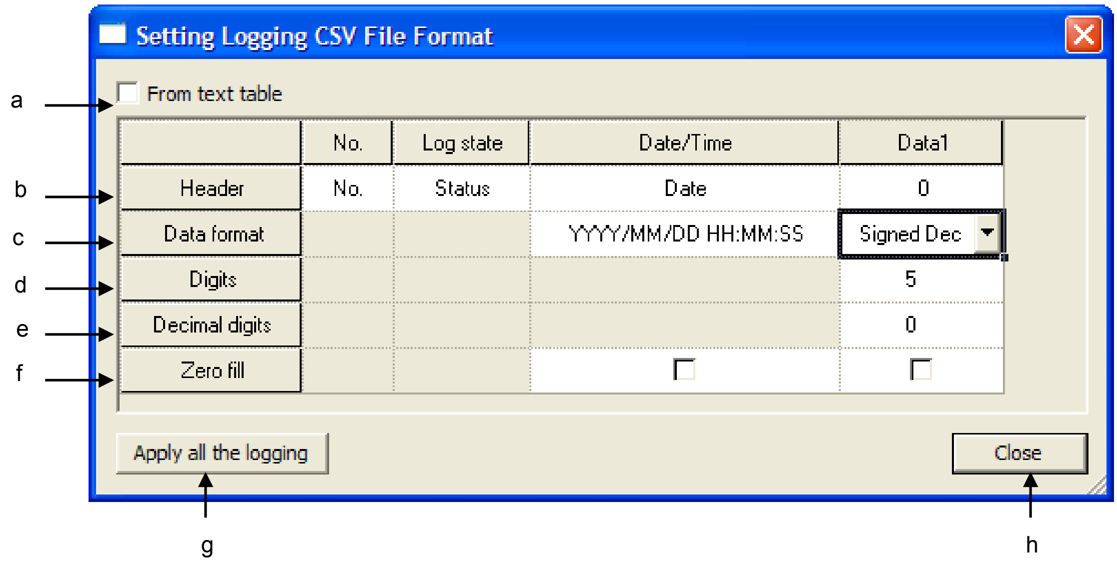
Backup Storage

Alarm data:	Not usage	Alarm	☐ Delete old file if disk full
Logging data:	Not usage	Logging	☐ Delete old file if disk full
Recipe data:	Not usage	Recipe	☐ Delete old file if disk full
Capture image:	Not usage	ScreenCapture	☐ Delete old file if disk full
Memo file:	Not Use	Memo	☐ Delete old file if disk full

Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
OK
Cancel

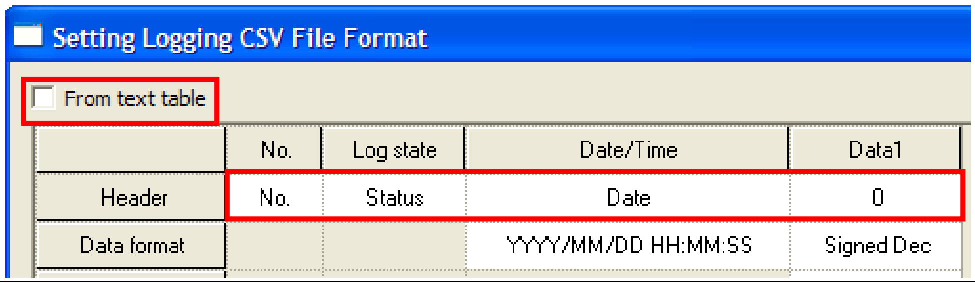
(3) Designating backup data display format

When logging data is back-upped, it is saved as CSV format and you can designate data display format to be shown for CSV file.



☐ From text table

	No.	Log state	Date/Time	Data1
Header	No.	Status	Date	0
Data format			YYYY/MM/DD HH:MM:SS	Signed Dec
Digits				5
Decimal digits				0
Zero fill			☐	☐

Items	Description
From text table (a)	Refers to text table for header text of backup CSV file
Header (b)	Inputs a header text of backup CSV file. If you select “From text table”, push the button and find from the text table.  Setting Logging CSV File Format ☐ From text table No. / Log state / Date/Time / Data1 Header: No. / Status / Date / 0 Data format: YYYY/MM/DD HH:MM:SS / Signed Dec
Data format (c)	You can change the display format of time and data
Digits(d)	Decides how many digits are used for data
Decimal digits (e)	Decides how many decimal digits are used for data
Zero fill (f)	Fill the data with the zero according to digit count
Apply all the logging (g)	Change the backup type of all loggings according to current dialog box.
Close (h)	Saves and closes the dialog box
Data1 ~ Data100	The number of data column varies according to the number of logging device

(4) Do not delete saving area during logging backup

During Logging backup, logging data saved is automatically deleted. However, for the object with a special function such as logging trend, backed up logging data should be preserved. In this case, select [Do not delete saving area during logging backup]. If the function is established, logging area will be automatically changed into [Using circular buffer for saving area].

(5) Sending E-Mail during logging backup

If logging backup is completed, the backup information will be sent to a user's E-Mail address. For setting the address, refer to 'E-Mail Setting'of [Project Property]-[Other Setting].

The sent mail is encoded as equipment name and Unicode. The format of E-Mail is as below and backup information includes equipment name and backup file's route.

```
* Logging data has saved as CSV.

[Device alias]
   .....

[File Path]
   .....
```

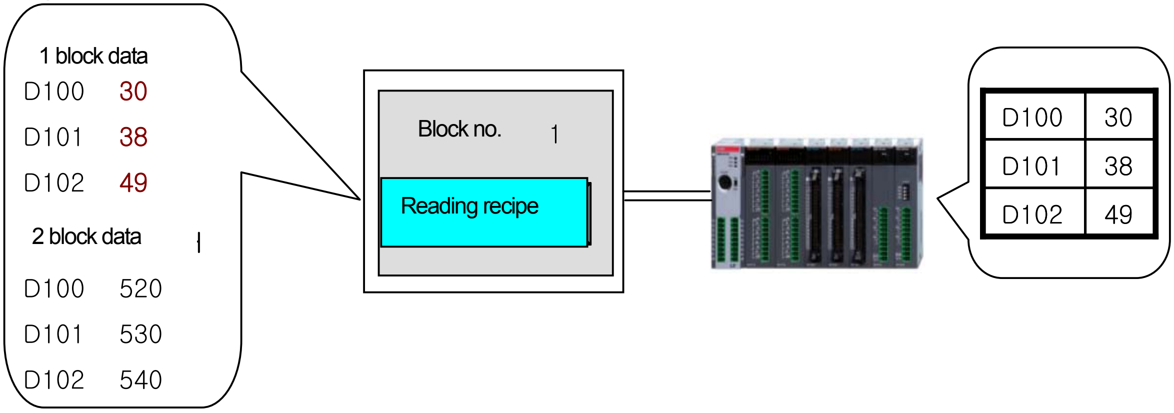
14.6 Recipe

This is the function of creating data to write in the PLC and using the data value created in the PLC device consecutively connected to a certain device. In addition, it invokes a massive quantity of device values from the PLC consecutively connected to a certain device.

14.6.1 Use of Recipe

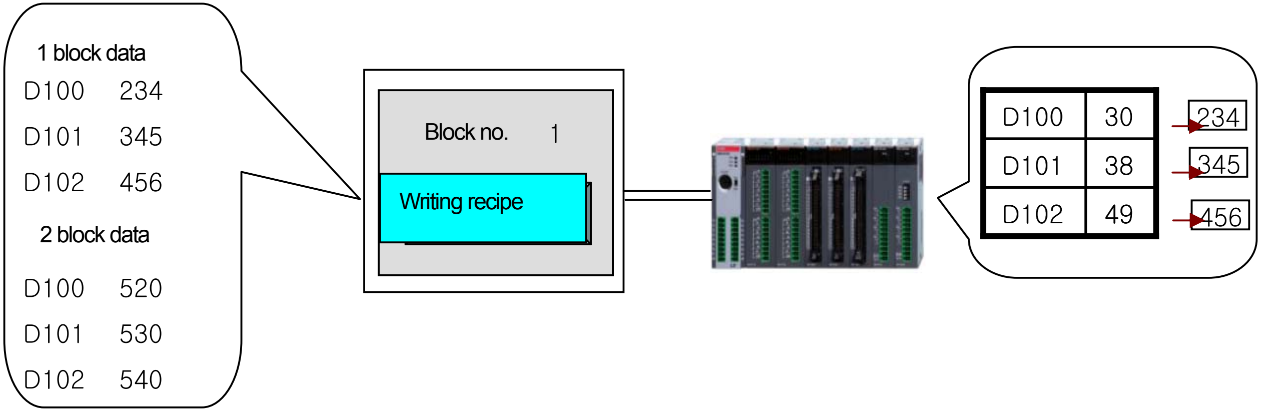
(1) Block Data Reading

If the recipe reading operation device is a rising or falling edge, as many devices as specified begin to be read from the specified device address of the PLC.


1 block data
D100 30
D101 38
D102 49
2 block data
D100 520
D101 530
D102 540
Block no. 1
Reading recipe
D100 30
D101 38
D102 49

(2) Block Data Writing

If the recipe writing starting device is a rising or falling edge, as many devices as specified begin to write in the device consecutively from the specified device address of the PLC.

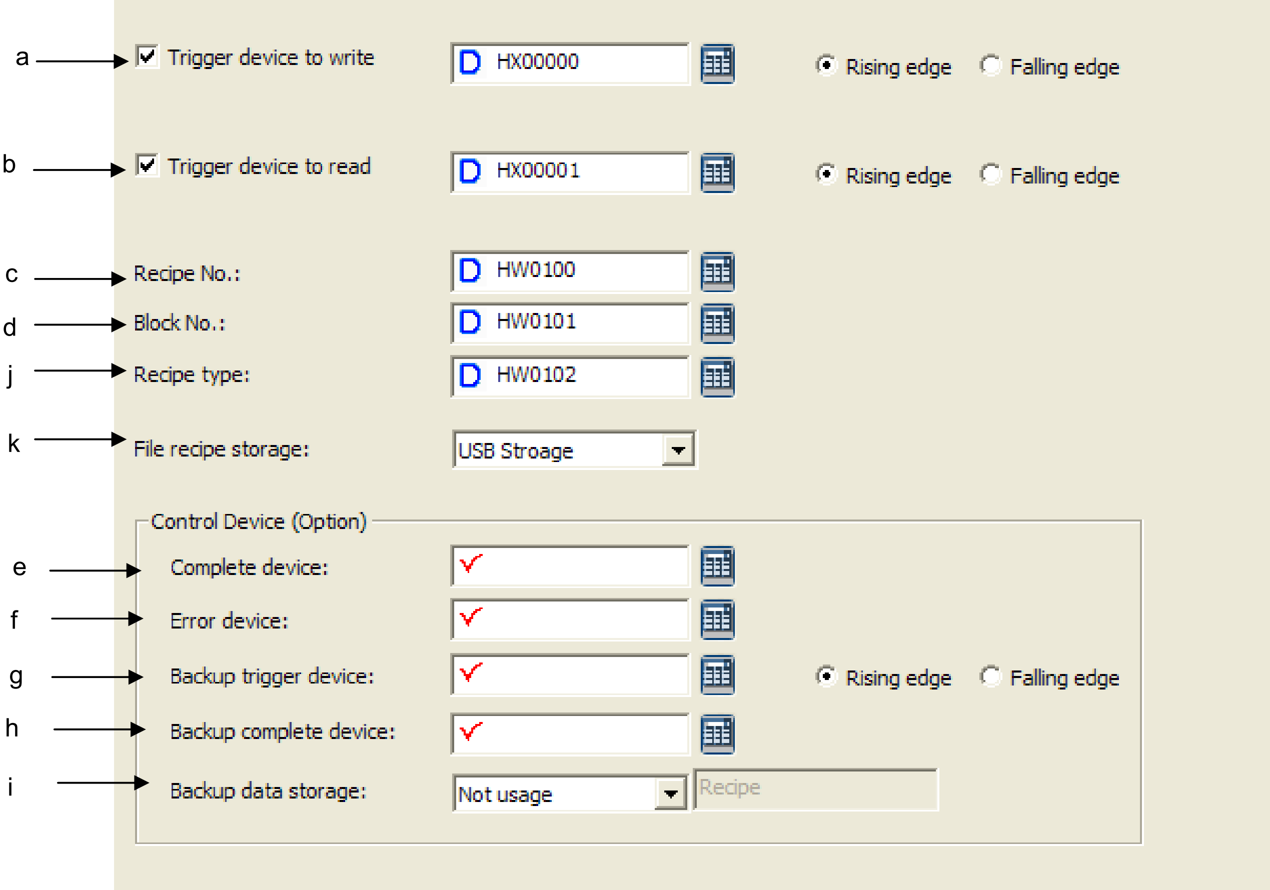

1 block data
D100 234
D101 345
D102 456
2 block data
D100 520
D101 530
D102 540
Block no. 1
Writing recipe
D100 30
D101 38
D102 49
234
345
456

14.6.2 Recipe Setting

This is the function of writing and reading the data stored the internal memory of the HMI device and other storage units in a specified device with the control device On/Off.

(1) Up to 10,000 recipes can be registered in XP Builder.
(2) Up to 255 data blocks can be registered in each recipe.
(3) The object device used for recipe data transfer uses signed/unsigned 16/32 bit devices.
(4) A continuous device is used as the device.

[Total Properties Setting]



☑ Trigger device to write: HX00000 ● Rising edge ○ Falling edge
☑ Trigger device to read: HX00001 ● Rising edge ○ Falling edge
Recipe No.: HW0100
Block No.: HW0101
Recipe type: HW0102
File recipe storage: USB Stroage

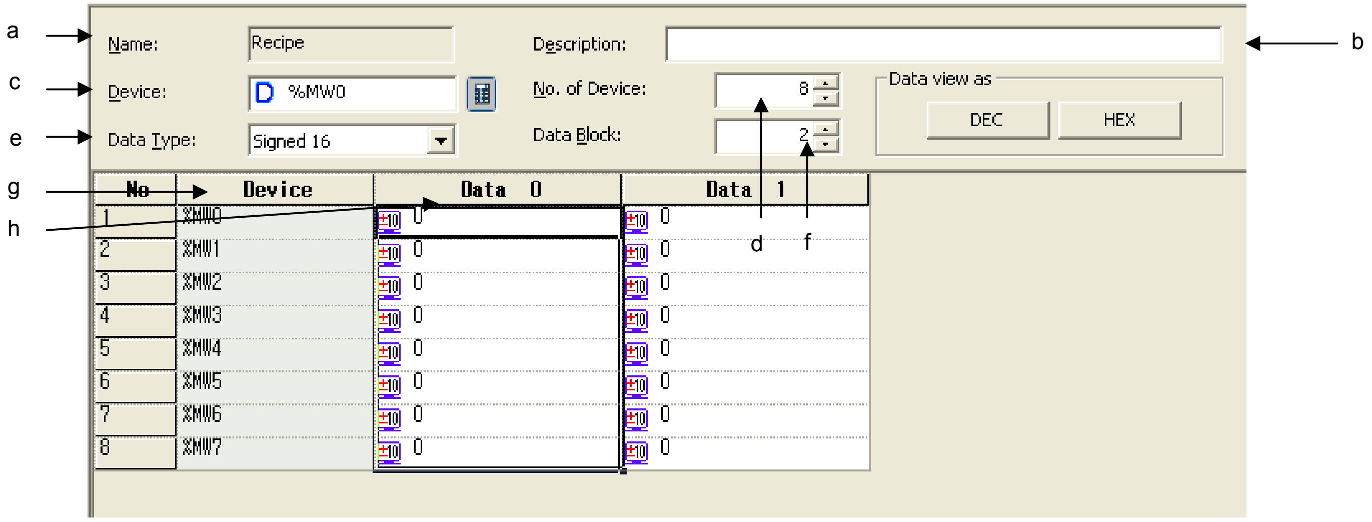
Control Device (Option)
Complete device:
Error device:
Backup trigger device: ● Rising edge ○ Falling edge
Backup complete device:
Backup data storage: Not usage Recipe

Items	Description
Trigger Device to Write (a)	Sets the device address to control writing and the condition of starting the action (rising edge, falling edge). For example, in the case above, recipe data is used when the HX0008 device value of the bit device is ON.
Trigger Device to Read (b)	Decides whether to have reading controlled by the device. The recipe does not operate unless both reading/writing devices are set. To operate the recipe, you should set at least one of the two devices.

Items	Description
Recipe No. (c)	Sets the device to specify the recipe to operate when the reading or writing start device meets the condition. This is a word device and operates a recipe by reading the word value (unsigned 16) from the device.
Block N0. (d)	This specifies the data block to transfer data in the recipe to operate when the reading or writing start device meets the condition. This is a word device and transfers data of the corresponding block number by reading the word value (unsigned 16) from the device.
Complete Device (e)	This turns the corresponding bit to ON when data transfer is completed by the recipe.
Error Device (f)	This turns the bit ON when there is a problem with data transfer by the recipe.
Backup Trigger Device(g)	This is a device to set the start of backup of recipe data in a mobile storage unit such as USB or CF card.
Backup Complete Device(h)	Turns the set bit to ON when backup is completed.
Backup Data Storage (i)	Specifies the location of backup when the recipe data is backed up. The location is the same as the recipe data backup location in [Set Storage Unit Use] of project properties.
Recipe type (j)	When Write or Read condition is met, specifies recipe type to be executed. In case the lowest bit of this device is 0, basic recipe is executed. And in case the highest bit of this device is 1, file recipe is executed.
File recipe storage (k)	Specifies storage path where data file of file recipe will be saved. You can designate CF Card or USB storage.

Select [Add] in the menu invoked by pressing the right button on the mouse in the [Recipe] item of the project tree.

[Recipe Display]



Name: Recipe

Description:

Device: %MW0

No. of Device: 8

Data Type: Signed 16

Data Block: 2

No	Device	Data 0	Data 1
1	%MW0	0	0
2	%MW1	0	0
3	%MW2	0	0
4	%MW3	0	0
5	%MW4	0	0
6	%MW5	0	0
7	%MW6	0	0
8	%MW7	0	0

Items	Description
Name (a)	Displays the recipe name. The names can be changed in the [Change Name] menu invoked by pressing the right button on the mouse in the recipe number in the project tree. There can be up to 32 recipes and the possible range of numbers is 1~255.
Description (b)	Shows brief description of the recipe.
Device (c)	Sets the object device to transfer the recipe data. Executes reading and writing operation of device QW0.3.0 with the object device.
No. of Devices (d)	Transfers as many data as the consecutive devices from the device set in (c). In the case above, with the number of devices set at 8, the reading and writing operation is carried out for the 8 consecutive devices from QW0.3.0.
Data type (e)	Indicates the data type of the object device. The value input from the data block is adjusted to this value.
Data Block (f)	Specifies the number of data blocks.
Device (g)	Displays the object device to input data. A recipe, which uses consecutive data, cannot set the device and determines the device by changing the object device start address set in (d).
Data Block Name (h)	Data blocks are given from 0 and the block numbers cannot be changed. When the number of blocks is reduced, the data input later is deleted first.

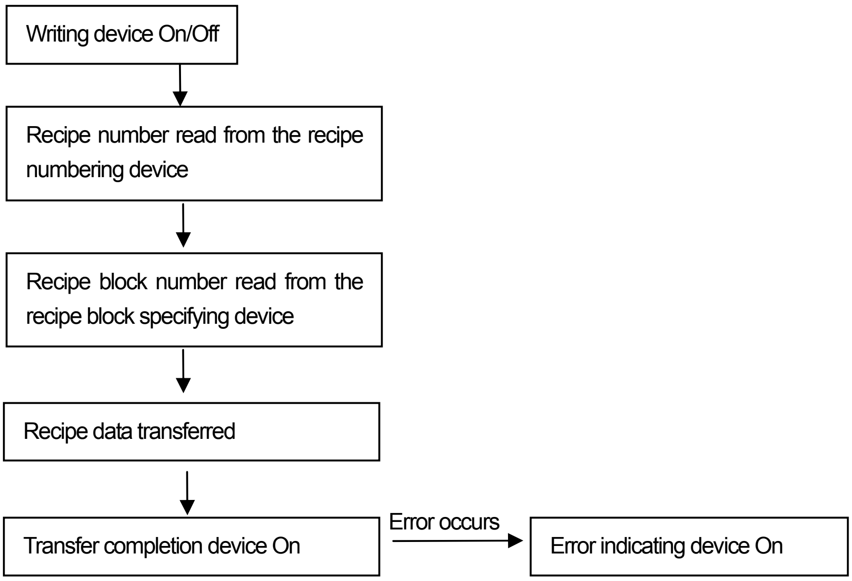
Note

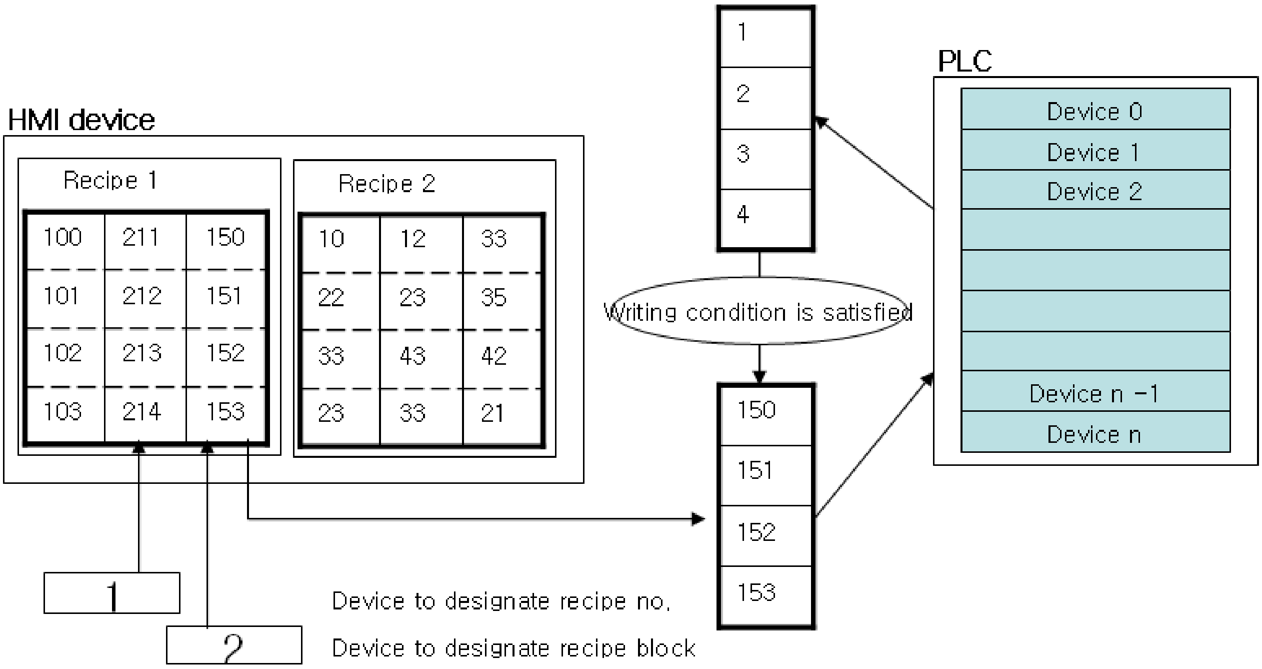
(1) Recipe device setting is as follows.
The start address of the recipe device can be selected in the tag. However, using consecutive devices, the recipe device is not referred to as a tag but the address specified by the tag is directly input. Note, after that, the tag being changed, the start address of the recipe does not change.

14.6.3 Recipe Action Trigger

(1) Block Data Writing

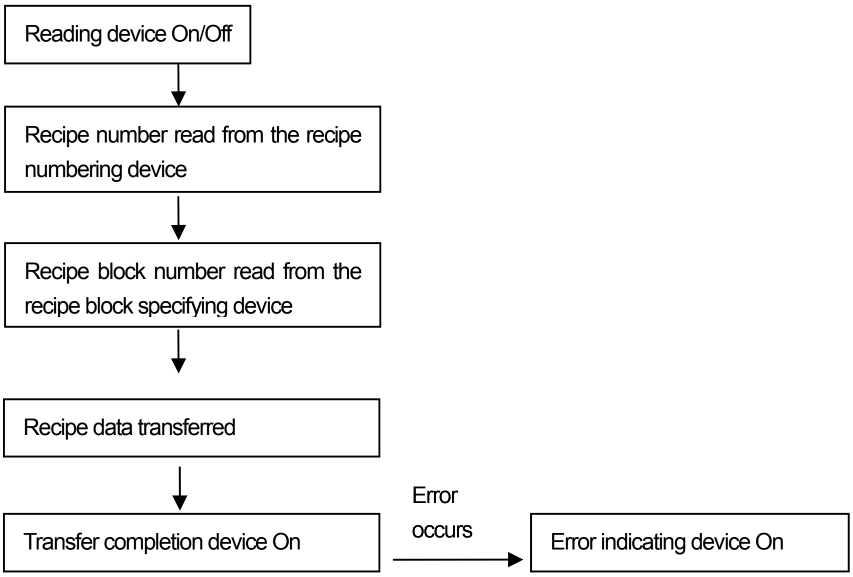
Recipe writing action starts when the recipe writing device is on(rising edge) or off(falling edge). The following shows the flow of writing by the recipe.

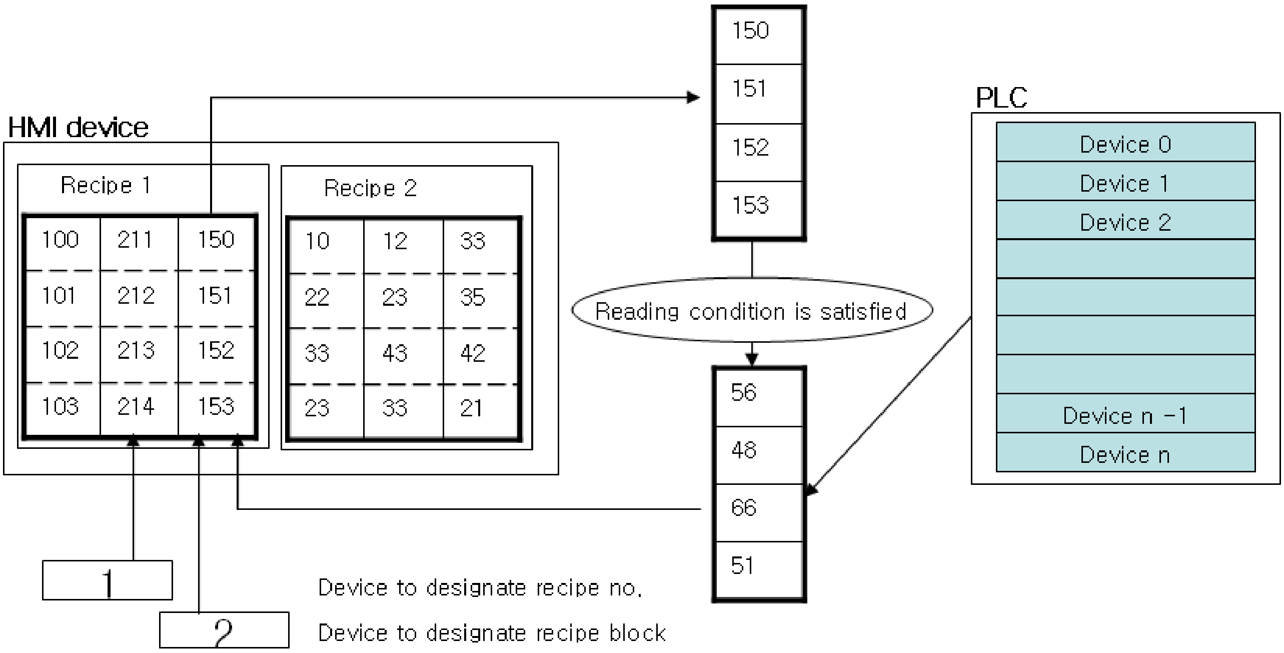

Writing device On/Off
Recipe number read from the recipe numbering device
Recipe block number read from the recipe block specifying device
Recipe data transferred
Transfer completion device On
Error occurs
Error indicating device On


HMI device
Recipe 1
100
211
150
101
212
151
102
213
152
103
214
153
Recipe 2
10
12
33
22
23
35
33
43
42
23
33
21
1
2
Device to designate recipe no.
Device to designate recipe block
1
2
3
4
Writing condition is satisfied
150
151
152
153
PLC
Device 0
Device 1
Device 2
Device n -1
Device n

(2) Block Data reading

Recipe writing action starts when the recipe writing device is on. The following shows the flow of writing by the recipe. Writing and reading cannot be executed at a time. When the two devices meet the same time and condition, writing is first executed.


Reading device On/Off
Recipe number read from the recipe numbering device
Recipe block number read from the recipe block specifying device
Recipe data transferred
Transfer completion device On
Error occurs
Error indicating device On


HMI device
Recipe 1
100 211 150
101 212 151
102 213 152
103 214 153
Recipe 2
10 12 33
22 23 35
33 43 42
23 33 21
150
151
152
153
Reading condition is satisfied
56
48
66
51
PLC
Device 0
Device 1
Device 2
Device n -1
Device n
1
2
Device to designate recipe no.
Device to designate recipe block

14.6.4 Recipe Control Device

Items	Description
Transfer completion indicating device	Turns ON when the writing or reading device meets the condition and data transfer is completed.
Transfer error indicating device	Turn ON if an error occurs during data transfer.
Backup start device	The recipe data buffer value inside XGT Panel is backed up at the specified location. The backup is conducted where the recipe backup location in the [Storage Use Information] properties of the project properties information.

14.6.5 Basic Storage of Recipe Data

Recipe data is stored in a non-volatile memory of XGT Panel. Therefore, in case of a power interruption, the last saved data is kept. When power supply resumes, device monitoring restarts and writing/reading is executed again, the last saved data is used.

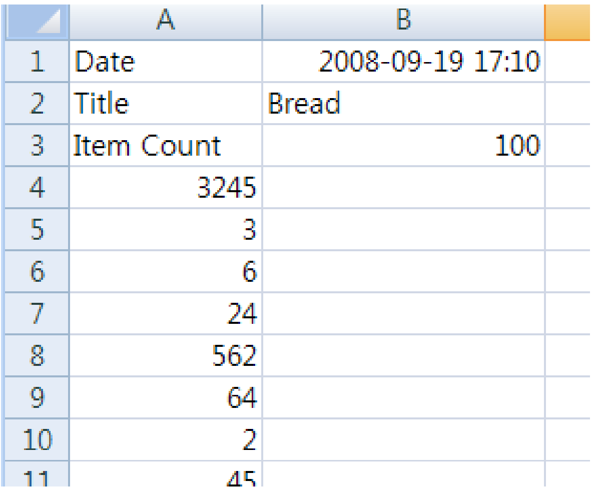
When you download the entire project, the previous recipe data is deleted and it is initialized to the newly downloaded recipe data.

In case of partial or modified download, the recipe data is not deleted. However, in case of download with the [Delete All the Monitoring Data] option in the download options selected, the saved recipe data is deleted. (Check operation)

14.6.6 Saving file recipe data

File recipe is saved the designated removable storage device as CSV file format.
Name of file recipe has the following format.

/Storage Card_root/XP_Recipe/XPR00000.CSV
/USB Storage_root/XP_Recipe/XPR00000.CSV



	A	B
1	Date	2008-09-19 17:10
2	Title	Bread
3	Item Count	100
4	3245	
5	3	
6	6	
7	24	
8	562	
9	64	
10	2	
11	45	

14.7 Scheduler

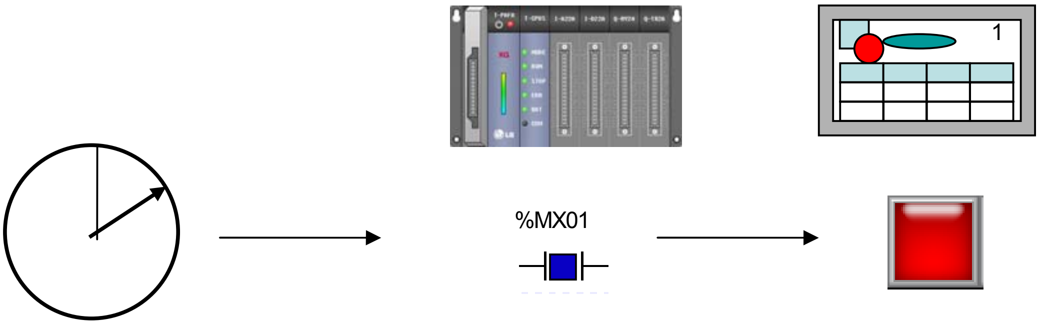
The scheduler is the function of deciding which action to do at the prearranged time.
Functions available are bit on, bit of, word value setting and script execution and so on and each scheduler can specify up to 8 actions.

Up to 32 schedulers can be set.

14.7.1 Use of Scheduler

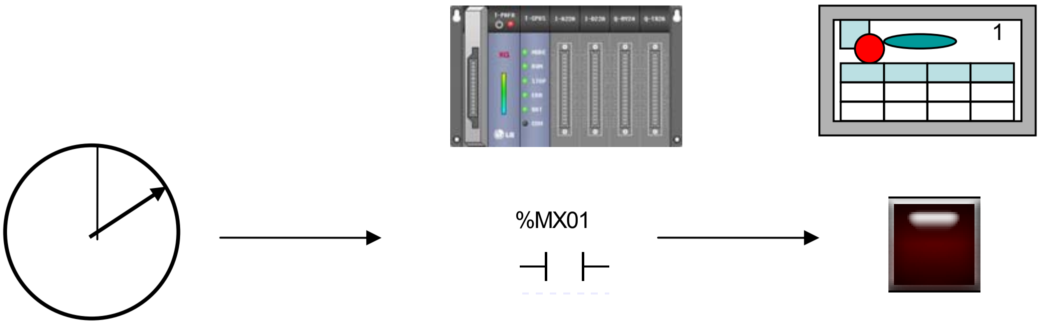
(1) Bit On

Turns the bit to ON at the arranged time.



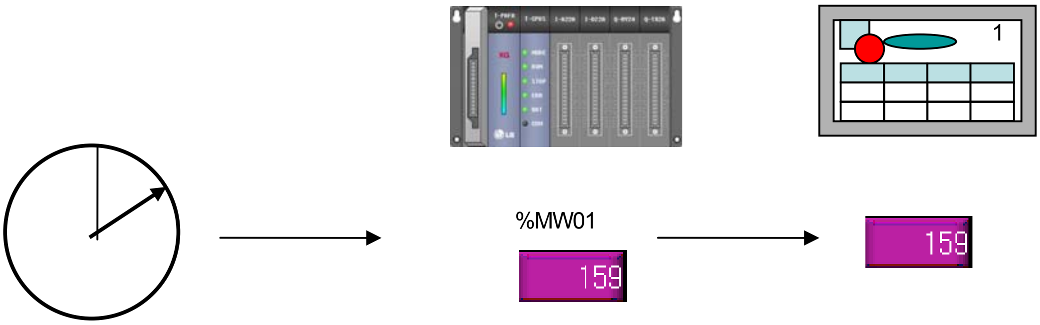
(2) Bit OFF

Turns the bit to OFF at the arranged time.



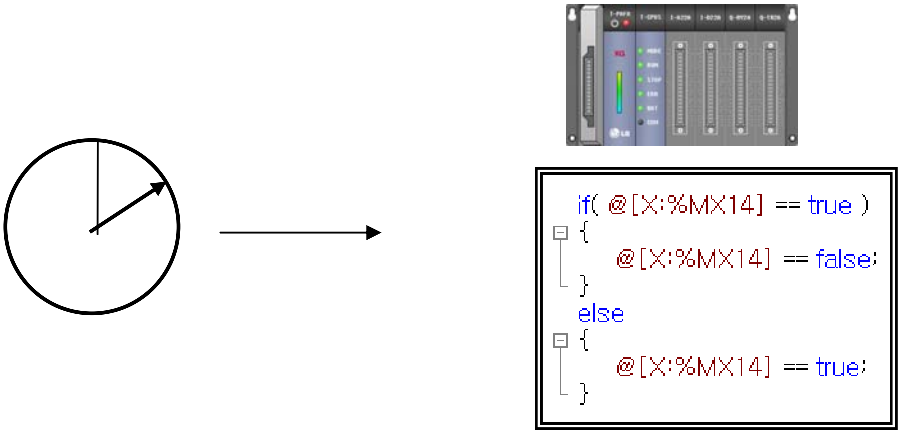
(3) Word Value Setting

Writes the value in the word device at the arranged time.



(4) Script Execution

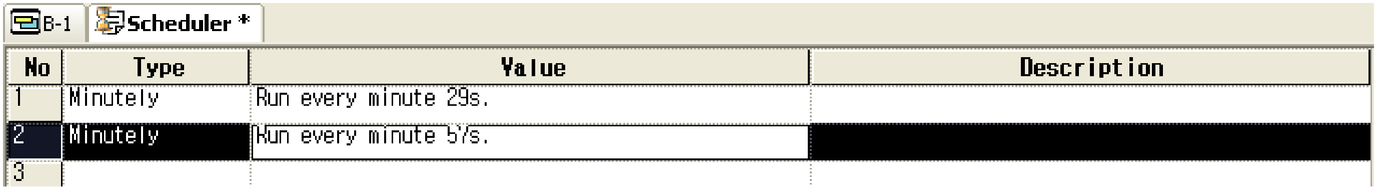
Executes the script at the arranged time.



```
if( @[X:%MX14] == true )
{
    @[X:%MX14] == false;
}
else
{
    @[X:%MX14] == true;
}
```

14.7.2 Scheduler Setting

Press [Open] in the menu invoked by double-clicking on [Scheduler] or pressing the right button on the mouse on [Scheduler] in the project tree.



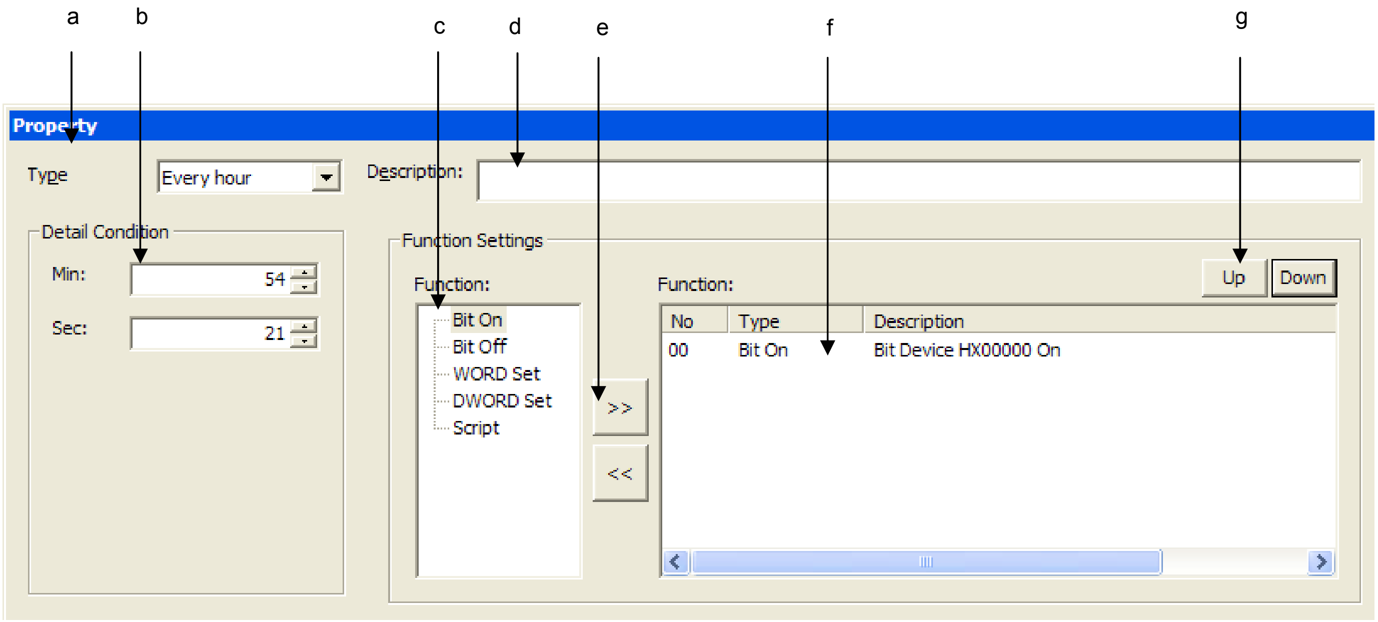
No	Type	Value	Description
1	Minutely	Run every minute 29s.	
2	Minutely	Run every minute 57s.	
3			

[Scheduler List Display]

This display shows a brief summary of the registered scheduler list.

Select [Insert New] in the menu invoked when you double-click or press the right button on the mouse on an empty line which is not registered.

A display showing the information on the currently selected scheduler is invoked at the bottom of the screen.



Type: Every hour

Description:

Detail Condition

Min: 54

Sec: 21

Function Settings

Function:
- Bit On
- Bit Off
- WORD Set
- DWORD Set
- Script

Function:

No	Type	Description
00	Bit On	Bit Device HX00000 On

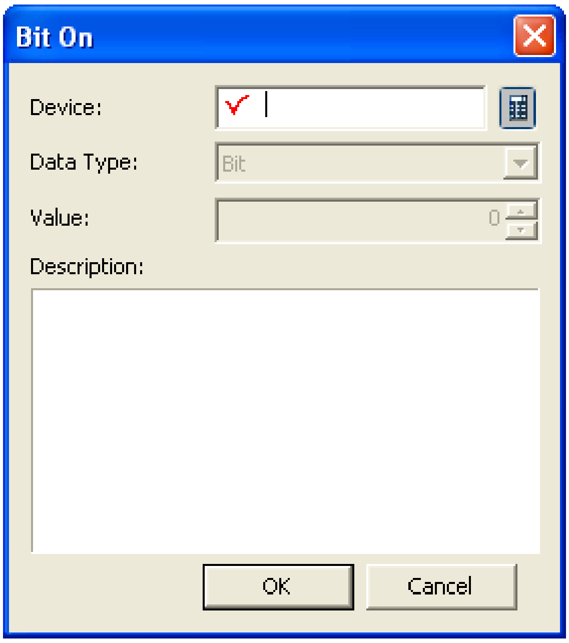
Items	Description
Execution condition (a)	Specifies the method of setting the scheduler operation time.
Detailed execution Condition (b)	Sets detailed times according to the operation mode.
Operating functions (c)	Displays the list of functions that can be registered in the scheduler.
Description (d)	Enters brief description about the scheduler.
Function registration button (e)	Registers functions on the left or removes a certain function in the registered function list.
Function list (f)	Displays the list of the functions registered in the scheduler. Up to 8 functions can be registered in a scheduler.
Operating sequence Up/Down (g)	Dictates the execution sequence of the functions when two or more functions are registered.

The operating time of a scheduler is as follows.

(a) Minutely: Operates the dictated function every minute. Enter the second for the function to operate.
(b) Hourly: Operates the dictated function every hour. Enter the minute and second for the function to operate.
(c) Daily: Operates the dictated function every day. Enter the hour, minute and second for the function to operate.
(d) Weekly: Operates the dictated function every week. Enter the day, hour, minute and second for the function to operate.
(e) Monthly: Operates the dictated function every month. Enter the date, hour, minute and second for the function to operate.
(f) Yearly: Operates the dictated function every year. Enter the month, date, hour, minute and second for the function to operate.
(g) Once: Operates the dictated function once at the arranged time. Enter the year, month, date, hour, minute and second for the function to operate.

14.7.3 Scheduler Operation Setting

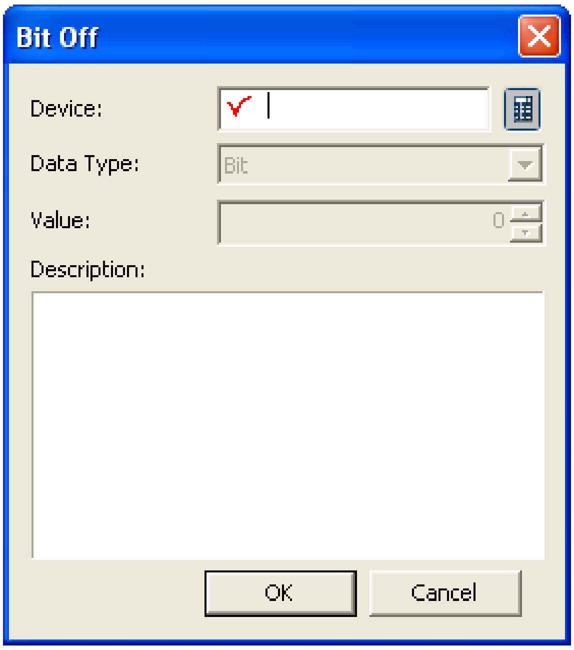
(1) Bit On


Bit On
Device:
Data Type:
Value:
Description:
OK
Cancel

Data Type: Bit

Value: 0

(2) Bit Off

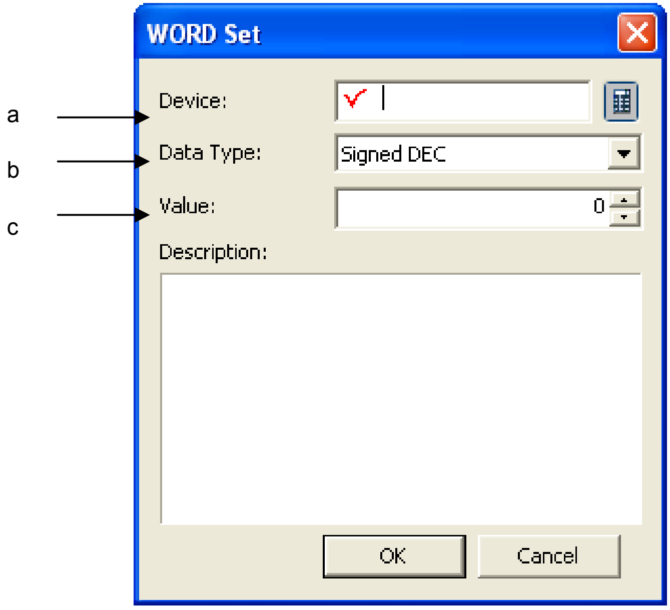

Bit Off
Device:
Data Type:
Value:
Description:
OK
Cancel

Data Type: Bit

Value: 0

(3) Word Value Setting

16 bit or 32 bit can be specified.

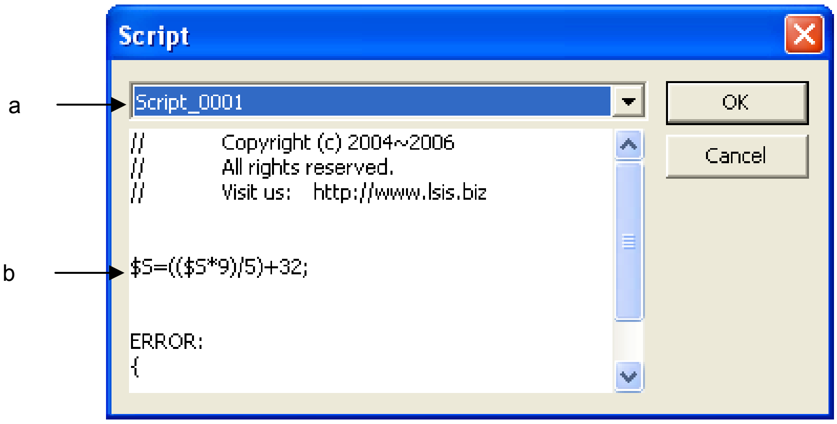

WORD Set
a
b
c
Device:
Data Type:
Value:
Description:
OK
Cancel

Data Type: Signed DEC

Value: 0

Items	Description
Object Device (a)	Sets the object word device to enter the value when the function operates. It is processed with 16 bit or 32 bit data.
Data type (b)	Decides the type of data to be input in the device.
Value (c)	Sets the value to enter in the device.

(4) Script Execution


Script
a
b
OK
Cancel

Script_0001

```
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$S=(($S*9)/5)+32;


ERROR:
{
```
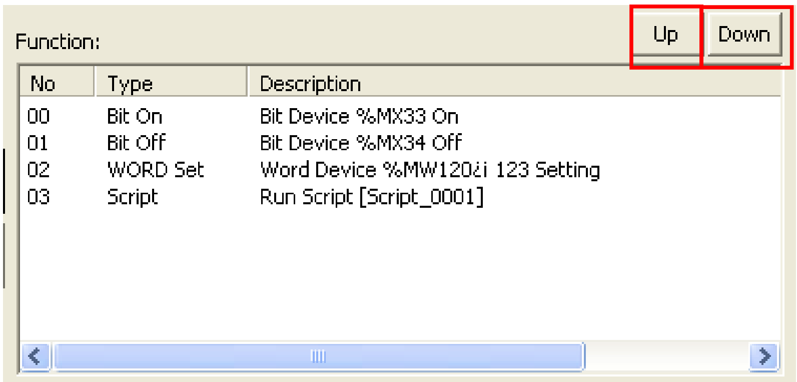

Items	Description
Script name (a)	Choose the script to operate.
Preview script (b)	Displays the contents of the script selected in (a).

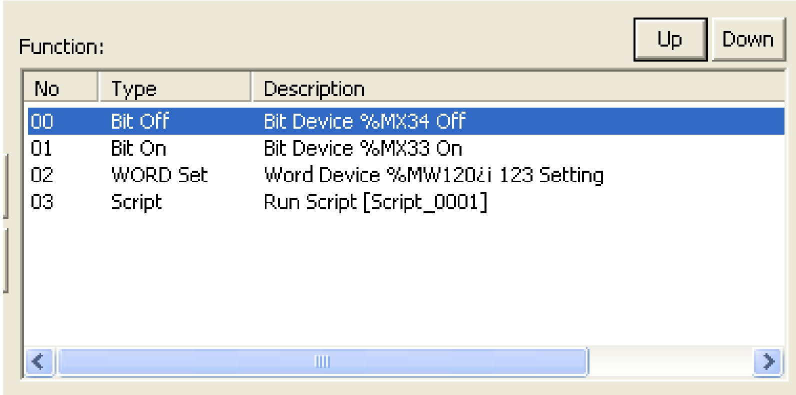
14.7.4 Scheduler Operation Priority Setting

[Action List]



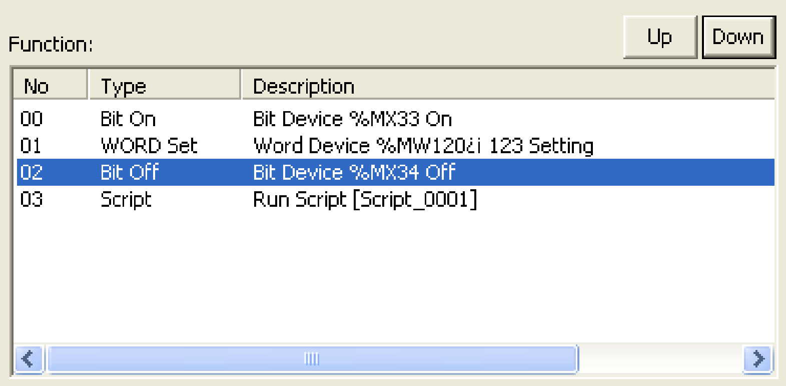
No	Type	Description
00	Bit On	Bit Device %MX33 On
01	Bit Off	Bit Device %MX34 Off
02	WORD Set	Word Device %MW120¿i 123 Setting
03	Script	Run Script [Script_0001]

Choose [Up]



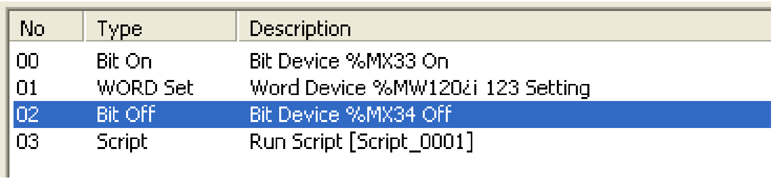
No	Type	Description
00	Bit Off	Bit Device %MX34 Off
01	Bit On	Bit Device %MX33 On
02	WORD Set	Word Device %MW120¿i 123 Setting
03	Script	Run Script [Script_0001]

Choose [Down]

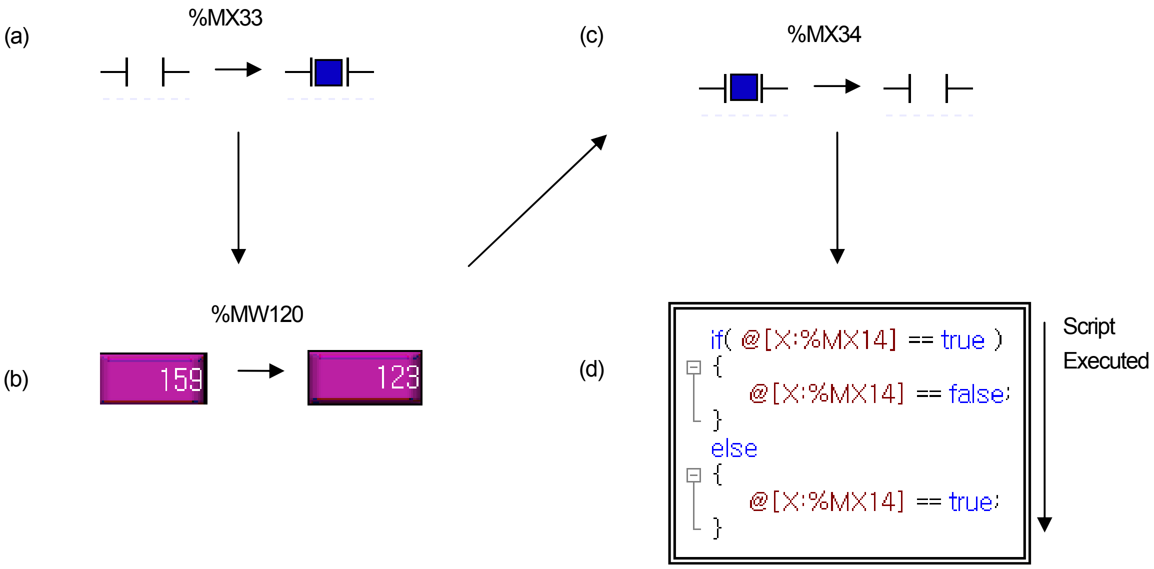


No	Type	Description
00	Bit On	Bit Device %MX33 On
01	WORD Set	Word Device %MW120¿i 123 Setting
02	Bit Off	Bit Device %MX34 Off
03	Script	Run Script [Script_0001]

[Scheduler Operation]



No	Type	Description
00	Bit On	Bit Device %MX33 On
01	WORD Set	Word Device %MW120¿¡ 123 Setting
02	Bit Off	Bit Device %MX34 Off
03	Script	Run Script [Script_0001]


(a)
%MX33
(c)
%MX34
%MW120
(b)
159
123
(d)
Script
Executed

```
if( @[X:%MX14] == true )
{
    @[X:%MX14] == false;
}
else
{
    @[X:%MX14] == true;
}
```

14.8 Script

The script is the function for the user to set the operation in addition to the functions provided by XP Builder. Scripts are entered in the form of texts.

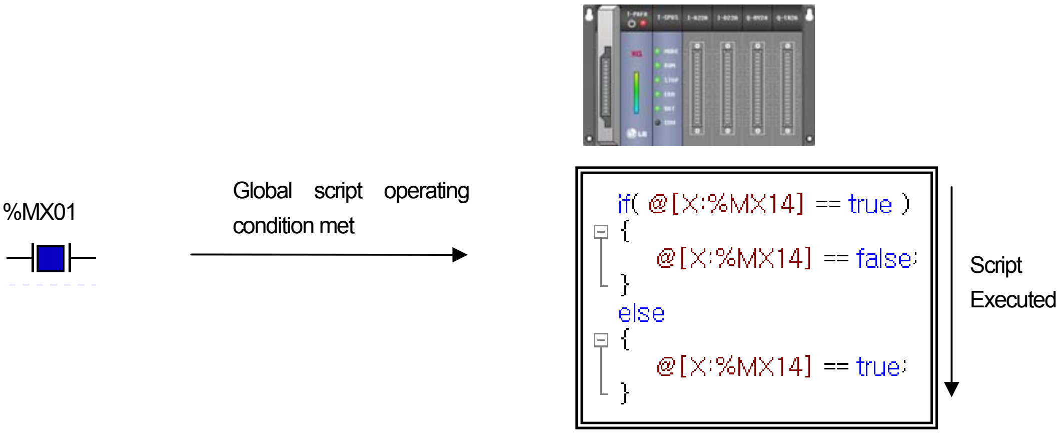
The script grammar follows the basic C grammar.

14.8.1 Use of Script

A script is not executed alone but when a specified action such as an object or display change is executed.

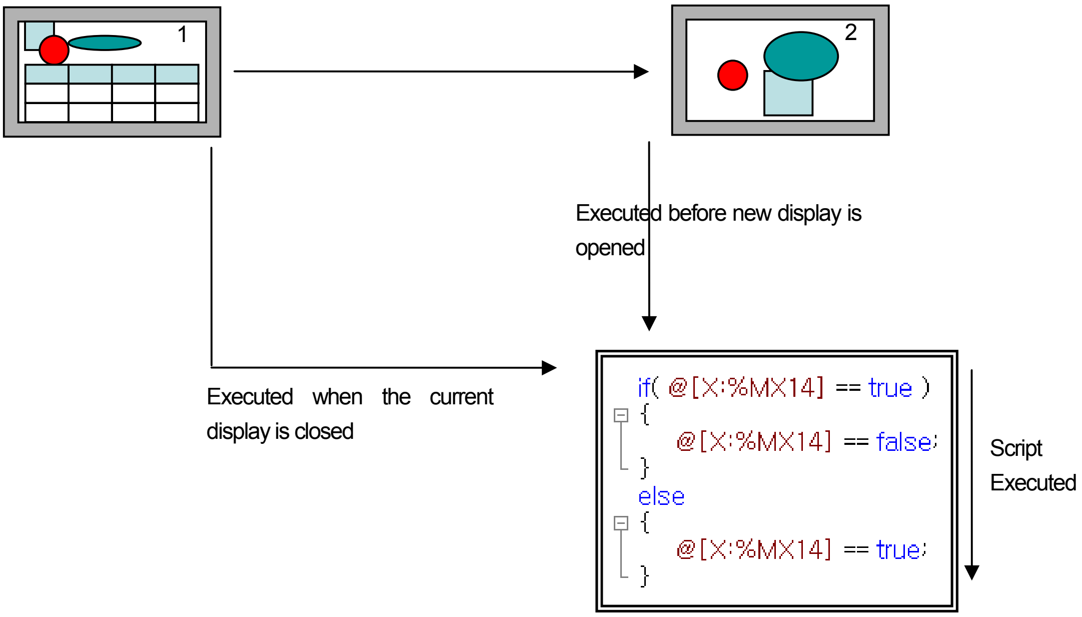
The following is an example of use of script.

(1) Global script


%MX01
Global script operating condition met
Script Executed

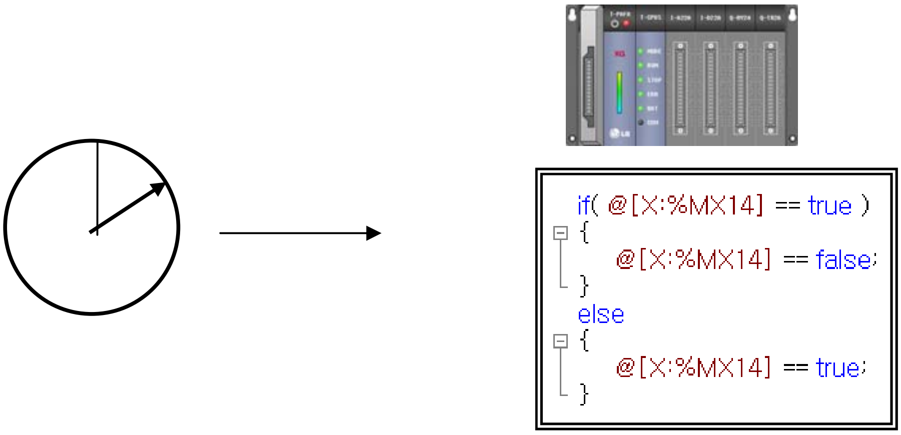
```
if( @[X:%MX14] == true )
{
    @[X:%MX14] == false;
}
else
{
    @[X:%MX14] == true;
}
```

(2) Display change script


1
2
Executed before new display is opened
Executed when the current display is closed
Script Executed

```
if( @[X:%MX14] == true )
{
    @[X:%MX14] == false;
}
else
{
    @[X:%MX14] == true;
}
```

(3) Scheduler

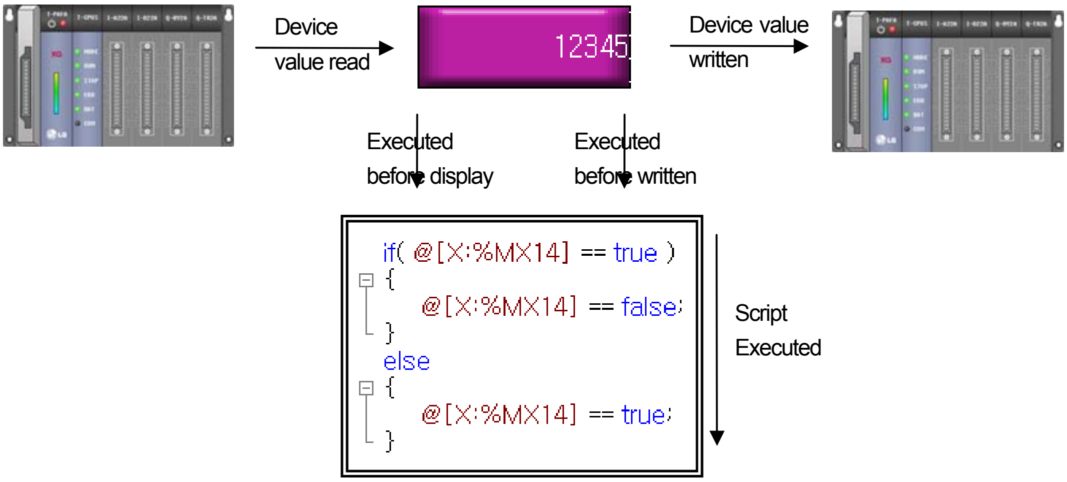


```
if( @[X:%MX14] == true )
{
    @[X:%MX14] == false;
}
else
{
    @[X:%MX14] == true;
}
```

(4) Object

Carried out the script before/after actions of the word lamp, number input unit, number output unit, character input unit, character output unit and so on.

Number input unit



Device
value read
12345
Device value
written
Executed
before display
Executed
before written
Script
Executed

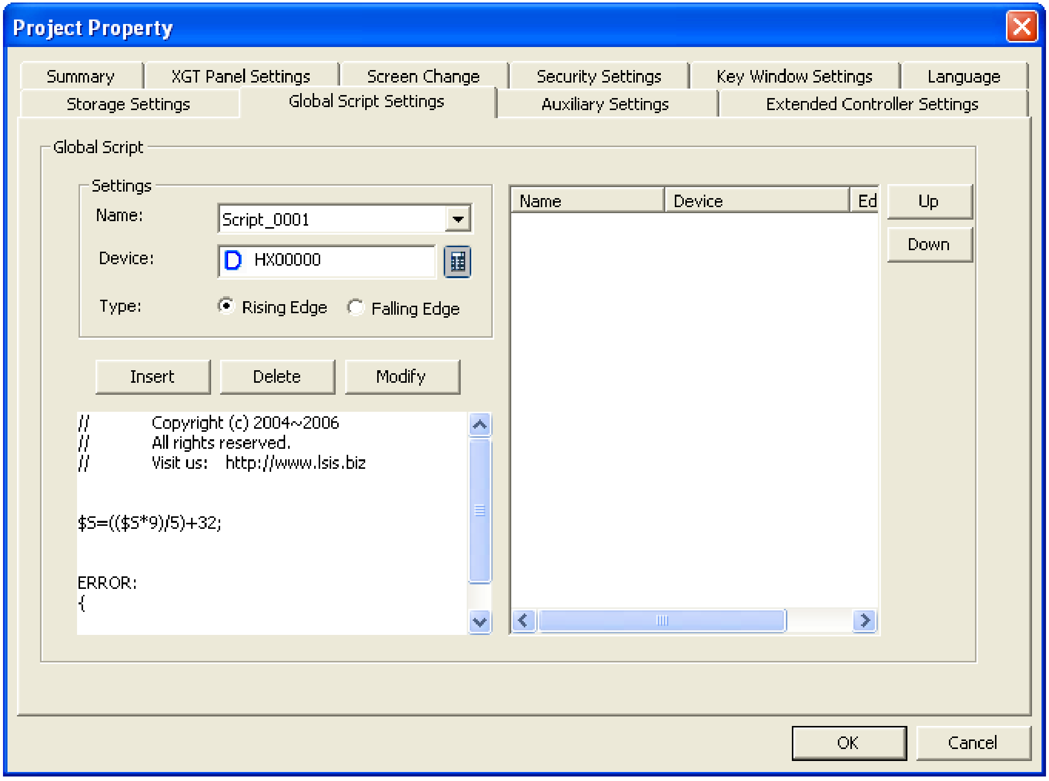
```
if( @[X:%MX14] == true )
{
    @[X:%MX14] == false;
}
else
{
    @[X:%MX14] == true;
}
```

14.8.2 Global Script Setting

[Sequence]

(a) Select [Common]-[Project Properties] in the menu.

(b) Shift to the [Global Script] tap in the properties editing dialog box which is invoked.


Project Property
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Global Script
Settings
Name
Device
Ed
Up
Down
Insert
Delete
Modify
OK
Cancel

Name: Script_0001

Device: HX00000

Type: ● Rising Edge ○ Falling Edge

```
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$S=(($S*9)/5)+32;


ERROR:
{
```

(c) Select the name of the script to execute in the name.

(d) Enter the bit device to order the device to start the script and specify the edge action of the condition device.

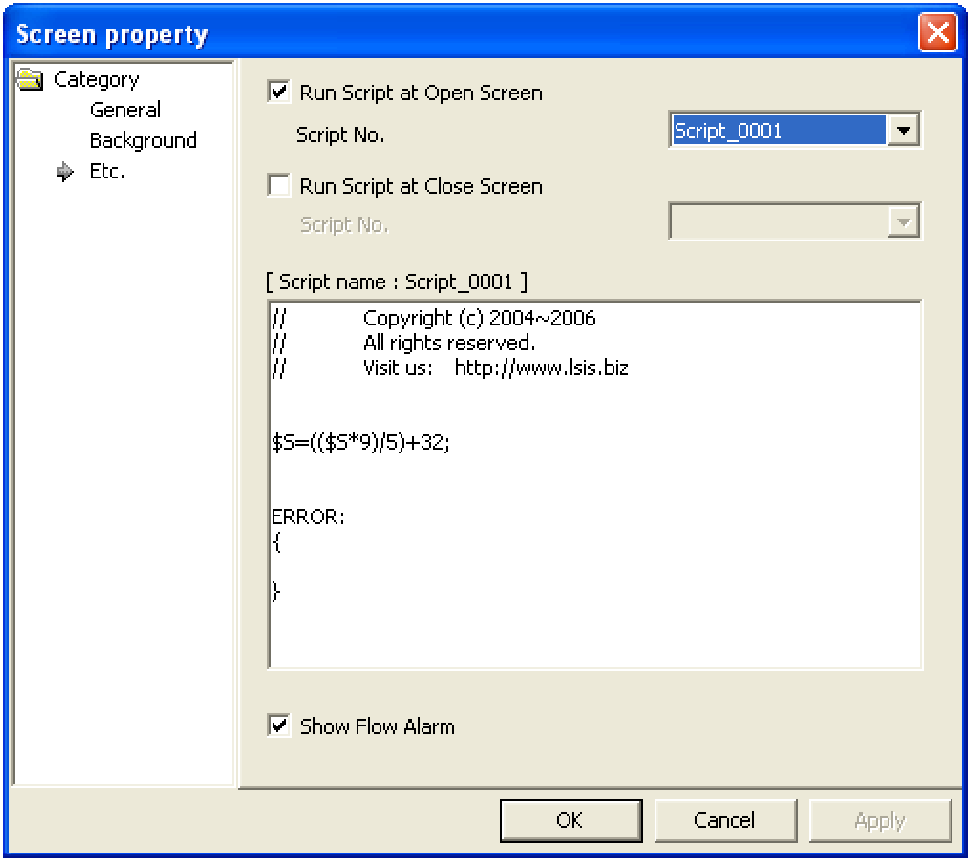
(e) Register the script by pressing Insert button in the center.

14.8.3 Display Change Script Setting

[Sequence]

(a) The mouse context menu is invoked in the basic display of the project tree.

(b) Choose [Properties] and move to the [Etc.] tap in the dialog box invoked in the screen.


Screen property
Category
General
Background
Etc.
OK
Cancel
Apply

☑ Run Script at Open Screen

Script No. Script_0001

☐ Run Script at Close Screen

Script No.

[Script name : Script_0001]

```
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$S=(($S*9)/5)+32;


ERROR:
{

}
```

☑ Show Flow Alarm

(c) Check [Run Script at Open Screen] or [Run Script at Close Screen] and specify the script to execute.

14.8.4 Scheduler Script Execution Setting

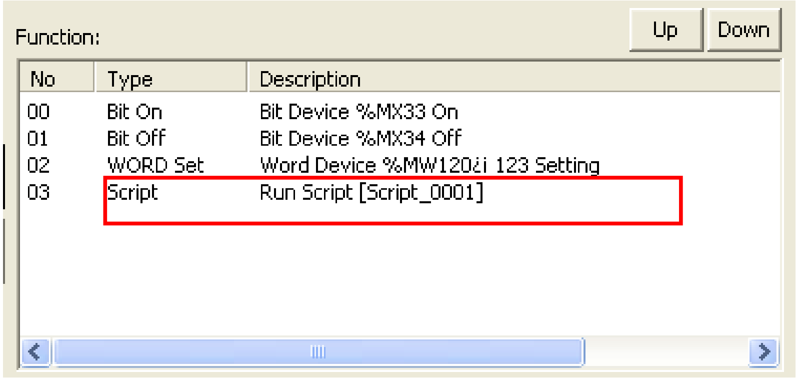
[Sequence]

(a) Register a new scheduler to invoke the scheduler properties window.

(b) Select the [Script] item in the [Function] list in [Function settings].

(c) Press >> button to invoke the selected dialog box.

Select the script to execute in the script selection dialog box and click on OK.



No	Type	Description
00	Bit On	Bit Device %MX33 On
01	Bit Off	Bit Device %MX34 Off
02	WORD Set	Word Device %MW120¿i 123 Setting
03	Script	Run Script [Script_0001]

For details, see Scheduler Setting.

14.8.5 Object Script Setting

For script selection of an object, see Setting Items of Object.

Chapter 15 Common Data Editing

15.1 Editing

(1) Creation/Opening/Closing

(a) The common setting has two configuration methods in the project tree.

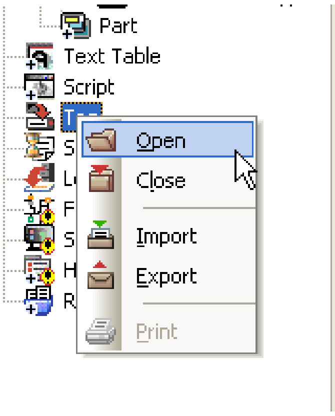
(b) One is the item that can have a sub-item and the other is the item used as a single item.

Single Item	Sub-item Creation
Tag	Text table
Flow Alarm	Script
System Alarm	History alarm(using common properties)
Logging	Recipe(using common properties)
Scheduler	-

[Open/Close Single Item]

Opening or closing a single item display is as follows.

Choose / in the context tree in the project tree.

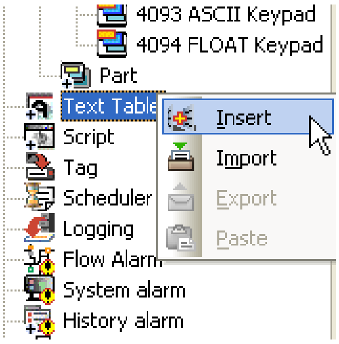


[Include Sub-Item]

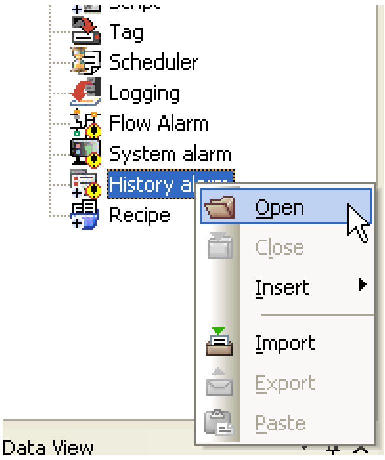
The items including sub-items in the project tree are divided into two types according to whether common properties exist or not.

The text table and script have no common properties and the history alarm and recipe have common properties.

The following illustration is the context menu without common properties such as a text table.


4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Insert
Import
Export
Paste

The following illustration is the context menu with common properties such as a flow alarm.


Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Insert
Import
Export
Paste
Data View

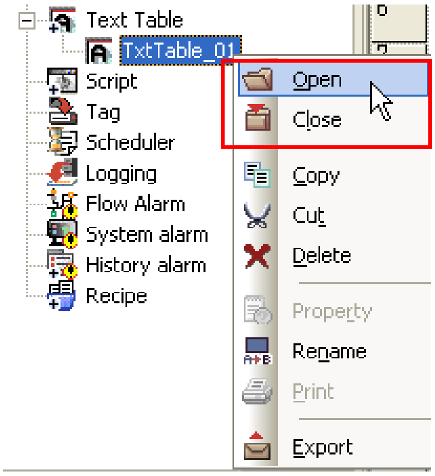
[Edit Common Properties]

To open common properties in an item with common properties, select Open / Close in the context menu.

[Insert Item]

A sub-item is added by selecting Insert in the context menu.
In inserting a sub-item, as the history alarm exceptionally, one of the alarm group and alarm list can be chosen. An alarm group might have an alarm group or alarm list as a sub-group.

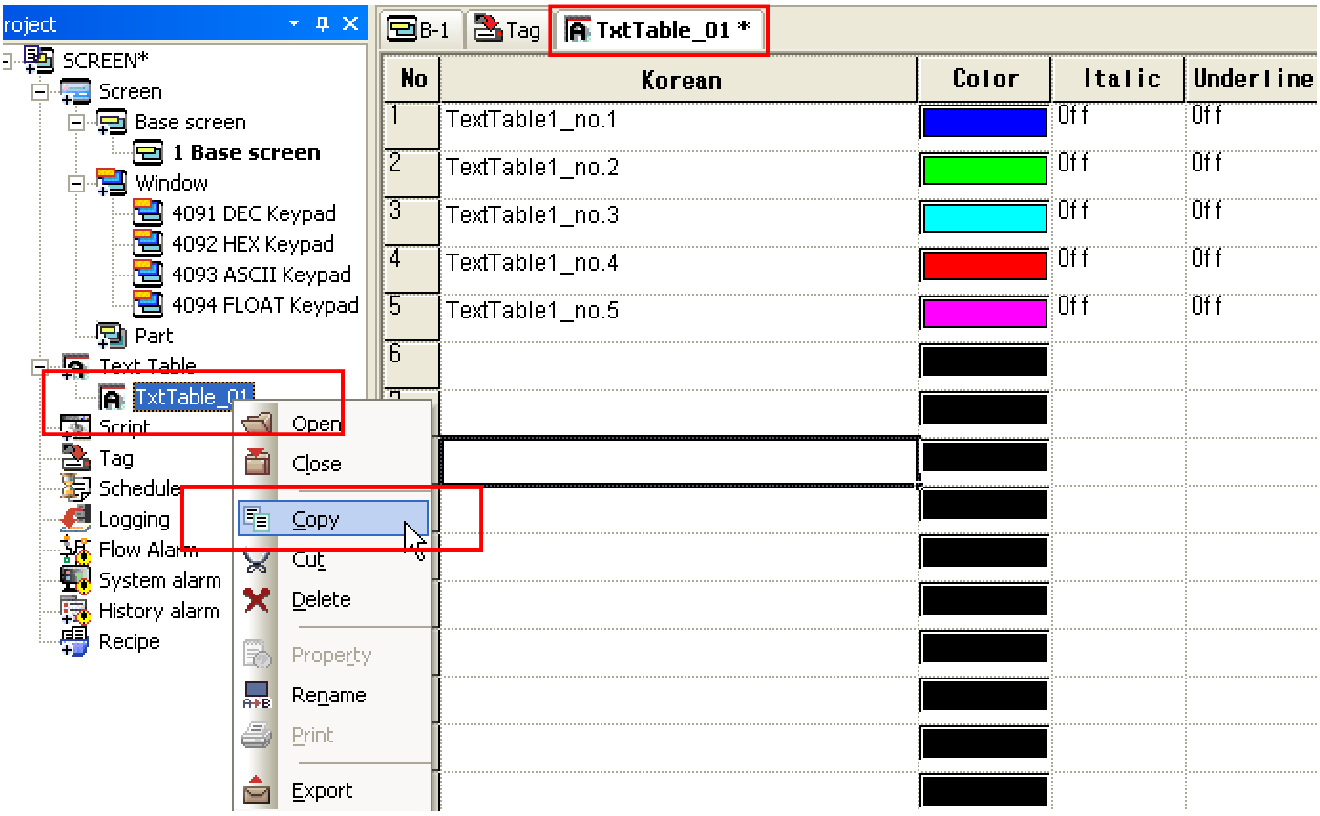
[Open/Close Sub-Item]
Opening/closing of a sub-item can be executed through the mouse context menu.


Text Table
TxtTable_01
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
Export

(2) Copy/Paste

All common items can be copied or pasted in the project tree. In an item with a sub-menu, only copy/paste of sub-menus is possible.

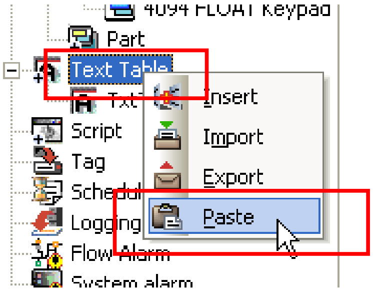
[Copy/Paste in the Same XP Builder]


roject
SCREEN*
Screen
Base screen
1 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
TxtTable_01
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
Export
B-1
Tag
TxtTable_01 *

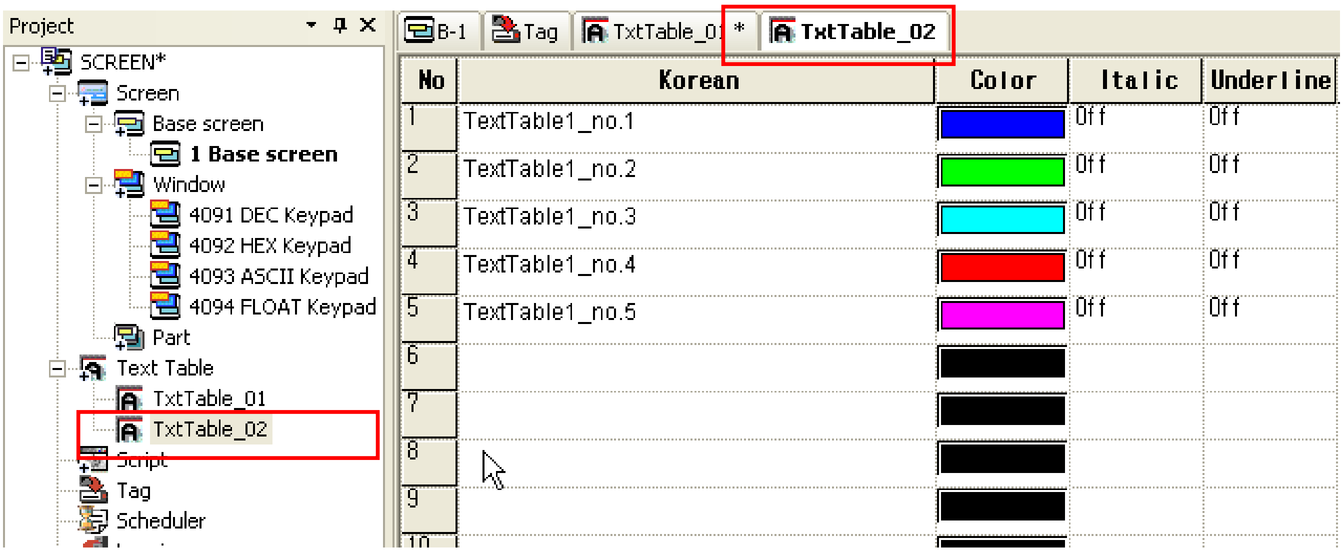
No	Korean	Color	Italic	Underline
1	TextTable1_no.1	🟦	Off	Off
2	TextTable1_no.2	🟩	Off	Off
3	TextTable1_no.3	🟦	Off	Off
4	TextTable1_no.4	🟥	Off	Off
5	TextTable1_no.5	🟪	Off	Off
6		⬛		

The illustration above displays selecting an item in the project tree and showing a context menu to copy “text table_01” item.

Select the location to paste the text table to display the mouse context menu. Choose [Paste] in the menu.


4094 FLOAT Keypad
Part
Text Table
Txt
Script
Tag
Schedul
Logging
Flow Alarm
System alarm
Insert
Import
Export
Paste

The following figure shows the result of paste.


Project
SCREEN*
Screen
Base screen
1 Base screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
TxtTable_01
TxtTable_02
Script
Tag
Scheduler
B-1
Tag
TxtTable_01 *
TxtTable_02

No	Korean	Color	Italic	Underline
1	TextTable1_no.1	🟦	Off	Off
2	TextTable1_no.2	🟩	Off	Off
3	TextTable1_no.3	🟦	Off	Off
4	TextTable1_no.4	🟥	Off	Off
5	TextTable1_no.5	🟪	Off	Off
6		⬛		
7		⬛		
8		⬛		
9		⬛		
10		⬛		

A text table cannot have a repeated name because XP Builder refers to the name when referring to the text table. Therefore, when pasting in the same XP Builder, create a new name and add a text table because there is already the same name.

The contents are equally copied.

Note

(1) Project item name

Items of project items that do not allow repeated naming are as follows.

The following items cannot have the same name because their names are referred to from outside.

text table	History alarm group	History alarm item	Script

[Copy Data between XP-Builders]

Copying common items between XP Builders is the same as copying items within the XP Builder. However, when the project properties or version is different between two XP Builders, some data might not be normally copied.

The following shows problems with data copying between XP Builders.

Items	Differences in XP-Builder Setting	Data
text table	Project editing language items are different. Editing language sequences are different.	Copying a text table is not copying a document with a form but just copying a simple text regardless of the editing language sequence or number of editing languages. Therefore, even in case of the same language, if the sequence is not correct, it can be copied to another language item.
Tag	Connection device setting is different. The number of connection devices is different.	The device information during copy/paste is saved in a text regardless of the PLC type, so the device address might be displayed differently after copying when the connection properties information between two projects is different. To safely copy data, the connection properties information between two projects should be the same.
History Alarm	Connection device setting is different. The number of connection devices is different.	A history alarm is copied with the alarm group and alarm list maintaining the same structure except the common properties of the history alarm. However, the names of the alarm group and alarm list cannot be repeated, so when the repeated name is found, it is changed into the basic name and copied. If the connection device types are different, the history alarm device information might be different.
Logging	Connection device setting is different. The number of connection devices is different.	If the connection device types are different, the history alarm device information might be different.
Scheduler	Connection device setting is different. The number of connection devices is different.	If the connection device types are different, the history alarm device information might be different.

(3) Export/import

Common items can share data within XP Builder or between XP Builders by export/import. In addition, the convenience in editing of the text table and tags has been enhanced by editing the exported files in a document editor (Excel, Word) and invoking them.

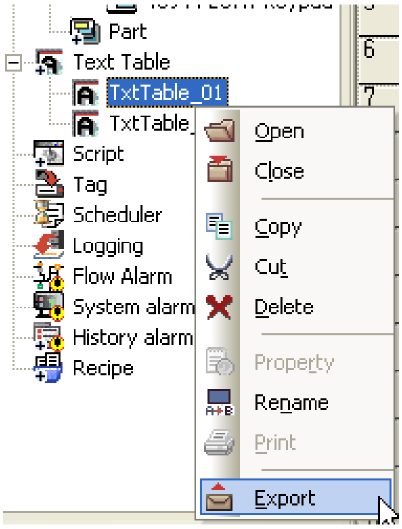
The following table is the file types used for export/import.

Items	File extender
Text table, recipe, tag	.CSV
History alarm	.HAL
Flow alarm	.FAL
Logging	.LOG
Scheduler	.SCH
Script	.SPT

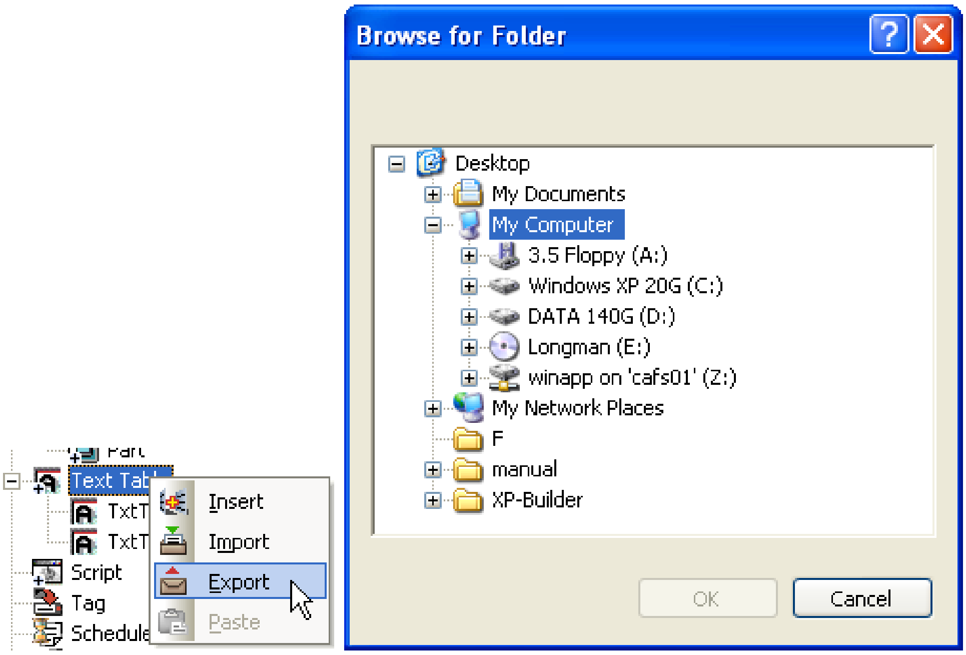
* CSV: Comma Separated Value. The CSV is recorded with each item of it marked with a comma. CSV files are saved in a file or can be read or edited in the editor.

[Export]

Press Export in the context menu to export a project tree item.


Part
Text Table
TxtTable_01
TxtTable_
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
Export

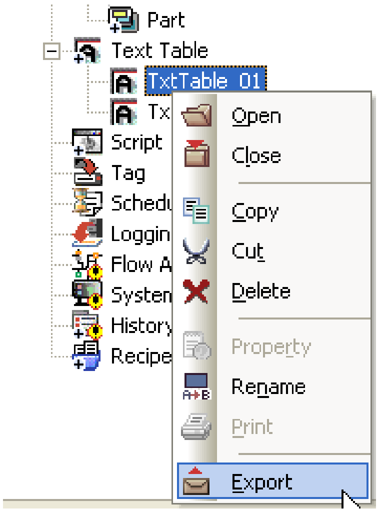
If you press Export, a dialog box for file or folder selection is imported.

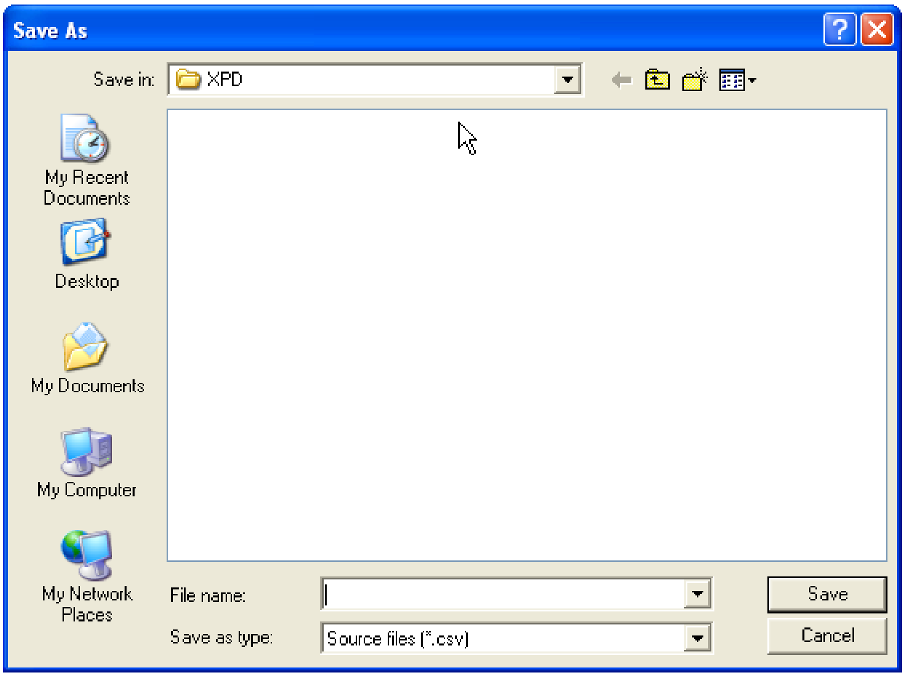

Part
Text Tabl
TxtT
TxtT
Script
Tag
Schedule
Insert
Import
Export
Paste
Browse for Folder
Desktop
My Documents
My Computer
3.5 Floppy (A:)
Windows XP 20G (C:)
DATA 140G (D:)
Longman (E:)
winapp on 'cafs01' (Z:)
My Network Places
F
manual
XP-Builder
OK
Cancel

The illustration above shows the dialog box invoked by selecting Export in the text table items. The text table has multiple sub-items. In such a case, a folder selection dialog box is invoked.

If the user selects a folder, XP Builder displays sub-items in the folder selected by the user. Now the name of the file is the name of the sub-item and extensions are divided according to the item types.

The items that can be exported to the folder are [text table], [recipe], [script] and so on.


Part
Text Table
TxtTable_01
Tx
Script
Tag
Schedu
Loggin
Flow A
Systen
History
Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
Export


Save As
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
File name:
Save
Cancel

Save in: XPD

Save as type: Source files (*.csv)

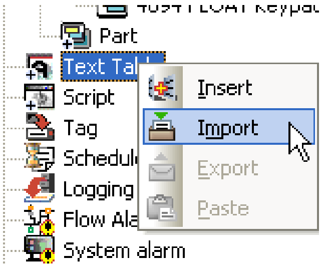
The illustration above shows the dialog box invoked when you press the Export button in a single item without a sub-item or in the final sub-item when there are any sub-items such as a text table.

The dialog box enables you to specify the name of the file for the user to export.

With respect to the file type, default values are set for the export properties of each item.

[Import]

Select the type of the item to import from the project tree and click on the Import button in the context menu.


4094 FLOAT Keypad
Part
Text Ta
Script
Tag
Schedul
Logging
Flow Ala
System alarm
Insert
Import
Export
Paste

Import can be conducted at the highest tree whether the item has a sub-item or not.
When you import an item, the text table, history alarm and script can be changed and read according to the item properties.

If you execute [Import] between different project, following problems might occur.

Items	XP-Builder Setting Differences	Data
Text table	Project editing language items are different. Sequences of editing language are different.	Only the common items of the editing language set in the project which executed export and the project that executed import are read.
Tag	Connection device settings are different. Number of connection devices is different.	If the PLC connection information of the two projects is different, the device of the tag might be different. If any repeated tag name is found according to the tag name rule, a number is given after the tag name to avoid the same name being given and a name is created.
Flow Alarm	Connection device settings are different. Number of connection devices is different.	A flow alarm executes additional actions after deleting the previous data when it imports. Therefore, it reads the same if the connection device settings are the same. However, if the type of the connection device is different, the flow alarm device information can be different.
History Alarm	Connection device settings are different. Number of connection devices is different.	The history alarm is read by the alarm group and alarm list with the same structure maintained except the common properties of the history alarm. However, the names of the alarm group and alarm list cannot be repeated, so if a repeated name is found, it can be changed into a basic name can be created. If the connection device type is different, the history alarm device information might also be different.
Logging	Connection device settings are different. Number of connection devices is different.	If the connection device type is different, the history alarm device information might also be different.
Scheduler	Connection device settings are different. Number of connection devices is different.	If the connection device type is different, the history alarm device information might also be different.
Script	Connection device settings are different. Number of connection devices is different.	Because Script is processed as text string, it doesn't change. But device reading and device writing sentence may have compile error.

Note

(1) The export file structure is as follows.

(a) The files created when a history alarm, flow alarm, logging or script is exported cannot be edited by an ordinary editor. It can be opened only in XP Builder.

(b) A tag, text table and recipe, which save information in the CSV file structure, can open the files to export and edit them and can also read files that have been edited by a document editor.

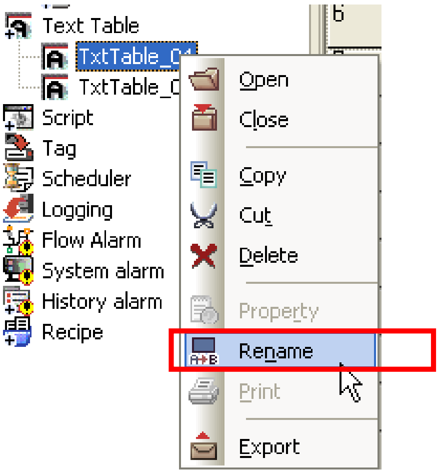
(4) Change of Common Item Name and Number

You can change the name or number of each common item in the project tree.

[Change Name]

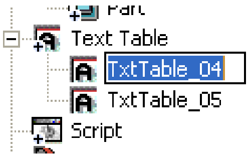
(a) Select an item in the project window.

(b) Press on the right button on the mouse to select [Rename].


Text Table
TxtTable_04
TxtTable_0
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
Export

(c) Change the name and press the Enter key.

Click on the [Rename] menu and if the tree label is activated, enter a desired name and press the Enter key when you are finished. If the entered name is a repetition of another item, it remains the previous value.


Text Table
TxtTable_04
TxtTable_05
Script

Note

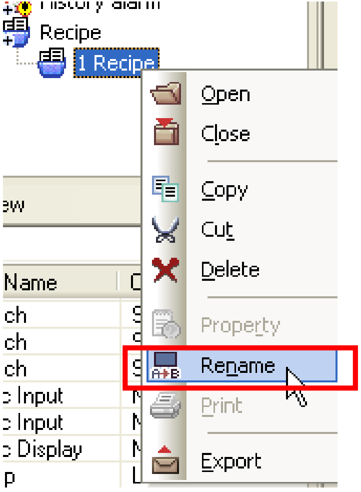
(1) Naming Regulation

Item	Regulation	Example
Screen	● Start with the number among 1 ~ 65534 and after leaving a space, input the name. ● It can not be overlapped with other screen No. or Windows No. ● Windows Screen 65531 (DEC), 65532 (HEX), 65533 (ASCII), 65534 (FLOAT) can not change screen No.	1 screen, 2, 1000 screen
Text table	● It can not be overlapped with other string table's name.	String 1, **, *Character*,
Script	● It can not be overlapped with other script name. ● Special characters and space are not available. ● Script grammar reserved word is not available. Reserved words: HMIExit, PrintScreen, PrintAlarm, ShowStatusbar, SetBuzzerEnable, Buzzer, GetLastError, Sleep, SetTime, CopyData, ChangeBaseScreen, BacklightOn	!@#$%.. ➔ Not available
Recipe	● Start with the number among 1 ~ 255 and after leaving a space, input the name. ● It can not be overlapped with other recipe name.	1 recipe, 255 recipe

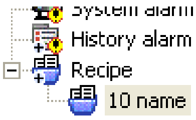
[Recipe Number Change]

(1) Select an item in the project window.

(2) Press the right button on the mouse to select the [Rename] menu.


Recipe
1 Recipe
Open
Close
Copy
Cut
Delete
Property
Rename
Print
Export
Name
ch
ch
ch
Input
Input
Display

(3) Change the number and name and press the Enter key.
Enter the number and then name, with a space between them.
If you enter nothing after the space, no name is recognized.


System alarm
History alarm
Recipe
10 name

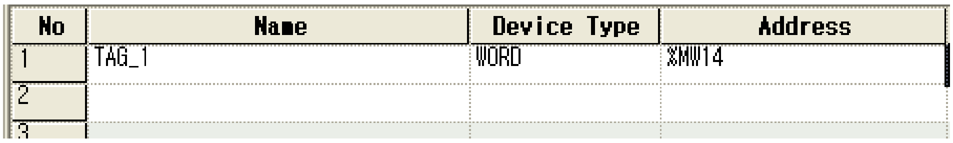
Note

(1) If you click on the tree item which you want to rename and click on it once more, the tree item becomes editable, which is the same effect as using the Rename menu described above.
(2) If the display number is the same as another item or there is an error in input of the number (e.g. when the name has been entered without leaving a space), the previous value is maintained.

15.2 Tag

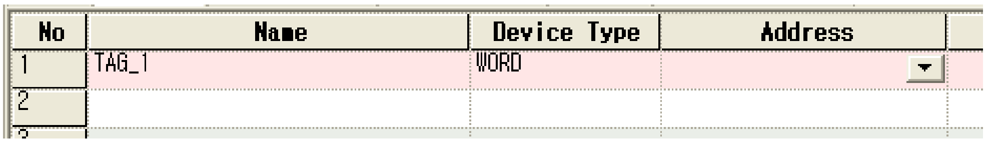
If any piece of information is missing when you enter the tag information, the relevant part turns slightly red. So wrongly entered a tag cannot be referred to and used elsewhere.
To be normally entered as a tag, the name and device address must be correctly registered.

[When Correctly Entered]



No	Name	Device Type	Address
1	TAG_1	WORD	%MW14
2			
3			

[Erroneous Tag without Device Address Entered]



No	Name	Device Type	Address
1	TAG_1	WORD	
2			

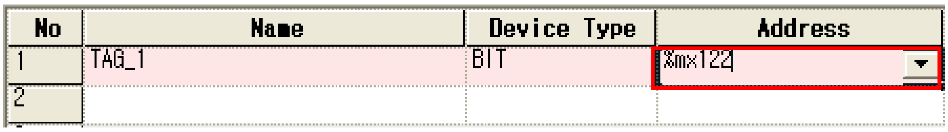
(1) Input of Device

You can enter a device value in tag editing either by directly entering it or using a dialog box.
In the former case, you should know the method of device address expression.

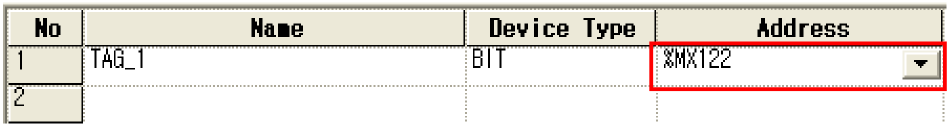
Click on the cell in which to enter in the device line in the tag input window.
The device input editor is activated and a cursor appears. Enter a correct device address expression referring to the PLC connection information set in the project properties. If the address expression is incorrect, the device is not entered but a space is left.

A device name entered in small letters is expressed in capital letters.

[Correct Device Address Input]
Bit Device Input

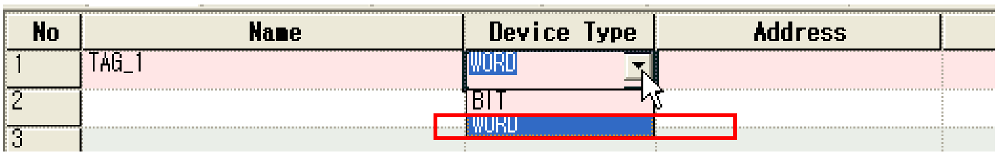


No	Name	Device Type	Address
1	TAG_1	BIT	%mx122
2			



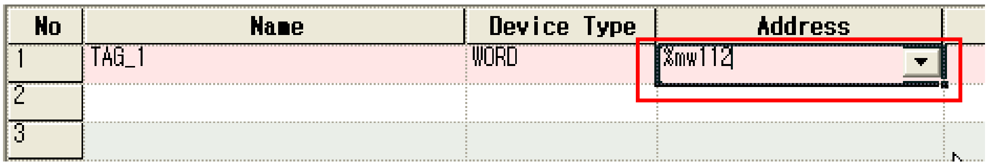
No	Name	Device Type	Address
1	TAG_1	BIT	%MX122
2			

Word Device Input



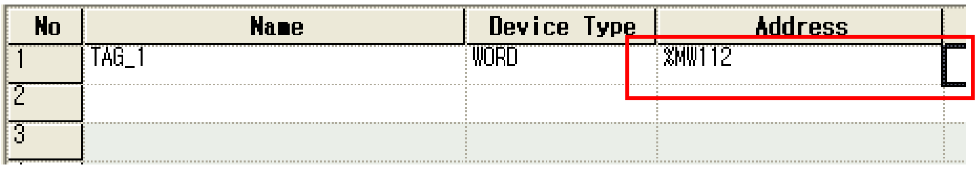
No	Name	Device Type	Address
1	TAG_1	WORD	
2			
3			

Set the device type as word.



No	Name	Device Type	Address
1	TAG_1	WORD	%mw112
2			
3			

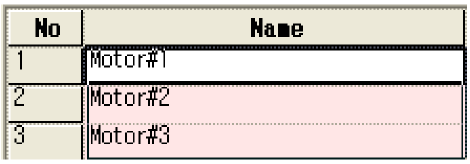
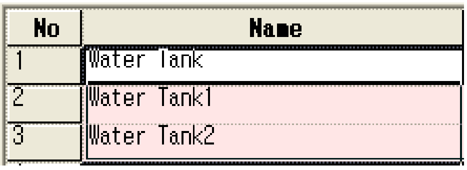
Enter the word device address.



No	Name	Device Type	Address
1	TAG_1	WORD	%MW112
2			
3			

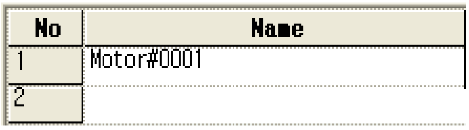
(2) Automatic Creation (Name)

This function is useful when you want to register several similar names or consecutive names in the tag input window. If you use this function, new names are created in the following rule.

Name	New Name
There are numbers the back or the middle of the name.	A new name is created with the number increased by 1. E.g.) Motor#1 → Motor#2 → Motor#3  No / Name 1 Motor#1 2 Motor#2 3 Motor#3
No number comes the back or in the middle of the name.	A random number is given after the name. Numbers are allotted from 1 and increased by 1 so that they are not repeated. E.g.) Water tank → Water tank 1 → Water tank 2  No / Name 1 Water Tank 2 Water Tank1 3 Water Tank2
A number in certain figures comes in the middle of the name.	The number is increased with the figures maintained. E.g.) Motor#0001 → Motor#0002 → Motor#0003

Automatic creation operates as follows.

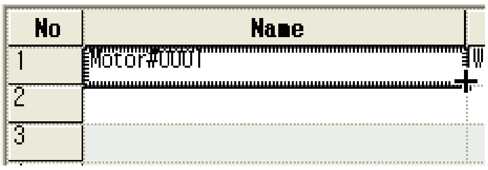
(a) Click on the name which you would like to specify as the standard of automatic creation.



No	Name
1	Motor#0001
2	

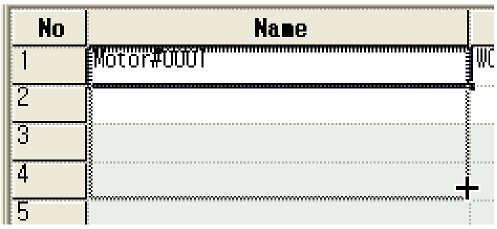
(b) If a cell is selected, it is marked with at the right bottom.

Click on . When you place the pointer on , the pointer turns into .



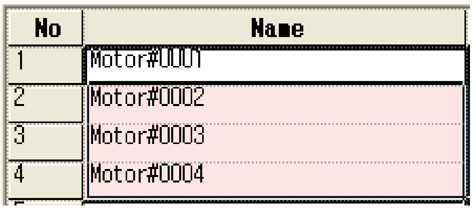
No	Name
1	Motor#0001
2	
3	

(c) Click on and holding the mouse button, drag it to the desired place.



No	Name
1	Motor#0001
2	
3	
4	
5	

(d) When you release the mouse button, new names are automatically created according to the naming rule to the area you chose.



No	Name
1	Motor#0001
2	Motor#0002
3	Motor#0003
4	Motor#0004

(3) Automatic Creation (Device)

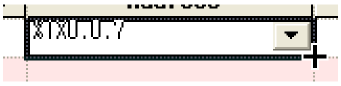
You can use this function when you want to register devices in consecutive addresses.
If you execute this function, device addresses are automatically created with the address number increased by 1.

If you choose a device address and execute this function, the address increases by 1.
If you execute automatic creation for 2 lines in the device address column, the address is increased by the difference between the addresses.

You can choose up to 2 columns for this function.
You can have the same effect if you select the whole including the name and device type and execute automatic creation.

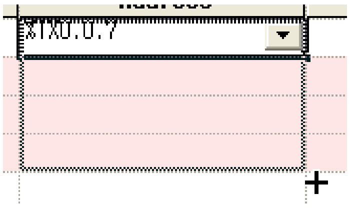
[Automatic Creation with a Column Selected]

Choose the base column for automatic creation.



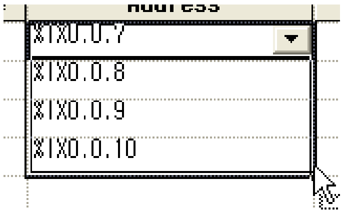
%IX0.0.7

Click on the start point at the right bottom and drag the mouse. The virtual line drawn when you drag the mouse indicates the area to be filled automatically.



%IX0.0.7

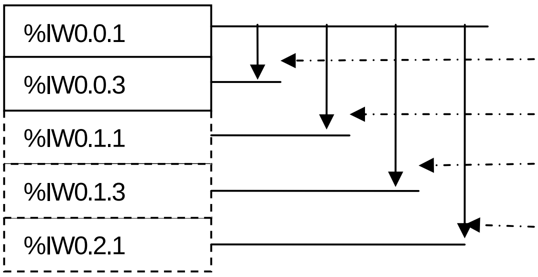
If you release the mouse button, the area is filled.



%IX0.0.7
%IX0.0.8
%IX0.0.9
%IX0.0.10

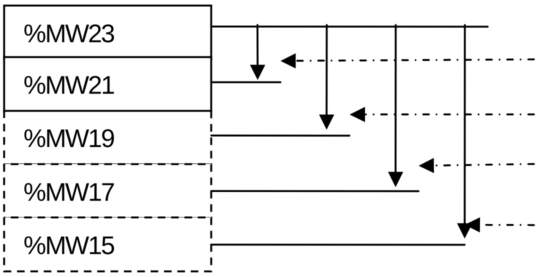
The address increases with an offset from the base device of automatic creation.

[Automatic Creation with Two Columns Selected]



%IW0.0.1
%IW0.0.3
%IW0.1.1
%IW0.1.3
%IW0.2.1

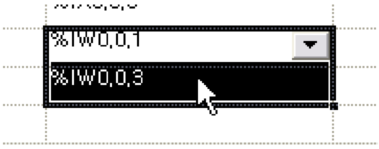
1. Address difference: 2 WORD
2. Offset: 2 WORD * 2 columns = 4 words after the first address
3. Offset: 2 WORD * 3 columns = 6 words after the first address
4. Offset: 2 WORD * 4 columns = 8 words after the first address



%MW23
%MW21
%MW19
%MW17
%MW15

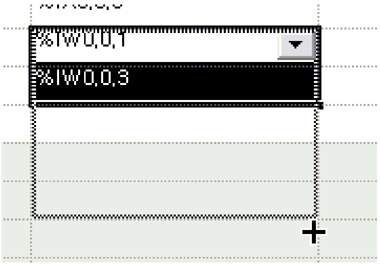
1. Address difference: -2 WORD
2. Offset: -2 WORD * 2 columns = -4 words after the first address
3. Offset: -2 WORD * 3 columns = -6 words after the first address
4. Offset: -2 WORD * 4 columns = -8 words after the first address

Select two columns as the base columns for automatic creation.



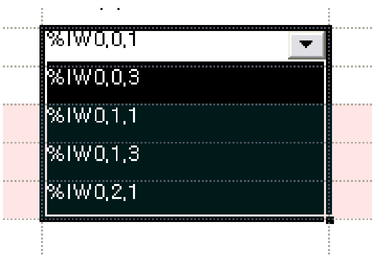
%IW0,0,1
%IW0,0,3

Click on the start point of the automatic creation and drag where you want to fill.



%IW0,0,1
%IW0,0,3

Selecting the area, release the mouse button and then the selected area is automatically filled.



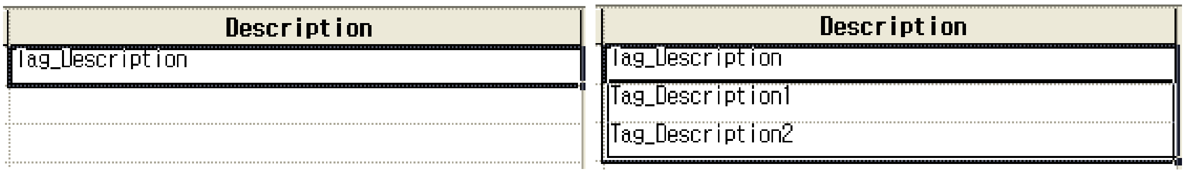
%IW0,0,1
%IW0,0,3
%IW0,1,1
%IW0,1,3
%IW0,2,1

The difference between the two initially selected addresses, that is, %IW0.0.3 - %IW0.0.1 has an offset of 2 WORD as shown above.
Therefore, the address to come next is %IW0.1., which is 2 WORD higher than %IW0.0.3.

(4) Automatic Creation (Description)

Automatic creation of device description is simply increasing copy. That is, if a number is included in the text, the number is increased and otherwise, a number comes after the text and increases.

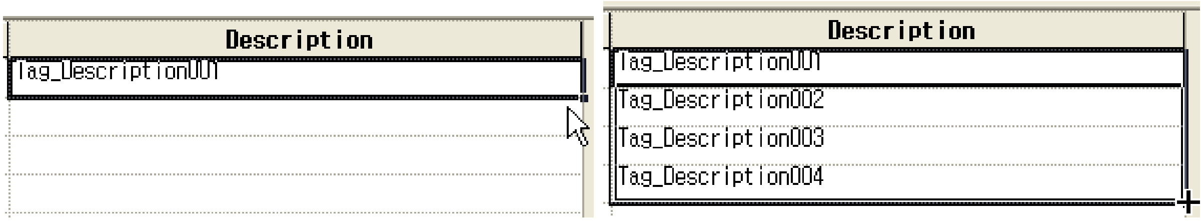
[No Number in the Text]



Description
Tag_Description

Description
Tag_Description
Tag_Description1
Tag_Description2

[Text with a Number]



Description

Tag_Description001

Description

Tag_Description001

Tag_Description002

Tag_Description003

Tag_Description004

The included number is automatically increased.

(5) Copy/Paste

The tag table supports copy/paste of the table contents.

When you paste, the tag name and address are checked stringently. With respect to the tag name, it is checked whether the pasted text is suitable for a name and the name is a repetition. If such conditions are not met, you cannot paste.

With respect to the address, it is checked whether the device address expression is correct and if it is found incorrect, you cannot paste.

(6) Export/Import – CSV Format

The tag table exports and imports in the CSV format.

The following shows the CSV file structure in case of export in the CSV file.

[Tag File Structure]

Files are saved in the format of Unicode – Codepage 1200.

# Tag Table Export				
# Do not edit the below 1 line. These lines contain important information.				
Tag				
# Number	Name	Device Type	Address	Description
1	Pump 1	BIT	P00001	Pump 1 On
2	Pump 2	BIT	P00002	Pump 2 On
~	~	~	~	~

#: This is a note added in the program.

The text of each field is separated by ‘,’ such as “Pump1”, “BIT” and saved.

The user can edit the CSV files using the Excel or other text editors.

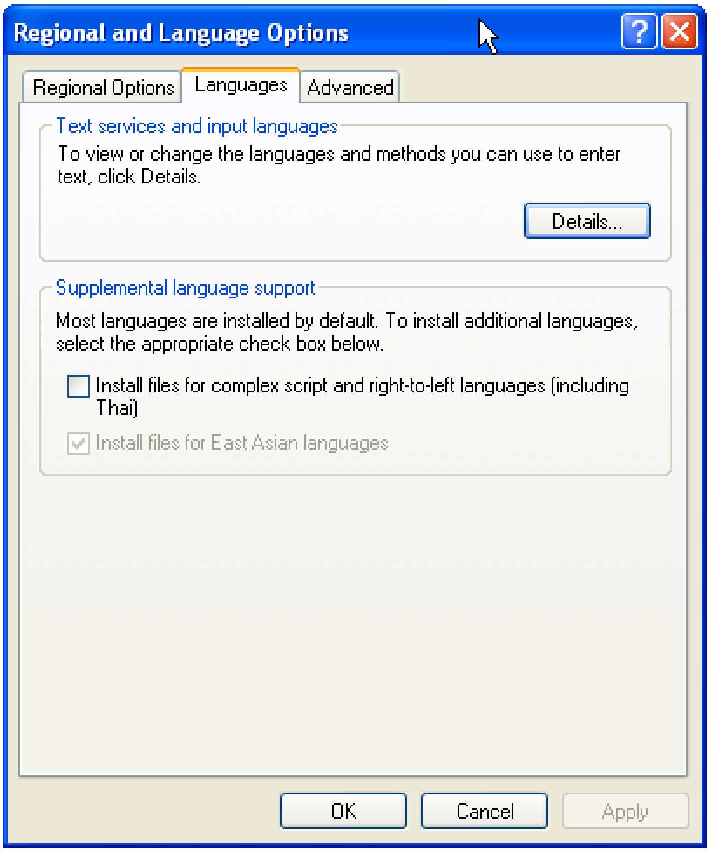
15.3 Text Table

(1) Keyboard Setting and Change

For multi-language input to be available using XP Builder, multi-language input should be available in the operating system of the PC where XP Builder is operating.

The following shows the PC multi-language input setting.

Select [Control Panel] in the [Start] menu in the desktop.
Choose [Regional and Language Option] in [Control Panel]. If a dialog box appears, move to the [Language] tap, the second tap.



Text services and input languages

To view or change the languages and methods you can use to enter text, click Details.

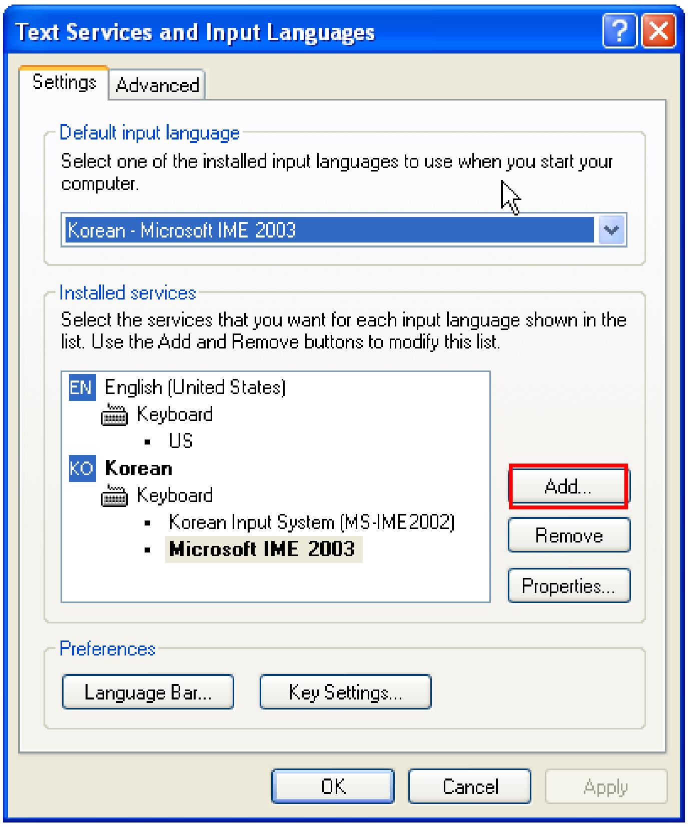
Supplemental language support

Most languages are installed by default. To install additional languages, select the appropriate check box below.

☐ Install files for complex script and right-to-left languages (including Thai)

☑ Install files for East Asian languages

Click on Details... in [Text Services and input languages].


Text Services and Input Languages
Settings
Advanced
Default input language
Add...
Remove
Properties...
Preferences
Language Bar...
Key Settings...
OK
Cancel
Apply

Select one of the installed input languages to use when you start your computer.

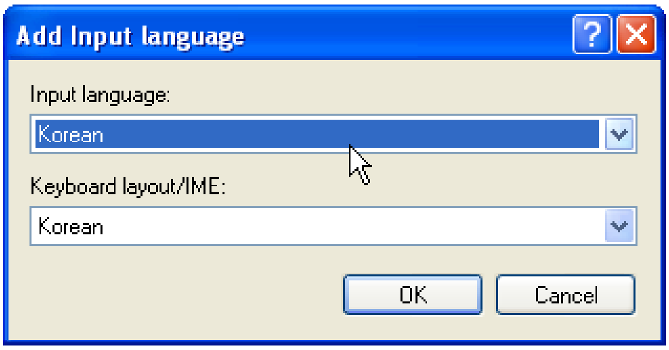
Korean - Microsoft IME 2003

Installed services

Select the services that you want for each input language shown in the list. Use the Add and Remove buttons to modify this list.

- EN English (United States)
  - Keyboard
    - US
- KO **Korean**
  - Keyboard
    - Korean Input System (MS-IME2002)
    - **Microsoft IME 2003**

Click on [Add] to add the language to use for input in XP Builder.


Add Input language
OK
Cancel

Input language: Korean

Keyboard layout/IME: Korean

If you select a language, you can select the keyboard corresponding to the language you chose. Specify the keyboard to use the language.

Note

Tips on IME keyboard input

IME stands for Input Method Editor and is an input window for using various languages such as Korean, Chinese and Japanese. As you cannot enter Asian languages with the basic English keyboard cannot, each key can change characters it represents in various languages. The information on the language change is displayed in the small window shown above, which is called the soft keyboard. In XP Builder, you can view or hide the keyboard by selecting [Menu] -> [View] -> [IME] when you want to enter Korean, Chinese and Japanese.

(2) Simultaneous Input of Multiple Languages

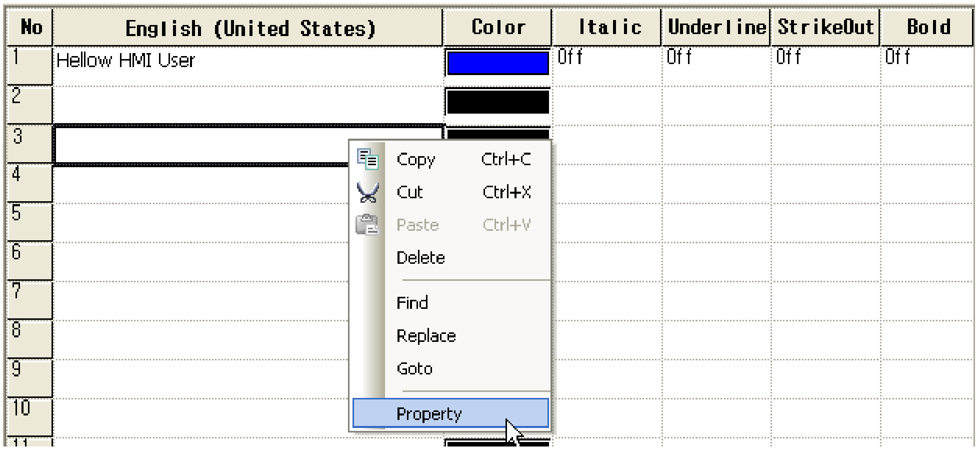
The text selected as the present editing language is displayed in the table when you enter characters in the text table. The text table can edit different languages in multiple lines at a time.

You can enter multiple languages in columns as follows.

[View Columns of Text Table]

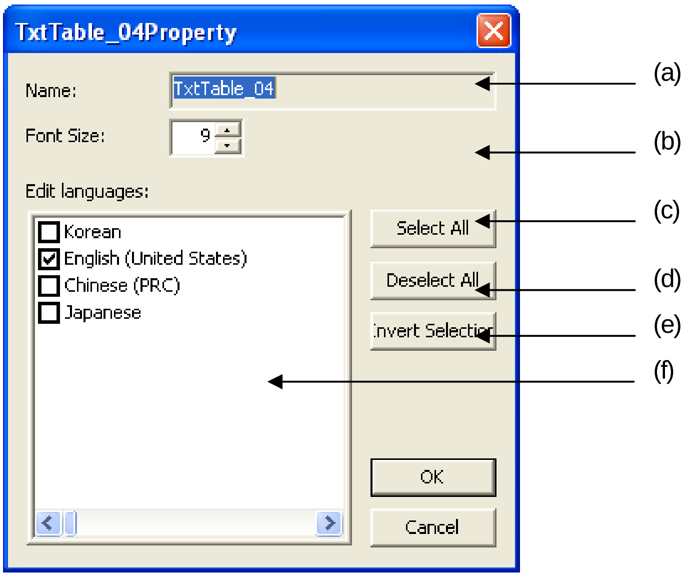
Press the right button on the mouse on the text table input box.

Select [Property] in the invoked menu and the following display appears.



No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Hellow HMI User	🟦	Off	Off	Off	Off
2		⬛				
3		⬛				
4						
5						
6						
7						
8						
9						
10						

Copy Ctrl+C
Cut Ctrl+X
Paste Ctrl+V
Delete
Find
Replace
Goto
Property



TxtTable_04Property

Name: TxtTable_04

Font Size: 9

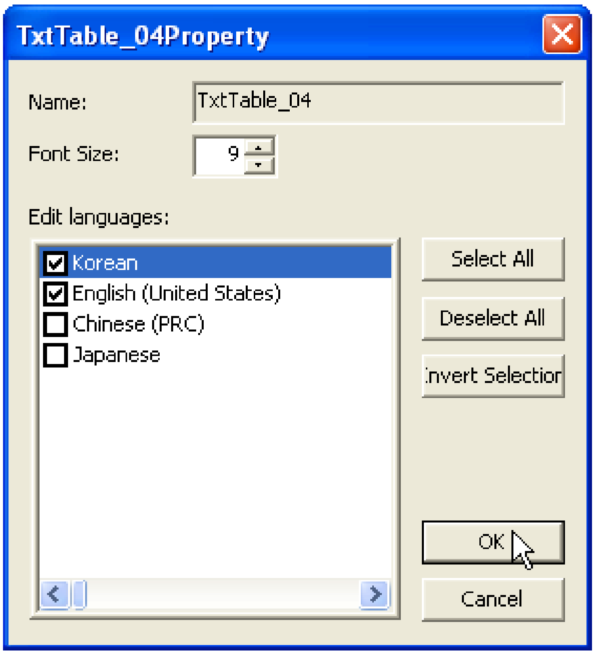
Edit languages:

☐ Korean
☑ English (United States)
☐ Chinese (PRC)
☐ Japanese

Select All
Deselect All
Invert Selection
OK
Cancel
(a)
(b)
(c)
(d)
(e)
(f)

Items	Description
(a) text table name	Displays the name of the text table
(b) Font size	The size of the font in the text table input box
(c) Select All	Select all the languages on the left
(d) Deselect All	Unselect all the languages on the left
(e) Invert Selection	Inverse selected languages
(f) Edit languages	Checks the editing languages registered as the project properties and the currently displayed languages.

The project properties window displays the editing language list selected in the project properties. The current editing language in the display is seen checked. If you want to juxtapose two languages in two columns and edit them at a time, select the two languages and press OK.

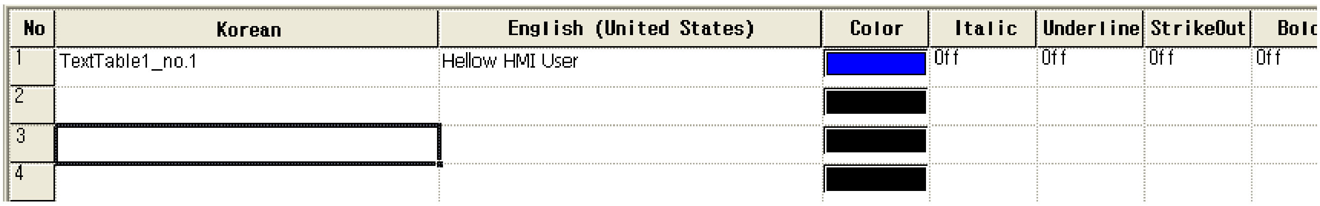


Name: TxtTable_04

Font Size: 9

Edit languages:

- ☑ Korean
- ☑ English (United States)
- ☐ Chinese (PRC)
- ☐ Japanese



No	Korean	English (United States)	Color	Italic	Underline	StrikeOut	Bolc
1	TextTable1_no.1	Hellow HMI User	🟦	Off	Off	Off	Off
2			⬛				
3			⬛				
4			⬛				

As shown above, the language editing lines of the two selected languages are displayed.

(3) Copy/Paste

It saves the selected area data to copy in the clip board. The copied contents can be added to the present project or another project. In addition, they can be pasted in another application.

[Sequence]

(a) Select the area to copy.
(b) Select [Edit] – [Copy] in the menu.

Note

You can select an area as follows.

(1) Select the (0,0) cell and thereby the entire table with your mouse.
(2) Select the entire column by selecting the column header of the cell with your mouse.
(3) Select the entire column by selecting the column header of the cell with your mouse.
(4) Drag part of the cell and select it with the mouse.
(5) Press Shift + arcolumn key to select it.

The data saved in the clip board is displayed in the selected place. If it already exists, you can invoke and select a dialog box and change the data, too.

[Sequence]
(a) Select the area to paste.
(b) Select [Edit]-[Paste] in the menu.

Note

(1) As many tags as there are in the clip board are pasted after the place selected when you pasted.
(2) If a text has been already entered where you are pasting, it is overwritten.

(4) Delete

The data in the selected area is deleted in the declared text list.

[Sequence]
(a) Select the area to delete.
(b) Select [Edit]-[Delete] in the menu.

(5) Automatic Creation

This is the function of searching for the parts corresponding to numbers in the texts registered in the text list and automatically increasing the values.
The text properties(color, thick, sloped, underline, crossing out) copy the set value.

[Sequence]
(a) Place the pointer at the end of the cell and then the pointer becomes +.
(b) Drag it up or down holding the left button on the mouse.

(6) Export/Import – CSV File Format

The following shows the CSV file structure when you export a text table to the CSV file.

[Text Table File Structure]
Files are saved in the form of Unicode – Codepage 1200.

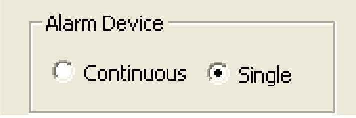
# Text Table Export									
# Do not edit the below 2 line. These lines indicate language codes.									
Text Table_01									
4	412	409	840	411					
#No	Korean	English	Chinese	Japanese	Color	Sloped	Underline	Crossing Out	Thick
1	안녕	Hello	你好	のとは	1	ON	ON	OFF	OFF
2	반갑습니다.				2	OFF	OFF	OFF	OFF

#: The note added in the program.
The text of each field is separated by ‘,’ such as “Pump1”, “BIT” and saved.
The user can edit the CSV files using the Excel or other text editors.

15.4 Flow Alarm

(1) Device Input (Continuous/Single)

The “Alarm Device” selection check box, which is at the upper center of the flow alarm editing display, provides the function of making device input more convenient. If you enter the first device address and check ○ Continuous when entering a consecutive device, the device is automatically allotted consecutively.



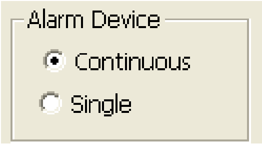
Alarm Device

○ Continuous ● Single

15.5 History Alarm

(1) Device Input (Continuous/Single)

The “Device Allotment” selection check box which is on the upper left in the alarm list editing display of the history alarm makes alarm object device input more convenient. If you enter the first device address and check Continuous when entering a consecutive device, the device is automatically allotted consecutively.



Alarm Device

● Continuous

○ Single

(2) Automatic Creation (Device)

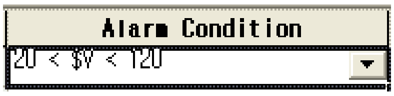
The automatic creation option in the alarm list table of the history alarm is all copy.

(3) Word Conditional Expression Input

Be sure to leave a space between terms or operands because terms of a word conditional expression are separated by ‘ ‘ (space) when you directly input the word conditional expression.

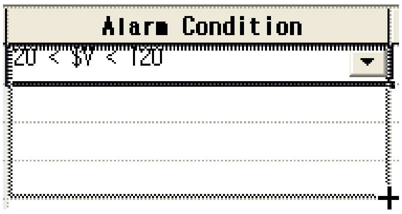
(4) Automatic Creation of Word Conditional Expression

If you execute automatic creation of a word conditional expression, the data is copied in a sub-list. This is useful when you enter several similar conditional expressions.



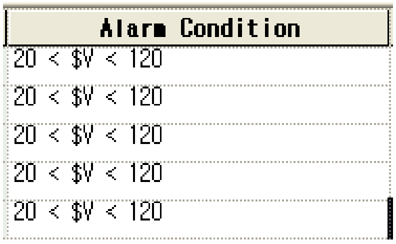
Alarm Condition

20 < $V < 120



Alarm Condition

20 < $V < 120

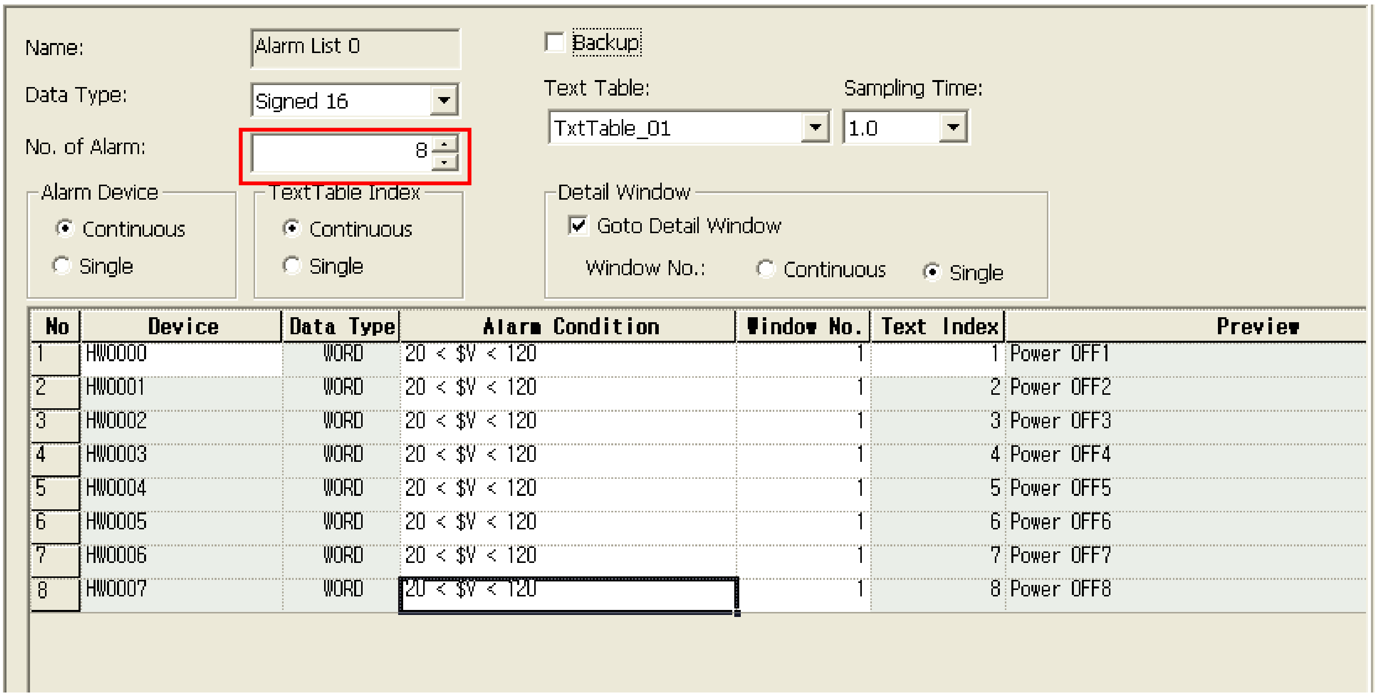


Alarm Condition
20 < $V < 120
20 < $V < 120
20 < $V < 120
20 < $V < 120
20 < $V < 120

(5) Line Deletion

You can select and delete a line in the alarm list editing table.

As a line is deleted, the number of alarms decreases by the number of deleted lines.



Name: Alarm List 0

☐ Backup

Data Type: Signed 16

Text Table: TxtTable_01

Sampling Time: 1.0

No. of Alarm: 8

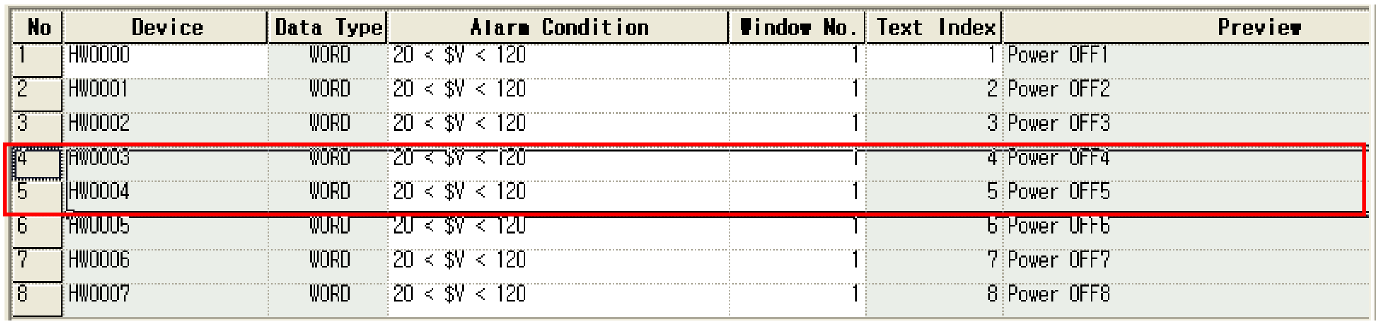
Alarm Device: ● Continuous ○ Single

TextTable Index: ● Continuous ○ Single

Detail Window: ☑ Goto Detail Window

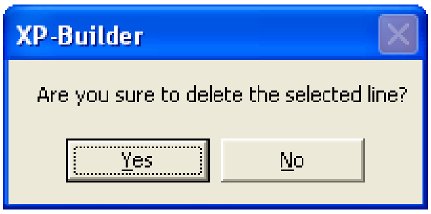
Window No.: ○ Continuous ● Single

No	Device	Data Type	Alarm Condition	Window No.	Text Index	Preview
1	HW0000	WORD	20 < $V < 120	1	1	Power OFF1
2	HW0001	WORD	20 < $V < 120	1	2	Power OFF2
3	HW0002	WORD	20 < $V < 120	1	3	Power OFF3
4	HW0003	WORD	20 < $V < 120	1	4	Power OFF4
5	HW0004	WORD	20 < $V < 120	1	5	Power OFF5
6	HW0005	WORD	20 < $V < 120	1	6	Power OFF6
7	HW0006	WORD	20 < $V < 120	1	7	Power OFF7
8	HW0007	WORD	20 < $V < 120	1	8	Power OFF8



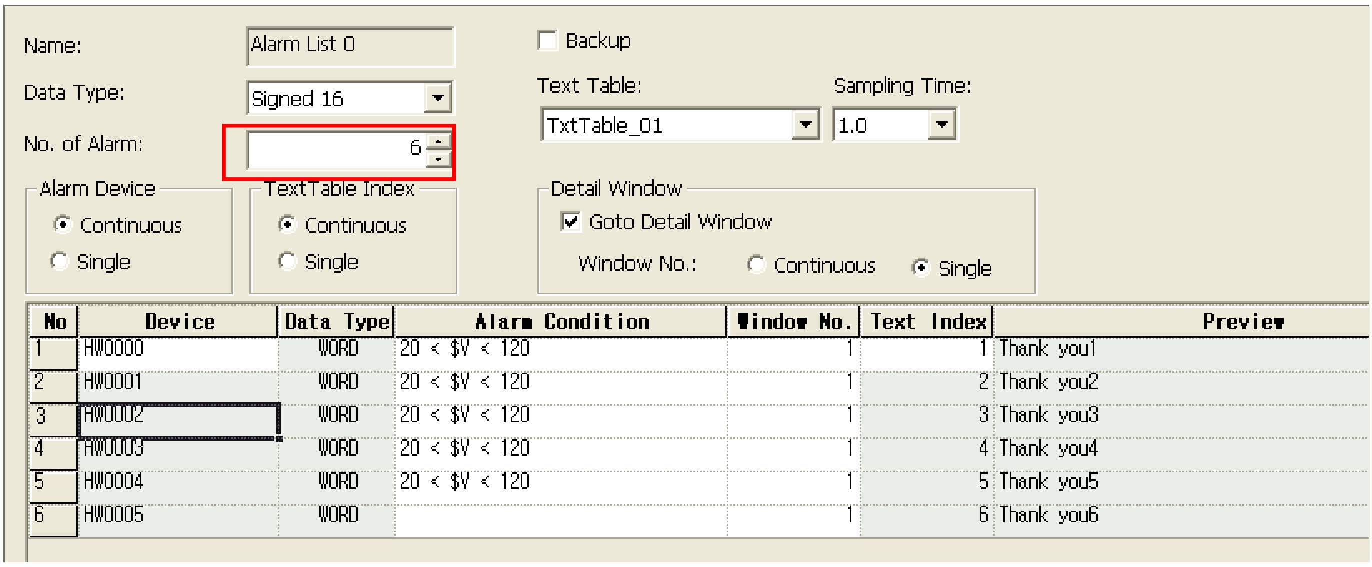
No	Device	Data Type	Alarm Condition	Window No.	Text Index	Preview
1	HW0000	WORD	20 < $V < 120	1	1	Power OFF1
2	HW0001	WORD	20 < $V < 120	1	2	Power OFF2
3	HW0002	WORD	20 < $V < 120	1	3	Power OFF3
4	HW0003	WORD	20 < $V < 120	1	4	Power OFF4
5	HW0004	WORD	20 < $V < 120	1	5	Power OFF5
6	HW0005	WORD	20 < $V < 120	1	6	Power OFF6
7	HW0006	WORD	20 < $V < 120	1	7	Power OFF7
8	HW0007	WORD	20 < $V < 120	1	8	Power OFF8

Press the [DEL] key.



XP-Builder

Are you sure to delete the selected line?



Name: Alarm List 0

Data Type: Signed 16

No. of Alarm: 6

☐ Backup

Text Table: TxtTable_01

Sampling Time: 1.0

Alarm Device: ● Continuous ○ Single

TextTable Index: ● Continuous ○ Single

Detail Window: ☑ Goto Detail Window

Window No.: ○ Continuous ● Single

No	Device	Data Type	Alarm Condition	Window No.	Text Index	Preview
1	HW0000	WORD	20 < $V < 120	1	1	Thank you1
2	HW0001	WORD	20 < $V < 120	1	2	Thank you2
3	HW0002	WORD	20 < $V < 120	1	3	Thank you3
4	HW0003	WORD	20 < $V < 120	1	4	Thank you4
5	HW0004	WORD	20 < $V < 120	1	5	Thank you5
6	HW0005	WORD		1	6	Thank you6

(6) Copy/Paste

The basic actions of Copy/Paste of the history alarm table interpret all the data as a text and paste them.
If the type it not met, the device address and word conditional expression cannot be pasted.

Moreover, data between bits/words cannot be normally copied because their types are different.

15.6 Logging

(1) Logging Creation/Deletion

Select the number line to create logging in the logging list table. Double-click on the line or click on [Add] in the mouse context menu.

A logging is created in the line and the properties window is displayed.

(2) Copy/Paste

Select the logging to copy in the logging table. Select [Edit]-[Copy] or press Ctrl + C to copy the logging.

Select a line to paste the logging. Select [Edit]-[Paste] or press Ctrl + V to paste the logging.

The copied or pasted logging maintains a constant set value.

15.7 Recipe

(1) Data Input

A recipe table is where the set value which the user needs is registered in advance.

If ‘Data view as’ is set as View HEX, the value is input in HEX values. The numbers input in the View DEC mode are input in DEC.

If you place ‘H’ of ‘h’ before the number in the View DEC mode, the number is recognized as a HEX value.

(2) Automatic Creation

If you select a line and execute automatic creation when you input a recipe table value, the number is automatically increased by 1 and input.

If you execute automatic creation holding the Ctrl key, you can copy it. In such a case, the number is not increased.

If you execute automatic creation after selecting two columns, you can copy them with the values increased by the difference between the two columns.

If you execute automatic creation holding the Ctrl key when you copy two columns, the two columns selected by simple copying are copied.

(3) Copy/Paste

You can copy/paste the data of a recipe table with a document editor. Copy a table with a document editor such as Excel and edit it with Excel. And then, copy in the document editor and paste it in the recipe table of XP Builder.

(4) Export/Import

You can save recipe set data in CSV files. You can read them after editing by using the text editor.

Export is divided into general export and individual recipe export.

[Individual Recipe Export]

Press the right button on the mouse on the individual recipe item in the project tree and select [Export].

When the file selection dialog box is invoked, name the file to save.

[General Recipe Export]

Press the right button on the mouse on the recipe item in the project tree and select [Export].

When the dialog box for selecting the folder to export is invoked, specify the folder to save the recipe item.

In such a case, files are saved as “recipe name.CSV.”

[Recipe CSV File Structure]

# Recipe Table Export(Note)				
# Do not edit the below 4 line. These lines contain import information				
Name(changeable)				
#Device Count	Input Point	Data Type	Data Block Count	
8	D00023	2	3	
Data000	Data0001	Data0002		
1	2	3		
2	3	4		
3	4	5		
44	45	46		
5	6	+		
6	7	8		
7	8	9		
8	9	10		

A note begins with # and can be added or deleted by the user. However, it is recommended that you do not edit the note at the top.
Each data block can be built extending to the right. The number of additionally input data blocks should be equal to the number of Data Block Counts at (5,4).

If you select [Import] in the context menu in the recipe items of the project tree, a dialog box for selecting the file is invoked.
If you want to read several files at a time, select multiple files to read in the file selection dialog box.
If the format above is not met when the recipe data is read, the recipe is not created.

15.8 Scheduler

(1) Scheduler Creation/Deletion

Select the number line in which to create a scheduler in the scheduler list table. Double click on the line or select [Add] in the mouse context menu.

A scheduler is created in the line and the properties window of the scheduler is invoked.

(2) Copy/Paste

Select the scheduler to copy in the scheduler table. You can copy the scheduler by selecting [Edit]-[Copy] or pressing Ctrl + C.

Select the line to paste and select [Edit]-[Paste] or press Ctrl + V.

The Copy/Paste scheduler maintains a constant set value.

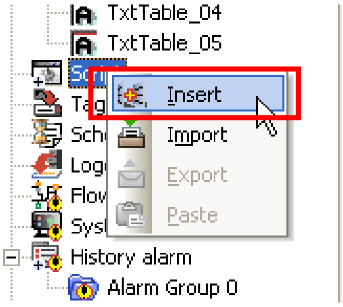
15.9 Script

(1) Script Creation/Deletion

A script is registered in the [Script] item in the project tree and used with the set script name referred to in each area where it is used.

[Register Script]

Press the right button on the mouse on the project tree script and select [Insert].



(2) Script Grammar

C language grammar is used as the script. See “Chapter 18 How To Use Script.”

(3) Device Setting in Script

Devices can be read and written in scripts, but tags cannot be used in scripts.

[Device Expression]

The parts surrounded by @[] is recognized as a device address.

As for the device address used in scripts, the data type of the device is added to the general device address expression (see Appendix. Device Setting).

@[Data type: Connection number: Station address: Direct device address]

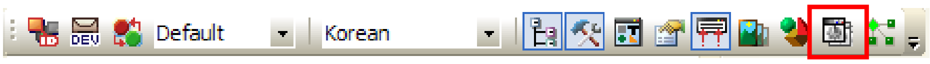
The following table shows settable data types.

Device	Status Examples	Examples of Use
X : BIT device	@[X:No: *1]	@[X:0:P001], @[X:P001]
S : SHORT(16bit) device	@[S:No: *1]	@[S:0:P000], @[S:2:#1:P000]
L : INT (32 bit) device	@[L:No: *1]	@[L:0:P000], @[L:P000]
W : UNSIGNED SHORT(16 bit) device	@[W:No: *1]	@[W:0:P000], @[W:1:#3:P000]
D : UNSIGNED INT(32 bit) device	@[D:No: *1]	@[D:0:P000], @[D:#1:P000]
F : FLOAT device	@[F:No: *1]	@[F:0:P000], @[F:#1:P000]

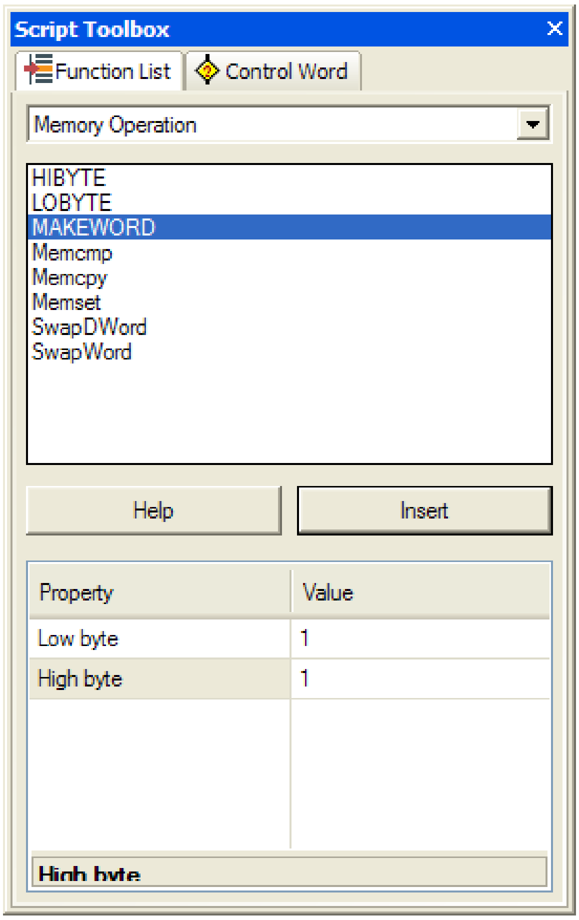
(4) Script Tool Box-Function List

Through the dialog box for script edition tool (Function List tab), you can register easily internal function that is available in script.

[Scrip Tool Box]
Select [View]-> [Scrip Tool Box] from the menu. Otherwise, select toolbar script icon.


Default
Korean

Select [Function List] at the script tool box.


Script Toolbox
Function List
Control Word
Help
Insert

Memory Operation

- HIBYTE
- LOBYTE
- MAKEWORD
- Memcmp
- Memcpy
- Memset
- SwapDWord
- SwapWord

Property	Value
Low byte	1
High byte	1

High byte

[Available Functions]

Category	Function	Description
System Function	HMIExit	End the monitor and move to standby screen
	InitHistoricalAlarm	Initialize the alarm area of NVRAM. Existing alarm contents are all deleted.
	InitLogging	Initialize the logging area of NVRAM. Logged contents are deleted.
	SetTime	Change the clock of XGT Panel.
Print Function	PrintAlarm	Print the alarm list.
	PrintScreen	Print the contents displayed on the current screen.
Script Function	GetLastError	Return the errors that take place during the script execution.
Device Function	CopyData	Read the data from the source device and input them to the target device.
	CopyDataEx	Read the data from the source device and input them to the target device.
	SetData	Input data to the device.
	GetData	Get the device value.
Communication Function	ADD_SUM	Calculate the sum of entered data and return.
	ADD_SUM_1S	Calculate the sum of entered data and obtain 1's complement and return.
	ADD_SUM_2S	Calculate the sum of entered data and obtain 2's complement and return.
	CRC16	Calculate the 16 bit CRC value of entered data and return.
	XOR_SUM	Calculate the XOR sum of entered data and return.
	ReadFromIO	Read data from I/O of a designated controller.
	WriteToIO	Transmit data to I/O of a designated controller.
Memory Function	ASCII2HEX	Transform ASCII data to hexadecimal data.
	HEX2ASCII	Transform hexadecimal data to ASCII data.
	HIBYTE	Obtain high byte of entered data.
	LOBYTE	Obtain low byte of entered data
	MAKEWORD	Obtain word values with two entered byte values.
	Memcpy	Copy the data of the original buffer to the target buffer.
	Memset	Initialize the buffer with a designated value.
	Memcmp	Compare two buffers each other.
	SwapDWord	Swap upper and lower word data of DWORD data.
Other	BacklightOn	Turn the back light On/Off
	Buzzer	Make buzzer sound.
	SetBuzzerEnable	Set to enable or disenable the buzzer.
	ShowStatusbar	Show the status bar on the bottom of XGT Panel screen.
	Sleep	Temporary stop Script for a certain amount of time.

Note

(1) For the detail of script function, refer to “chapter 18.4”.

[Inputting functions to editing screen]

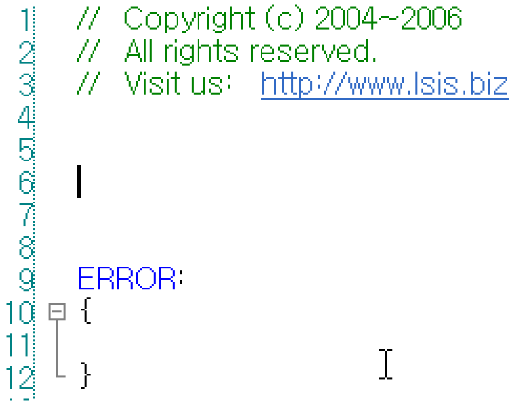
Select [Script] item from a project tree.

Select the menu [Project]->[Inserting script]

Then, new script will be created and shown at the screen. Put the cursor to the point where script function is inserted. Select the function that you need from script tool screen.

Set up the properties and press [Insert] button at the bottom of tool screen.

Finally, the function will be input to the cursor point.



```
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ERROR:
{

}
```
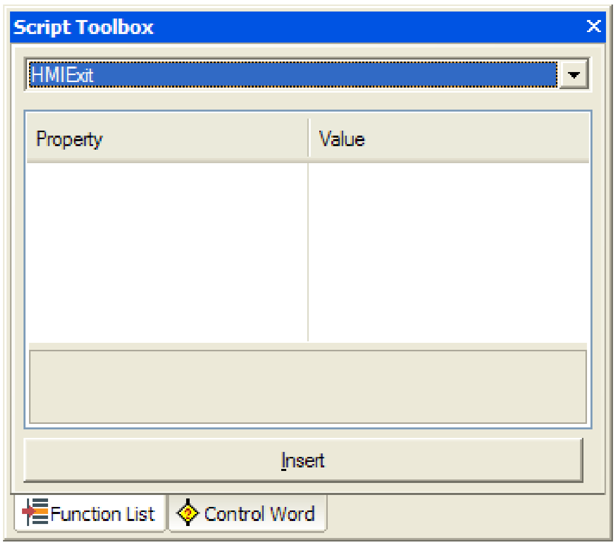
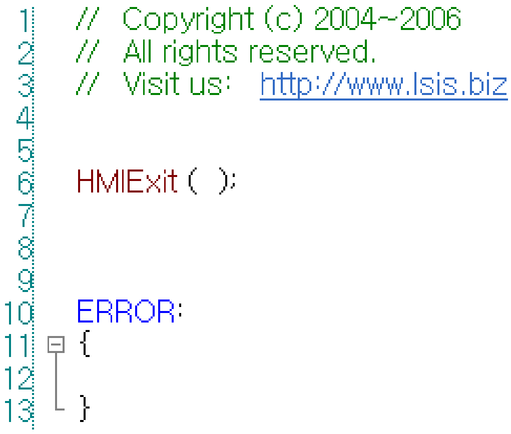


Script Toolbox
HMIExit
Property
Value
Insert
Function List
Control Word



```
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HMIExit ( );



ERROR:
{

}
```
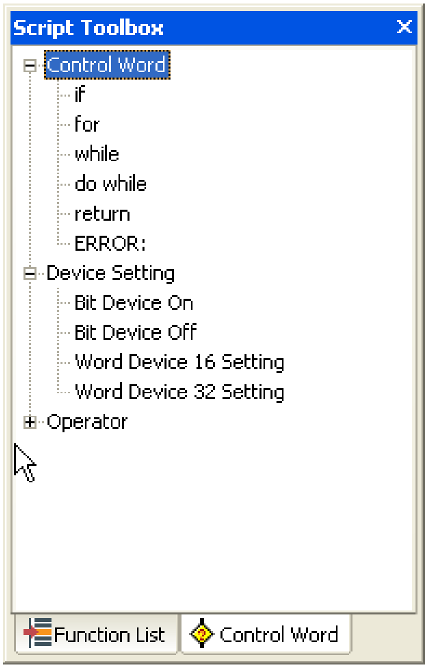
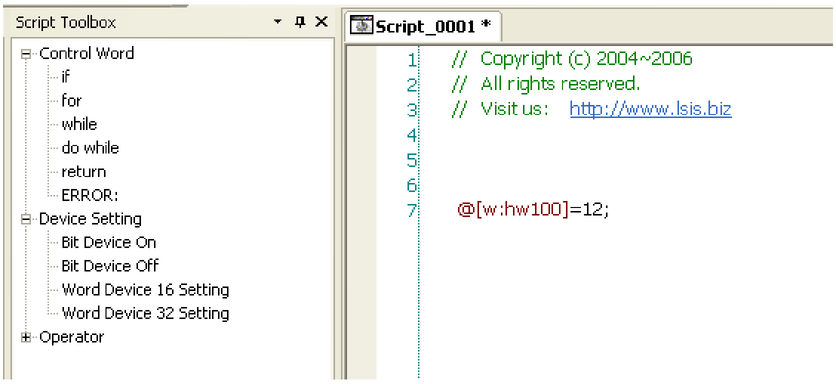

(5) Script Tool Box-control word

The script editing tool dialog box displays the control sentences, device settings and operands available in the script.


Script Toolbox
Control Word
if
for
while
do while
return
ERROR:
Device Setting
Bit Device On
Bit Device Off
Word Device 16 Setting
Word Device 32 Setting
Operator
Function List
Control Word

[Add Control Sentence/Operand]

Click on twice the function in the sub-category of the control sentence in the function list tree.
The basic form of the function is inserted where the cursor is in the script display.


Script Toolbox
Control Word
if
for
while
do while
return
ERROR:
Device Setting
Bit Device On
Bit Device Off
Word Device 16 Setting
Word Device 32 Setting
Operator
Script_0001 *

```
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 @[w:hw100]=12;
```

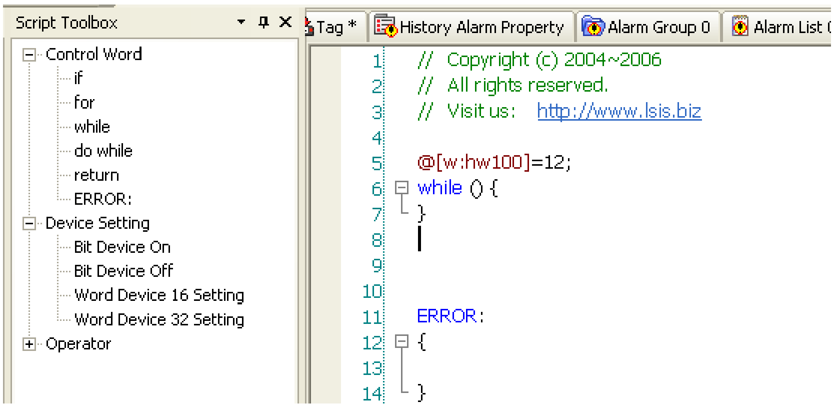
Script Toolbox
Control Word
if
for
while
do while
return
ERROR:
Device Setting
Bit Device On
Bit Device Off
Word Device 16 Setting
Word Device 32 Setting
Operator
Tag *
History Alarm Property
Alarm Group 0
Alarm List (

```
//  Copyright (c) 2004~2006
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@[w:hw100]=12;
while () {
}


ERROR:
{

}
```
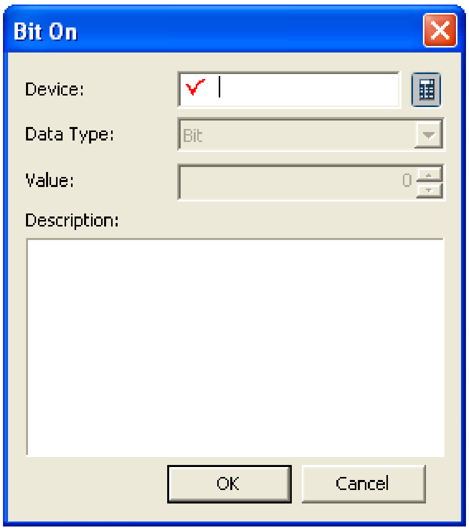
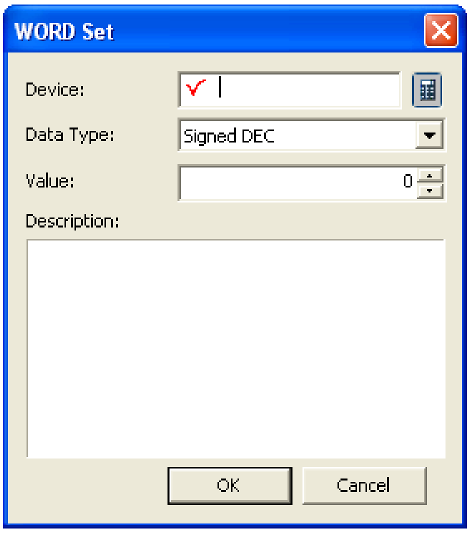

The figure above shows the result of clicking on the ‘while sentence’ twice in the script tool box and adding it to the script. The added function text is inserted where the cursor currently is. The cursor then moves to the end of the inserted function text.

[Device Setting]
This enables a device to be entered in the script.
As a device-related function, there are bit device on/off word and word 16/32 device setting.


Bit On
OK
Cancel

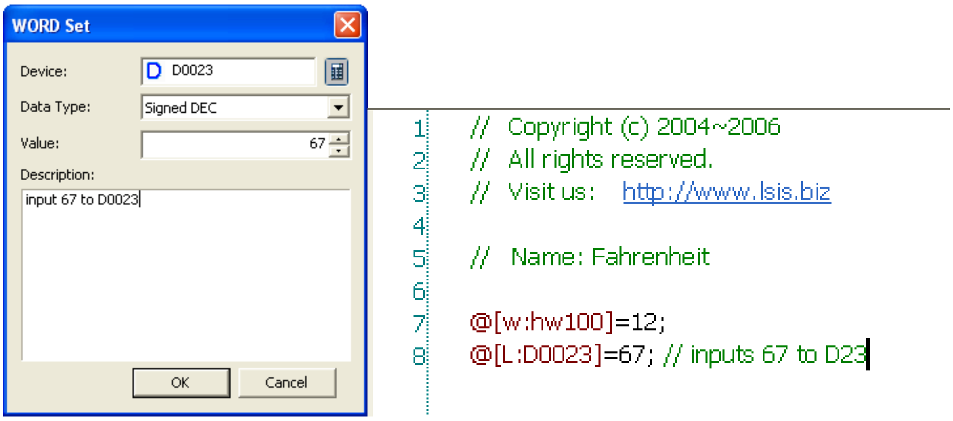
Device:
Data Type: Bit
Value: 0
Description:


WORD Set
OK
Cancel

Device:
Data Type: Signed DEC
Value: 0
Description:

Object device: sets the object device.
Description: summarizes description of the action.

Enter the device, data value and description and press OK.
The set value is entered in the script display.



Device: D0023

Data Type: Signed DEC

Value: 67

Description:
input 67 to D0023

```
//  Copyright (c) 2004~2006
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//  Name: Fahrenheit

@[w:hw100]=12;
@[L:D0023]=67; // inputs 67 to D23
```
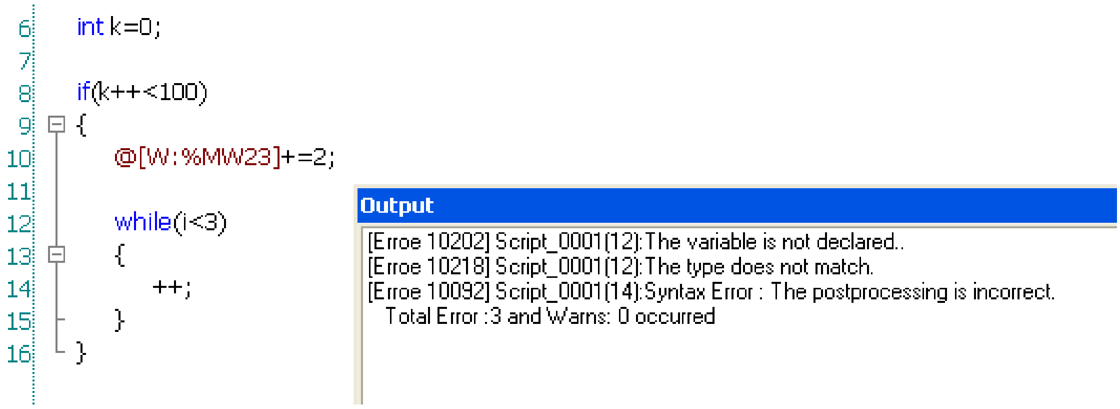

(6) Script Error Check

This is the function of compiling the script written by the user. Select [Tool]-[Script Check] in the menu. [Script Check] is executed when the present script window is activated and only checks the activated windows.

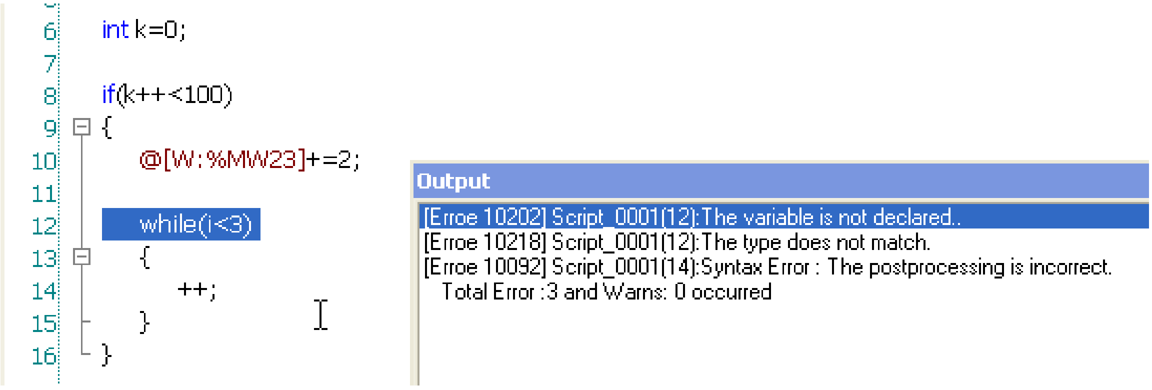
Script Error Check Result (e.g.)



```
 6  int k=0;
 7
 8  if(k++<100)
 9  {
10      @[W:%MW23]+=2;
11
12      while(i<3)
13      {
14          ++;
15      }
16  }
```

```
[Erroe 10202] Script_0001(12):The variable is not declared..
[Erroe 10218] Script_0001(12):The type does not match.
[Erroe 10092] Script_0001(14):Syntax Error : The postprocessing is incorrect.
   Total Error :3 and Warns: 0 occurred
```

Errors are displayed in the output window. To shift to the desired place, double click on the item you want to go to among the errors in the output window.



```
 6  int k=0;
 7
 8  if(k++<100)
 9  {
10      @[W:%MW23]+=2;
11
12      while(i<3)
13      {
14          ++;
15      }
16  }
```

```
[Erroe 10202] Script_0001(12):The variable is not declared..
[Erroe 10218] Script_0001(12):The type does not match.
[Erroe 10092] Script_0001(14):Syntax Error : The postprocessing is incorrect.
   Total Error :3 and Warns: 0 occurred
```

To compile all the registered scripts, select the [Tool]-[Data Check] in the menu.

(7) Script Error Message

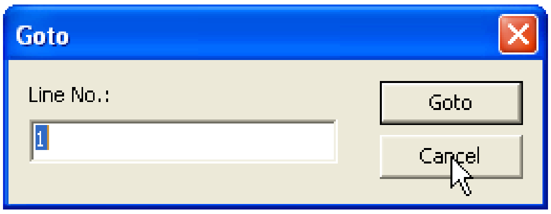
For script compile errors, see “Chapter 18 Script.”

(8) Script Text Editing

This function uses the basic character editing functions and can copy, paste, cut and delete texts.

[Goto]

Press the right button on the mouse in the script window. Select [Goto] in the menu.



Select the line to move to in the Goto dialog box and press the [Goto] button. The script cursor will move to the desired place.

[Find/Replace]

Execute [Tool]-[Find in active screen/Replace in active screen] in the main menu.

Enter the text you want to find or modify and execute the command.

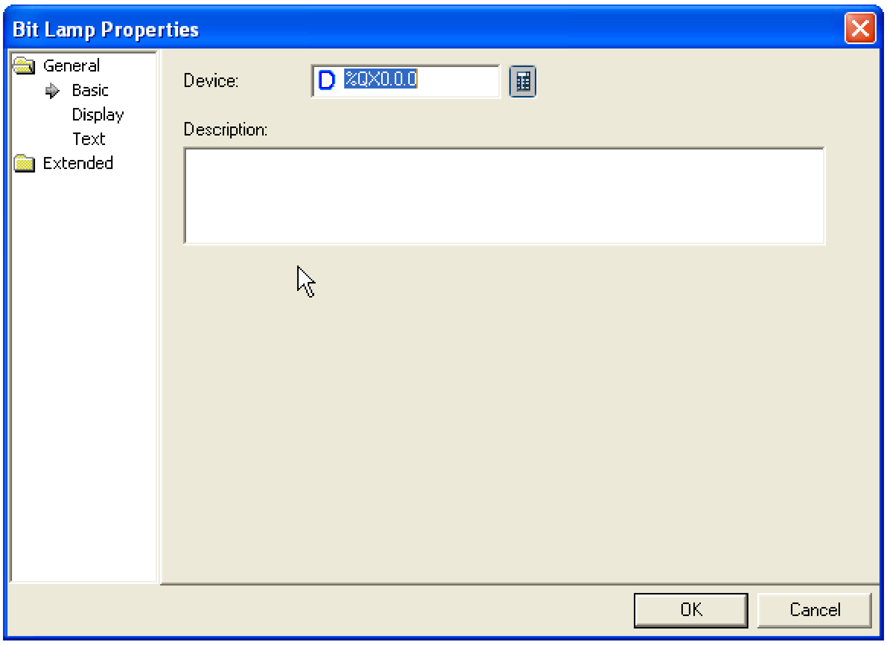
Chapter 16 Object Setting

16.1 Device Setting

This chapter describes how to set the device, which is monitored or written in each object function.

The device is set by the device buttons in the set dialog box in each object function.
e.g.) The device to be monitored can be set.

[Basic lamp setting display]



Bit Lamp Properties
General
Basic
Display
Text
Extended
OK
Cancel

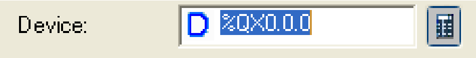
Device: D %QX0.0.0

Description:

[Dialog box]

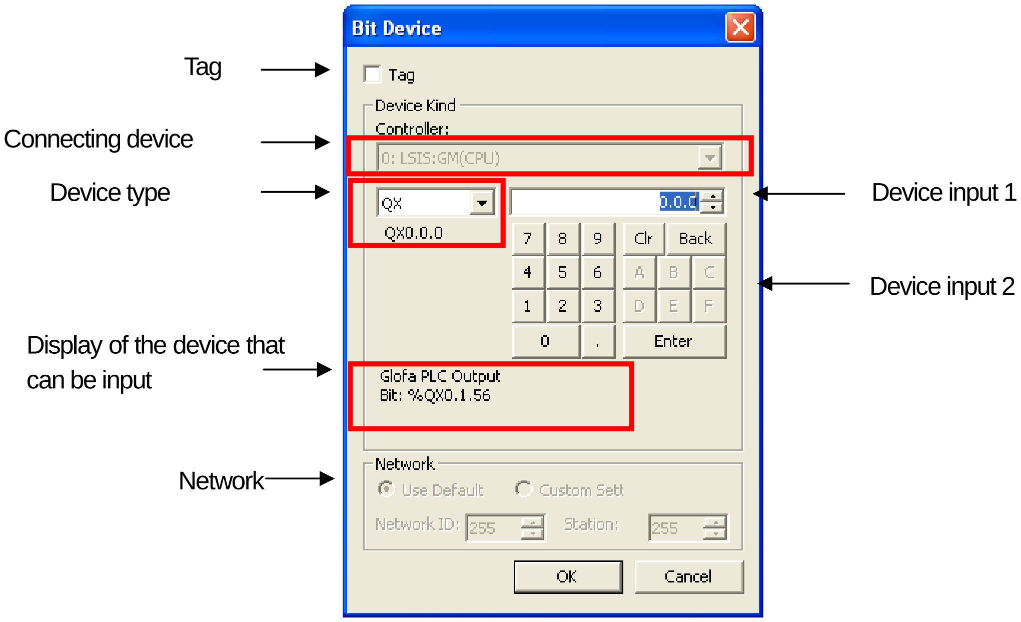
(1) When you directly input

You can directly enter by the keyboard to set the device. In such a case, you should enter the device type and device number.



Device: D %QX0.0.0

(2) Input by clicking on Dev button


Tag
Connecting device
Device type
Display of the device that can be input
Network
Device input 1
Device input 2
Bit Device
7
8
9
Clr
Back
4
5
6
A
B
C
1
2
3
D
E
F
0
.
Enter
OK
Cancel

☐ Tag

Device Kind

Controller: 0: LSIS:GM(CPU)

QX

QX0.0.0

0.0.0

Glofa PLC Output
Bit: %QX0.1.56

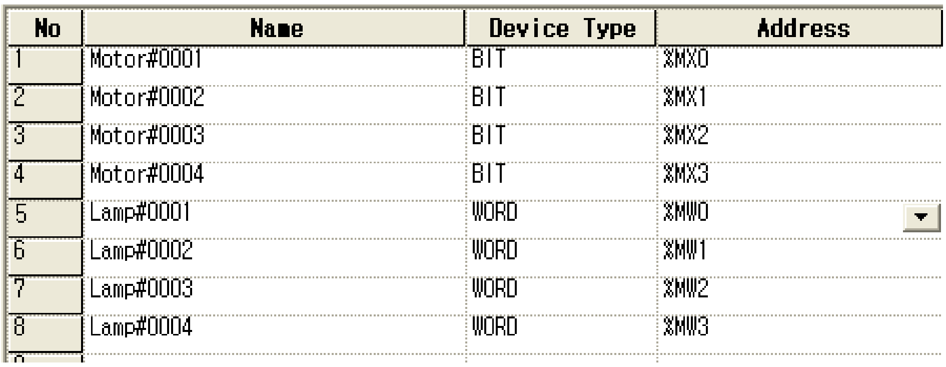
Network

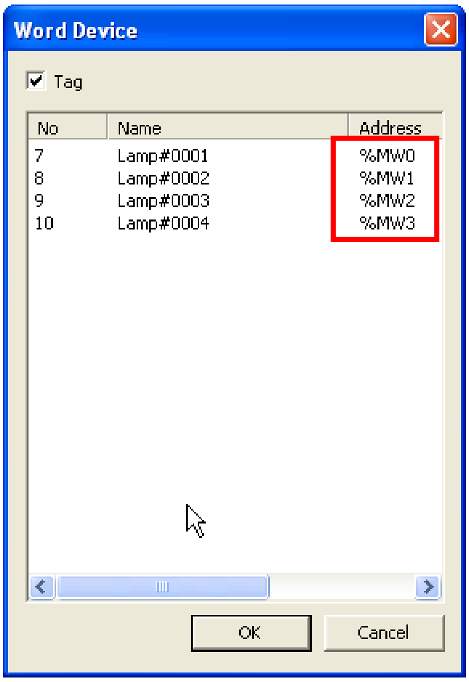
● Use Default ○ Custom Sett

Network ID: 255 Station: 255

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Tag</td><td>
1) Provides the device name for the user to easily recognize by inputting the device to frequently use and can have the device referred to everywhere the device is set such as an object or alarm.
2) Set to use the device saved in advance.
3) By tag setting, you can specify the device through the list dialog of the registered device in advance as follows.

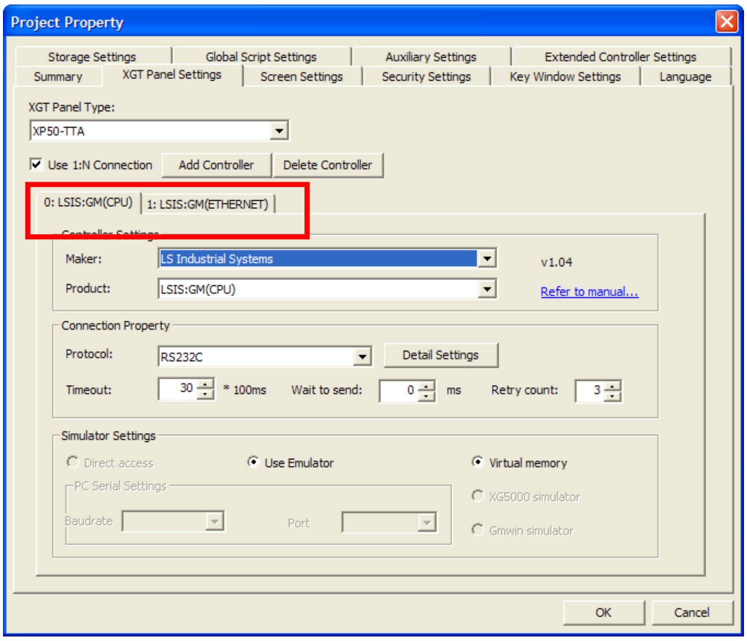
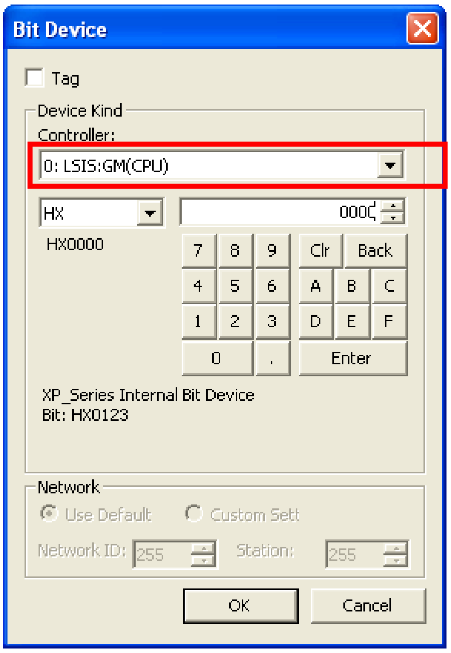
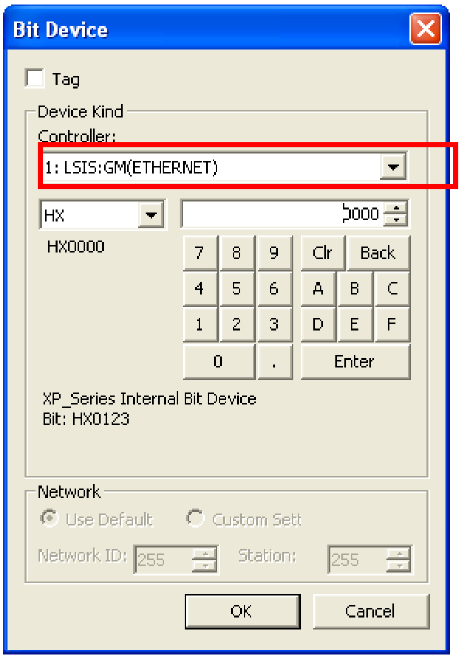
If you select the tag button, a tag list set in advance is displayed.
In case of a bit object, only the tag list set as the bit device is displayed and in case of a word object, only the tag list set as the word device is displayed.

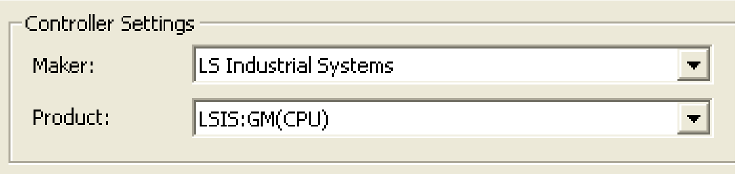
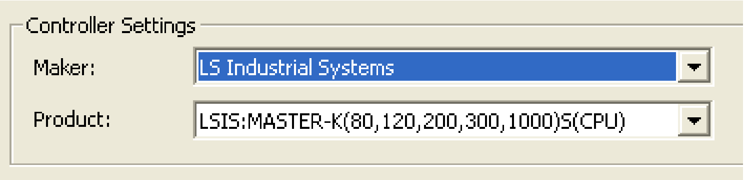
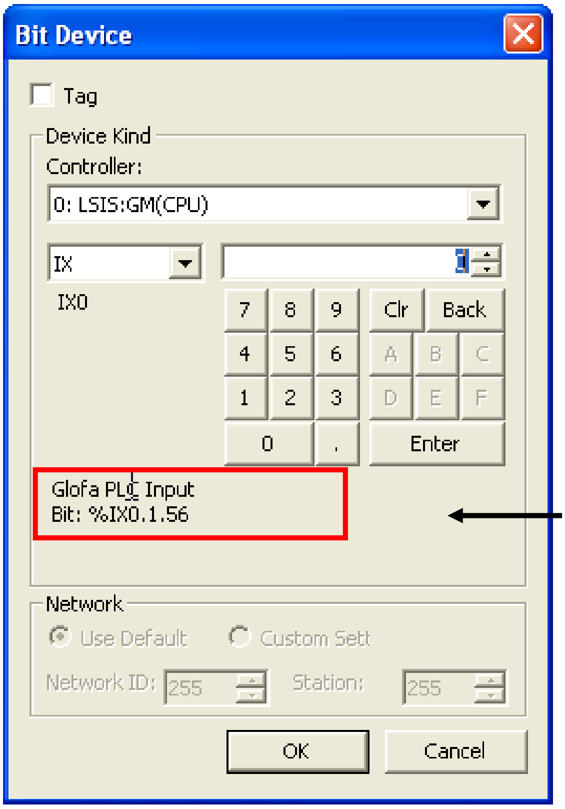

<table>
<tr><th>No</th><th>Name</th><th>Device Type</th><th>Address</th></tr>
<tr><td>1</td><td>Motor#0001</td><td>BIT</td><td>%MX0</td></tr>
<tr><td>2</td><td>Motor#0002</td><td>BIT</td><td>%MX1</td></tr>
<tr><td>3</td><td>Motor#0003</td><td>BIT</td><td>%MX2</td></tr>
<tr><td>4</td><td>Motor#0004</td><td>BIT</td><td>%MX3</td></tr>
<tr><td>5</td><td>Lamp#0001</td><td>WORD</td><td>%MW0</td></tr>
<tr><td>6</td><td>Lamp#0002</td><td>WORD</td><td>%MW1</td></tr>
<tr><td>7</td><td>Lamp#0003</td><td>WORD</td><td>%MW2</td></tr>
<tr><td>8</td><td>Lamp#0004</td><td>WORD</td><td>%MW3</td></tr>
</table>
[Registered Tag]

[Setting device using tag in word lamp]


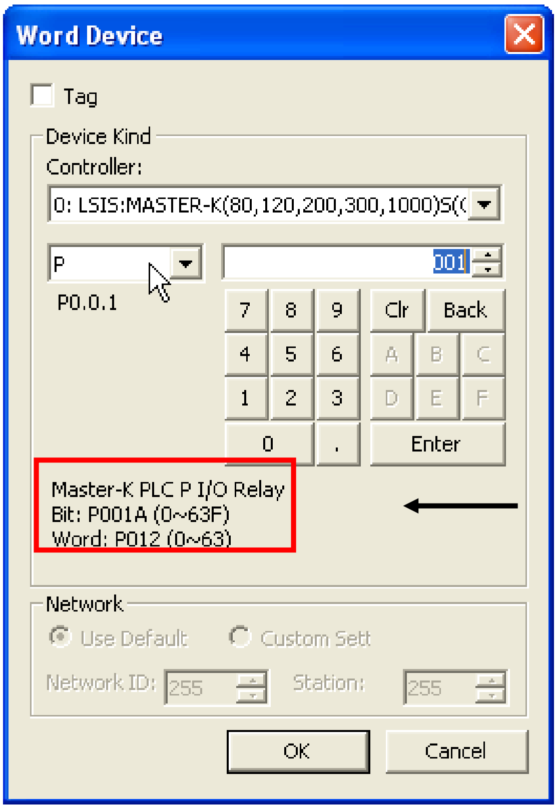
☑ Tag
<table>
<tr><th>No</th><th>Name</th><th>Address</th></tr>
<tr><td>7</td><td>Lamp#0001</td><td>%MW0</td></tr>
<tr><td>8</td><td>Lamp#0002</td><td>%MW1</td></tr>
<tr><td>9</td><td>Lamp#0003</td><td>%MW2</td></tr>
<tr><td>10</td><td>Lamp#0004</td><td>%MW3</td></tr>
</table>

Only the word device is displayed in registered tag
</td></tr>
</table>

<table>
<tr>
<td>Connecting device</td>
<td>
<p>XP-Builder can set four connecting XGT Panel by communication methods such as CPU, Link and Ethernet.</p>
<p>If you have set two or more connecting devices, the connection status is specified too when the device to be monitored in the object is set.</p>
<p>Example) When XGT Panel is connected by GM-CPU or GM-Ethernet methods as follows</p>

<p>Project Property
XGT Panel Type: XP50-TTA
☑ Use 1:N Connection
0: LSIS:GM(CPU) | 1: LSIS:GM(ETHERNET)
Maker: LS Industrial Systems v1.04
Product: LSIS:GM(CPU)
Protocol: RS232C
Timeout: 30 * 100ms Wait to send: 0 ms Retry count: 3
○ Direct access ● Use Emulator ● Virtual memory</p>
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Settings
Security Settings
Key Window Settings
Language
Add Controller
Delete Controller
Controller Settings
Refer to manual...
Connection Property
Detail Settings
Simulator Settings
PC Serial Settings
Baudrate
Port
XG5000 simulator
Gmwin simulator
OK
Cancel
<p>If the supervisory device is set in an object, the connection status and device address are set together.</p>

<p>Bit Device
☐ Tag
Controller: 0: LSIS:GM(CPU)
HX 0000
HX0000
XP_Series Internal Bit Device
Bit: HX0123
Network ID: 255 Station: 255</p>
Device Kind
7 8 9 Clr Back
4 5 6 A B C
1 2 3 D E F
0 . Enter
Network
Use Default
Custom Sett
OK
Cancel
<p>Supervision of HX0000 device connected to GM-CPU</p>

<p>Bit Device
☐ Tag
Controller: 1: LSIS:GM(ETHERNET)
HX 0000
HX0000
XP_Series Internal Bit Device
Bit: HX0123
Network ID: 255 Station: 255</p>
Device Kind
7 8 9 Clr Back
4 5 6 A B C
1 2 3 D E F
0 . Enter
Network
Use Default
Custom Sett
OK
Cancel
<p>Supervision of HX0000 device connected to GM-Ethernet</p>
</td>
</tr>
</table>

Device type	The devices that can be selected are the internal and external devices The selectable devices are displayed differently according to the XGT Panel information set when the XP Builder display is created.  Controller Settings Maker: LS Industrial Systems Product: LSIS:GM(CPU)  Controller Settings Maker: LS Industrial Systems Product: LSIS:MASTER-K(80,120,200,300,1000)S(CPU)
Device input 1	Select the device type and input the device number.
Device input 2	Select the device type and input the device number with buttons 0 ~ F. Back: deletes the device number entered last. Clr : deletes the devices numbers entered. Enter : enters the set device number.
Display of device that can be input	Shows the device type that can be entered. The form of device address expression and maximum device range differ according to the PLC device type. The expression form and maximum device range in device address display are displayed. Example 1. When the address of IX bit device of GM (CPU) is specified  Bit Device ☐ Tag Device Kind Controller: 0: LSIS:GM(CPU) IX IX0 7 8 9 Clr Back 4 5 6 A B C 1 2 3 D E F 0 . Enter Glofa PLC Input Bit: %IX0.1.56 Network ● Use Default ○ Custom Sett Network ID: 255 Station: 255 OK Cancel Input type of IX device

Example 2. P word device of Master-K(CPU) is specified


Word Device
Tag
Device Kind
Network
Use Default
Custom Sett
7
8
9
Clr
Back
4
5
6
A
B
C
1
2
3
D
E
F
0
.
Enter
OK
Cancel

☐ Tag

Controller: 0: LSIS:MASTER-K(80,120,200,300,1000)S((

P 001

P0.0.1

Master-K PLC P I/O Relay
Bit: P001A (0~63F)
Word: P012 (0~63)

● Use Default ○ Custom Sett

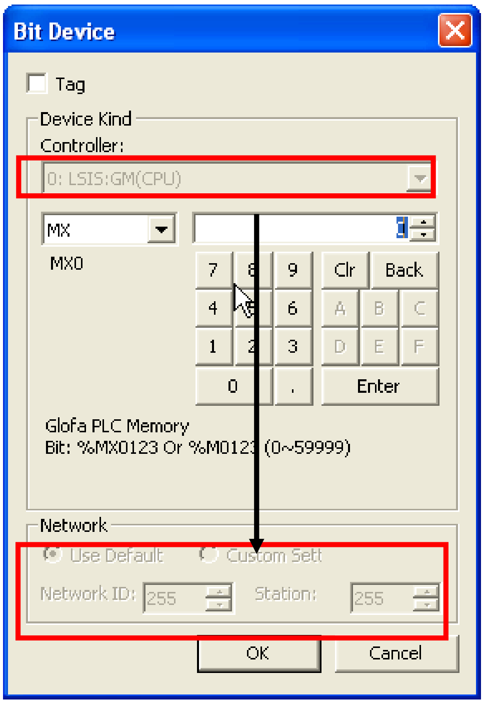
Network ID: 255 Station: 255

Input type and range of P device bit and word

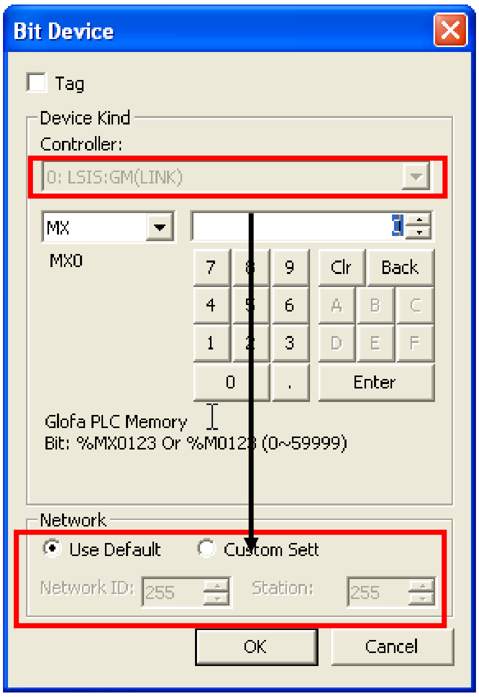
If you directly input the device address, refer to the device input type and range displayed in the device display.

Network

This is used for setting the device area number according to the PLC connection status. Station number can be set together with the device specification only when the XGT Panel connection method is Cnet Therefore, if the connection method is CPU and Ethernet, the network window is activated.

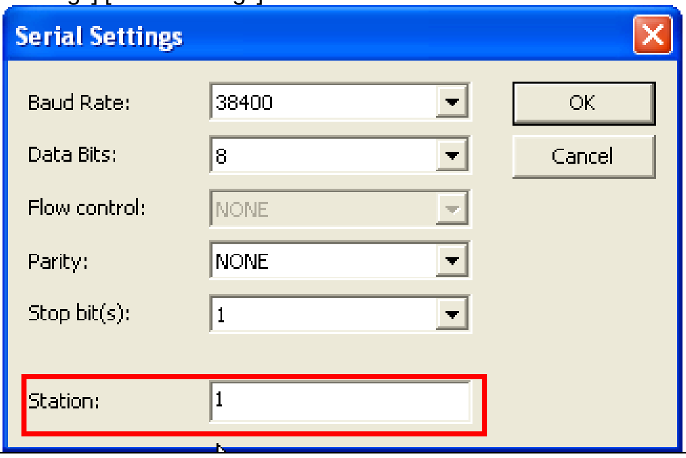

Bit Device
Tag
Device Kind
Controller:
0: LSIS:GM(CPU)
MX
MX0
7 8 9 Clr Back
4 5 6 A B C
1 2 3 D E F
0 . Enter
Glofa PLC Memory
Bit: %MX0123 Or %M0123 (0~59999)
Network
Use Default
Custom Sett
Network ID: 255
Station: 255
OK
Cancel

CPU Connection


Bit Device
Tag
Device Kind
Controller:
0: LSIS:GM(LINK)
MX
MX0
7 8 9 Clr Back
4 5 6 A B C
1 2 3 D E F
0 . Enter
Glofa PLC Memory
Bit: %MX0123 Or %M0123 (0~59999)
Network
Use Default
Custom Sett
Network ID: 255
Station: 255
OK
Cancel

Cnet Connection

In case of XGT Panel connection of Cnet, the network setting can be done in the following ways.

Setting type	Description
Use Default	Use the area number specified in [Common]-[Project Property Setting]-[XGT Panel Settings]-[Detail Settings].  Baud Rate: 38400 Data Bits: 8 Flow control: NONE Parity: NONE Stop bit(s): 1 Station: 1
Custom setting	The user can specify an station number to supervise the device.

16.2 Display Function Setting

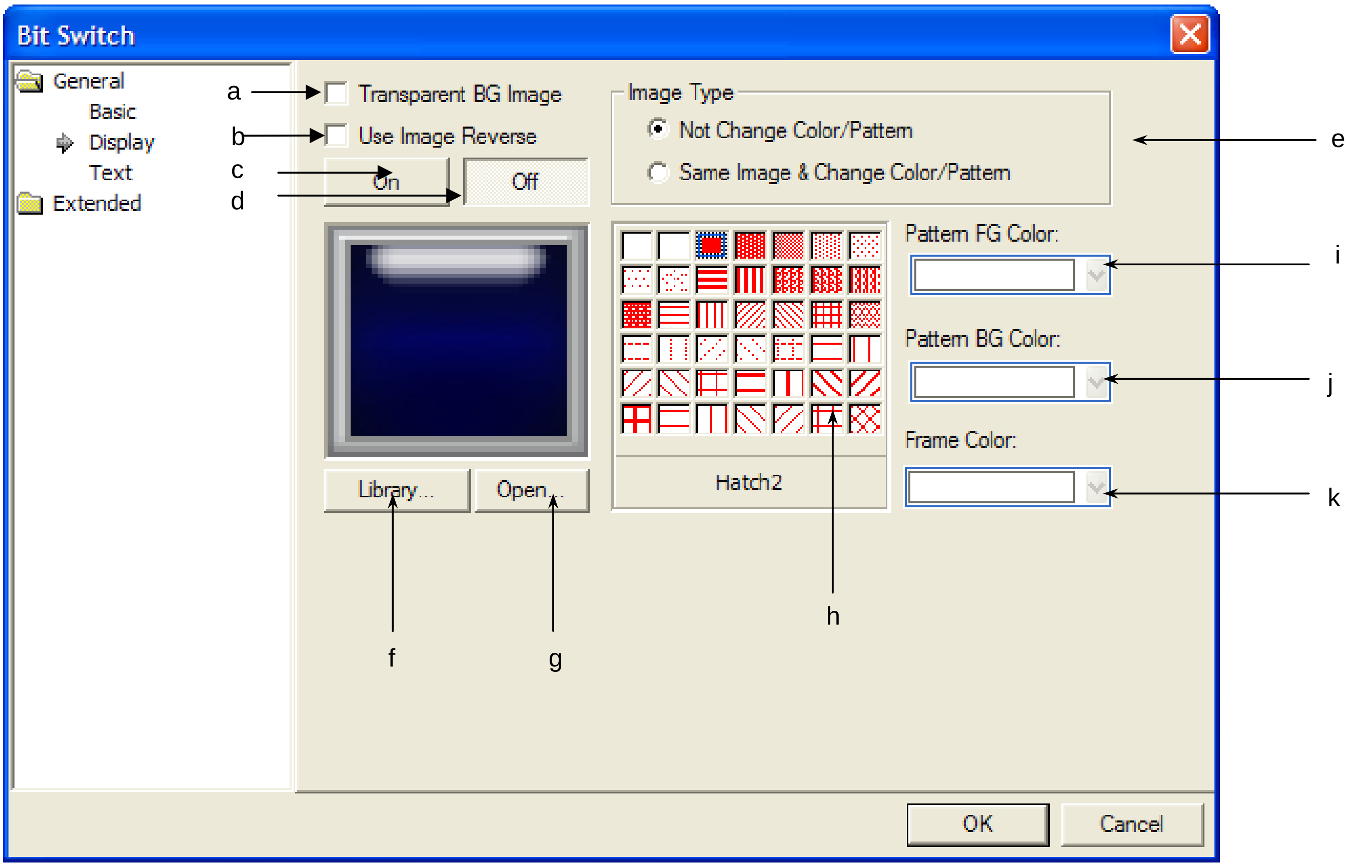
Display function is setting the color, image, pattern, background color of the pattern, frame color and image type according to the device status (on/off). The display items set like this are displayed in the screen according to the status of the device connected to PLC.

The following displays are differently set according to the objects. Here the objects using complicated display functions are mainly described.

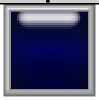
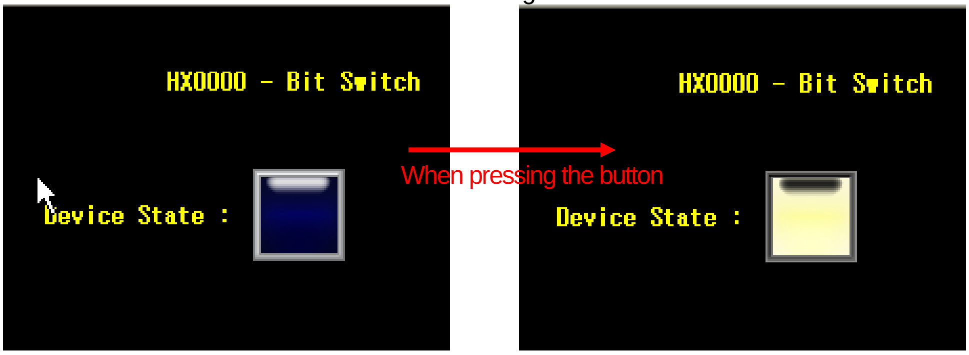
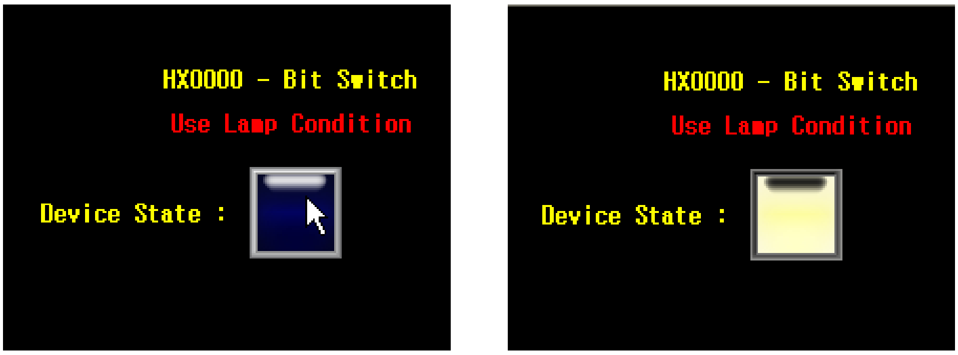
● Switch bit	Switch word	Window switch
● Special switch	Multi switch	Lamp bit

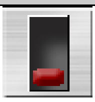
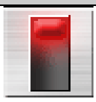
To be used, the displays are set in the dialog box window of object display items.

[Display dialog box]

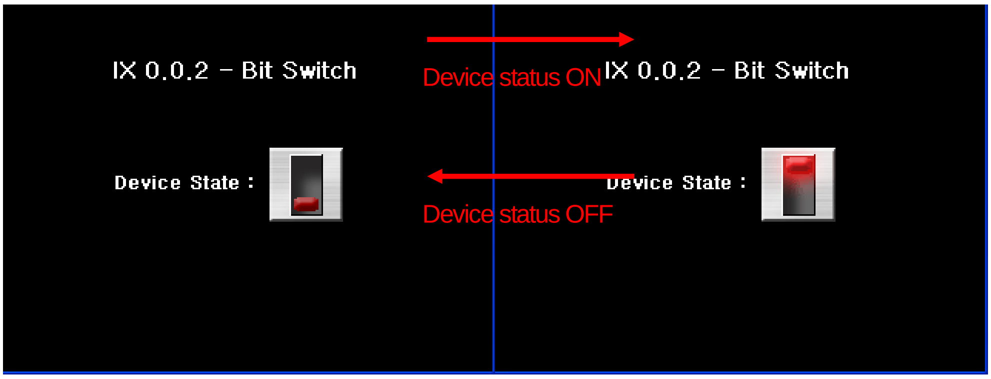

Bit Switch
General
Basic
Display
Text
Extended
a
b
c
d
e
f
g
h
i
j
k
☐ Transparent BG Image
☐ Use Image Reverse
On
Off
Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Pattern
Pattern FG Color:
Pattern BG Color:
Frame Color:
Hatch2
Library...
Open...
OK
Cancel

Items	Description
Transparent BG Image (a)	Having the object image not displayed
Use Image Reverse (b)	Bit Lamp does not have [Using Negative Image] function. It does not set On, Off image at switch object but displays the image with OFF image only. If the switch [In case Lamp Conditions are not applied] is activated, negative image area will be shown at the screen. Ex. Basic device has HX0000 at Bit switch. Supposing that the basic image is as below, it will be shown at XGT Panel depending on whether a switch is pressed or not.

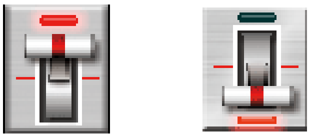
Items	Description
	 Basic Image  HX0000 - Bit Switch Device State : When pressing the button HX0000 - Bit Switch Device State : On the other hand, if [In case Lamp Conditions are applied] is activated, the negative image will be shown at the screen when lamp conditions device is ON or meets the conditions. Ex. Both Basic device and lamp conditions device have HX0000 at Bit switch. Supposing that the basic image is as above, the following image will be shown at XGT Panel depending on the status of HX0000 device.  HX0000 - Bit Switch Use Lamp Condition Device State : HX0000 - Bit Switch Use Lamp Condition Device State : If [Negative Image] is applied, you can not establish [Not using image] with setting On, Off image respectively. Furthermore, if [Not using image] is applied, setting [Negative Image] is not available.
ON (c)	Sets the image to be displayed when the device is ON after the net function is selected.
OFF (d)	Sets the image to be displayed when the device is OFF after the net function is selected. When On/Off images are set, the standard device status can be checked by the image.

<table>
<tr><th>Items</th><th>Description</th></tr>
<tr><td></td><td>

OFF image

ON image

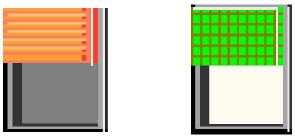
After the On/Off images are set as above, the image is changed whenever the device status changes.


IX 0.0.2 – Bit Switch
Device status ON
IX 0.0.2 – Bit Switch
Device State :
Device status OFF
Device State :
</td></tr>
<tr><td>Image Type (e)</td><td>
Selects the image type.

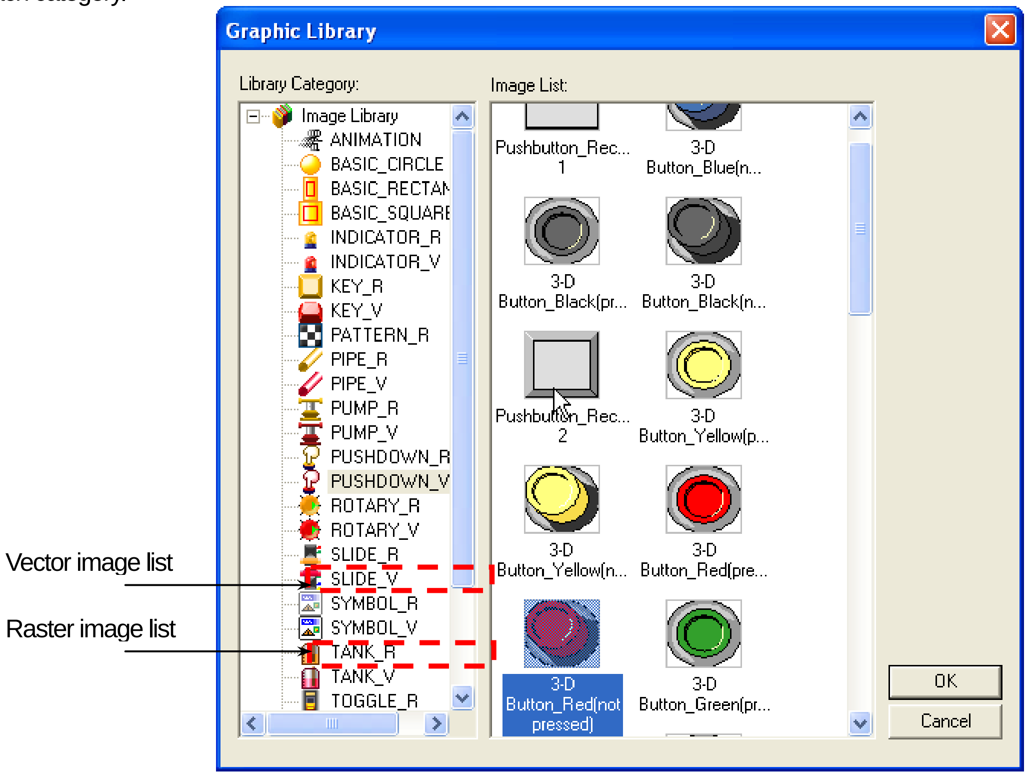
<table>
<tr><th>Image type</th><th>Description</th></tr>
<tr><td>Not Change Color/Pattern</td><td>-ON, OFF images can be chosen from the raster, vector or user image list.
-The image can be selected by using [Open].
-Different images can be selected for the On/Off images.
-A pattern cannot be applied to the image.</td></tr>
<tr><td>Same Image & Change Color/Pattern</td><td>-ON, OFF images can be chosen from the vector image list (not from the raster and user image list).
-The image cannot be selected by using [Open].
-Only one On/Off image can be selected for the On/Off images.
-A pattern can be applied.</td></tr>
</table>


On image Off image

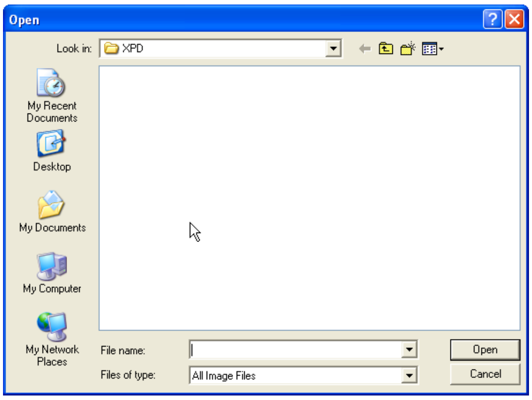
Not Change Color/Pattern


On image Off image

Same Image & Change Color/Pattern
</td></tr>
</table>

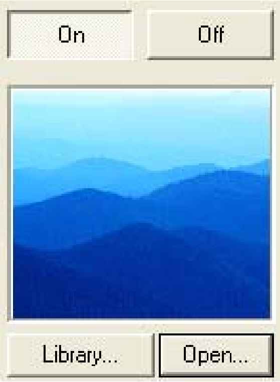
Items	Description
Library (f)	The form to display according to the device status (On/Off) is selected from the library. If you select the following functions, an image selection window as follows is invoked. You can select an image from each category.  Graphic Library Library Category: Image List: Image Library ANIMATION BASIC_CIRCLE BASIC_RECTAN BASIC_SQUARE INDICATOR_R INDICATOR_V KEY_R KEY_V PATTERN_R PIPE_R PIPE_V PUMP_R PUMP_V PUSHDOWN_R PUSHDOWN_V ROTARY_R ROTARY_V SLIDE_R SLIDE_V SYMBOL_R SYMBOL_V TANK_R TANK_V TOGGLE_R Pushbutton_Rec... 1 3-D Button_Blue(n... 3-D Button_Black(pr... 3-D Button_Black(n... Pushbutton_Rec... 2 3-D Button_Yellow(p... 3-D Button_Yellow(n... 3-D Button_Red(pre... 3-D Button_Red(not pressed) 3-D Button_Green(pr... OK Cancel Vector image list Raster image list [_R] next to the image library list name refers to the raster image and [_V] refers to the vector image. A pattern can be applied to the image selected from the vector image list but not to the image selected from the raster image or user graphic image.

<table>
<tr><th>Items</th><th>Description</th></tr>
<tr><td>Open (g)</td><td>
The user can select an image file other than the image specified for the XP Builder system.
If you use graphic files such as the bitmap file, JPEG or GIF as the switch or lamp image and press [Open], the dialog box for image registration is invoked.

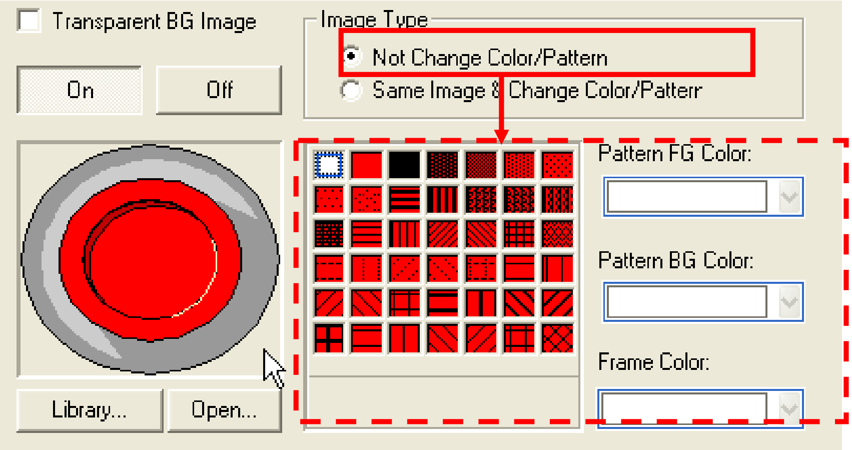

Open
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
File name:
Open
Cancel

Look in: XPD
Files of type: All Image Files

You can select On or Off graphic filed.


On
Off
Library...
Open...

ON image setting by using Open
</td></tr>
<tr><td>Pattern(h)</td><td>
Selects the figure pattern.
A pattern can be applied only when the image is set as [Same Image & Change Color/Pattern].


On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:

☐ Transparent BG Image
Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Patterr

Image type in [Not Change Color/Pattern]
</td></tr>
</table>

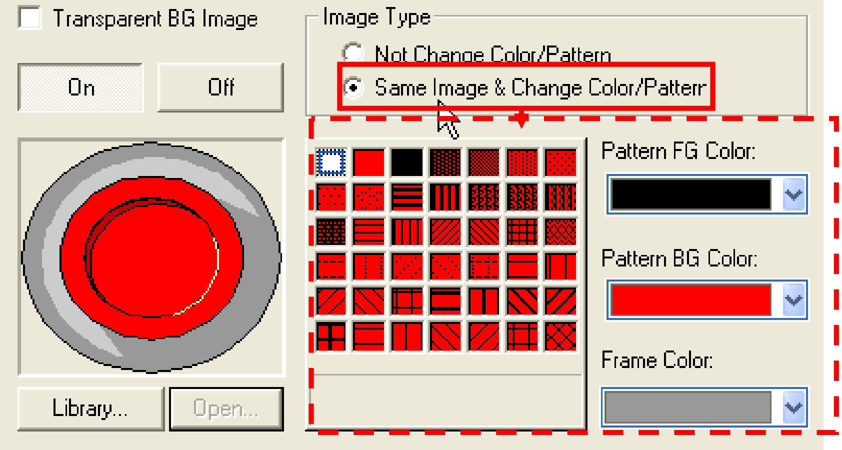
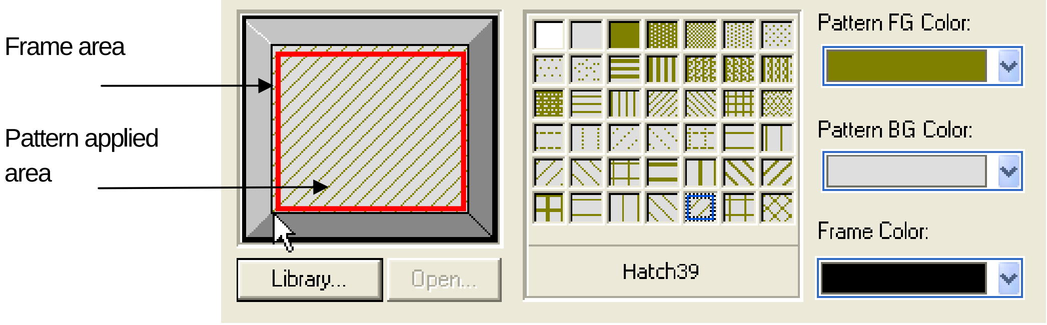
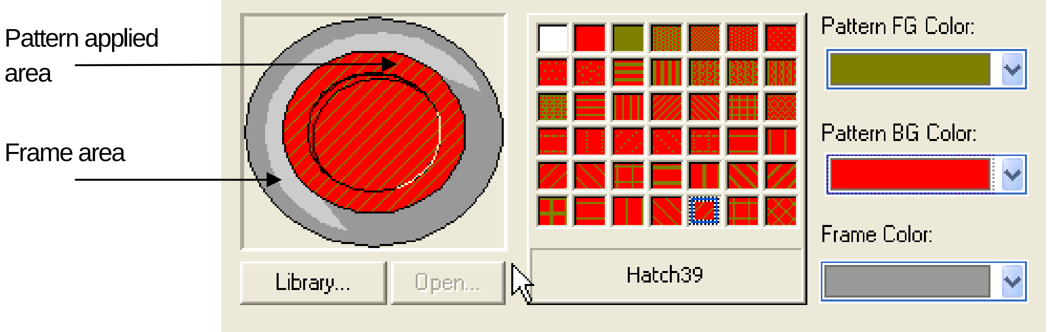
<table>
<tr><th>Items</th><th>Description</th></tr>
<tr><td></td><td>

Transparent BG Image
Image Type
Not Change Color/Pattern
Same Image & Change Color/Pattern
On
Off
Pattern FG Color:
Pattern BG Color:
Frame Color:
Library...
Open...

Image type in [Same Image & Change Color/Pattern]
</td></tr>
<tr><td>Pattern foreground color(i)</td><td>
Sets the pattern color.
The area where the pattern is applied is the remaining part of an image other than the frame. The frame area differs according to the image as follows and the area where the pattern applies is also different according to the image.

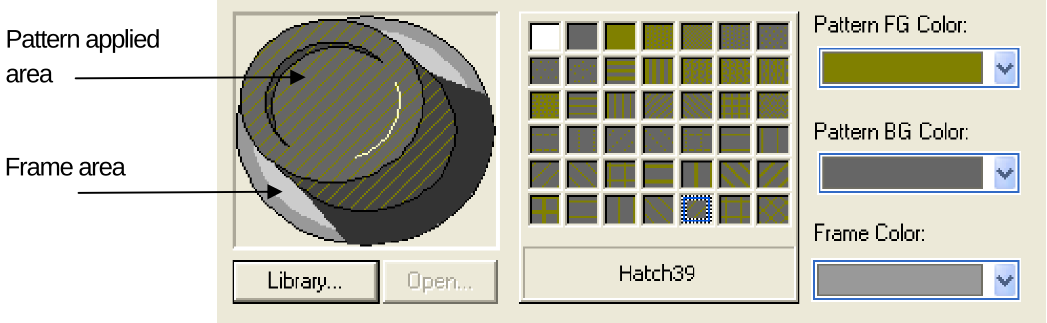
Example 1.


Frame area
Pattern applied area
Library...
Open...
Hatch39
Pattern FG Color:
Pattern BG Color:
Frame Color:

Example 2.


Pattern applied area
Frame area
Library...
Open...
Hatch39
Pattern FG Color:
Pattern BG Color:
Frame Color:

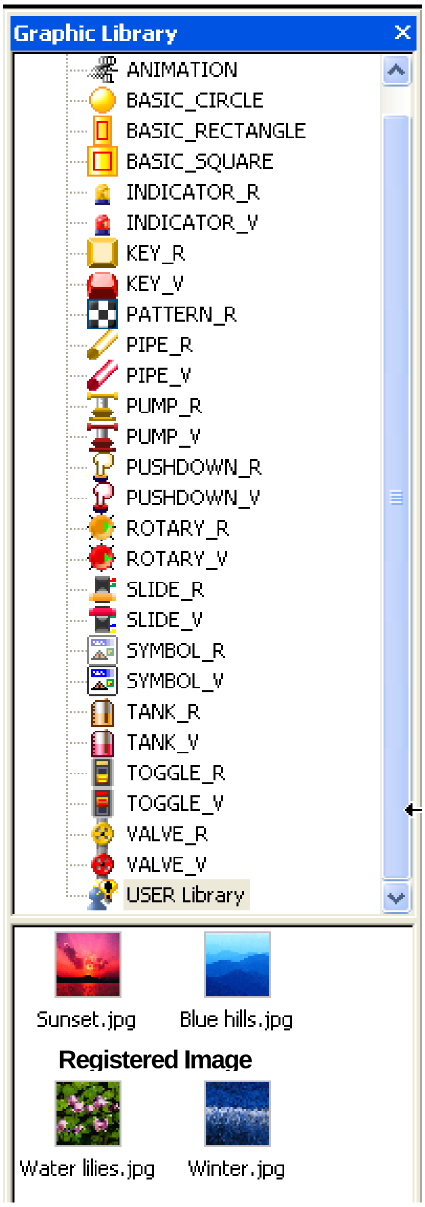
Example 3


Pattern applied area
Frame area
Library...
Open...
Hatch39
Pattern FG Color:
Pattern BG Color:
Frame Color:
</td></tr>
</table>

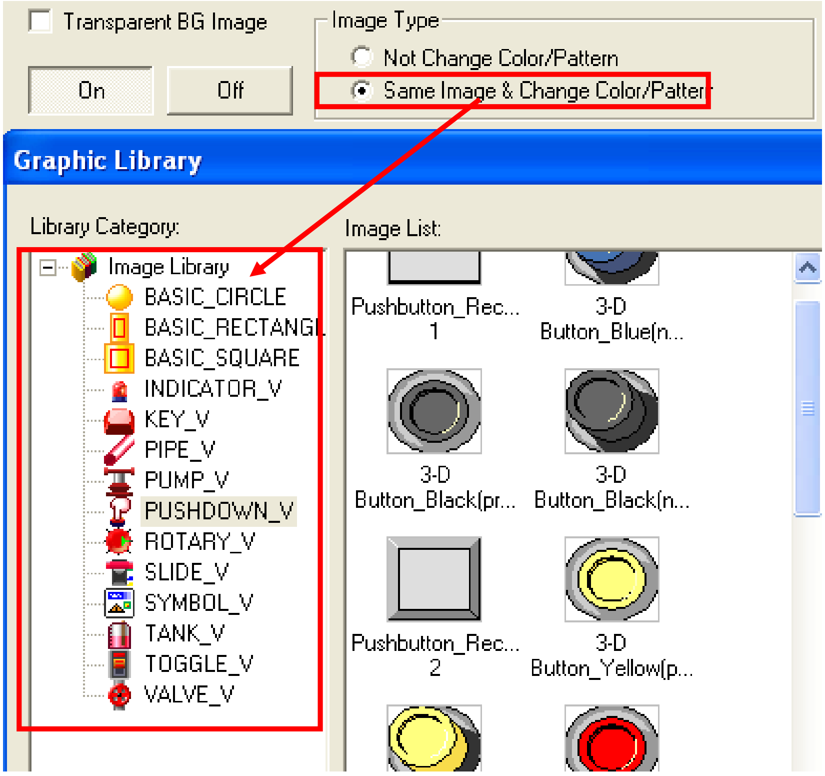
Items	Description
Pattern background color(j)	Sets the background color of the pattern. ☞ **See pattern color (h).**
Frame color(k)	Sets the frame color. ☞ **See pattern color (h).**

Note

(1) If you select an image by [Open](Open...), the image is automatically registered in the user graphic library.


Graphic Library
ANIMATION
BASIC_CIRCLE
BASIC_RECTANGLE
BASIC_SQUARE
INDICATOR_R
INDICATOR_V
KEY_R
KEY_V
PATTERN_R
PIPE_R
PIPE_V
PUMP_R
PUMP_V
PUSHDOWN_R
PUSHDOWN_V
ROTARY_R
ROTARY_V
SLIDE_R
SLIDE_V
SYMBOL_R
SYMBOL_V
TANK_R
TANK_V
TOGGLE_R
TOGGLE_V
VALVE_R
VALVE_V
USER Library
Sunset.jpg
Blue hills.jpg
Registered Image
Water lilies.jpg
Winter.jpg

If you select [Not Change Color/Pattern], all the image lists can be selected of the vector, raster and user graphic libraries in the category list. If you select [Same Image & Change Color/Patern], the image can be set only from the vector image list in the category list.



☐ Transparent BG Image

Image Type
○ Not Change Color/Pattern
● Same Image & Change Color/Patter

On
Off
Graphic Library
Library Category:
Image List:
Image Library
BASIC_CIRCLE
BASIC_RECTANGL
BASIC_SQUARE
INDICATOR_V
KEY_V
PIPE_V
PUMP_V
PUSHDOWN_V
ROTARY_V
SLIDE_V
SYMBOL_V
TANK_V
TOGGLE_V
VALVE_V
Pushbutton_Rec... 1
3-D Button_Blue(n...
3-D Button_Black(pr...
3-D Button_Black(n...
Pushbutton_Rec... 2
3-D Button_Yellow(p...

- The bit lamp and bit word do not have [Transparent BG Image] function.
- If the communication between PLC and XGT Panel series is disconnected or the cable connection in XGT Panel is not normal, the image changes of each object displayed in XGT Panel are as follows.

Object Type	Display
Bit switch	Not changed.
Word switch	Not changed.
Window shift switch	Not changed.
Special switch	Not changed.
Multi switch	Not changed.
Bit lamp	Image not displayed.
Word lamp	Image not displayed.
Clock	Not changed.
Bit message	Message not displayed. The image at the time when the background image is specified is displayed.
Word message	Message not displayed. The image at the time when the background image is specified is displayed.
Numeric Display	Number not displayed. The image at the time when the background image is specified is displayed.
Numeric Input	Number not displayed. The image at the time when the background image is specified is displayed.
Text Display	Character text not displayed. The image at the time when the background image is specified is displayed.
Text Input	Character text not displayed. The image at the time when the background image is specified is displayed.

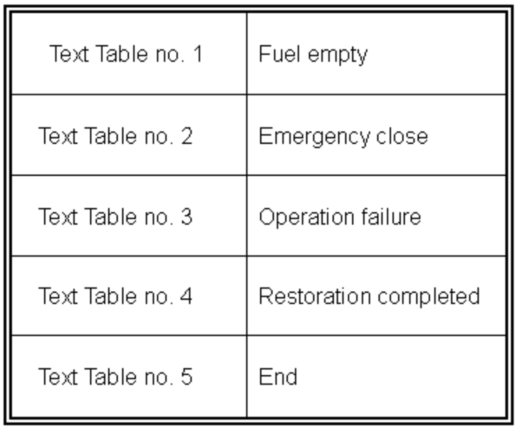
Bit window	The window set in the object is not displayed. If the window is set in another object of which the communication is normal, it can be displayed by the object.	
Word window	The window set in the object is not displayed. If the window is set in another object of which the communication is normal, it can be displayed by the object.	
Bit part	The part screen set in the object is not displayed. If the window is set in another object of which the communication is normal, it can be displayed by the object.	
Word part	The part screen set in the object is not displayed. If the window is set in another object of which the communication is normal, it can be displayed by the object.	
Animation	Not displayed.	
Bar graph	Graph not displayed. The image at the time when the background image is specified is displayed.	
Pie graph	Graph not displayed. The image at the time when the background image is specified is displayed.	
Meter graph	Graph not displayed. The image at the time when the background image is specified is displayed.	
Closed graph	Graph not displayed. The image at the time when the background image is specified is displayed.	
Trend graph	X, Y axes are normally displayed but the trend line is not displayed. The image at the time when the background image is specified is displayed.	
History Alarm Viewer	Not changed. If the communication is not normal, the alarm does not occur because the status of the device to be supervised cannot be known, but the data of the alarms that occurred are all displayed.	
Data list	Values not displayed. The grid of the data list view object is displayed.	
Logging Viewer	Not changed. The log data recorded when the communication is normal is displayed. The log data when the communication is not normal is displayed as #.	
Alarm Navigator	Not changed. It displays the group of alarms that already occurred, so if there is data of the alarms that occurred when the communication was not normal, the name of the group to which the alarm belongs is displayed.	

16.3 Text Setting

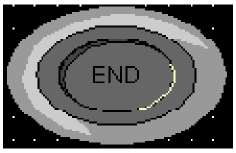
Text setting is specifying the properties of the texts to be displayed on each object. If you use each text, you can change the displayed texts according to the device status (On/Off) connected to PLC or device value. The properties of the text that can be set vary according to the objects.
In case of the switch and lamp object, the user can input the text and also can specify the text by using the registered text table.

Text table registration is registering the contents of the frequently used text in advance. You can conveniently use the text or text items in the objects registered like this in order to build the text.

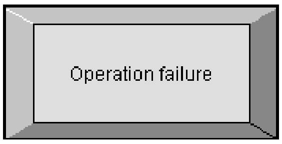
E.g.)



Text Table no. 1	Fuel empty
Text Table no. 2	Emergency close
Text Table no. 3	Operation failure
Text Table no. 4	Restoration completed
Text Table no. 5	End



Selection of switch bit object text 5



Selection of message object text 3

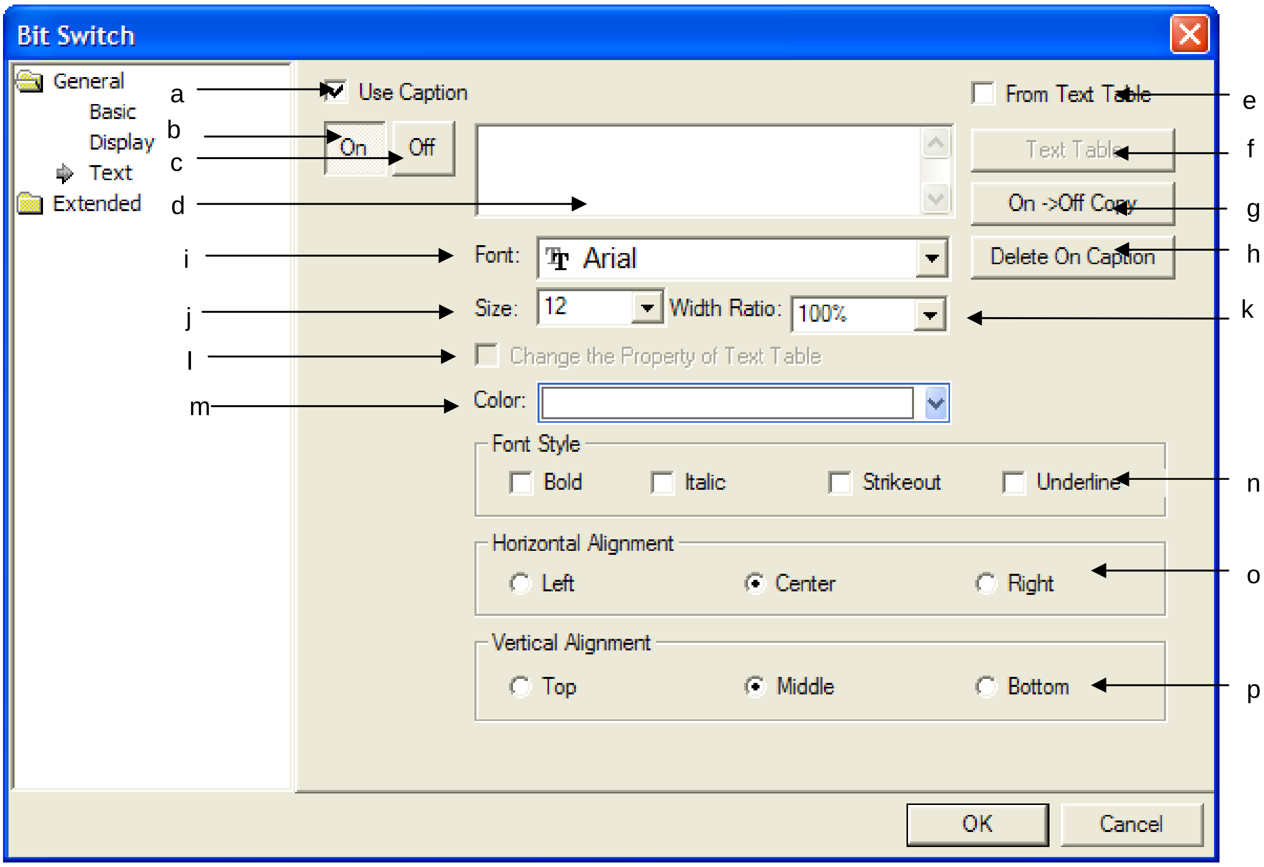
The text setting function has different setting items according to the object. Here, the object using complex text setting function shall be described.

The functions of the object using comment are as follows.

- Switch bit
- special switch
- switch word
- multi-switch
- Change screen switch
- lamp bit

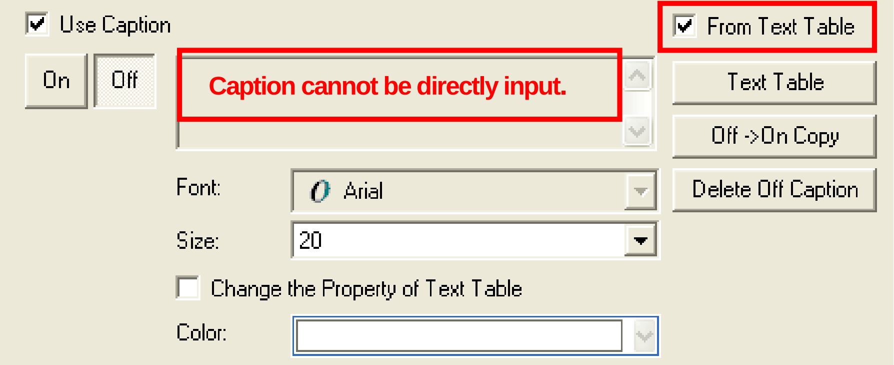
Note

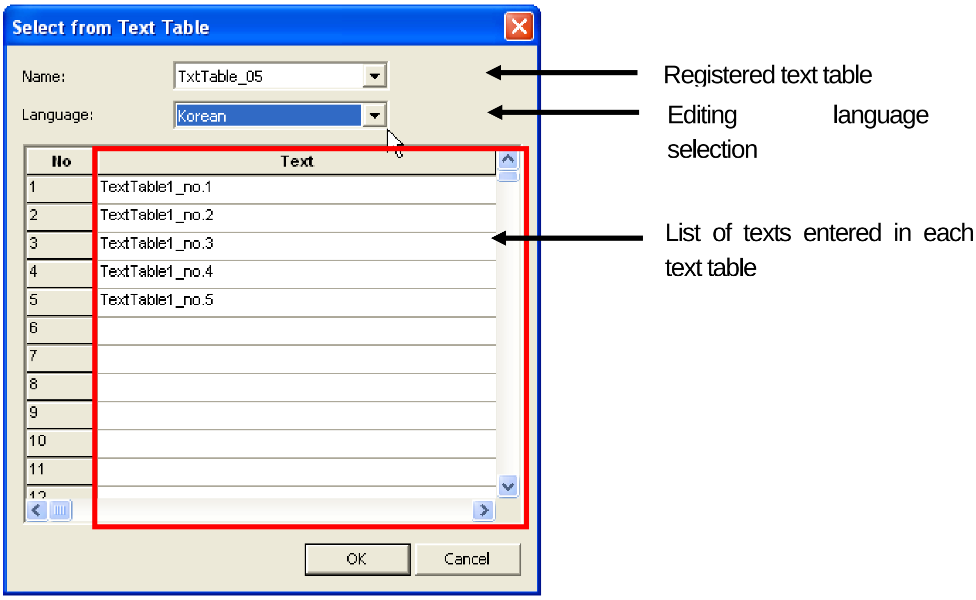
(1) For the text table to be used, it should be registered before the text is selected in the object.

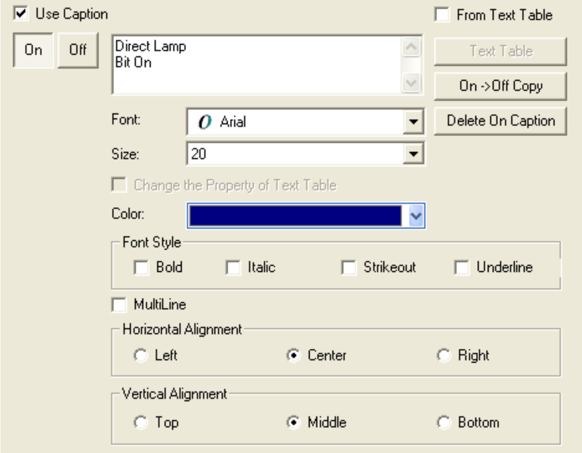
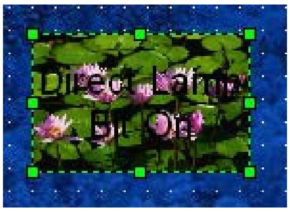
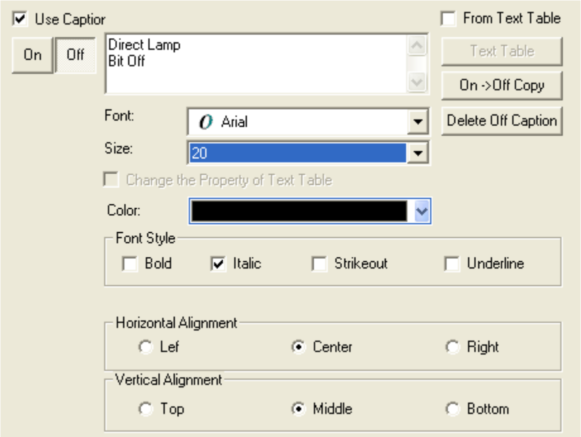
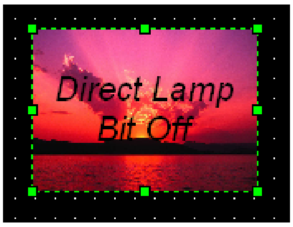
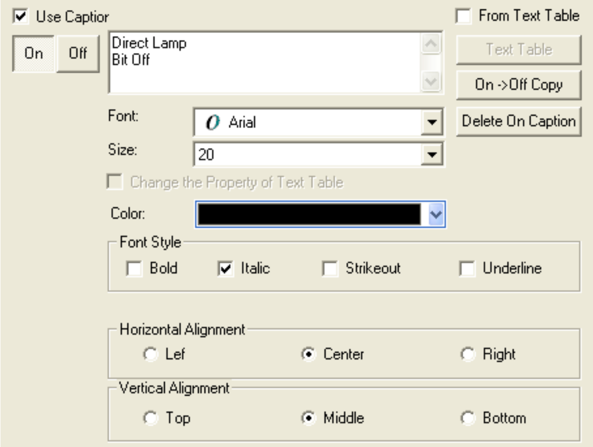


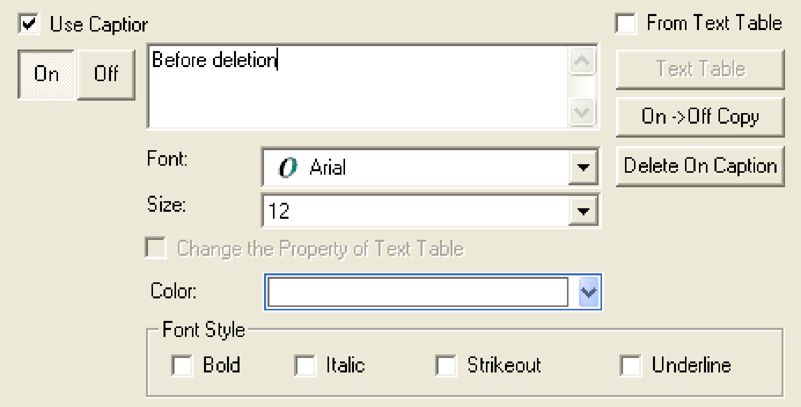
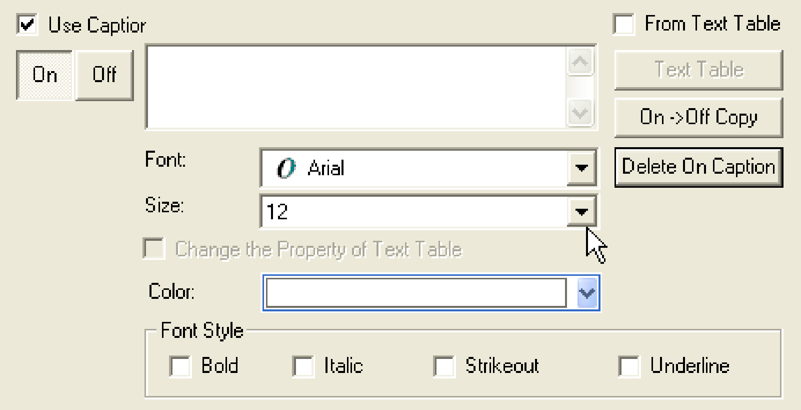
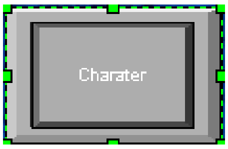
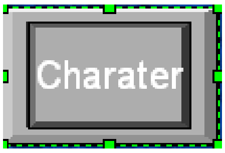
☑ Use Caption
☐ From Text Table
Font: Arial
Size: 12
Width Ratio: 100%
☐ Change the Property of Text Table
Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline
Horizontal Alignment: ○ Left ● Center ○ Right
Vertical Alignment: ○ Top ● Middle ○ Bottom

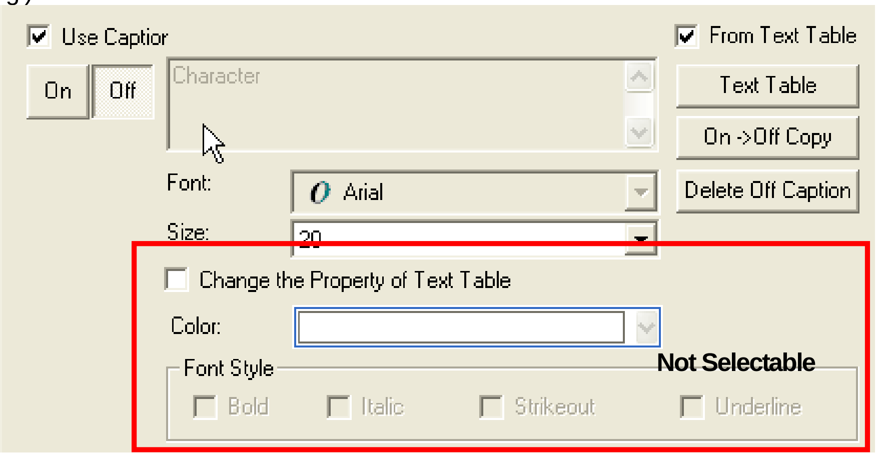
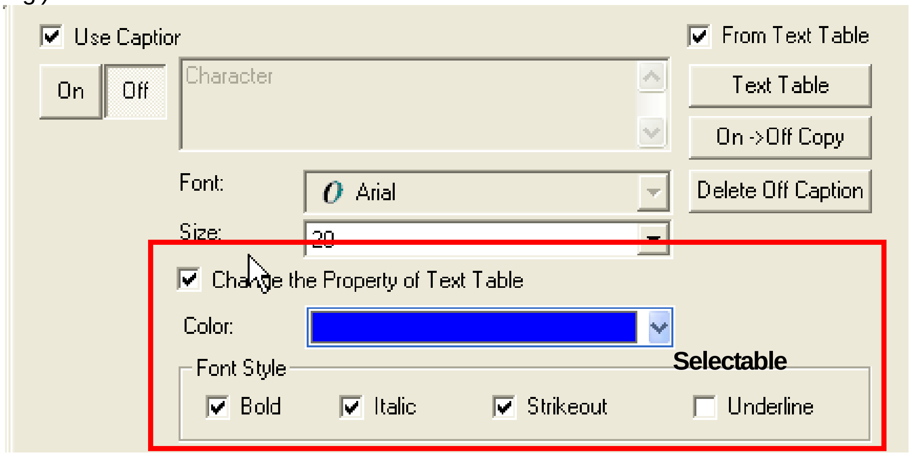
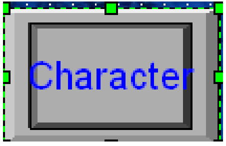
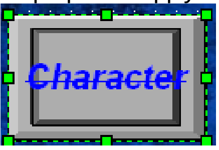
Bit Switch
General
Basic
Display
Text
Extended
a
b
c
d
On
Off
e
Text Table
f
On ->Off Copy
g
Delete On Caption
h
i
j
k
l
m
Color:
n
o
p
OK
Cancel

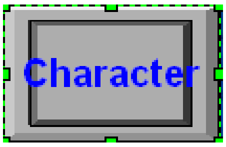
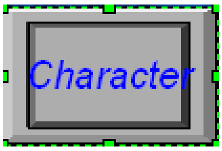
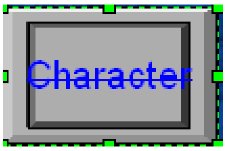
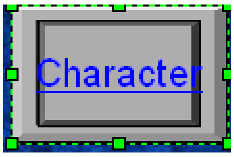
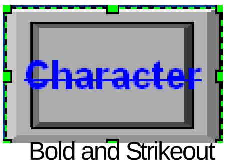
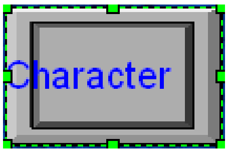
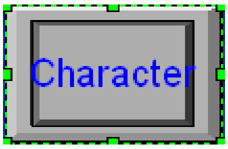
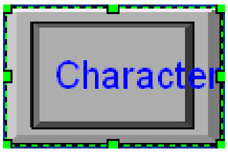
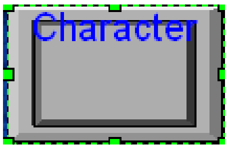
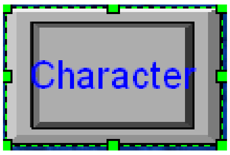
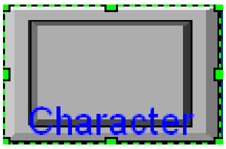
Items	Setting
Use Caption (a)	Sets whether to use text display in the object. Set when the user wants to use the text to display on the object image. If you select caption use, all the text properties are activated and each item can be set.
On (b)	If the text for the device connected to PLC to display when on, click on On (b) and set the other text properties.
Off (c)	If the text for the device connected to PLC to display when off, click on Off (b) and set the other text properties.
Text input area (d)	Enters the texts to display.
From text table (e)	The texts are not directly input, but selected from the built text table.  ☑ Use Caption ☑ From Text Table Font: Arial Size: 20 ☐ Change the Property of Text Table Caption cannot be directly input. On Off Text Table Off ->On Copy Delete Off Caption Color: As in the example above, if you set the [in text table] check item, you cannot directly use the text input area (d) directly, but the button is activated so that you can select the text table.

Items	Setting
Text table (f)	If you press …. in order to select a built text table, the following dialog box is invoked and you can select a desired text in the table.  Select from Text Table Registered text table Editing language selection List of texts entered in each text table OK Cancel Name: TxtTable_05 Language: Korean No — Text 1 — TextTable1_no.1 2 — TextTable1_no.2 3 — TextTable1_no.3 4 — TextTable1_no.4 5 — TextTable1_no.5 6 7 8 9 10 11 The color and text type of the selected text table are maintained as they were set in the text table.

Items	Setting
On <-> Off copy (g)	Off-> On copy: the text and type set during OFF are copied when ON. On-> Off copy: the text and type set during ON are copied when OFF.  ☑ Use Caption ☐ From Text Table On Off Direct Lamp Bit On Text Table On ->Off Copy Delete On Caption Font: Arial Size: 20 ☐ Change the Property of Text Table Color: Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline ☐ MultiLine Horizontal Alignment: ○ Left ● Center ○ Right Vertical Alignment: ○ Top ● Middle ○ Bottom  On caption text properties status Reference device is ON in XGT Panel  ☑ Use Captior ☐ From Text Table On Off Direct Lamp Bit Off Text Table On ->Off Copy Delete Off Caption Font: Arial Size: 20 ☐ Change the Property of Text Table Color: Font Style: ☐ Bold ☑ Italic ☐ Strikeout ☐ Underline Horizontal Alignment: ○ Lef ● Center ○ Right Vertical Alignment: ○ Top ● Middle ○ Bottom  Off caption text properties status Reference device is OFF in XGT Panel If you set ON and OFF and click on Off->On copy (On ->Off Copy), the text properties of ON are changed as follows.  ☑ Use Captior ☐ From Text Table On Off Direct Lamp Bit Off Text Table On ->Off Copy Delete On Caption Font: Arial Size: 20 ☐ Change the Property of Text Table Color: Font Style: ☐ Bold ☑ Italic ☐ Strikeout ☐ Underline Horizontal Alignment: ○ Lef ● Center ○ Right Vertical Alignment: ○ Top ● Middle ○ Bottom

Items	Setting
Delete On/Off caption (h)	Set when you want to delete all the ON captions you have built. If you press the button in On status (a), all the On captions are deleted. If you press the button in Off status (a), all the Off captions are deleted.  ☑ Use Caption Before deletion Font: Arial Size: 12 ☐ From Text Table On Off Text Table On ->Off Copy Delete On Caption ☐ Change the Property of Text Table Color: Font Style ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline [Before pressing the button of On caption deletion]  ☑ Use Caption Font: Arial Size: 12 ☐ From Text Table On Off Text Table On ->Off Copy Delete On Caption ☐ Change the Property of Text Table Color: Font Style ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline [Pressing the button of On caption deletion]
Font (i)	Sets the font type.
Size (j)	Sets the size of texts between 9 and 624.  Size : 9  Size : 20
Vertical Ratio (k)	You can establish character’s vertical ratio with a percentage to extend or reduce the character width. The ratio of character width is vertical ratio to character size (j) and the available setting value ranges from 1% to 600%. A user can select the ratio from combo box or input the value directly. Ex.) Supposing Font: Arial, Size: 12, the size to its vertical ratio is as below. Alarm 50% Alarm 100% Alarm 200% If you establish character at string table, setting [Vertical Ratio] is not available. Even for the same caption or character, character width is displayed depending on character shape (Gulim, Saegulim, etc.).

Items	Setting
Change the Property of Text Table (k)	If you want to change the text color and type (bold, italic, strikeout, underline) set in the text table, the following function is set. This function cannot be selected in direct input, but activated only when it is selected in the text table. If you select the properties change selected in the text table, you can select the text color and type (bold, italic, strikeout, underline). e.g.)  ☑ Use Captior ☑ From Text Table Character Font: Arial Size: 20 ☐ Change the Property of Text Table Color: Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline **Not Selectable** On Off Text Table On ->Off Copy Delete Off Caption e.g.)  ☑ Use Captior ☑ From Text Table Character Font: Arial Size: 20 ☑ Change the Property of Text Table Color: 🟦 Font Style: ☑ Bold ☑ Italic ☑ Strikeout ☐ Underline **Selectable** On Off Text Table On ->Off Copy Delete Off Caption If you change the properties specified in the text table, the changed properties apply to XP Builder.  Use text table properties  Change properties as above
Color(l)	Sets the color of texts.

Items	Setting
Text type(m)	Sets the type of texts (bold, italic, strikeout, underline). Two or more can be selected at a time.  Bold  Italic  Strikeout  Underline Multiple types can be applied at a time.  Bold and Strikeout
Horizontal location(o)	Selects the horizontal location of texts.  Left  Center  Right
Vertical location(p)	Selects the vertical location of texts.  Top  Middle  Bottom

Note

(1) The texts selected in ON and OFF must be selected in the same text table. (e.g. if ON caption is set in text_01, the OFF caption must be set in text_01 as well.)

(2) If the text table is renamed during creation, the previously specified text can be changed.

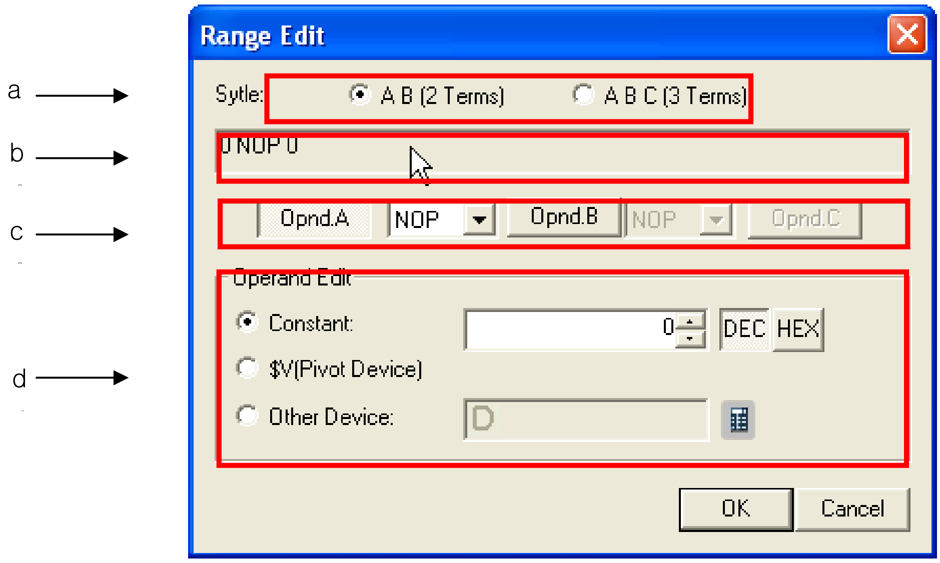
16.4 Conditional Sentence Setting

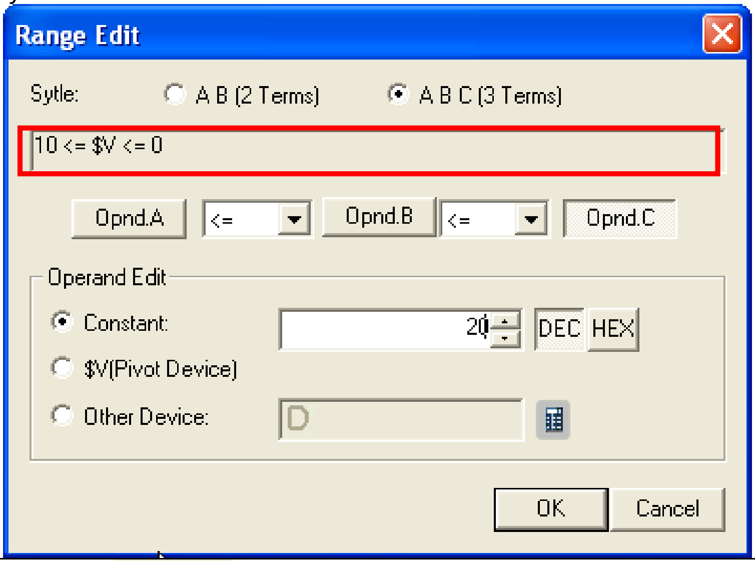
This is setting conditional sentences and can change the settings of the background color, frame color, figure outline and text of an object image according to the condition of the set conditional sentence.

The object that can set a conditional sentence and the settings that can be changed are as follows.

Object	Settings
Switch Object	Operating condition, lamp condition
Word Lamp	Image and text properties
Word Message	Image color, image background color, text color, text
Numeric input, numeric display	Image background color, text color, flashing
Word Window	The number of window to which to shift
Word Part	The number of part to which to shift
Bar Graph	Padded area padding background color, Padded area padding color
Pie Graph	Padded area padding background color, Padded area padding color
Meter Graph	Color of the pointer
Closed Graph	Padded area padding background color, Padded area padding color

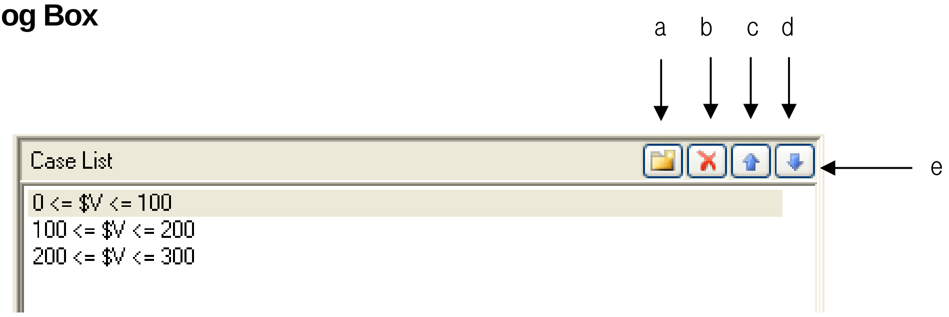
16.4.1 Area Editing Dialog Box


a
b
c
d
Range Edit
Sytle:
● A B (2 Terms)
○ A B C (3 Terms)
0 NOP 0
Opnd.A
NOP
Opnd.B
NOP
Opnd.C
Operand Edit
● Constant:
0
DEC
HEX
○ $V(Pivot Device)
○ Other Device:
D
OK
Cancel

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>a</td><td>Sets the conditional sentence to build among the operating expressions of second and third terms.</td></tr>
<tr><td>b</td><td>Displays the result of the set conditions.

Range Edit
Opnd.A
Opnd.B
Opnd.C
Operand Edit
DEC
HEX
OK
Cancel

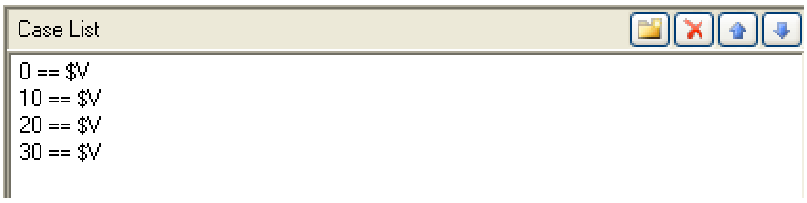
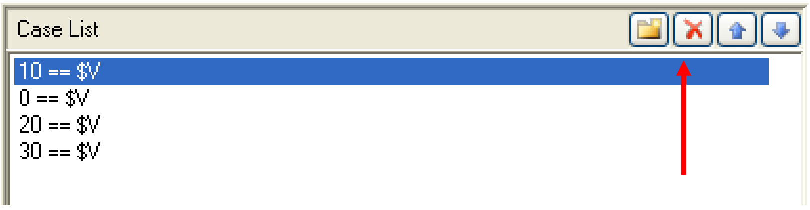
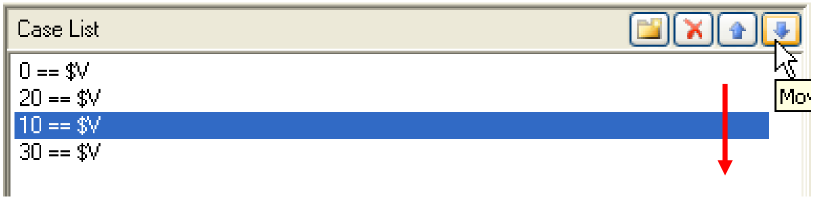
Sytle: ○ A B (2 Terms) ● A B C (3 Terms)
10 <= $V <= 0
Opnd.A <= Opnd.B <= Opnd.C
● Constant: 20
○ $V(Pivot Device)
○ Other Device: D</td></tr>
<tr><td>c</td><td>Operand A (Opnd.A) : sets the operand in the first term.
Operand B(Opnd.B) : sets the operand in the second term.
operand C(Opnd.C) : sets the operand in the third term.
$$\underset{\text{operand A}}{\underline{720}} <= \underset{\text{operand B}}{\underline{\$V}} <= \underset{\text{operand C}}{\underline{950}}$$
The ranges of each term are as follows.
<table>
<tr><th>Type of Range</th><th>Description</th></tr>
<tr><td><</td><td>Left term is smaller than right term.</td></tr>
<tr><td>< =</td><td>Left term is equal to or smaller than right term.</td></tr>
<tr><td>= =</td><td>Left term is equal to right term.</td></tr>
<tr><td>! =</td><td>Left term is different from right term.</td></tr>
<tr><td>></td><td>Left term is bigger than right term.</td></tr>
<tr><td>>=</td><td>Right term is equal to or smaller than left term.</td></tr>
</table></td></tr>
<tr><td>d</td><td>The operands of each term set in (c) are as follows.
<table>
<tr><th>Operand Settings</th><th>Description</th></tr>
<tr><td>Constant</td><td>The user specifies the operand as the constant input by the user.</td></tr>
<tr><td>$V(Pivot device)</td><td>Specifies the value of the operand as the reference device data value supervised by the object.</td></tr>
<tr><td>Other Device</td><td>Specifies the value of the operand as the set device data value</td></tr>
</table></td></tr>
</table>

16.4.2 Condition List Dialog Box



Case List
0 <= $V <= 100
100 <= $V <= 200
200 <= $V <= 300

[Description of dialog box]

Type	Description
a	Builds a new conditional sentence.
b	Deletes the conditional sentence.
c	Moves up the priority of the conditional sentence under editing.  Case List 0 == $V 10 == $V 20 == $V 30 == $V Conditional sentence which has been built  Case List 10 == $V 0 == $V 20 == $V 30 == $V Moves up the second conditional term of the sentences built above
d	Moves down the priority of the conditional sentence under editing.  Case List 0 == $V 20 == $V 10 == $V 30 == $V Moves up the third conditional term of the sentences built above

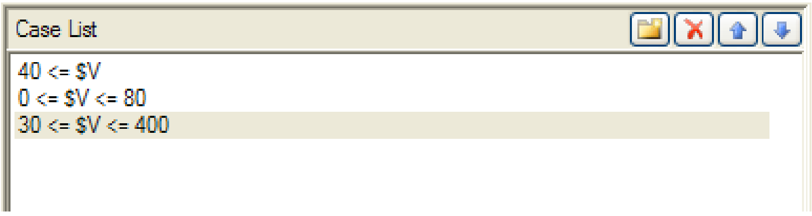
Note

(1) If you input the operand as a fixed constant, the range of possible constants cannot be exceeded according to the size and type of the standard device.

Device size	Device type	Minimum	Maximum
16 bit	Signed Decimal	-32768	32767
16 bit	Unsigned Decimal	0	65535
16 bit	BCD	0	9999
32 bit	Signed Decimal	-2147483648	2147483647
32 bit	Unsigned Decimal	0	4294967295
32 bit	BCD	0	99999999

(2) Execution is carried out in the sequence of priority and if two conditions are met in the built conditional sentences, the conditional sentence higher in the list of conditional sentences is executed.

Example. If a conditional sentence as follows is set



40 <= $V
0 <= $V <= 80
30 <= $V <= 400

If the standard device value is 50, all three conditional sentences above are met. In such a case, only the conditional sentence set the highest is executed.

16.5 Offset Setting

You can access an address as far from the basic address as the value set in the offset device by offset value change. That is, you can dynamically change the address of the object to supervise. If you specify P100 as the offset device, the device to supervise dynamically changes as follows according to the value of the offset device.

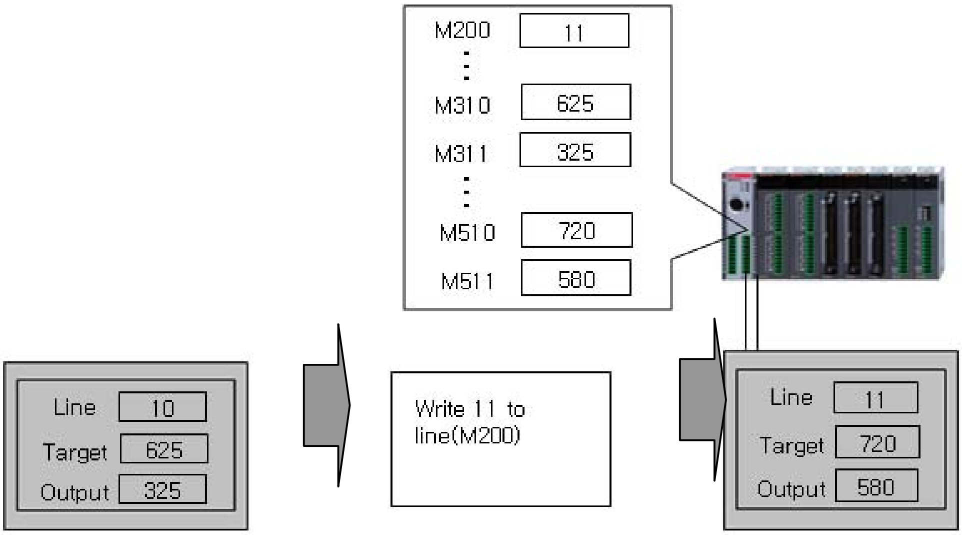
Setting the offset as P100

	Value from P100	Device address to refer to
P200	0	P200
	10	P210
	11	P211

Example 1. If you set offset at P100 after setting the standard device at P200 in the basic setting, the value of P100 is read and added to the basic setting and the address of the device to supervise is calculated. If P100 is 0, the address of the device to supervise is P200 and 10, the value is P210.

Example 2.

Line : Numeric input function Basic device M200
Goal : Numeric display function Basic device M300
Offset device M200
Output : Numeric display function Basic device M500
Offset device M200



Target monitors device M310.
(M300 + 10 = M310)
Output monitors device M510.
(M500 + 10 = M510)

Target monitors device M312.
(M300 + 11 = M311)
Output monitors device M510.
(M500 + 11 = M511)

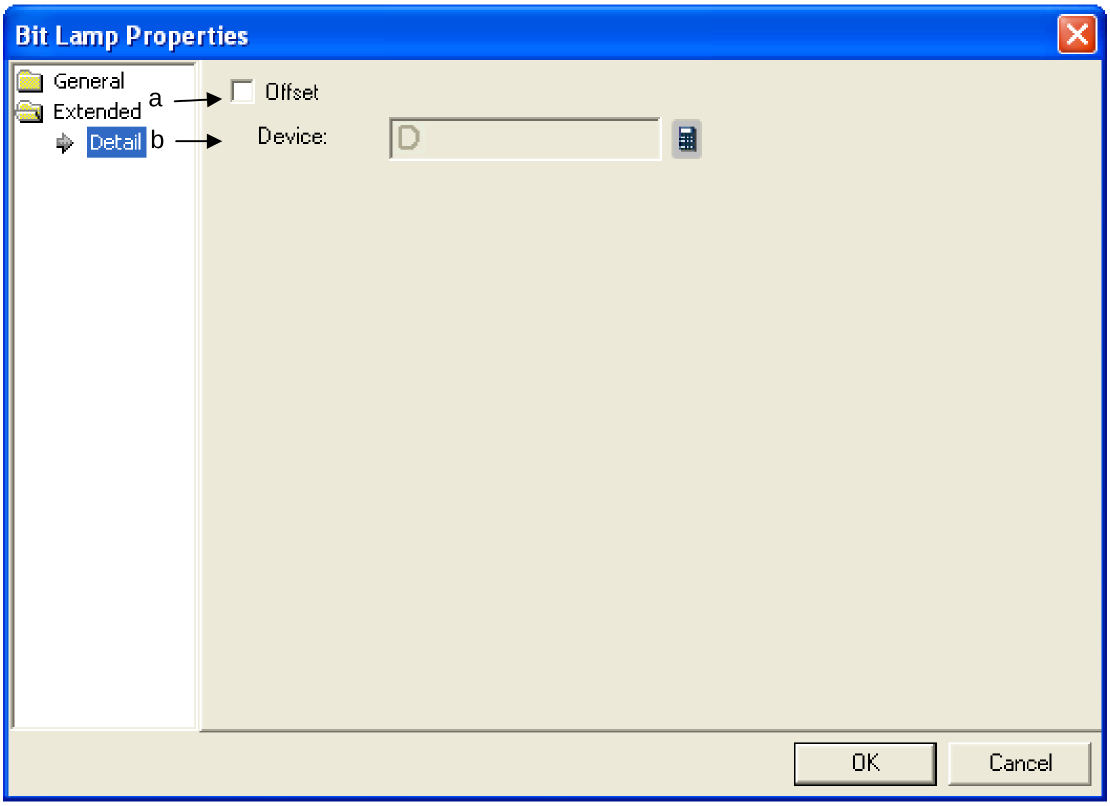
The offset function is set by arranging the object functions. The objects that are capable of offset setting are as follows.

- Bit Switch
- Bit Lamp
- Numeric input
- Bit Part
- Meter Graph

Word Switch
Word Lamp
Numeric display
Word Part
Trend Graph

Change Screen switch
Bit Message
Text Input
Bar Graph

Special switch
Word Message
Text Display
Pie Graph



☐ Offset

Device: D

Items	Settings
Offset(a)	Set to use the offset function.
Device(b)	Set to decide the device address by adding the device value set by the offset device to the device to monitor. Set in the same size and type as the device to referred to in the basic item.

16.6 Operating Condition Setting

This is set for the object that carries out operation to the device. If the conditions are not met, the operation is not executed and if the conditions re met, actionable objects are executed.

The objects that can set operating conditions are as follows.

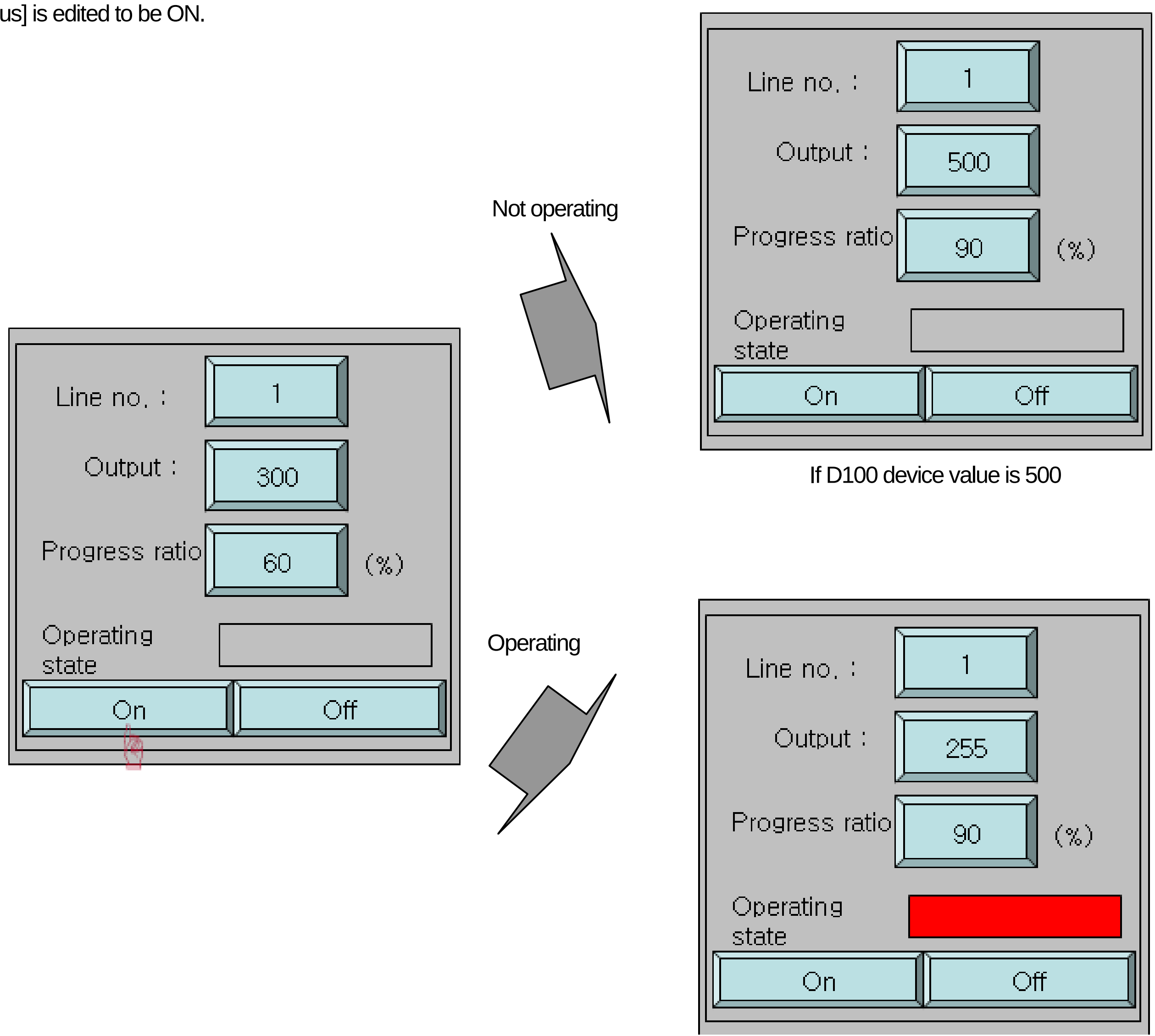
• Bit Switch	Word Switch	Change Screen Switch	Special Switch
• Numeric Input/Display	Text Input	Multi Switch	

Example)

If the operating condition is set as follows

D100 == 255

If the condition above is met, the operating switch is activated and operates as follows when the lamp displaying the [Line operating status] is edited to be ON.



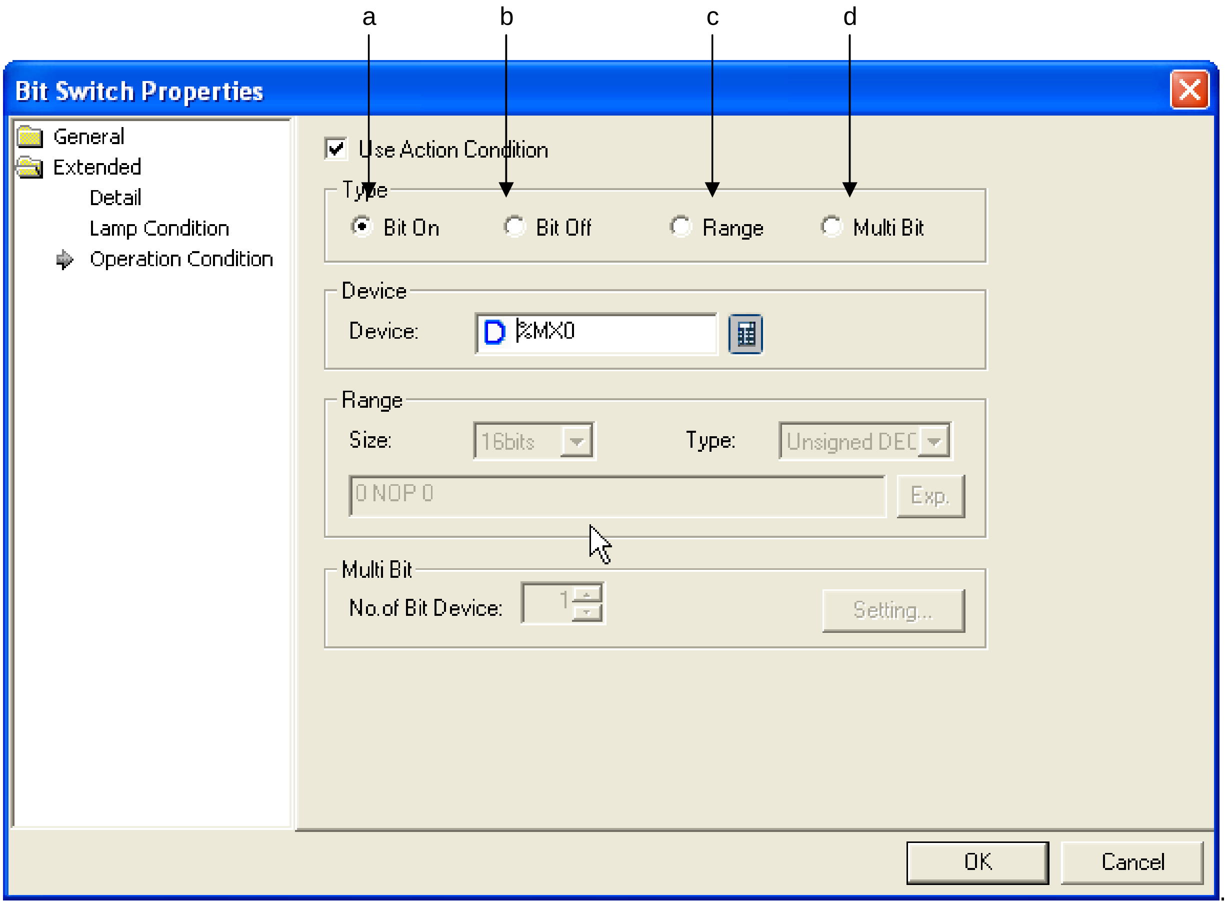
Line no. : 1
Output : 300
Progress ratio 60 (%)

Line no. : 1
Output : 500
Progress ratio 90 (%)

If D100 device value is 500

Line no. : 1
Output : 255
Progress ratio 90 (%)

If D100 device value is 255


a
b
c
d
Bit Switch Properties
General
Extended
Detail
Lamp Condition
Operation Condition
Bit Off
Range
Multi Bit
Range
Size:
Type:
Exp.
Multi Bit
Setting...
OK
Cancel

☑ Use Action Condition

Type: ● Bit On

Device: %MX0

Size: 16bits

Type: Unsigned DEC

0 NOP 0

No.of Bit Device: 1

The operation types and execution conditions are as follows.

Condition Type	Execution Conditions	Operations When Conditions Are Met
Bit On (a)	Operates when bit is On	The object operates only when the bit device set in the operating conditions is On. Example. [Numeric input unit] Number input unit operates only when the bit device %IX0.0.0 is On in the dialog box above.
Bit Off (b)	Operates when bit is Off	The object operates only when the bit device set in the operating conditions is Off. Example. [Numeric input unit] Number input unit operates only when the bit device %IX0.0.0 is Off in the dialog box above.
Range (c)	Operates when the word device range is met	The object operates only when the specified conditional sentence is met. Example. [Numeric input unit] If the device value set in the operating conditions meets the conditions of the set range, it executes number input operation.
Multi Bit (d)	Operates according to the result of logical operation of set multiple bit device ON/OFF.	☞ **See [Multi Bit] below.**

Note

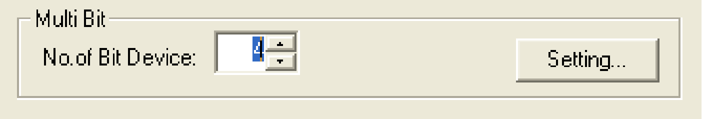
(1) If the device size or type is changed by the area, the conditional sentence of the built area is deleted

(2) The fixed value that can be set by the area has the following range according to the size and type of the device.

Device size	Device type	Minimum	Maximum
16bit	Signed Decimal	-32768	32767
16bit	Unsigned Decimal	0	65535
16bit	BCD	0	9999
32bit	Signed Decimal	-2147483648	2147483647
32bit	Unsigned Decimal	0	4294967295
32bit	BCD	0	99999999

[Details of Multi bit]

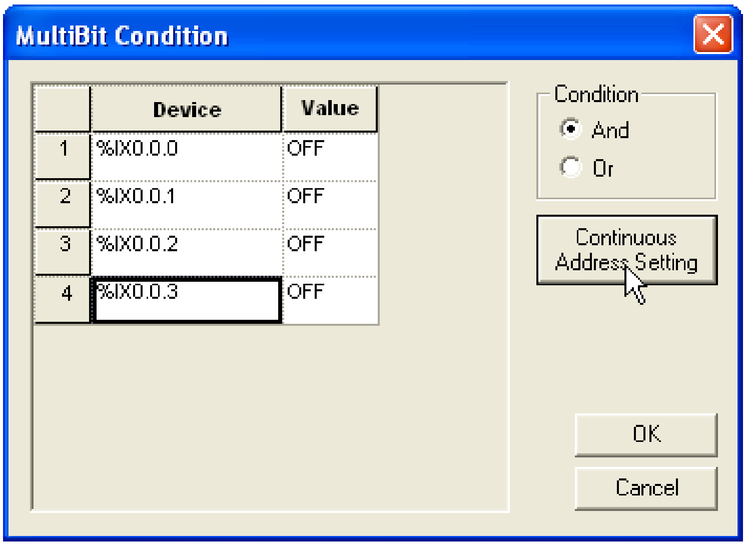
(1) The multi bit is selected in the operating conditions and the number of bits is specified.



Multi Bit

No.of Bit Device: 4

(2) If you click on the setting button, dialog box [Multi bit condition] is invoked so that the as many devices as the set number of bits can be set.



MultiBit Condition

	Device	Value
1	%IX0.0.0	OFF
2	%IX0.0.1	OFF
3	%IX0.0.2	OFF
4	%IX0.0.3	OFF

Condition

● And

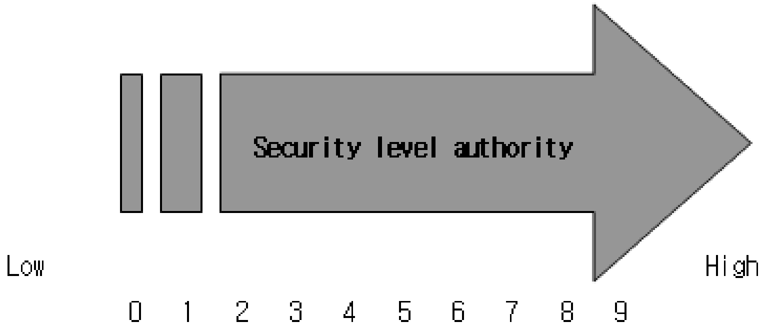
○ Or

The operating conditions are set in each object function.

Operation	Description
Device	Sets the device that is the condition of multi bits.
Value	Decides which of ON and OFF the bit device condition satisfaction should be.
Condition	Selects the method of meeting the conditions. **Condition** / **Description** AND: The condition is met when the ON/OFF conditions of each bit device are all met. OR: The condition is met when one of the ON/OFF conditions of each bit device is met.
Continuous Address Setting	As many devices as the set number of devices, beginning from the set device, are consecutively set automatically.

16.7 Security Setting

This is for enabling only the person who knows the password to use/operate the object by setting a password of the object.
Security can be set by selecting the security function in the object functions.
You can also limit display or operation of objects by using the security function and set the security levels(0~9).



If the security level is 0, it is not set and all users have access.

E.g.) Security according to the password
Examples of the following security functions set for four objects (text input unit, Screen Change switch, multi switch and numeric input unit) are as follows.

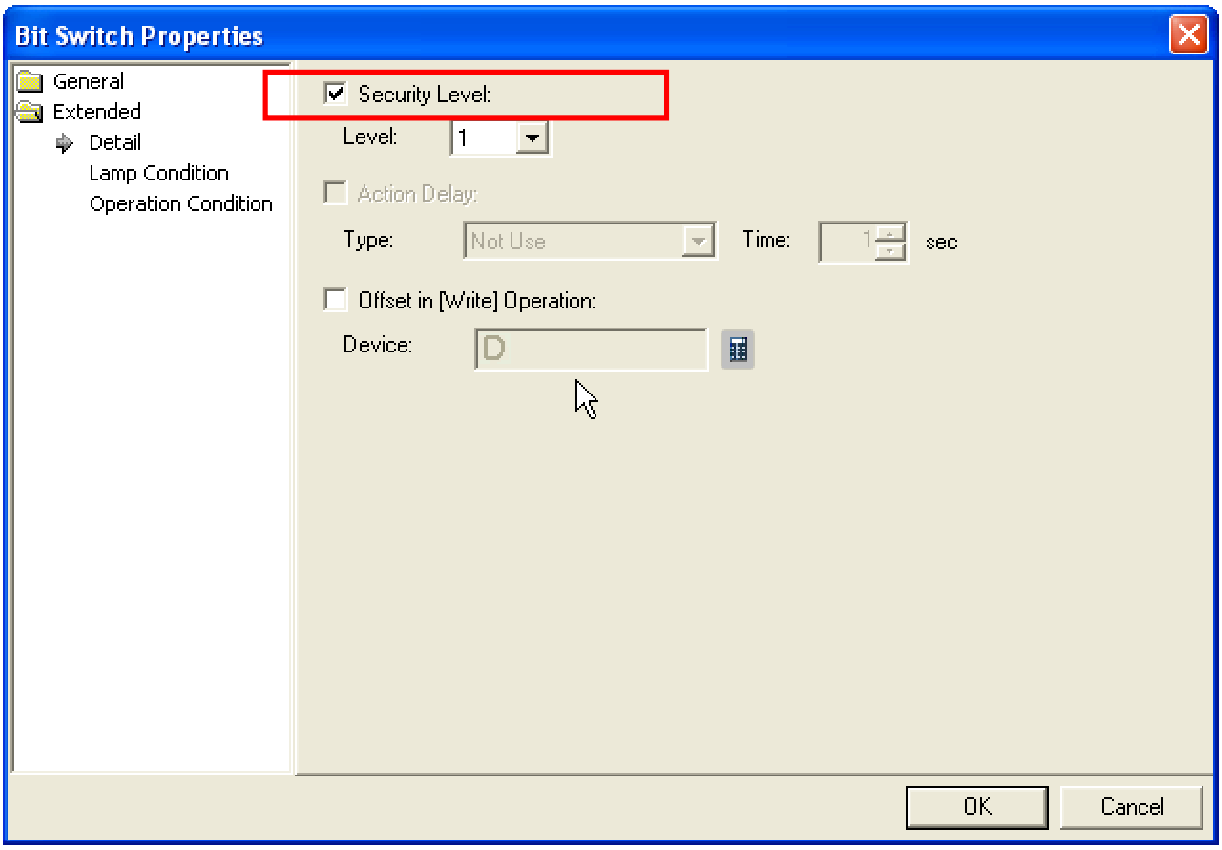
Object Type	Security Authority
Text Input	3
Change Screen Switch	7
Multi Switch	1
Numeric Input	0

The security level authorities are as above and if multiple users want to manipulate each object, the objects that can be manipulated according to the user security level are as follows.
(O : Manipulatable, X : Not Manipulatable)

User	User security level	Text input unit	Window shift switch	Multi switch	Number input unit
User1	1	X	X	O	O
User2	4	O	X	O	O
User3	8	O	O	O	O
Others	0	X	X	X	O

Users 1, 2 and 3 have access to user security levels 1, 4 and 8 respectively in the table above. User 1 has access to only objects below security level 1, so he can change the multi switch setting, but has no access to other objects. By contract, user 3 has access to objects below security level 8 and therefore all the objects are accessible for him. The access to objects varies according to the security level of the user.

Each object unit is set in the each object function setting dialog box. The properties dialog box is displayed. Set the security level set in the window in Security level.


Bit Switch Properties
General
Extended
Detail
Lamp Condition
Operation Condition
OK
Cancel

☑ Security Level:

Level: 1

☐ Action Delay:

Type: Not Use

Time: 1 sec

☐ Offset in [Write] Operation:

Device: D

(1) Selected when you want to use security function.

(2) Determine the security level between 0 and 9 (level 0 is not using security).

16.8 Script

This is about using the script built in advance by the XP Builder object and setting the script to use. Scripts have been designed to easily control or display the device data in the XGT Panel series.

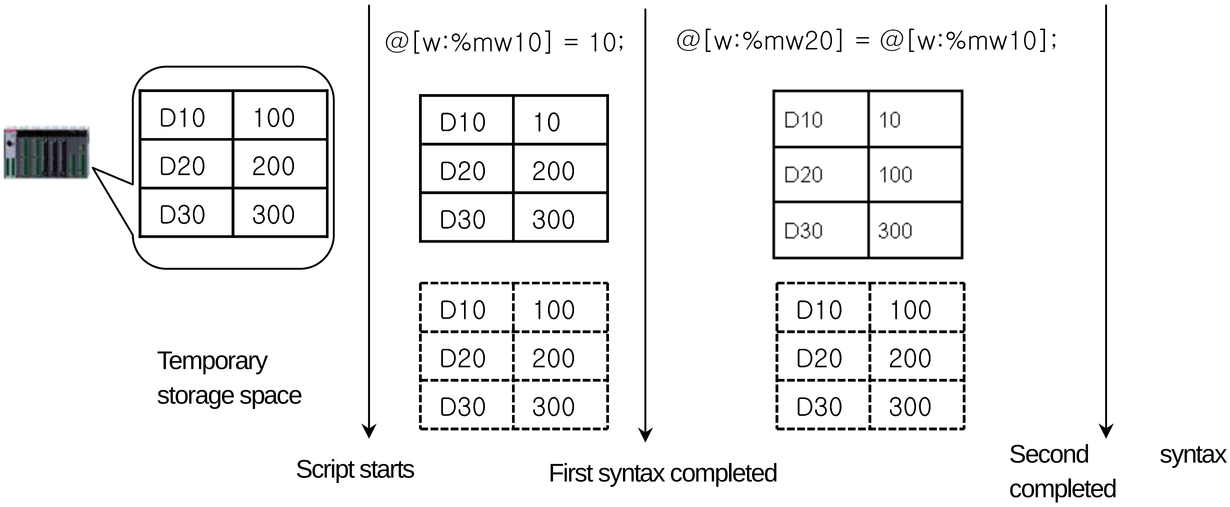
☞ **For the characteristics, use and language limits of the script, see the chapter 18 Script Chapter.**

16.8.1 Cautions in Script Operation

(1) The time limit for each script is 5 seconds for communication between the PLC and XGT Panel series and for efficiency of XGT Panel operation. It is recommended that you do not use a script syntax that takes a lot of time.
(2) If communication fails, the script stops.
(3) If a wrong operation (dividing by 0, etc.) is executed, the script stops.

16.8.2 Direct Variables and Internal Variables within Script

The device value used within the script set in the object reads data values from the PLC when the script starts. Henceforth, it stores the data value in a temporary storage space used within the script. Reading within the script uses the data saved in the temporary storage space. Writing in the script is carried out immediately when value assignment is conducted.


@[w:%mw10] = 10;
@[w:%mw20] = @[w:%mw10];
D10 100
D20 200
D30 300
D10 10
D20 200
D30 300
D10 10
D20 100
D30 300
D10 100
D20 200
D30 300
D10 100
D20 200
D30 300
Temporary storage space
Script starts
First syntax completed
Second syntax completed

Therefore, even if a constant or another device value is allotted to the variable within the script, the values cannot be used while the script is being executed. When you want to change and use the device value in the script, use the internal variable.

Use of direct variable

```
Initial mw10 device value is 100

// Script starts
@[w:%mw10] = 80;

    if(@[w:%mw10] == 80)
            @[w:%mw10] = 0;
    else
            @[w:%mw10] = 1;
```

Use of temporary variable

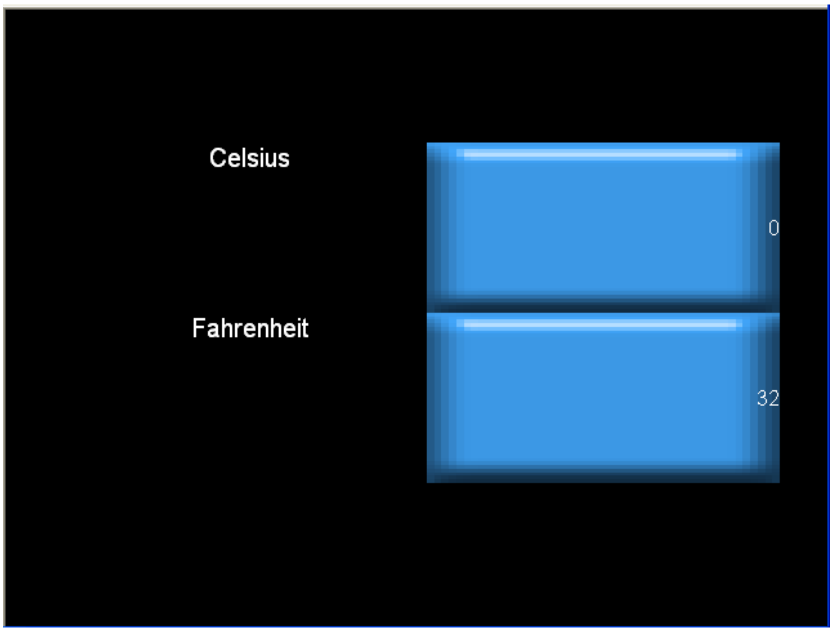
```
Initial mw10 device value is 100

// Script starts
$S = @[w:%mw10];
$S = 80;

    If($S == 80)
            @[w:%mw10] = 0;
    else
            @[w:%mw10] = 1;
```

In the example above, the results of operations carried out in the script according to the variables are as follows.

<table>
<tr><th>Variable</th><th>Method</th></tr>
<tr><td>Direct variable</td><td>
<table>
<tr><th>Sequence</th><th>Result and Description</th></tr>
<tr><td>Script starts</td><td>PLC device value is saved in the temporary script storage space
<table>
<tr><td>PLC device mw100 value</td><td>100</td></tr>
<tr><td>mw100 value of temporary storage space</td><td>100</td></tr>
</table></td></tr>
<tr><td>First syntax @[w:%mw10] = 80;</td><td>Execution of operation of writing 80 in the PCL mw10 address
<table>
<tr><td>PLC device mw100 value</td><td>80</td></tr>
<tr><td>mw100 value of temporary storage space</td><td>100</td></tr>
</table></td></tr>
<tr><td>Second syntax if(@[w:%mw10] == 80)</td><td>@[w:%mw10] uses the value of the temporary storage space during script execution. Therefore, this syntax is FALSE.</td></tr>
<tr><td>Script result</td><td>The result is @[w:%mw10] = 1;</td></tr>
</table>
When the script is executed by using the direct variable, the final value of @[w:%mw10] is 1.
</td></tr>
<tr><td>Temporary variable</td><td>
<table>
<tr><th>Sequence</th><th>Result and Description</th></tr>
<tr><td>Script starts</td><td>PLC device value is saved in the temporary script storage space
<table>
<tr><td>PLC device mw100 value</td><td>100</td></tr>
<tr><td>mw100 value of temporary storage space</td><td>100</td></tr>
</table></td></tr>
<tr><td>First syntax $S = @[w:%mw10];</td><td>In internal variable with mw10 in the temporary storage space within the script is created.
<table>
<tr><td>PLC device mw100 value</td><td>100</td></tr>
<tr><td>mw100 value of temporary storage space</td><td>100</td></tr>
<tr><td>Internal variable $S value</td><td>100</td></tr>
</table></td></tr>
<tr><td>Second syntax $S = 80;</td><td>80 is allotted to the created internal variable with the mw100 not changed in PLC or temporary storage space
<table>
<tr><td>PLC device mw100 value</td><td>100</td></tr>
<tr><td>mw100 value of temporary storage space</td><td>100</td></tr>
<tr><td>Internal variable $S value</td><td>80</td></tr>
</table></td></tr>
<tr><td>Third syntax If($S == 80)</td><td>Internal variable $S is 80.Therefire, this syntax is TRUE.</td></tr>
<tr><td>Script result</td><td>The result is @[w:%mw10] = 0;</td></tr>
</table>
When the script is executed by using the direct variable, the final value of @[w:%mw10] is 0.
</td></tr>
</table>

16.8.3 Examples of Script Result

The user can operate the standard device value connected to the PLC and monitor the operated values by using the XP Builder script. For example, let's assume that the device value of mw100 indicates the temperature in Celsius of the PLC device, the user can indicate the temperature in terms of Fahrenheit.


Celsius
0
Fahrenheit
32

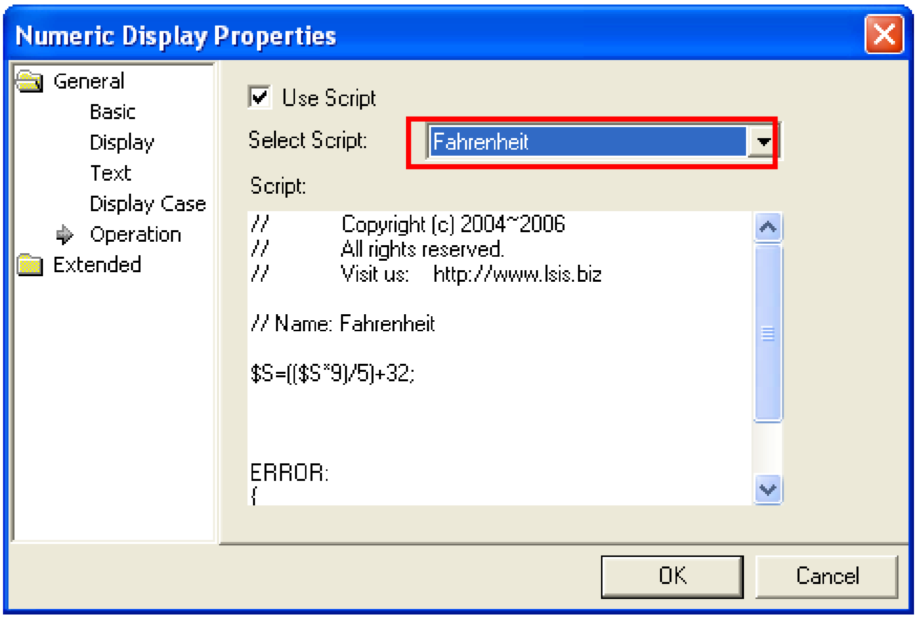
[Sequence]

(1) Add the script of which the name is [Fahrenheit].

(2) Edit the following script syntax.

```
$S = (($S * 9) / 5 ) + 32;
```

(3) Set [Fahrenheit] script as follows in the number indicator object.


Numeric Display Properties
General
Basic
Display
Text
Display Case
Operation
Extended
OK
Cancel

☑ Use Script

Select Script: Fahrenheit

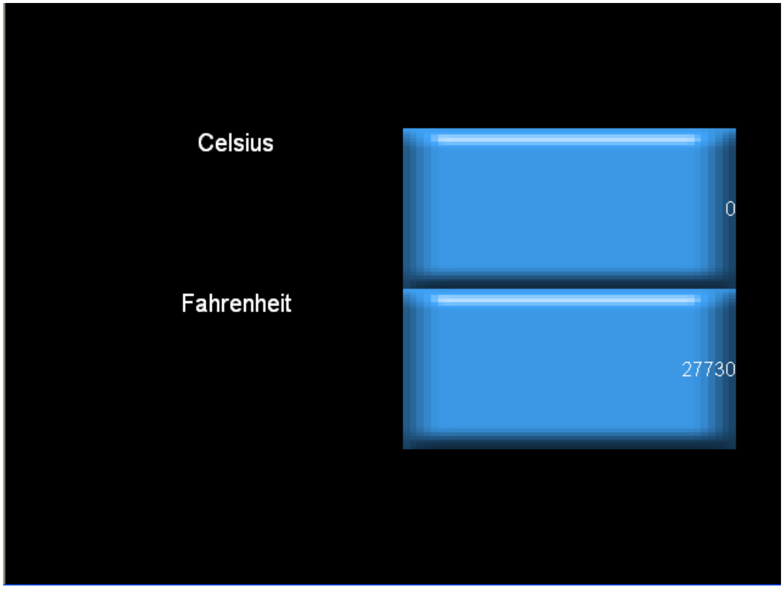
Script:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz

// Name: Fahrenheit

$S=(($S*9)/5)+32;


ERROR:
(
```

Note

(1) If you use the direct variable in editing script syntax, the result is different from the example above.

```
@[0:w:%MW0000] = ((@[0:w:%MW0000] * 9) / 5 ) + 32;
```



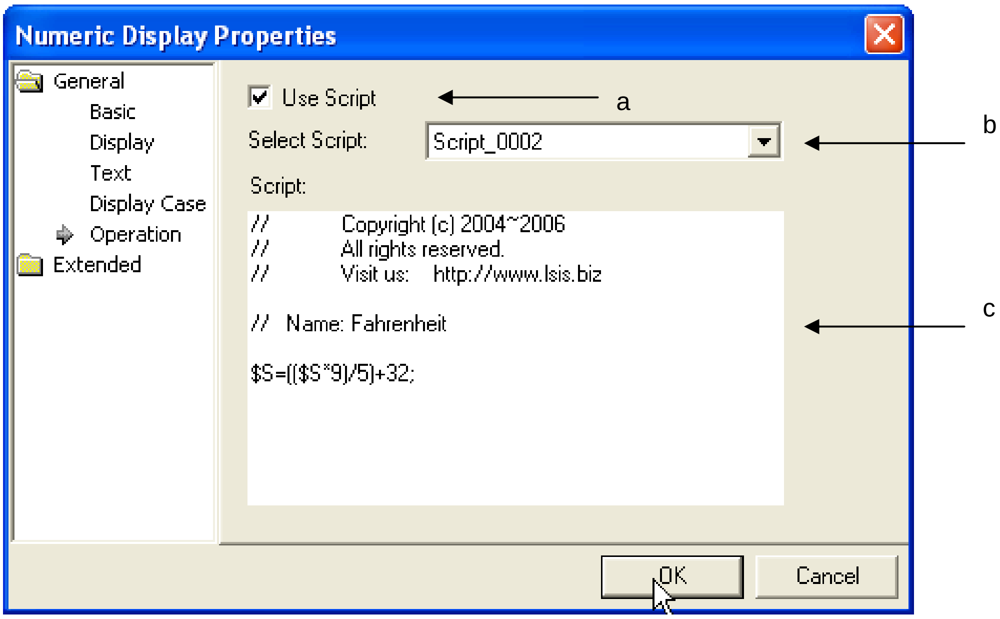
As the example above shows, if you use the direct variable, the operation result is written in MW0000 device as soon as the script syntax is finished, so MW0000 of PLC is displayed in Fahrenheit. That is, if you use the temporary variable, the operation of writing the value in the PLC device is not carried out, but only the operation result is displayed. However, if the direct variable is used, the operation result is written in the PLC, so the PLC device value is changed.

<table>
<tr><th>Sequence</th><th>Use of Direct Variable</th><th>Use of Temporary Variable</th></tr>
<tr><td>Script starts</td><td><table><tr><td>PLC device mw0000 value</td><td>0</td></tr><tr><td>mw0000 value of temporary storage space</td><td>0</td></tr></table></td><td><table><tr><td>PLC device mw0000 value</td><td>0</td></tr><tr><td>mw100 value of temporary storage space</td><td>0</td></tr></table></td></tr>
<tr><td>First syntax finished</td><td><table><tr><td>PLC device mw0000 value</td><td>32</td></tr><tr><td>mw0000 value of temporary storage space</td><td>32</td></tr></table></td><td><table><tr><td>PLC device mw0000 value</td><td>0</td></tr><tr><td>mw0000 value of temporary storage space</td><td>32</td></tr></table></td></tr>
<tr><td>Result</td><td>1. Actual PLC device value is changed into 32.
2. The value continues to change because 32 is used for the next script execution.</td><td>1. Actual PLC device value is not changed.
2. The value does not change because 0 is used for the next script execution.</td></tr>
</table>

Therefore, if the script is operated only to display the device value, using the temporary variable is desirable.

16.8.4 Script Setting Items

Items for setting the script in each object are as follows.

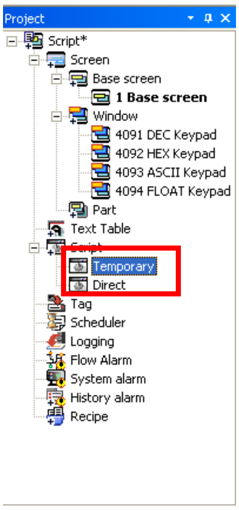

Numeric Display Properties
General
Basic
Display
Text
Display Case
Operation
Extended
a
b
c
OK
Cancel

☑ Use Script

Select Script: Script_0002

Script:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz

//   Name: Fahrenheit

$S=(($S*9)/5)+32;
```

Items	Description
Use Script (a)	Selected when the script is used.
Select Script (b)	All the script lists in [Project Tree]-[Script] are displayed in the combo box. The script to be operated by the word lamp in the combo box is selected.  Project Script* Screen Base screen 1 Base screen Window 4091 DEC Keypad 4092 HEX Keypad 4093 ASCII Keypad 4094 FLOAT Keypad Part Text Table Script Temporary Direct Tag Scheduler Logging Flow Alarm System alarm History alarm Recipe
Script contents (c)	The contents of the selected script are displayed. Where the script contents are displayed, only the syntaxes edited in [Common]-[Script] are displayed. The edited contents cannot be modified or added here. To change the script, edit it in [Common]-[Script].

Note

(1) If the set script is deleted, an error occurs in data check.

16.9 Setting Display Trigger Function

Display trigger function refers to a function to make a relevant object displayed or not displayed on the XGT Panel screen according to its device condition (on/off). For example, for objects of bit parts, enter the expression P0==10 on [Bit Part]-[Extended]-[Display Trigger] screen, if the user wants to display it only when device P0 is 10. If so, bit parts are displayed on the XGT Panel screen only when P0 device value is 10.
The objects are displayed on the screen depending on the state of the device connected with PLC.

The following display trigger functions may vary according to settings of each object. This publication focuses on the objects using complicate display functions.

- Clock
  Bit Message
  Word Message
- Numeric Display
  Numeric Pad
  Character Display Character Pad
- Bit Part
  Word Part
- Animation
  Bar Graph
  Pie Graph
- Meter Graph
  Looped Curve Graph
  Trend Graph
- Logging Trend Graph
  Real Time Distribution Graph
  Logging Distribution Graph
- History Alarm View
  Data List View
  Logging View
- Alarm Detector
  Memo Pad
  Recipe Detector
- Data List Editor
  File Recipe Editor

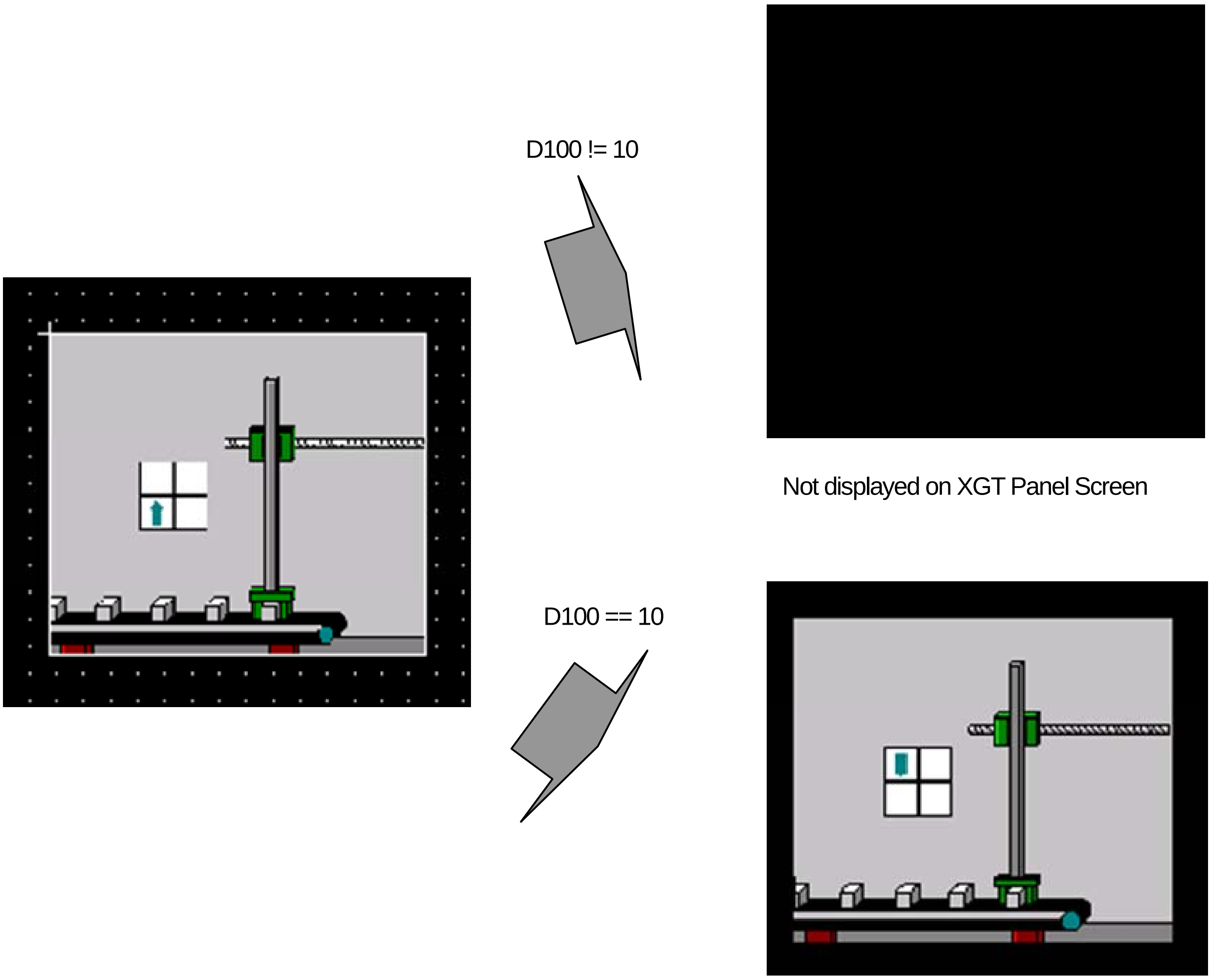
Example)

To use the display trigger settings, it is necessary to set display items of the relevant object in the dialog box.

Example1)
When setting a display trigger condition as follow,

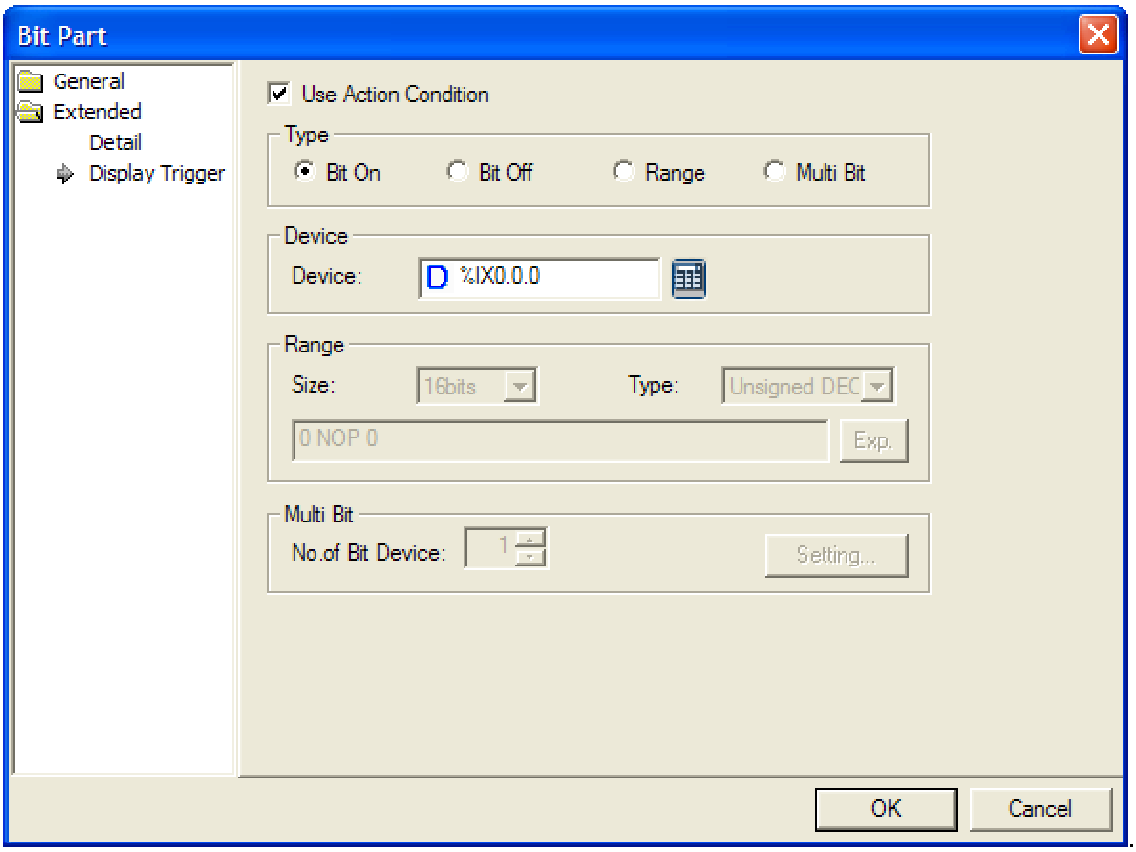
When D100 == 10,

If the condition above is met and it is edited that part screen is displayed on a basic screen to show the operation state of the operation line, it will operate as follows:


D100 != 10
D100 == 10

Not displayed on XGT Panel Screen

Displayed on XGT Panel Screen


Bit Part
General
Extended
Detail
Display Trigger
Type
Bit Off
Range
Multi Bit
Device
Range
Size:
16bits
Type:
Unsigned DEC
0 NOP 0
Exp.
Multi Bit
No.of Bit Device:
1
Setting...
OK
Cancel

☑ Use Action Condition

Type: ● Bit On

Device: %IX0.0.0

Operation types and execution conditions are as follows:

Condition Type	Execution Condition	Operation if the condition is met
Bit On (a)	Displayed only when bit is turned On	The relevant object will be displayed only when the bit device set on the operation condition is turned On. Example. In case of [Bit part], the part screen will be displayed only when the state of bit device %IX0.0.0 is On in the dialog box above.
Bit Off (b)	Displayed only when bit is turned Off	The relevant object will be displayed only when the bit device set on the operation condition is turned Off. Example. In case of [Bit part], the part screen will be displayed only when the state of bit device %IX0.0.0 is Off in the dialog box above.
Range (c)	Displayed only when the Word device range is met	The relevant object will be displayed only when the designated condition statement is met. Example. In case of [Bit part], the part screen will be displayed only when the value of the target device set on the operation condition meets the condition of the set range.
Multi Bit (d)	Displayed depending on the result of logical calculation of the bit devices On/Off state	☞ **Refer to the following [Multi Bit].**

Notice

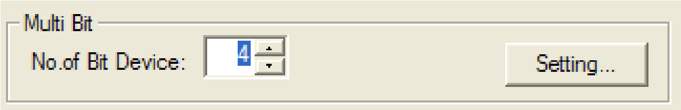
(1) If any change in device size or type is made in the Range, the previous condition statement will be deleted.

(2) The constant on the Range can have the following range depending on its device size and type:

Device Size	Device Type	Minimum Value	Maximum Value
16bit	Signed Decimal	-32768	32767
16bit	Unsigned Decimal	0	65535
16bit	Binary-Coded Decimal(BCD)	0	9999
32bit	Signed Decimal	-2147483648	2147483647
32bit	Unsigned Decimal	0	4294967295
32bit	Binary-Coded Decimal(BCD)	0	99999999

[Multi Bit Detailed Description]

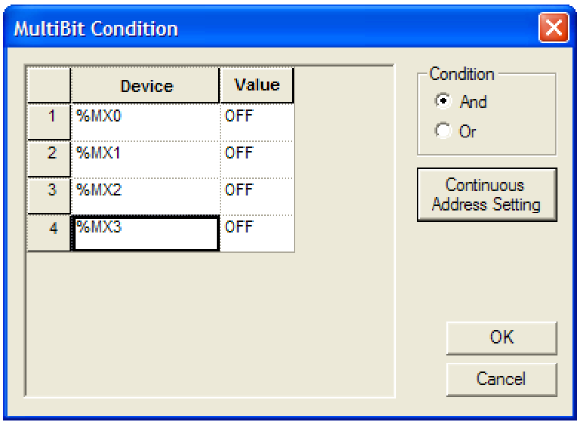
(1) Decide the number of bit after selecting Multi Bit



Multi Bit

No.of Bit Device: 4

(2) If clicking the set button, the [Multi Bit Condition] dialog box appears to allow the user to set devices as many as the number of the bit devices



MultiBit Condition

	Device	Value
1	%MX0	OFF
2	%MX1	OFF
3	%MX2	OFF
4	%MX3	OFF

Condition

● And

○ Or

Item	Description
Device	Set devices that will be subject to multi bit conditions.
Value	Select either On or Off state on which the criteria to meet the conditions of the bit device is based.
Condition	Select a method to meet the conditions. Condition: AND — Those conditions are met only when all of the On/Off Conditions of each bit device are matched. Condition: OR — Those conditions are met when any one of On/Off Conditions of each bit device is matched.
Continuous Address Setting	Automatically set devices as many as the number of the set devices continuously starting from the set device.

Chapter 17 Object

Objects are the items in the display which are displayed differently according to the monitoring data values.

17.1 Lamp Object

17.1.1 Overview

The lamp changes the forms of circles, quadrangles or graphics according to the conditions adjusted to the state of the device connected to the PLC.

17.1.2 Lamp Types

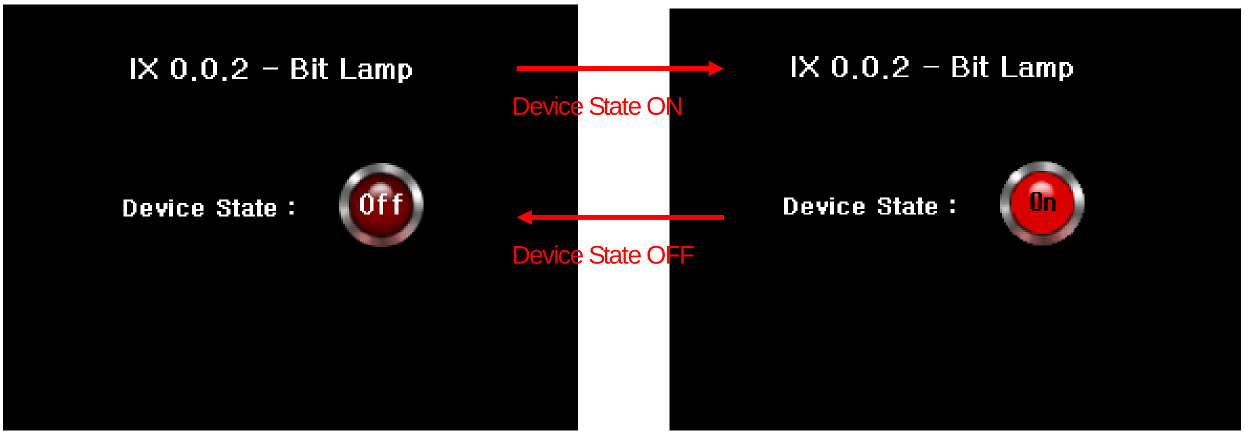
Types	Description
Bit lamp	The lamp has different forms according to On/Off of the relevant device.
Word lamp	The lamp has different forms according to the conditions of the value range of the relevant device.

Note

(1) If not connected to the PLC device, a lamp is not displayed in XGT Panel.
(2) Do not overlay a lamp on another object. It might not be displayed correctly.

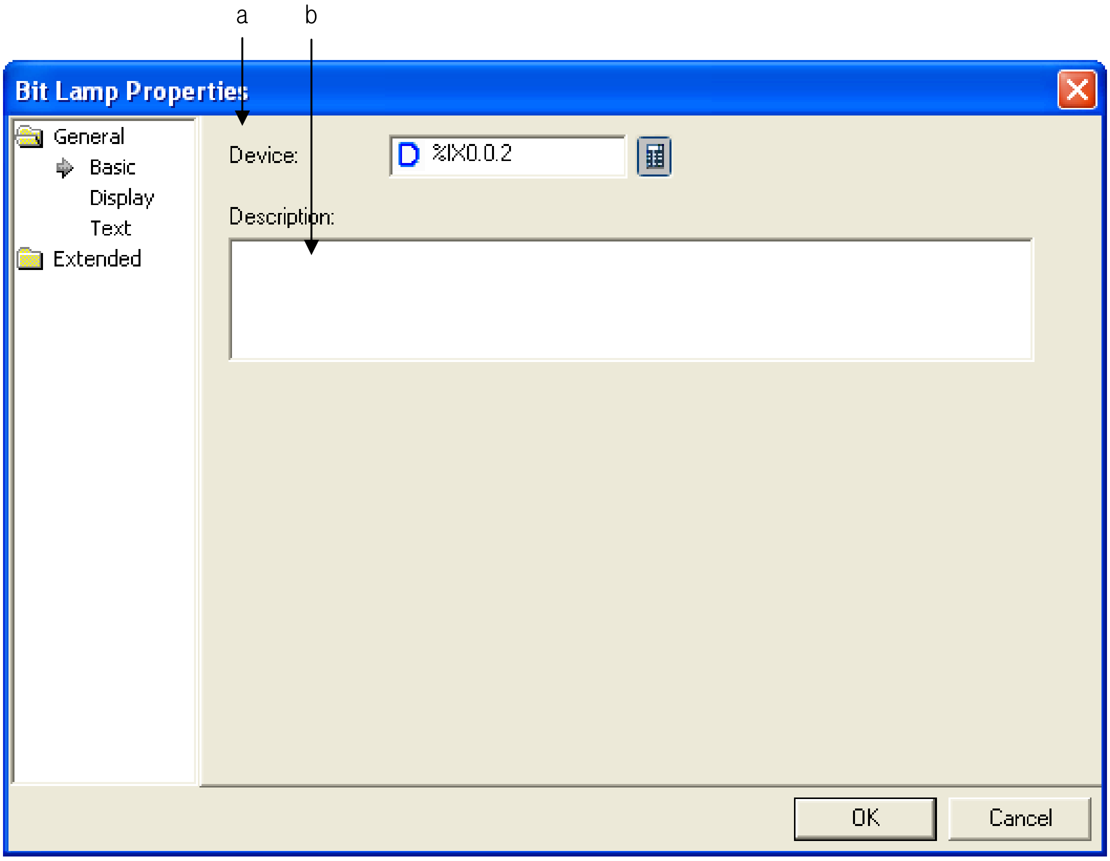
17.1.3 Bit Lamp Setting Items

The form and text of a lamp change according to the state of the relevant device value as follows.



[Method]
(a) Create a bit lamp in the screen.
(b) Set the object device in [Basic] of the bit lamp.
(c) Set the image according to On/Off in [Display] of the bit lamp.
(☞ **See 16.2 Display function Setting)**
(d) Set the texts according to On/Off in [Text] of the bit lamp.
(☞ **See 16.3 Text Setting**)

(1) Basic

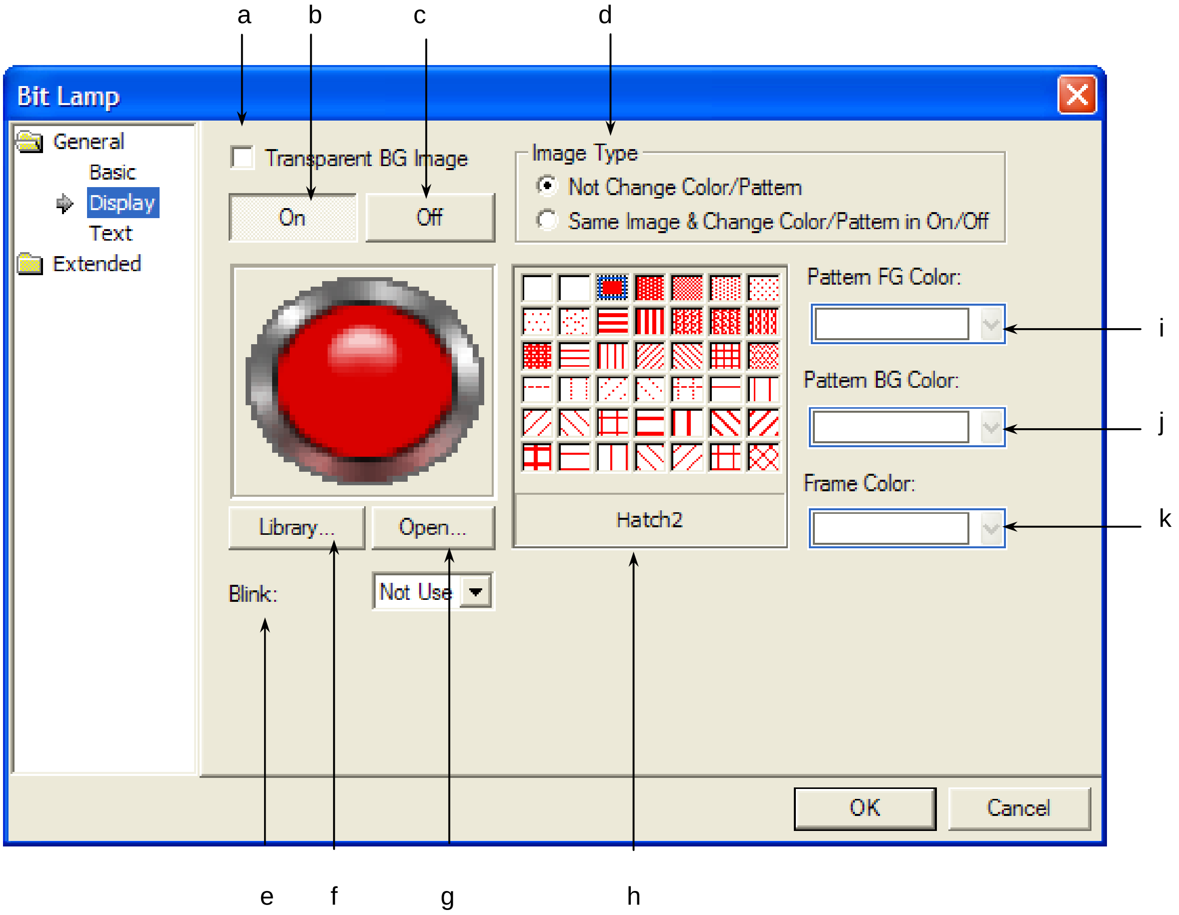

a
b
Bit Lamp Properties
General
Basic
Display
Text
Extended
Device:
%IX0.0.2
Description:
OK
Cancel

Items	Settings
Device (a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Description (b)	Enters description on the relevant object.

(2) Display

The On/Off image, pattern and color are specified for the bit lamp to be displayed.

(☞ **See 16.2 Display function Setting)**

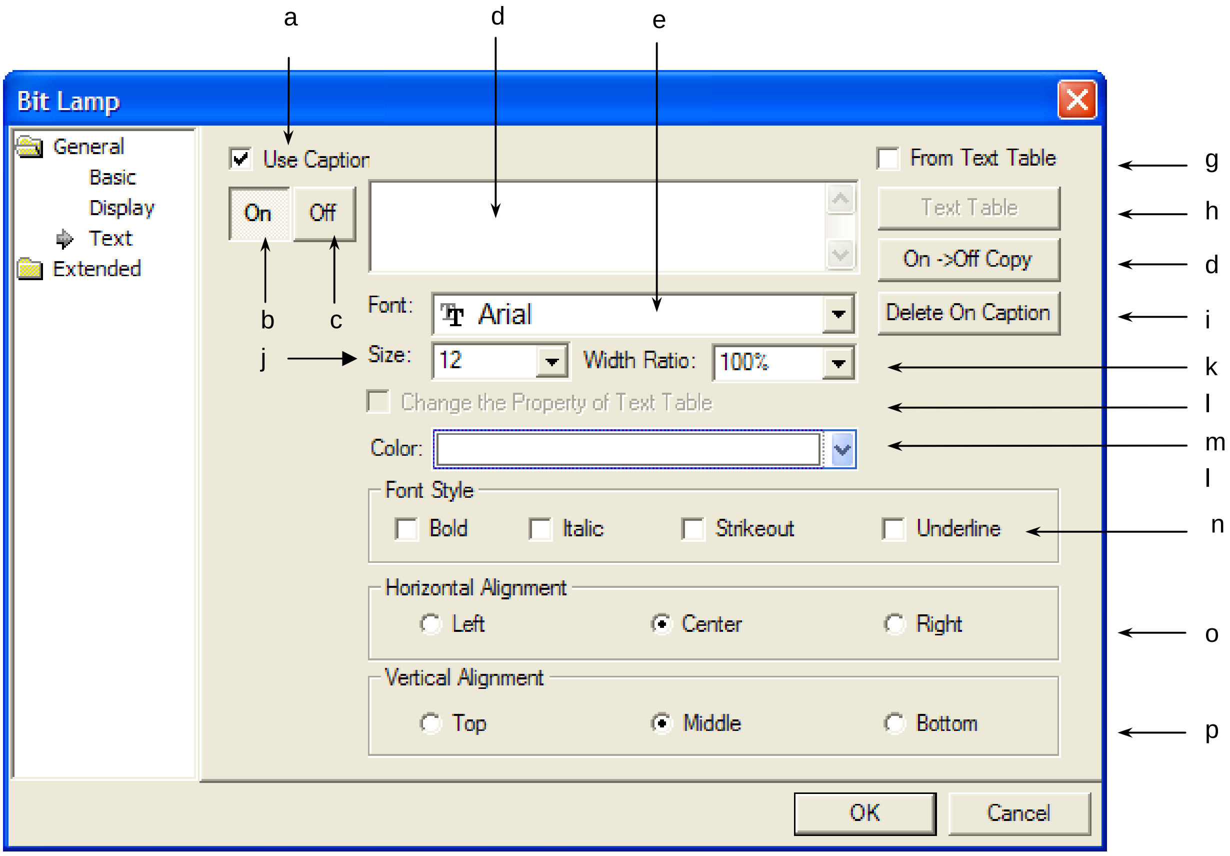

a
b
c
d
Bit Lamp
General
Basic
Display
Text
Extended
☐ Transparent BG Image
On
Off
Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Pattern in On/Off
Pattern FG Color:
Pattern BG Color:
Frame Color:
i
j
k
Hatch2
Library...
Open...
Blink:
Not Use
OK
Cancel
e
f
g
h

Items	Settings
Transparent BG image (a)	Doesn't display the object image, selectable per each ON, OFF status
ON (b)	When selected, sets the properties to be displayed at ON.
OFF (c)	When selected, sets the properties to be displayed at OFF.
Image type (d)	Selects who to display the form of the image. Not Change Color/Pattern: selects different images for On and Off. Same Image & Change Color/Pattern in On/Off: selects the same image for On and Off, but sets different colors and patterns.
Blink (e)	Sets the Blink speed of the image. (Not used, slow, normal and fast)
Library (f)	Selects the form to display in the library.
Open (g)	Directly sets the image from the file.
Pattern (h)	Selects the pattern of a figure.
Pattern FG color (i)	Sets the foreground color of the pattern.
Pattern BG color (j)	Sets the background color of the pattern.
Frame color (k)	Sets the frame color.

(3) Text

This is setting the text to be displayed on the bit lamp object image.

(☞ **See 16.3 Text Setting)**


a
d
e
Bit Lamp
General
Basic
Display
Text
Extended
On
Off
b
c
j
From Text Table
Text Table
On ->Off Copy
Delete On Caption
Change the Property of Text Table
Color:
Font Style
Bold
Italic
Strikeout
Underline
Horizontal Alignment
Left
Center
Right
Vertical Alignment
Top
Middle
Bottom
OK
Cancel
g
h
d
i
k
l
m
l
n
o
p

☑ Use Caption

Font: Arial

Size: 12

Width Ratio: 100%

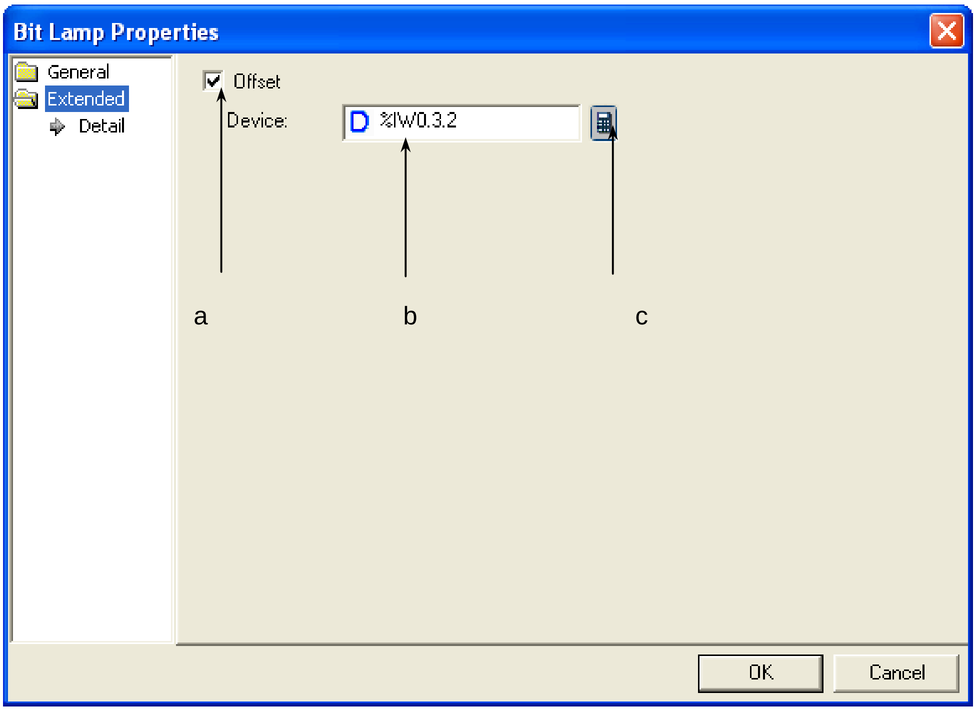
Horizontal Alignment: ● Center

Vertical Alignment: ● Middle

Terms	Settings
Use caption (a)	Decides whether to use text display.
ON (b)	Selects the next function and then sets the text to display when the relevant device turns ON.
OFF (c)	Selects the next function and then sets the text to display when the relevant device turns OFF.
Text entry area (d)	Enters the texts to display. If a text is brought from the text table, you cannot directly enter in the text entry area.
Font (e)	Sets the font type.
From Text Table (g)	This is not directly entering texts, but is set when entered through the previously set text table.
Text Table (h)	Open the text table when selecting a text in the text table. Select a desired text in the text table. The selected text maintains the color and form of the texts set in the text table.
On <-> Off Copy (d)	In case of Off-> On copy, the text and form set as OFF is copied at ON. In case of On->Off copy, the text and form set as ON is copied at OFF.
Delete On caption (i)	Erases the texts which have been set so far.
Size (j)	Sets the text size.
Width Ratio(k)	You can establish character's vertical ratio with a percentage to extend or reduce the character width. The ratio of character width is vertical ratio to character size (j) and the available setting value ranges from 1% to 600%. A user can select the ratio from combo box or input the value directly.

Terms	Settings
Change the property of text table (l)	This is set when you indirectly enter texts (select in the text table) and change the text color and type(Bold, Italic, Strikeout, Underline) set in the text table.
Color (m)	Sets the color of texts.
Font Style (n)	Sets the text form (Bold, Italic, Strikeout, Underline). You can select two or more of them at a time.
Horizontal Alignment (o)	Selects the horizontal location of texts (left, center, right).
Vertical Alignment (p)	Selects the vertical location of texts (top, middle, bottom).

(4) Detail



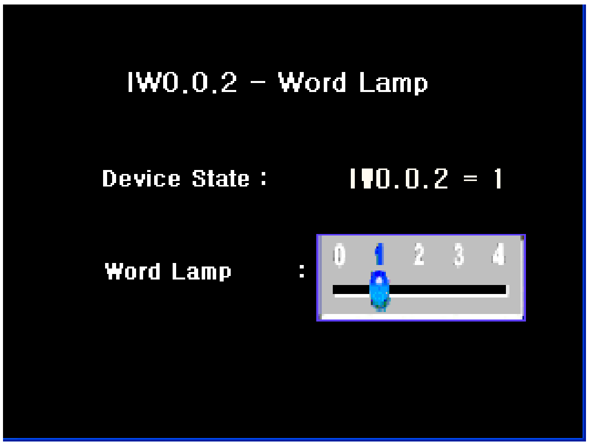
☑ Offset

Device: D %IW0.3.2

Items	Settings
Offset(a)	Set when you use the offset function.
Device(b, c)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

17.1.4 Word Lamp Setting Items

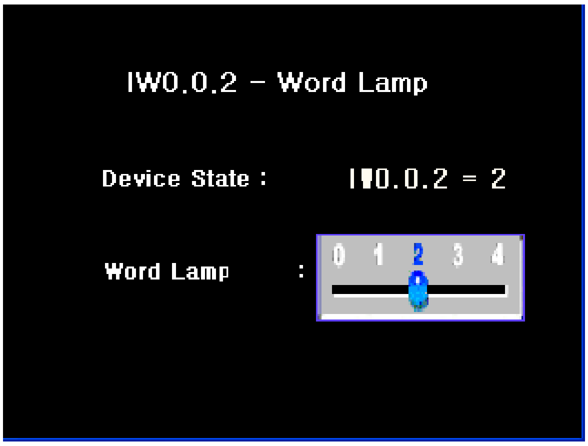
As follows, the lamp shape and text change according to the device value.


IW0.0.2 – Word Lamp

Device State : IW0.0.2 = 1

Word Lamp :

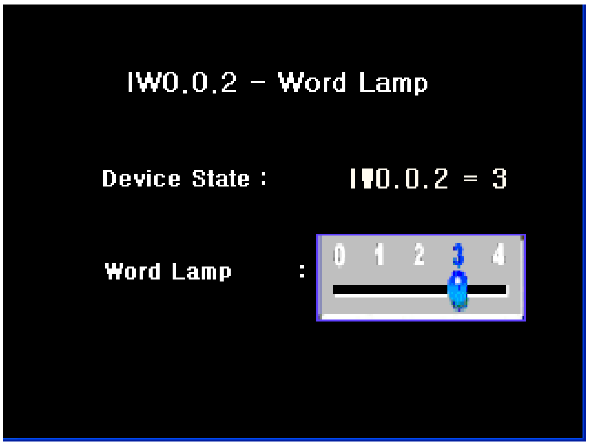
Device IW0.0.2 value is 1


IW0.0.2 – Word Lamp

Device State : IW0.0.2 = 2

Word Lamp :

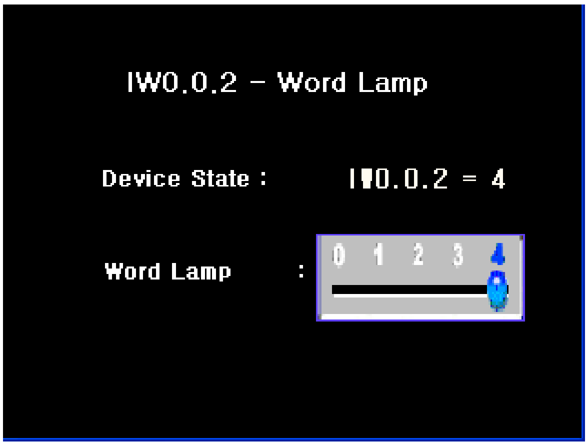
Device IW0.0.2 value is 2


IW0.0.2 – Word Lamp

Device State : IW0.0.2 = 3

Word Lamp :

Device IW0.0.2 value is 3


IW0.0.2 – Word Lamp

Device State : IW0.0.2 = 4

Word Lamp :

Device IW0.0.2 value is 4

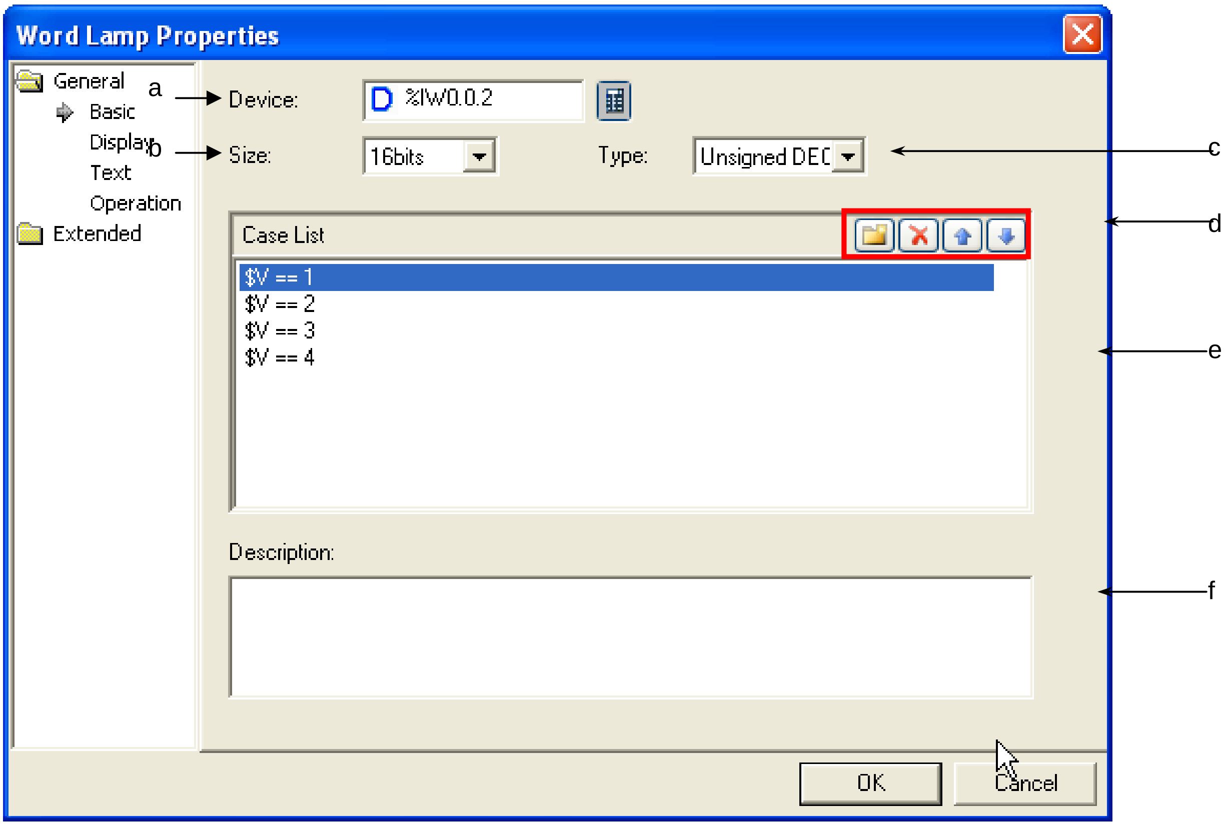
[Method]

(a) Create word lamp in the window.
(b) Set the object device at IW0.0.2 in [Basic] of word lamp.
(c) Make the following four conditional expressions in [Basic] of the word lamp. ($V refers to the object device)

```
$V  == 1
$V  == 2
$V  == 3
$V  == 4
```

(d) Set images corresponding to the default value, case 1, case 2, case 3 and case 4 in [Display] of the word lamp.
(☞ **See 16.2 Display function Setting)**
(e) Set texts corresponding to the default value, case 1, case 2, case 3 and case 4 in [Text] of the word lamp.
(☞ **See 16.3 Text Setting**)

(1) Basic



Device: %IW0.0.2

Size: 16bits

Type: Unsigned DEC

Case List:
$V == 1
$V == 2
$V == 3
$V == 4

Description:

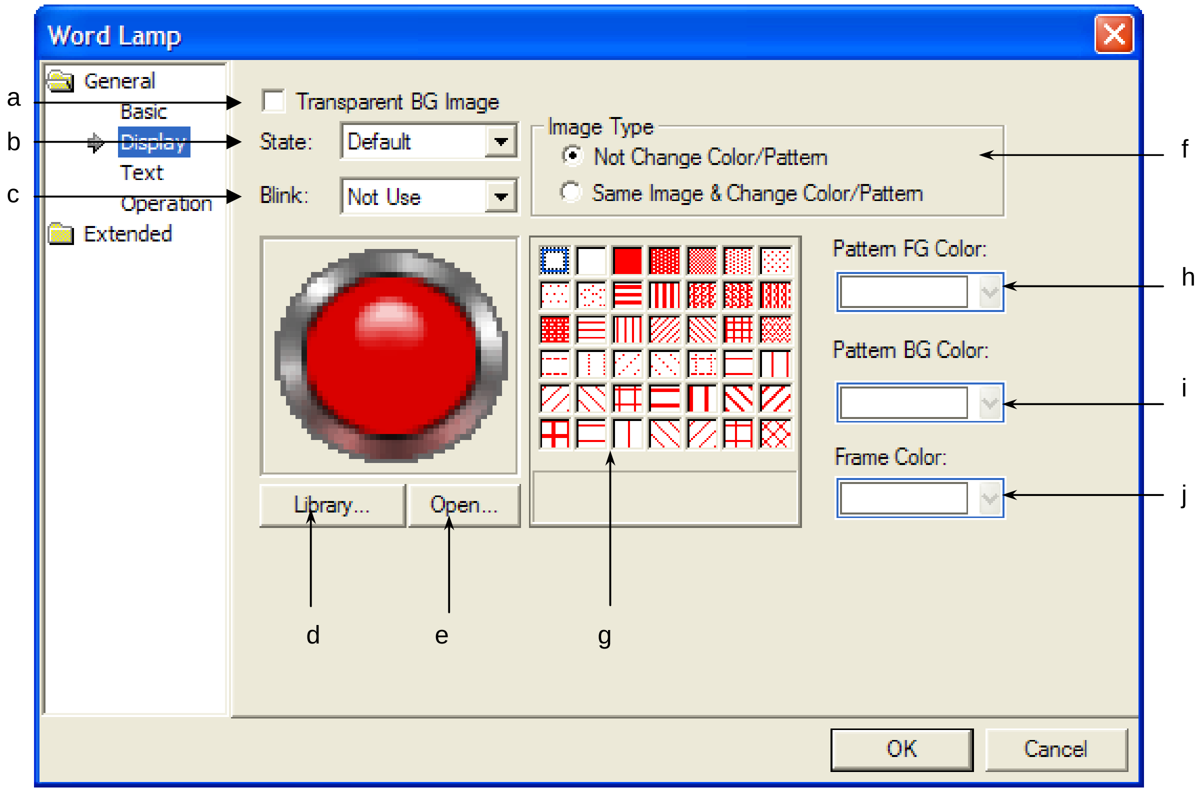
Items	Settings
Device (a)	Sets the device to be referred to in the object. You can either set by using the device button or directly enter it on the keyboard.
Size (b)	Sets the data size of the device (16 bit, 32 bit).
Type (c)	Sets the data form of the device (signed decimal, unsigned decimal, BCD).
Create and delete conditional expression, up and down (d)	Creates the conditional expressions to display the lamp. (☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting**
Case list (e)	Defines the conditions of the state. Up to 8 states can be registered.
Description (f)	Enters description on the relevant object.

Type	Description
Create	Creates a new range condition of the relevant word device value.
Delete	Deletes the range condition of the created word device value.
Up	Shifts the sequence of the range condition of the created word device value upward.
Down	Shifts the sequence of the range condition of the created word device value downward.

(2) Display

Sets the image, pattern and color to display the word lamp when conditions are met.

(☞ **See 16.2 Display function Setting)**


Word Lamp
General
Basic
Display
Text
Operation
Extended
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel
a
b
c
d
e
f
g
h
i
j

☐ Transparent BG Image

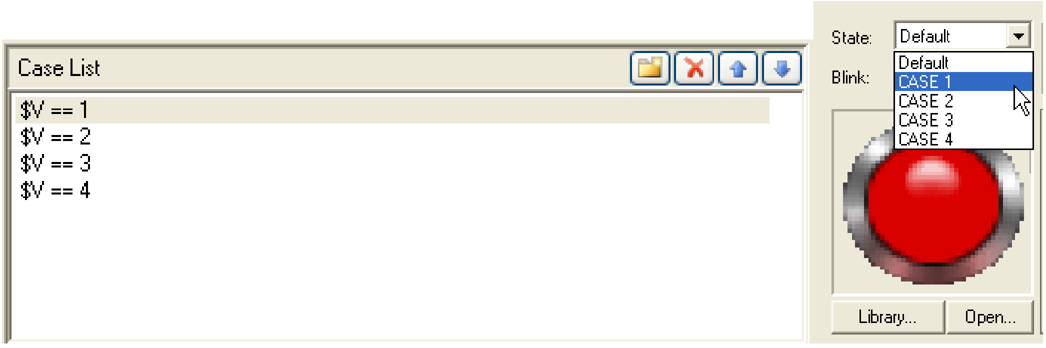
State: Default

Blink: Not Use

Image Type

● Not Change Color/Pattern

○ Same Image & Change Color/Pattern

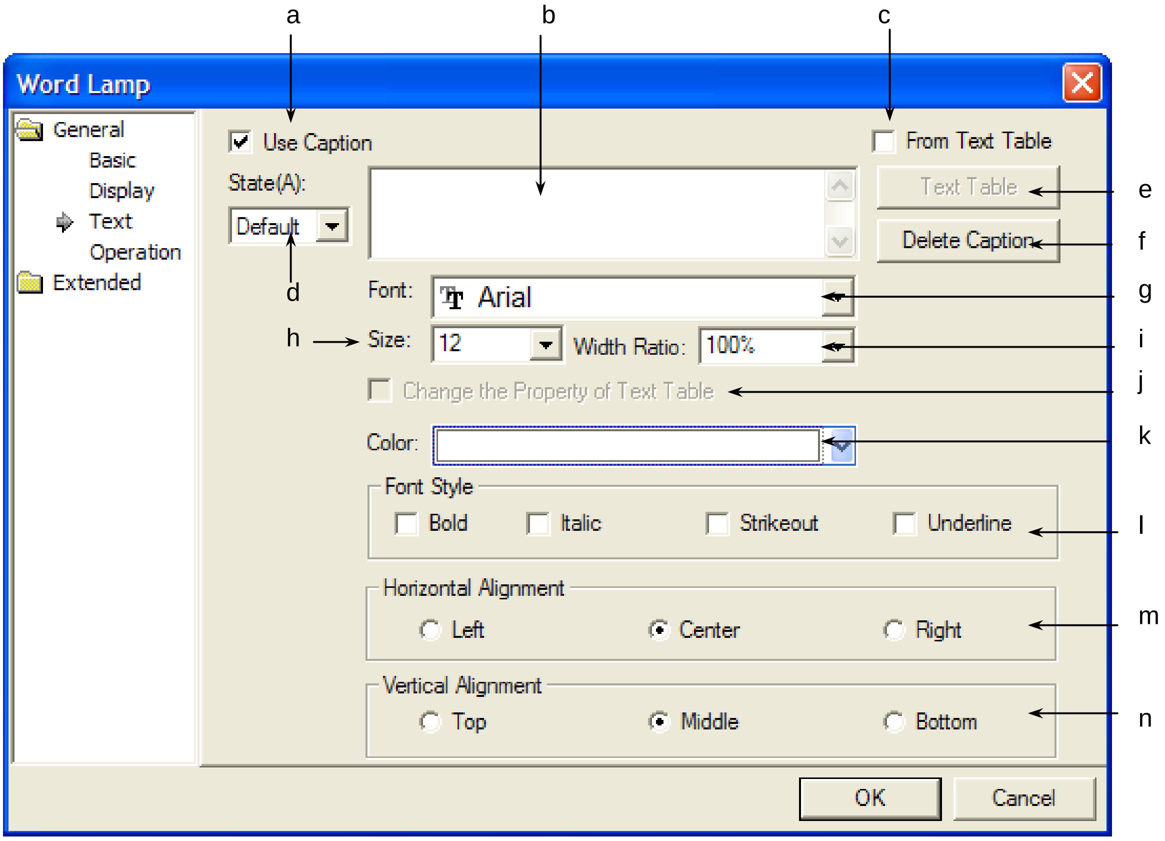
Items	Settings
Transparent BG Image (a)	Doesn't display the object image, selectable per each ON, OFF status
State (b)	Selects each state number and sets the image properties to display when the corresponding condition number is met. The number of state numbers is the number of the conditional sentences set in the basic items including the default value.  Case List $V == 1 $V == 2 $V == 3 $V == 4 State: Default Default CASE 1 CASE 2 CASE 3 CASE 4 Blink: Library... Open... The image to display when the conditional sentence set in the [Basic] is met is set. The default value is displayed when the conditional sentence set in the [Basic] is not met.
Blink (c)	Sets the Blink speed of the image (Not used, slow, normal, fast).

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Library (d)</td><td>The shape to be displayed according to the state of the relevant device is selected in the library.
(☞ See 16.2 Display function Setting)</td></tr>
<tr><td>Open (e)</td><td>The user selects directly the image file in addition to the image specified in the XP-Builder system. If a bitmap file, JPEG or GIF file is used as the image of the switch or lamp, press the [Open] (Open...) button to invoke a dialog box for registering images.
(☞ See 16.2 Display function Setting)</td></tr>
<tr><td>Image type (f)</td><td>Selects in which type to display the image.
(☞ See 16.2 Display function Setting)
<table>
<tr><th>Image Type</th><th>Description</th></tr>
<tr><td>Not Change Color/Pattern</td><td>1. You can select On and Off images in the raster, vector or user image list.
2. You can select an image by clicking on [Open] (Open...).
3. You can select a different image for On and Off respectively.
4. You cannot apply a pattern to the image.</td></tr>
<tr><td>Same Image & Change Color/Pattern</td><td>1. You can select On and Off images in the vector image list(not the raster and user image list).
2. You cannot select an image by clicking on [Open] (Open...).
3. You can select only one image for On and Off.
4. You can apply a pattern to set On and Off images differently.</td></tr>
</table></td></tr>
<tr><td>Pattern (g)</td><td>Selects the pattern of the figure.
(☞ See 16.2 Display function Setting)</td></tr>
<tr><td>Pattern FG color (h)</td><td>Sets the foreground color of the pattern.
((☞ See 16.2 Display function Setting)</td></tr>
<tr><td>Pattern BG color (i)</td><td>Sets the background of the pattern.
(☞ See 16.2 Display function Setting)</td></tr>
<tr><td>Frame color (j)</td><td>Sets the frame color.
(☞ See 16.2 Display function Setting)</td></tr>
</table>

(3) Text

This is selecting the text to be displayed on the bit lamp object image.

(☞ **See 16.3 Text Setting)**


a
b
c
Word Lamp
General
Basic
Display
Text
Operation
Extended
Use Caption
From Text Table
State(A):
Default
Text Table
e
Delete Caption
f
d
Font:
Arial
g
h
Size:
12
Width Ratio:
100%
i
Change the Property of Text Table
j
Color:
k
Font Style
Bold
Italic
Strikeout
Underline
l
Horizontal Alignment
Left
Center
Right
m
Vertical Alignment
Top
Middle
Bottom
n
OK
Cancel

☑ Use Caption

☐ From Text Table

State(A): Default

Font: Arial

Size: 12

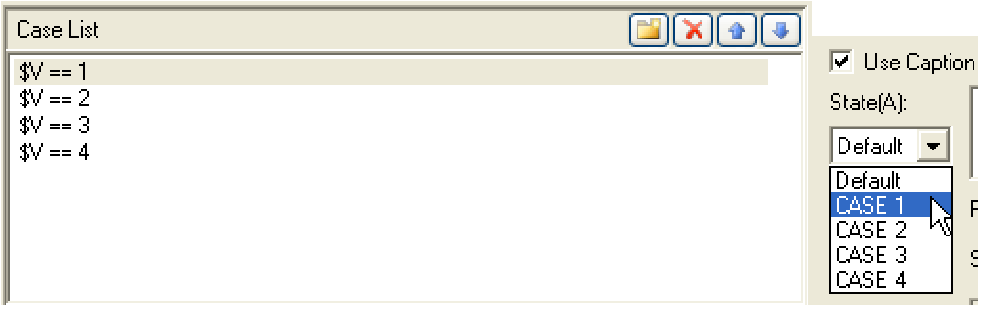
Width Ratio: 100%

☐ Change the Property of Text Table

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

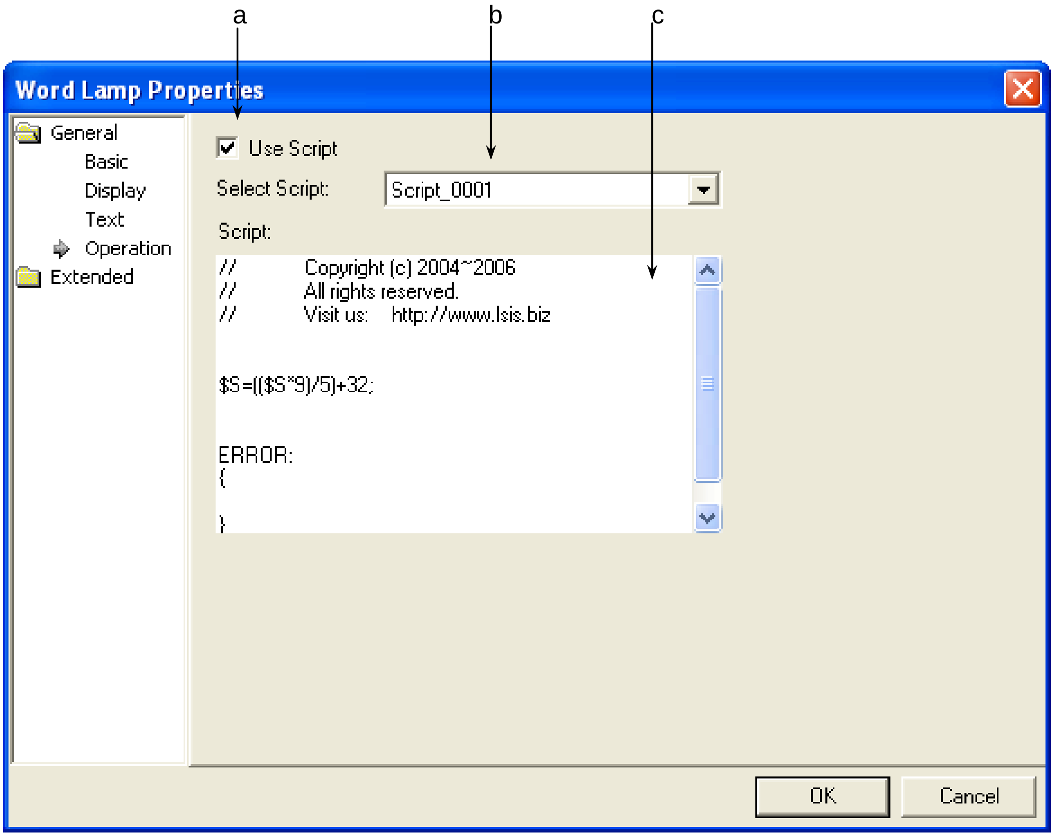
Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

Items	Settings
Use caption (a)	Decides whether to use text display.
Text entry box (b)	Enters the text to display. If a text is brought from the text table, you cannot directly enter in the text entry box.
From text table (c)	This is selected when you select and enter a text in the text table instead of directly entering it.
State (d)	Selects each state number and then sets the text properties to display when the corresponding condition number is met. The number of state numbers is that of the conditional sentences set in the basic item including the default value.  Case List $V == 1 $V == 2 $V == 3 $V == 4 Use Caption State(A): Default Default CASE 1 CASE 2 CASE 3 CASE 4
Text table (e)	Opens the text table when selecting a text in the text table. You can choose a desired text in the text table. The selected text maintains the color and form of the text set in the text table.

Items	Settings
	The text set in each state should be selected in the same text table and if it is selected in a different text table, the last selected text table is specified.
Delete caption (f)	Deletes all the set captions.
Font (g)	Sets the font type.
Size (h)	Sets the size of texts.
Width Ratio(k)	You can establish character's vertical ratio with a percentage to extend or reduce the character width. The ratio of character width is vertical ratio to character size (j) and the available setting value ranges from 1% to 600%. A user can select the ratio from combo box or input the value directly.
Change the property of text table (j)	This is set when you indirectly enter texts (select in the text table) and change the text color and form (Bold, Italic, Strikeout, Underline) set in the text table.
Color (k)	Sets the color of texts.
Font Style (l)	Sets the text types (Bold, Italic, Strikeout, Underline). You can select two or more of them at a time.
Horizontal alignment (m)	Sets the horizontal position of character
Vertical alignment (n)	Sets the vertical position of character

(4) Operation



☑ Use Script

Select Script: Script_0001

Script:

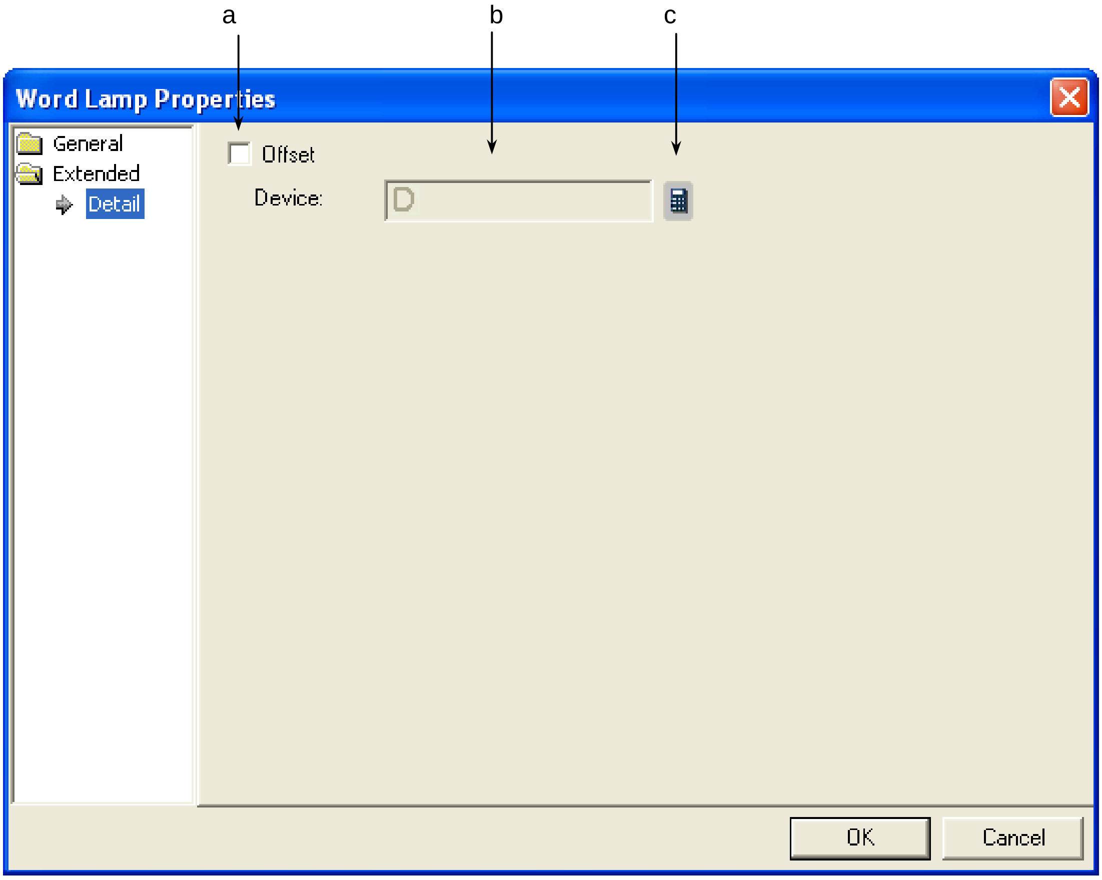
```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:     http://www.lsis.biz


$S=(($S*9)/5)+32;


ERROR:
{

}
```

Items	Settings
Use script (a)	Select this when you want to use script.
Select script (b)	The list of all the scripts inserted and edited in the project window is displayed in the combo box. Select the script for the word lamp to operate in the combo box.
Script contents (c)	The contents of the selected script are displayed.

Note

(1) If you delete a selected script, an error occurs in data check.

(5) Extended Setting


a
b
c
Word Lamp Properties
General
Extended
Detail
Offset
Device:
D
OK
Cancel

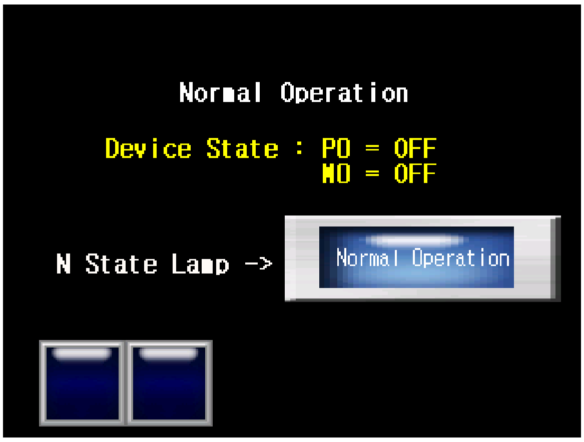
Items	Settings
Offset (a)	Set the offset device when you use the offset function.
Device (b, c)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

17.1.5 Items to establish N-Phase Lamp

In the case of bit lamp object, the shape of lamp and character are changed depending on one PLC Device status. On the other hand, in the case of N-Phase Device lamp, the shape of lamp and character are changed depending on the max. 5pcs PLC device status as below.
Ex.) Monitoring Device (Bit Device) : P0000, M0000

Priority	Status No.	Bit Device Status	Image color	Displayed Character	깜빡임 상태
High	Status 0	P0000 : OFF M0000 : OFF	Blue	Normal Operation	No
↓	Status 1	P0000 : ON M0000 : OFF	Red	Stop	Fast
	Status 2	P0000 : OFF M0000 : ON	Yellow	Caution	Slow
Low	Status 3	P0000 : ON M0000 : ON	Purple	Alarm	Normal

Status 0

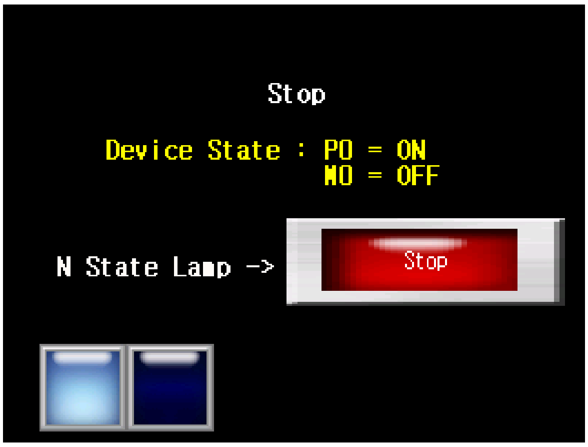


Normal Operation

Device State : P0 = OFF
M0 = OFF

N State Lamp ->

Status1

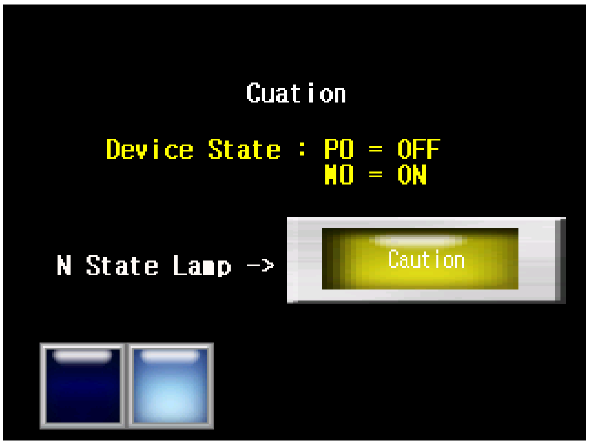


Stop

Device State : P0 = ON
M0 = OFF

N State Lamp ->

Status 2

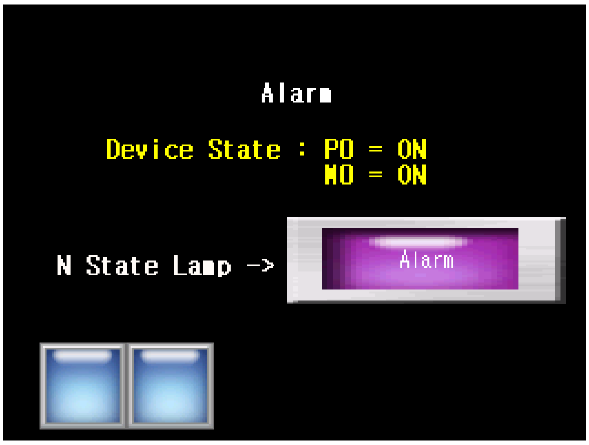


Cuation

Device State : P0 = OFF
M0 = ON

N State Lamp ->

Status 3



Alarm

Device State : P0 = ON
M0 = ON

N State Lamp ->

[Methods]

(a) Create N-Phase Lamp at the screen.

(b) Establish 4 statuses at N-Phase Lamp's [Basic Items]

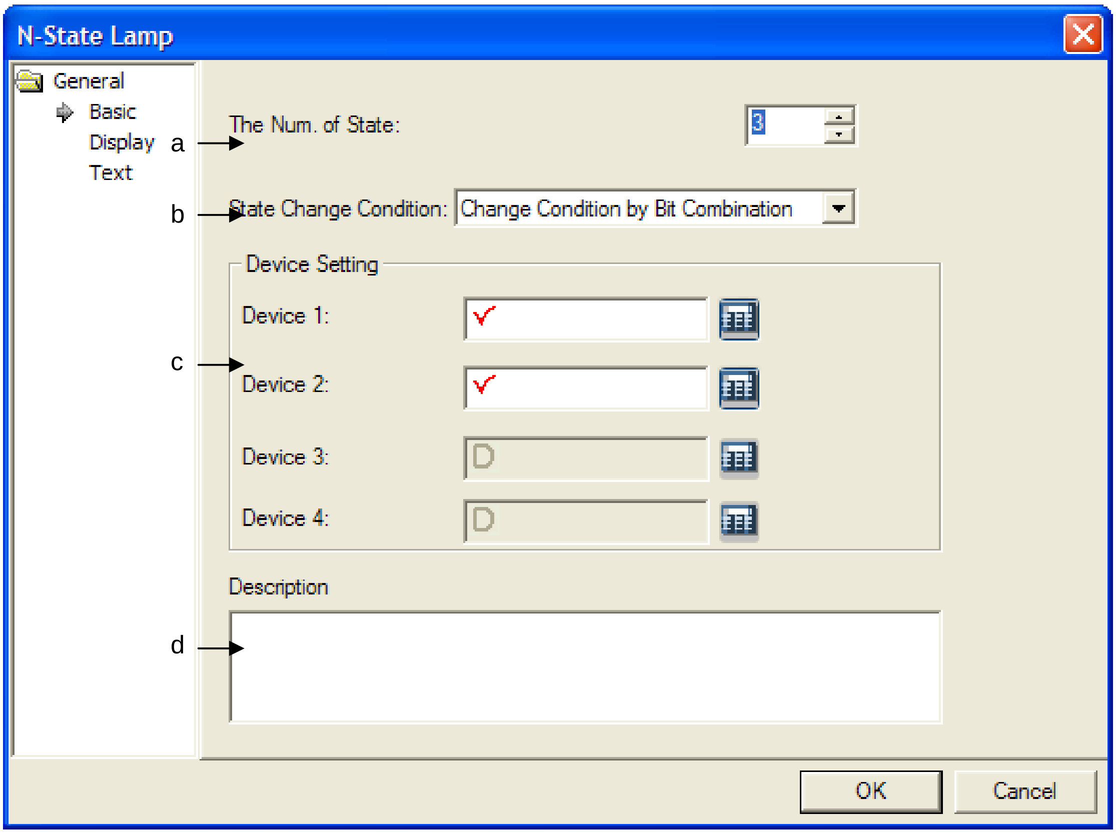
(c) Designate the method to change status as [Status Change by bit combination] at N-Phase Lamp's [Basic Items].

(d) Set Device 1 as P0000, Device 2 as M0000 at N-Phase Lamp's [Basic Items]

(d) Set the appropriate image for Default value, Condition 0, Condition 1, Condition 2, Condition 3 at N-Phase Lamp's [Display Items]. (☞ Refer to 3.2 Display Functions Setting.)

(e) Set the appropriate image for Default value, Condition 0, Condition 1, Condition 2, Condition 3 at N-Phase Lamp's [Display Items]. (☞ Refer to 3.3 Character Setting.)

(1) Basic Items



The Num. of State: 3

State Change Condition: Change Condition by Bit Combination

Device Setting

Device 1:

Device 2:

Device 3: D

Device 4: D

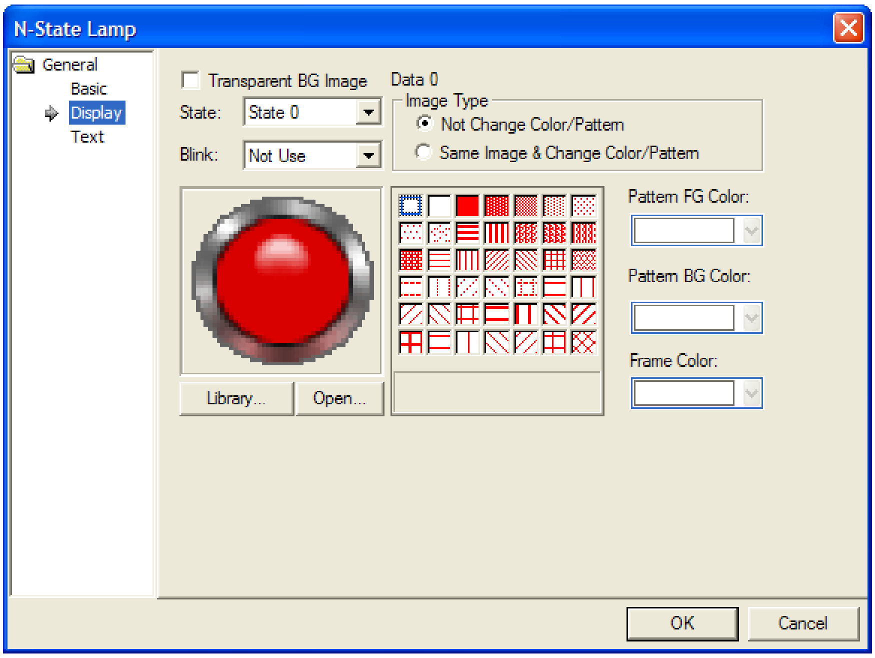
Description

Item	Description
The number of statuses (a)	Setting the number of statuses to be displayed for the object. They can be established from min. 3 to max. 16.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Method to change status (b)</td><td>You can set the method to change device status.
The description to change device status with the number of devices statuses are as below.
<table>
<tr><th>Method</th><th>The max. number of statuses</th><th>Operation and the change of status</th></tr>
<tr><td>By Bit</td><td>5 EA</td><td>It respectively displays On, Off status with one lamp, using PLC's bit device up to 4EA.
Ex. When setting the bit device for P0, P1, P2, P3, each status is as below.
<table>
<tr><th>Status</th><th>P0</th><th>P1</th><th>P2</th><th>P3</th><th>Display (Ex.)</th></tr>
<tr><td>Status 1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>🔴</td></tr>
<tr><td>Status 2</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>🟡</td></tr>
<tr><td>Status 3</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>🔵</td></tr>
<tr><td>Status 4</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>🟢</td></tr>
<tr><td>Status 5</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>🟣</td></tr>
</table></td></tr>
<tr><td>By Bit combination</td><td>16 EA</td><td>It respectively displays On, Off status combining each bot device address status with one lamp, using PLC's bit device up to 4EA.
Ex. When setting the bit device for P0, P1, P2, P3, each status is as below.
<table>
<tr><th>Status</th><th>P0</th><th>P1</th><th>P2</th><th>P3</th><th>Display (Ex.)</th></tr>
<tr><td>Status 1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>🔴</td></tr>
<tr><td>Status 2</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>🟡</td></tr>
<tr><td>Status 3</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>🔵</td></tr>
<tr><td>Status 4</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>🟢</td></tr>
<tr><td>Status 5</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>🟣</td></tr>
<tr><td>⋮</td><td>⋮</td><td>⋮</td><td>⋮</td><td>⋮</td><td>⋮</td></tr>
</table></td></tr>
</table></td></tr>
<tr><td>Device (c)</td><td>You can set the device to be referred for the object via device button or keyboard input. Between 2 and 4 devices are available and device setting is different depending on the methods to change status with the number of statuses. (☞Refer to the number of statuses, methods to change status)</td></tr>
<tr><td>Explanation(d)</td><td>You can input explanation for the object.</td></tr>
</table>

(2) Display mode

You can select the image, pattern based on device status. Setting color and pattern details can be different depending on image format.


N-State Lamp

☐ Transparent BG Image

State: State 0

Blink: Not Use

Data 0

Image Type

● Not Change Color/Pattern

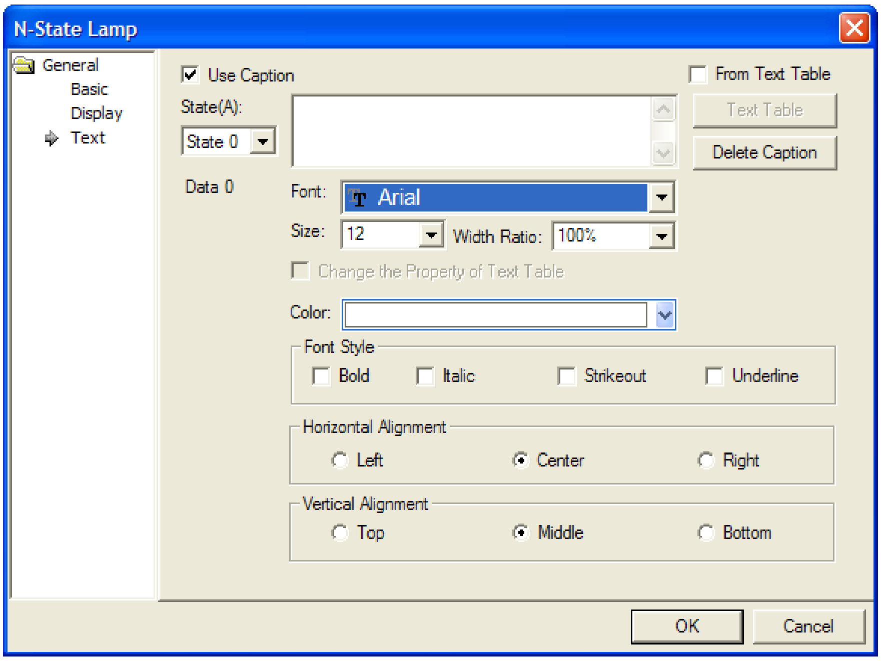
○ Same Image & Change Color/Pattern

General
Basic
Display
Text
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

(☞ Refer to 17.1.4 [Display Setting]of Word Lamp.)

(3) Displaying Character

You can establish character displayed depending on PLC’s internal device status.


N-State Lamp

☑ Use Caption

☐ From Text Table

State(A): State 0

Data 0

Font: Arial

Size: 12

Width Ratio: 100%

☐ Change the Property of Text Table

Color:

Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

○ Left ● Center ○ Right

Vertical Alignment

○ Top ● Middle ○ Bottom

General
Basic
Display
Text
Text Table
Delete Caption
OK
Cancel

(☞ 17.1.4. Refer to 17.1.4 [Character Setting] of Word Lamp.)

17.2 Switch Object

17.2.1 Overview

The switch executes one or more functions by touching the screen and provides different functions by type.

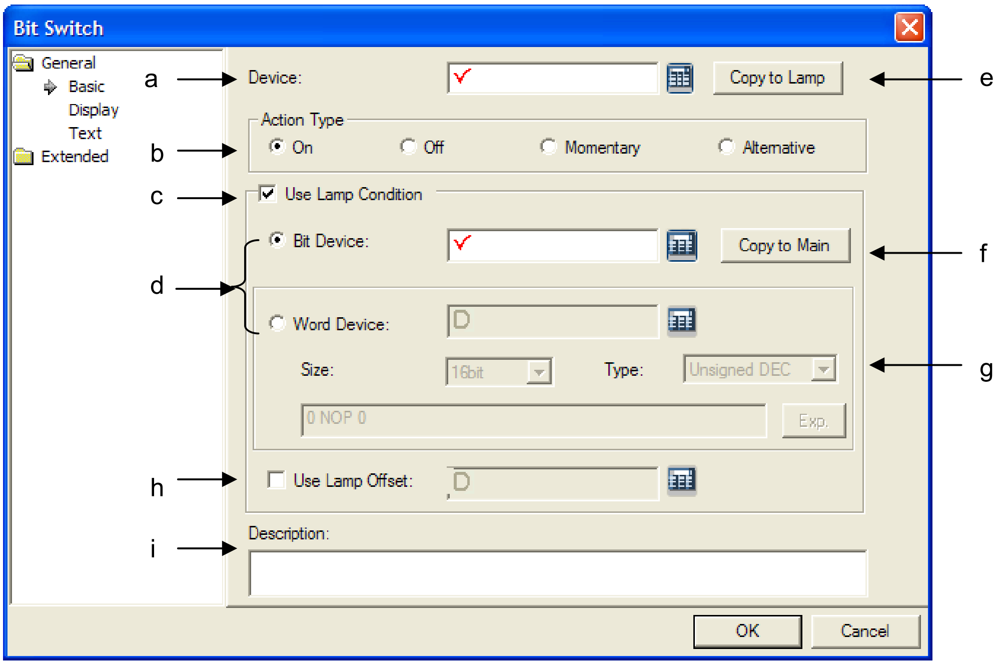
17.2.2 Switch Types

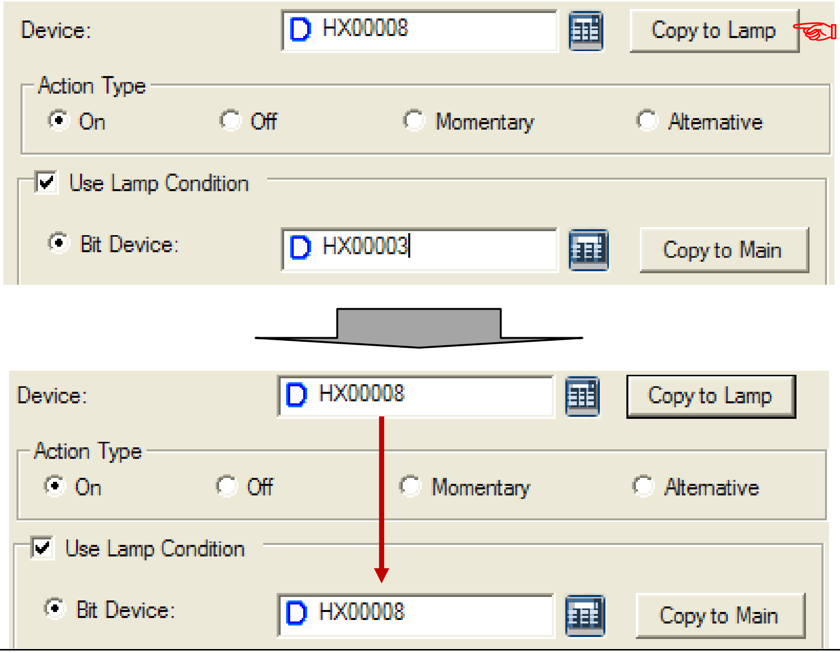
Types	Description
Bit switch	The switch controlling On/Off of the relevant bit address.
Word switch	Executes the script, enters a fixed value, adds or reduces the value.
Changes Screen Switch	This switch is for switching the window. You can set the window screen, base screen and previous window and so on.
Special switch	This switch is for carrying out the key code, alarm, logging-related actions, printing, language switching, script operation and other storage-related actions.
Multi switch	A switch for setting all functions and carrying multiple functions.

A switch does not carry out any operation or action other than those above.

17.2.3 Bit Switch Setting Items

(1) Basic


Bit Switch
General
Basic
Display
Text
Extended
a
b
c
d
h
i
e
f
g
Device:
Copy to Lamp
Action Type
● On
○ Off
○ Momentary
○ Alternative
☑ Use Lamp Condition
● Bit Device:
Copy to Main
○ Word Device:
D
Size:
16bit
Type:
Unsigned DEC
0 NOP 0
Exp.
☐ Use Lamp Offset:
D
Description:
OK
Cancel

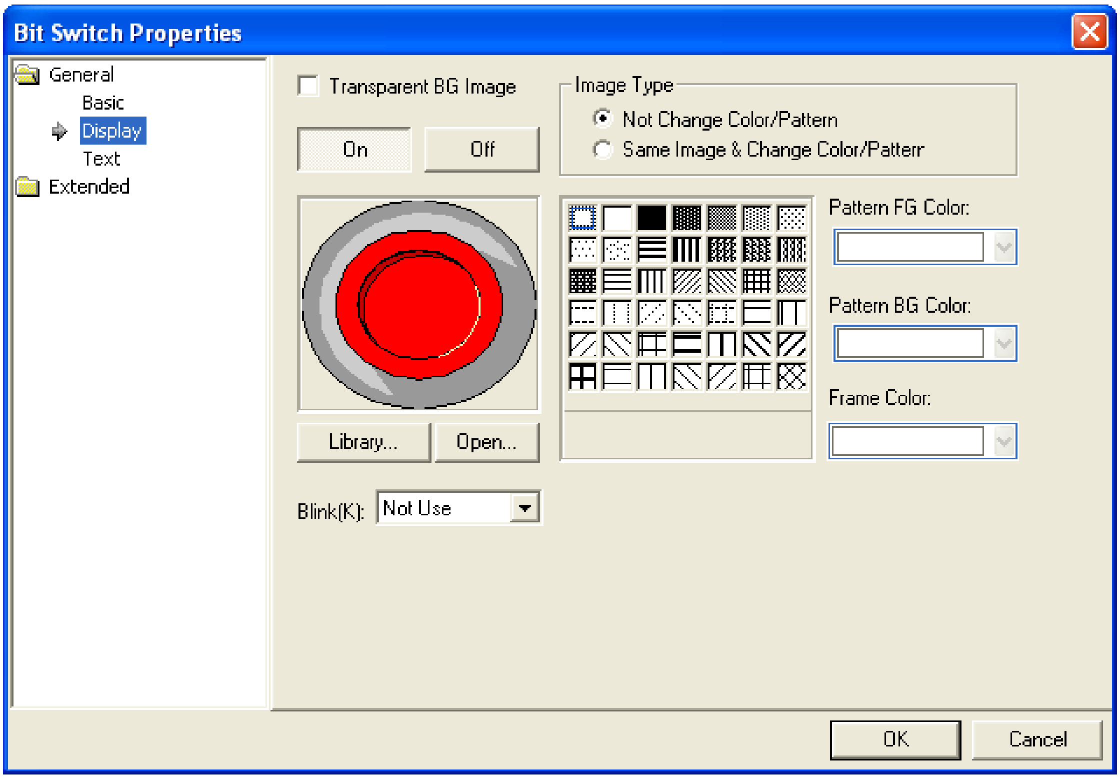
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Device(a)</td><td>Sets the device to be referred to in the relevant object.
You can set it by using the device button or directly enter it on the keyboard.</td></tr>
<tr><td>Action Type(b)</td><td>Sets which operation to carry out for the relevant bit device when you touch the switch.
<table>
<tr><th>Operation</th><th>Description</th></tr>
<tr><td>On</td><td>Turns ON the relevant bit device value in the PLC when you touch the switch. The state is preserved.</td></tr>
<tr><td>Off</td><td>Turns OFF the relevant bit device value in the PLC when you touch the switch. The state is preserved.</td></tr>
<tr><td>Momentary</td><td>Turns ON the relevant bit device value in the PLC only when you are touching the switch. Otherwise it turns OFF.</td></tr>
<tr><td>Alternative</td><td>Switches the relevant bit device value ON/OFF when you touch the switch.
If the object device is ON or OFF before you press the switching switch, it switches to OFF or ON respectively.</td></tr>
</table>
</td></tr>
<tr><td>Use Lamp Conditions (c)</td><td>If you try to control a lamp with other method not turning it On when switch is touched at XGT Panel, you can select the function.</td></tr>
<tr><td>Mode(d)</td><td>Selecting the conditions for a lamp control.
Bit: If the set device bit is On, a lamp will be On.
Word: If the set device value is proper for setting conditions, a lamp will be On.</td></tr>
<tr><td>Copy to lamp (e)</td><td>The basic device address of bit switch is copied to lamp conditions' bit device address.

Device: HX00008 [Copy to Lamp]
Action Type: ● On ○ Off ○ Momentary ○ Alternative
☑ Use Lamp Condition
● Bit Device: HX00003 [Copy to Main]

Device: HX00008 [Copy to Lamp]
Action Type: ● On ○ Off ○ Momentary ○ Alternative
☑ Use Lamp Condition
● Bit Device: HX00008 [Copy to Main]
</td></tr>
<tr><td>Copy to main (f)</td><td>Lamp conditions' bit device address is copied to the basic device of bit switch.</td></tr>
<tr><td>Bit word device, size, shape, expression(g)</td><td>When lamp form is bit, set the device to be referred at the object.
When lamp form is word, set the size, kinds of devices with the conditions for On mode.
Size: 16 bits, 32 bits
Type: Decimal number with sign, Decimal number without sign, BCD</td></tr>
</table>

Items	Settings
	Device: The device to be referred at lamp conditions Expression: The condition for displaying On is designated as conditional expression.
Using lamp offset (h)	Setting offset device for bit or word device established by lamp conditions.
Description (i)	Inputs description of object.

(2) Display

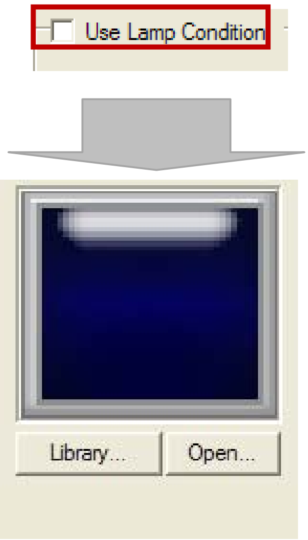
This is selecting the color (On color, Off color), image (On image, Off image) and pattern (On pattern, Off pattern) according to the device state. The settings of the color and pattern vary according to the image type setting.

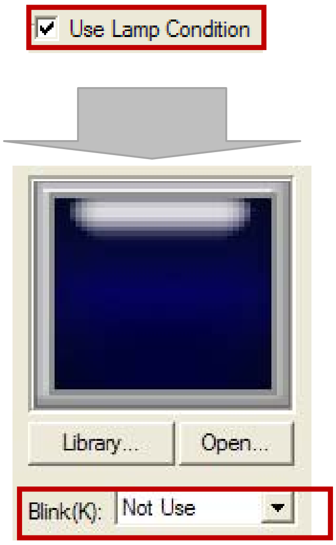

Bit Switch Properties
General
Basic
Display
Text
Extended
☐ Transparent BG Image
On
Off
Library...
Open...
Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Patterr
Pattern FG Color:
Pattern BG Color:
Frame Color:
Blink(K): Not Use
OK
Cancel

(☞ See 16.2 Display function Setting)

Note

In case of using [General]-[Basic]-[Use Lamp Condition] ☑ Use Lamp Condition , you can set the blink at the [Display].

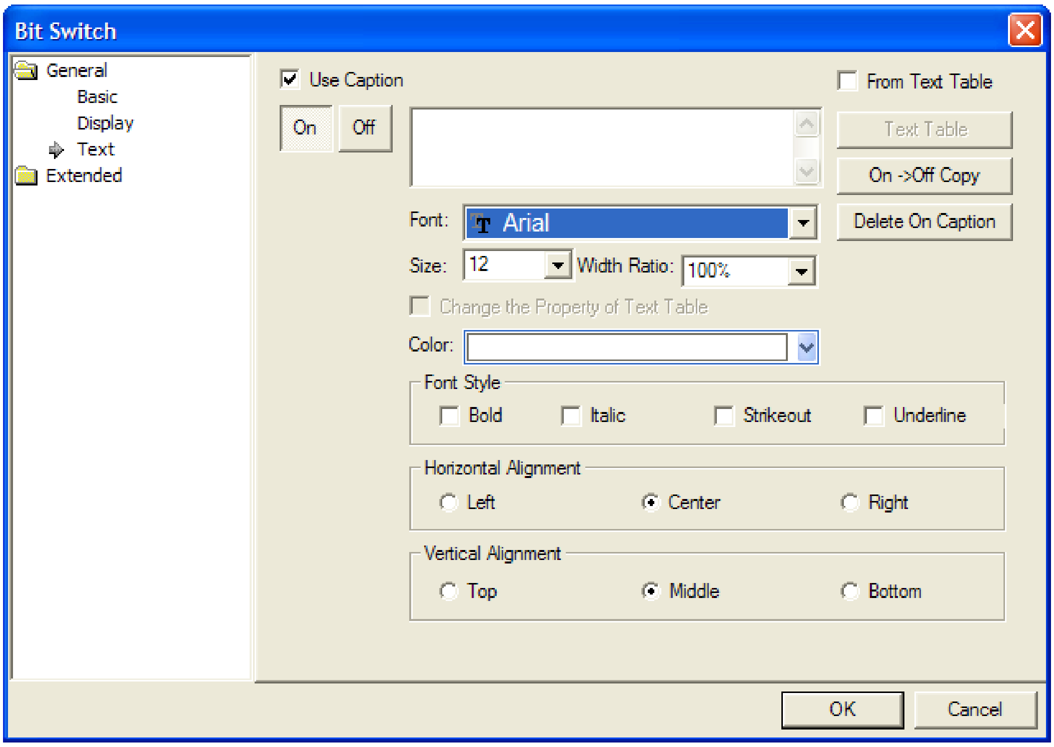

☐ Use Lamp Condition
Library...
Open...


☑ Use Lamp Condition
Library...
Open...

Blink(K): Not Use

(3) Text

This is setting the text according to the state of the device connected to the PLC on the object.



Bit Switch

- General
  - Basic
  - Display
  - Text
- Extended

☑ Use Caption

☐ From Text Table

On | Off

Text Table

On ->Off Copy

Delete On Caption

Font: Arial

Size: 12

Width Ratio: 100%

☐ Change the Property of Text Table

Color:

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

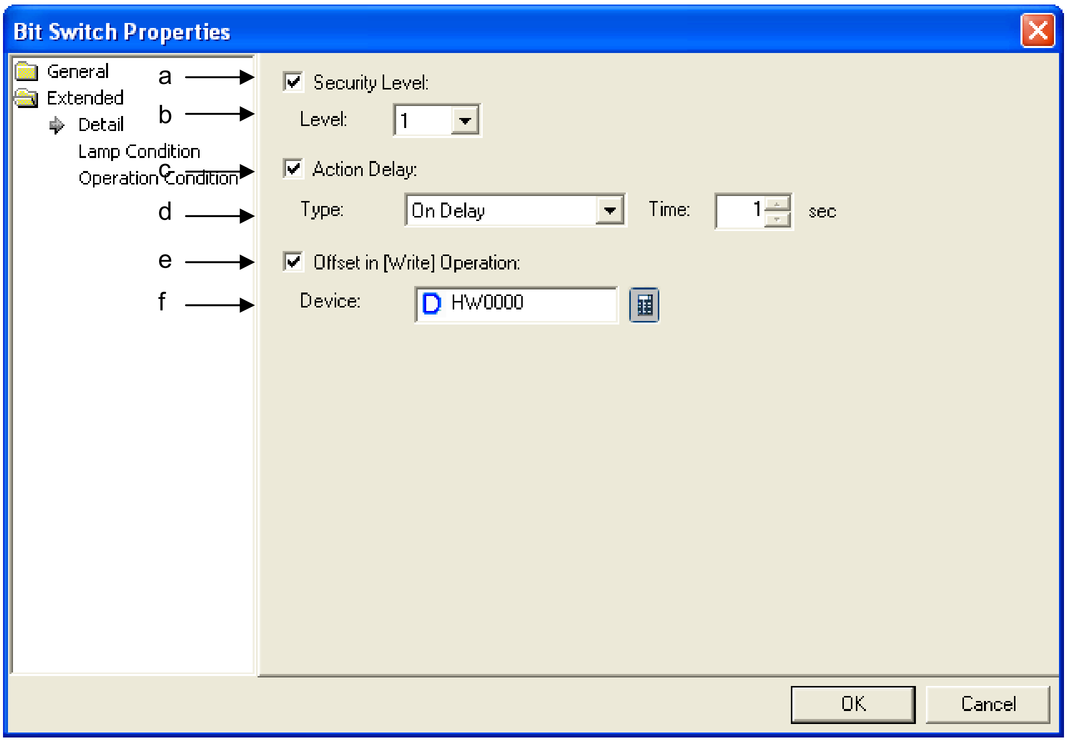
Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

OK | Cancel

(☞ **See 16.3 Text Setting**)

(4) Detail



Bit Switch Properties

- General
- Extended
  - Detail
  - Lamp Condition
  - Operation Condition

☑ Security Level:

Level: 1

☑ Action Delay:

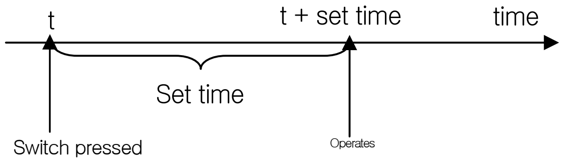
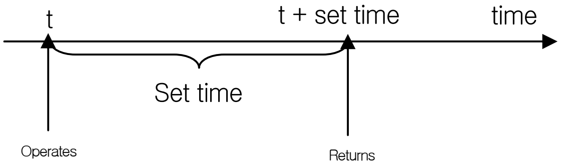
Type: On Delay

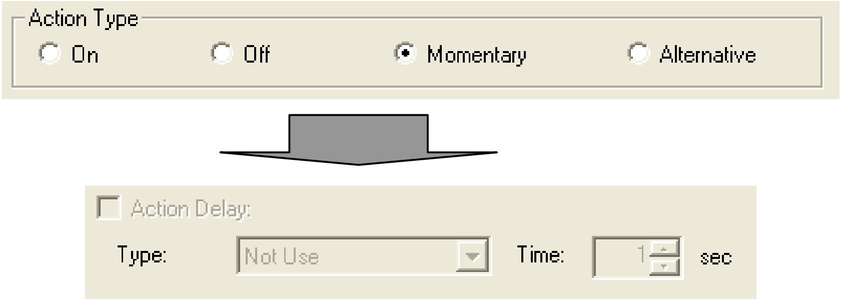
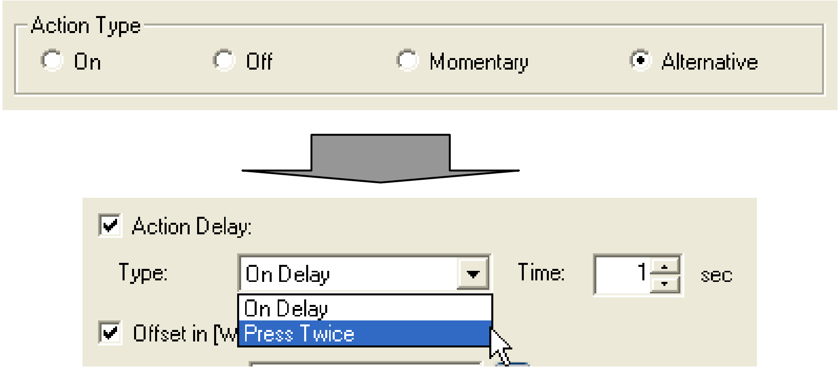
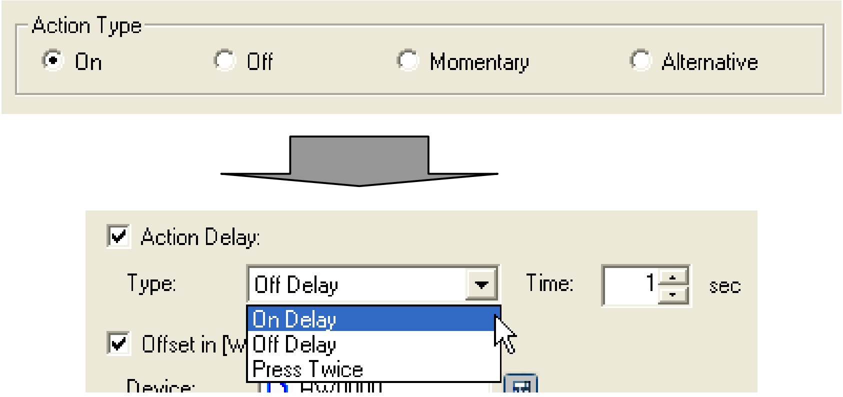
Time: 1 sec

☑ Offset in [Write] Operation:

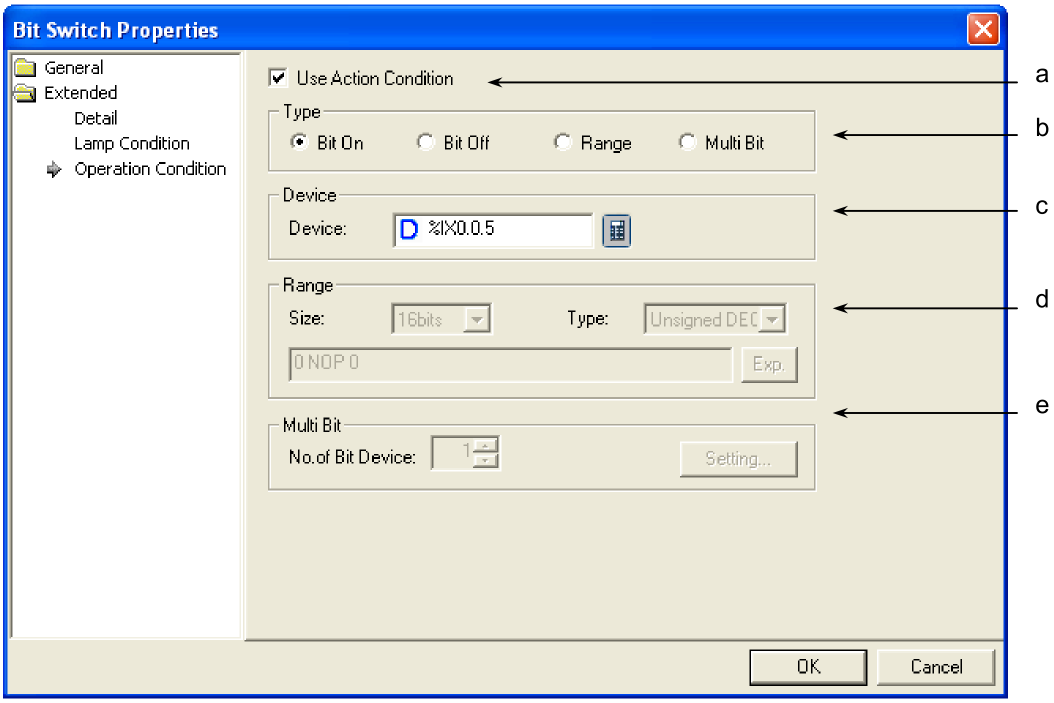
Device: HW0000

OK | Cancel

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Security level(a)</td><td>Set when you use the security function.</td></tr>
<tr><td>Level(b)</td><td>You can use the security function if you select this.
The security level ranges between 1 and 9.
(☞ See 16.7 Security Setting of Chapter 16 Object Setting)</td></tr>
<tr><td>Action delay(c)</td><td>This is set when you use the action delay function.</td></tr>
<tr><td>Type and time(d)</td><td>If you select this, the delay time after the switch is touched until it operates is set.
<table>
<tr><th>Delay Type</th><th>Description</th></tr>
<tr><td>On delay</td><td>The corresponding bit device value is changed according to the operation set in [Basic] when you continue pressing the switch for the set duration.
The delay time is set after being selected.

</td></tr>
<tr><td>Off delay</td><td>The operation set in [Basic] (On, Off, momentary, alternative) is conducted when you press the switch and it recovers to the previous state when you hold it for the set period of time.

</td></tr>
<tr><td>Press twice</td><td>If you press once, a check dialog box is invoked. If you click on the OK button, the operation set in [Basic] (On, Off, momentary, alternative) is conducted. If you do not hold the OK button for the set period of time, the dialog box disappears automatically.</td></tr>
</table>
The delay types you can set according to the operation types selected in [Basic] are as follows.
<table>
<tr><th>Operation type of [Basic]</th><th>Delay types available</th></tr>
<tr><td>On</td><td>Operates after delay, returns after operation and delay, double check</td></tr>
<tr><td>Off</td><td>Operates after delay, returns after operation and delay, double check</td></tr>
<tr><td>Momentary</td><td>N/A
(In this case, operation occurs only while the switch is being hold. The act of holding the switch is not perceived as a delay for the set period of time. Therefore, you cannot set the delay function)</td></tr>
<tr><td>Alternative</td><td>Operates after delay, double check</td></tr>
</table></td></tr>
</table>

Items	Settings
	Example 1. The operation type is set as [Momentary] in the [Basic] of the switch.  Action Type ○ On ○ Off ● Momentary ○ Alternative ☐ Action Delay: Type: Not Use Time: 1 sec You cannot set operation delay. Example 2. The operation type is set as [Alternative] in the [Basic] of the switch.  Action Type ○ On ○ Off ○ Momentary ● Alternative ☑ Action Delay: Type: On Delay Time: 1 sec On Delay Press Twice ☑ Offset in [W The Off delay function is deleted in the combo box. 3. The operation type is set as [ON] in the [Basic] of the switch.  Action Type ● On ○ Off ○ Momentary ○ Alternative ☑ Action Delay: Type: Off Delay Time: 1 sec On Delay Off Delay Press Twice ☑ Offset in [W Device: You can set all delay operation functions.
Offset in [Write] operation(e)	Sets the offset device when you use the offset function.
Device(f)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor.

(5) Operation Condition Setting



☑ Use Action Condition

Type

● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: %IX0.0.5

Range

Size: 16bits Type: Unsigned DEC

0 NOP 0

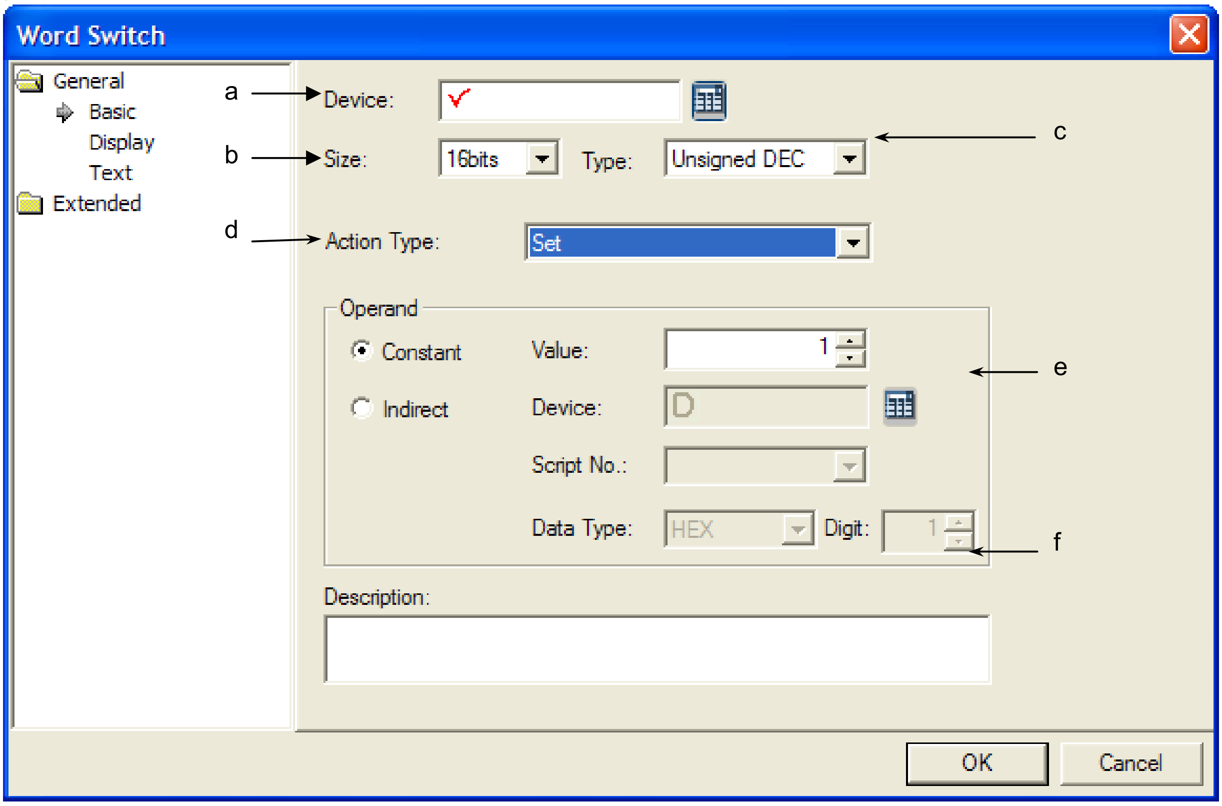
Multi Bit

No.of Bit Device: 1

Items	Settings
Use Action Condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition to operate the object. On bit: carries out the object operation when the operation condition device is ON. Off bit: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the Range condition of the word device is met. Multiple Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the Range is set.
Range (d)	Sets the size, type and Range condition when the operation condition is the Range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the Range condition is set in a conditional expression.
Multi Bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multiple bit. (See 16.6 Operation Condition Setting of Chapter 16 Object Setting)

17.2.4 Word Switch Setting Item

(1) Basic



Device:

Size: 16bits

Type: Unsigned DEC

Action Type: Set

Operand

● Constant Value: 1

○ Indirect Device: D

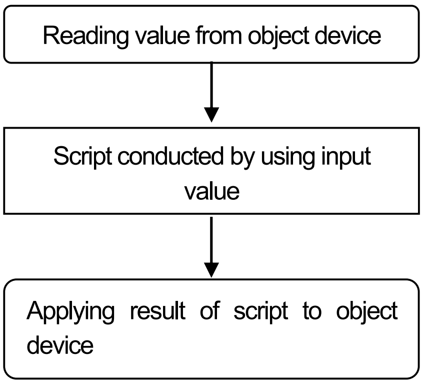
Script No.:

Data Type: HEX Digit: 1

Description:

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Device (a)</td><td>Sets the device to be referred to in the object. You can either set by using the device button or directly enter it on the keyboard.</td></tr>
<tr><td>Data size (b)</td><td>Sets the data size of the device (16 bit, 32 bit).</td></tr>
<tr><td>Data type (c)</td><td>Sets the data form of the device (signed decimal, unsigned decimal, BCD).</td></tr>
<tr><td>Action type (d)</td><td>Selects the type of the operation to carry out.
<table>
<tr><th>Types</th><th>Description</th></tr>
<tr><td>Set</td><td>Writes the set value in the device.</td></tr>
<tr><td>Add</td><td>Adds the set value to the device value.</td></tr>
<tr><td>Sub.</td><td>Subtract the set value from the device value.</td></tr>
<tr><td>Script</td><td>Carries out the set script.</td></tr>
<tr><td>Increasing the value of specific place</td><td>It increases only bit value of specific place in word device. In the case of value addition, the value is added to the current device value as many as operand established by a user, however, the value of specific place just increases as many as set value .
<table>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
</table>
↑
Third place</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
<table>
<tr><td></td><td>
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr></table>
↑
Third place
For example, supposing that device values are as above and place value is 3, when operating a switch in XGT Panel, the device value will be changed as below.</td></tr>
<tr><td>Decreasing the value of specific place</td><td>It decreases only bit value of specific place in word device.
In the case of value subtraction, the value reduced from the current device value as many as operand established by a user, however, the value of specific place just decreases as many as set value .</td></tr>
</table>
</td></tr>
<tr><td>Operand (e)</td><td>Sets the value to write in the object device.
The operand can be set as a fixed constant, set device value or script operation result value and so on.
<table>
<tr><th>Operand Type</th><th>Description</th></tr>
<tr><td>Constant</td><td>Sets the fixed value when you write a fixed value in the word device in the writing mode.</td></tr>
<tr><td>Indirect</td><td>Sets Indirect and the device when you write the value of the word device specified in the writing mode word device.</td></tr>
<tr><td>Script</td><td>Set when you execute a certain script other than adding, subtracting or writing a particular device value or a fixed value.</td></tr>
<tr><td>Data Type</td><td>It sets the data type to be increased or reduced for Increasing ·Decreasing the value of specific place. If the related device value established with BCD data is A~F, word switch does not run.</td></tr>
<tr><td>The number of digits</td><td>It sets the number of digits for Increasing ·Decreasing the value of specific place.
If device size is 16 bit, you can set it as 1~4 and 32bit, 1~8.</td></tr>
</table>
If the operand is saved in a script, the final value is applied to the corresponding device after the script operation is all completed. The procedure is as follows.
1. Write the value from the reference device specified in the word switch and save it in a temporary variable referring to the reference device.
2. Carry out the script for the read value.
3. Apply the value stored in the temporary variable to the reference device after the script is completed.</td></tr>
</table>

Items	Settings
	 Reading value from object device Script conducted by using input value Applying result of script to object device - In the flowchart above, the script result value refers to the value of the temporary variable at the time when the script is finished. That is, the script is not affected by a change of the reference device value while the script is being carried out. - Even if the reference device value has been changed by using the direct variable while the script is being carried out, the changes during the period of time remains because the temporary variable value is written in the reference device after the script is finished. Accordingly, if the reference device is used within the script in XP-Builder, a message appears which reads "[Warning 2012] The reference device exists in the specified script script_name. An unintended result might occur."
Description (f)	Enters description in the corresponding object.

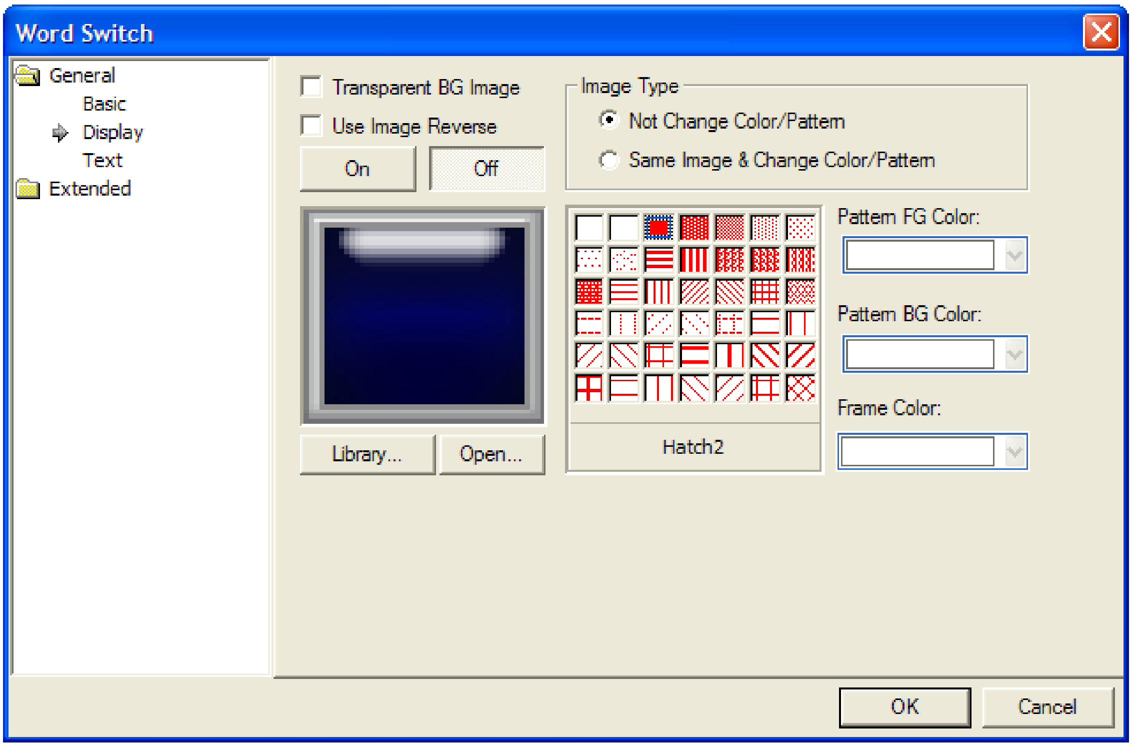
Note

(1) If you enter the operand in a fixed constant, the possible range of the constant value is as follows according to the size and type of the reference device. If you set the fixed value beyond the range, a warning is released and it would not be entered.

Device Size	Device Type	Minimum	Maximum
16bit	Signed decimal	-32768	32767
16bit	Unsigned decimal	0	65535
16bit	BCD	0	9999
32bit	Signed decimal	-2147483648	2147483647
32bit	Unsigned decimal	0	4294967295
32bit	BCD	0	99999999

(2) Display

This is selecting the color (On color, Off color), image (On image, Off image) and pattern (On pattern, Off pattern) according to the device state. The settings of the color and pattern vary according to the image type setting.


Word Switch
General
Basic
Display
Text
Extended
On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

☐ Transparent BG Image

☐ Use Image Reverse

Image Type

● Not Change Color/Pattern

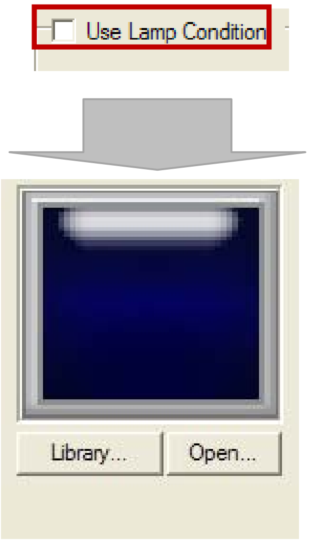
○ Same Image & Change Color/Pattern

Hatch2

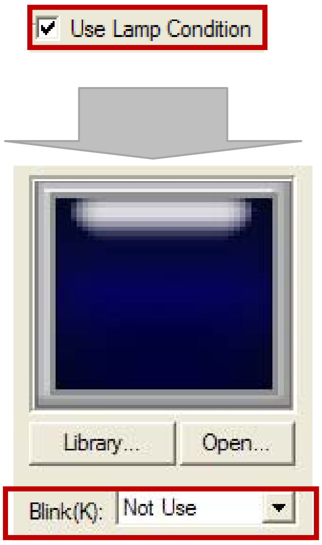
(☞ **See 16.2 Display function Setting)**

Note

In case of using [General]-[Basic]-[Use Lamp Condition] ☑ Use Lamp Condition, you can set the blink at the [Display].


Use Lamp Condition
Library...
Open...

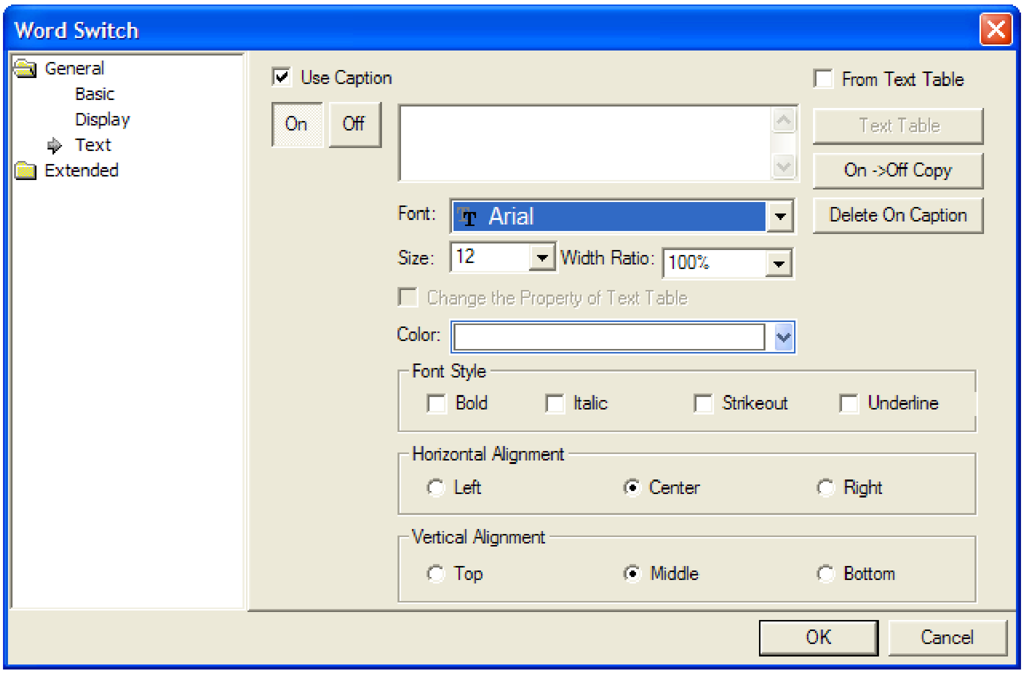
☐ Use Lamp Condition


Use Lamp Condition
Library...
Open...

☑ Use Lamp Condition

Blink(K): Not Use

(3) Text


Word Switch
General
Basic
Display
Text
Extended
On
Off
Text Table
On ->Off Copy
Delete On Caption
Font Style
Horizontal Alignment
Vertical Alignment
OK
Cancel

☑ Use Caption

☐ From Text Table

Font: Arial

Size: 12

Width Ratio: 100%

☐ Change the Property of Text Table

Color:

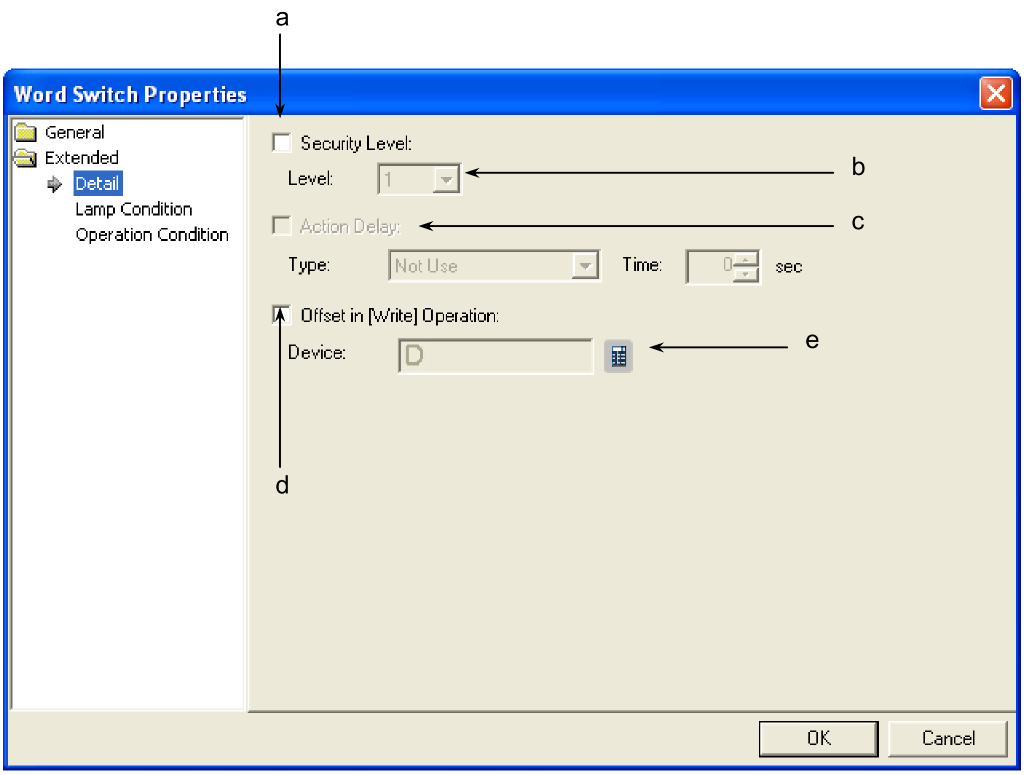
Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

Vertical Alignment: ○ Top ● Middle ○ Bottom

(☞ **See 16.3 Text Setting**)

(4) Detail


a
Word Switch Properties
General
Extended
Detail
Lamp Condition
Operation Condition
b
c
e
d
OK
Cancel

☐ Security Level:

Level: 1

☐ Action Delay:

Type: Not Use

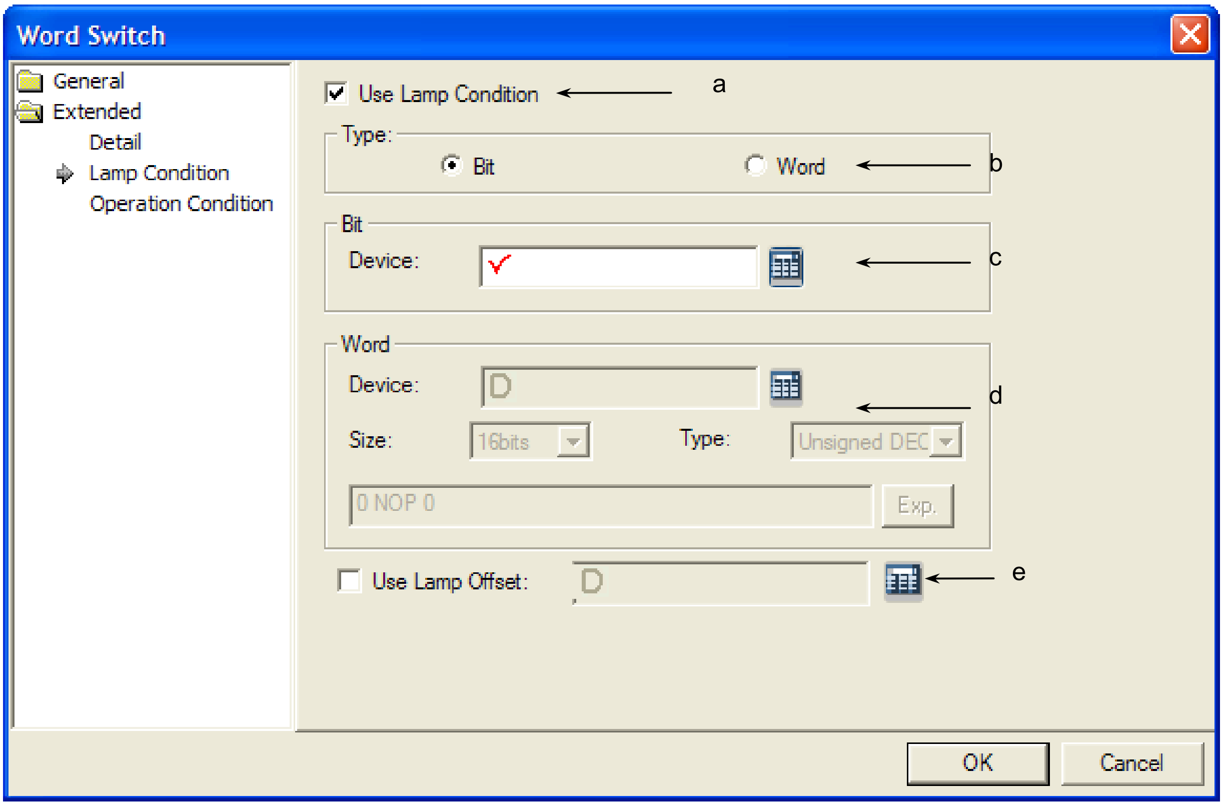
Time: 0 sec

☐ Offset in [Write] Operation:

Device: D

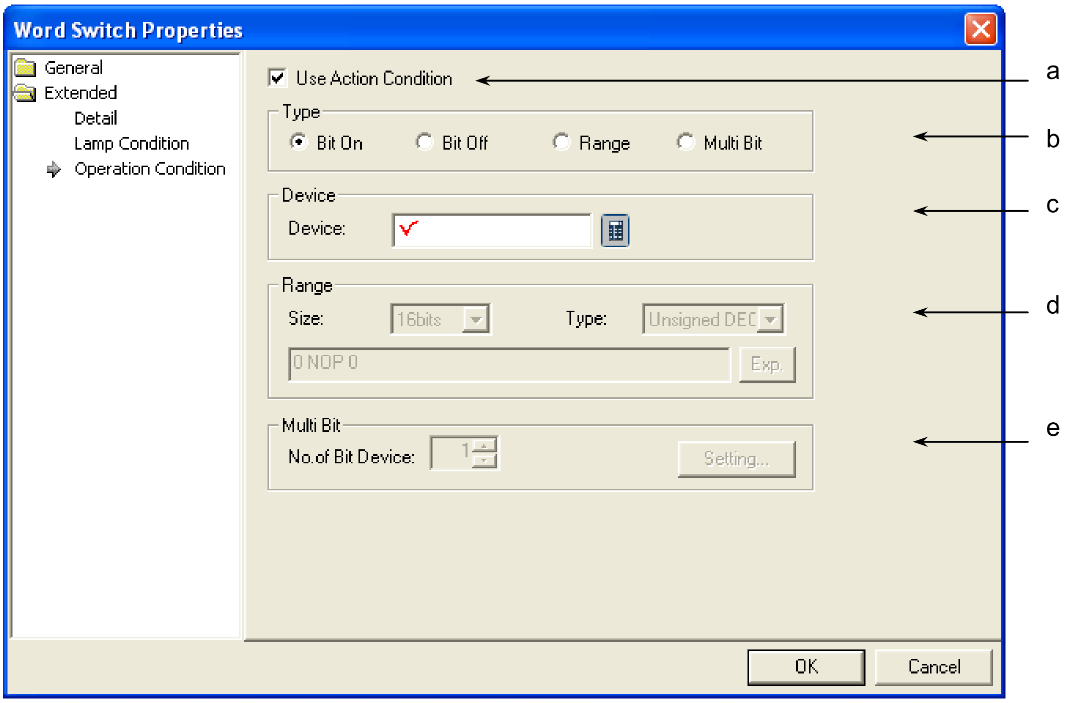
Items	Settings
Security level (a)	Set when you use the security function.
Level (b)	You can use the security function if you select this. The security level ranges between 1 and 15. (☞ **See 16.7 Security Setting of Chapter 16 Object Setting)** Method) You can operate the related switches in XGT Panel only you have set a password in [Common]-[Project Properties]-[Security Setting] of XP-Builder and enter the password above the security level set in the word switch.
Action delay (c)	You cannot set this function in the switch word. The switch word does not provide the operation delay function.
Offset in [Write] operation (d)	Set when you use the offset function.
Device (e)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(5) Lamp Condition


Word Switch
General
Extended
Detail
Lamp Condition
Operation Condition
☑ Use Lamp Condition
a
Type:
● Bit
○ Word
b
Bit
Device:
c
Word
Device:
D
Size:
16bits
Type:
Unsigned DEC
0 NOP 0
Exp.
d
☐ Use Lamp Offset:
D
e
OK
Cancel

Items	Settings
Use lamp condition (a)	Decides whether to control the lamp in a way other than turning ON the lamp when you touch the switch in XGT Panel.
Type (b)	Selects the condition for lamp control. Bit: turns the lamp ON when the set device bit is On. Word: turns the lamp ON when the set device value meets the set condition.
Bit device (c)	Sets the device to be referred to in the corresponding object when the lamp type is a bit.
Word device, size, type and expression (d)	Sets the device size, type and condition while ON when the lamp type is a word. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Expression: the condition for On display is set in a conditional expression.
Use Lamp Offset (e)	Sets offset device to bit or word device set in the Lamp Condition

(6) Operation Condition Setting



☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device:

Size: 16bits

Type: Unsigned DEC

0 NOP 0

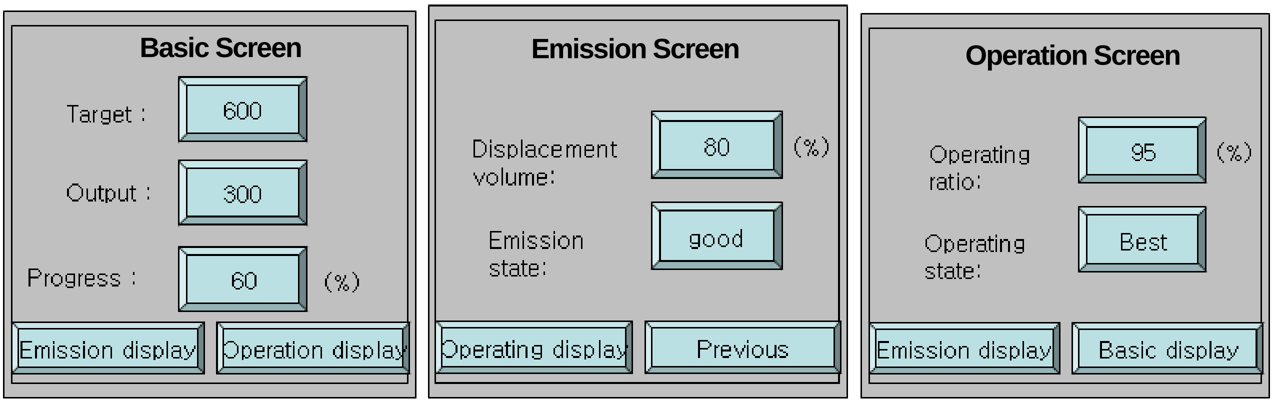
Exp.

No.of Bit Device: 1

Items	Settings
Use Action condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition to operate the object. On bit: carries out the object operation when the operation condition device is ON. Off bit: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the range condition of the word device is met. Multiple Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the range is set.
Range (d)	Sets the size, type and Range condition when the operation condition is the range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the Range condition is set in a conditional expression.
Multiple bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multiple bit. **(See 16.6 Operation Condition Setting of Chapter 16 Object Setting)**

17.2.5 Change Screen Switch Settings

You can edit the following three screens, which are the basic screen, operation screen and emission screen, and shift to each of them by using the change screen switch in XGT Panel.


Basic Screen
Emission display
Operation display
Emission Screen
Operating display
Previous
Operation Screen
Emission display
Basic display

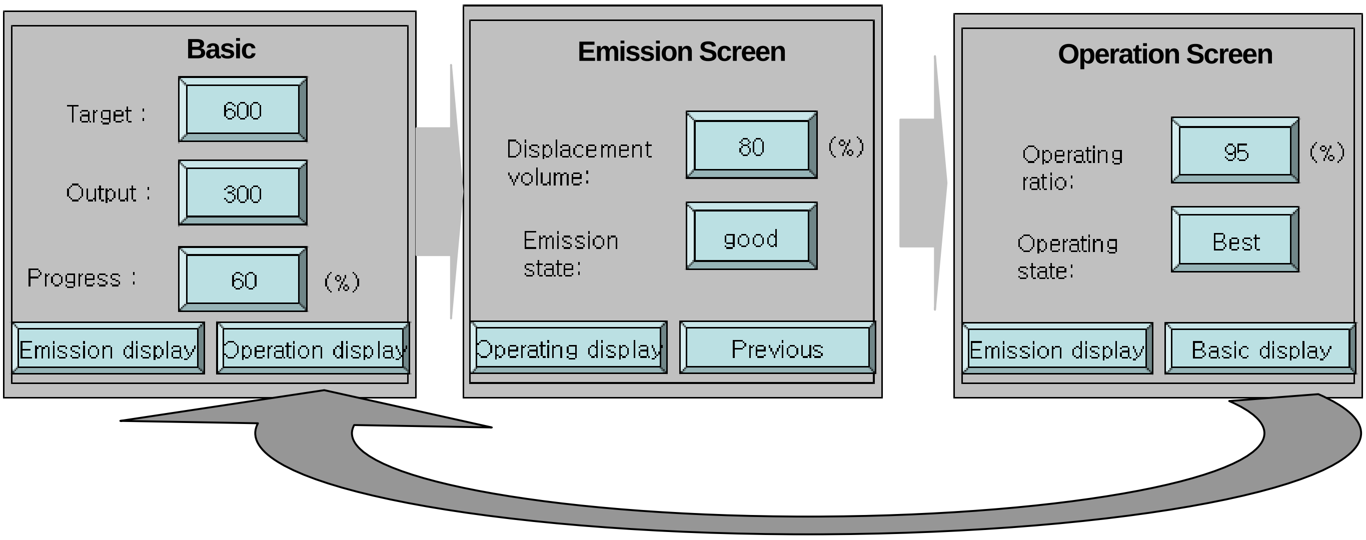
Target : 600
Output : 300
Progress : 60 (%)

Displacement volume: 80 (%)
Emission state: good

Operating ratio: 95 (%)
Operating state: Best

[Method]

(1) Edit the change screen switch in the basic screen and set the screen to shift to as [Operation Screen].
(2) Edit the change screen switch in the emission screen and set the screen to shift to as [Operation Screen].
(3) Edit the change screen switch in the operation screen and set the screen to shift to as [Basic Screen].

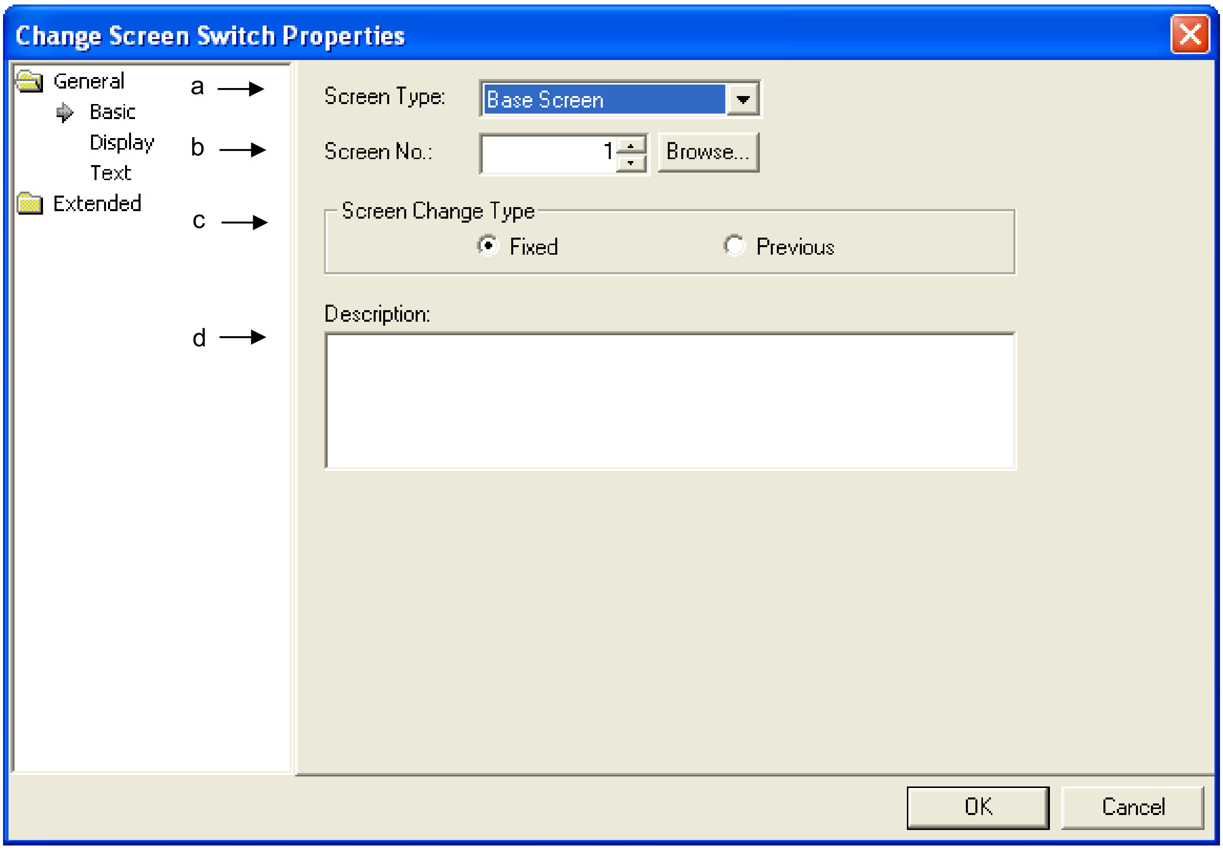

Basic
Emission display
Operation display
Emission Screen
Operating display
Previous
Operation Screen
Emission display
Basic display

Target : 600
Output : 300
Progress : 60 (%)

Displacement volume: 80 (%)
Emission state: good

Operating ratio: 95 (%)
Operating state: Best

(1) Basic

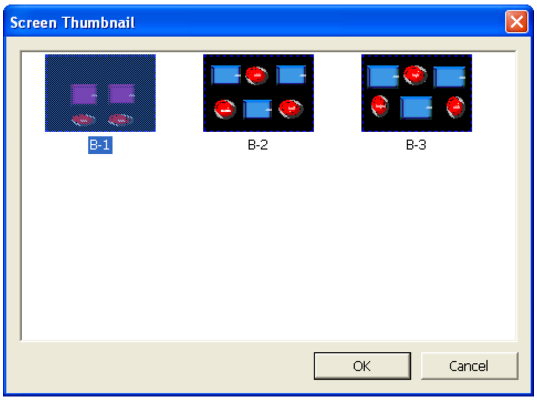

Change Screen Switch Properties
General
Basic
Display
Text
Extended
a
b
c
d
Browse...
OK
Cancel

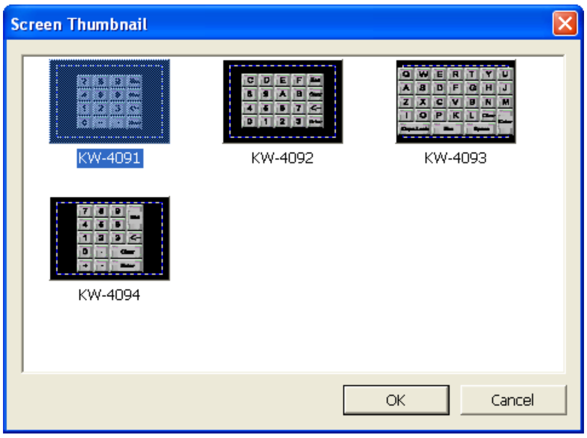
Screen Type: Base Screen

Screen No.: 1

Screen Change Type: ● Fixed ○ Previous

Description:

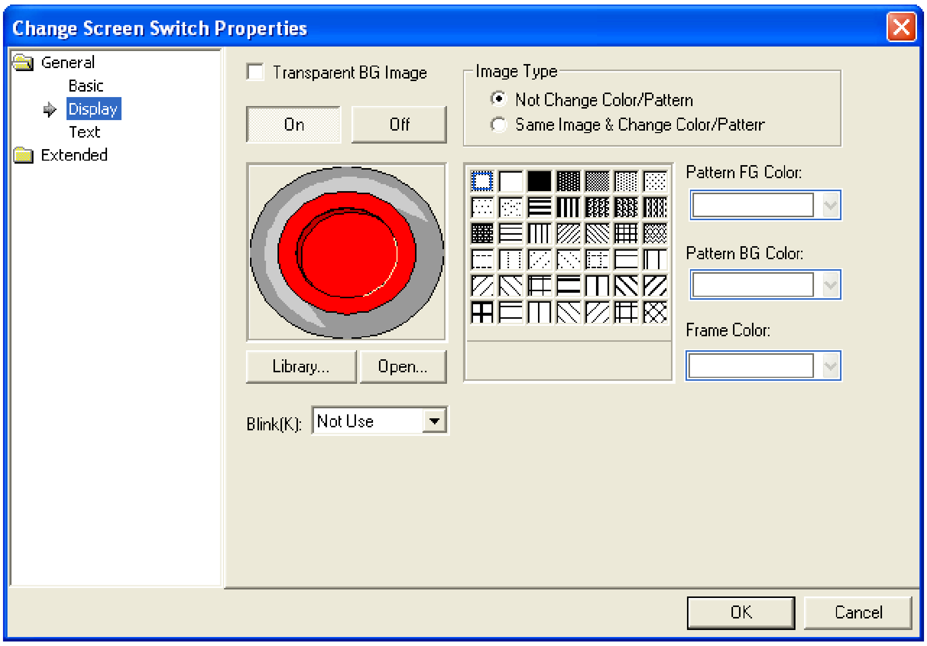
Items	Settings
Screen Type (a)	Select the type of screen to shift to. Screen type: base screen, global window 1, global window 2
Screen No. (b)	Sets the number of screen to shift to. You can specify the number either by directly entering it or by using the Search button (Browse...). If you click on the button, the specified type of screen is shown in a small size as follows. [When the screen type is the base screen] The base screen list is shown in smaller size.  Screen Thumbnail B-1 B-2 B-3 OK Cancel

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Screen No. (b)</td><td>[When the screen type is global window 1]
The window screen list is shown in smaller size.


Screen Thumbnail
KW-4091
KW-4092
KW-4093
KW-4094
OK
Cancel

If you use the Search button, you can specify the screen number by selecting the screen to shift to in the downsized screen and clicking on the OK button.</td></tr>
<tr><td>Screen Change Type (c)</td><td><table><tr><th>Type</th><th>Description</th></tr><tr><td>Fixed screen</td><td>Set the screen number of the screen to shift to.
(☞ For how to set the number, see Screen No.(b))</td></tr><tr><td>Previous screen</td><td>This is set when you shift to the previous screen.
In this case, do not set the screen number of the screen to shift to.
If you set the previous screen, you can shift to the immediately previous window by touching the change screen switch.
If the window where the change screen switch is is the first monitoring window, you do not shift to another window.</td></tr></table></td></tr>
<tr><td>Description (d)</td><td>Enter description in the relevant object.</td></tr>
</table>

(2) Display



Change Screen Switch Properties

- General
  - Basic
  - Display
  - Text
- Extended

☐ Transparent BG Image

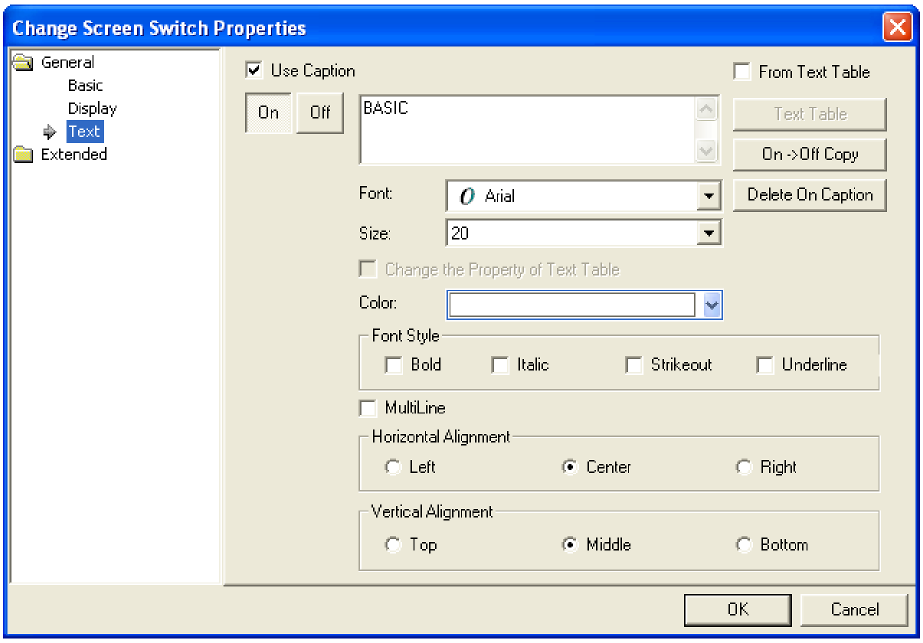
Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Pattern

Blink(K): Not Use

On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

(☞ **See 16.2 Display function Setting)**

(3) Text



Change Screen Switch Properties

- General
  - Basic
  - Display
  - Text
- Extended

☑ Use Caption

☐ From Text Table

BASIC

Font: Arial

Size: 20

☐ Change the Property of Text Table

Color:

Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

☐ MultiLine

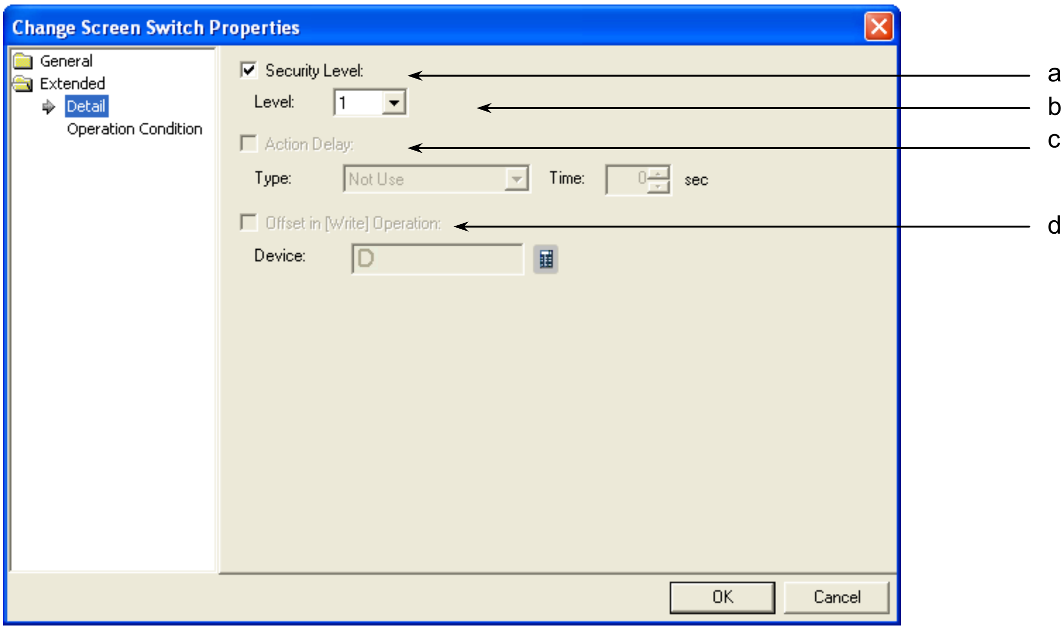
Horizontal Alignment
○ Left ● Center ○ Right

Vertical Alignment
○ Top ● Middle ○ Bottom

On
Off
Text Table
On ->Off Copy
Delete On Caption
OK
Cancel

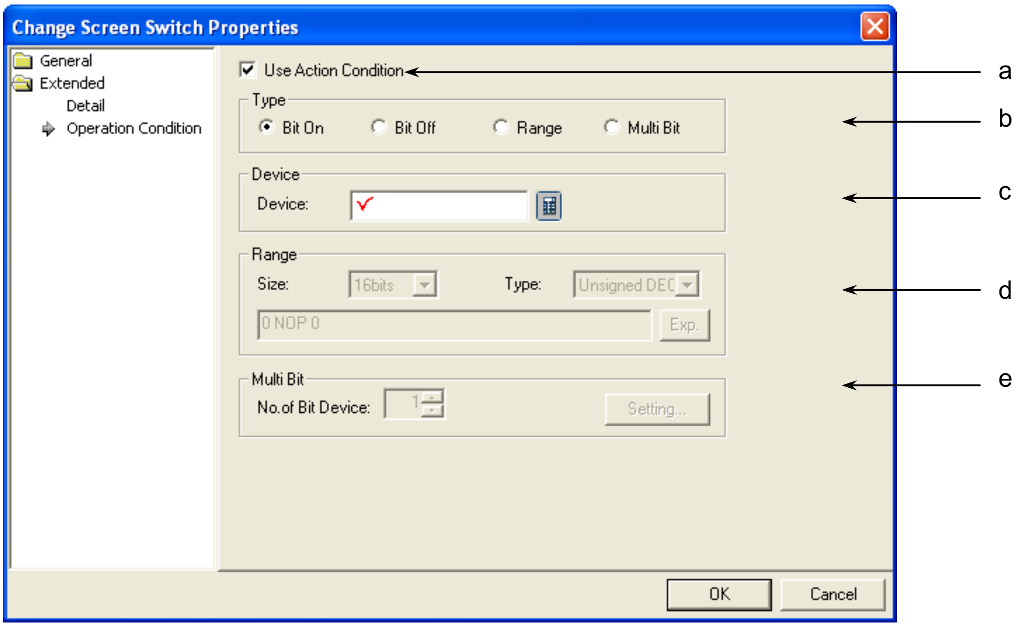
(☞ **See 16.3 Text Setting**)

(4) Detail Items


Change Screen Switch Properties
General
Extended
Detail
Operation Condition
☑ Security Level:
Level: 1
☐ Action Delay:
Type: Not Use
Time: 0 sec
☐ Offset in [Write] Operation:
Device: D
OK
Cancel
a
b
c
d

Items	Settings
Security level (a)	Set when you use the security function.
Level (b)	You can use the security function if you select this. The security level ranges between 1 and 9. (☞ **See 16.7 Security Setting of Chapter 16 Object Setting)** Method) You can operate the related switches in XGT Panel only you have set a password in [Common]-[Project Properties]-[Security Setting] of XP-Builder and enter the password above the security level set in the word switch.
Action delay (c)	You cannot use this function in change screen, which does not provide the operation delay function.
Offset in [Write] operation (d)	You cannot use the offset function in Change Screen Switch. Change Screen Switch does not provide the offset function.

(6) Operation Condition Setting



☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device:

Range Size: 16bits Type: Unsigned DEC

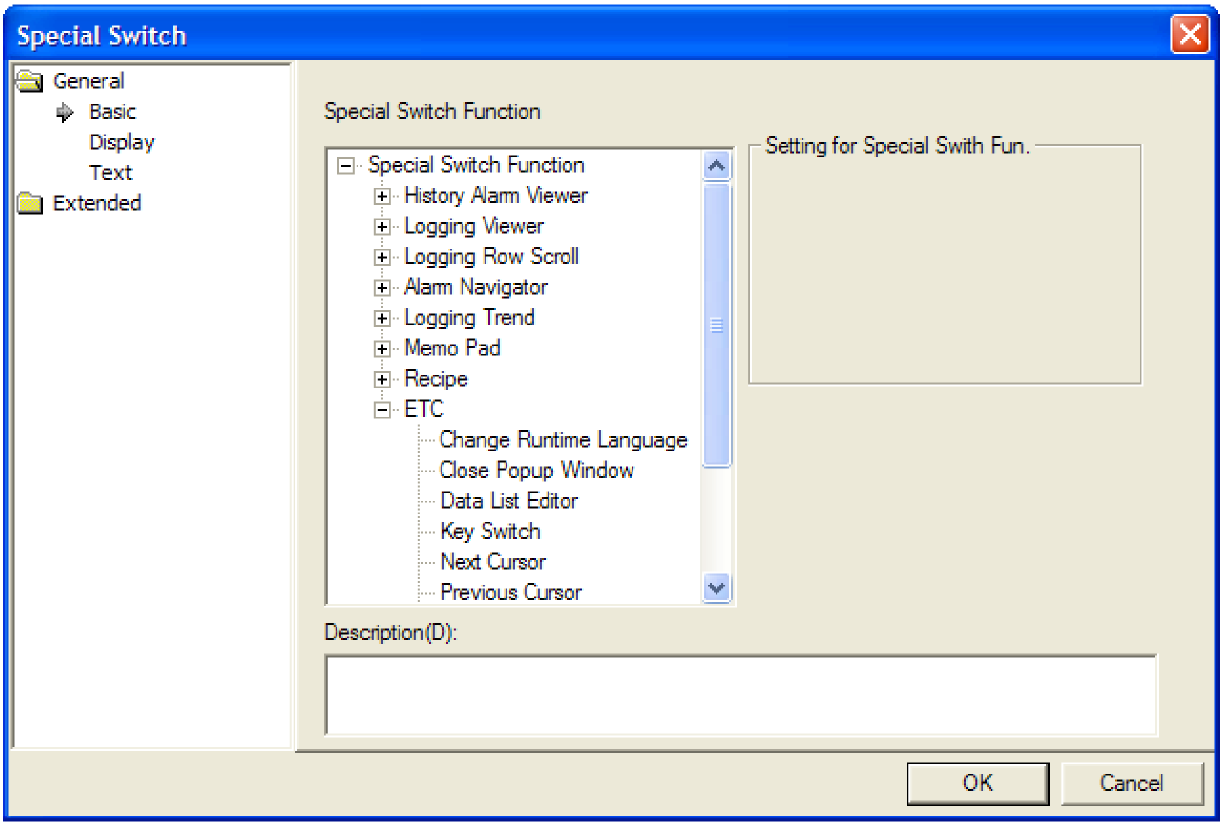
0 NOP 0

Multi Bit No.of Bit Device: 1

Items	Settings
Use Action Condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition to operate the object. On bit: carries out the object operation when the operation condition device is ON. Off bit: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the Range condition of the word device is met. Multiple Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the Range is set.
Range (d)	Sets the size, type and Range condition when the operation condition is the Range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the Range condition is set in a conditional expression.
Multi bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multiple bit. **(See 16.6 Operation Condition Setting of Chapter 16 Object Setting)**

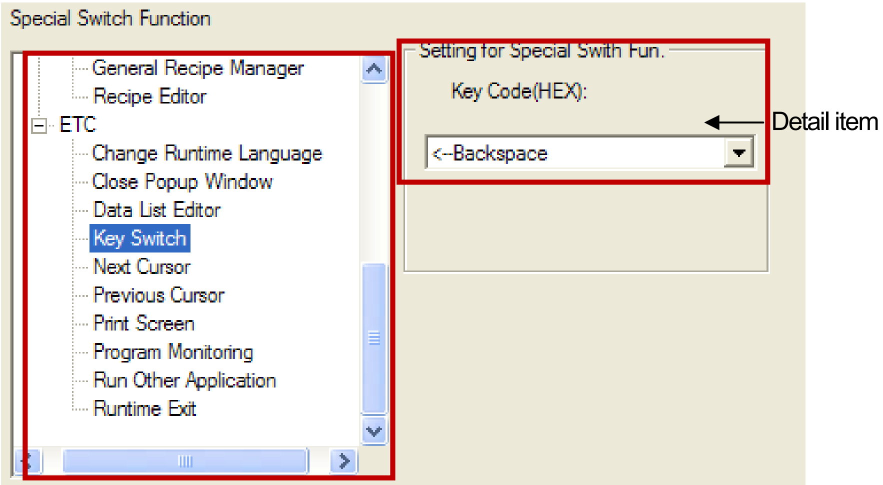
17.2.6 Special Switch Settings

(1) Basic

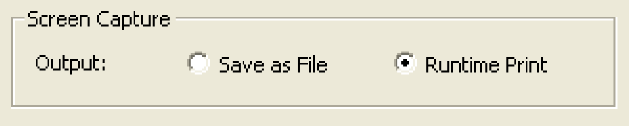
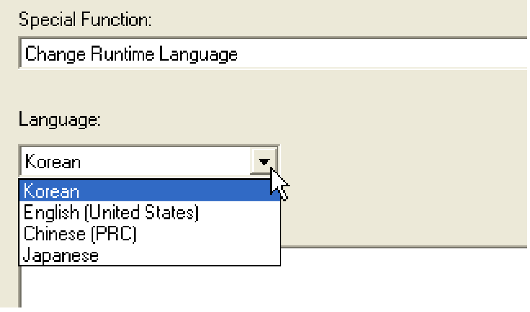
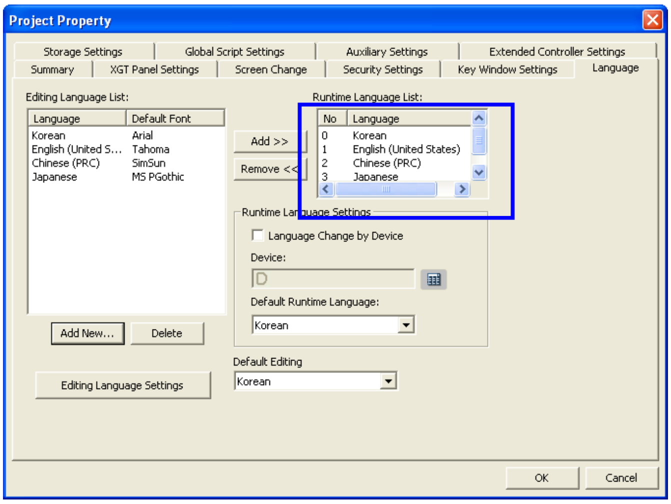

Special Switch
General
Basic
Display
Text
Extended
Special Switch Function
Special Switch Function
History Alarm Viewer
Logging Viewer
Logging Row Scroll
Alarm Navigator
Logging Trend
Memo Pad
Recipe
ETC
Change Runtime Language
Close Popup Window
Data List Editor
Key Switch
Next Cursor
Previous Cursor
Setting for Special Swith Fun.
Description(D):
OK
Cancel

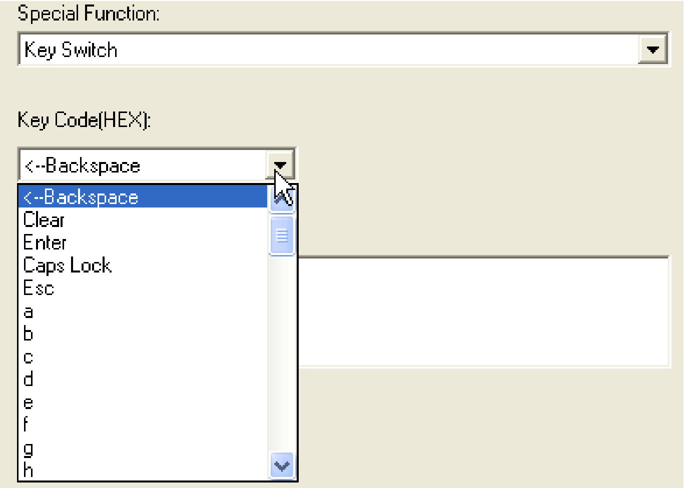
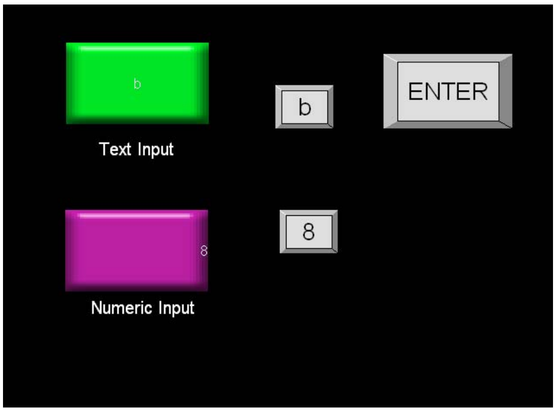
Items	Settings
Special Switch function items	Special switch functions are classified into two steps. Select the function you need Items are as follows.

Items	Sub items
History alarm viewer	1. Check All Alarm Data in Alarm Viewer 2. Check Selected Alarm Data in Alarm Viewer 3. Delete Alarm Data in Alarm Viewer Page 4. Delete All Occurrence No. 5. Delete Recovered All Data in Alarm Viewer 6. Delete Selected Line in Alarm Viewer 7. Go to History Alarm Viewer Detail 8. History Alarm Filter 9. History Alarm Viewer Line Down 10. History Alarm Viewer Line up 11. History Alarm Viewer Page Down 12. History Alarm Viewer Page Up 13. Occurrence No. of Selected Alarm 14. Print History Alarm 15. Selected History Alarm Viewer Line Up 16. Selected History Alarm Viewer Page Down

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
<table>
<tr><td>Logging Viewer</td><td>1. Logging Viewer Line Down
2. Logging Viewer Line Up
3. Logging Viewer Page Down
4. Logging Viewer Page Up</td></tr>
<tr><td>Alarm Navigator</td><td>1. Alarm Navigator Viewer Line Down
2. Alarm Navigator Viewer Line Up</td></tr>
<tr><td>Logging Trend</td><td>1. Next Log Trend Data
2. Previous Log Trend Data
3. The First Log Trend Data
4. The Last Log Trend Data</td></tr>
<tr><td>Memo Pad</td><td>1. Change memo Mode
2. Next Memo
3. Pen Setting
4. Previous Memo
5. Redo Memo
6. Reset Memo
7. 모Storage of memo
8. Indo Memo</td></tr>
<tr><td>Recipe</td><td>1. File Recipe Manager and Transfer
2. General Recipe Manager
3. Recipe Editor</td></tr>
<tr><td>ETC</td><td>1. Change Runtime Language
2. Close Popup Window
3. Data List Editor
4. Key Switch
5. Next Cursor
6. Previous Cursor
7. Print Screen
8. Program Monitoring
9. Run Other Application
10. Runtime Exit</td></tr>
</table>
For detail of each item, refer to following contents.</td></tr>
<tr><td>Detail item</td><td>Set detail item according to sub item.

Special Switch Function
General Recipe Manager
Recipe Editor
ETC
Change Runtime Language
Close Popup Window
Data List Editor
Key Switch
Next Cursor
Previous Cursor
Print Screen
Program Monitoring
Run Other Application
Runtime Exit
Setting for Special Swith Fun.
Detail item
Key Code(HEX): <--Backspace</td></tr>
<tr><td>Description</td><td>Inputs description of each item.</td></tr>
</table>

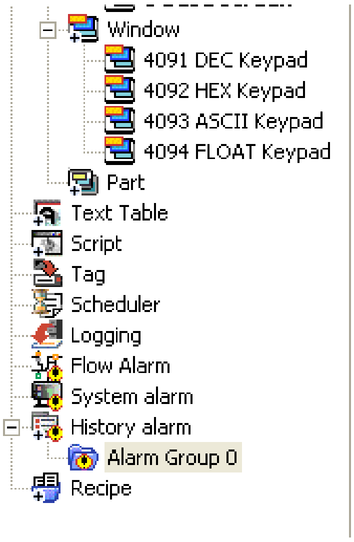
You can choose from the following functions.

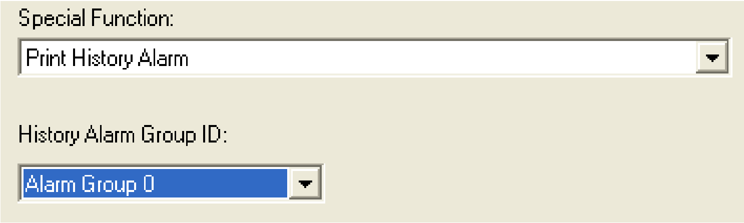
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Print Screen</td><td>The screen displayed when the switch is pressed in XGT Panel is printed.
The contents of the screen are printed in the specified printing location, which you can set in [Common]-[Project Property setting]-[Auxiliary Settings]-[Screen Capture]-[Output]. Printing operates as follows according to the specified printing location.

Screen Capture
Output: ○ Save as File ● Runtime Print
<table>
<tr><th>Items</th><th>Description</th></tr>
<tr><td>Save as file</td><td>Saved as a bitmap file in the path specified in [Common]-[Project Property Setting]-[Storage Settings]-[Backup Storage]-[Capture Image].
If the screen capture image location is not set, it is not saved in a file.</td></tr>
<tr><td>Runtime Print</td><td>Printed by the USB printer currently connected to XGT Panel.
If no printer is plugged, a system alarm occurs reading that no printer is connected. (The system alarm operates only when it is set in [Common]-[Project Property Setting]-[Auxiliary Settings]-[System Alarm Window].) A system alarm is restored if you connect a USB printer and retry printing.</td></tr>
</table>
</td></tr>
<tr><td>Change Runtime Language</td><td>This is the function of switching languages in XGT Panel when you press the special switch.
The language to switch to is selected as follows in XP-Builder.

Special Function: Change Runtime Language
Language: Korean
Korean
English (United States)
Chinese (PRC)
Japanese
Languages can be selected from the languages registered in [Common]-[Project Property Setting]-[Language]-[Runtime Language List].

Project Property
Storage Settings
Global Script Settings
Auxiliary Settings
Extended Controller Settings
Summary
XGT Panel Settings
Screen Change
Security Settings
Key Window Settings
Language
Add >>
Remove <<
Add New...
Delete
Editing Language Settings
OK
Cancel
Editing Language List:
<table>
<tr><th>Language</th><th>Default Font</th></tr>
<tr><td>Korean</td><td>Arial</td></tr>
<tr><td>English (United S...</td><td>Tahoma</td></tr>
<tr><td>Chinese (PRC)</td><td>SimSun</td></tr>
<tr><td>Japanese</td><td>MS PGothic</td></tr>
</table>
Runtime Language List:
<table>
<tr><th>No</th><th>Language</th></tr>
<tr><td>0</td><td>Korean</td></tr>
<tr><td>1</td><td>English (United States)</td></tr>
<tr><td>2</td><td>Chinese (PRC)</td></tr>
<tr><td>3</td><td>Japanese</td></tr>
</table>
Runtime Language Settings
☐ Language Change by Device
Device: D
Default Runtime Language: Korean
Default Editing: Korean
</td></tr>
</table>

Items	**Settings**
Key switch	This is the switch for entering values in the text input unit or numeric input unit. It sets key codes to be operated in XGT Panel as follows.  Special Function: Key Switch Key Code(HEX): <--Backspace <--Backspace Clear Enter Caps Lock Esc a b c d e f g h You can set numbers, alphabet, special signs (Esc, Clear, etc.). When you touch the specified key special switch for operation in XGT Panel, the specified texts are entered in the text input unit or number input unit which is waiting for entry.  b Text Input b ENTER 8 Numeric Input 8

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Print History Alarm</td><td>

Only the history alarm data of the group selected when you press the special button is printed.
An alarm group can be chosen from the history alarm list. If no alarm group has been made, you cannot edit a special switch.


Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Alarm Group 0
Recipe



Special Function:
Print History Alarm

History Alarm Group ID:
Alarm Group 0

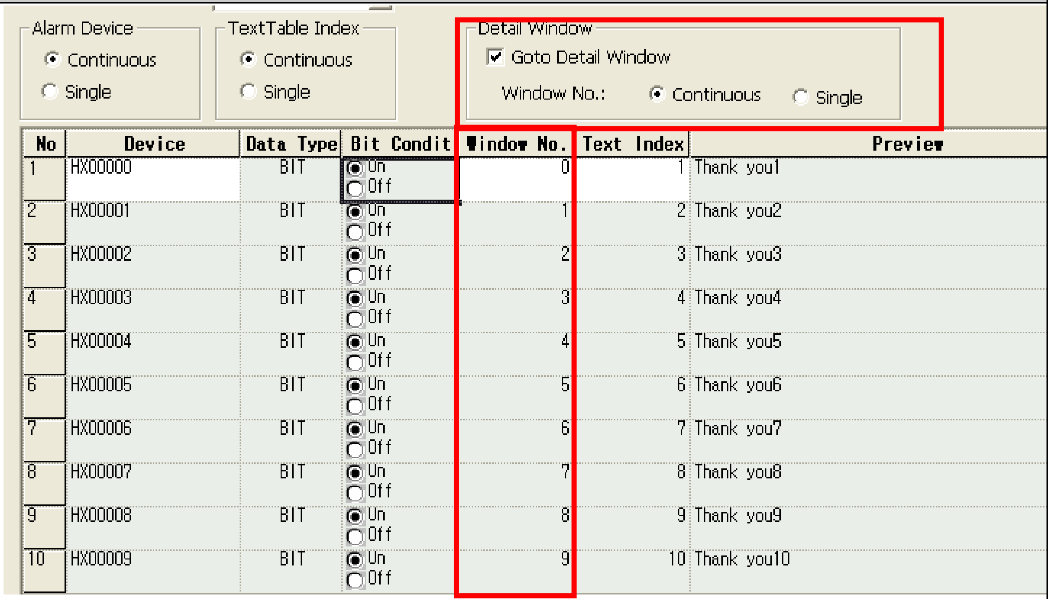
</td></tr>
<tr><td>Runtime Exit</td><td>The current monitoring is terminated and you go back to the menu screen of the XGT Panel series when you press the special switch.</td></tr>
<tr><td>Go to History Alarm Viewer Detail</td><td>

When an alarm occurs according to the set history alarm condition, additional information related to the alarm might be necessary. In such a case, a window is invoked which has been edited by using objects and so on to gain additional information.
The detailed procedure is as follows.

1. Edit the detailed window screen by using an object.
2. In the history alarm list of the common data, setup the detail window change.
3. Set View Details in the history alarm viewer object.
4. Touch the column of which the details you want to see of the history alarm data in the XGT Panel series.
5. Touch the special switch for viewing detailed history alarm.
6. The previously built pop-up view details window is invoked.

</td></tr>
</table>

Items	Settings



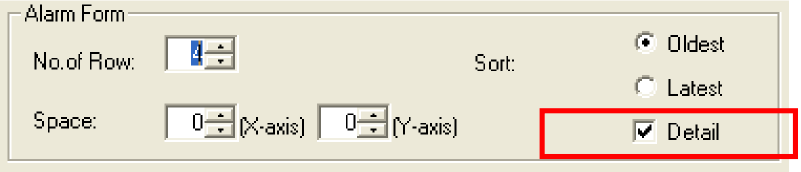
Alarm Device
● Continuous
○ Single

TextTable Index
● Continuous
○ Single

Detail Window
☑ Goto Detail Window
Window No.: ● Continuous ○ Single

No	Device	Data Type	Bit Condit	Window No.	Text Index	Preview
1	HX00000	BIT	● On ○ Off	0	1	Thank you1
2	HX00001	BIT	● On ○ Off	1	2	Thank you2
3	HX00002	BIT	● On ○ Off	2	3	Thank you3
4	HX00003	BIT	● On ○ Off	3	4	Thank you4
5	HX00004	BIT	● On ○ Off	4	5	Thank you5
6	HX00005	BIT	● On ○ Off	5	6	Thank you6
7	HX00006	BIT	● On ○ Off	6	7	Thank you7
8	HX00007	BIT	● On ○ Off	7	8	Thank you8
9	HX00008	BIT	● On ○ Off	8	9	Thank you9
10	HX00009	BIT	● On ○ Off	9	10	Thank you10

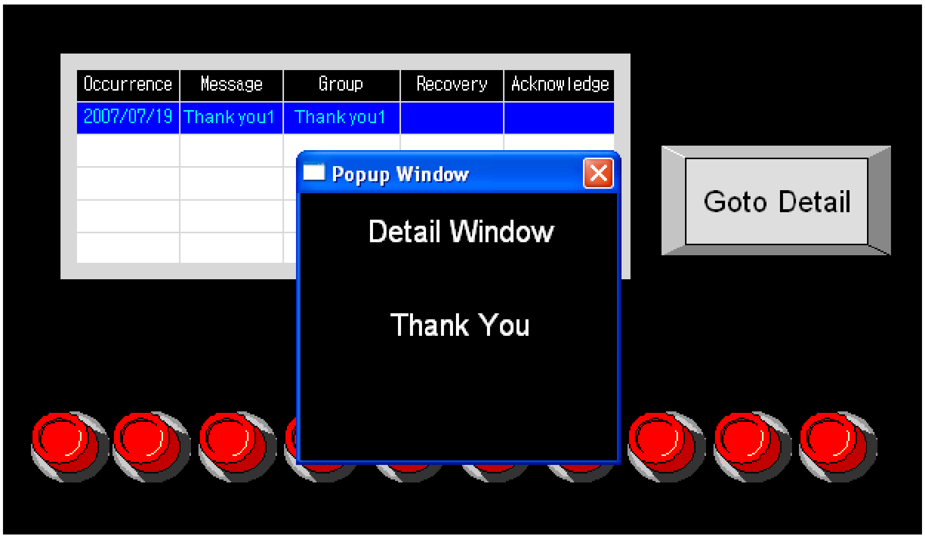
History Alarm List of Common Data



Alarm Form
No.of Row: 4
Space: 0 (X-axis) 0 (Y-axis)
Sort: ● Oldest ○ Latest
☑ Detail

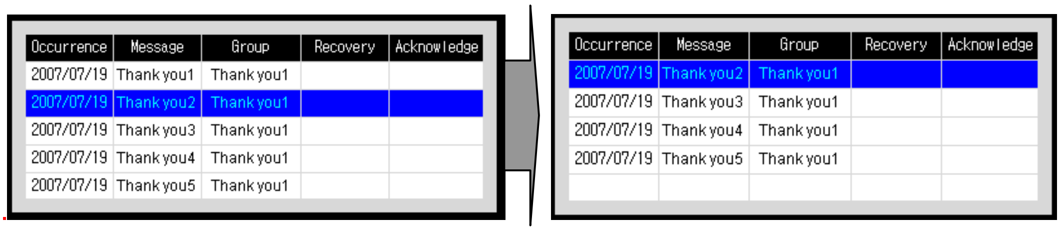
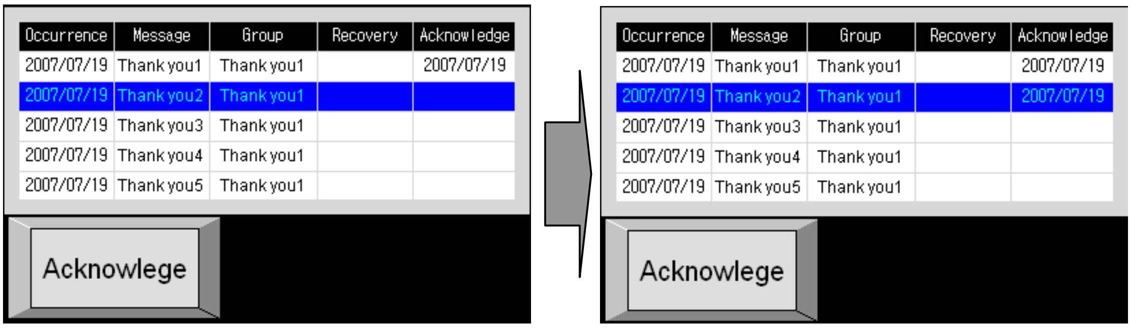
History Alarm View Object

Select a column of which the details you want to see in the history alarm view object and touch the [Go to History Alarm Viewer Detail] switch to invoke the relevant window screen.

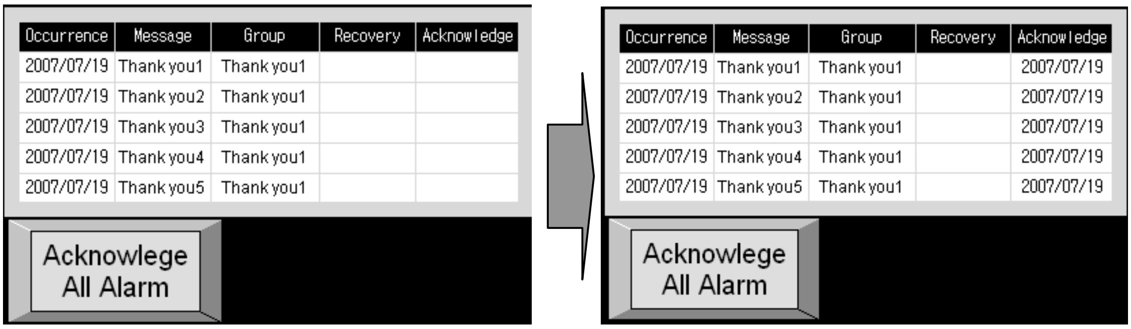


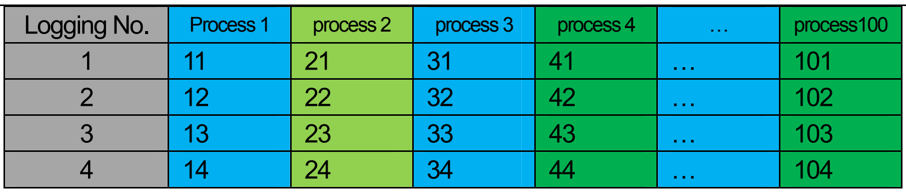
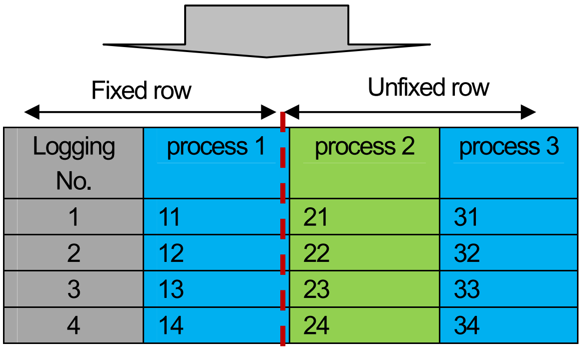
Occurrence	Message	Group	Recovery	Acknowledge
2007/07/19	Thank you1	Thank you1		

Popup Window
Detail Window
Thank You

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>History alarm Viewer</td><td>
<table>
<tr><th>Type</th><th>Function</th></tr>
<tr><td>Page up</td><td>If there are more history alarms than those displayed in the XGT Panel window, multiple pages of history alarms are created. If you press a special switch in XGT Panel, the history alarm contents of the page immediately prior to the currently displayed page are shown.</td></tr>
<tr><td>Page down</td><td>If there are more history alarms than those displayed in the XGT Panel window, multiple pages of history alarms are created. If you press a special switch in XGT Panel, the history alarm contents of the page immediately next to the currently displayed page are shown.</td></tr>
<tr><td>Line up</td><td>The alarm contents in the column above the current history alarm contents are shown when you press the special switch.</td></tr>
<tr><td>Line down</td><td>The alarm contents a column after the current history alarm contents are shown when you press the special switch.</td></tr>
</table>

<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you1</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td></td></tr>
</table>
<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Delete selected Line in Alarm viewer</td><td>The data selected in View History Alarm is deleted when you select particular history alarm data in View History Alarm and press the special switch. The alarm data which has not been restored is not deleted.</td></tr>
<tr><td>Delete All Alarm Data in Alarm viewer</td><td>This is for deleting all the alarm data in the currently displayed page in View History Alarm. The alarm data which has not been restored is not deleted.</td></tr>
<tr><td>Acknowledge selected Alarm Data in Alarm Viewer</td><td>The data selected in View History Alarm is checked when you select particular history alarm data in View History Alarm and press the special switch. In this case, the check time is recorded.


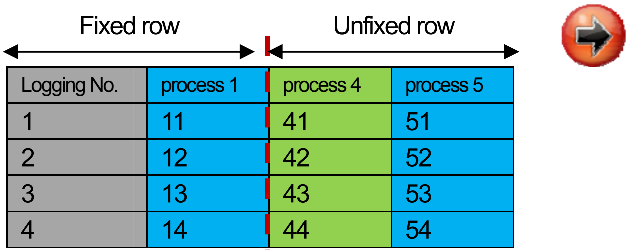
<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you1</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td></td></tr>
</table>
<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you1</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Acknowledge All Alarm Data in Alarm Viewer</td><td>This is for checking all the alarm data in the currently displayed page in View History Alarm. In this case, the check time is recorded in all the alarm data of the current page.</td></tr>
</table>

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>

<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you1</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td></td></tr>
</table>
<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you1</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
</table>

</td></tr>
<tr><td>Logging vertical list view</td><td>
<table>
<tr><th>Type</th><th>Function</th></tr>
<tr><td>Page up</td><td>If there are more logging contents than those displayed in the XGT Panel window, multiple pages of logging contents are created. If you press a special switch in XGT Panel, the logging contents of the page immediately prior to the currently displayed page are shown.</td></tr>
<tr><td>Page down</td><td>If there are more logging contents than those displayed in the XGT Panel window, multiple pages of logging contents are created. If you press a special switch in XGT Panel, the logging contents of the page immediately next to the currently displayed page are shown.</td></tr>
<tr><td>Line up</td><td>The logging contents in the column above the current logging contents are shown when you press the special switch.</td></tr>
<tr><td>Line down</td><td>The logging contents in the column after the current logging contents are shown when you press the special switch.</td></tr>
</table>
</td></tr>
<tr><td>Logging horizontal list view</td><td>

<table>
<tr><th>Logging No.</th><th>Process 1</th><th>process 2</th><th>process 3</th><th>process 4</th><th>…</th><th>process100</th></tr>
<tr><td>1</td><td>11</td><td>21</td><td>31</td><td>41</td><td>…</td><td>101</td></tr>
<tr><td>2</td><td>12</td><td>22</td><td>32</td><td>42</td><td>…</td><td>102</td></tr>
<tr><td>3</td><td>13</td><td>23</td><td>33</td><td>43</td><td>…</td><td>103</td></tr>
<tr><td>4</td><td>14</td><td>24</td><td>34</td><td>44</td><td>…</td><td>104</td></tr>
</table>
[Actual Logging Data]


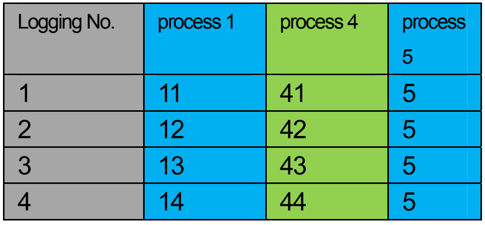
<table>
<tr><th>Logging No.</th><th>process 1</th><th>process 2</th><th>process 3</th></tr>
<tr><td>1</td><td>11</td><td>21</td><td>31</td></tr>
<tr><td>2</td><td>12</td><td>22</td><td>32</td></tr>
<tr><td>3</td><td>13</td><td>23</td><td>33</td></tr>
<tr><td>4</td><td>14</td><td>24</td><td>34</td></tr>
</table>
[Logging Data displayed at XGT-Panel screen]
</td></tr>
</table>

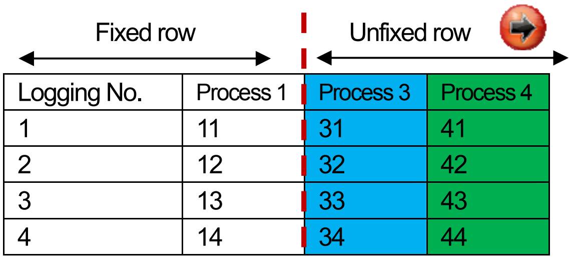
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
The actual logging data and that displayed at XGT Panel are as above, their functions are as below.
<table>
<tr><th>Type</th><th>Functions</th></tr>
<tr><td>Next page view in the horizontal direction</td><td>
When the logging data of the horizontal direction is more than those displayed at XGT Panel screen, you can use this switch. At unfixed rows, it shows the logging data of the right next page from the current one with keeping the fixed row.



<table>
<tr><th>Logging No.</th><th>process 1</th><th>process 4</th><th>process 5</th></tr>
<tr><td>1</td><td>11</td><td>41</td><td>51</td></tr>
<tr><td>2</td><td>12</td><td>42</td><td>52</td></tr>
<tr><td>3</td><td>13</td><td>43</td><td>53</td></tr>
<tr><td>4</td><td>14</td><td>44</td><td>54</td></tr>
</table>
[Logging Data displayed at XGT-Panel screen]

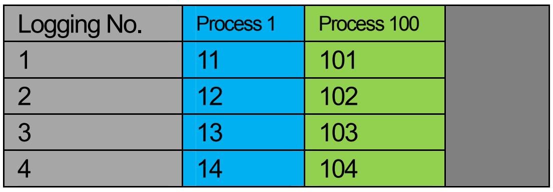
In the above case, although there are some data in the last row on right side, it is displayed as being cut since display area is not enough.


<table>
<tr><th>Logging No.</th><th>process 1</th><th>process 4</th><th>process 5</th></tr>
<tr><td>1</td><td>11</td><td>41</td><td>5</td></tr>
<tr><td>2</td><td>12</td><td>42</td><td>5</td></tr>
<tr><td>3</td><td>13</td><td>43</td><td>5</td></tr>
<tr><td>4</td><td>14</td><td>44</td><td>5</td></tr>
</table>
</td></tr>
<tr><td>Previous page view in the horizontal direction</td><td>
When the logging data of the horizontal direction is more than those displayed at XGT Panel screen, you can use this switch. At unfixed rows, it shows the logging data of the right previous page from the current one with keeping the fixed row.
</td></tr>
<tr><td>Next Row View</td><td>
If logging data in horizontal direction is more than the number of data displayed at XGT Panel screen, you can use the switch. At unfixed rows, it shows the logging data of the next row from the current one with keeping the fixed row.



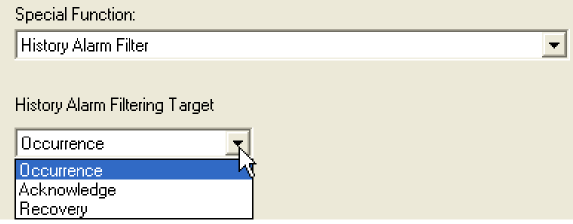
<table>
<tr><th>Logging No.</th><th>Process 1</th><th>Process 3</th><th>Process 4</th></tr>
<tr><td>1</td><td>11</td><td>31</td><td>41</td></tr>
<tr><td>2</td><td>12</td><td>32</td><td>42</td></tr>
<tr><td>3</td><td>13</td><td>33</td><td>43</td></tr>
<tr><td>4</td><td>14</td><td>34</td><td>44</td></tr>
</table>
[Logging data displayed at XGT-Panel screen]
</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
<table>
<tr><td>Previous row View</td><td>If logging data in horizontal direction is more than the number of data displayed at XGT Panel screen, you can use the switch. At unfixed rows, it shows the logging data of the previous row from the current one with keeping the fixed row.</td></tr>
<tr><td>First row view</td><td>It shows the logging data of the first row at Logging Data View of XGT Panel among generated logging data.</td></tr>
<tr><td>Last row view</td><td>It shows the logging data of the last row at Logging Data View of XGT Panel among generated logging data.



<table>
<tr><th>Logging No.</th><th>Process 1</th><th>Process 100</th><th></th></tr>
<tr><td>1</td><td>11</td><td>101</td><td></td></tr>
<tr><td>2</td><td>12</td><td>102</td><td></td></tr>
<tr><td>3</td><td>13</td><td>103</td><td></td></tr>
<tr><td>4</td><td>14</td><td>104</td><td></td></tr>
</table>

If the object area is larger than the area displayed to the last row as above, remaining area will be filled with gray color.</td></tr>
</table>
</td></tr>
<tr><td>Alarm Navigator Viewer</td><td>
<table>
<tr><th>Type</th><th>Function</th></tr>
<tr><td>Line up</td><td>The alarm group in the column above the current alarm search panel contents is shown when you press the special switch.</td></tr>
<tr><td>Line down</td><td>The alarm group in the column after the current alarm search panel contents is shown when you press the special switch.</td></tr>
</table>
</td></tr>
<tr><td>History alarm filter</td><td>This is for filtering the specified filtering objects of all the history alarm data that have occurred and displaying them in the history alarm view object.

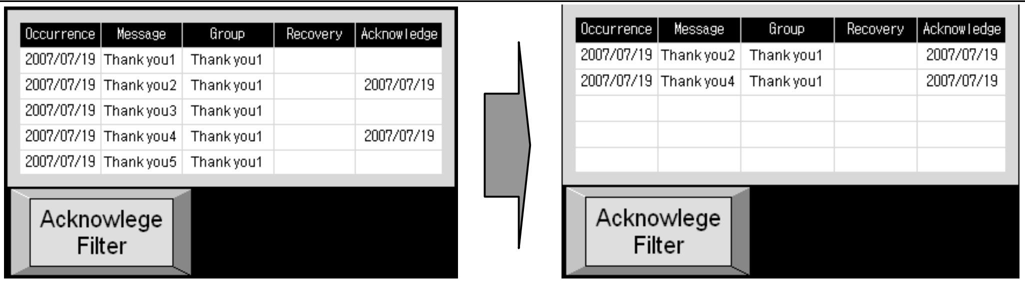


Special Function: History Alarm Filter

History Alarm Filtering Target: Occurrence

Filtering objects are as follows.

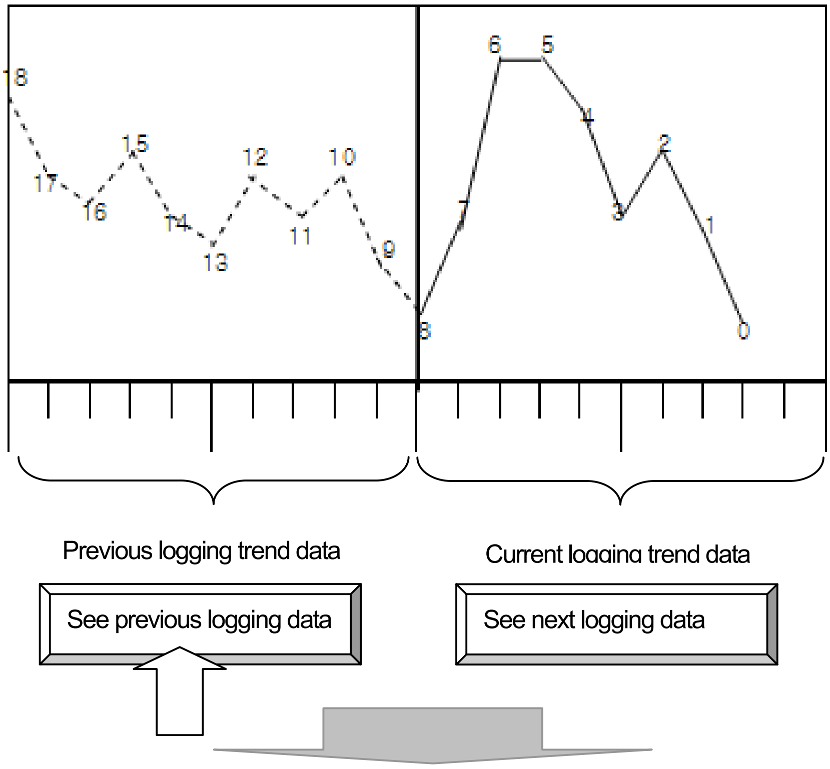
<table>
<tr><th>Type</th><th>Function</th></tr>
<tr><td>Occurrence</td><td>Displays all the history alarm data of which the alarm has occurred.</td></tr>
<tr><td>Acknowledge</td><td>Displays all the checked history alarm data of all the history alarm data which occurred.
The history alarm data checked by using the special switch is the object now.</td></tr>
<tr><td>Recovery</td><td>Displays all the history alarm data which has been restored of all the history alarm data which occurred.</td></tr>
</table>
</td></tr>
</table>

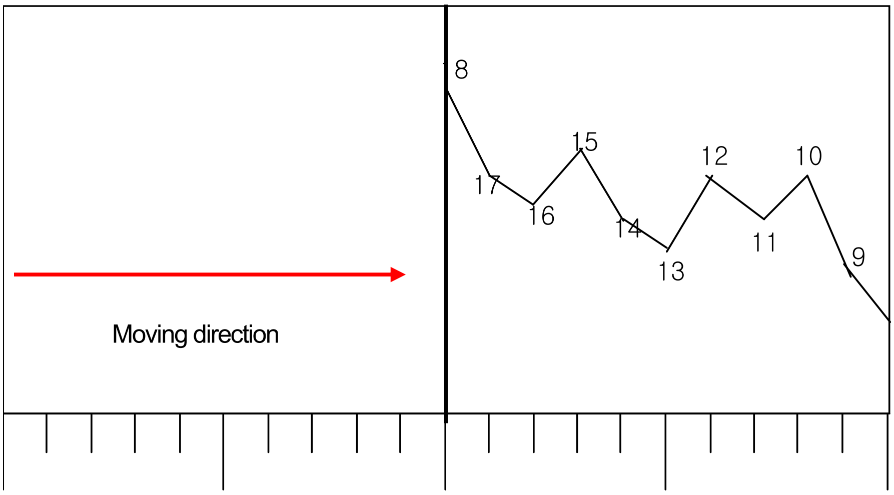
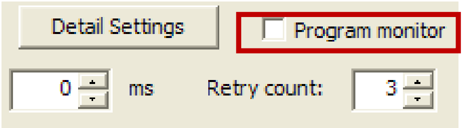
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>


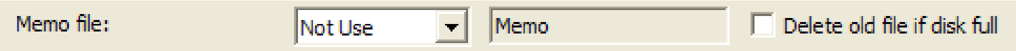
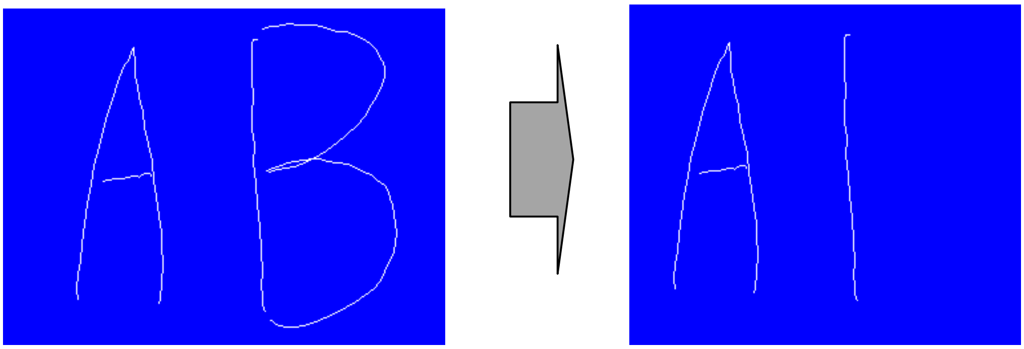
<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you1</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you3</td><td>Thank you1</td><td></td><td></td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you5</td><td>Thank you1</td><td></td><td></td></tr>
</table>

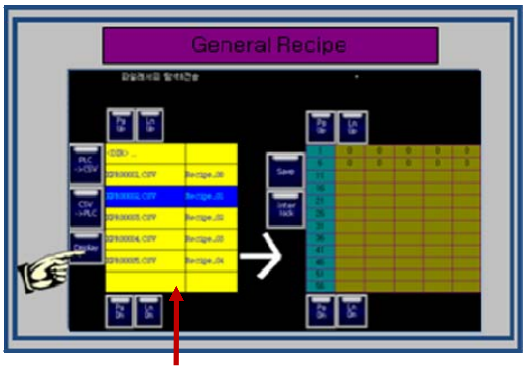
<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/19</td><td>Thank you2</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
<tr><td>2007/07/19</td><td>Thank you4</td><td>Thank you1</td><td></td><td>2007/07/19</td></tr>
</table>

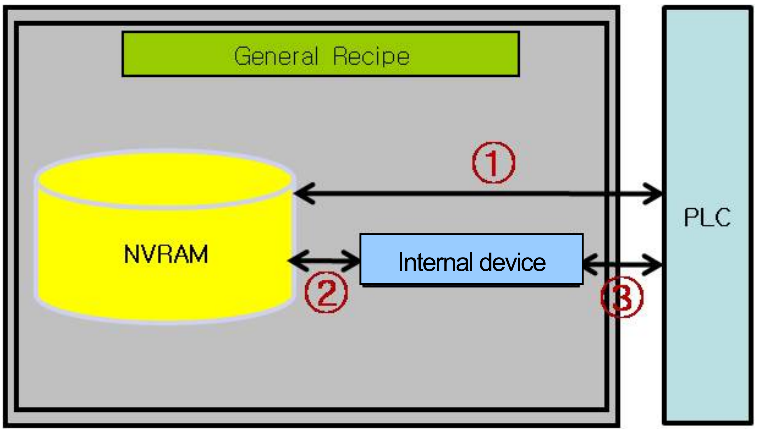
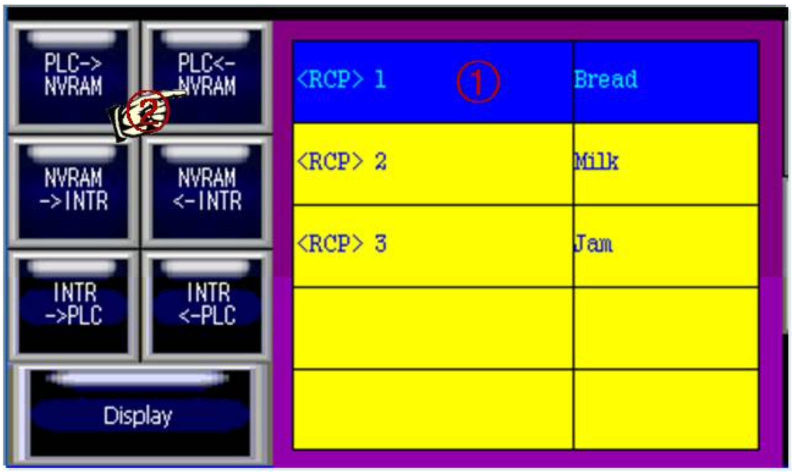
Acknowlege Filter
Acknowlege Filter
</td></tr>
<tr><td>Logging Trend Previous Data View</td><td>
You can see the logging data generated prior to the data displayed at logging trend now. Supposing that the number of displayed data is 9EA with 18EA of logging data, if you try to see the logging data obtained prior to the current data, you can use the special switch [Logging Trend Previous Data View]. You can also establish the number of data to be transferred.

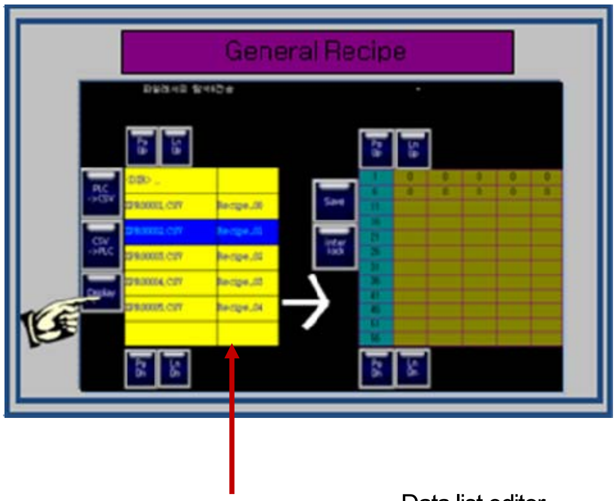

18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
Previous logging trend data
Current logging trend data
See previous logging data
See next logging data
</td></tr>
</table>

Items	Settings
	 8 17 16 15 14 13 12 11 10 9 Moving direction If the number of data to be transferred is 8EA, the data recorded prior to 8times will be displayed at the current logging trend.
Logging trend Next data view	You can see the logging data generated later than the data displayed at logging trend now. Supposing that the number of displayed data is 9EA with 24EA of logging data and 18EA of logging data is displayed at the moment, if you try to see the next logging value from the current data, you can use the special switch [Logging Trend Next Data View]. You can also establish the number of data to be transferred. Supposing that the number of data to be transferred is 8EA, if you touch Logging Trend Next Data View, the data logged after 8times from the current displayed data will be displayed at the screen.
First Logging trend data view	You can see the first logging data among the recorded data at logging area now.
Last Logging trend data view	You can see the last logging data among the recorded data at logging area now.
Close Windows popup screen	XGT Panel closes the displayed Windows popup screen
Program Monitoring	Select the program monitoring to be executed at XGT Panel. There are XGT Series, XGI Series, XGB Series for the kinds of program monitoring equipment and only when you establish [Program Monitor] at [Project Property]-[XGT Panel Settings], it works normally.  Detail Settings ☐ Program monitor 0 ms Retry count: 3
Next Memo	It calls the next memo of the current one at XGT Panel.
Previous Memo	It calls the previous memo of the current one at XGT Panel.

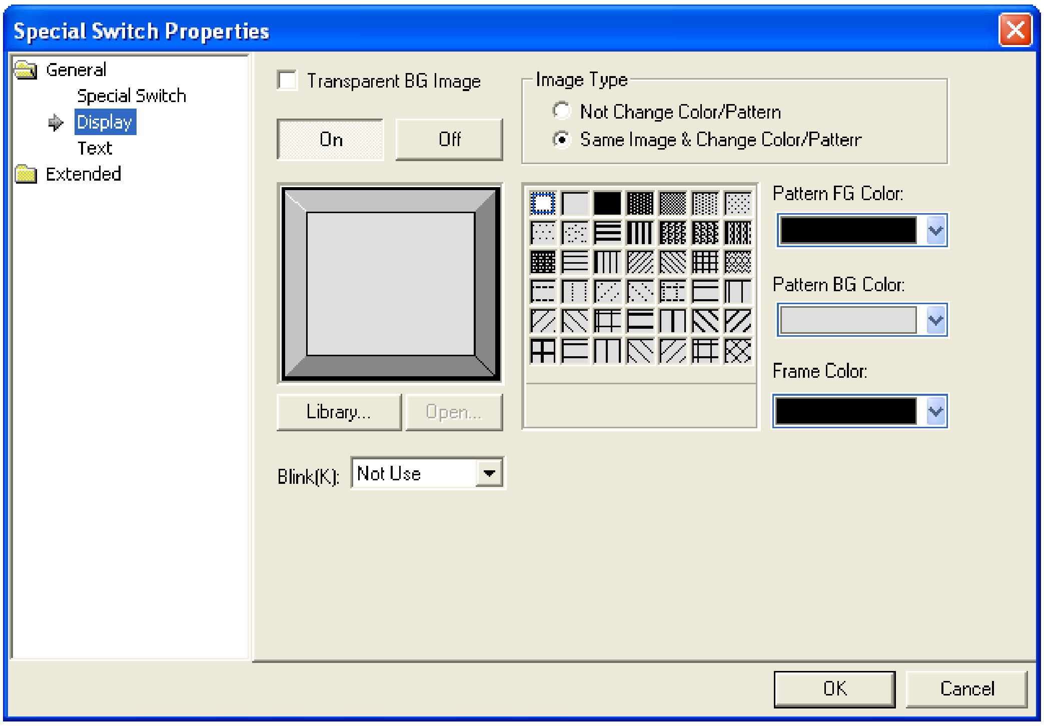
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Memo Save</td><td>It saves the memo pad that exists in XGT Panel now to the file. A user needs to designate the storage equipment for saving memo when editing a memo pad.
It is saved the place (CF Card, USB Memory) established at [Common]-[Project Property]-[Storage Settings]-[Backup Storage].

Memo file: Not Use ▾ Memo ☐ Delete old file if disk full
The name of saved file is the same as history alarm.
The second bit of memo pad status device indicates whether it is successfully saved or not.</td></tr>
<tr><td>Memo Delete</td><td>It deletes all memo pad files of storage devices. The third bit of memo pad status device indicates whether they are successfully deleted or not.</td></tr>
<tr><td>Delete all save memo</td><td>It deletes all memo pad files of storage devices. The third bit of memo pad status device indicates whether they are successfully deleted or not.</td></tr>
<tr><td>Undo</td><td>A user needs to cancel the right previous memo input operation. The moment that you cancel pressing XGT Panel is regarded as 1 stroke and 'Undo' button removes 1 stroke. Namely, if you press 'Undo' button after inputting A,B, you can see the below.
</td></tr>
<tr><td>Redo</td><td>It displays the data canceled recently once again.</td></tr>
<tr><td>Pen Setting</td><td>It sets the color and thickness of a pen to be used for memo pad. In addition to the pen established by memo pad object, if you change the color and thickness of memo when XGT Panel runs, you can establish the pen with a special switch.</td></tr>
<tr><td>Mode conversion</td><td>While the status that memo input is available is called Active mode, the status that memo input is not available is called Non-Active mode. When converting into Non-Active Mode, all memos that remains at the memo pad will be removed and it initialized to background color (in the case of no designation, transparent color). It displays the very fist file among saved memo files.
Reference) You can check the mode status from the first bit of status device at [Basic Items] of Memo pad object.</td></tr>
<tr><td>Memo Initialization</td><td>It deleted all memos displayed at XGT Panel now. If you operate [Memo Initialization]
at Active Mode, it deletes all memos displayed at XGT Panel now and initialized to background color. However, the function is not available at Non-Active mode.</td></tr>
<tr><td>Data list Editor</td><td>
<table>
<tr><th>Type</th><th>Functions</th></tr>
<tr><td>Page Up</td><td>If data list is more than the number of displayed data at XGT Panel, several pages of edited data are generated. When pressing a special switch at XGT Panel, it shows the data of right above page from the current one.</td></tr>
<tr><td>Page Down</td><td>If data list is more than the number of displayed data at XGT Panel, several pages of edited data are generated. When pressing a special switch at XGT Panel, it shows the data of right below page from the current one.</td></tr>
<tr><td>Line Up</td><td>When pressing a special switch, it shows the data of right above line from the current one.</td></tr>
</table>
</td></tr>
</table>

Items	Settings	
	Line Down	When pressing a special switch, it shows the data of right below line from the current one.
File Recipe Edition	**Type**	**Functions**
	Page Up	If file recipe list is more than the number of displayed data at XGT Panel, several pages of edited file recipe data are generated. When pressing a special switch at XGT Panel, it shows the file recipe of right above page from the current one.
	Page Down	If file recipe list is more than the number of displayed data at XGT Panel, several pages of edited file recipe data are generated. When pressing a special switch at XGT Panel, it shows the file recipe of right below page from the current one.
	Line Up	When pressing a special switch, it shows the file recipe of right above line from the current one.
	Line Down	When pressing a special switch, it shows the file recipe of right below line from the current one.
	Save	It saves the data of file recipe editor displayed at XGT Panel to the file selected by recipe explorer.
File recipe exploring and transmission	**Type**	**Functions**
	Controller ->XP transmission	The recipe data of PLC or controller are transmitted to XGT Panel's file recipe editor and displayed.
	XP-> Controller transmission	The data of XGT Panel's file recipe editor are transmitted to PLC or controller.
	Page Up	If file recipe list is more than the number of displayed data at XGT Panel, several pages of recipe explorer lists are generated. When pressing a special switch at XGT Panel, it shows the file recipe list of right above page from the current one.
	Page Down	If file recipe list is more than the number of displayed data at XGT Panel, several pages of recipe explorer lists are generated. When pressing a special switch at XGT Panel, it shows file recipe list of right below page from the current one.
	Line Up	When pressing a special switch, it shows the file recipe list of right above line from the current one.
	Line Down	When pressing a special switch, it shows the file recipe list of right below line from the current one.
	Selected file view	If a user press a special switch after selecting the specific list among file recipe list displayed at recipe explorer, the recipe data of the related list will be displayed in file recipe editor.  Recipe Explorer File Recipe Editor

Items	Settings	
	Type	**Functions**
Basic recipe exploring and transmission	Line Up	When pressing a special switch, it shows the basic file recipe list of right above line from the current one.
	Line Down	When pressing a special switch, it shows the basic file recipe list of right below line from the current one.
	NVRAM->PLC Transmission	If the basic recipe edited at XP-Builder is transmitted to XGT Panel, it will be back-upped at NAVRAM. Transmitting recipe between back-upped NAVRAM, internal device, PLC is as below.  General Recipe ① NVRAM Internal device ② ③ PLC When pressing the special switch established as NVRAM->PLC transmission, the data will be transmitted as above No.1. The setting method is as below. 1. Select the recipe list to be transmitted at recipe explorer. 2. Press the special switch for NVRAM->PLC transmission.  PLC-> NVRAM PLC<- NVRAM ② NVRAM ->INTR NVRAM <-INTR INTR ->PLC INTR <-PLC Display ① <RCP> 1 Bread <RCP> 2 Milk <RCP> 3 Jam
	PLC->NVRAM Transmission	When pressing a special switch, it transmits the basic recipe saved at PLC to NVRAM. When pressing the special switch established as PLC->NVRAM transmission, the data will be transmitted as above No.1. The setting method is as below. 1. Select the appropriate recipe list 2. Press the special switch for PLC->NVRAM transmission 3. Then, the basic recipe value of PLC will move to NVRAM allocated for recipe list.

Items	Settings	
	NVRAM->Internal Device Transmission	When pressing a special switch, it transmits the basic recipe back-upped at NVRAM to internal device. When pressing the special switch established as NVRAM ->Internal Device transmission, the data will be transmitted as above No.2. To edit basic recipe back-upped at NVRAM, you need to move the saved recipe to internal device. Accordingly, for data edition, it should move to internal device and you can establish internal device address to be transferred in the internal device of recipe editor.
	Internal Device -> NVRAM Transmission	When pressing a special switch, it transmits the recipe back-upped of internal device to NAVRAM. In the case of Internal Device -> NVRAM transmission, the data will be transmitted as above No.2. You can move the basic recipe value edited at internal device to NVRAM.
	Internal Device ->PLC Transmission	When pressing a special switch, it transmits the recipe of internal device to PLC. In the case of Internal Device -> PLC transmission, the data will be transmitted as above No.3.
	PLC -> Internal Device	When pressing a special switch, it transmits the recipe of PLC device to internal device. In the case of PLC->Internal Device transmission, the data will be transmitted as above No.3.
	Selected file view	If a user presses the special switch after selecting a certain list among basic recipe list displayed recipe explorer, the recipe date of the related list will be displayed at data list editor.  Recipe Explorer Data list editor

(2) Display


Special Switch Properties
General
Special Switch
Display
Text
Extended
Library...
Open...
OK
Cancel

☐ Transparent BG Image

On | Off

Image Type
○ Not Change Color/Pattern
● Same Image & Change Color/Pattern

Pattern FG Color:

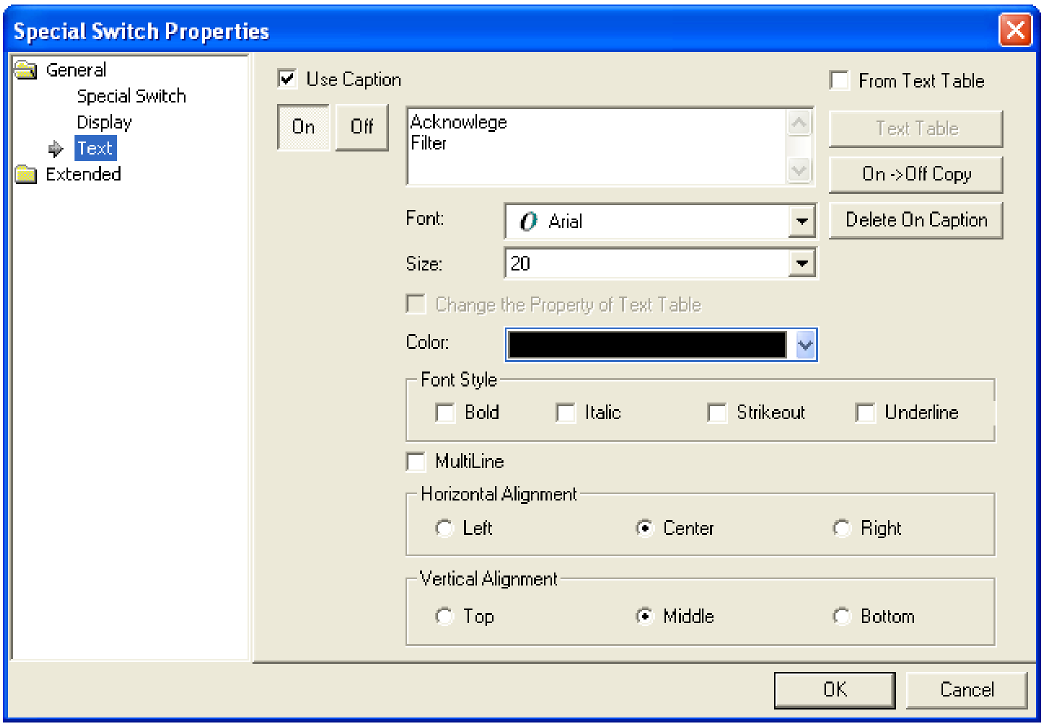
Pattern BG Color:

Frame Color:

Blink(K): Not Use

(☞ **See 16.2 Display Function Setting)**

(3) Text


Special Switch Properties
General
Special Switch
Display
Text
Extended
Text Table
On ->Off Copy
Delete On Caption
OK
Cancel

☑ Use Caption

☐ From Text Table

On | Off

Acknowlege
Filter

Font: Arial

Size: 20

☐ Change the Property of Text Table

Color:

Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

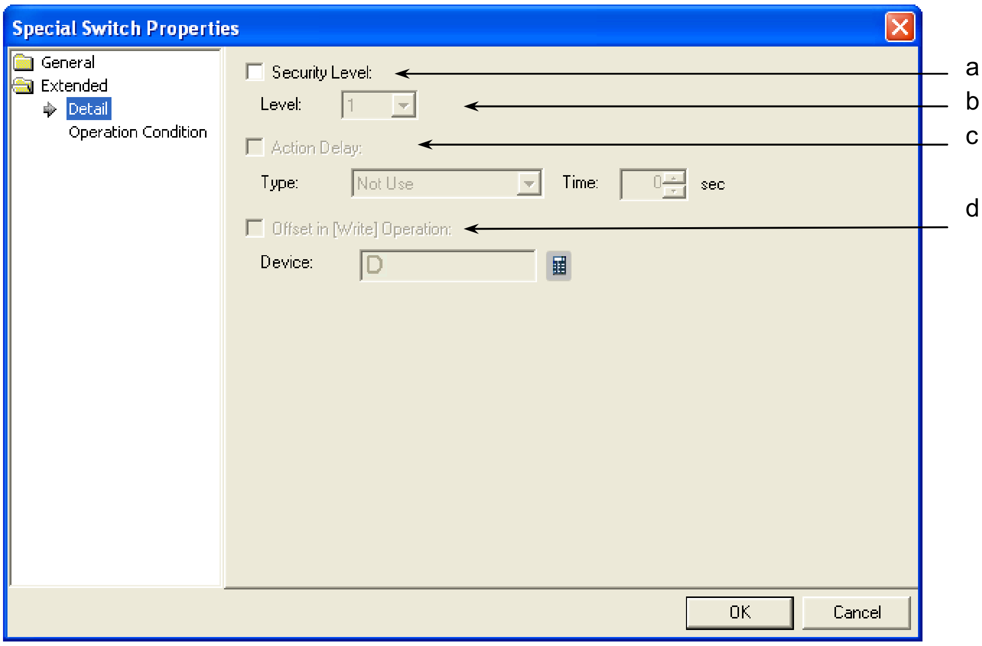
☐ MultiLine

Horizontal Alignment
○ Left ● Center ○ Right

Vertical Alignment
○ Top ● Middle ○ Bottom

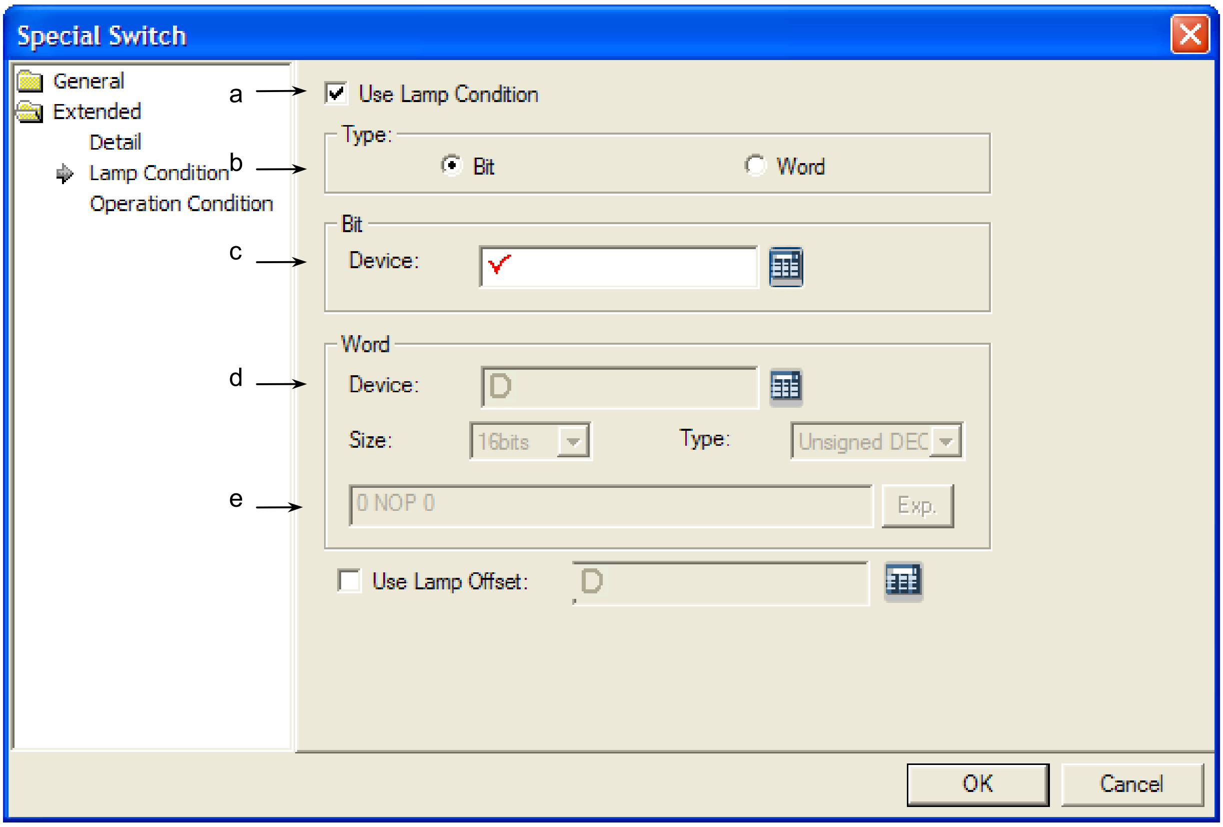
(☞ **See 16.3 Text Setting**)

(4) Detail


Special Switch Properties
General
Extended
Detail
Operation Condition
☐ Security Level:
Level:
1
☐ Action Delay:
Type:
Not Use
Time:
0
sec
☐ Offset in [Write] Operation:
Device:
D
OK
Cancel
a
b
c
d

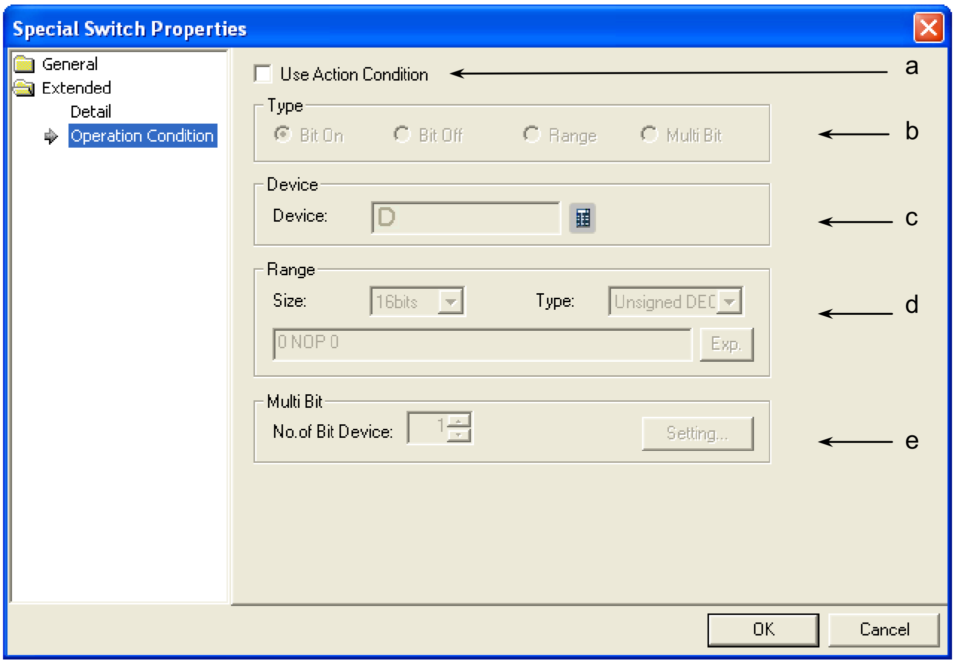
Items	Settings
Security level (a)	Set when you use the security function.
Level (b)	You can use the security function if you select this. The security level ranges between 1 and 15. (☞ **See 16.7 Security Setting of Chapter 16 Object Setting)** Method) You can operate the related switches in XGT Panel only you have set a password in [Common]-[Project Property settings]-[Security Settings] of XP-Builder and enter the password above the security level set in the word switch.
Action delay (c)	You cannot use this function in the special switch, which does not provide the operation delay function.
Offset in [Write] Operation (d)	You cannot use this function in the special switch, which does not provide the offset function.

(5) Lamp Condition Setting


Special Switch
General
Extended
Detail
Lamp Condition
Operation Condition
a
b
c
d
e
☑ Use Lamp Condition
Type:
● Bit
○ Word
Bit
Device:
Word
Device:
D
Size:
16bits
Type:
Unsigned DEC
0 NOP 0
Exp.
☐ Use Lamp Offset:
D
OK
Cancel

Items	Settings
Use lamp condition (a)	Decides whether to control the lamp in a way other than turning ON the lamp when you touch the switch in XGT Panel.
Type (b)	Selects the condition for lamp control. Bit: turns the lamp ON when the set device bit is On. Word: turns the lamp ON when the set device value meets the set condition.
Bit device (c)	Sets the device to be referred to in the corresponding object when the lamp type is a bit.
Word device, size, type and expression (d)	Sets the device size, type and condition while ON when the lamp type is a word. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Expression: the condition for On display is set in a conditional expression.
Use Lamp Offset (e)	Sets offset device to bit or word device set in the Lamp Condition

(6) Operation Condition Setting


Special Switch Properties
General
Extended
Detail
Operation Condition
☐ Use Action Condition
a
Type
● Bit On
○ Bit Off
○ Range
○ Multi Bit
b
Device
Device:
D
c
Range
Size:
16bits
Type:
Unsigned DEC
0 NOP 0
Exp.
d
Multi Bit
No.of Bit Device:
1
Setting...
e
OK
Cancel

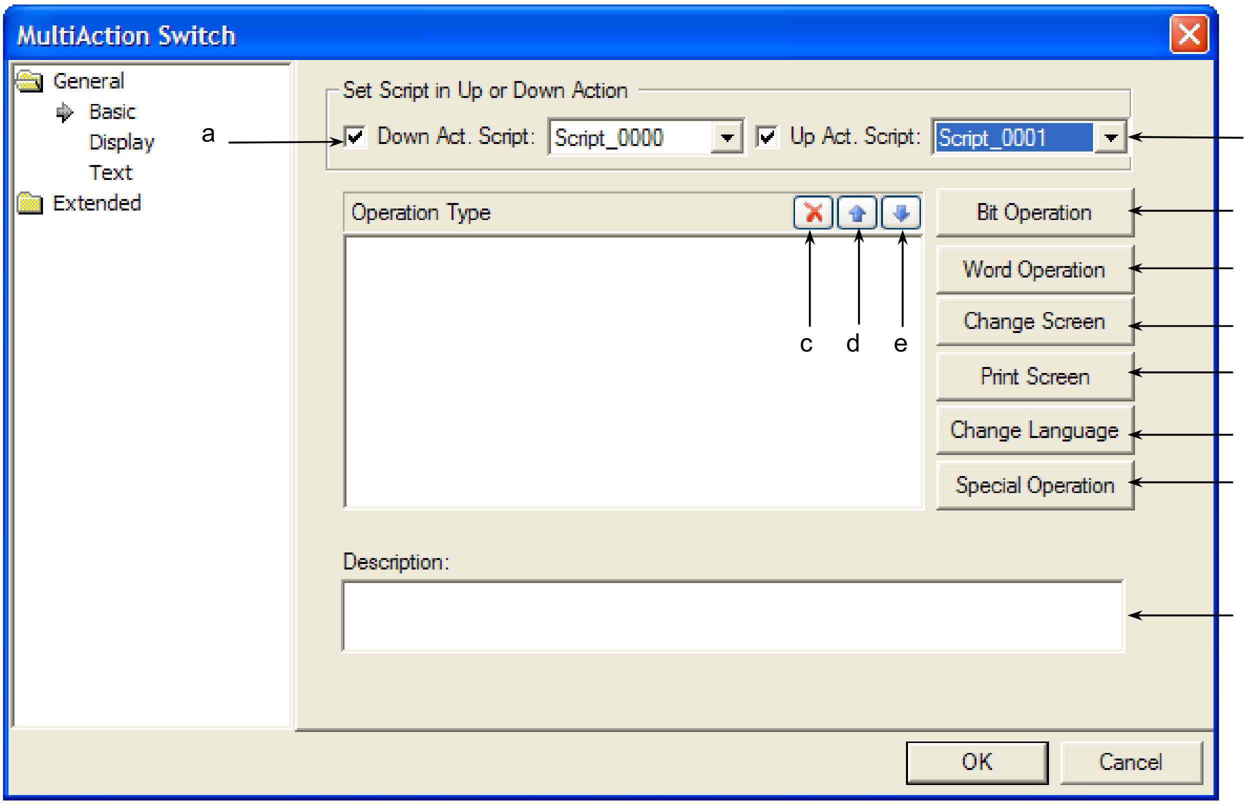
Items	Settings
Use Action condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition it should operate the object. On bit: carries out the object operation when the operation condition device is ON. Off bit: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the Range condition of the word device is met. Multi Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the Range is set.
Range (d)	Sets the size, type and Range condition when the operation condition is the Range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the range condition is set in a conditional expression.
Multi bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multi bit. **(See 16.6 Operation Condition Setting of Chapter 16 Object Setting)**

17.2.7 Multi Action Switch Settings

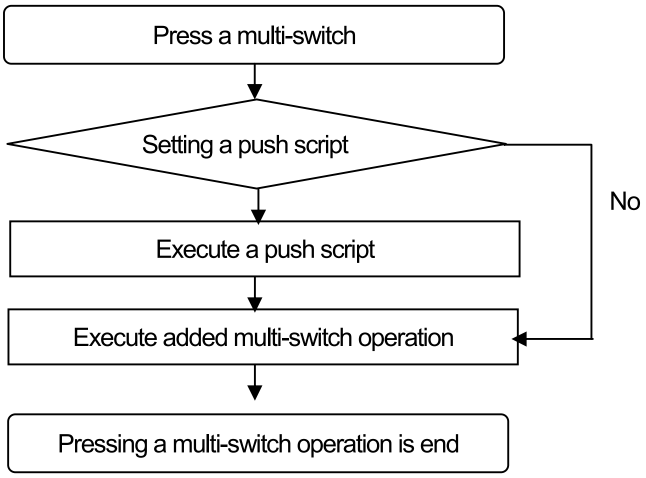
This is a switch that can operate a combination of functions of the bit switch, word switch, change screen switch and special switch. You can set the sequence of each operation and up to 8 functions can be carried out at a time.

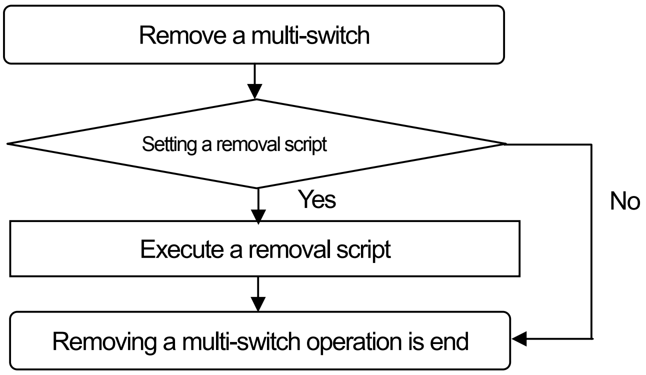
(1) Basic

Up to 8 actions can be added.


MultiAction Switch
General
Basic
Display
Text
Extended
Set Script in Up or Down Action
Operation Type
Bit Operation
Word Operation
Change Screen
Print Screen
Change Language
Special Operation
Description:
OK
Cancel
a
b
c
d
e
f
g
h
i
j
k
l

☑ Down Act. Script: Script_0000
☑ Up Act. Script: Script_0001

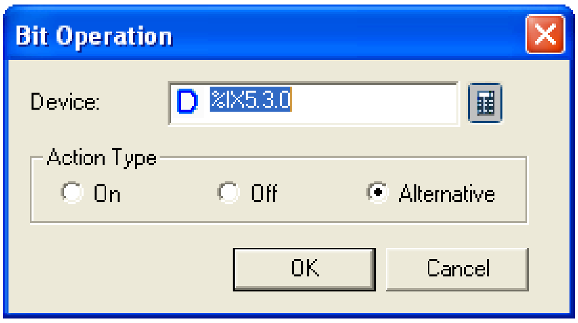
Items	Settings
Down Act. Script (a)	It displays the script to be executed when pressing a multi-switch at XGT Panel. The moment that you press the switch, it executes [Push Script] established before added multi-switch operation. The operation procedure is as below.  Press a multi-switch Setting a push script No Execute a push script Execute added multi-switch operation Pressing a multi-switch operation is end

Items		Settings
Up Act. Script(b)		It displays the script to be executed when releasing (removing) a multi-switch at XGT Panel. The moment that you release your hand or mouse from the switch, it executes [Removal Script]. The operation procedure is as below.  Remove a multi-switch Setting a removal script Yes No Execute a removal script Removing a multi-switch operation is end
Operation Type	Delete (a)	Deletes the selected action from the list.
	Up (b)	Shifts the priority of the selected action up.
	Down (c)	Shifts the priority of the selected action down.
Operation adding button	Bit Operation (d)	Invokes the setting screen for adding the bit switch.
	Word Operation (e)	Invokes the setting screen for adding the word switch.
	Change Screen (f)	Invokes the setting screen for adding the change screen switch.
	Print Screen (g)	Prints only the current screen of the XGT Panel.
	Change Language (h)	Invoke the setting screen for adding the language switching switch.
	Special Operation (i)	Invoke the setting screen for adding the special function switch.
Description (j)		Enters description in the object.

(a) Bit Switch

Setting is the same as that of basic items and operates the same action.

[Bit Action Properties Window]



Bit Operation

Device: %IX5.3.0

Action Type

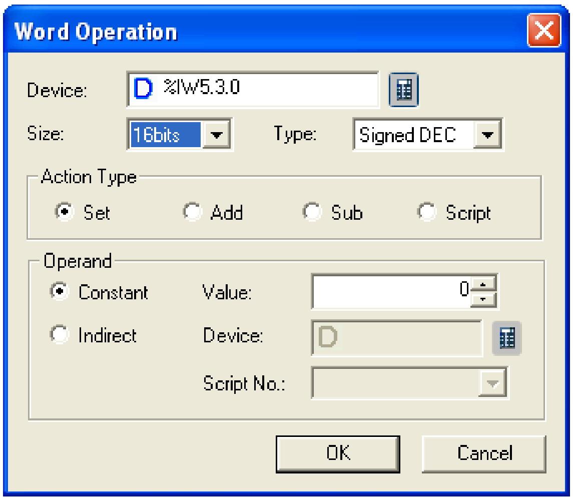
○ On ○ Off ● Alternative

Operation Type	Description
On	Turns ON the corresponding bit device value when you touch the switch. The state is preserved.
Off	Turns OFF the corresponding bit device value when you touch the switch. The state is preserved.
Alternative	Switches ON/OFF the corresponding bit device value when you touch the switch.

(b) Word Switch

Setting is the same as that of basic items and operates the same action.

[Word Action Properties Window]



Word Operation
Device: D %IW5.3.0
Size: 16bits
Type: Signed DEC
Action Type
● Set ○ Add ○ Sub ○ Script
Operand
● Constant Value: 0
○ Indirect Device: D
Script No.:
OK
Cancel

Action Type	Description
Set	Writes the fixed value or device value set in the operand.
Add	Adds the fixed value or device value set in the operand to the reference device value.
Sub	Subtract the fixed value or device value set in the operand from the reference device value.
Script	Carries out the set script. **(☞ For how to conduct the script, see details of word switch)**

(c) Change Screen Switch

Setting is the same as that of basic items and operates the same action.

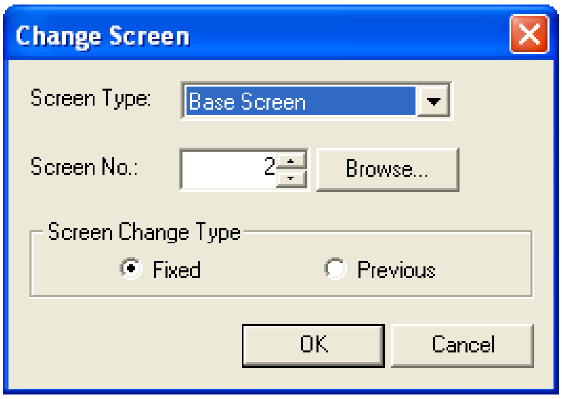
☞ **See Change Screen Switch**

Note

(1) The change screen switch must be set last of the multiple switches.

If you set the change screen switch in the middle of actions, it is automatically set last. This is for making sure that the actions started by the user in the current window can be completed before shift to the next window.

[Change Screen Action Properties Window]



Change Screen
Screen Type: Base Screen
Screen No.: 2
Browse...
Screen Change Type
● Fixed ○ Previous
OK
Cancel

(d) Print Screen

Only the window currently screened in the XGT Panel series is printed.
The screened contents operate differently according to the set printing location.

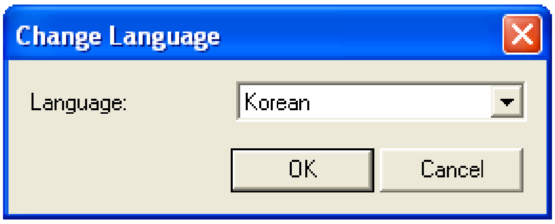
☞ **See Print Screen of Special Switch.**

(e) Change Language

Setting is the same as that of the language switching of the special switch and operates the same action.

☞ **See Change Language of Special Switch.**

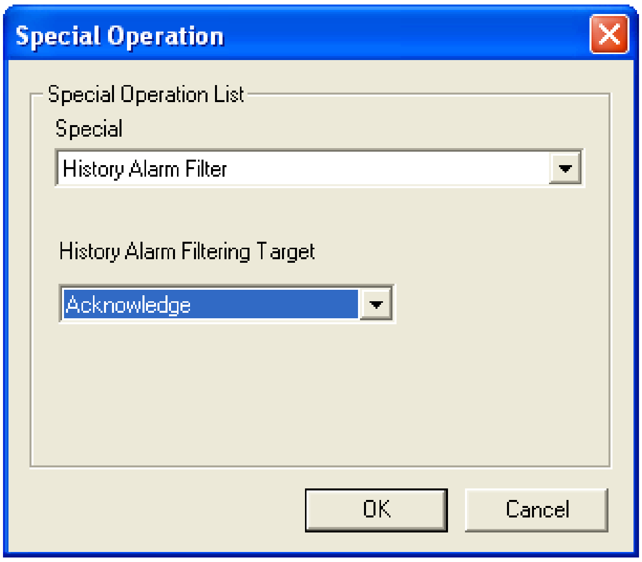
[Change Language Properties Window]



Language: Korean

(f) Special Switch

Setting is the same as that of basic items of the special switch and operates the same action.
Language switching and screen printing operate independently in the multi switch. That is, the function of the general special switch and the type of special switch provided in the multi switch has slight differences.

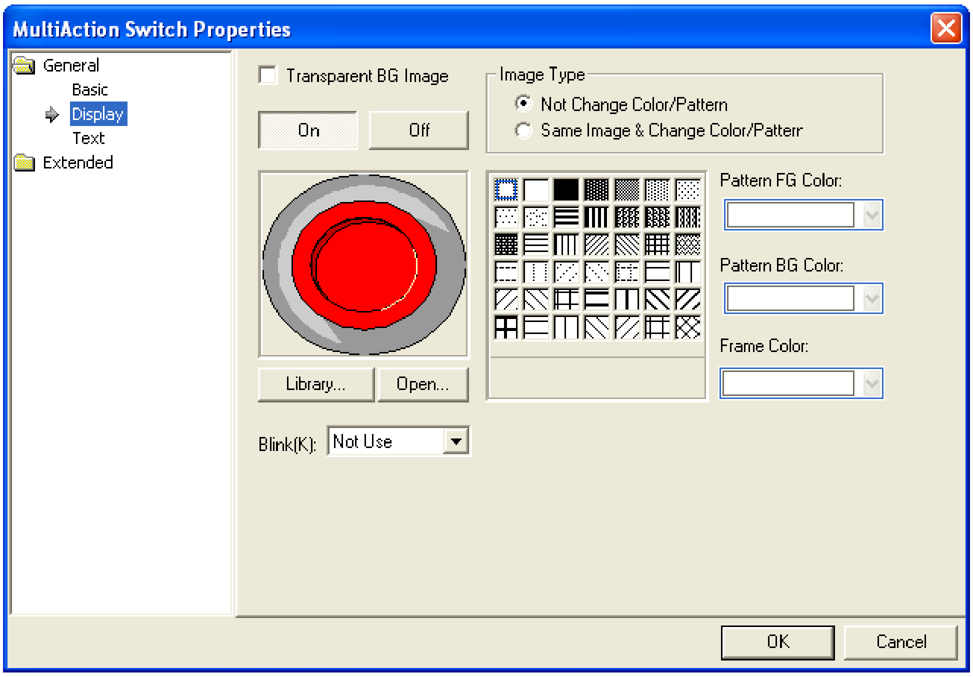


Special: History Alarm Filter

History Alarm Filtering Target: Acknowledge

[Operational Attributes Window of Special Switch]

(2) Display


MultiAction Switch Properties
General
Basic
Display
Text
Extended
On
Off
Library...
Open...
Pattern FG Color:
Pattern BG Color:
Frame Color:
OK
Cancel

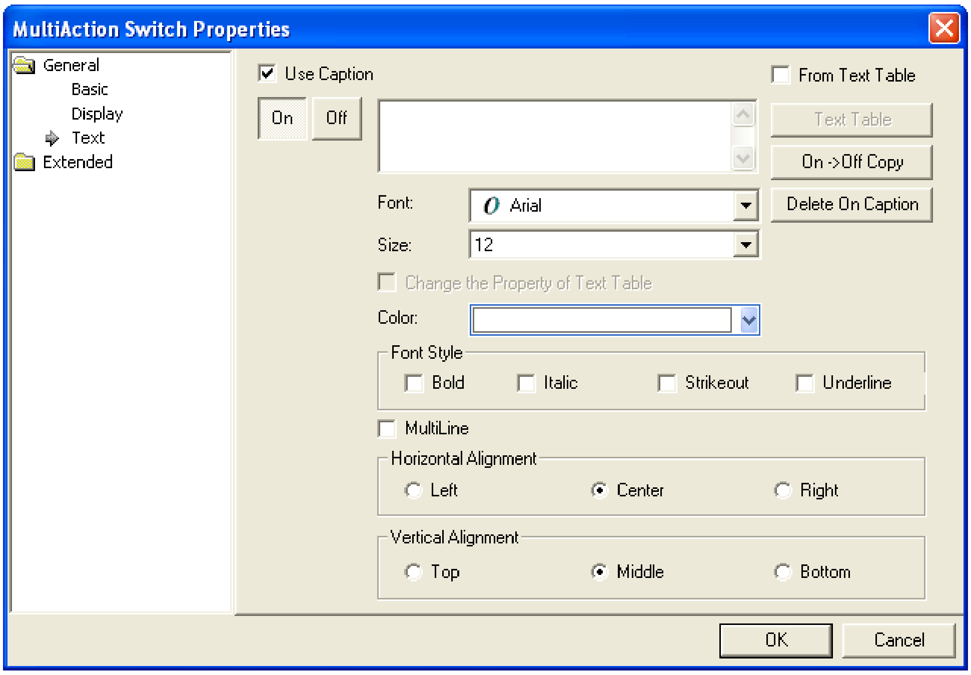
☐ Transparent BG Image

Image Type
● Not Change Color/Pattern
○ Same Image & Change Color/Patterr

Blink(K): Not Use

(☞ **See 16.2 Display Function Setting)**

(3) Text


MultiAction Switch Properties
General
Basic
Display
Text
Extended
On
Off
Text Table
On ->Off Copy
Delete On Caption
OK
Cancel

☑ Use Caption

☐ From Text Table

Font: Arial

Size: 12

☐ Change the Property of Text Table

Color:

Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

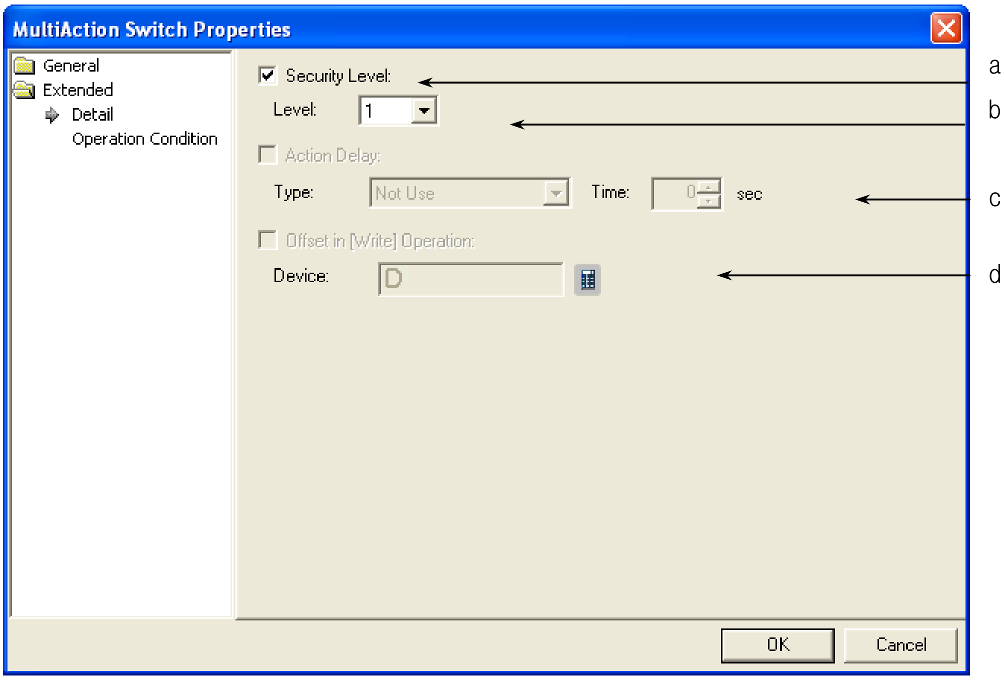
☐ MultiLine

Horizontal Alignment
○ Left ● Center ○ Right

Vertical Alignment
○ Top ● Middle ○ Bottom

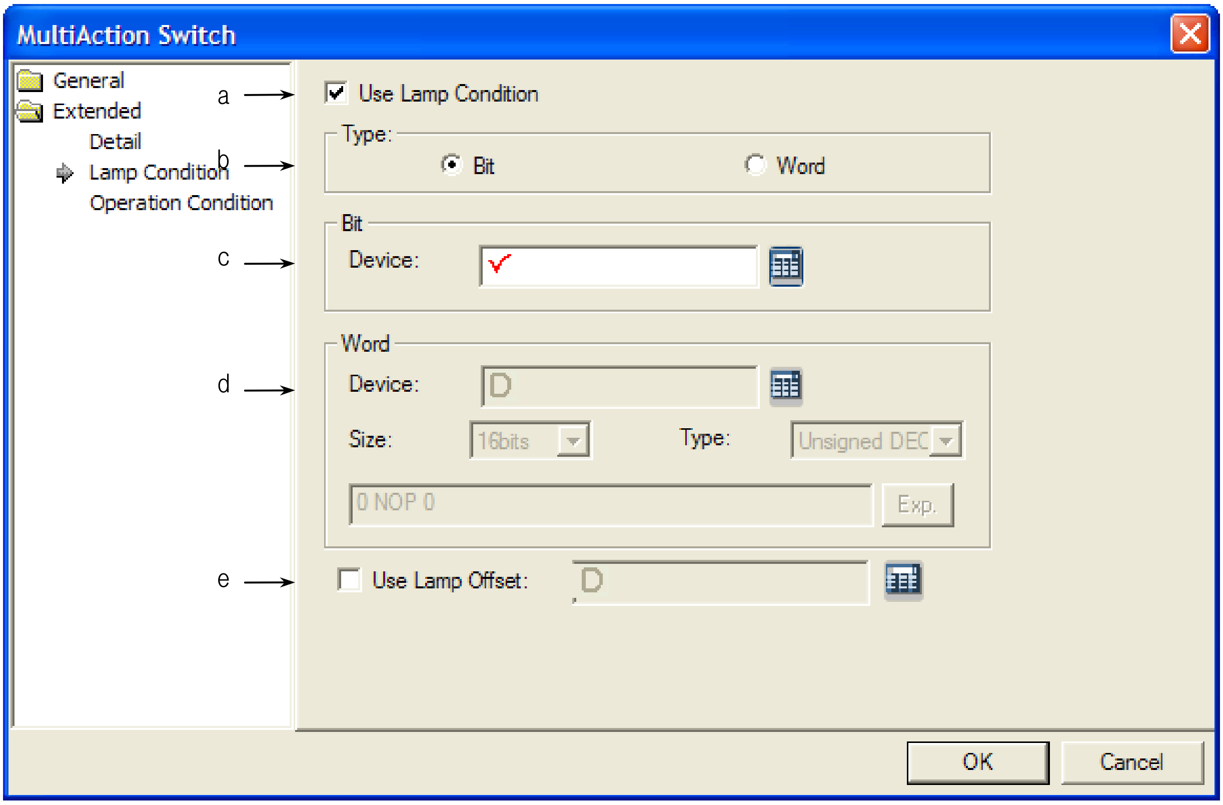
(☞ **See 16.3 Text Setting**)

(4) Detail


MultiAction Switch Properties
General
Extended
Detail
Operation Condition
☑ Security Level:
Level: 1
☐ Action Delay:
Type: Not Use
Time: 0 sec
☐ Offset in [Write] Operation:
Device: D
OK
Cancel
a
b
c
d

Items	Settings
Security level (a)	Set when you use the security function.
Level (b)	You can use the security function if you select this. The security level ranges between 1 and 15. (☞ **See 16.7 Security Setting of Chapter 16 Object Setting)** Method) You can operate the related switches in XGT Panel only you have set a password in [Common]-[Project Property settings]-[Security Settings] of XP-Builder and enter the password above the security level set in the word switch.
Action delay (c)	You cannot use this function in change screen, which does not provide the operation delay function.
Offset in [Write] Operation (d)	You cannot use the offset function in change screen. Change screen does not provide the offset function.

(5) Lamp Condition Setting



☑ Use Lamp Condition

Type: ● Bit ○ Word

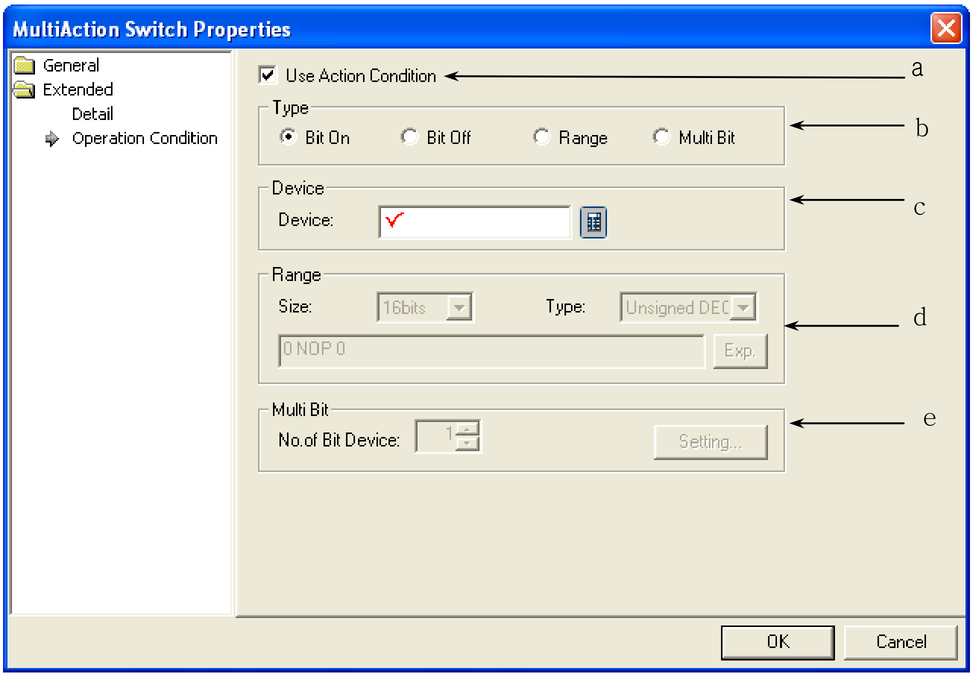
Bit
Device:

Word
Device: D
Size: 16bits
Type: Unsigned DEC
0 NOP 0

☐ Use Lamp Offset: D

Item	Settins
Use lamp condition (a)	Decides whether to control the lamp in a way other than turning ON the lamp when you touch the switch in XGT Panel.
Type (b)	Selects the condition for lamp control. Bit: turns the lamp ON when the set device bit is On. Word: turns the lamp ON when the set device value meets the set condition.
Bit device (c)	Sets the device to be referred to in the corresponding object when the lamp type is a bit.
Word device, size, type and expression (d)	Sets the device size, type and condition while ON when the lamp type is a word. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Expression: the condition for On display is set in a conditional expression.
Use Lamp Offset (e)	Sets offset device to bit or word device set in the Lamp Condition

(6) Operation Condition Setting


MultiAction Switch Properties
General
Extended
Detail
Operation Condition
☑ Use Action Condition
a
Type
● Bit On
○ Bit Off
○ Range
○ Multi Bit
b
Device
Device:
c
Range
Size:
16bits
Type:
Unsigned DEC
0 NOP 0
Exp.
d
Multi Bit
No.of Bit Device:
1
Setting...
e
OK
Cancel

Items	Settings
Use Action Condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition to operate the object. On bit: carries out the object operation when the operation condition device is ON. Off bit: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the range condition of the word device is met. Multiple Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the Range is set.
Range (d)	Sets the size, type and range condition when the operation condition is the Range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the Range condition is set in a conditional expression.
Multi bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multiple bit. **(See 16.6 Operation Condition Setting of Chapter 16 Object Setting)**

17.3 Message Object

17.3.1 Overview

The message screen function shows messages according to the set conditions. You need to register messag to use in the text table in case you use a message object.

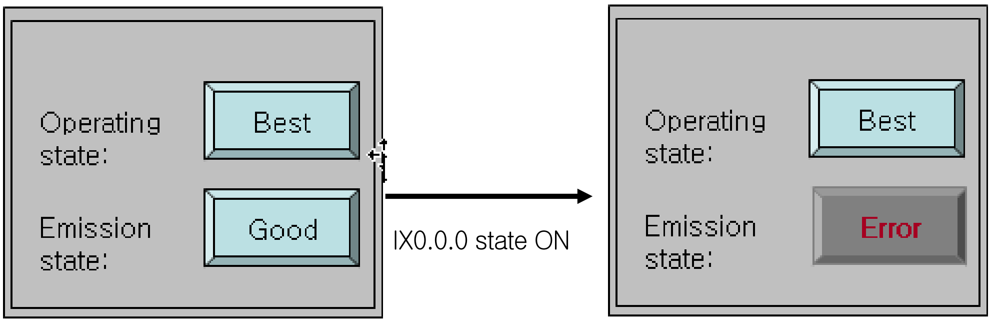
17.3.2 Message Types

Type	Description
Bit message	Displays the corresponding message according to ON/OFF of the bit device.
Word message	Displays the message corresponding to the relevant word device value.

Example)

(1) Bit Message

You can set different messages according to the state of the bit reference device (On, Off) and express them in a message of which the device state is set.



Bit Message Object for Monitoring the Operation State and Emission State

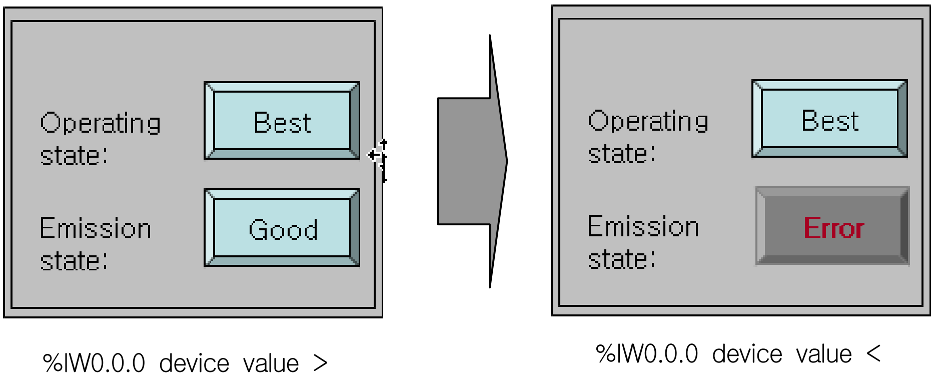
If the state of %IX0.0.0 is OFF as shown above, the emission state is marked as “Good” and if ON, you can express the emission state as “Abnormal Operation” as follows.

[Method]

(a) Insert and edit a text table in the text table of the common data.
(b) Set the object device in [Basic]-[Device] of the bit message.
(c) Click on the [Text]-[TEXT TABLE] buttons of the bit message to set the ON and OFF texts.
(☞ **See Text Items)**

(2) Word Message

You can set different messages according to the range of the device value and express them in the message set according to the device value as follows.


Operating state:
Best
Emission state:
Good
%IW0.0.0 device value >
Operating state:
Best
Emission state:
Error
%IW0.0.0 device value <

Word Message Object for Monitoring the Operation State and Emission State

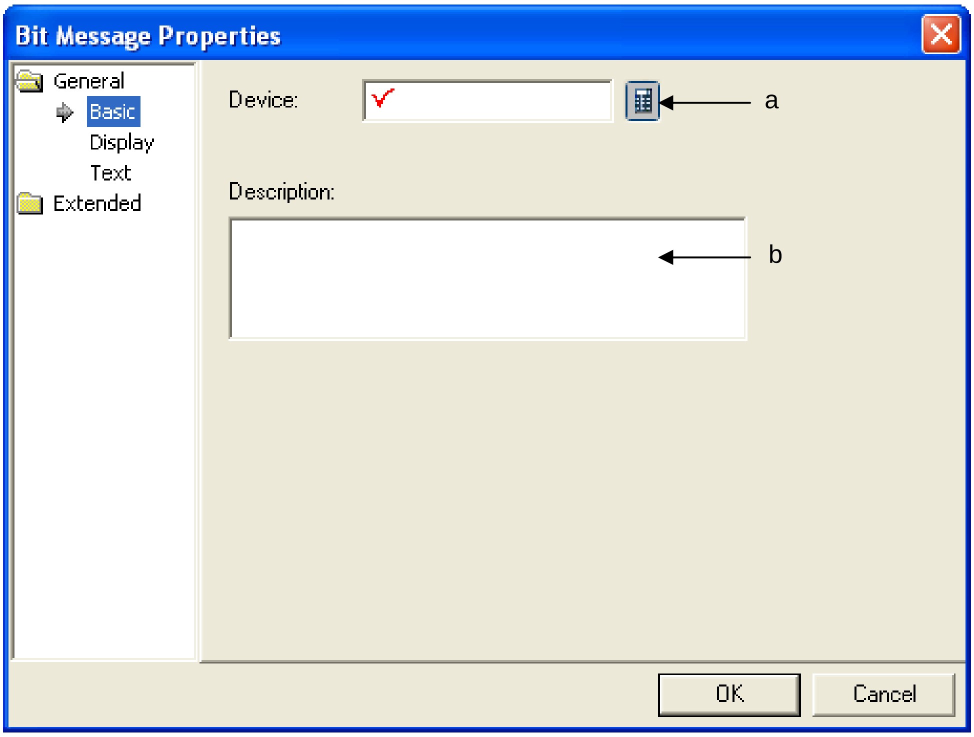
If the device value of %IX0.0.0 is above 60, as shown above, a “Good” message is released and if below 60, you can express the “Abnormal Operation” message as follows.

[Method]

(a) Insert and edit a text table in the text table of the common data.
(b) Set the object device in [Basic]-[Device] of the word message.
(c) Set the [Case] method in [[Basic]-[Select Message] of the word message.
(d) Select the [Case] - [New (insert)] of the word message and create a conditional sentence of %IW.0.0.0 > 60.
(e) Select the text to be displayed in the created conditional sentence in the text table.
(☞ **See Case)**

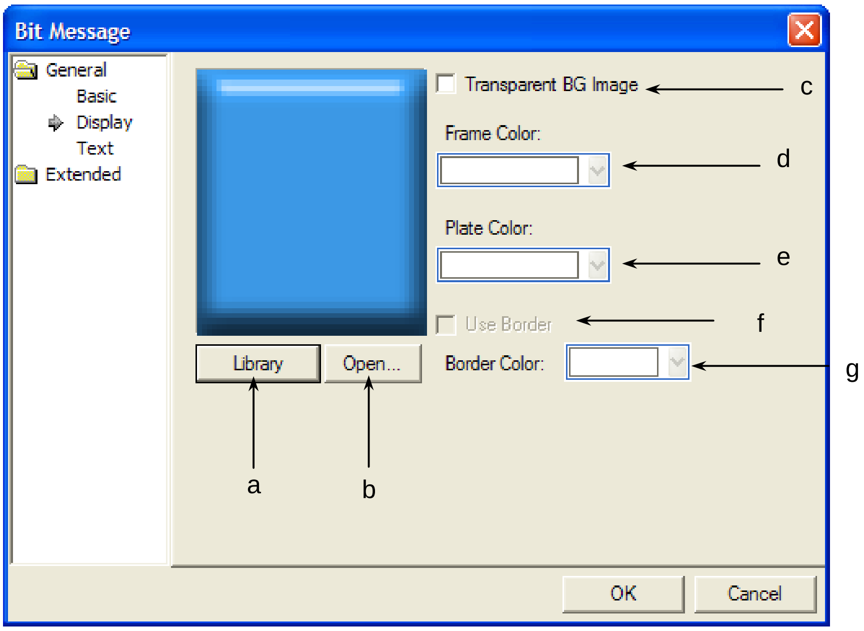
17.3.3 Bit Message Settings

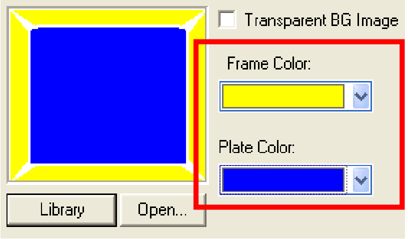
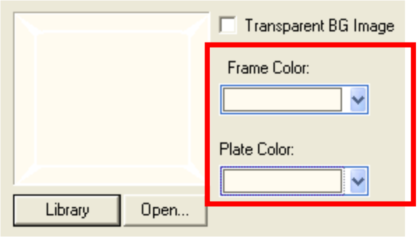
(1) Basic

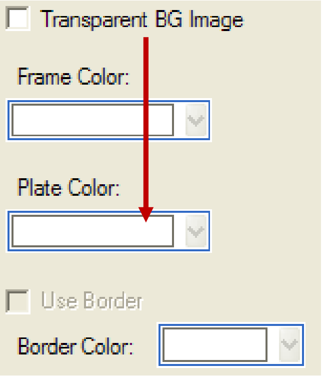
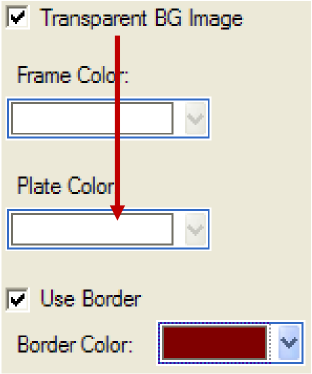

Bit Message Properties
General
Basic
Display
Text
Extended
Device:
a
Description:
b
OK
Cancel

Items	Settings
Device (a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Description (b)	Enters description on the relevant object.

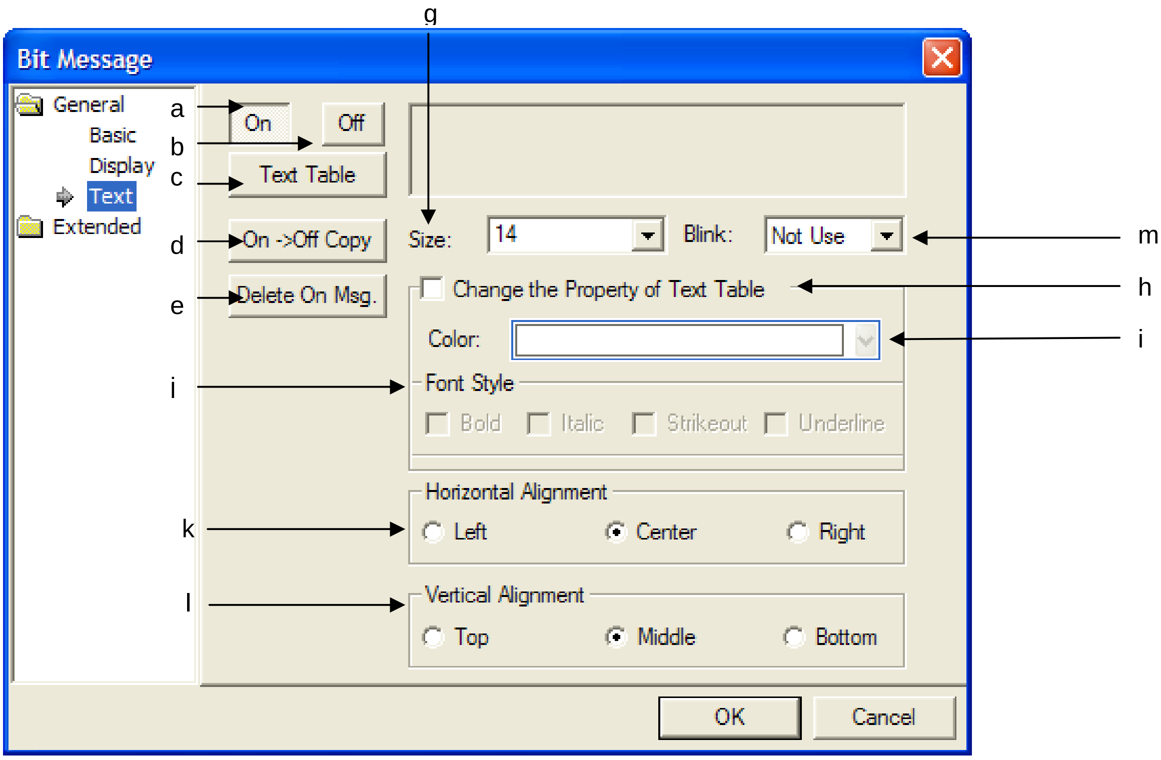
(2) Display


Bit Message
General
Basic
Display
Text
Extended
☐ Transparent BG Image
Frame Color:
Plate Color:
☐ Use Border
Border Color:
Library
Open...
OK
Cancel
a
b
c
d
e
f
g

Items	Settings
Library (a)	Selects the shape of the bit message in the library.
Open (b)	Directly enters the shape of the bit message in the user's image file. (☞ **See 16.2 Display Function Setting)**
Transparent BG image (c)	Check this when you don't use the background image.
Frame color (d)	Sets the frame color.
Plate color (e)	The frame color can be set only when the image to be displayed is a vector.  ☐ Transparent BG Image Frame Color: Plate Color: Library Open... Vector Image Selected  ☐ Transparent BG Image Frame Color: Plate Color: Library Open... Raster Image Selected The frame area and the background color area are different according to the vector image. (☞ **See 16.2 Display Function Setting)**
Using Border(f)	If you want to display the only outline of object without showing background image of bit message, you can select the function. [Using Border] is available only when image is not used and it displays the object border with a line of 1 pixel instead of background image.

Items	Settings
	 ☐ Transparent BG Image Frame Color: Plate Color: ☐ Use Border Border Color:  ☑ Transparent BG Image Frame Color: Plate Color: ☑ Use Border Border Color: Only when you do not use image as above, Using Border is available.
Border Color(g)	In the case of using border, it establishes the color to display the border of object

(3) Text



Bit Message

General
Basic
Display
Text
Extended

On | Off
Text Table
On ->Off Copy
Delete On Msg.

Size: 14 Blink: Not Use

☐ Change the Property of Text Table

Color:

Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

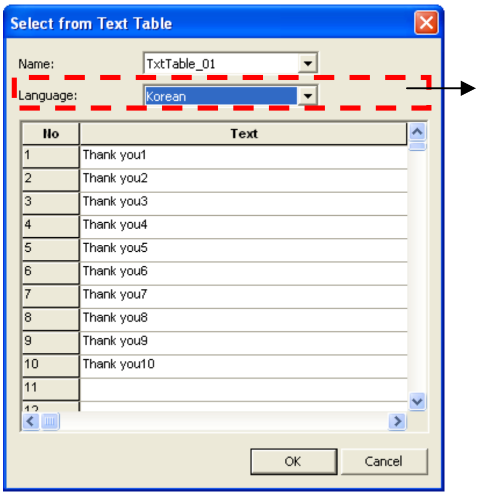
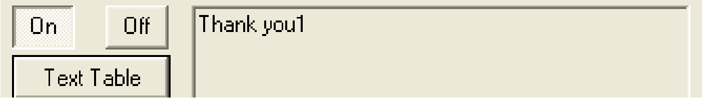
○ Left ● Center ○ Right

Vertical Alignment

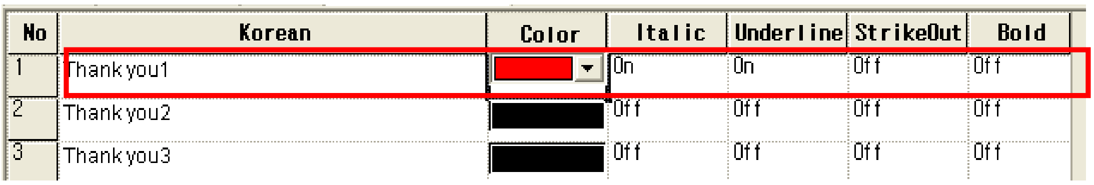
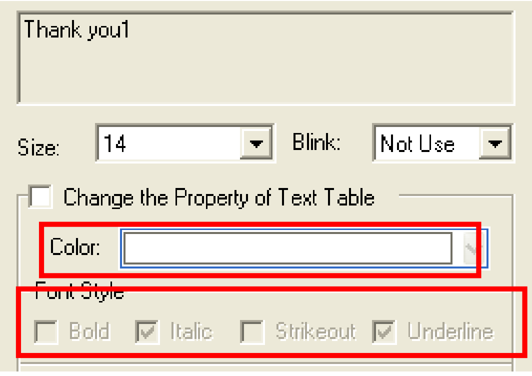
○ Top ● Middle ○ Bottom

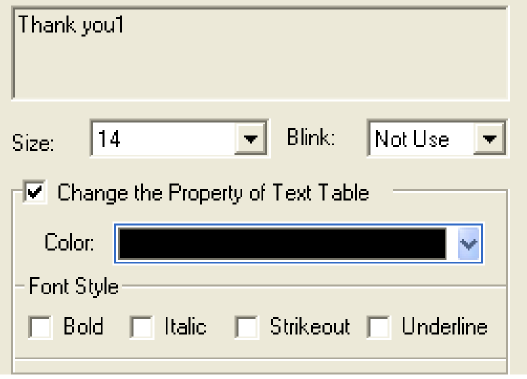
OK Cancel

Items	Settings
ON (a)	Sets the texts to display at ON.
OFF (b)	Sets the texts to display at OFF.
Text Table (c)	Opens and selects the text to display at ON and OFF in the previously made text table. ON and OFF should select the text in the same text table. If you click on the Text table button (Text Table), a dialog box where you can select the name, language and text list of the previously registered text table is invoked.

Items	Settings
	 Select from Text Table Name: TxtTable_01 Language: Korean No — Text 1 — Thank you1 2 — Thank you2 3 — Thank you3 4 — Thank you4 5 — Thank you5 6 — Thank you6 7 — Thank you7 8 — Thank you8 9 — Thank you9 10 — Thank you10 11 Be sure to set the On and Off messages in the same text table name. Set the text list in the dialog box. In this case, be sure to set the On and Off texts in the same text name. Otherwise, the text set in the last changed text table name is displayed. If you select text #1 of text table_01 as the ON message, the following is invoked.  Thank you1
On <-> Off Copy(d)	Copies the text, text color, size set as OFF in the ON message or copies the text, text color, size set as ON in the OFF message. All the information such as the font, size, color, Blink, type, horizontal and vertical justification are copied.
Delete On (Off) message (e)	Deletes the set text. If you delete a text at On, the On message is deleted and if you delete a text at Off, the Off message if deleted.
Size (g)	Sets the size of the message texts.

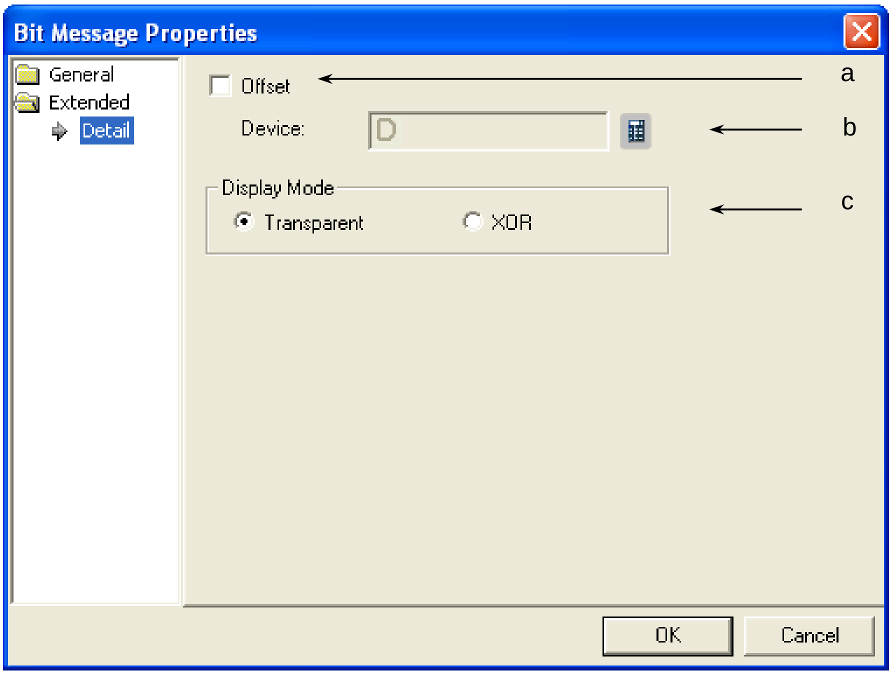
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Change the property of Text Table (h)</td><td>This is set when you want to change the text properties of the previously made text table.

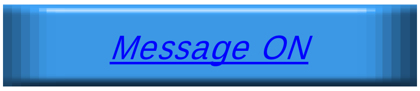
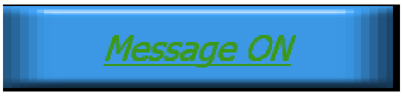
If you determine the text in the text table, the text color and type (Italic, Underline, StrikeOut, Bold) set in the text table are all reflected as follows.

<table>
<tr><th>No</th><th>Korean</th><th>Color</th><th>Italic</th><th>Underline</th><th>StrikeOut</th><th>Bold</th></tr>
<tr><td>1</td><td>Thank you1</td><td>🟥</td><td>On</td><td>On</td><td>Off</td><td>Off</td></tr>
<tr><td>2</td><td>Thank you2</td><td>⬛</td><td>Off</td><td>Off</td><td>Off</td><td>Off</td></tr>
<tr><td>3</td><td>Thank you3</td><td>⬛</td><td>Off</td><td>Off</td><td>Off</td><td>Off</td></tr>
</table>

Thank you1
Size: 14 Blink: Not Use
☐ Change the Property of Text Table
Color:
Font Style
☐ Bold ☑ Italic ☐ Strikeout ☑ Underline

However, if you change the properties set in the text table, you can change the text color and Font Style after setting [Change the Property of Text Table].

Thank you1
Size: 14 Blink: Not Use
☑ Change the Property of Text Table
Color: ⬛
Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline
Changing the Property Selected in Text Table
<table>
<tr><th>Settings</th><th>Result</th></tr>
<tr><td>Do not set [Change the Property of Text Table].</td><td>If you have changed the text color and type in the text table, the result is reflected.</td></tr>
<tr><td>Set [Change the Property of Text Table].</td><td>If you have changed the text color and type in the text table, the result is not reflected.</td></tr>
</table>
</td></tr>
<tr><td>Color (i)</td><td>Selects the color of the message texts.</td></tr>
<tr><td>Font Style (j)</td><td>Sets the text type (Bold, Italic, Strikeout and Underline). You can select two or more of them at a time.
The properties set in the text table directly apply. If you have set [Change the Property of Text Table](h), you can select two or more of them.</td></tr>
</table>

Items	Settings
Horizontal Alignment(k)	Sets the horizontal location of texts.
Vertical Alignment(l)	Sets the vertical location of texts.
Blink(m)	Sets the Blink speed of the message in XGT Panel. (Not used, slow, medium, fast)

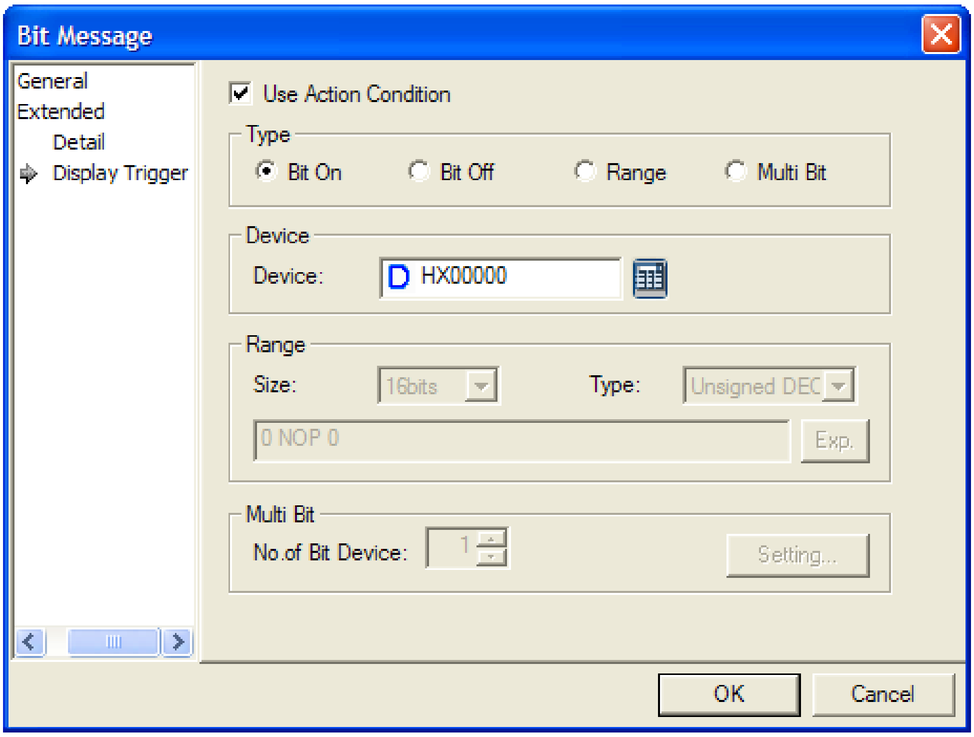
(4) Detail


Bit Message Properties
General
Extended
Detail
☐ Offset
Device: D
Display Mode
● Transparent
○ XOR
OK
Cancel
a
b
c

Items	Settings
Offset (a)	The offset device is set when you use the offset function.
Device (b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.
Display mode (c)	Decides whether to display the background color of the message in the XOR treated color. Transparent: Numbers are displayed in a transparent image. XOR: The message is displayed so that the background image and numbers are distinct with the background image color screened in XOR. Example)  Transparent  XOR

(5) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Bit Message
General
Extended
Detail
Display Trigger
OK
Cancel
Setting...
Exp.

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range: Size: 16bits Type: Unsigned DEC

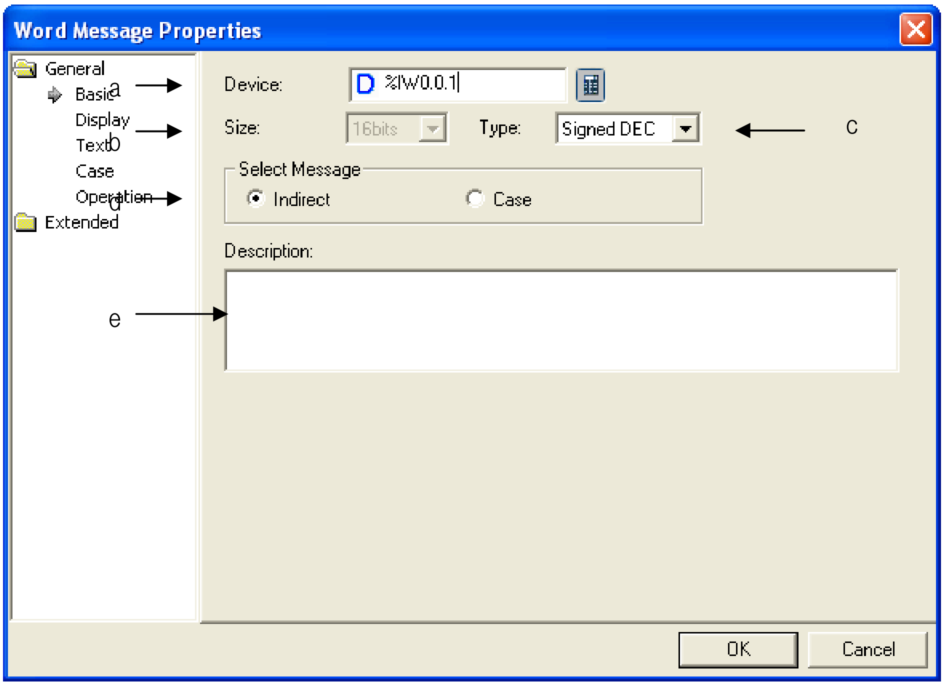
0 NOP 0

Multi Bit: No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.3.4 Word Message Settings

(1) Basic


Word Message Properties
General
Basic
Display
Text
Case
Operation
Extended
a
b
c
d
e
OK
Cancel

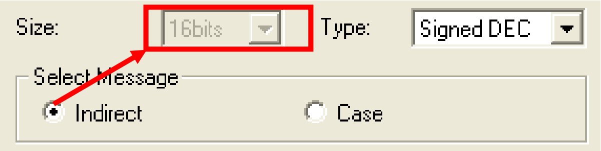
Device: D %IW0.0.1

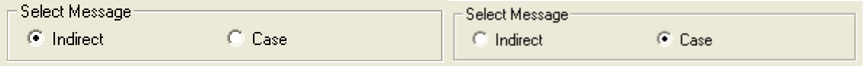
Size: 16bits

Type: Signed DEC

Select Message
● Indirect ○ Case

Description:

Items	Settings
Device (a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Size (b)	Sets the device data size (16 bit, 32 bit). In case of Indirect, the text number of the text table is specified according to the device value. The maximum number of texts that can be created can be expressed in 16 bit devices. Therefore, if you select a message [indirect], the size is fixed at 16 bit and the size cannot be changed.  Size: 16bits Type: Signed DEC Select Message ● Indirect ○ Case
Type (c)	Sets the data form of the device (signed decimal, unsigned decimal, BCD).

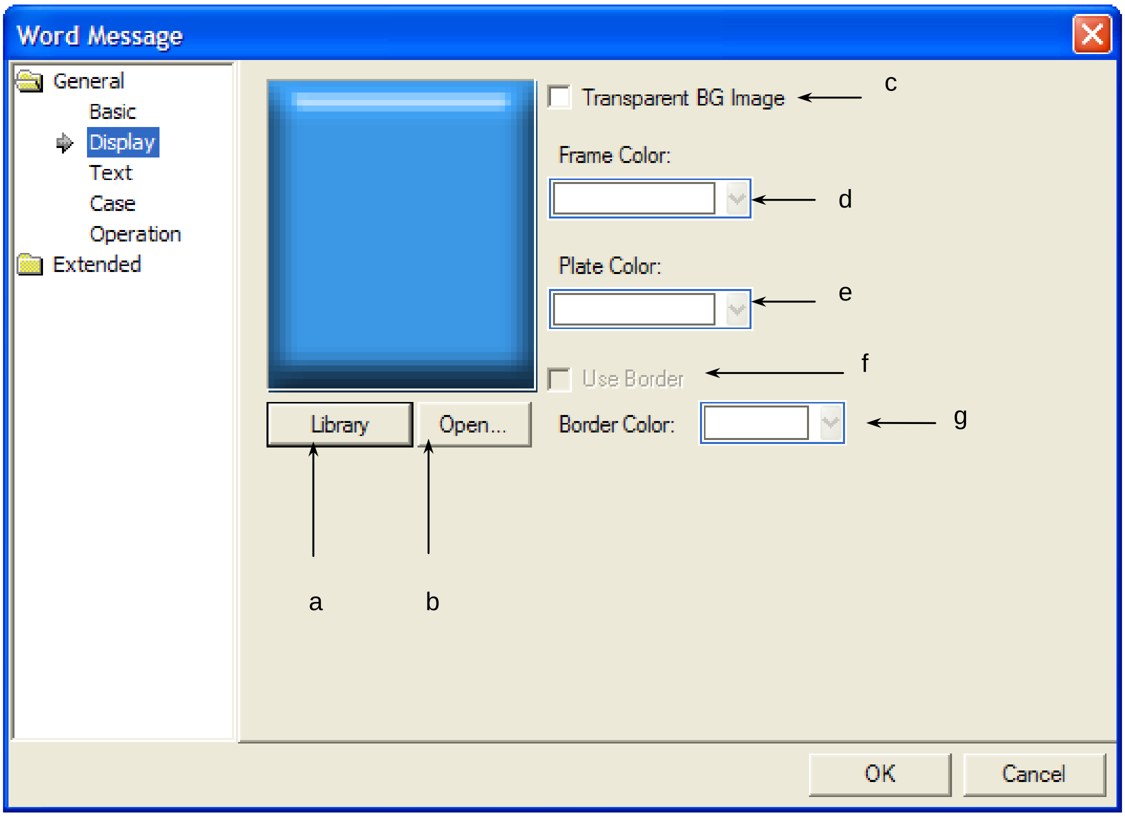
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Select message (d)</td><td>
Use of the message is divided into [Indirect] and [Case].
If the former case, the value read from the reference device is used as the number of the text table and the message corresponding to the number is screened.
In the later case, if the reference device of the conditional sentences set in [Case] meets the set condition, the specified text is screened.
When the text is set as follows in the text table
<table>
<tr><td>Line 1</td><td>Abnormal operation in column 1</td></tr>
<tr><td>Line 2</td><td>Fuel shortage in column 1</td></tr>
<tr><td>Line 3</td><td>Output decrease</td></tr>
<tr><td>Line 4</td><td>Operation end</td></tr>
</table>
Example 1. Reference device is set as M000 and message selection is set as [Indirect].
<table>
<tr><th>Device value</th><th>Message screened in XGT Panel bit message</th></tr>
<tr><td>M000 = 0</td><td>Not displayed (message 0 of text table)</td></tr>
<tr><td>M000 = 1</td><td>Abnormal operation in column 1 (message 1 of text table)</td></tr>
<tr><td>M000 = 2</td><td>Fuel shortage in column 1 (message 2 of text table)</td></tr>
</table>
Example 2. Reference device is set as M000, message selection is set as [Case] and the following three conditional sentences are made in the [Case].
$V == 0 text #1
0 < $V <10 text #2
$V == 10 text #3
($V refers to the object device)
<table>
<tr><th>Device value</th><th>Message screened in XGT Panel bit message</th></tr>
<tr><td>M000 = 0</td><td>Abnormal operation in column 1 (text message #1 according to the first condition)</td></tr>
<tr><td>M000 = 1</td><td>Fuel shortage in column 1 (text message #2 according to the second condition)</td></tr>
<tr><td>M000 = 2</td><td>Fuel shortage in column 1 (text message #2 according to the second condition)</td></tr>
</table>
If you set the message selection as [Case], you can create conditional sentences in [Case] and otherwise, you cannot.

Select Message ● Indirect ○ Case
Select Message ○ Indirect ● Case
</td></tr>
</table>

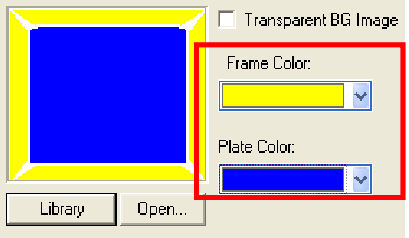
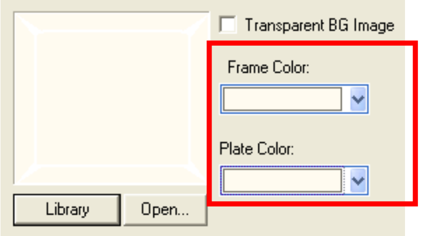
Items	Settings
	Case List Case List
Description(e)	Enters description in the relevant object.

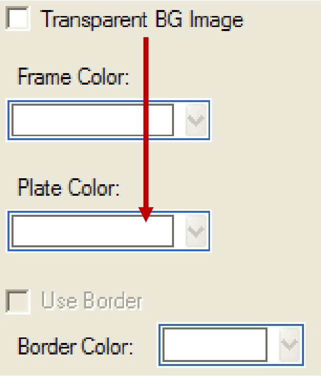
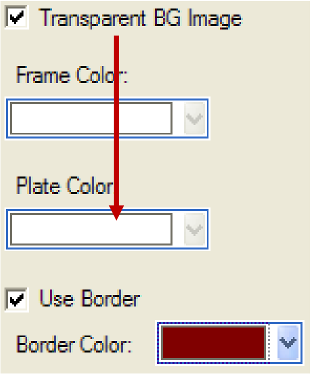
Note

(1) If the data size/form is changed, the conditional sentences set in [Case] when they were made are all deleted.
(2) If you change the message selection method from [Case] to [Indirect], the conditional sentences set in [Case] are all deleted.

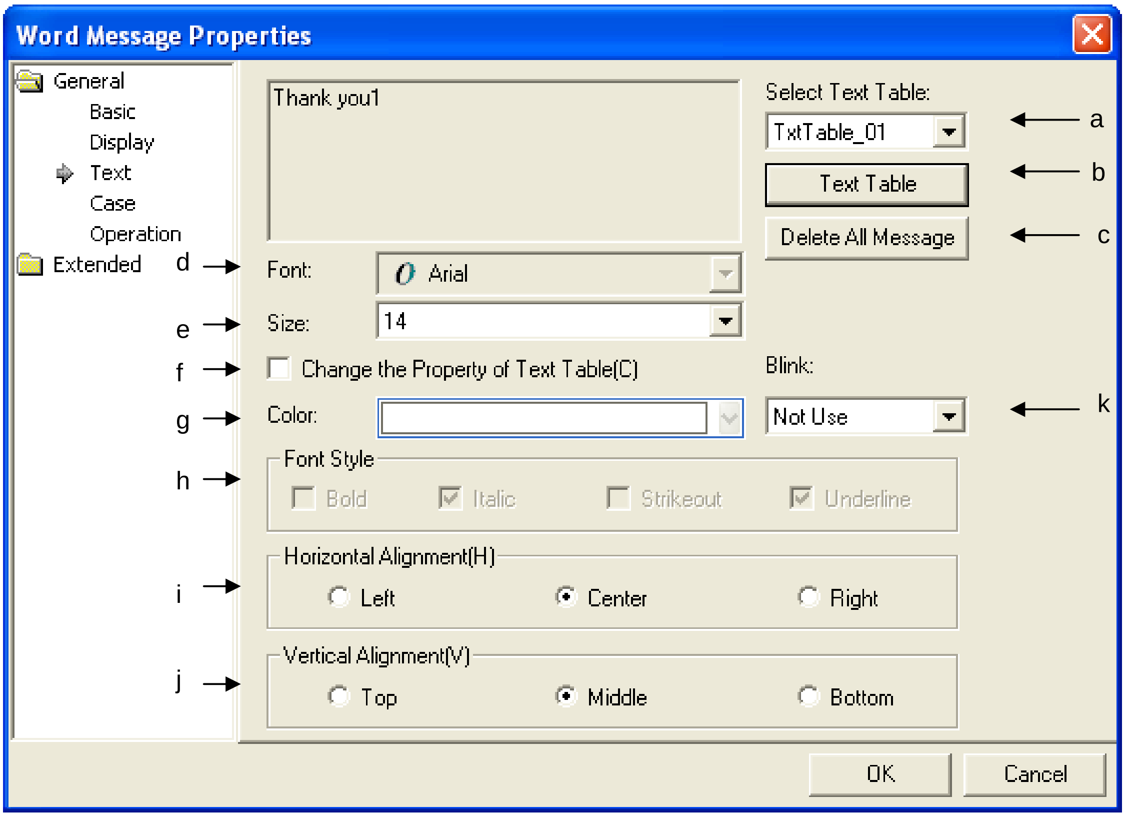
(2) Display


Word Message
General
Basic
Display
Text
Case
Operation
Extended
☐ Transparent BG Image
Frame Color:
Plate Color:
☐ Use Border
Border Color:
Library
Open...
OK
Cancel
a
b
c
d
e
f
g

Items	Settings
Library(a)	Selects the shape of the bit message in the library.
Open(b)	Directly enters the shape of the bit message in the user's image file. (☞ **See 16.2 Display Function Setting)**
Transparent BG Image(c)	Check this when you don't use the background image.
Frame color(d) Plate color(e)	Sets the frame color. The frame color can be set only when the image to be displayed is a vector.  ☐ Transparent BG Image Frame Color: Plate Color: Library Open... Vector Image Selected  ☐ Transparent BG Image Frame Color: Plate Color: Library Open... Raster Image Selected The frame Range and the background color Range are different according to the vector image. (☞ **See 16.2 Display Function Setting)**
Using Border(f)	If you want to display the only outline of object without showing background image of bit message, you can select the function. [Using Border] is available only when image is not used and it displays the object border with a line of 1 pixel instead of background image.

Items	Settings
	 ☐ Transparent BG Image Frame Color: Plate Color: ☐ Use Border Border Color:  ☑ Transparent BG Image Frame Color: Plate Color: ☑ Use Border Border Color: 🟥 Only when you do not use image as above, Using Border is available.
Border Color(g)	In the case of using border, it establishes the color to display the border of object

(3) Text



Thank you1

Select Text Table: TxtTable_01

Font: Arial

Size: 14

☐ Change the Property of Text Table(C)

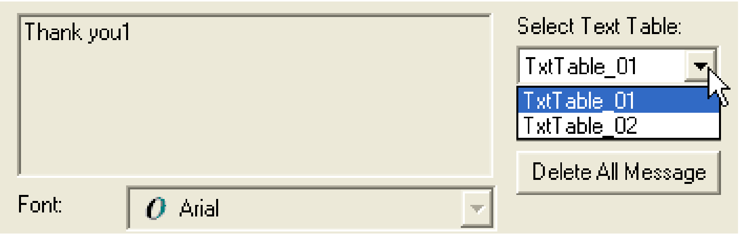
Color:

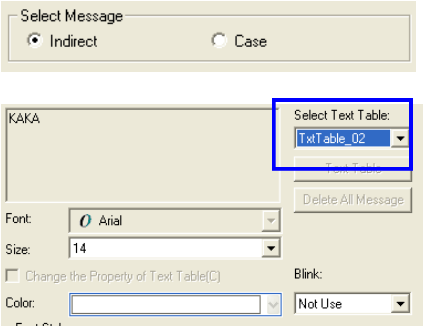
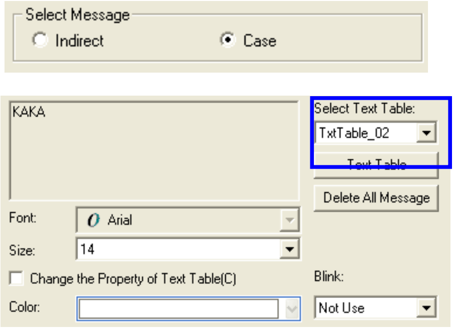
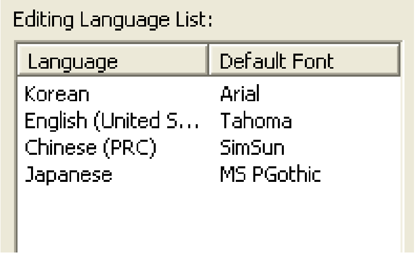
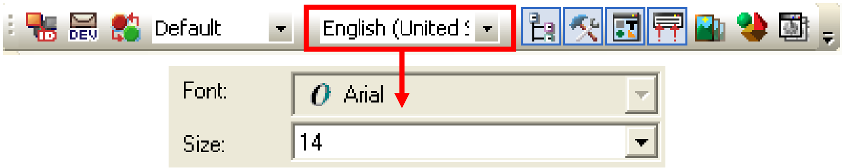
Blink: Not Use

Font Style: ☐ Bold ☑ Italic ☐ Strikeout ☑ Underline

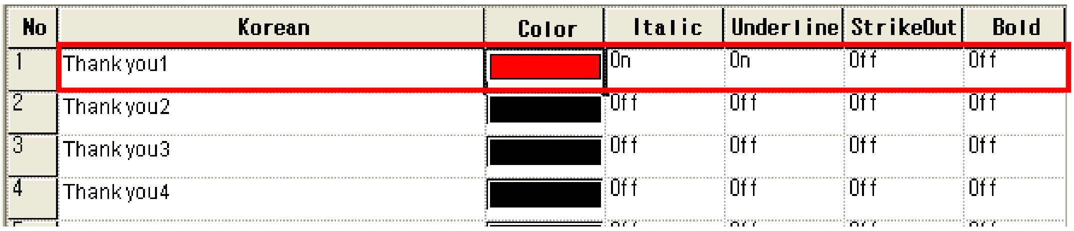
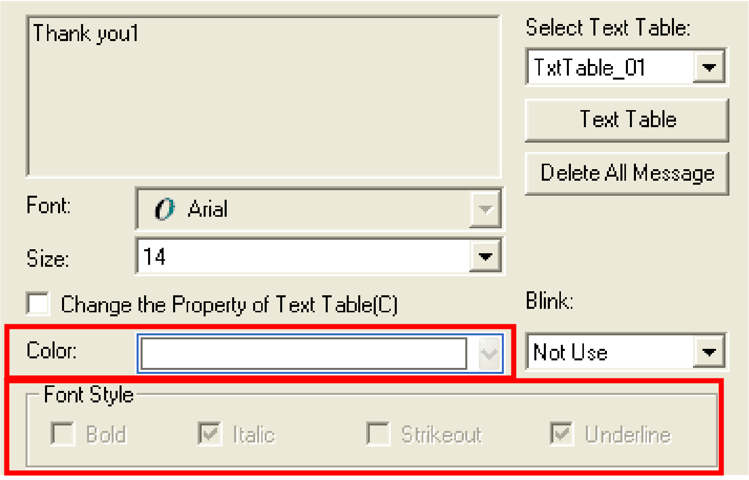
Horizontal Alignment(H): ○ Left ● Center ○ Right

Vertical Alignment(V): ○ Top ● Middle ○ Bottom

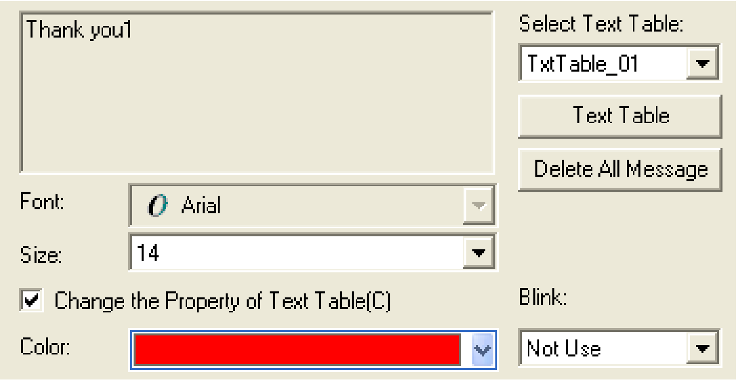
Items	Settings
Message area	The area where the texts decided in the text table are displayed.
Select Text Table (a)	The list of all the text tables set in the common data is displayed as follows and you can specify the text table to use.  Thank you1 Select Text Table: TxtTable_01 TxtTable_01 TxtTable_02 Delete All Message Font: Arial Be sure to select a text table.
Text table (b)	You can use the text table function (Text Table) only when you set the message selection method at [Case] in the [Basic]. The text set here sets the text displayed in the message object as the default value when all the conditions set in [Case] are met. If you have to specify the text number corresponding to the device value as in [Indirect], a message cannot be displayed in the message object when there is no text number corresponding to the device value. That is, if you have selected [Indirect] message selection, you cannot select texts in the text table and if you have selected [Case] message selection, you can.

Items	Settings
	 Select Message: ● Indirect ○ Case Select Text Table: TxtTable_02 Font: Arial Size: 14 Blink: Not Use KAKA Text Table Delete All Message ☐ Change the Property of Text Table(C) Color: Indirect message selection in basic items  Select Message: ○ Indirect ● Case Select Text Table: TxtTable_02 Font: Arial Size: 14 Blink: Not Use KAKA Text Table Delete All Message ☐ Change the Property of Text Table(C) Color: State message selection in basic items
Delete all messages (c)	Deletes the messages set as the default value.
Font (d)	The properties of the message font cannot be set by the user. The messages displayed in the word message object use the default settings of the text table previously built as they are. Therefore, the font of the message is set as that set in [Common]-[Project Property settings]-[Language].  Editing Language List: Language — Default Font Korean — Arial English (United S... — Tahoma Chinese (PRC) — SimSun Japanese — MS PGothic The font in the [Text] dialog box of the word message object is set in [Common]-[Project Property settings]-[Language] on the basis of the present editing language.  Default English (United S Font: Arial Size: 14
Size (e)	Sets the size of the message texts.

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Change the Properties of text table (f)</td><td>This is set when you want to change the text properties of the previously made text table.

If you determine the text in the text table, the text color and type (Italic, Underline, StrikeOut, Bold) set in the text table are all reflected as follows.

<table>
<tr><th>No</th><th>Korean</th><th>Color</th><th>Italic</th><th>Underline</th><th>StrikeOut</th><th>Bold</th></tr>
<tr><td>1</td><td>Thank you1</td><td>🟥</td><td>On</td><td>On</td><td>Off</td><td>Off</td></tr>
<tr><td>2</td><td>Thank you2</td><td>■</td><td>Off</td><td>Off</td><td>Off</td><td>Off</td></tr>
<tr><td>3</td><td>Thank you3</td><td>■</td><td>Off</td><td>Off</td><td>Off</td><td>Off</td></tr>
<tr><td>4</td><td>Thank you4</td><td>■</td><td>Off</td><td>Off</td><td>Off</td><td>Off</td></tr>
</table>

Thank you1
Select Text Table: TxtTable_01

Font: Arial
Size: 14
☐ Change the Property of Text Table(C)
Blink: Not Use
Color:
Font Style
☐ Bold ☑ Italic ☐ Strikeout ☑ Underline

However, if you change the properties set in the text table, you can change the text color and type after setting [Change the Properties of Text Table].

Thank you1
Select Text Table: TxtTable_01

Font: Arial
Size: 14
☑ Change the Property of Text Table(C)
Blink: Not Use
Color: 🟥

Change the Property of Text Table
<table>
<tr><th>Settings</th><th>Result</th></tr>
<tr><td>Do not set [Change the Property of Text Table].</td><td>If you have changed the text color and type in the text table, the result is reflected.</td></tr>
<tr><td>Set [Change the Property of Text Table].</td><td>If you have changed the text color and type in the text table, the result is not reflected.</td></tr>
</table></td></tr>
<tr><td>Color (g)</td><td>Selects the color of the message texts.</td></tr>
</table>

Items	Settings
Font Style (h)	Sets the text type (Bold, Italic, Strikeout, underline). You can select two or more of them at a time. The properties set in the text table directly apply. If you have set [Change the Property Text Table](h), you can select two or more of them.
Horizontal Alignment (i)	Sets the horizontal location of texts.
Vertical Alignment (j)	Sets the vertical location of texts.
Blink	Sets the Blink speed of the message in XGT Panel. (Not use, Slow, Normal, Fast)

Note

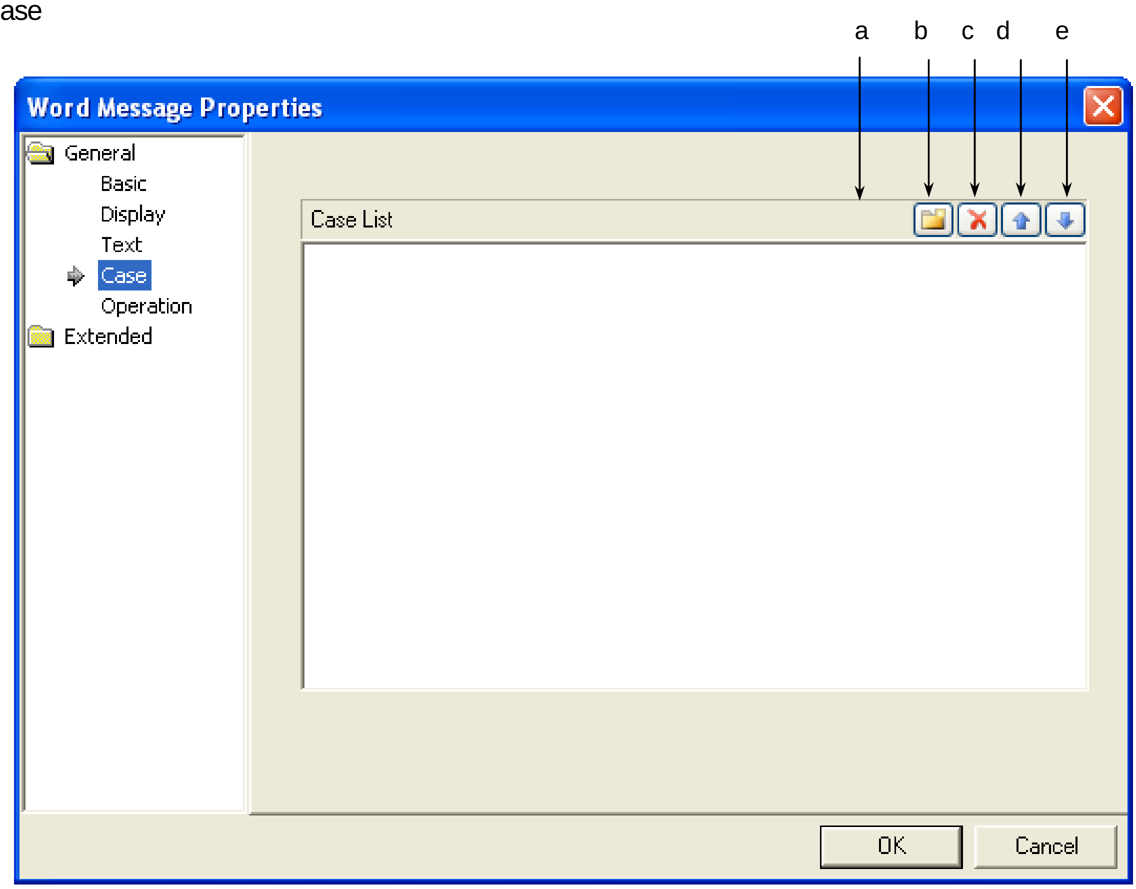
(1) For the text table to be displayed, be sure to select the text table.

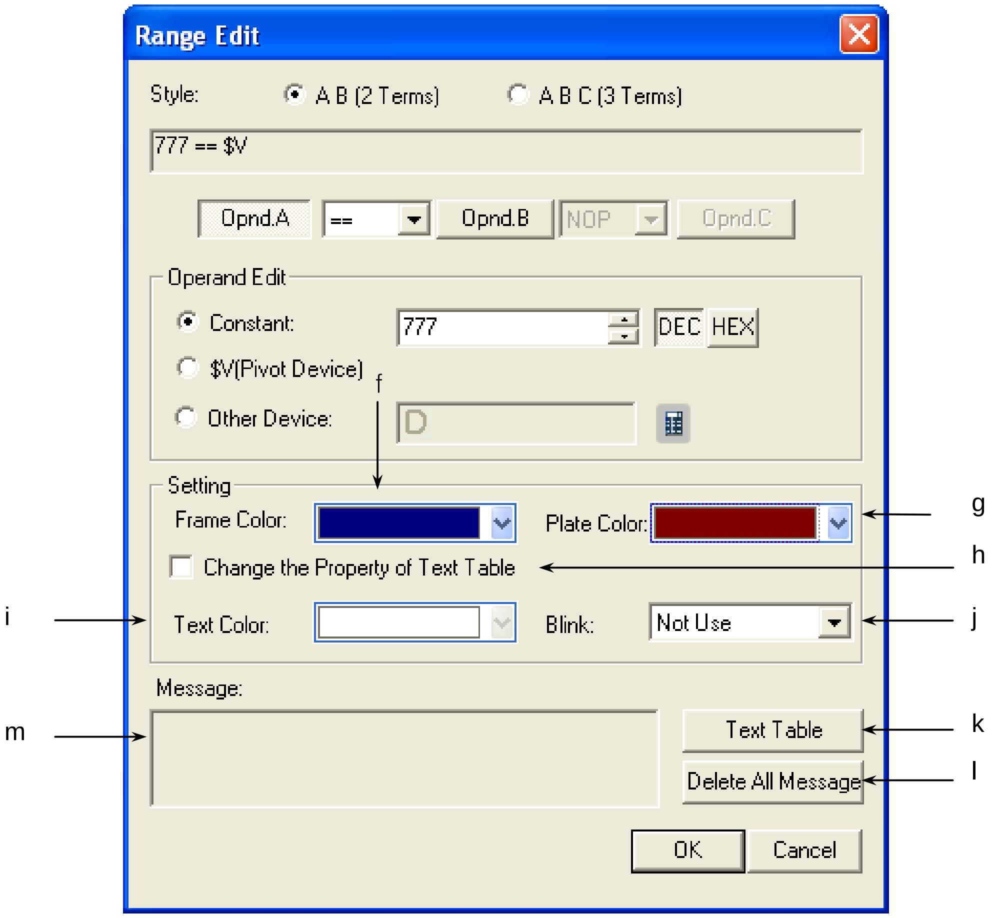
(2) If you have set the message selection method as [Indirect] in [Basic], the text properties set in the text table are used because the current device value is used as the text number.

(3) If you have set the message selection method as [Case] in [Basic], you can change the text properties specified in each state and set them differently from each other.

(4) The color, form, blink, horizontal and vertical alignment are all applied only when the message type is set as [Case] in [Basic Items].

(4) Case





Range Edit

Style: ● A B (2 Terms) ○ A B C (3 Terms)

777 == $V

Operand Edit

● Constant: 777

○ $V(Pivot Device)

○ Other Device: D

Setting

Frame Color:

Plate Color:

☐ Change the Property of Text Table

Text Color:

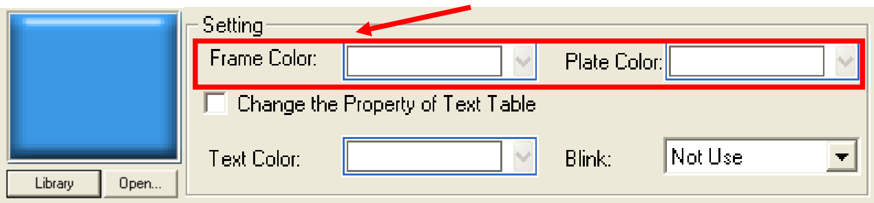
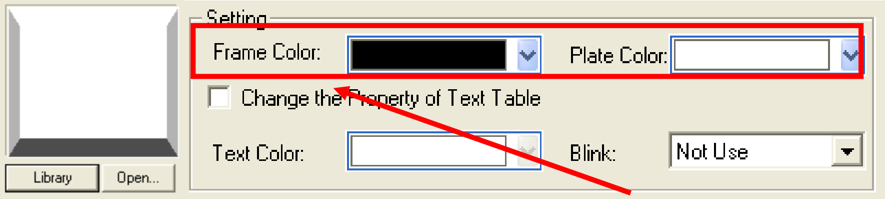
Blink: Not Use

Message:

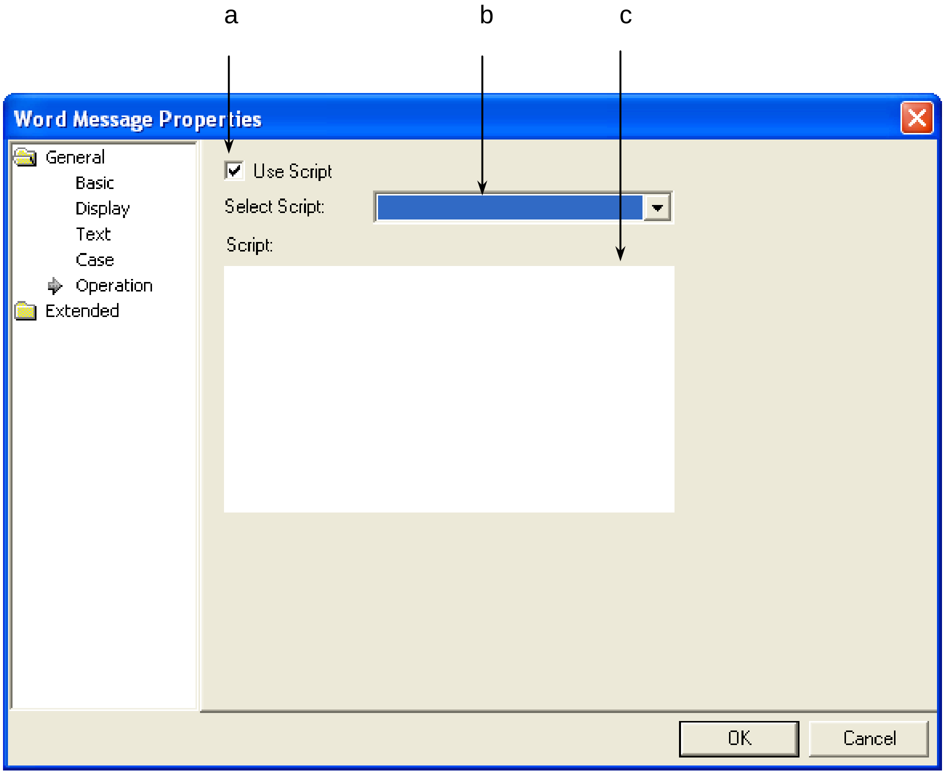
Opnd.A
==
Opnd.B
NOP
Opnd.C
DEC
HEX
f
g
h
i
j
m
Text Table
k
Delete All Message
l
OK
Cancel

[Condition and Message Setting Window]

Items	Settings
Conditions (a)	Defines the entry condition of the word message.
Create (b)	(☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete (c)	Deletes the conditional sentences.
A column up (d)	Shifts up the priority of the conditional sentences being edited.
A column down (e)	Shifts down the priority of the conditional sentences being edited.

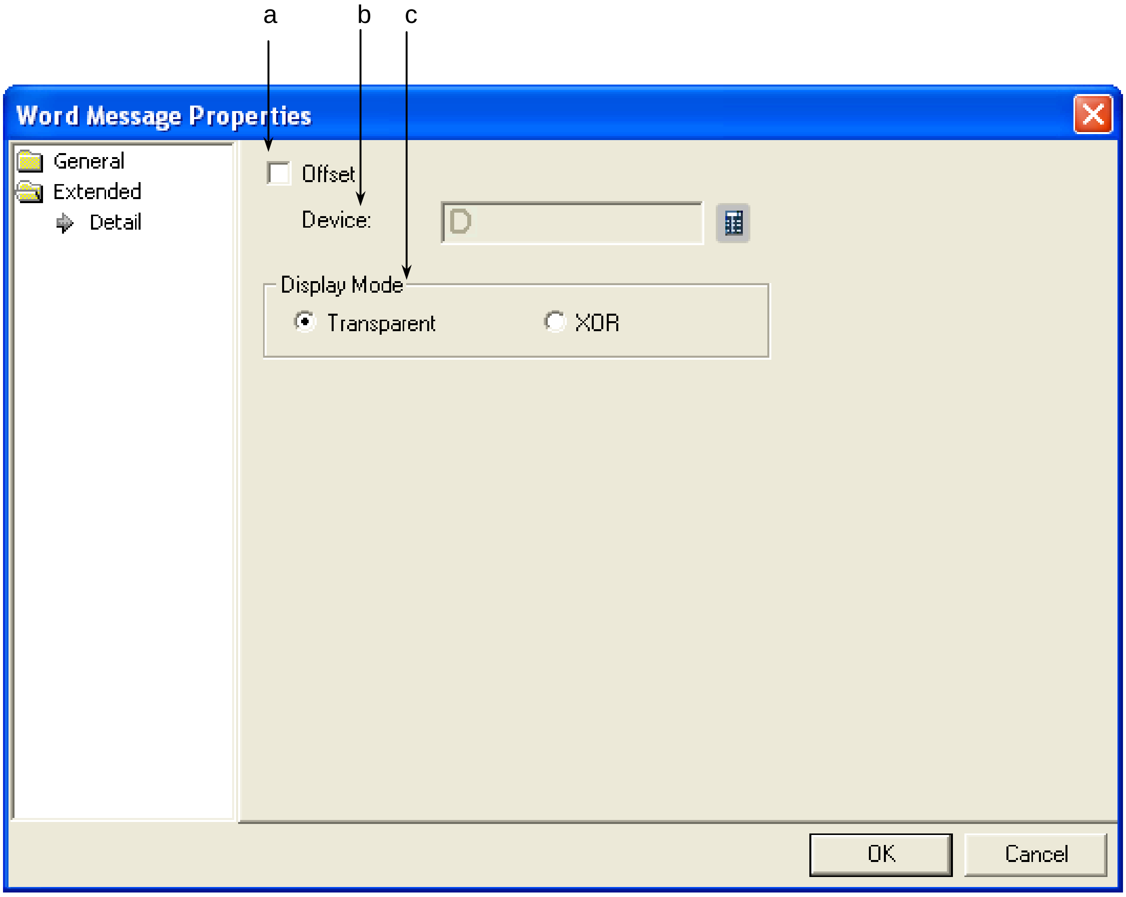
Items	Settings
Frame color (f)	You can specify the frame color of the image selected in the display type according to the set condition. If the image has been set as raster in the screen items, the frame color cannot be specified. Cannot be specified  Setting Frame Color: Plate Color: ☐ Change the Property of Text Table Text Color: Blink: Not Use Raster image selected in display item  Setting Frame Color: Plate Color: ☐ Change the Property of Text Table Text Color: Blink: Not Use Can be specified Vector image selected in display item
Plate color (g)	You can specify the background color of a image selected in the screen type according to the set condition. If the image has been set as raster in the screen items, the background color cannot be specified.
Change the property of Text Table (h)	Set when you want to change the text color set in text table
Text color (i)	You can specify the color of the text according to the set condition. You can set the properties change set in the text table and then change them.
Blink (j)	Sets the Blink speed of the message in XGT Panel. (Not used, slow, normal and fast)
Text table (k)	This is selected when you enter in the previously set text table. You can select a text in the same way as the method set in the text screen item.
Delete all Message (l)	Deletes the set text.
Message area (m)	The area where the text decided in the text table is displayed.

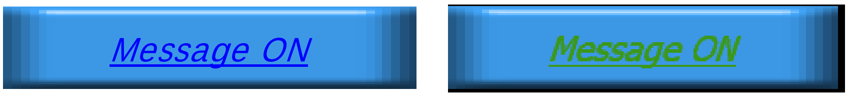
(5) Operation Items


a
b
c
Word Message Properties
General
Basic
Display
Text
Case
Operation
Extended
☑ Use Script
Select Script:
Script:
OK
Cancel

Items	Settings
Use script (a)	Select this when you want to use the script.
Select script (b)	Selects the list of scripts.
Script contents (c)	Screens the contents of the selected script.

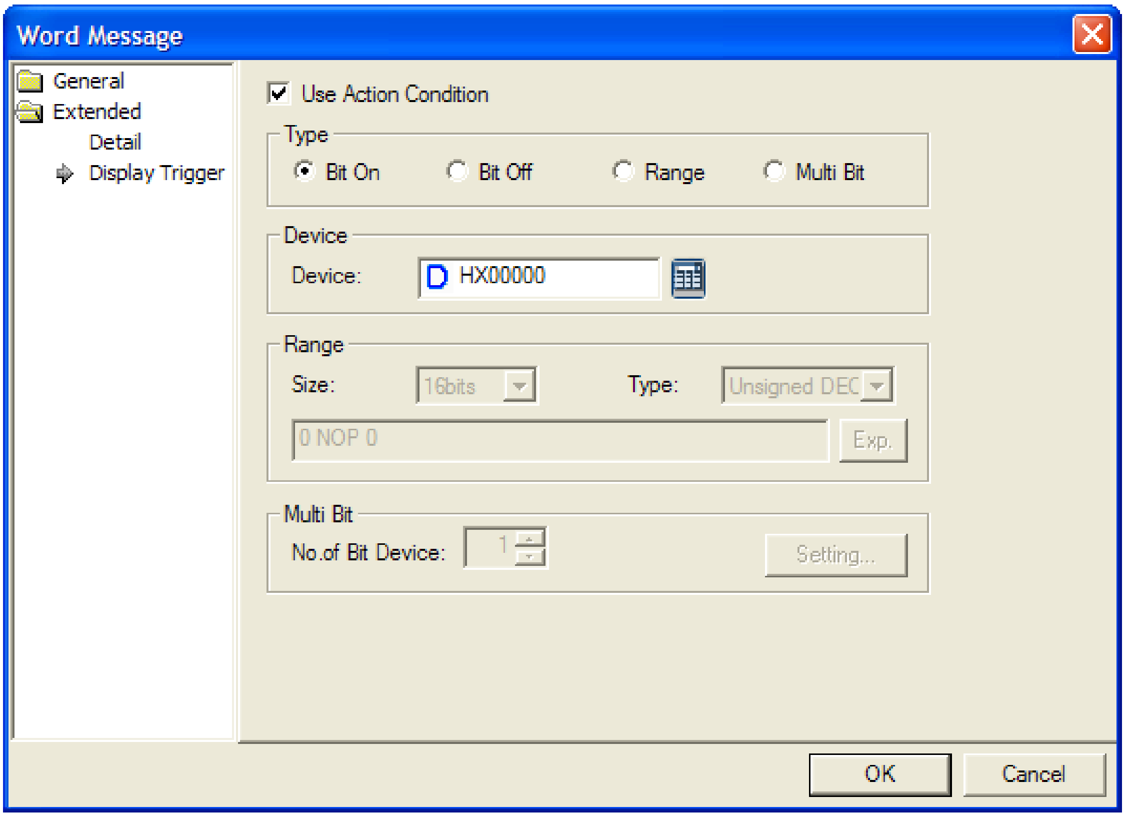
(6) Detail


a
b
c
Word Message Properties
General
Extended
Detail
☐ Offset
Device:
D
Display Mode
● Transparent
○ XOR
OK
Cancel

Items	Settings
Offset (a)	The offset device is set when you use the offset function.
Device (b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.
Display Mode (c)	Decides whether to display the background color of the message in the XOR treated color. Transparent: Numbers are displayed in a transparent image. XOR: The message is displayed so that the background image and numbers are distinct with the background image color displayed in XOR. Example)  Message ON Message ON Transparent XOR

(7) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Word Message
General
Extended
Detail
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.4 Numeric/Text Object

17.4.1 Overview

The numeric/text object displays the value of the relevant device in numbers or texts or inputs the value set by the keypad in the relevant device.

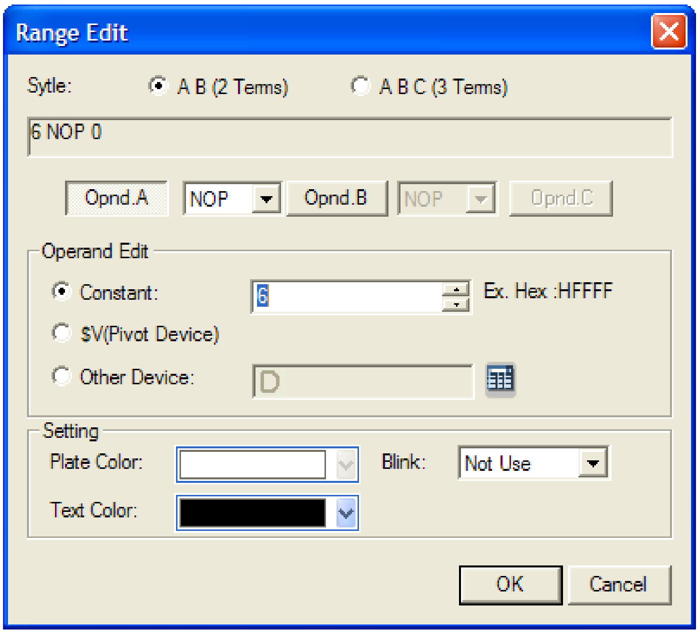
17.4.2 Types of Numeric/Text Objects

Type	Description
Numeric input	Enters and displays the value in the word device connected to the PLC in XGT Panel.
Numeric display	Displays the word device data connected to the PLC in numbers in XGT Panel.
Text input	Writes the entered texts in the word device in ASCII code.
Text display	Displays the text recognizing the data saved in the word device as the ASCII code value.

[Numeric Display]

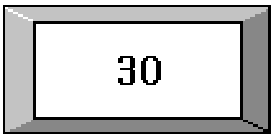
You can clearly check the PLC device state changes by changing the color of text and plate to be displayed according to the values.

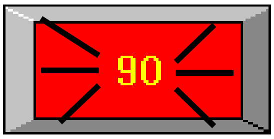
You can set the device value range, plate color, text color and blink in the conditional sentence setting dialog box of the numeric display unit as follows.


Range Edit
Sytle:
● A B (2 Terms)
○ A B C (3 Terms)
6 NOP 0
Opnd.A
NOP
Opnd.B
NOP
Opnd.C
Operand Edit
● Constant:
6
Ex. Hex :HFFFF
○ $V(Pivot Device)
○ Other Device:
D
Setting
Plate Color:
Blink:
Not Use
Text Color:
OK
Cancel

For example, the default value is displayed when the temperature is between 0 ~ 80 and if the temperature is above 90, the plate color of the image is in red and the texts are in yellow. You can set the Blink faster as follows.

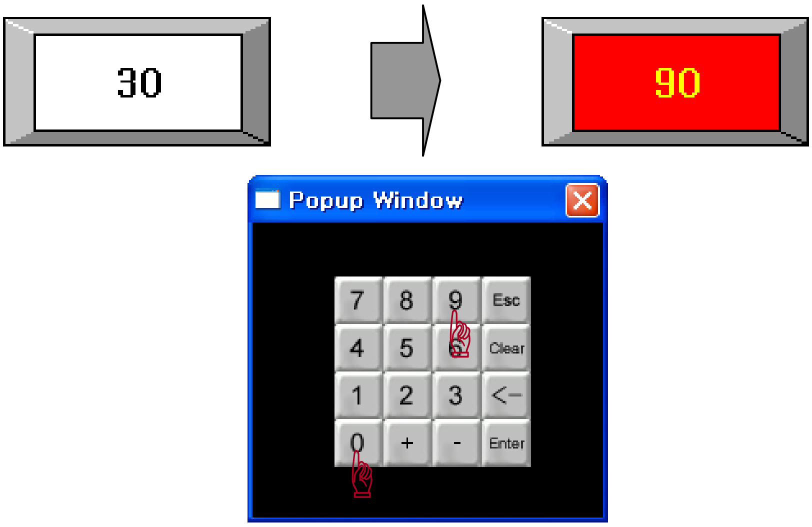
	Conditional Sentence	Background Color	Text Color	Blink
Basic setting	N/A	White	Black	Not used
Condition 1	90<=$V	Red	Yellow	Fast





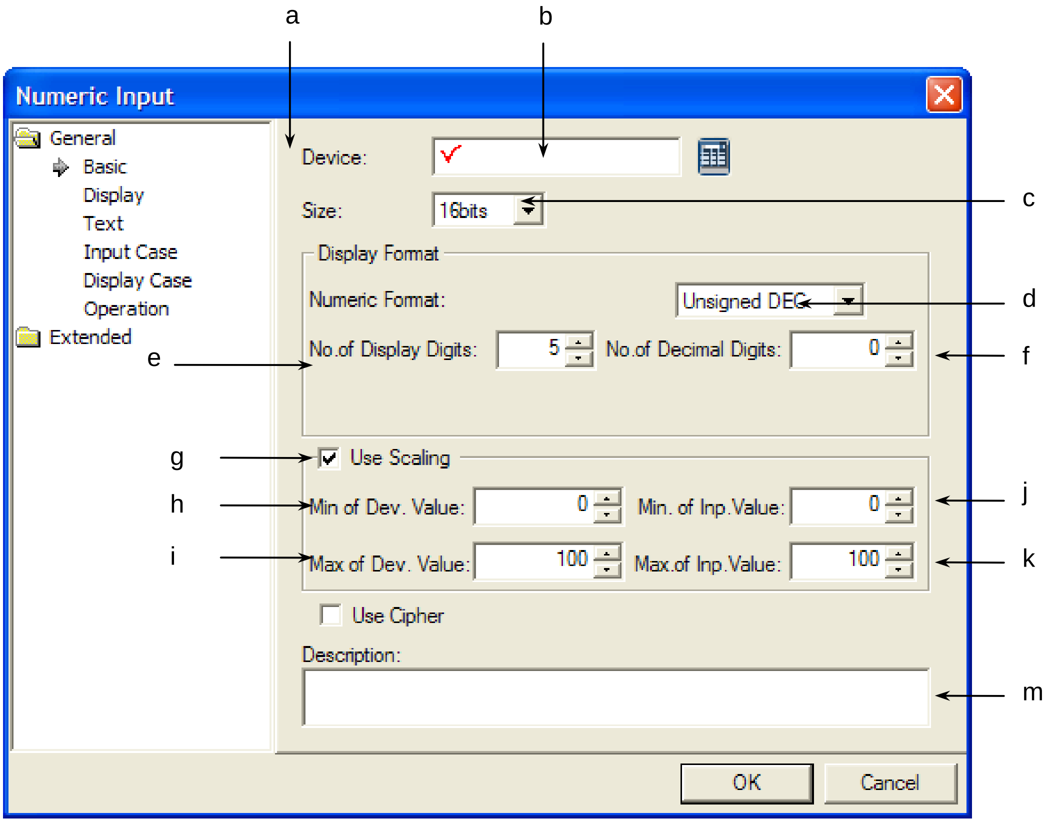
[Numeric Input]

You can enter the value of the device connected to the PLC by using the key window. The key window is divided into the key pad window which XP-Builder originally is equipped with and the key window made by the user.


30
90
Popup Window
7
8
9
Esc
4
5
6
Clear
1
2
3
<-
0
+
-
Enter

17.4.3 Numeric Input Settings

(1) Basic


a
b
c
d
e
f
g
h
i
j
k
m
Numeric Input
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
Display Format
OK
Cancel

Device:

Size: 16bits

Numeric Format: Unsigned DEC

No.of Display Digits: 5 No.of Decimal Digits: 0

☑ Use Scaling

Min of Dev. Value: 0 Min. of Inp.Value: 0

Max of Dev. Value: 100 Max.of Inp.Value: 100

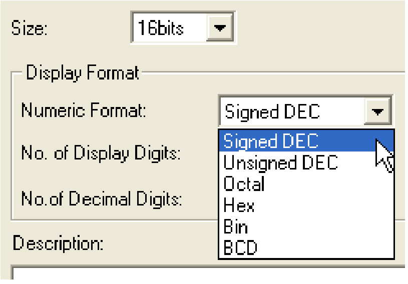
☐ Use Cipher

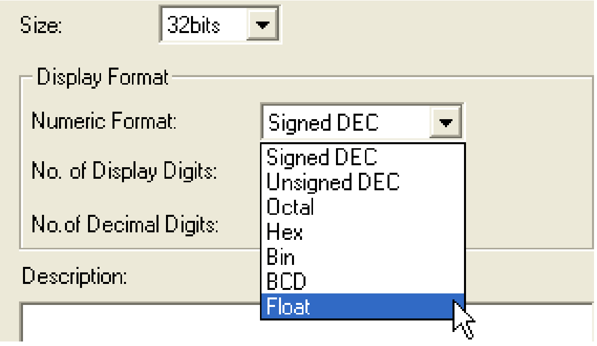
Description:

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Device (a, b)</td><td>Sets the device to be referred to in the relevant object.
The number input unit screens and enters numbers.
If you have not set the [Details]-[Read] device, reading and writing are carried out with the device set in the basic referred to.

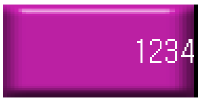
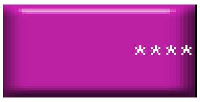
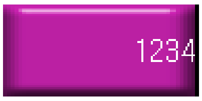
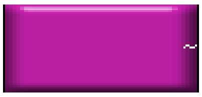
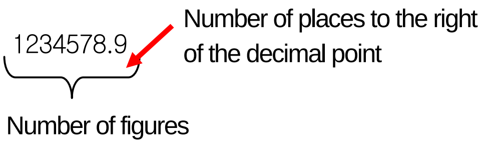
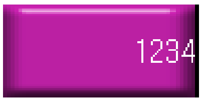
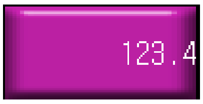
If the value displayed in the object differs from the value that carried out writing, check whether the reading device is set.
(☞ 7) See Detail)</td></tr>
<tr><td>Size (c)</td><td>Sets the size of the device data (16 bit, 32 bit).</td></tr>
<tr><td>Numeric Format (d)</td><td>Selects the display type.

<table>
<tr><th>Display type</th><th>Description</th><th>Example</th></tr>
<tr><td>Signed decimal</td><td>Displayed in signed decimal numbers.</td><td>-2184</td></tr>
<tr><td>Unsigned decimal</td><td>Displayed in unsigned decimal numbers.</td><td>2184</td></tr>
<tr><td>Octal</td><td>Displayed in octal numbers.</td><td>4210</td></tr>
<tr><td>Hexadecimal</td><td>Displayed in hexadecimal numbers.</td><td>888</td></tr>
<tr><td>Binary</td><td>Displayed in binary numbers.</td><td>10010001000</td></tr>
<tr><td>BCD</td><td>Displayed in BCD.</td><td>888</td></tr>
<tr><td>Actual number</td><td>Displayed in actual numbers.</td><td>2184.0</td></tr>
</table>

Actual numbers can be set only if the device size is 32 bit as follows.

Size: 16bits
Numeric Format: Signed DEC
Display Format
No. of Display Digits:
No.of Decimal Digits:
Description:
Signed DEC
Unsigned DEC
Octal
Hex
Bin
BCD

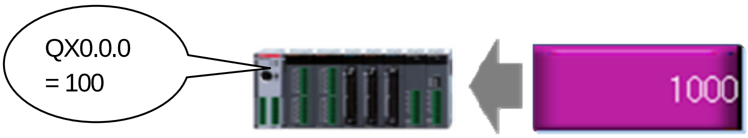
No float number in case of 16bit

Size: 32bits
Numeric Format: Signed DEC
Display Format
No. of Display Digits:
No.of Decimal Digits:
Description:
Signed DEC
Unsigned DEC
Octal
Hex
Bin
BCD
Float

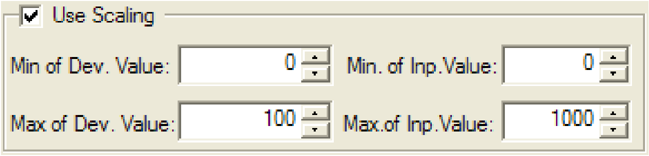
Float number exists in case of 32bit</td></tr>
<tr><td>Number of Display Digits (e)</td><td>Sets how many figures to display the numbers.
You can set up to 64 figures.
If the number of set numbers is below the reading and writing device values, it is displayed as * in the</td></tr>
</table>

Items	Settings
	object. For example, if the device value is 123456 and the set number of figures is 4, the display is as shown on the right below.  4 digit device value  6 digit device value If the device value cannot be displayed in the form of BCD, it is displayed as ~. For example, of the device value is 1234 and an unsigned decimal number, it is displayed as 1234 and if in the form of BCD, the display is as shown on the right below.  Unsigned decimal  BCD
No. of Decimal Digits (f)	Sets how many places to put to the right of the decimal point when you select all types of numbers other than binary, octal and hexadecimal numbers.  1234578.9 Number of places to the right of the decimal point Number of figures If the device value is 1234, the number of figures is 4 and there is 1 place to the right of the decimal point, the number is displayed as shown on the right below.  Number of places to the right of the decimal point : 0  Number of places to the right of the decimal point :1

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Using scaling
(g)</td><td>

When a user scalues and inputs random value to established PLC device address, the function is applied. For example, if a user tries to input range value of 0~1000 to PLC Device address as the value of 0~100, it can be applied as below.





☑ Use Scaling

Min of Dev. Value: 0

Min. of Inp.Value: 0

Max of Dev. Value: 100

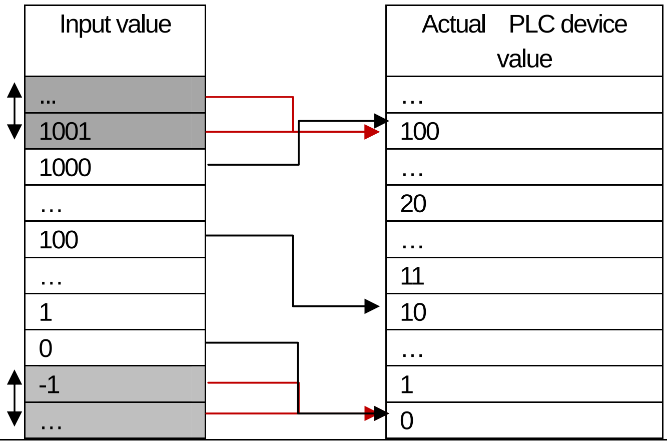
Max.of Inp.Value: 1000

PLC actual data value and displayable data value are respectively different depending on data size, display type.

<table>
<tr><th>Device Size</th><th>Display format</th><th>The Min. Value</th><th>The Max. Value</th></tr>
<tr><td>16Bit</td><td>Decimal Number with a sign</td><td>-32768</td><td>32767</td></tr>
<tr><td>16Bit</td><td>Decimal Number without a sign,
Binary, Octal Hexadecimal
number</td><td>0</td><td>65535</td></tr>
<tr><td>16Bit</td><td>BCD</td><td>0</td><td>9999</td></tr>
<tr><td>32Bit</td><td>Decimal Number with a sign</td><td>-2147483648</td><td>2147483647</td></tr>
<tr><td>32Bit</td><td>Decimal Number without a sign,
Binary, Octal Hexadecimal
number</td><td>0</td><td>4294967295</td></tr>
<tr><td>32Bit</td><td>BCD</td><td>0</td><td>99999999</td></tr>
</table>

If the value input by a user exceeds [Max. input value], [Max. input value] is input to the device.
If the value input by a user exceeds [Min. input value], [Min. input value] is input to the device.
At the above example, supposing that PLC actual data value is 2000, the max. value 100 will be displayed at numner output unit.

In the case of exceeding [The Maximum input value], input [The Maximum input value]



In the case of under [The Minimum input value], input [The Minimum value]

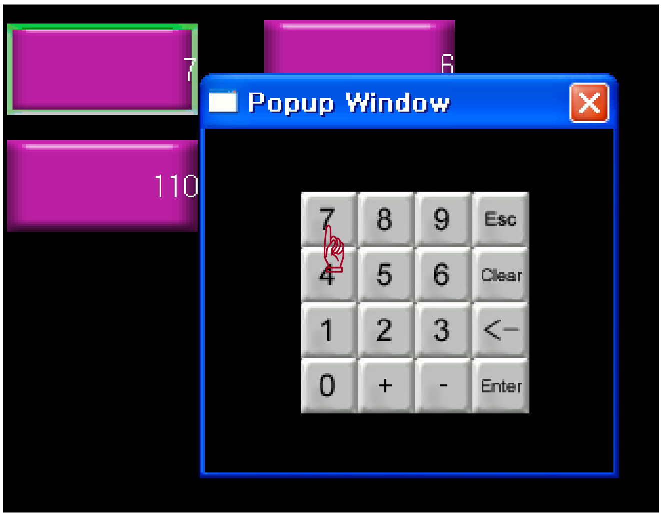
</td></tr>
<tr><td>Min. Device
Value (h)</td><td>After setting scale function, input the min. PLC device data to be scaled.</td></tr>
</table>

Items	Settings
Max. Device Value (i)	After setting scale function, input the max. PLC device data to be scaled.
Min. input value(j)	After setting scale function, input the min. data value to be displayed at scale.
Max. input value (k)	After setting scale function, input the max. data value to be displayed at scale.
Use cipher (l)	If you apply code word, * is displayed as many as the number of digits that a user inputs. Display including a decimal point is same as before.
Description (m)	Inputs description of object

Note

(1) When you enter values, touche the relevant numeric input unit in the XGT Panel. If you use the key pad, the set key pad is invoked in a pop-up window and the input unit you touched is displayed in the entry mode. If you enter the number in the pop-up window in the entry mode, the currently entered value is displayed in the input unit.

Entry mode displayed



(2) The data type (signed decimal, unsigned decimal and BCD) of the device is determined according to the numeric format (Numeric Format:).

(3) If you enter a signed decimal number in the unsigned decimal input unit, the absolute value is entered.

(4) The following message can be released in XGT Panel with respect to number input.

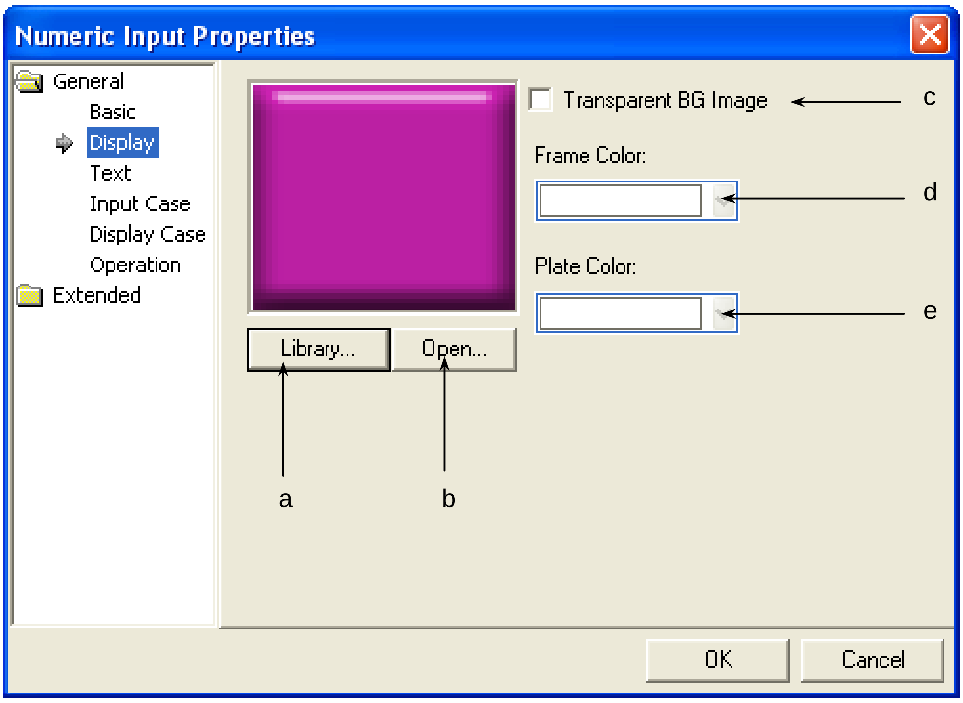
Message	Situation	Troubleshooting
Cant' Write Data	Communication fails between the XGT Panel series and the PLC	☞ Check the connection cable or the power supply of the PLC and XGT Panel.
Exceeded The Maximum Value!	A value exceeding the size and type of the device is entered.	☞ Enter a correct value referring to the Note of the word switch basic item.

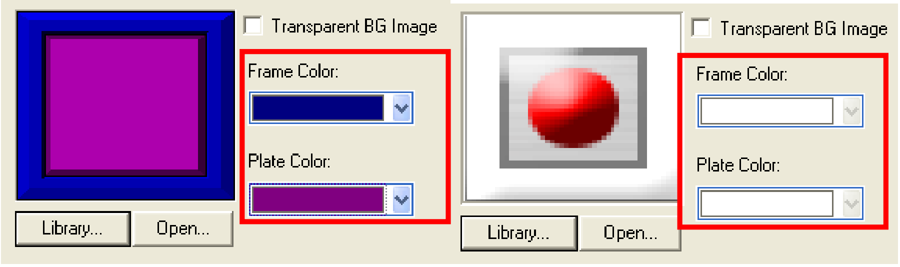
(5) If the data size is changed, the previously entered input condition and display condition are deleted.

(6) In case of a failure of communication with the PLC during entry or reading, only the object background image is displayed in the XGT Panel series and numbers are not displayed.

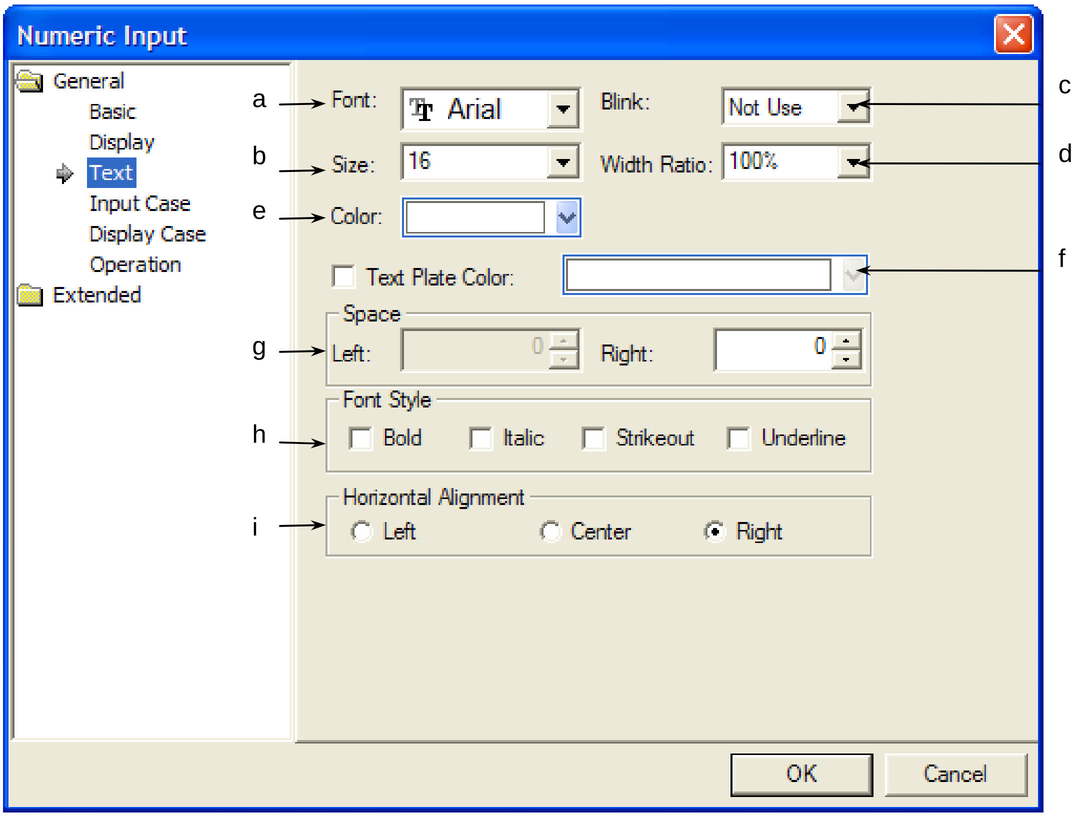
(7) In case of inputting number les than decimal point, input the number after pressing the '.' at the keypad.

(2) Display


Numeric Input Properties
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
Transparent BG Image
Frame Color:
Plate Color:
Library...
Open...
OK
Cancel
a
b
c
d
e

Items	Settings
Library (a)	Selects the form of the displayed numbers in the library.
Open (b)	Directly enters the form of the displayed numbers in the user's image file. (☞ **See 16.2 Display function Setting)**
Transparent BG Image (c)	Check this when you don't use the background image.
Frame color (d) Plate color (e)	Sets the frame color. The frame color can be set only when the image to be displayed is a vector.  Vector Image Selected Raster Image Selected The frame area and the background color area are different according to the vector image. (☞ **See 16.2 Display function Setting)**

(3) Text


Numeric Input
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
a
b
c
d
e
f
g
h
i
OK
Cancel

Font: Arial

Size: 16

Blink: Not Use

Width Ratio: 100%

Color:

☐ Text Plate Color:

Space

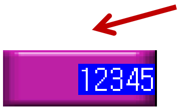
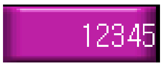
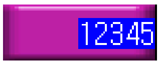
Left: 0 Right: 0

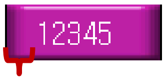
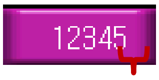
Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

○ Left ○ Center ● Right

Items	Settings
Font (a)	Sets the type of the font in which the numbers are to be displayed in XGT Panel.
Size (b)	Sets the size of the texts in which the numbers are to be displayed in XGT Panel.
Blink (c)	Sets the Blink speed of the message in XGT Panel. (Not use, Slow, Normal, Fast)
Width ration (d)	Sets the width ratio of numeric displayed in the XGT Panel
Color (e)	Sets the color of the texts in which the numbers are to be displayed in XGT Panel.
Text Plate Color (f)	It sets the background color of the figures at XGT Panel. Background color of character  Example)  Not using background color of character  using background color of character (blue)

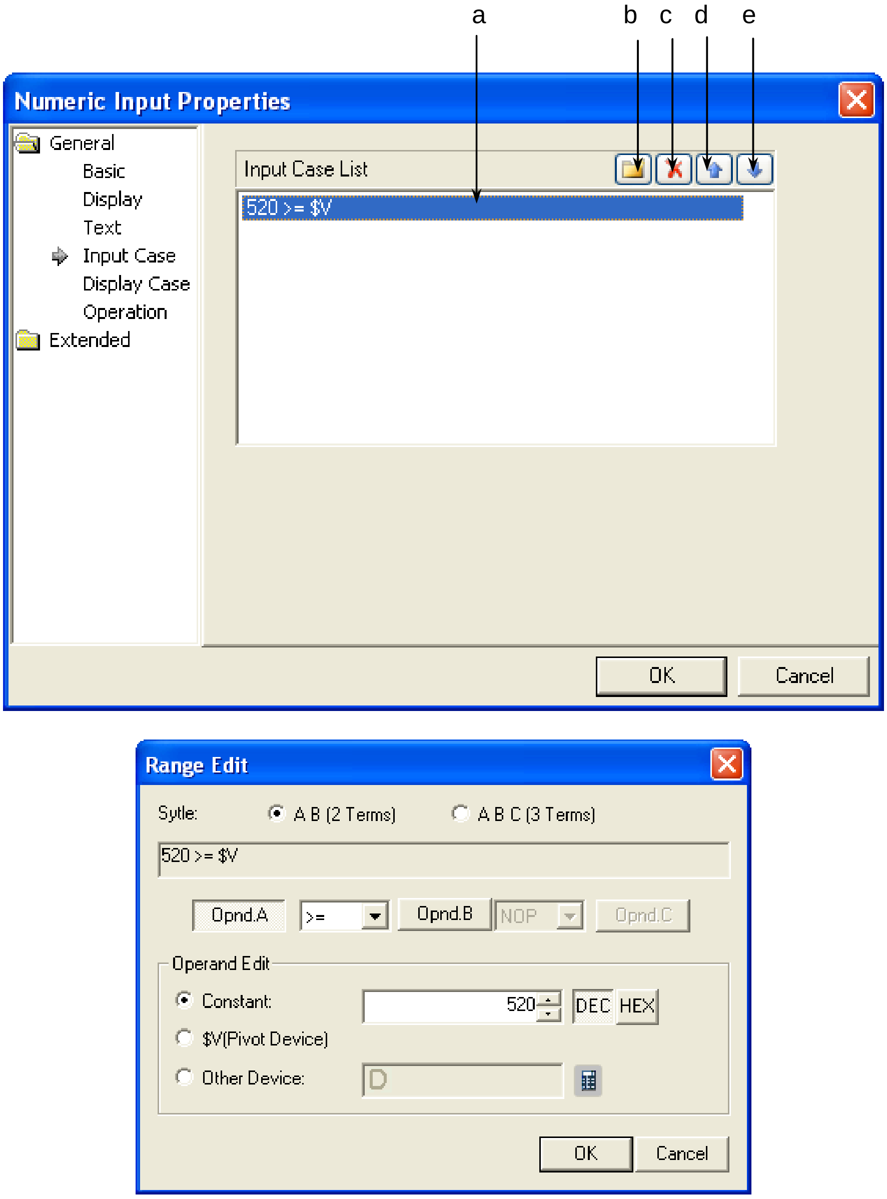
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Space (g)</td><td>You can select left, right margin at number input unit object.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Left Margin</td><td>If [Horizontal alignment] is left, it displays numerical value with the space of the pixel established by a user from the most left.

Left Margin</td></tr>
<tr><td>Right Margin</td><td>If [Horizontal alignment] is right, it displays numerical value with the space of the pixel established by a user from the most right.

Right Margin</td></tr>
</table>

While right [Horizontal alignment] allows setting left space only, right [Horizontal alignment] allows setting right space only.

If the size of established space is larger than the size of object, the figure is not displayed at the object but background image only.
.</td></tr>
<tr><td>Font Style (h)</td><td>Sets the text form (Bold, italic, Strikeout, underline). You can select two or more of them at a time.</td></tr>
<tr><td>Horizontal Alignment (i)</td><td>Sets the horizontal location of texts.</td></tr>
</table>

(4) Input Case

Sets the condition in which to enter numbers according to the device state


a
b
c
d
e
Numeric Input Properties
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
Input Case List
OK
Cancel
Range Edit
Opnd.A
Opnd.B
Opnd.C
DEC
HEX
OK
Cancel

520 >= $V

Sytle: ● A B (2 Terms) ○ A B C (3 Terms)

520 >= $V

>= NOP

Operand Edit

● Constant: 520

○ $V(Pivot Device)

○ Other Device: D

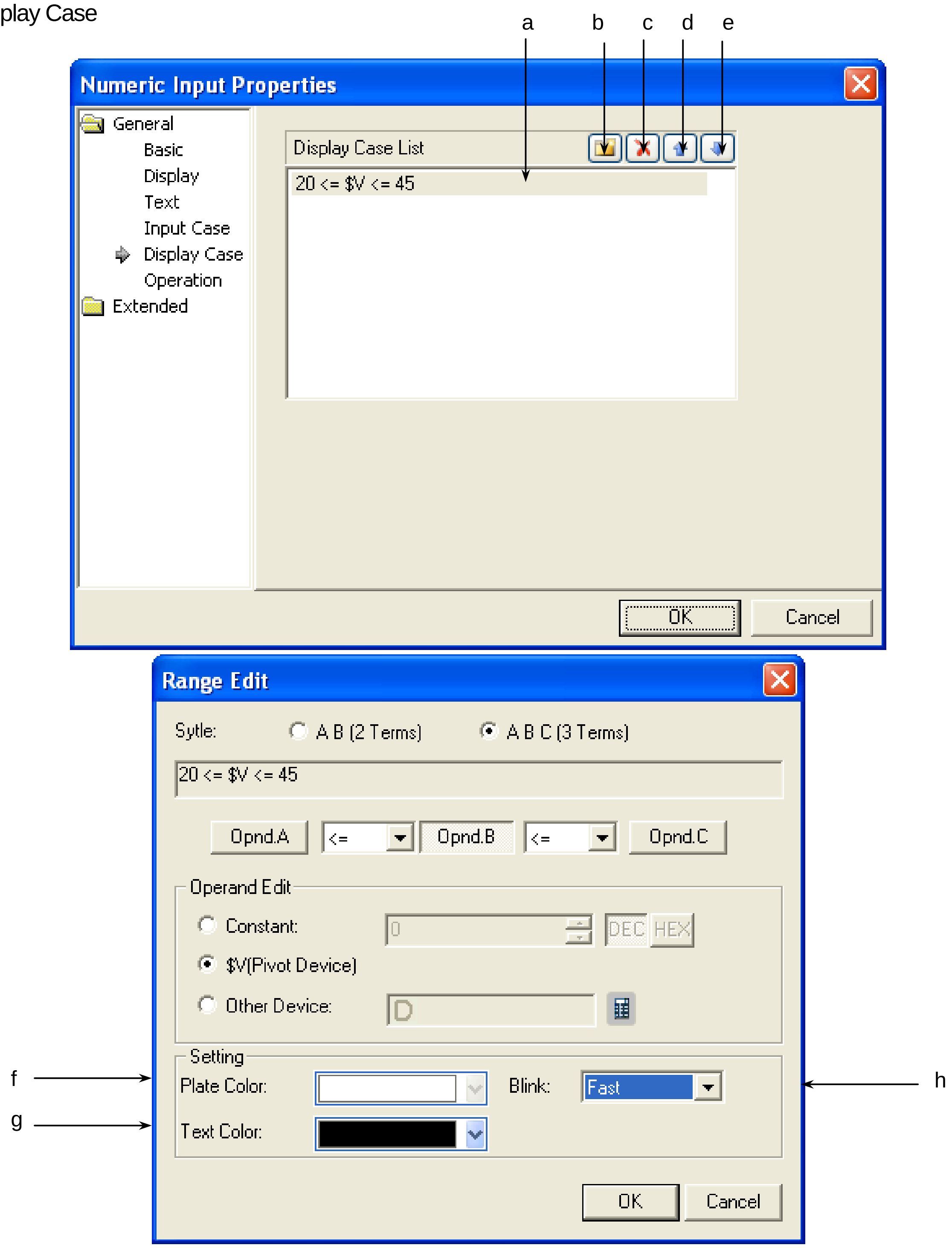
[Entry condition Defining Window]

Items	Settings
Conditions (a)	Defines the entry condition of numbers.
Create (b)	☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete (c)	Deletes the conditional sentences.
A column up (d)	Shifts up the priority of the conditional sentences being edited.
A column down (e)	Shifts down the priority of the conditional sentences being edited.

Note

(1) You can set only one number input condition.

(5) Display Case


a
b
c
d
e
f
g
h
Numeric Input Properties
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
OK
Cancel
Range Edit
Opnd.A
Opnd.B
Opnd.C
DEC
HEX
OK
Cancel

Display Case List

20 <= $V <= 45

Sytle: ○ A B (2 Terms) ● A B C (3 Terms)

20 <= $V <= 45

Opnd.A <= Opnd.B <= Opnd.C

Operand Edit

○ Constant: 0

● $V(Pivot Device)

○ Other Device: D

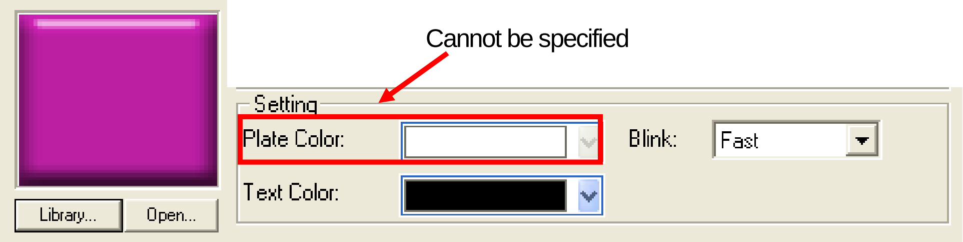
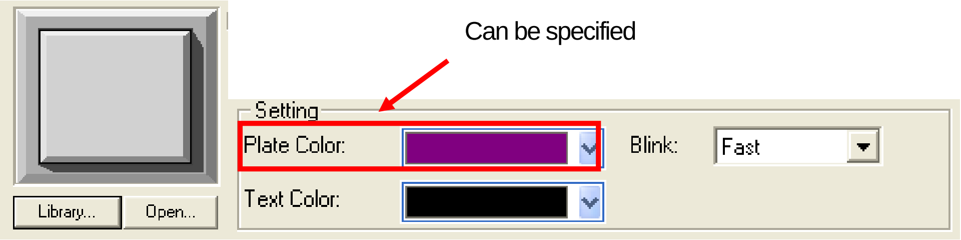
Setting

Plate Color:

Blink: Fast

Text Color:

[Display Condition Setting Window]

Items	Settings
Conditions (a)	Defines the display condition of numbers.
Create (b)	☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete (c)	Deletes the conditional sentences.
A column up (d)	Shifts up the priority of the conditional sentences being edited.
A column down (e)	Shifts down the priority of the conditional sentences being edited.
Plate color (f)	You can specify the background color of the image selected in the display item according to the set condition. If the image is set as raster in the display item, the background color cannot be specified.  Setting Plate Color: Text Color: Library... Open... Blink: Fast Cannot be specified Raster image selected in screen item  Setting Plate Color: Text Color: Library... Open... Blink: Fast Can be specified Vector image selected in screen item
Text color (g)	Sets the color of the numbers to be displayed in the number input unit according to the condition.
Blink (h)	Sets the Blink speed of the number to be displayed in the numeric input unit in XGT Panel according to the condition. (Not use, Slow, Normal, Fast)

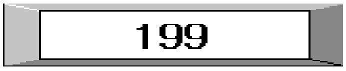
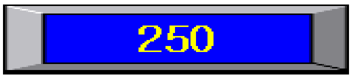
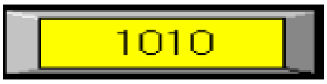
[Example of Input and display Conditions]
$V displays the device value to be monitored.
When the input condition is as follows:

$V > 0

When the display condition is as follows:

	Conditional sentence	Background color	Text color	Blink
Condition 1	200 <= $V < 300	Blue	Yellow	Not used
Condition 2	$V >1000	Yellow	Black	Slow
General	N/A	Grey	Black	Not used

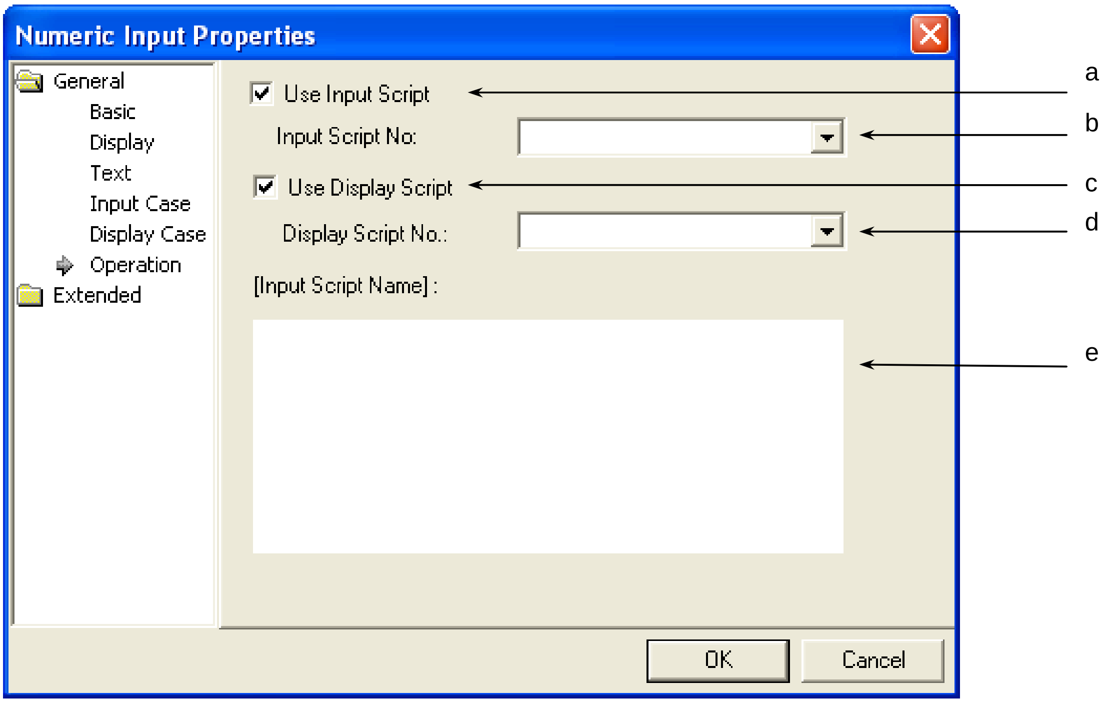
The number input unit of XGT Panel changes as follows according to the device value to be monitored.

State	Result
Device value to be monitored = -200	No number is input.
Device value to be monitored = 199	
Device value to be monitored = 250	
Device value to be monitored = 1010	

Note

(1) If the device value meets multiple conditional sentences, display depends on the settings of the conditional sentence first met.

(6) Operation


Numeric Input Properties
General
Basic
Display
Text
Input Case
Display Case
Operation
Extended
OK
Cancel
a
b
c
d
e

☑ Use Input Script

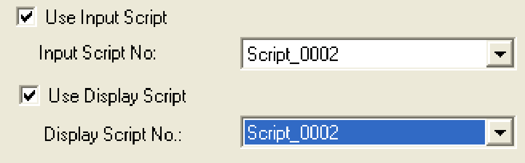
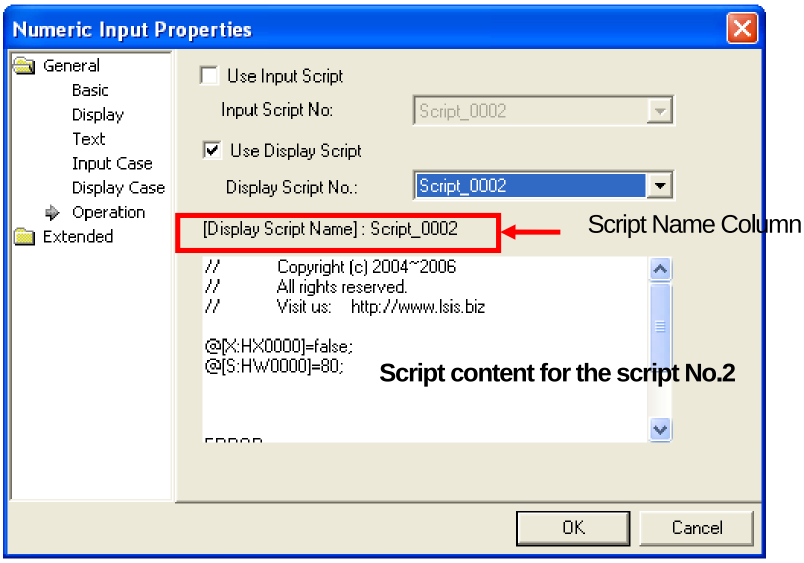
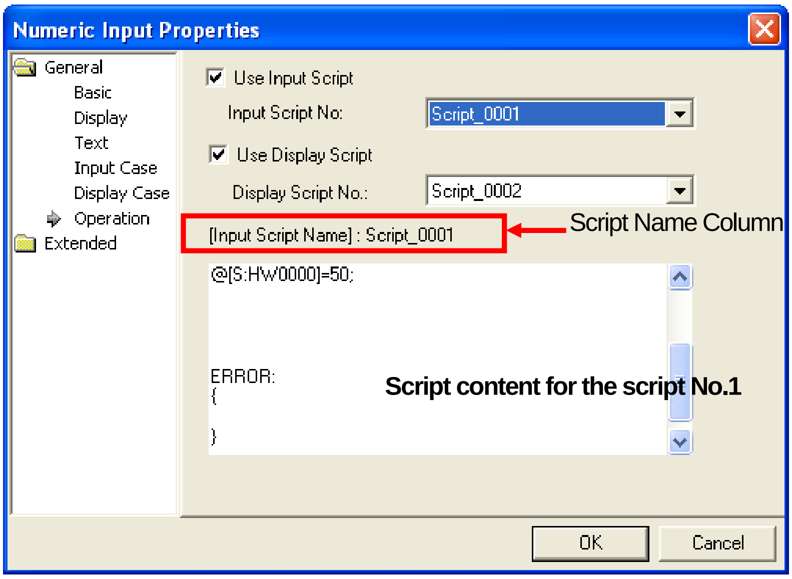
Input Script No:

☑ Use Display Script

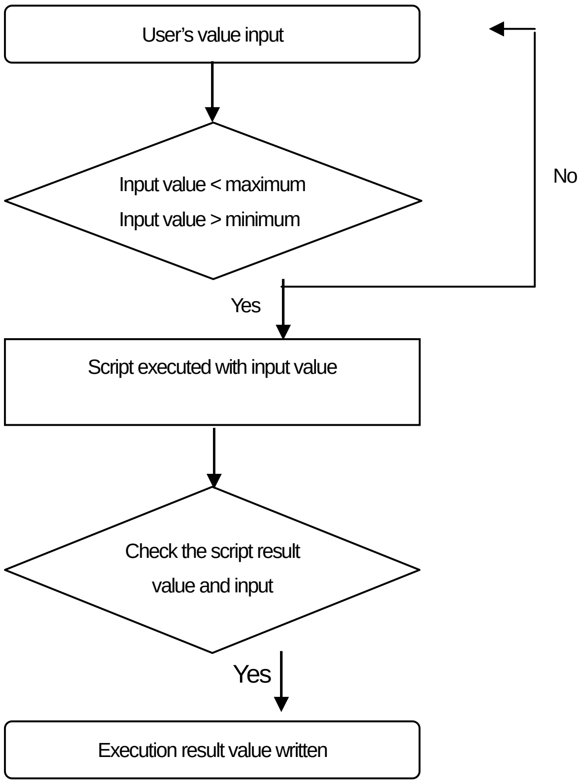
Display Script No.:

[Input Script Name] :

Items	Settings
Use input script (a)	Selected when you use a script for numeric input.
Input script number (b)	Select the script for numeric input and then the script to execute among the scripts. Select the script to execute at the input action.
Use display script (c)	Selected when you use a script for numeric display.
Display script number (d)	Select the script of numeric display and then the script to execute among the scripts. Select the script to execute at the display action.

Input script name box (e)	Expresses the most recent selected script contents.
	
	☑ Use Input Script
	Input Script No: Script_0002
	☑ Use Display Script
	Display Script No.: Script_0002
	
	 Numeric Input Properties
	General
	Basic
	Display
	Text
	Input Case
	Display Case
	Operation
	Extended
	OK
	Cancel
	☐ Use Input Script
	Input Script No: Script_0002
	☑ Use Display Script
	Display Script No.: Script_0002
	[Display Script Name] : Script_0002
	Script Name Column
	// Copyright (c) 2004~2006
	// All rights reserved.
	// Visit us: http://www.lsis.biz
	@[X:HX0000]=false;
	@[S:HW0000]=80;
	Script content for the script No.2
	Displayed in the name box when the output script is set as script #2 at last
	
	 Numeric Input Properties
	General
	Basic
	Display
	Text
	Input Case
	Display Case
	Operation
	Extended
	OK
	Cancel
	☑ Use Input Script
	Input Script No: Script_0001
	☑ Use Display Script
	Display Script No.: Script_0002
	[Input Script Name] : Script_0001
	Script Name Column
	@[S:HW0000]=50;
	ERROR:
	{
	}
	Script content for the script No.1
	Displayed in the name box when the output script is set as script #1 at last

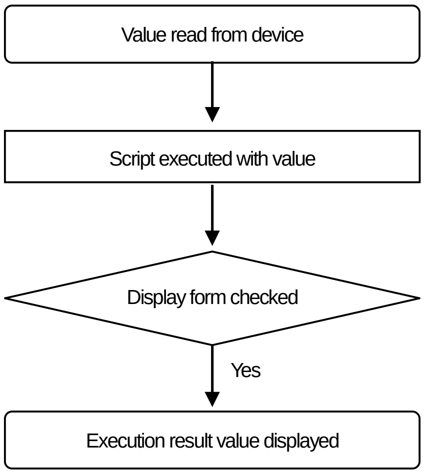
The input script operates as follows.


User's value input
Input value < maximum
Input value > minimum
No
Yes
Script executed with input value
Check the script result
value and input
Yes
Execution result value written

Note

The value input by the user is always regarded as a decimal number, so it is not converted.
The maximum/minimum values differ according to the size and type of the device. See Note of Basic Items of Word Switch.
The next action goes on even if an action fails during script operation.
If an action fails during script operation, and if a temporary variable ($ variable) is changed at the point of failure, the next step is carried out with the changed value.
As a result of checking of the script result value and the written input conditional sentence, if the condition is not met, a message reading "Invalid at Input Case" occurs and input would not be carried out.
If communication fails when a value is written after normal operation of the script, a message reading "Can't Write Data" occurs and input would not be carried out.

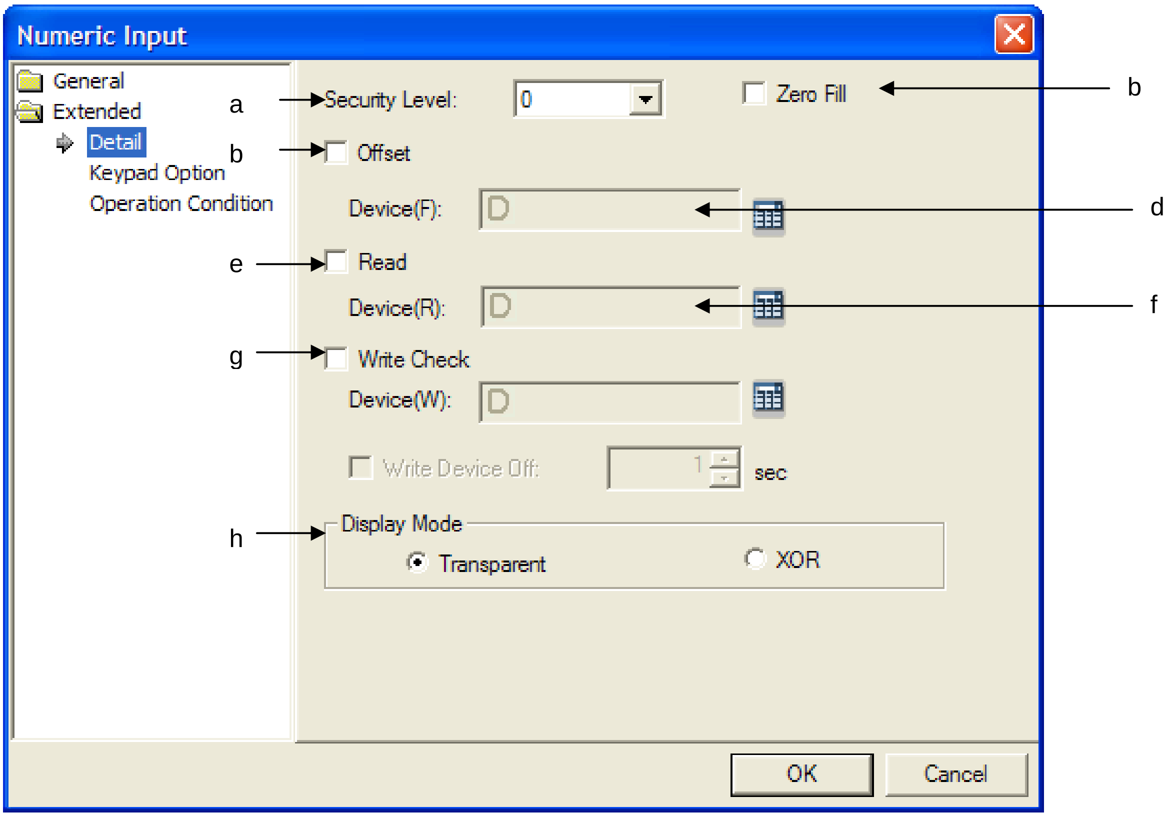
The operation sequence of the output script is as follows.


Value read from device
Script executed with value
Display form checked
Yes
Execution result value displayed

Note

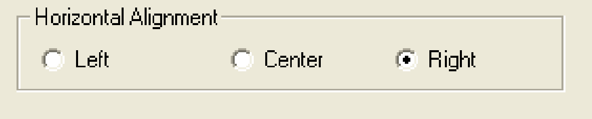
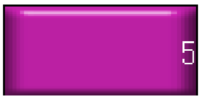
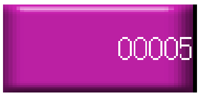
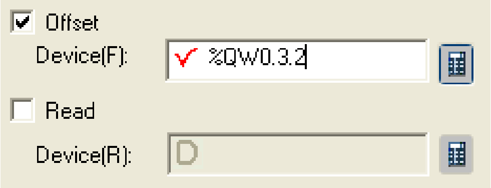
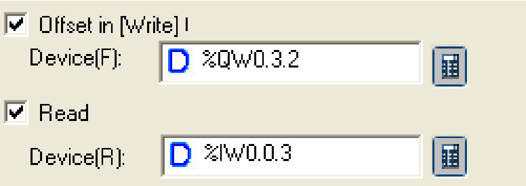
(1) If communication fails when a value is read from a device of the PLC, the next step does not go on.3
(2) During the execution of the script, even at the failure of an action, the next action will be carried out
(3) If an action fails during script operation, and if a temporary variable ($ variable) is changed at the point of failure, the next step is carried out with the changed value.
(4) The display type is checked and if it is found that it fails to meet the BCD form, it is expressed as ~.
(5) If the final result value exceeds the set number of figures, it is displayed as *.
(6) If communication fails when a value is written after normal operation of the script, a message reading "Can't Write Data" occurs and input would not be carried out.

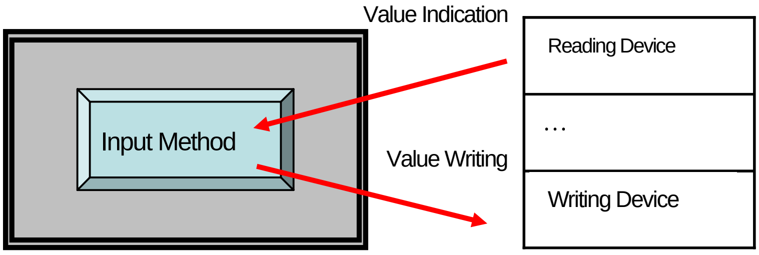
(7) Detail


Numeric Input
General
Extended
Detail
Keypad Option
Operation Condition
a
Security Level:
0
☐ Zero Fill
b
b
☐ Offset
Device(F):
D
d
e
☐ Read
Device(R):
D
f
g
☐ Write Check
Device(W):
D
☐ Write Device Off:
1
sec
h
Display Mode
● Transparent
○ XOR
OK
Cancel

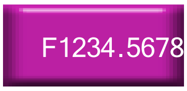
Dialog Change (keypad number -> error)

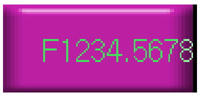
Items	Settings
Security level (a)	You can use the security function if you select this. The security level ranges between 1 and 9. (☞ **See 3.7 Security Setting)** Method) You can operate the related switches in XGT Panel only you have set a password in [Common]-[Project Property settings]-[Security Settings] of XP-Builder and enter the password above the security level set in the word switch.

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Zero Fill (b)</td><td>Check when “0” comes before the number in selecting [Right] of [Horizontal Alignment] of [Text] as follows.

Horizontal Alignment
○ Left ○ Center ● Right
In some data display types, setting is impossible (e.g. Float numbers).
5 digit number

Not filled with 0

Filled with 0</td></tr>
<tr><td>Offset(c, d)</td><td>This is for adding the device value set as the offset device to the device where to input numbers and thereby switching the device where to input numbers.
Offset operation differs according to the settings of the [Read] (☑ Read) device.
<table>
<tr><th>Settings</th><th>Writing</th><th>Reading</th></tr>
<tr><td>Reading not set</td><td>Operates after offset being applied to device set in basic items</td><td>Operates after offset being applied to device set in basic items</td></tr>
<tr><td>Reading set</td><td>Operates after offset being applied to device set in basic items</td><td>Offset does not apply to reading device</td></tr>
</table>
If reading is set, the offset only applied to writing. If reading is not set, the offset applied to both writing and reading.

☑ Offset
Device(F): %QW0.3.2
☐ Read
Device(R):
Reading device not set

☑ Offset in [Write] I
Device(F): %QW0.3.2
☑ Read
Device(R): %IW0.0.3
Reading device set
(☞ For details, see 16.5 Offset Setting of Chapter 16)</td></tr>
</table>

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Read(e, f)</td><td>Set for separately using the reading and writing devices.
If you check [Read] and specify a device, the object device of writing and object device of reading are separated.


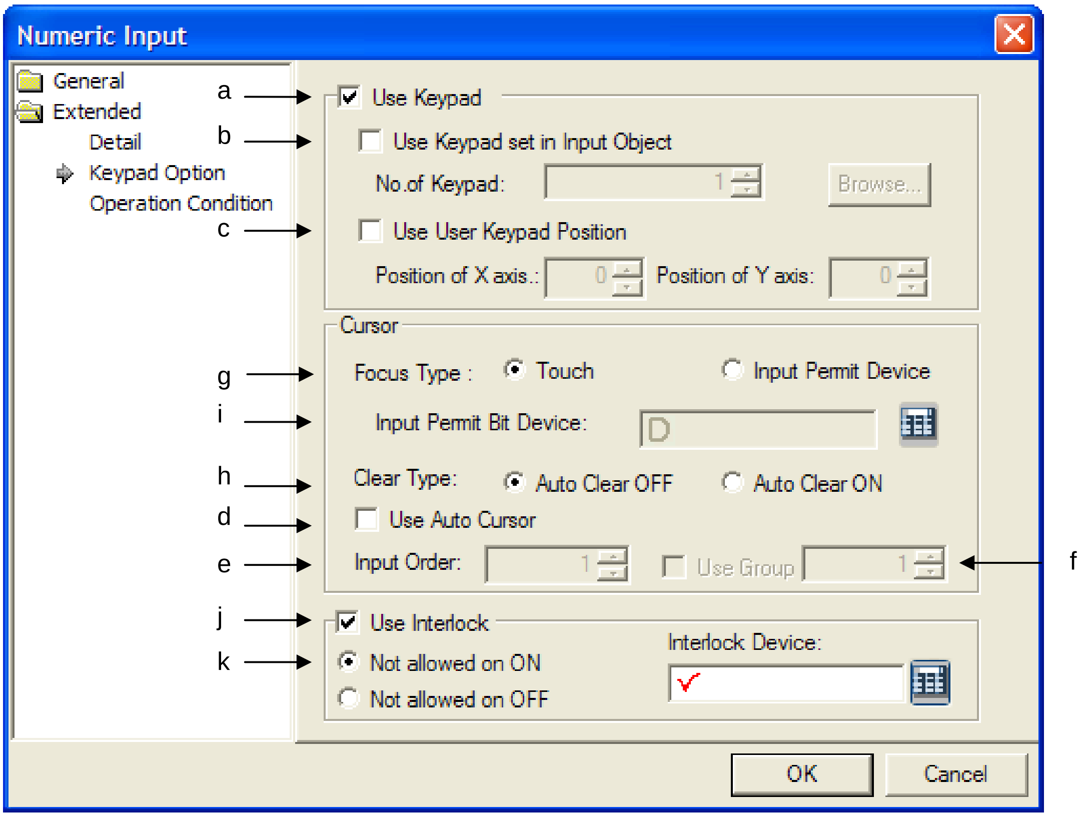
Value Indication
Reading Device
…
Input Method
Value Writing
Writing Device

If you set the [Read] function, the offset device setting only applies to the writing device even with the same device specified as the reference device.
In such a case, the value is written in the writing device during input and in other times, the values are read and displayed from the reading device continuously.
<table>
<tr><th></th><th>Device address</th><th>Device value</th></tr>
<tr><td>Reference device</td><td>D10</td><td>100</td></tr>
<tr><td>Reading device</td><td>D20</td><td>200</td></tr>
</table>
* Reference device means the device specified in the [Basic]
The results of writing 500 in the number input unit in such a condition as above are as follows.
<table>
<tr><th></th><th>Actual value of PLC</th><th>Displayed value of XGT Panel</th></tr>
<tr><td>Reading not set</td><td>D10 500
D20 200</td><td>500</td></tr>
<tr><td>Reading set</td><td>D10 500
D20 200</td><td>200</td></tr>
</table>
That is, the device value of the PLC as a result of the execution is the same, but the value displayed in the XGT Panel series might be different.</td></tr>
<tr><td>Write check(g)</td><td>Set when you turn ON the bit device after finishing number entry.
Set the device by clicking on the device button after setting.
Set the action of the device which has been set after setting the device.
ON : turns on the set bit device when number entry is finished.</td></tr>
<tr><td>Display mode(h)</td><td>Decides whether to display the background color of the message in the XOR treated color.
Transparent: Numbers are displayed in a transparent image.
XOR: The message is displayed so that the background image and numbers are distinct with the background image color displayed in XOR.
Example)


Transparent


XOR</td></tr>
</table>

(8) Keypad Setting



Numeric Input

General
Extended
Detail
Keypad Option
Operation Condition

☑ Use Keypad

☐ Use Keypad set in Input Object

No.of Keypad: 1 Browse...

☐ Use User Keypad Position

Position of X axis.: 0 Position of Y axis: 0

Cursor

Focus Type : ● Touch ○ Input Permit Device

Input Permit Bit Device: D

Clear Type: ● Auto Clear OFF ○ Auto Clear ON

☐ Use Auto Cursor

Input Order: 1 ☐ Use Group 1

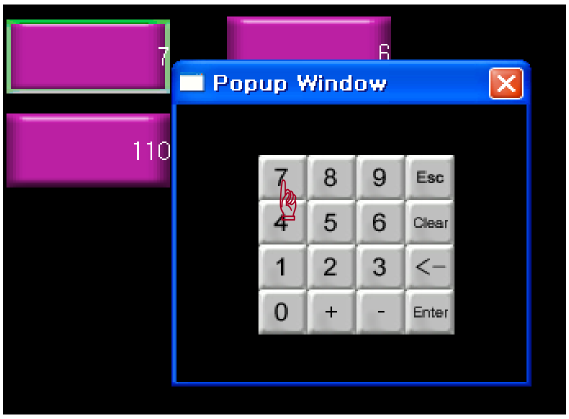
☑ Use Interlock

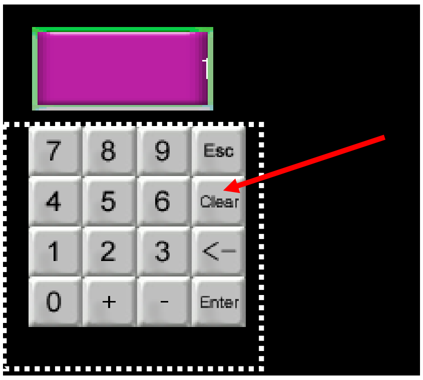
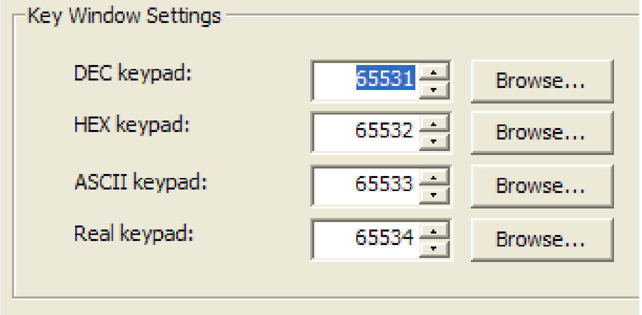
● Not allowed on ON

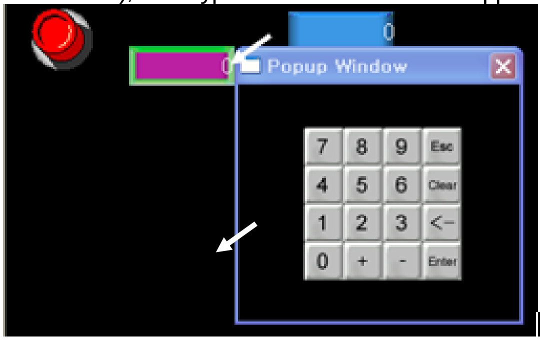
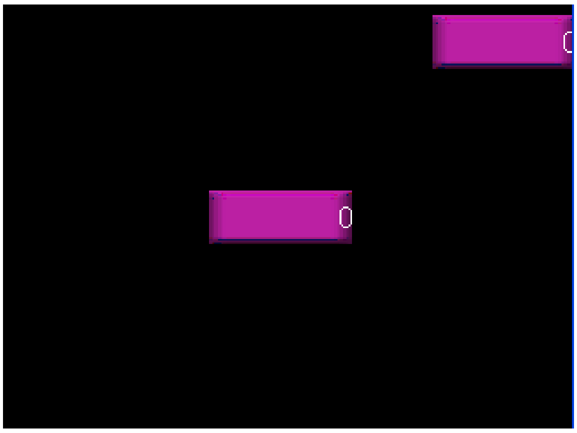
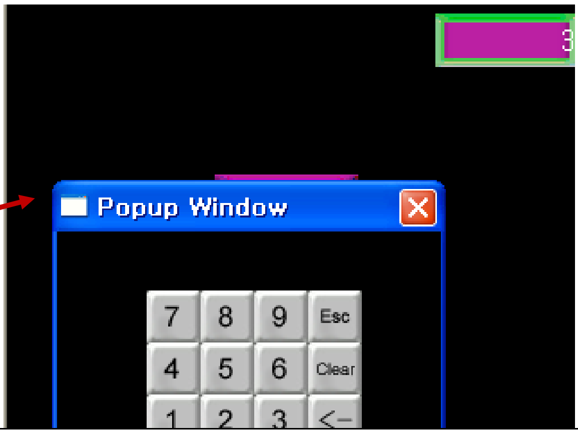
○ Not allowed on OFF

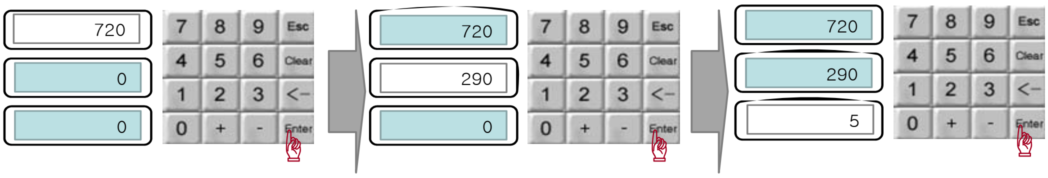
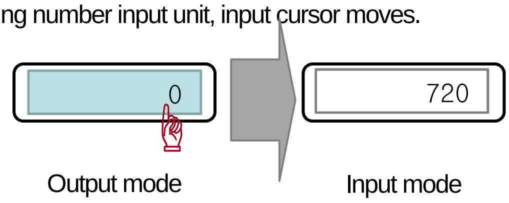
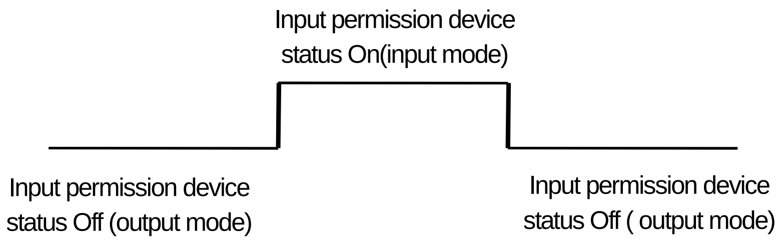
Interlock Device:

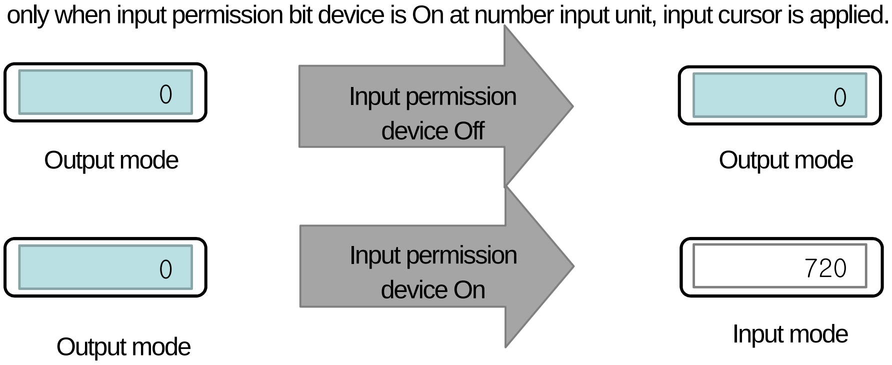
OK Cancel

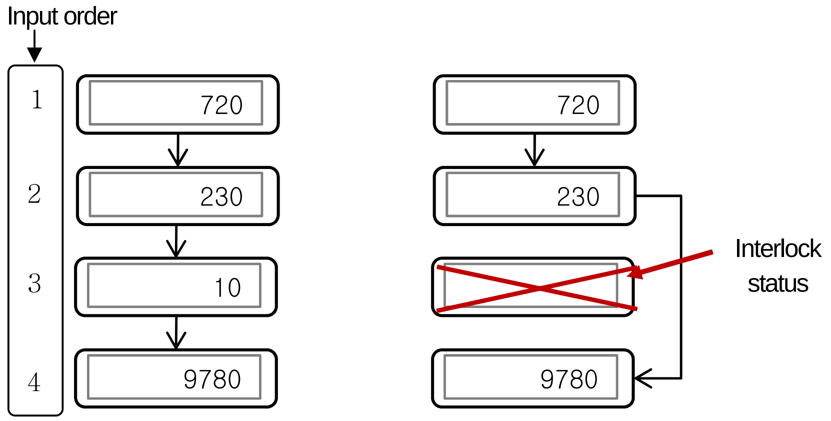
Item	Description
Use keypad (a)	It is established when pop-upping XP-Builder's keypad windows or key windows made by a user for XGT Panel series. When establishing keypad screen confirmation column, Make sure to set up windows screen No. to be pop-upped.  7 6 110 Popup Window 7 8 9 Esc 4 5 6 Clear 1 2 3 <- 0 + - Enter When inputting the values, figures are displayed at the object and they are written at a device the moment Enter key is touched.

Items	Descriptions
Use keypad (a)	In case that keypad is not applied, a window is not pop-upped at input mode so you can use special key switch for input.  Special key switch edited at the current screen.
Using keypad set in input object (b)	There are two methods to establish keypad Windows as below. (1) Designate the keypad Windows to be pop-upped at [Common]-[Project Property]-[Key Windows Setting].  Key Window Settings DEC keypad: 65531 Browse... HEX keypad: 65532 Browse... ASCII keypad: 65533 Browse... Real keypad: 65534 Browse... After preparing keypad Windows, activate [Use keypad set in input object] (☑ Use Keypad set in Input Object) and select the executed keypad Windows at [keypad No.]. If you prepare key Windows and use the keypad for number input unit, you need to establish the below functions.

Items	Descriptions
Use User Keypad position (c)	Create numerical keypad screen to your intended position. If you does not select [Use User Keypad Position](☑ Use User Keypad Position), the keypad will be created at the upper left or upper right area.  0 Popup Window 7 8 9 Esc 4 5 6 Clear 1 2 3 <- 0 + - Enter The left upper point of a screen indicates the coordinate of (0,0) (0,0)  If you establish the X-coordinate and Y-coordinate of number input unit as 50, 150 respectively, which is located in right upper area from the above editing screen, the keypad will be created at XGT Panel as below. (50,150)  Popup Window 7 8 9 Esc 4 5 6 Clear 1 2 3 <-

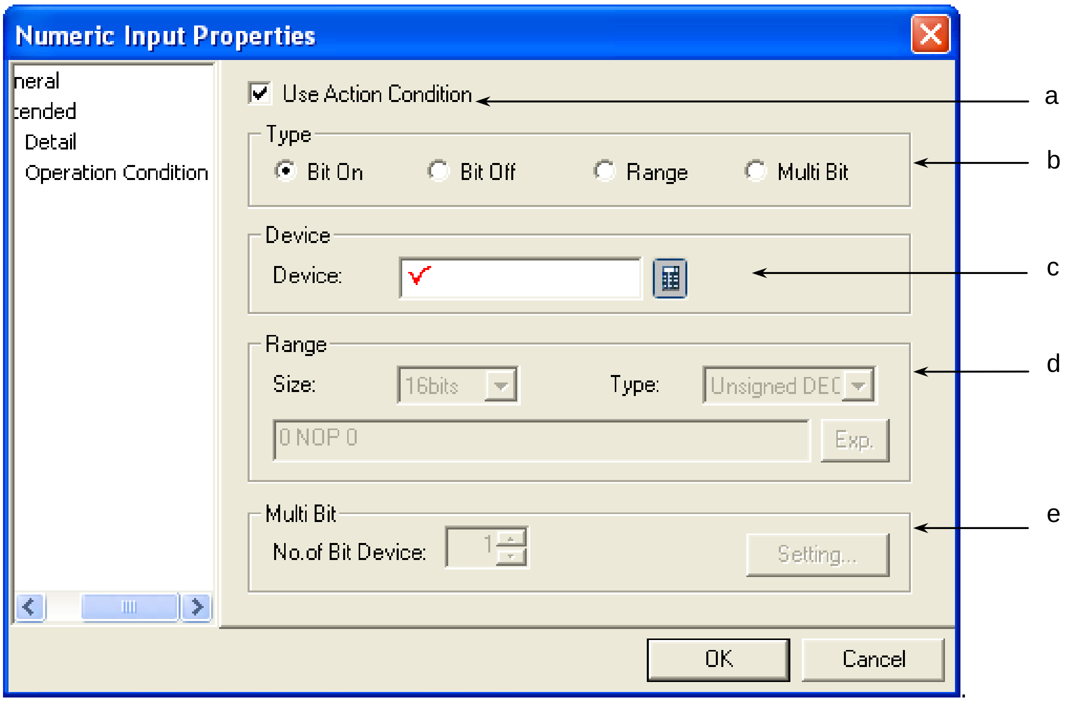
Items	Descriptions
Use Auto Cursor (d)	Contrary to the case it is changed into input mode only when touching numerical input unit at XGT Panel, if you apply Automatic Cursor (☑ Use Auto Cursor) and input [Enter] at pop-upped keypad, the input mode will be changed to next number input unit automatically.  *. Terminating automatic cursor: In the case of [Touch], touch [ESC] of keypad and touch the input unit again to terminate input process. In the case of [Device for allowing Input], when the related bit is Off, it is terminated.
Input order(e)	It sets the input procedure of a cursor and then, the cursor will automatically move based on the procedure.
Use group (f)	After designating two number input units or more as the group, it you try to input data with automatic cursor for the group, you can apply the function.
Focus type(g)	When input mode is changed into automatic cursor, you can select the movement type of cursor. Touch mode: When touching number input unit, input cursor moves.  0 720 Output mode Input mode Only when touching number input unit, input cursor is applied. The procedures to change into input·output mode are as below. Output mode　Input mode　Enter key　Output mode Input permission device: Only when bit device is On, input cursor moves. The procedures to change into input·output mode are as below.  Input permission device status On(input mode) Input permission device status Off (output mode) Input permission device status Off (output mode)

<table>
<tr><th>Items</th><th>Descriptions</th></tr>
<tr><td>Focus type(g)</td><td>Namely, only when input permission bit device is On at number input unit, input cursor is applied.

0
Output mode
Input permission device Off
0
Output mode
0
Output mode
Input permission device On
720
Input mode

Moving cursor:
(1) In the case of [Touch], input units can be divided into group and continuous input is performed within the group.
(2) If some input units that [Input procedures] is established are at interlock status, it skips interlocked one and ready for next number input.
(3) If you operate the special moving switch during input, it will cancel input and return to the previous data and ready for next input.</td></tr>
<tr><td>Clear type(h)</td><td>When changing into input mode, you can establish the methods to delete or preserve the existing data.
<table>
<tr><th>Clear Type</th><th>Description</th></tr>
<tr><td>Automatic Clear Off</td><td>At input mode, it continues displaying the existing data.
If you input the value, the last digit of displayed data will be input first.</td></tr>
<tr><td>Automatic Clear On</td><td>At input mode, it sets the value displayed by number input unit as 0</td></tr>
</table></td></tr>
<tr><td>Input permission device (i)</td><td>You can select this function when cursor type is input permission device.</td></tr>
<tr><td>Interlock (j)</td><td>It sets interlock. When automatic cursor is moved by transference order and interlock device meets certain conditions, input cursor does not move and transfers to next number input unit.

Input order
1
2
3
4
720
230
10
9780
720
230
9780
Interlock status

</td></tr>
<tr><td>Interlock Conditions (k)</td><td>On: When the device is On, Interlock is applied.
Off: When the device is Off, Interlock is applied.</td></tr>
</table>

(9) Operation Condition Setting



☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: ✓

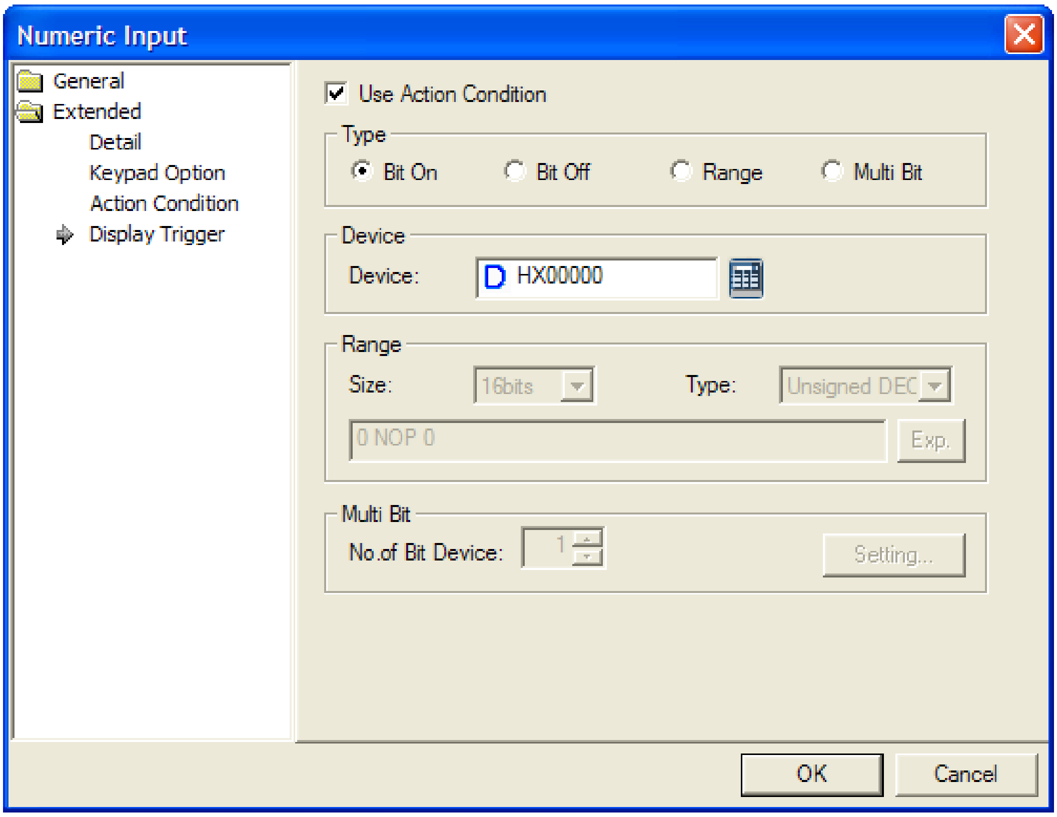
Range
Size: 16bits Type: Unsigned DEC
0 NOP 0
Exp.

Multi Bit
No.of Bit Device: 1
Setting...

Items	Settings
Use Action Condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition to operate the object. Bit On: carries out the object operation when the operation condition device is ON. Bit Off: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the Range condition of the word device is met. Multiple Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the Range is set.
Range (d)	Sets the size, type and Range condition when the operation condition is the Range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the Range condition is set in a conditional expression.
Multiple bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multiple bit. **(See 16.6 Operation Condition Setting of Chapter 16 Object Setting)**

(10) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Numeric Input
General
Extended
Detail
Keypad Option
Action Condition
Display Trigger
Exp.
Setting...
OK
Cancel

☑ Use Action Condition

Type

● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: HX00000

Range

Size: 16bits Type: Unsigned DEC

0 NOP 0

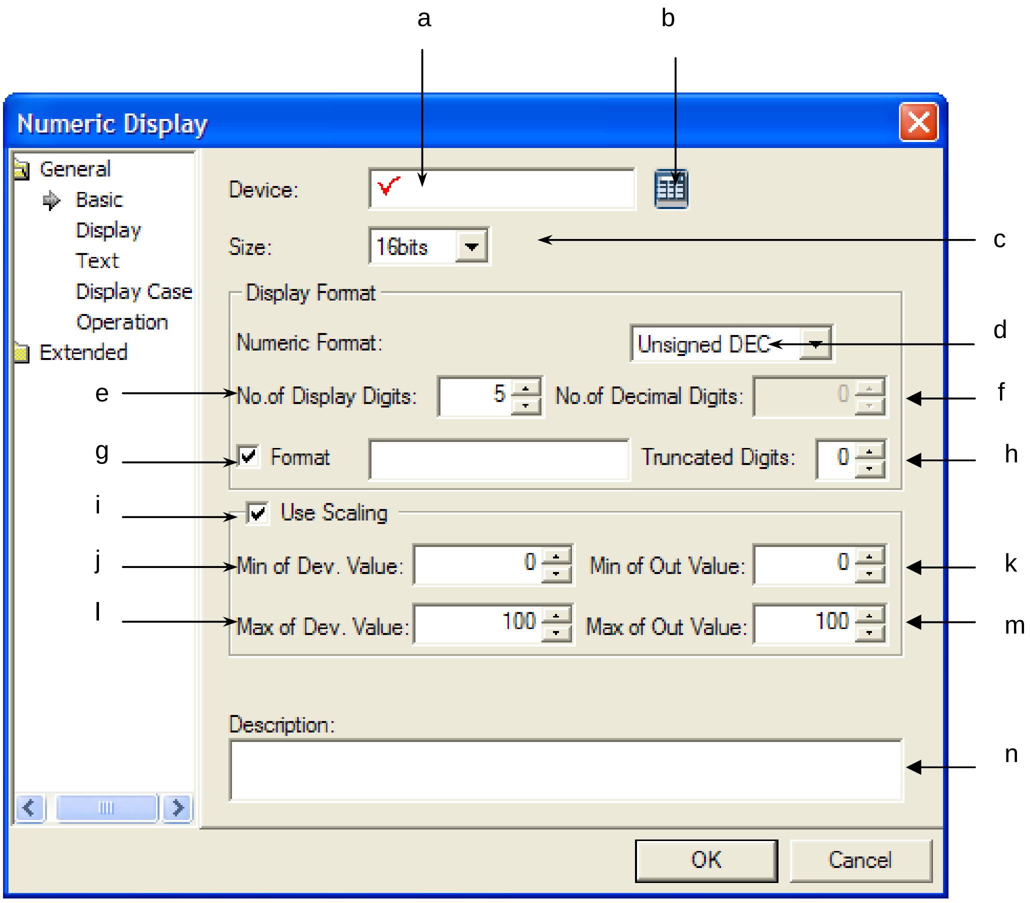
Multi Bit

No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.4.4 Numeric Display Settings

(1) Basic


a
b
Numeric Display
General
Basic
Display
Text
Display Case
Operation
Extended
c
d
e
f
g
h
i
j
k
l
m
n
OK
Cancel

Device:

Size: 16bits

Display Format

Numeric Format: Unsigned DEC

No.of Display Digits: 5 No.of Decimal Digits: 0

☑ Format Truncated Digits: 0

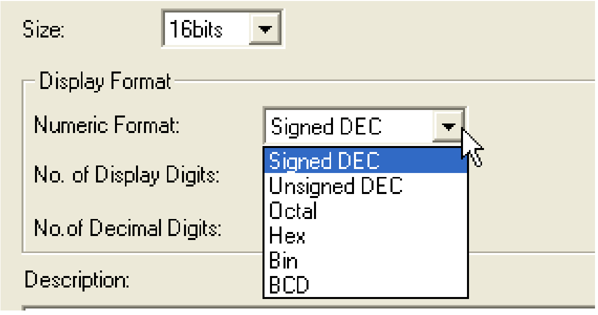
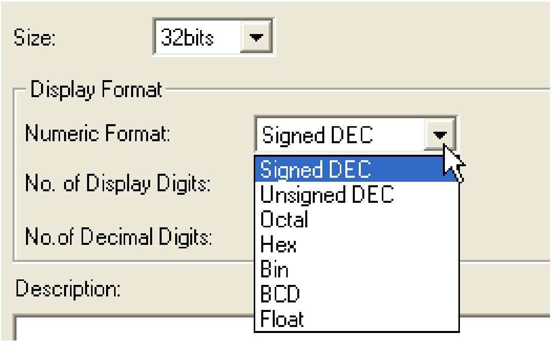
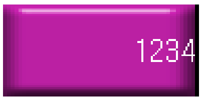
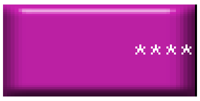
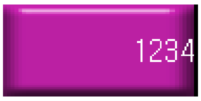
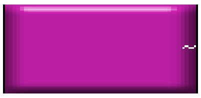
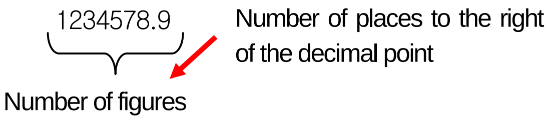
☑ Use Scaling

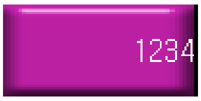
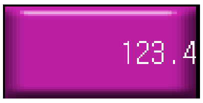
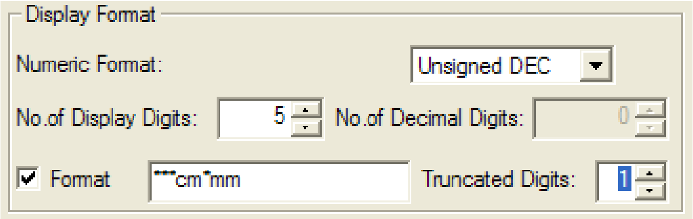
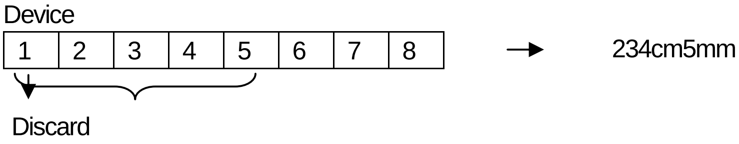
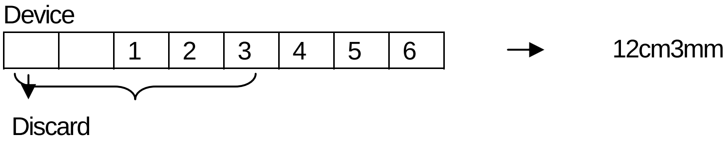
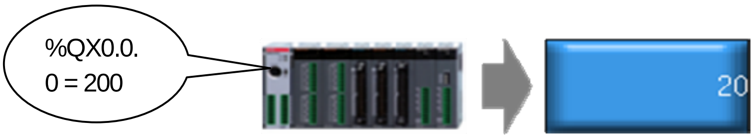
Min of Dev. Value: 0 Min of Out Value: 0

Max of Dev. Value: 100 Max of Out Value: 100

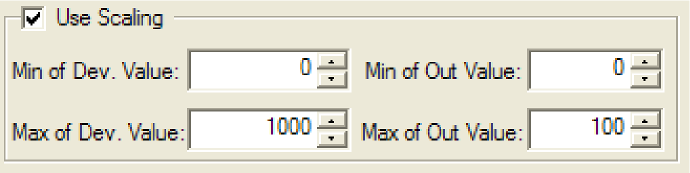
Description:

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Device (a, b)</td><td>Sets the device to be referred to in the relevant object.</td></tr>
<tr><td>Data size (c)</td><td>Sets the size of the device data (16 bit, 32 bit).</td></tr>
<tr><td>Numeric Format (d)</td><td>Selects the display type.
<table>
<tr><th>Display type</th><th>Description</th><th>Example</th></tr>
<tr><td>Signed decimal</td><td>Displayed in signed decimal numbers.</td><td>-2184</td></tr>
<tr><td>Unsigned decimal</td><td>Displayed in unsigned decimal numbers.</td><td>2184</td></tr>
<tr><td>Octal</td><td>Displayed in octal numbers.</td><td>4210</td></tr>
<tr><td>Hexadecimal</td><td>Displayed in hexadecimal numbers.</td><td>888</td></tr>
<tr><td>Binary</td><td>Displayed in binary numbers.</td><td>10010001000</td></tr>
<tr><td>BCD</td><td>Displayed in BCD.</td><td>888</td></tr>
<tr><td>Float number</td><td>Displayed in actual numbers.</td><td>2184.0</td></tr>
</table>
Actual numbers can be set only if the device size is 32 bit as follows.</td></tr>
</table>

Items	Settings
	 Size: 16bits Display Format Numeric Format: Signed DEC Signed DEC Unsigned DEC Octal Hex Bin BCD No. of Display Digits: No.of Decimal Digits: Description: No float number in case of 16bit  Size: 32bits Display Format Numeric Format: Signed DEC Signed DEC Unsigned DEC Octal Hex Bin BCD Float No. of Display Digits: No.of Decimal Digits: Description: Float number exists in case of 32bit
No. of Display Digits (e)	Sets in how many figures to display the numbers. You can set up to 64 figures. If the number of set numbers is below the reading and writing device values, it is displayed as * in the object. For example, if the device value is 123456 and the set number of figures is 4, the display is as shown on the right below.  4 digit device value  6 digit device value If the device value cannot be displayed in the form of BCD, it is displayed as ~. For example, of the device value is 1234 and an unsigned decimal number, it is displayed as 1234 and if in the form of BCD, the display is as shown on the right below.  Unsigned decimal  BCD
No. of Decimal Digits (f)	Sets how many places to put to the right of the decimal point when you select all types of numbers other than binary, octal and hexadecimal numbers.  1234578.9 Number of places to the right of the decimal point Number of figures

Items	Settings
	If the device value is 1234, the number of figures is 4 and there is 1 place to the right of the decimal point, the number is displayed as shown on the right below.  Number of places to the right of the decimal point : 0  Number of places to the right of the decimal point : 1
Character type(g)	If you need to use character with numerical display such as 12cm 34mm, the function is applied. you need to input character type to be displayed for using character type and can indincate number as *. For example, if you indicate 12cm 34mm as **cm**mm, * will be displayed as number at XGT Panel. If you use character type, you can not use * for string sicne * means number. Fruthermore, you can set the number of figures displayed with * as [No. of Display Digits]-[Truncated Digits]. Discard digits are applited in descending order of bit place; from Most significant bit(MSB) to least significant bit(LSB).  Display Format Numeric Format: Unsigned DEC No.of Display Digits: 5 No.of Decimal Digits: 0 ☑ Format ***cm*mm Truncated Digits: 1 Supposing the above settngs, the values are displayed at XGT Panel depending on device value as below  
Truncated digits(h)	If there is a value that you do not want to disply among the values, you can establish the number of discard. Upper bit shoud be discarded first and the numbe r of discard can ranges from 0 to 64. However, it can not be established more than the number of figures.
Using scaling(i)	When a user tries to change the established PLC device actual value into random one and disapy it, the funciton is applied. For example, if PLC device value is 0~1000 and you try to display the value into the range of 0~100, the below can be applied. 

Items	Settings



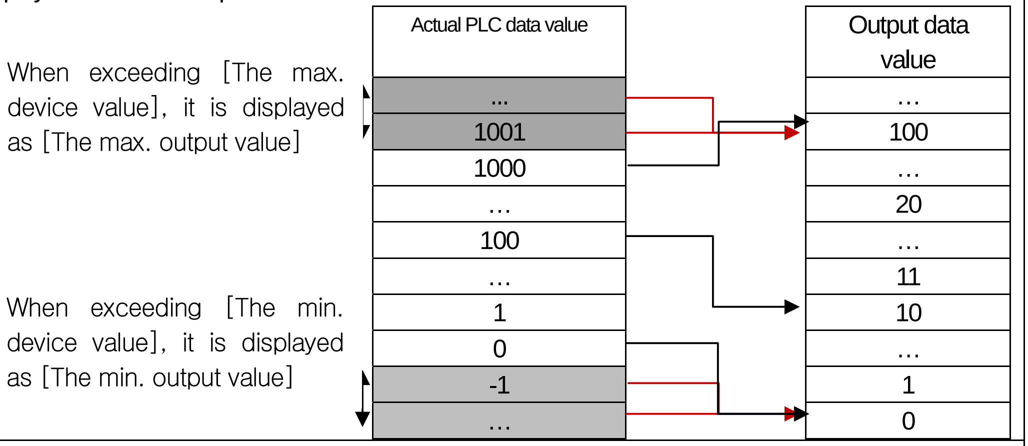
☑ Use Scaling

Min of Dev. Value: 0
Min of Out Value: 0
Max of Dev. Value: 1000
Max of Out Value: 100

PLC actual data value that can be scaled and displayable data are different depending on the size, display type of data.

Device size	Display type	The Min. value	The Max.value
16Bit	Decimal Number with a sign	-32768	32767
16Bit	Decimal Number without a sign, Binary, Octal Hexadecimal number	0	65535
16Bit	BCD	0	9999
32Bit		-2147483648	2147483647
32Bit	Decimal Number without a sign, Binary, Octal Hexadecimal number	0	4294967295
32Bit	BCD	0	99999999

If PLC actual data value exceeds [Max. device value], establsihed [Max. output value] is displayed..
If PLC actual data value is less than [Min. device value], establsihed [Min. output value] is displayed.
At the above example, supposing that PLC actual data value is 2000, the max. output value 100 will be displayed at numner output unit.


When exceeding [The max. device value], it is displayed as [The max. output value]
When exceeding [The min. device value], it is displayed as [The min. output value]
Actual PLC data value
…
1001
1000
…
100
…
1
0
-1
…
Output data value
…
100
…
20
…
11
10
…
1
0

Items	Settings
Min. Device Value (j)	After setting scale function, input the min. PLC device data to be scaled.
Max. Device Value (k)	After setting scale function, input the max. PLC device data to be scaled.
Min. output value(l)	After setting scale function, input the min. data value to be displayed at scale.
Max. output value (m)	After setting scale function, input the max. data value to be displayed at scale.
Description (n)	Enters description in the object.

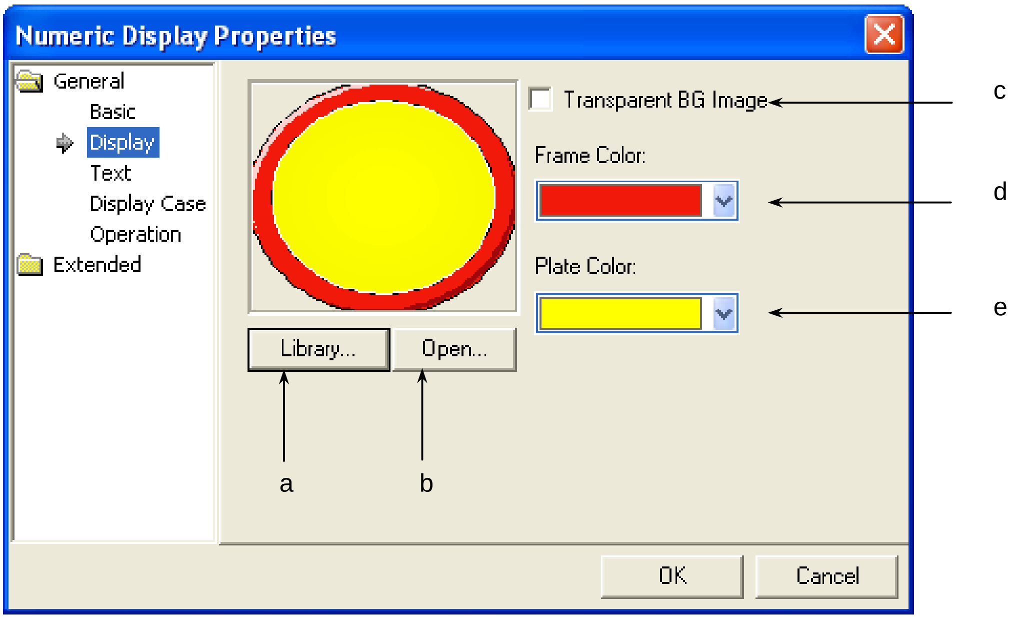
Note

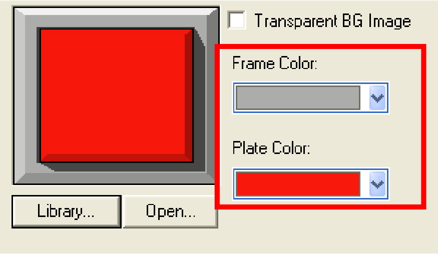
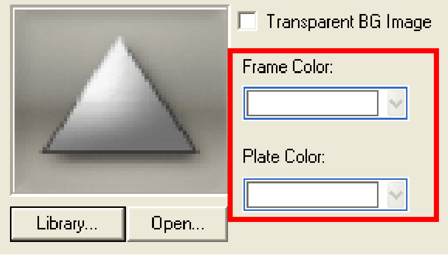
(1) The data type of the device (signed decimal, unsigned decimal, BCD) is determined by the numeric format (Numeric Format:).

(2) If the data size is changed, the previously made display condition is deleted.

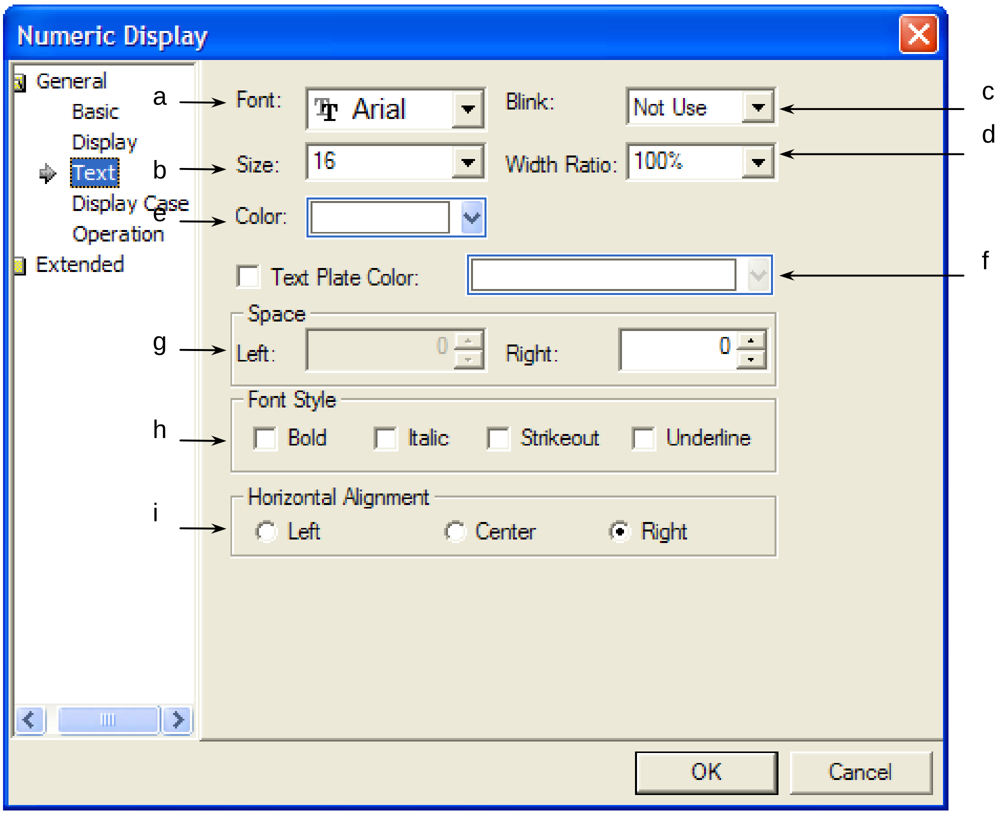
(3) In case of a failure of communication with the PLC only the object background image is displayed in the XGT Panel series and numbers are not displayed.

(2) Display


Numeric Display Properties
General
Basic
Display
Text
Display Case
Operation
Extended
☐ Transparent BG Image
Frame Color:
Plate Color:
Library...
Open...
OK
Cancel
a
b
c
d
e

Items	Settings
Library (a)	Selects the shape in which to display the values in the library.
Open (b)	Directly enters the shape in which to display the values in the user's image file. (☞ **See 16.2 Display function Setting)**
Transparent BG Image (c)	Check this when you don't use the background image.
Frame color (d) Plate color (e)	Sets the frame color. The frame color can be set only when the image to be displayed is a vector.  ☐ Transparent BG Image Frame Color: Plate Color: Library... Open... Vector Image Selected  ☐ Transparent BG Image Frame Color: Plate Color: Library... Open... Raster Image Selected The frame color area and the plate color area are different according to the vector image. (☞ **See 16.2 Display function Setting)**

(3) Text


Numeric Display
General
Basic
Display
Text
Display Case
Operation
Extended
a
b
c
d
e
f
g
h
i
OK
Cancel

Font: Arial

Size: 16

Color:

Blink: Not Use

Width Ratio: 100%

☐ Text Plate Color:

Space

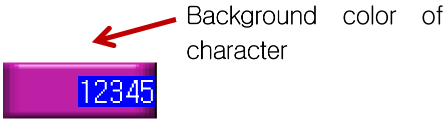
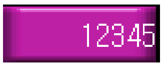
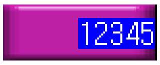
Left: 0 Right: 0

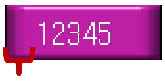
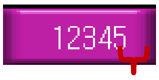
Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment

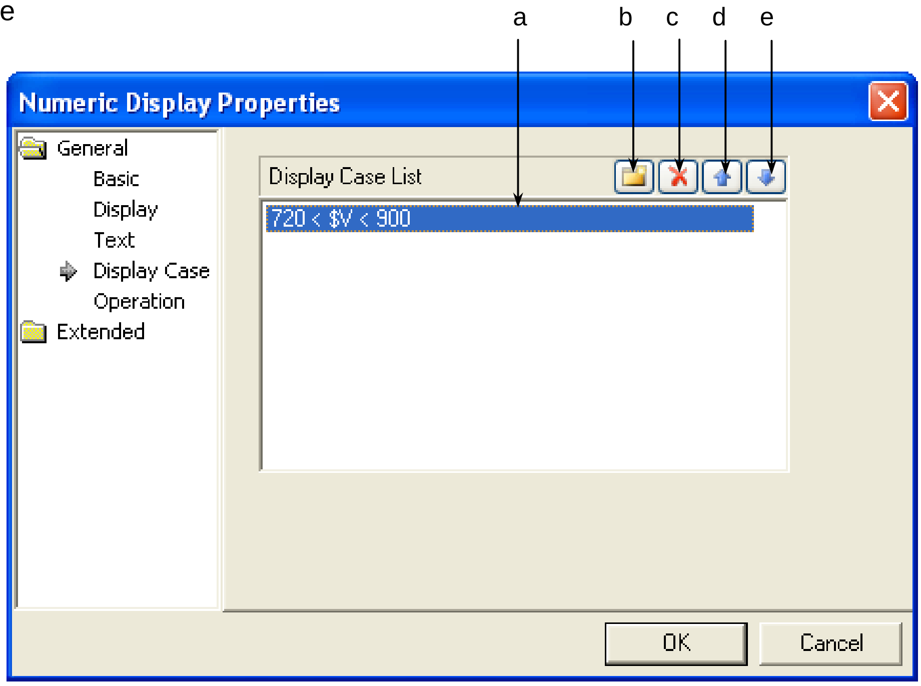
○ Left ○ Center ● Right

Items	Settings
Font (a)	Sets the type of the font in which the numbers are to be displayed in XGT Panel.
Size (b)	Sets the size of the texts in which the numbers are to be displayed in XGT Panel.
Blink (c)	Sets the Blink speed of the message in XGT Panel. (Not use, Slow, Normal, Fast)
Width ration (d)	Sets the width ratio of numeric displayed in the XGT Panel
Color (e)	Sets the color of the texts in which the numbers are to be displayed in XGT Panel.
Text Plate Color (f)	It sets the background color of the figures at XGT Panel.  Background color of character Example)  Not using background color of character  using background color of character (blue)

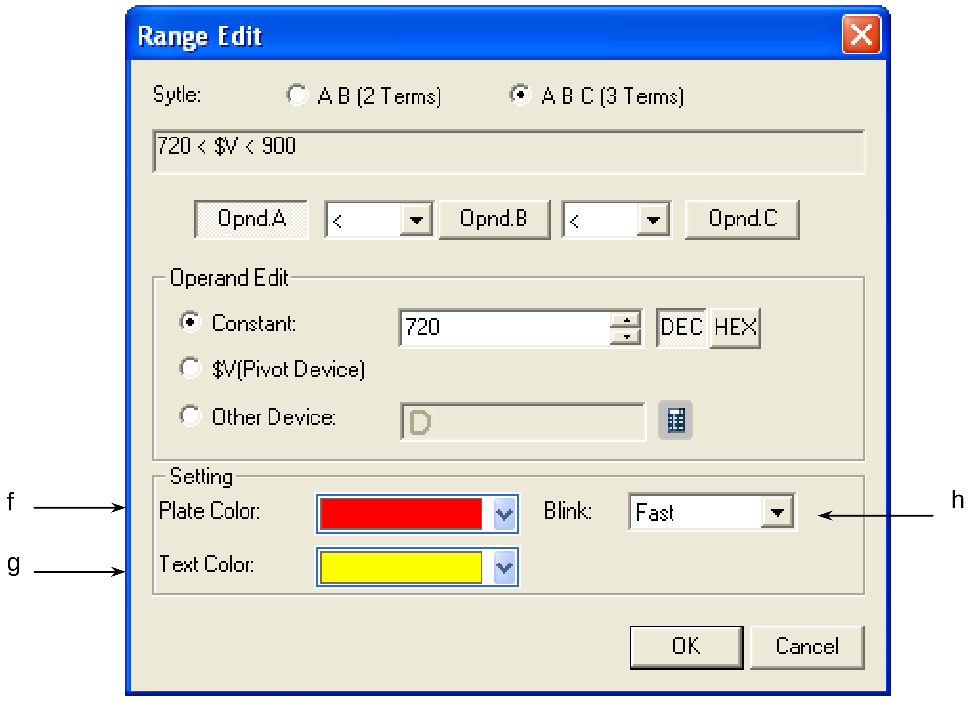
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Space (g)</td><td>You can select left, right margin at number input unit object.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Left Margin</td><td>If [Horizontal alignment] is left, it displays numerical value with the space of the pixel established by a user from the most left.

Left Margin</td></tr>
<tr><td>Right Margin</td><td>If [Horizontal alignment] is right, it displays numerical value with the space of the pixel established by a user from the most right.

Right Margin</td></tr>
</table>

While right [Horizontal alignment] allows setting left space only, right [Horizontal alignment] allows setting right space only.
If the size of established space is larger than the size of object, the figure is not displayed at the object but background image only.
.</td></tr>
<tr><td>Font Style (h)</td><td>Sets the text form (Bold, italic, Strikeout, underline). You can select two or more of them at a time.</td></tr>
<tr><td>Horizontal Alignment (i)</td><td>Sets the horizontal location of texts.</td></tr>
</table>

(4) Display Case


a
b
c
d
e
Numeric Display Properties
General
Basic
Display
Text
Display Case
Operation
Extended
Display Case List
OK
Cancel

720 < $V < 900


Range Edit
Opnd.A
Opnd.B
Opnd.C
Operand Edit
Setting
DEC
HEX
OK
Cancel
f
g
h

Sytle: ○ A B (2 Terms) ● A B C (3 Terms)

720 < $V < 900

Opnd.A < Opnd.B < Opnd.C

● Constant: 720

○ $V(Pivot Device)

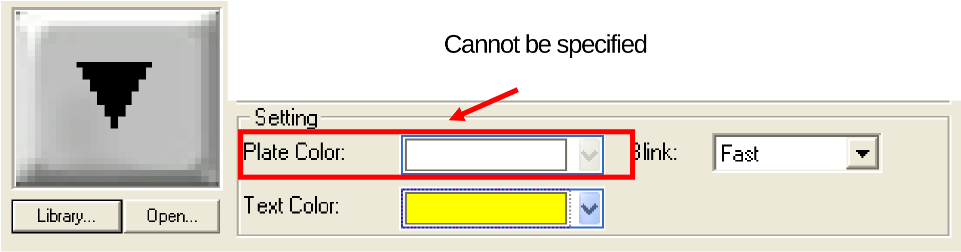
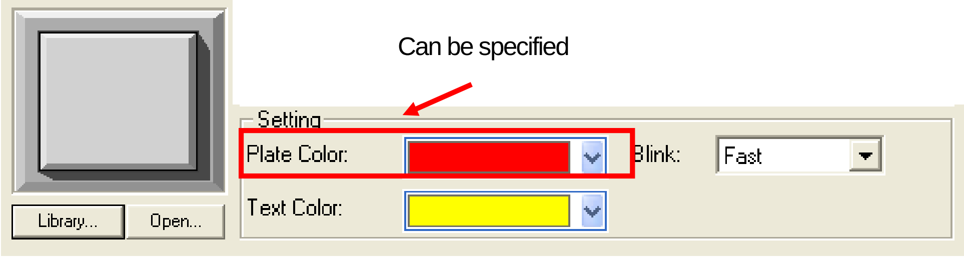
○ Other Device: D

Plate Color: 🟥

Blink: Fast

Text Color: 🟨

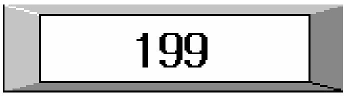
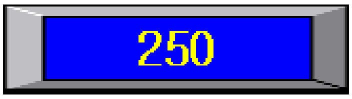
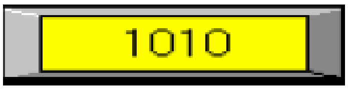
[Display Condition Defining Window]

Items	Settings
Condition alarm (a)	Defines the output condition of numbers.
Create (b)	☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete (c)	Deletes the conditional sentences.
A column up (d)	Shifts up the priority of the conditional sentences being edited.
A column down (e)	Shifts down the priority of the conditional sentences being edited.
Plate color (f)	You can specify the background color of the image selected in the display item according to the set condition. If the image is set as raster in the display item, the background color cannot be specified.  Cannot be specified Setting Plate Color: Blink: Fast Text Color: Raster image selected in display item  Can be specified Setting Plate Color: Blink: Fast Text Color: Vector image selected in display item
Text color(g)	Sets the color of the numbers to be displayed in the numeric display according to the condition.
Blink(h)	Sets the Blink speed of the number to be displayed in the numeric display unit in XGT Panel according to the condition. (Not used, slow, medium, fast)

[Example of Input and display Conditions]
$V displays the device value to be monitored.
When the display condition is as follows:

Setting	Conditional sentence	Background color	Text color	Blink
Condition 1	200 <= $V < 300	Blue	Yellow	Not used
Condition 2	$V > 1000	Yellow	Black	Slow
General	N/A	Grey	Black	Not used

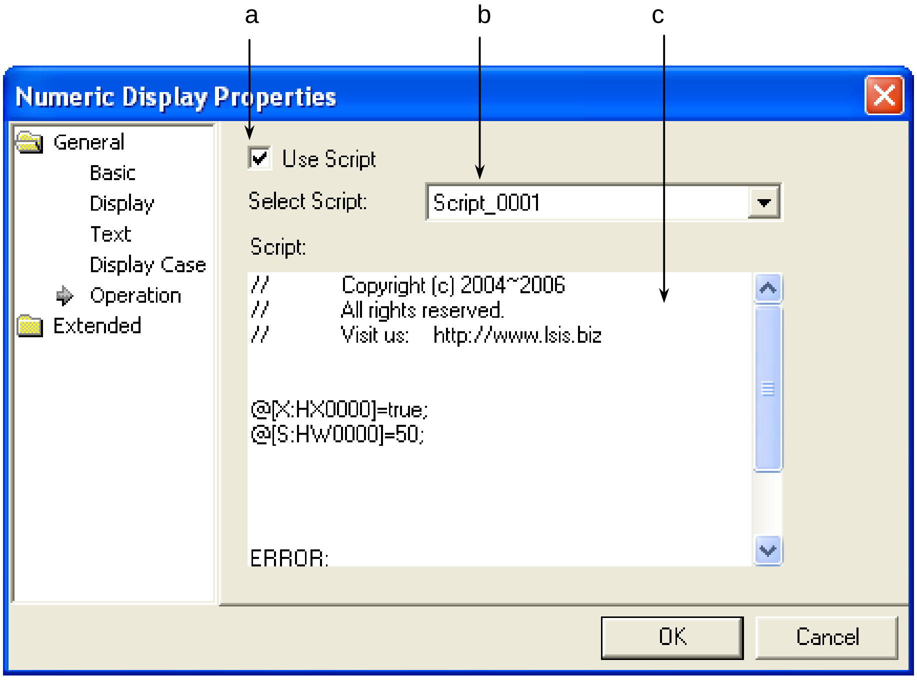
The numeric display unit of XGT Panel changes as follows according to the device value to be monitored.

Case	Result
Device value to be monitored = -200	Can't be inputted
Device value to be monitored = 199	 199
Device value to be monitored = 250	 250
Device value to be monitored = 1010	 1010

Note

(1) If the device value meets multiple conditional sentences, display depends on the settings of the conditional sentence first met. In the above example, in case device value to be monitored is 250, though both condition 1 and 2 are met, but it is displayed according to condition 1.

(5) Operation



☑ Use Script

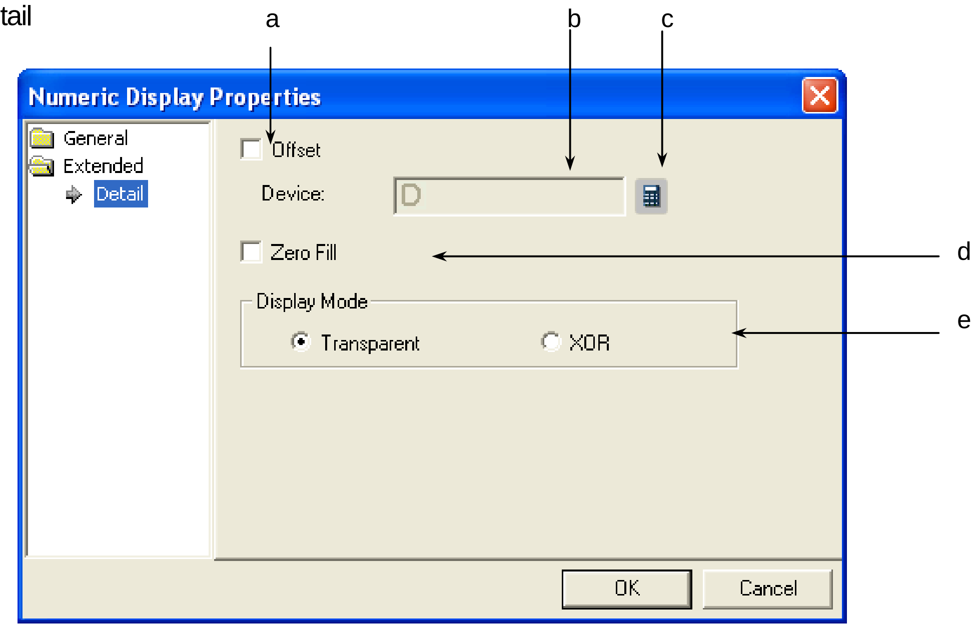
Select Script: Script_0001

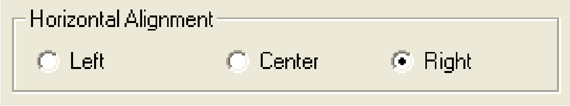
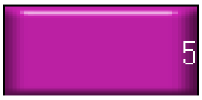
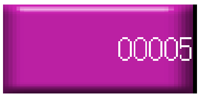
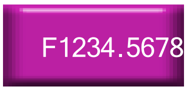
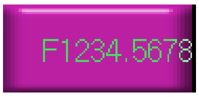
Script:

```
//        Copyright (c) 2004~2006
//        All rights reserved.
//        Visit us:    http://www.lsis.biz


@[X:HX0000]=true;
@[S:HW0000]=50;



ERROR:
```

Items	Settings
Use script (a)	Select this when you want to use script.
Select script (b)	Select the list of scripts you made.
Script contents (c)	The contents of the selected script are displayed.

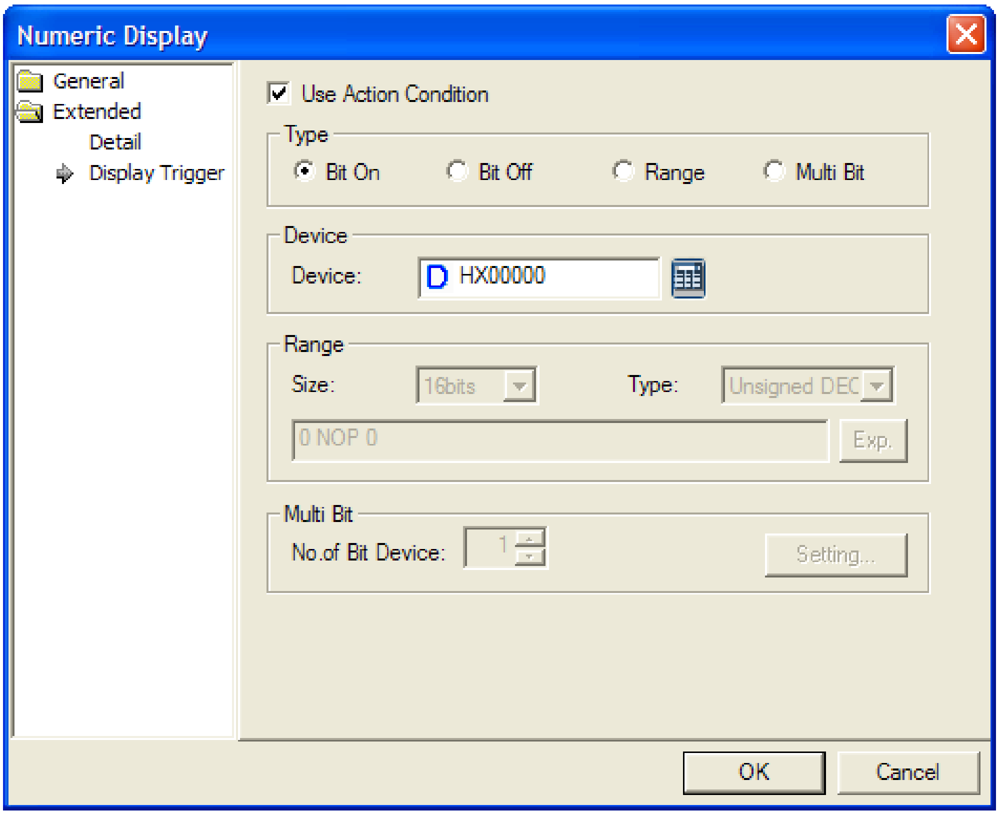
(6) Detail


a
b
c
Numeric Display Properties
General
Extended
Detail
☐ Offset
Device: D
☐ Zero Fill
d
Display Mode
● Transparent
○ XOR
e
OK
Cancel

Items	Settings
Offset (a)	Set when you add the device value set as the offset device to the device where to input the values and switching the device where to input the values. (☞ **For details, see 16.5 Offset Setting of Chapter 16)**
Device (b, c)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.
Zero Fill (d)	Check when “0” comes before the number in selecting [Right] of [Horizontal Alignment] of [Text] as follows.  Horizontal Alignment ○ Left ○ Center ● Right In some data display types, setting is impossible (e.g. actual numbers). 5 digit number  No filling with 0  Filled with 0
Display Mode (e)	Decides whether to display the background color of the message in the XOR treated color. Transparent: Numbers are displayed in a transparent image. XOR: The message is displayed so that the background image and numbers are distinct with the background image color displayed in XOR. Example)  Transparent  XOR

(7) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Numeric Display

- General
- Extended
  - Detail
  - Display Trigger

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range — Size: 16bits Type: Unsigned DEC

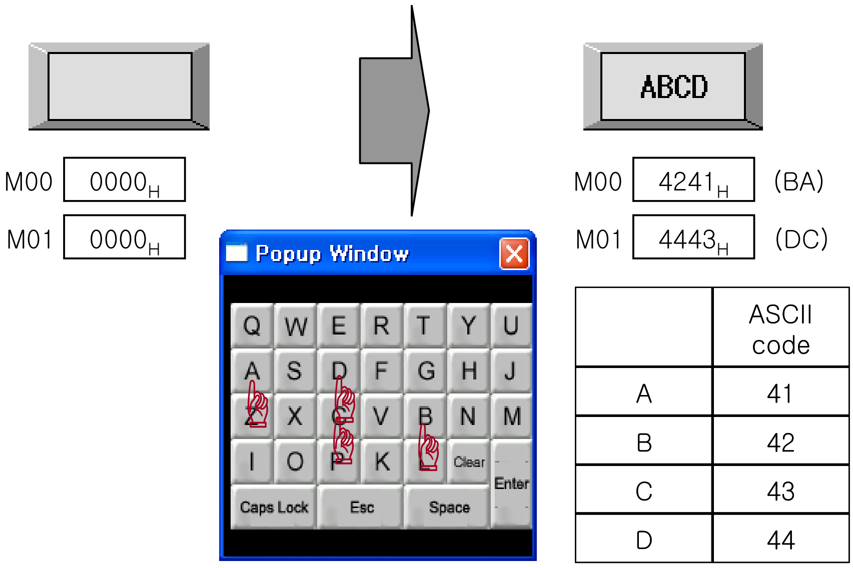
0 NOP 0

Multi Bit — No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

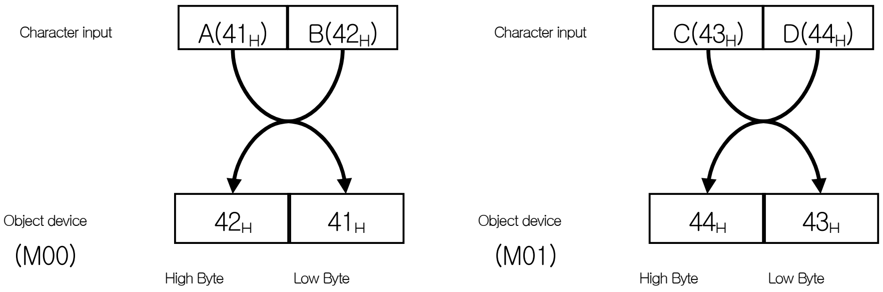
17.4.5 Text Input Settings

You can enter the value of the device connected to the PLC by using the key window. The key window is divided into the key pad window which XP-Builder originally is equipped with and the key window made by the user.


M00 0000H
M01 0000H
ABCD
M00 4241H (BA)
M01 4443H (DC)
Popup Window
Q W E R T Y U
A S D F G H J
Z X C V B N M
I O P K Clear Enter
Caps Lock Esc Space

	ASCII code
A	41
B	42
C	43
D	44

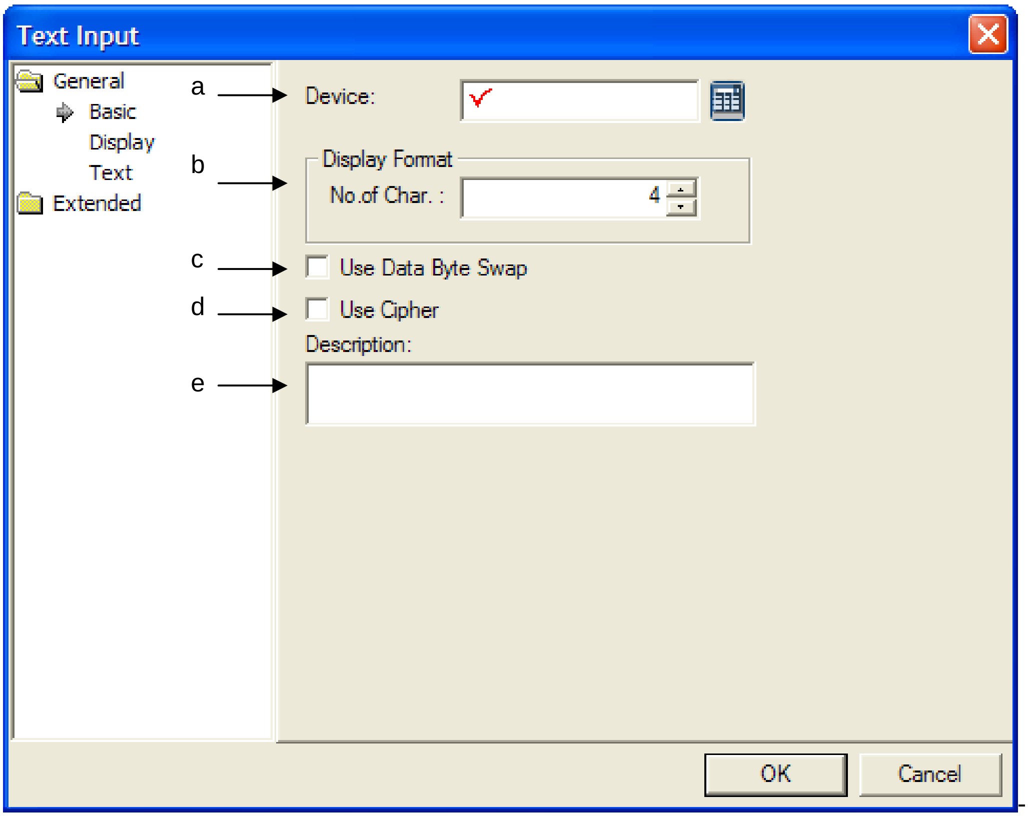
Writing ABCD in the object device is as follows.


Character input
A(41H) B(42H)
Object device
(M00)
42H 41H
High Byte
Low Byte
Character input
C(43H) D(44H)
Object device
(M01)
44H 43H
High Byte
Low Byte

Input is conducted in the word unit and the texts first input are input in the low Byte of the object device and the texts later input are input in the high Byte of the object device.
If you enter the four letter ASCII value in the object device, the value is input in the 4 byte input Range from the object (device address).

[Method]
(1) Edit the text input unit in the window.
(2) Set the object device in [Basic] of the text input unit.
(3) Set the number of texts of [Basic] of the text input unit. (As many bytes as the number of texts is allotted beginning with the object device address.)

(1) Basic


Text Input
General
Basic
Display
Text
Extended
a
b
c
d
e
Device:
Display Format
No.of Char. :
4
☐ Use Data Byte Swap
☐ Use Cipher
Description:
OK
Cancel

Items	Settings
Device (a)	Sets the device to be referred to in the object. You can either set by using the device button or directly enter it on the keyboard.
No. of Char. (b)	Sets the no. of char. The number can be between 2 and 64.
Use Data Byte Swap(c)	It changes and outputs device data into WORD unit. For example, if the character input is “ABCD” as the picture above, the actual character input going to be “BADC.”
Use Cipher (e)	If you apply code word, * is displayed as many as the number of digits that a user inputs. Display including a decimal point is same as before.
Description (e)	Enters description in the relevant object.

Note

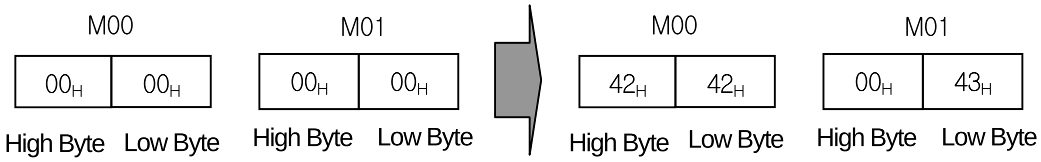
(1) A space takes up the place of a figure.

(2) 16 bit word device is allotted to enter 2 texts.

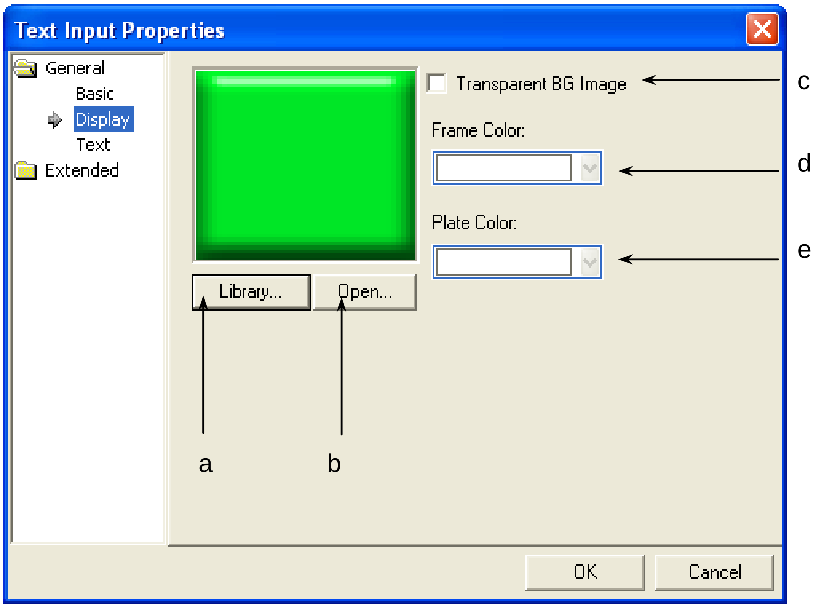
(3) As many actual entry area of the controller as the total byte of the texts is allotted beginning with the specified reference device as the start address. That is, with the reference device being the HWO, which is an internal device, and 10 texts being entered, a total of 10 byte is allotted as the input area from HWO.

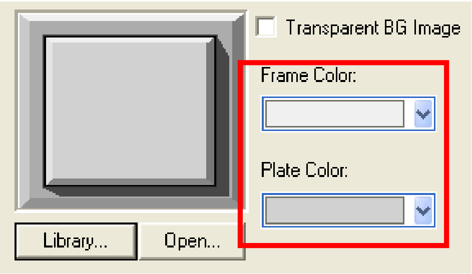
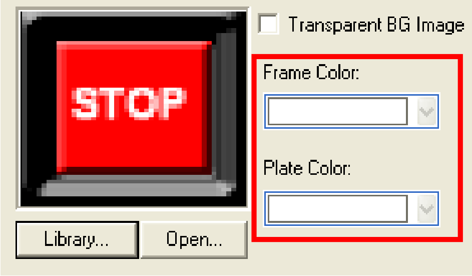
(4) The number of texts cannot be an odd number (but only an even number) because texts are input in the word unit.

(5) When you actually enter texts, you can input an odd number of texts, too. The remaining space is filled with 0. That is, if four places of texts are set and only three texts are actually entered, the remaining Range of the memory is filled with 0.
E.g.) If you set the number of texts as 4, 2 device addresses are allocated as shown on the left below. If you enter three texts of ABC, the high byte of M01 is allotted as 0.

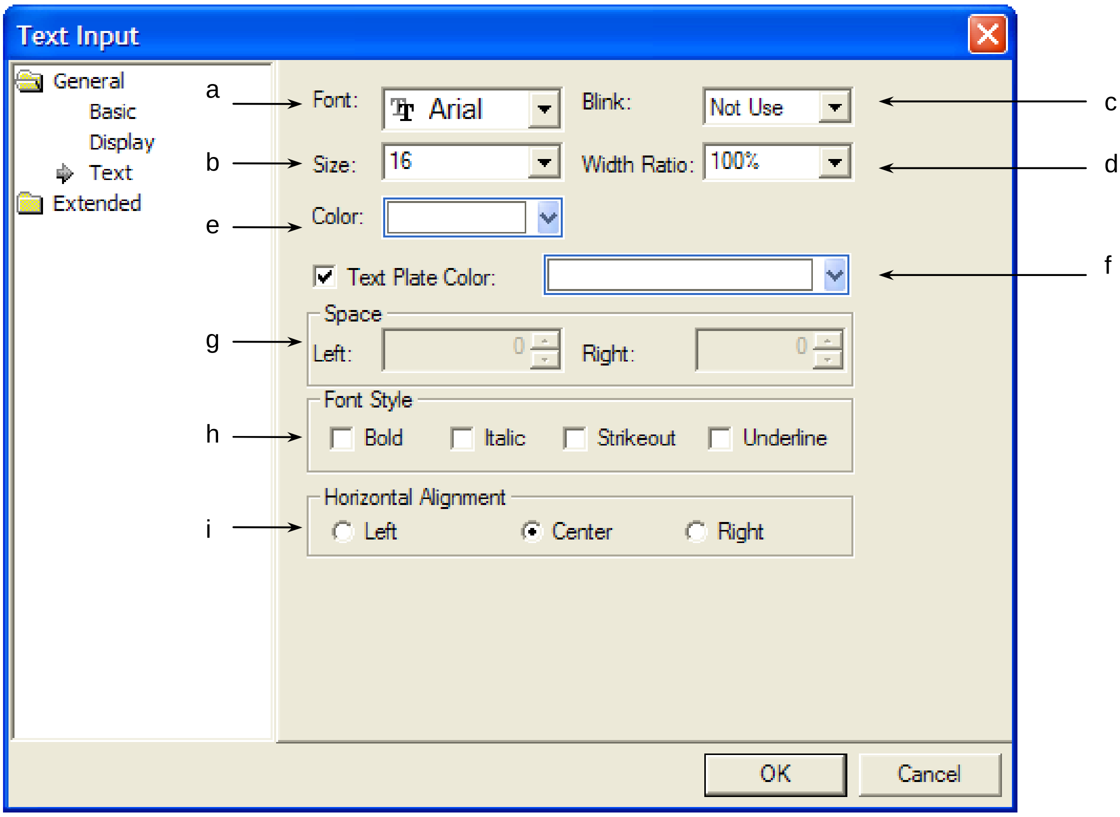

M00
00_H
00_H
High Byte
Low Byte
M01
00_H
00_H
High Byte
Low Byte
M00
42_H
42_H
High Byte
Low Byte
M01
00_H
43_H
High Byte
Low Byte

(2) Display

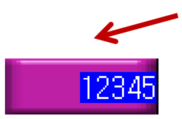
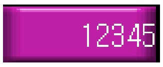
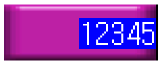

Text Input Properties
General
Basic
Display
Text
Extended
Transparent BG Image
Frame Color:
Plate Color:
Library...
Open...
OK
Cancel
a
b
c
d
e

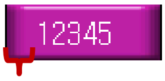
Items	Settings
Library (a)	Selects the form in which to display texts in the library.
Open (b)	Directly enters the form in which to display texts in the user's image file. (☞ **See 16.2 Display function Setting)**
Transparent BG Image (c)	Check this when you don't use the background image.
Frame color (d) Plate color (e)	Sets the frame color. The frame color can be set only when the image to be displayed is a vector.  Transparent BG Image Frame Color: Plate Color: Library... Open... Vector Image Selected  STOP Transparent BG Image Frame Color: Plate Color: Library... Open... Raster Image Selected The frame color area and the plate color area are different according to the vector image. (☞ **See 16.2 Display function Setting)**

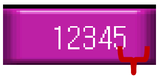
(3) Text



Font: Arial
Blink: Not Use
Size: 16
Width Ratio: 100%
Color:
☑ Text Plate Color:
Space
Left: 0
Right: 0
Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline
Horizontal Alignment
○ Left ● Center ○ Right

Items	Settings
Font (a)	Sets the type of the font in which the numbers are to be displayed in XGT Panel.
Size (b)	Sets the size of the texts in which the numbers are to be displayed in XGT Panel.
Blink (c)	Sets the Blink speed of the message in XGT Panel. (Not use, Slow, Normal, Fast)
Width ration (d)	Sets the width ratio of numeric displayed in the XGT Panel
Color (e)	Sets the color of the texts in which the numbers are to be displayed in XGT Panel.
Text Plate Color (f)	It sets the background color of the figures at XGT Panel.  Background color of character Example)  Not using background color of character  using background color of character (blue)

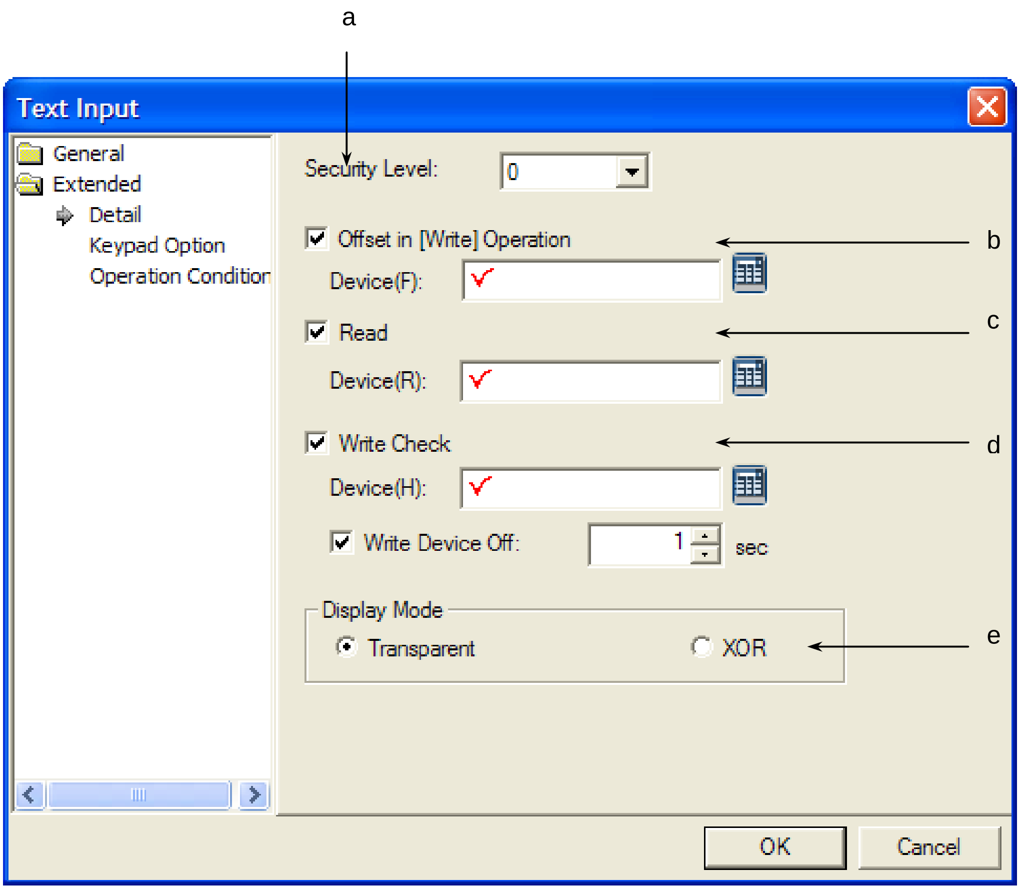
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Space (g)</td><td>You can select left, right margin at number input unit object.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Left Margin</td><td>If [Horizontal alignment] is left, it displays numerical value with the space of the pixel established by a user from the most left.


Left Margin</td></tr>
<tr><td>Right Margin</td><td>If [Horizontal alignment] is right, it displays numerical value with the space of the pixel established by a user from the most right.


Right Margin</td></tr>
</table>

While right [Horizontal alignment] allows setting left space only, right [Horizontal alignment] allows setting right space only.
If the size of established space is larger than the size of object, the figure is not displayed at the object but background image only.
.</td></tr>
<tr><td>Font Style (h)</td><td>Sets the text form (Bold, italic, Strikeout, underline). You can select two or more of them at a time.</td></tr>
<tr><td>Horizontal Alignment (i)</td><td>Sets the horizontal location of texts.</td></tr>
</table>

(4) Detail



Security Level: 0

☑ Offset in [Write] Operation

Device(F):

☑ Read

Device(R):

☑ Write Check

Device(H):

☑ Write Device Off: 1 sec

Display Mode

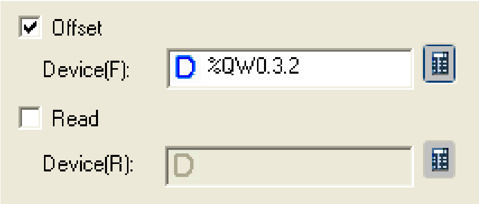
● Transparent ○ XOR

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Security level (a)</td><td>You can use the security function if you select this.
The security level ranges between 1 and 9.

(☞ **See 16.7 Security Setting of Chapter 16 Object Setting)**
Method)
You can operate the related switches in XGT Panel only you have set a password in [Common]-[Project Property Settings]-[Security Settings] of XP-Builder and enter the password above the security level set in the word switch.</td></tr>
<tr><td>Offset (d\b)</td><td>This is for adding the device value set as the offset device to the device where to input numbers and thereby switching the device where to input numbers.

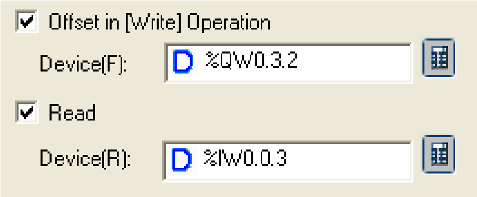
Offset operation differs according to the settings of the [Read](☑ Read) device.
<table>
<tr><th>Settings</th><th>Writing</th><th>Reading</th></tr>
<tr><td>Reading not set</td><td>Operates after offset being applied to device set in basic items</td><td>Operates after offset being applied to device set in basic items</td></tr>
<tr><td>Reading set</td><td>Operates after offset being applied to device set in basic items</td><td>Offset does not apply to reading device</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
If reading is set, the offset only applied to writing. If reading is not set, the offset applied to both writing and reading.



☑ Offset
Device(F): D %QW0.3.2
☐ Read
Device(R): D

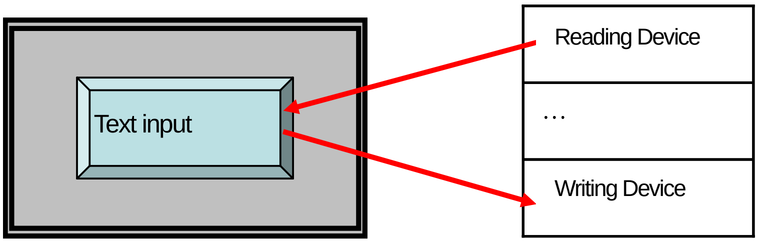
Reading device not set



☑ Offset in [Write] Operation
Device(F): D %QW0.3.2
☑ Read
Device(R): D %IW0.0.3

Reading device set

((☞ **For details, see 16.5 Offset Setting of Chapter 16)**
</td></tr>
<tr><td>Read (c)</td><td>
Set for separately using the reading and writing devices.
If you check [Read] and specify a device, the object device of writing and object device of reading are separated.



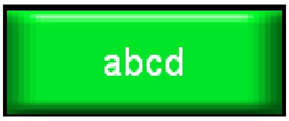
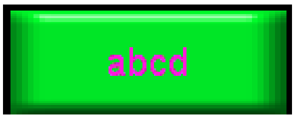
If you set the [Read] function, the offset device setting only applies to the writing device even with the same device specified as the reference device.
In such a case, the value is written in the writing device during input and in other times, the values are read and displayed from the reading device continuously.

<table>
<tr><th></th><th>Device address</th><th>Device value</th></tr>
<tr><td>Reference device</td><td>D10</td><td>0 (0x00)</td></tr>
<tr><td>Reading device</td><td>D20</td><td>CD(0x4443)</td></tr>
</table>

The results of entering AB(0x4241) in the number input unit in such a condition as above are as follows.

<table>
<tr><th></th><th>Actual value of PLC</th><th>Displayed value of XGT Panel</th></tr>
<tr><td>Reading not set</td><td><table><tr><td>D10</td><td>AB(0x4241)</td></tr><tr><td>D20</td><td>CD(0x4443)</td></tr></table></td><td>AB(0x4241)</td></tr>
<tr><td>Reading set</td><td><table><tr><td>D10</td><td>AB(0x4241)</td></tr><tr><td>D20</td><td>CD(0x4443)</td></tr></table></td><td>CD(0x4443)</td></tr>
</table>

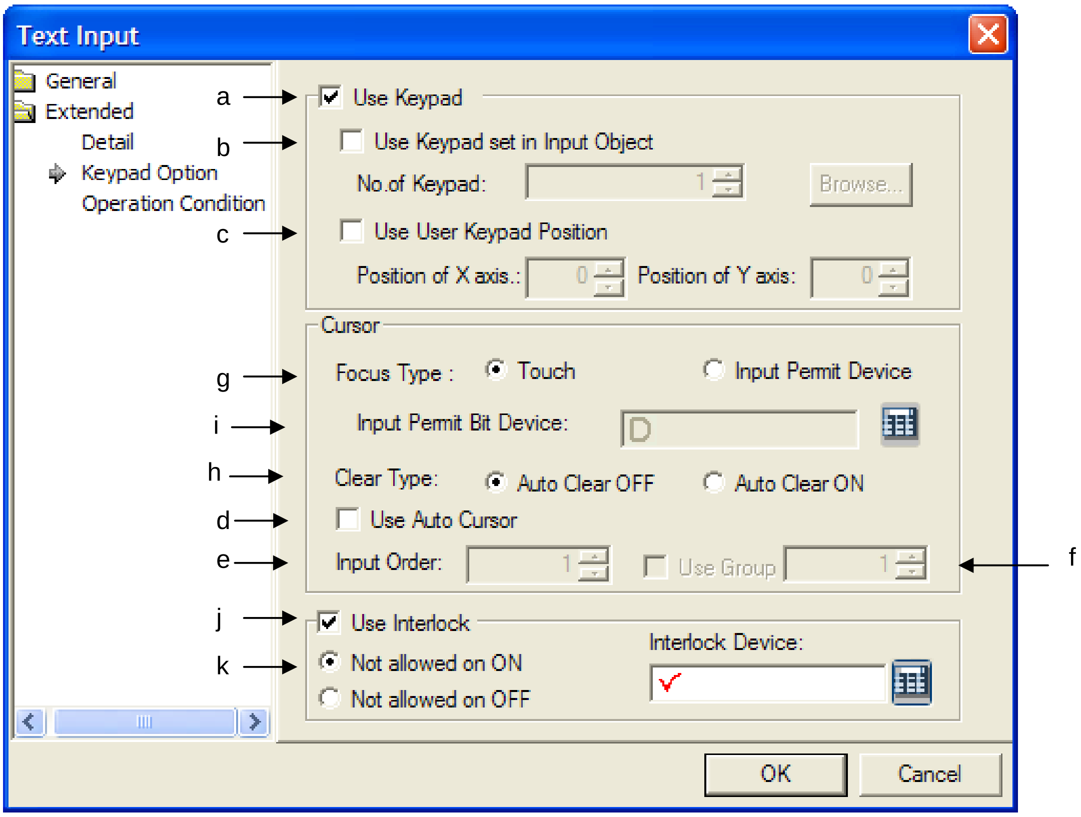
That is, the device value of the PLC as a result of the execution is the same, but the value displayed in the XGT Panel series might be different.
</td></tr>
</table>

Items	Settings
Write check (d)	Set when you turn ON the bit device after finishing number entry. Set the device by clicking on the device button after setting. Set the action of the device which has been set after setting the device. ON: turns on the set bit device when number entry is finished.
Display Mode (e)	Decides whether to display the background color of the message in the XOR treated color. Transparent: Numbers are displayed in a transparent image. XOR: The message is displayed so that the background image and numbers are distinct with the background image color displayed in XOR. Example)  Transparent  XOR

Note

If you do not use the key pad, you can enter the special switch in the window.

(5) Keypad setting



☑ Use Keypad

☐ Use Keypad set in Input Object

No.of Keypad: 1

☐ Use User Keypad Position

Position of X axis.: 0 Position of Y axis: 0

Cursor

Focus Type : ● Touch ○ Input Permit Device

Input Permit Bit Device: D

Clear Type: ● Auto Clear OFF ○ Auto Clear ON

☐ Use Auto Cursor

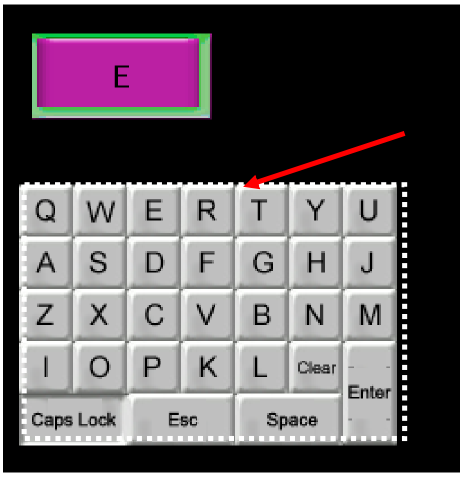
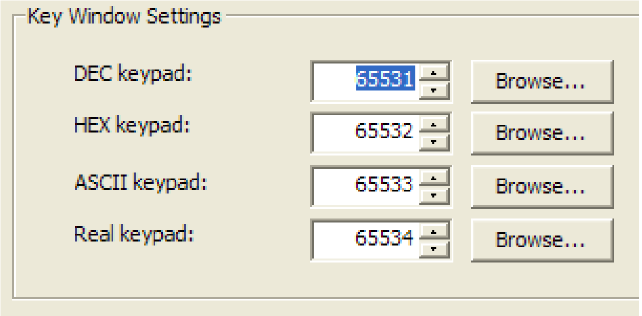
Input Order: 1 ☐ Use Group 1

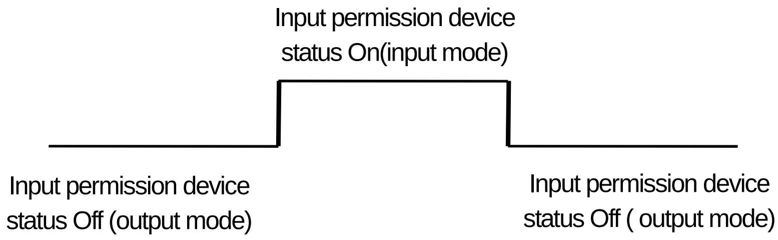
☑ Use Interlock

● Not allowed on ON

○ Not allowed on OFF

Interlock Device:

Item	Description
Use keypad (a)	In order to input capital character, touch 'Caps Look'. Once you touch 'Caps Look', it remains pressed until it is canceled. While you input, the input value is displayed at the object. And when you touch the Enter key, the value is written to the device. In case that keypad is not applied, a window is not pop-upped at input mode so you can use special key switch for input.  E Q W E R T Y U A S D F G H J Z X C V B N M I O P K L Clear Enter Caps Lock Esc Space Special key switch edited at the current screen.
Using keypad set in input object (b)	There are two methods to establish keypad Windows as below. (1) Designate the keypad Windows to be pop-upped at [Common]-[Project Property]-[Key Windows Setting].  Key Window Settings DEC keypad: 65531 Browse... HEX keypad: 65532 Browse... ASCII keypad: 65533 Browse... Real keypad: 65534 Browse... After preparing keypad Windows, activate [Use keypad set in input object] (☑ Use Keypad set in Input Object) and select the executed keypad Windows at [keypad No.]. If you prepare key Windows and use the keypad for number input unit, you need to establish the below functions.

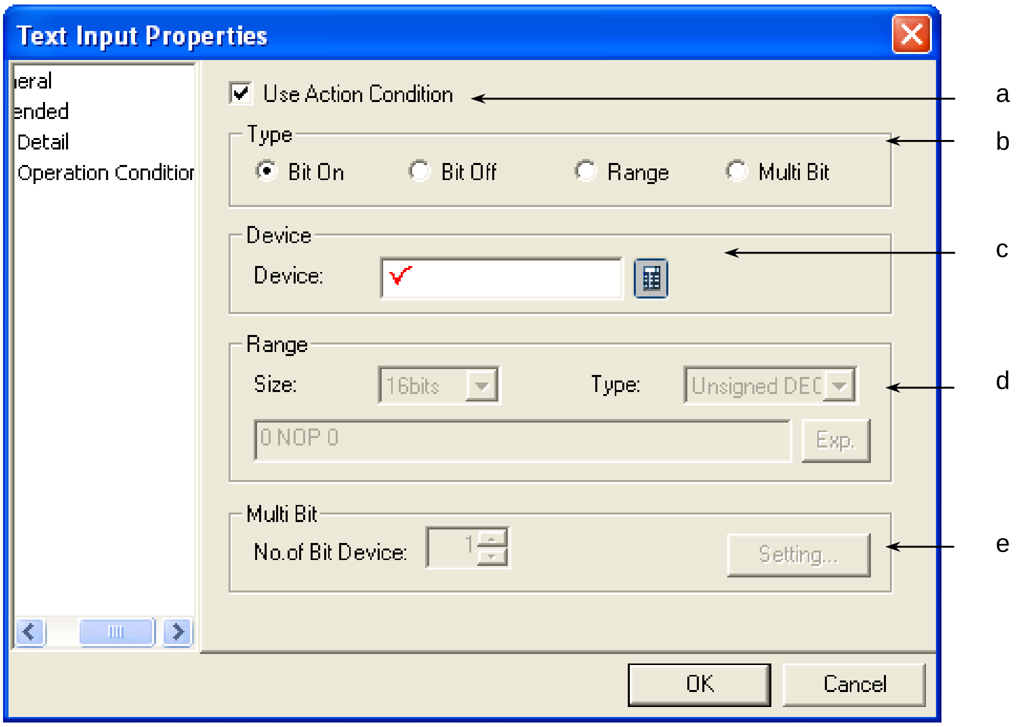
Items	Descriptions
Use User Keypad position (c)	Create text keypad screen to your intended position. If you does not select [Use User Keypad Position](☑ Use User Keypad Position), the keypad will be created at the upper left or upper right area.
Use Auto Cursor (d)	Contrary to the case it is changed into input mode only when touching text input unit at XGT Panel, if you apply Automatic Cursor (☑ Use Auto Cursor) and input [Enter] at pop-upped keypad, the input mode will be changed to next text input unit automatically. *. Terminating automatic cursor: In the case of [Touch], touch [ESC] of keypad and touch the input unit again to terminate input process. In the case of [Device for allowing Input], when the related bit is Off, it is terminated.
Input order(e)	It sets the input order of a cursor and then, the cursor will automatically move based on the order.
Use group (f)	After designating two text input units or more as the group, if you try to input data with automatic cursor for the group, you can apply the function.
Focus type(g)	When input mode is changed into automatic cursor, you can select the movement type of cursor. Touch mode: When touching text input unit, input cursor moves. Only when touching text input unit, input cursor is applied. The procedures to change into input·output mode are as below. Output mode Touch Input mode Enter key Output mode Input permission device: Only when bit device is On, input cursor moves. The procedures to change into input·output mode are as below.  Input permission device status On(input mode) Input permission device status Off (output mode) Input permission device status Off (output mode)

Items	Descriptions
Focus type(g)	Namely, only when input permission bit device is On at text input unit, input cursor is applied. **Moving cursor:** (1) In the case of [Touch], input units can be divided into group and continuous input is performed within the group. (2) If some input units whose [Input order] is established are at interlock status, it skips interlocked one and ready for next text input. (3) If you operate the special moving switch during input, it will cancel input and return to the previous data and ready for next input.
Clear type(h)	When changing into input mode, you can establish the methods to delete or preserve the existing data. **Clear Type** – **Description** Automatic Clear Off – At input mode, it continues displaying the existing data. If you input the value, the last digit of displayed data will be input first. Automatic Clear On – At input mode, it sets the value displayed by text input unit as 0
Input permission device (i)	You can select this function when cursor type is input permission device.
Interlock (j)	It sets interlock. When automatic cursor is moved by transference order and interlock device meets certain conditions, input cursor does not move and transfers to next number input unit.
Interlock Conditions (k)	On: When the device is On, Interlock is applied. Off: When the device is Off, Interlock is applied.

Nested table in Clear type(h):

Clear Type	Description
Automatic Clear Off	At input mode, it continues displaying the existing data. If you input the value, the last digit of displayed data will be input first.
Automatic Clear On	At input mode, it sets the value displayed by text input unit as 0

(6) Operation Condition Setting



☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: Device:

Range: Size: 16bits Type: Unsigned DEC

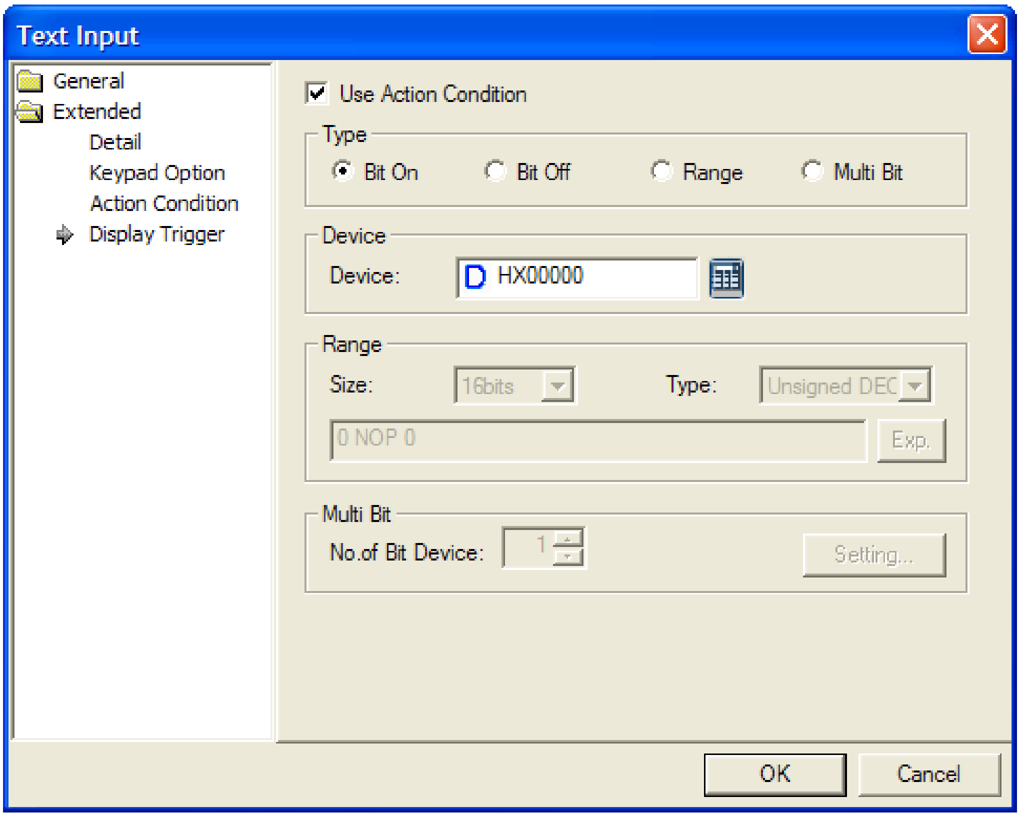
0 NOP 0

Multi Bit: No.of Bit Device: 1

Items	Settings
Use Action Condition (a)	Selects whether to use the operation condition.
Type (b)	Decides in which operation condition to operate the object. Bit On: carries out the object operation when the operation condition device is ON. Bit Off: carries out the object operation when the operation condition device is OFF. Range: carries out the object operation when the Range condition of the word device is met. Multiple Bit: carries out the object when the logical operation result of the multiple bit devices is met.
Device (c)	Sets the bit or word device to use for the operation condition. You can enter a bit device when On or Off bits are set. You can enter a word device when the Range is set.
Range (d)	Sets the size, type and Range condition when the operation condition is the Range. Size: 16 bit, 32 bit Type: signed decimal, unsigned decimal, BCD Device: the device to be referred to for the lamp condition Condition: the Range condition is set in a conditional expression.
Multi Bit (e)	Sets the bit device when the operation condition is multiple bit. Set the number of multiple bits, click on Setting (Setting...) and then set the condition of the multiple bit. **(See 16.6 Operation Condition Setting of Chapter 16 Object Setting)**

(7) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Text Input

General
Extended
Detail
Keypad Option
Action Condition
Display Trigger

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range
Size: 16bits
Type: Unsigned DEC
0 NOP 0

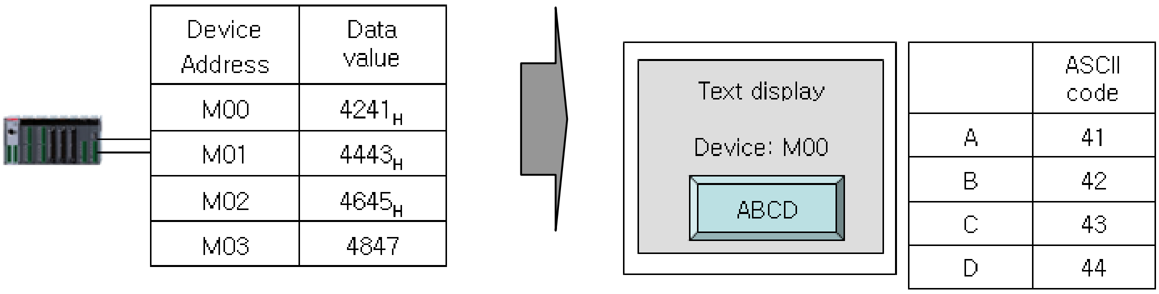
Multi Bit
No.of Bit Device: 1

Exp.
Setting...
OK
Cancel

(☞ refer to 16.9 display trigger.)

17.4.6 Text Display Settings

This is the function of displaying texts by recognizing the data stored in the word device as the ASCII code value.
As follows, you can display four texts with the M00 device of PLC as the reference device.

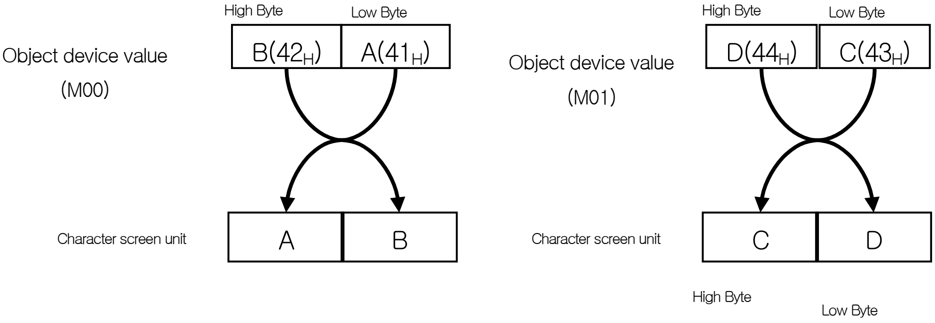


Device Address	Data value
M00	4241_H
M01	4443_H
M02	4645_H
M03	4847

Text display
Device: M00
ABCD

	ASCII code
A	41
B	42
C	43
D	44

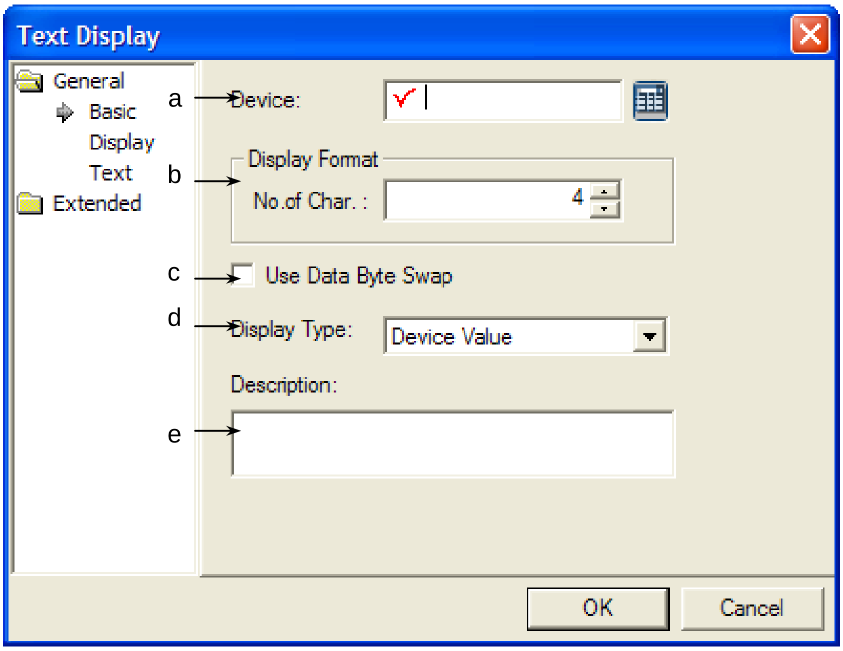
Reading ABCD in the object device is as follows.


Object device value
(M00)
High Byte
Low Byte
B(42_H)
A(41_H)
Character screen unit
A
B
Object device value
(M01)
High Byte
Low Byte
D(44_H)
C(43_H)
Character screen unit
C
D
High Byte
Low Byte

The reading action is conducted in the word unit. The low Byte of the object device is first read and then the high Byte is later read, which are displayed in the text display unit object.
If you enter the four letter ASCII value in the object device, the value is displayed in the 4 byte reading Range from the object device address.

[Method]
(a) Edit the text display unit in the window.
(b) Set the object device in [Basic] of the text display unit.
(c) Set the number of texts of [Basic] of the text display unit.
(As many bytes as the number of texts is allotted beginning with the object device address.)

(1) Basic


Text Display
General
Basic
Display
Text
Extended
a
b
c
d
e
Display Format
OK
Cancel

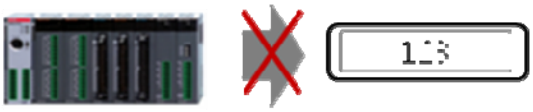
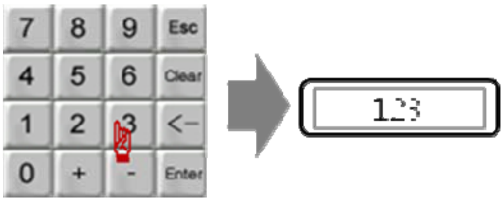
Device: ✓

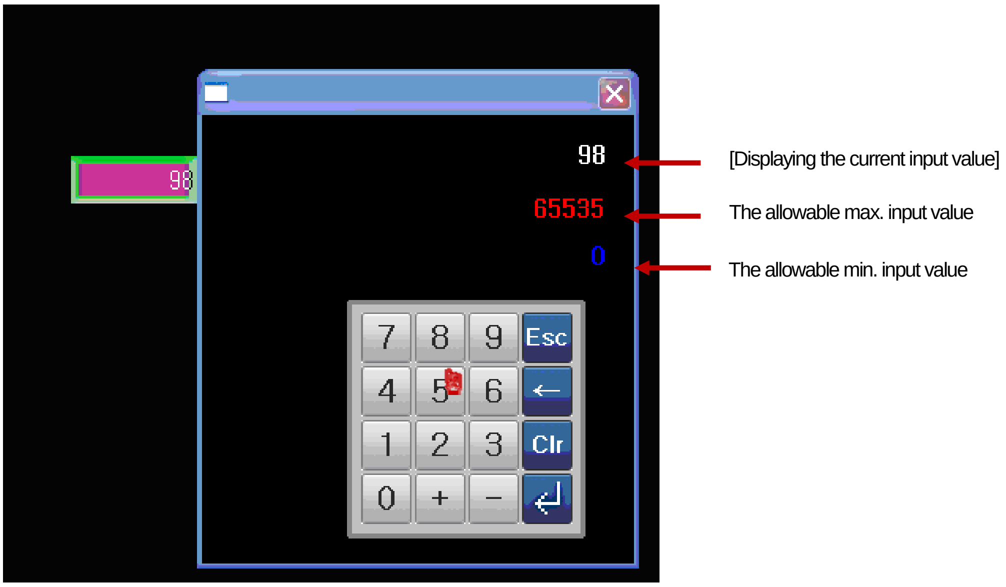
No.of Char. : 4

☐ Use Data Byte Swap

Display Type: Device Value

Description:

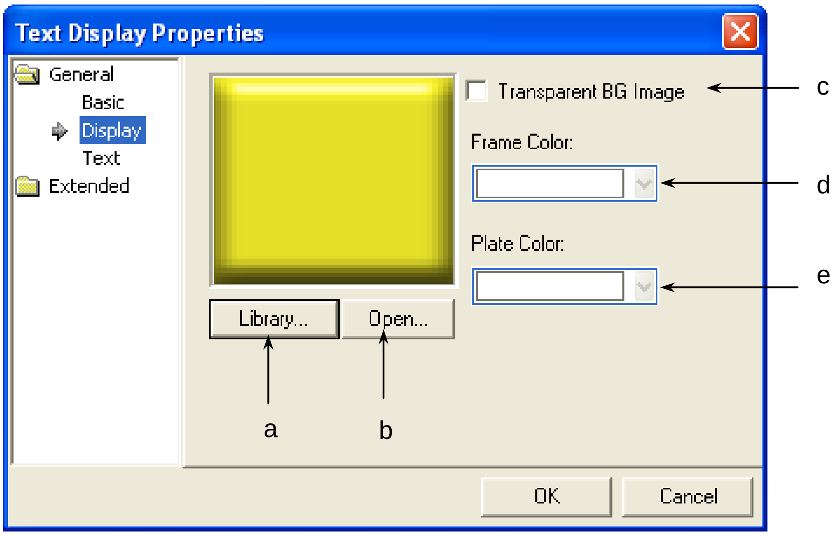
Items	Settings
Device (a)	Sets the device to be referred to in the object. You can either set by using the device button or directly enter it on the keyboard.
No. of Char (b)	Sets the number of texts The number can be between 2 and 64.
Using Data Byte Swap (c)	It changes and outputs device data into WORD unit. For example, if the device is input as “BADC”as the above picture, it is also input as “BADX” in character indicator.
Display type(d)	It sets the display type for character indicator; 1. Device value 1. Current input value 3. Current upper bound 4. Current lower bound. In the case of current input value, it does not display the PLC’s address value but displays the value input at currently active keypad to character indicator. Accordingly, when establishing [Current input vale display], [Device Address] input, [Using Data Byte Swap], [The number of Characters] can not be set.   7 8 9 Esc 4 5 6 Clear 1 2 3 <- 0 + - Enter 123

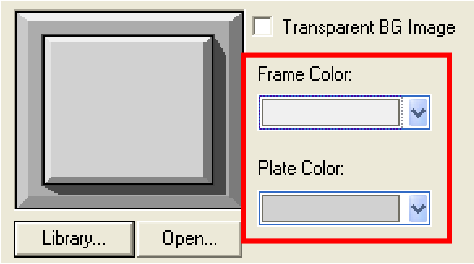
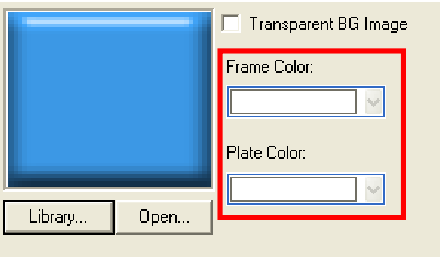
Items	Settings
	In the case of current upper bound, it does not display the PLC's address value but displays the max. value input at currently active keypad to character indicator. Accordingly, when establishing [Current upper bound display], [Device Address] input, [Using Data Byte Swap], [The number of Characters] can not be set. When you edit the screen after setting [Using current input value disply] of [Character Indicator] object, [Current max. input value], [Current min. value] at a keypad or pupup keypad Windows screen, it is diaplyed at object as below.  98 98 65535 0 7 8 9 Esc 4 5 6 ← 1 2 3 Clr 0 + − [Displaying the current input value] The allowable max. input value The allowable min. input value The ranges of the allowable min., max. values are different depending on the size, shape of device of object that generates popup keypad. Furthermore, if [Input conditions] is set, the allowable min., max. values are displayed in different way depending on the range of input conditions.
Description (e)	Enters description in the relevant object.

Note

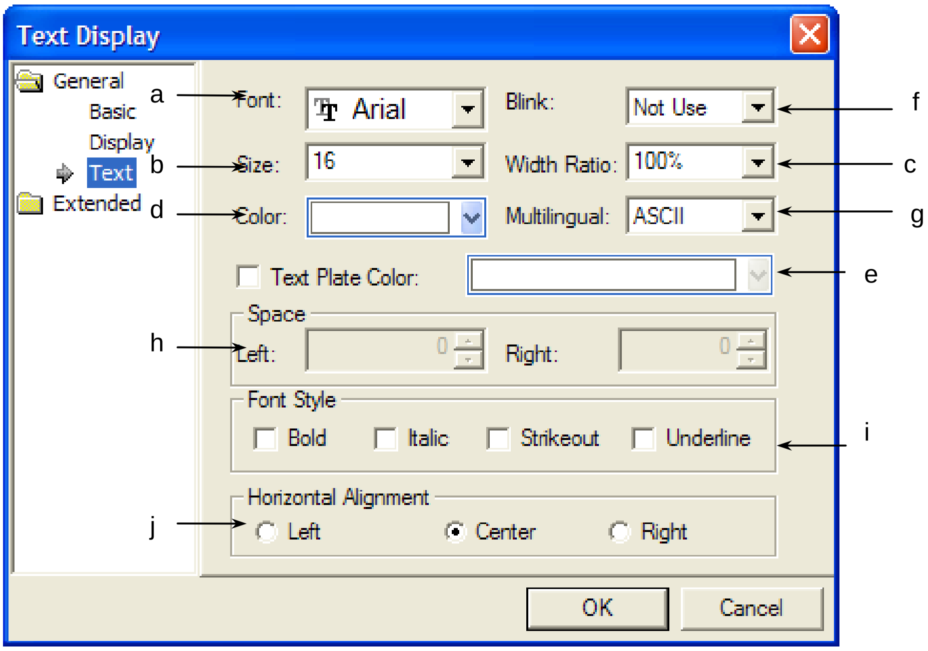
(1) A space takes up the place of a figure.
(2) 16 bit word device is allotted to enter 2 texts.
(3) With respect to the actual reading function of the controller, with the specified reference device being the start address, as many bytes as the total number of texts are displayed. That is, with the reference device being the HWO, which is an internal device, and 10 texts being entered, a total of 10 byte is allotted as the reading Range from HWO.
(4) The number of texts cannot be an odd number (but only an even number) because texts are input in the word unit.

(2) Display

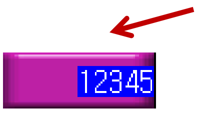
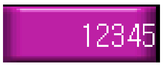
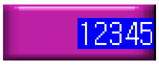

Text Display Properties
General
Basic
Display
Text
Extended
☐ Transparent BG Image
Frame Color:
Plate Color:
Library...
Open...
OK
Cancel
a
b
c
d
e

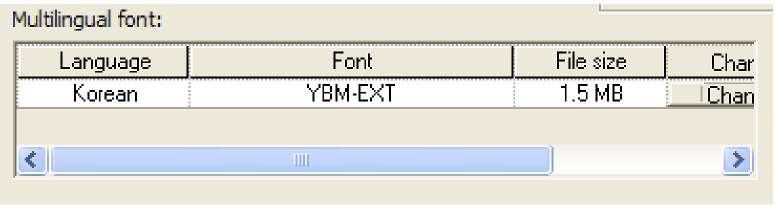
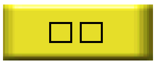
Items	Settings
Library (d)	Selects the form in which to display texts in the library.
Open (b)	Directly enters the form in which to display texts in the user's image file. (☞ **See 16.2 Display function Setting)**
Transparent BG Image (c)	Check this when you don't use the background image.
Frame color (d) Plate color (e)	Sets the frame color. The frame color can be set only when the image to be displayed is a vector.  ☐ Transparent BG Image Frame Color: Plate Color: Library... Open... Vector Image Selected  ☐ Transparent BG Image Frame Color: Plate Color: Library... Open... Raster Image Selected The frame Range and the background color Range are different according to the vector image. (☞ **See 16.2 Display function Setting)**

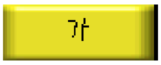
(3) Text

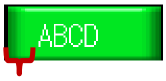

Text Display
General
Basic
Display
Text
Extended
a
b
c
d
e
f
g
h
i
j
Text Plate Color:
Space
Left:
Right:
Font Style
☐ Bold
☐ Italic
☐ Strikeout
☐ Underline
Horizontal Alignment
○ Left
● Center
○ Right
OK
Cancel

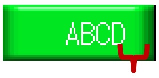
Font: Arial
Size: 16
Color:
Blink: Not Use
Width Ratio: 100%
Multilingual: ASCII
☐ Text Plate Color:
Space Left: 0 Right: 0
Horizontal Alignment: ● Center

Items	Settings
Font(a)	Sets the type of the font in which the texts are to be displayed in XGT Panel.
Size(b)	Sets the size of the texts in which the numbers are to be displayed in XGT Panel.
Width ration (c)	Sets the width ratio of text displayed in the XGT Panel (☞refer to 16.3)
Color (d)	Sets the color of the texts in which the numbers are to be displayed in XGT Panel.
Text Plate Color (e)	It sets the background color of the figures at XGT Panel.  Background color of character Example)  Not using background color of character  using background color of character (blue)
Blink(f)	Sets the Blink speed of the message in XGT Panel. (Not use, Slow, Normal, Fast)
Multi-Language Display(g)	It sets the language type(English, Korean) of the character to be displayed. It can convert the Korean string with multi-bite structure saved at a controller such as PLC into Unicode used for XGT Panel and then, display it in Korean or English. If you select other language except English for Multi-language Display, setting a font is not allowable, however, the font established at [Common]-[Project Property]-[Multi-language supporting font] is applied.

<table>
<tr><td></td><td>
Multilingual font:
<table><tr><th>Language</th><th>Font</th><th>File size</th><th>Char</th></tr><tr><td>Korean</td><td>YBM-EXT</td><td>1.5 MB</td><td>Chan</td></tr></table>
Accordingly, the font should be established at [Common]-[Project Property]-[Multi-language supporting font].
Ex.) Supposing that PLC device address value is A1B0 and Korean·English are set for Multi-language display, they are respectively displayed as below.


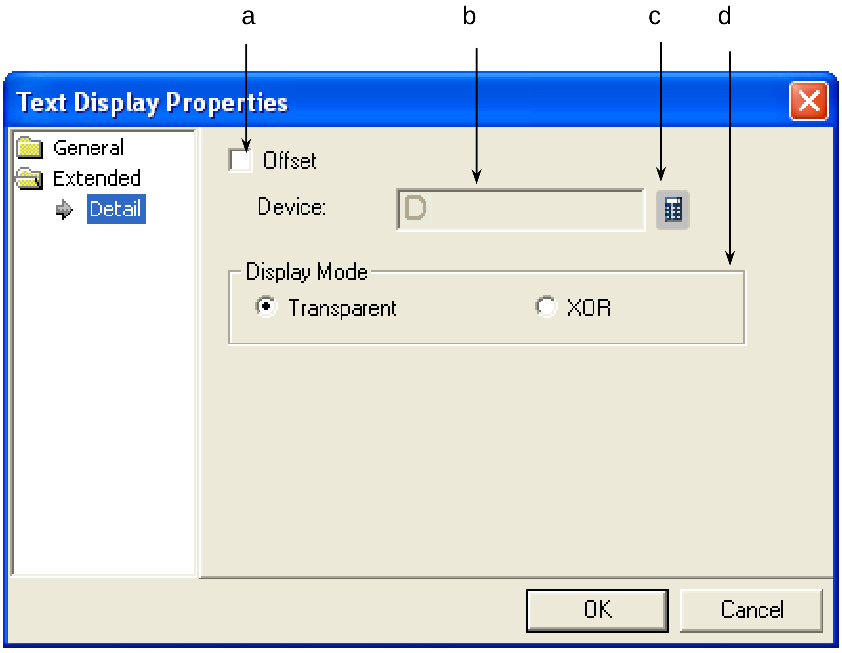
English


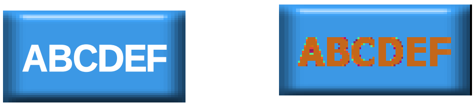
Korea
English Unicode that is applicable to A1B0 does not exist and it is not displayed. Korean comes under “가” so it displays “가”.</td></tr>
<tr><td>Space (h)</td><td>You can select left, right margin at number input unit object.
<table><tr><th>Type</th><th>Description</th></tr>
<tr><td>Left Margin</td><td>If [Horizontal alignment] is left, it displays numerical value with the space of the pixel established by a user from the most left.


Left Margin</td></tr>
<tr><td>Right Margin</td><td>If [Horizontal alignment] is right, it displays numerical value with the space of the pixel established by a user from the most right.


Right Margin</td></tr></table>
While right [Horizontal alignment] allows setting left space only, right [Horizontal alignment] allows setting right space only.
If the size of established space is larger than the size of object, the figure is not displayed at the object but background image only.
.</td></tr>
<tr><td>Font Style(i)</td><td>Sets the text form (Bold, Italic, Strikeout, Underline). You can select two or more of them at a time.</td></tr>
<tr><td>Horizontal Alignment(j)</td><td>Sets the horizontal location of texts.</td></tr>
</table>

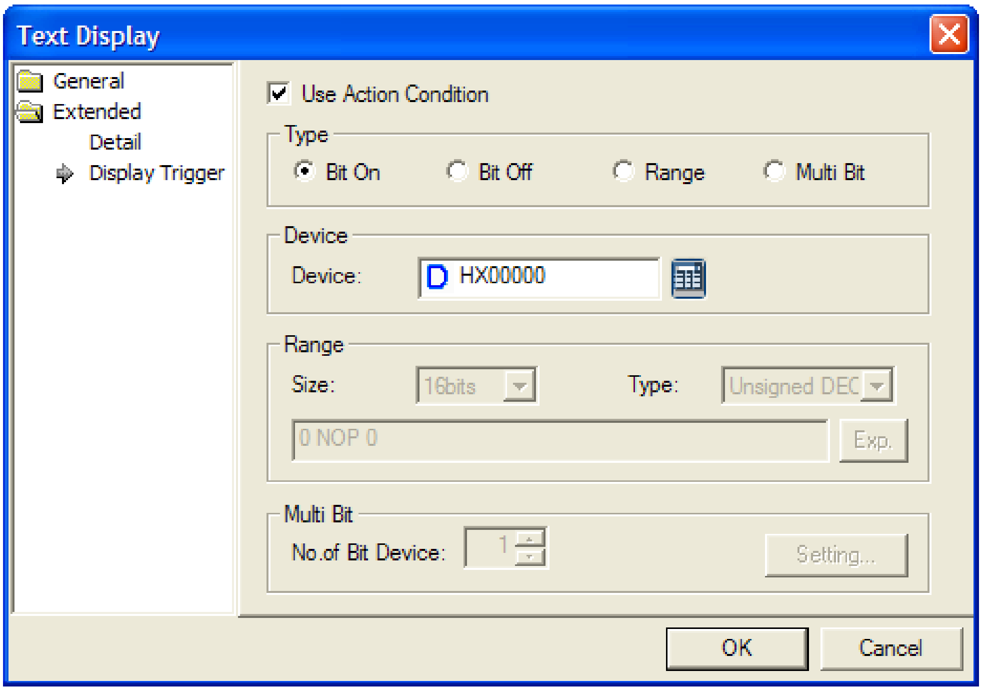
(4) Detail


a
b
c
d
Text Display Properties
General
Extended
Detail
☐ Offset
Device:
D
Display Mode
● Transparent
○ XOR
OK
Cancel

Items	Settings
Offset(a)	This is for adding the device value set as the offset device to the device where to input texts and thereby switching the device where to input texts. (☞ **For details, see 16.5 Offset Setting of Chapter 16)**
Device(b,c)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.
Display Mode(d)	Decides whether to display the background color of the message in the XOR treated color. Transparent: Numbers are displayed in a transparent image. XOR: The message is displayed so that the background image and numbers are distinct with the background image color displayed in XOR. Example)  Transparent XOR

(5) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Text Display
General
Extended
Detail
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range: Size: 16bits Type: Unsigned DEC

0 NOP 0

Multi Bit: No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.5 Window Object

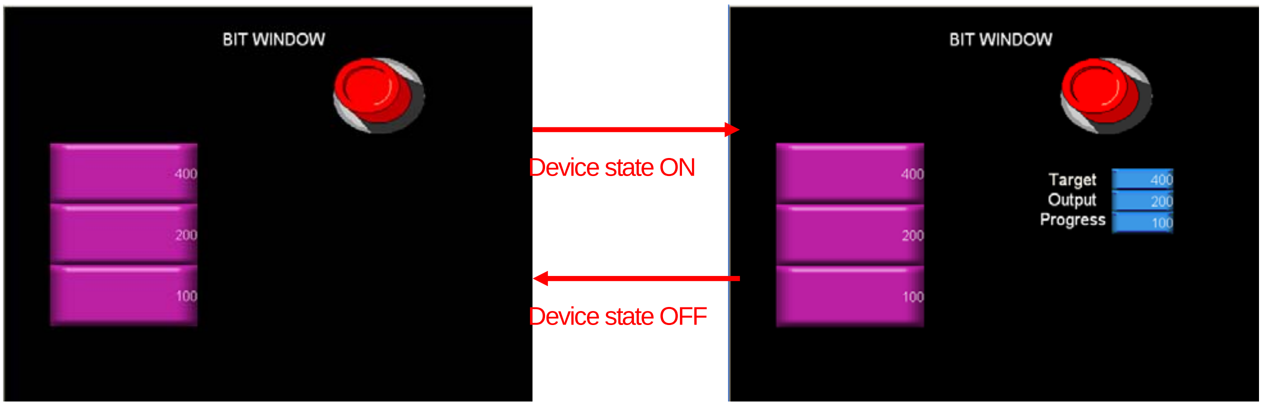
17.5.1 Overview

Window screen invocation carries out the function of invoking and displaying window screens according to the conditions.

17.5.2 Types of Window Invocation

Type	Description
Bit window	Invokes the relevant window screen according to the On/Off of the corresponding bit device.
Word window	Invokes the relevant window screen corresponding to the range condition or the value of the corresponding word device.

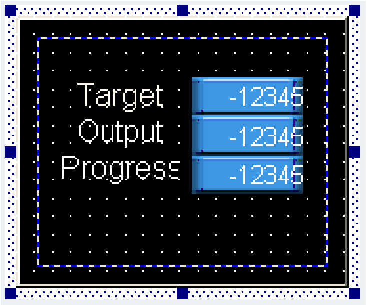
17.5.3 Bit Window Settings


BIT WINDOW
400
200
100
Device state ON
Device state OFF
BIT WINDOW
400
200
100
Target
Output
Progress
400
200
100

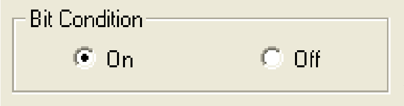
As in the example above, when the reference device state of the bit window is On, you can invoke the window where the target, output and progress are edited as follows.

[Method]

(a) Create window screen 1.
(b) Edit the object which can display the target, output and progress in the created window screen as follows.


Target
-12345
Output
-12345
Progress
-12345

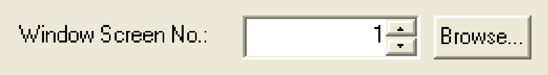
Edited Window Screen 1



Bit Condition
● On ○ Off

(c) Create the bit window in the base screen and set the [Basic]-[Bit Condition]( ) as On.

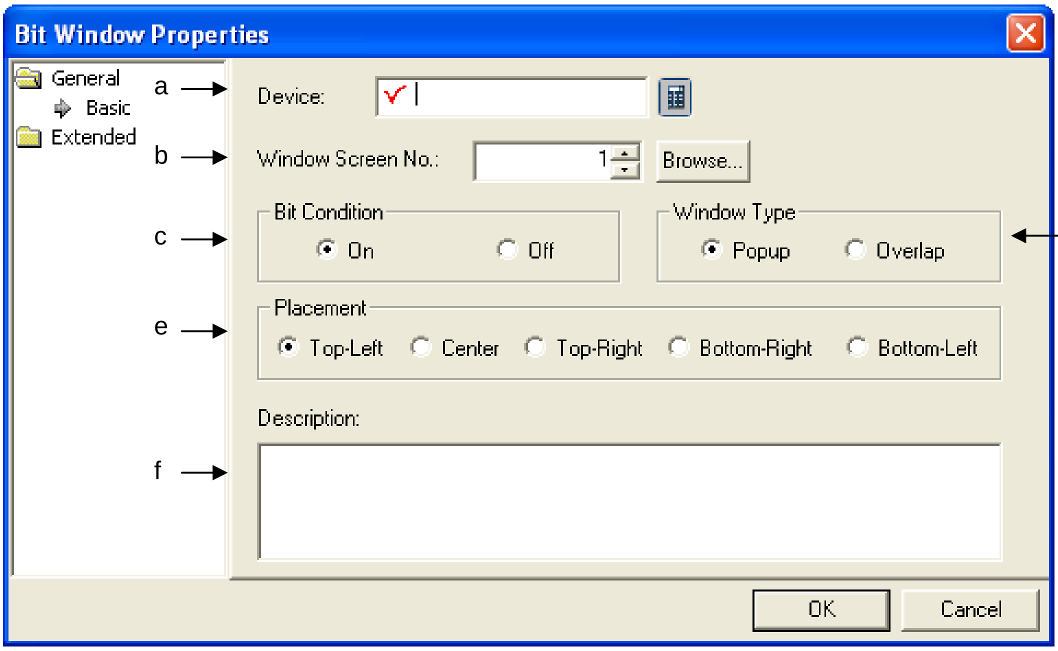
(d) Set the screen number of the bit window as window #1, which was edited in step (2).



Window Screen No.: 1

When you have set the bit window as shown above, the window is invoked in the screen as a pop-up or an overlapping window according to the state of the reference device of the bit window.

(1) Basic



Bit Window Properties

Device:

Window Screen No.: 1

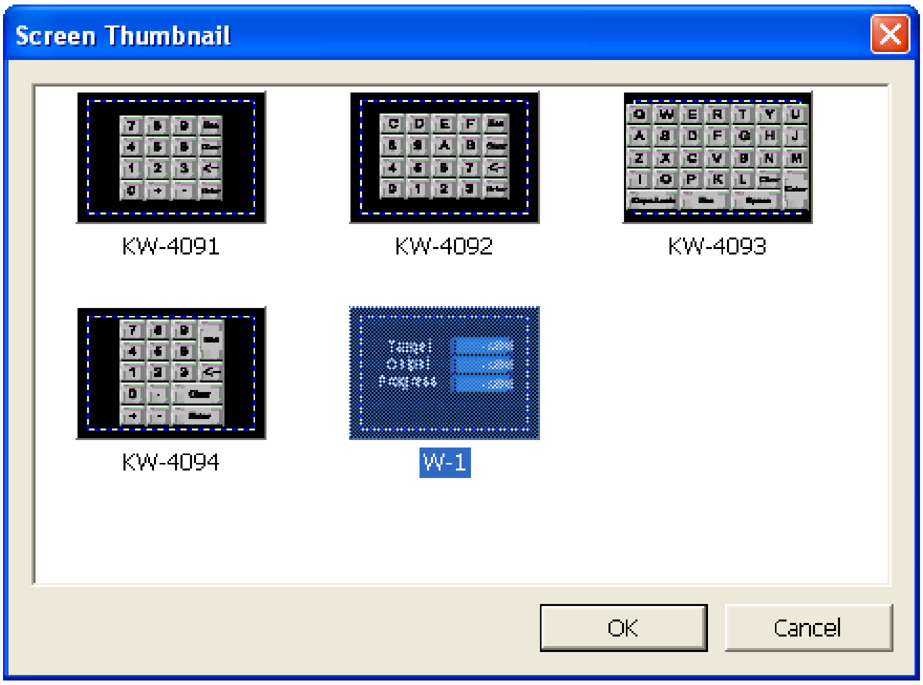
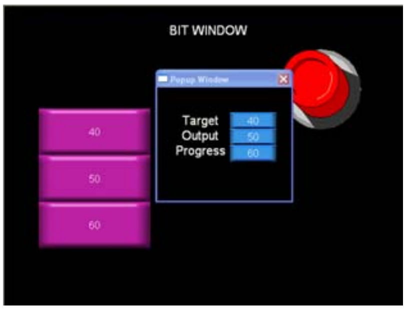
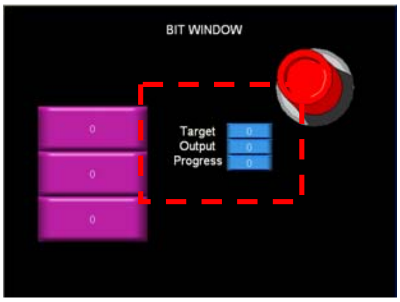
Bit Condition: ● On ○ Off

Window Type: ● Popup ○ Overlap

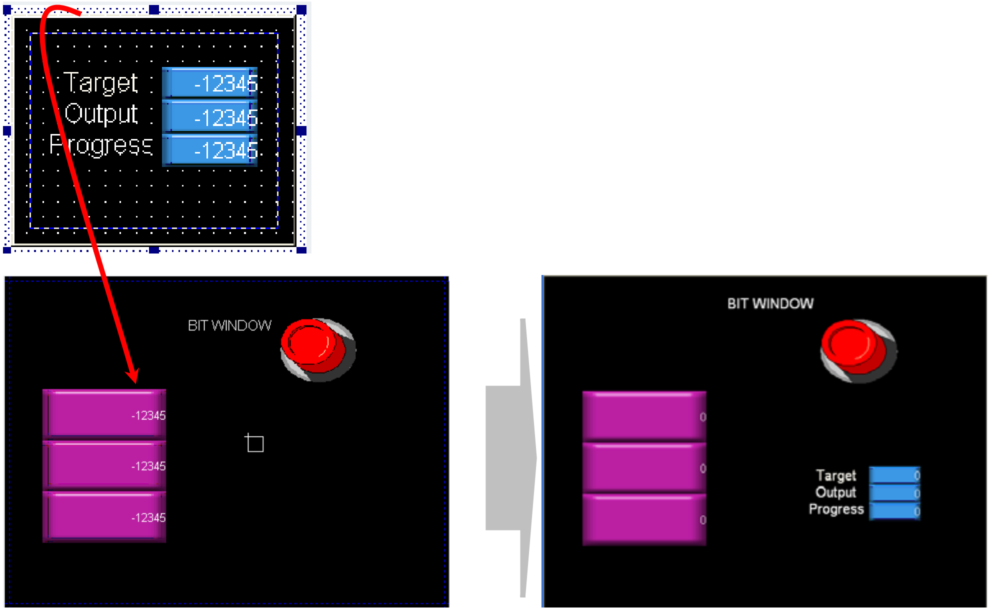
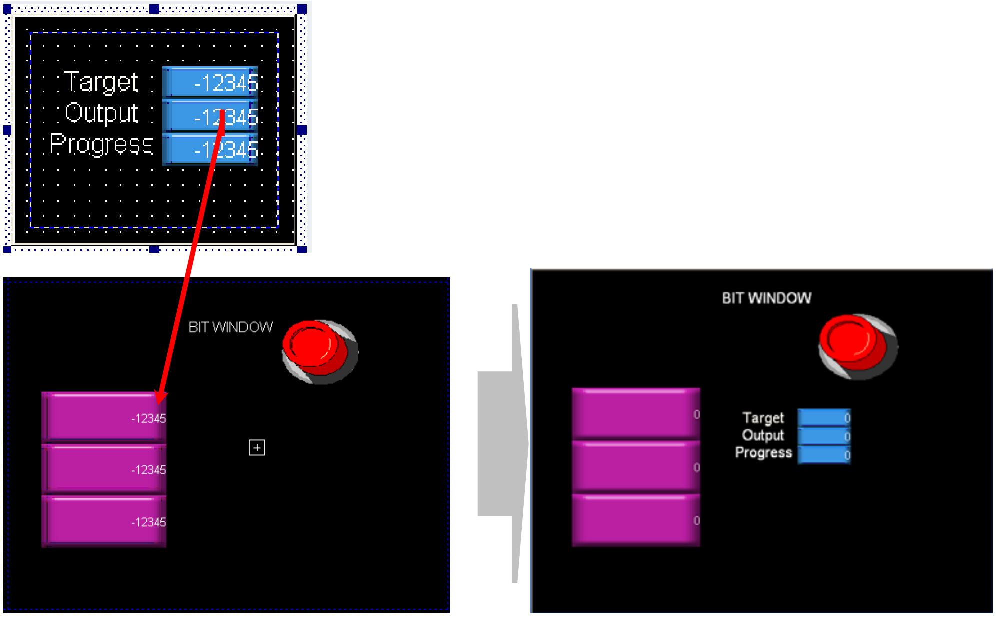
Placement: ● Top-Left ○ Center ○ Top-Right ○ Bottom-Right ○ Bottom-Left

Description:

Items	Settings
Device(a)	Sets the device to be referred to in the object. You can either set by using the device button or directly enter it on the keyboard.
Window Screen number(b)	Set the window screen number to invoke. You can specify the window screen number either by directly entering it or by using the Browse button (Browse...). If you click on the button, the window screen inserted by the user is shown in a small size as follows.

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>

Screen Thumbnail
KW-4091
KW-4092
KW-4093
KW-4094
W-1
OK
Cancel
Double click on the window to invoke in the small window or click on the window to invoke and then click on the OK button to specify the number.
</td></tr>
<tr><td>Bit condition(c)</td><td>
Sets the bit device state to invoke the window screen.
<table>
<tr><th>Condition</th><th>Description</th></tr>
<tr><td>On</td><td>Invokes the corresponding window when the device value turns from Off to On.</td></tr>
<tr><td>Off</td><td>Invokes the corresponding window when the device value turns from On to Off.</td></tr>
</table>
</td></tr>
<tr><td>Window type(d)</td><td>
Sets the display type of the invoked window.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Popup</td><td>The window is displayed in the form of a dialog box and the base screen under the window screen is not shown.</td></tr>
<tr><td>Overlap</td><td>The basic screen is overlaid with the window screen and the part where no figure or object is in the screen is transparent so that the base screen is directly shown.</td></tr>
</table>

BIT WINDOW
Popup Window
Target
Output
Progress
40
50
60
40
50
60
Pop-up

BIT WINDOW
Target
Output
Progress
0
0
0
0
0
0
Overlap

In the former case, a new dialog box is invoked and in the latter case, the basic window is overlaid with the window screen without a new dialog box.
</td></tr>
</table>

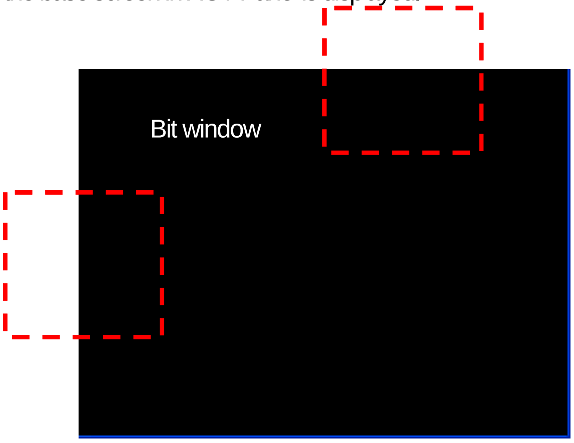
Placement	Sets the justification reference of the window screen and the bit window object. This is for adjusting the justification point of the window screen and bit object. Example 1. If you set the justification at the upper left, the upper left part of the window screen is shown on the left of the object.  Target Output Progress -12345 -12345 -12345 BIT WINDOW -12345 -12345 -12345 BIT WINDOW 0 0 0 Target Output Progress 0 0 0 Adjustment of the upper left of the window and the upper left of the object Adjustment of the upper left to display the overlaying Example 2. If they are justified at the middle, the middle of the window is displayed at the middle of the object.  Target Output Progress -12345 -12345 -12345 BIT WINDOW -12345 -12345 -12345 BIT WINDOW 0 0 0 Target Output Progress 0 0 0

<table>
<tr><td></td><td>Types of justification are as follows.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Top-Left</td><td>Justifies the upper left of the window and object.</td></tr>
<tr><td>Center</td><td>Justifies the middle of the window and object.</td></tr>
<tr><td>Top- right</td><td>Justifies the upper right of the window and object.</td></tr>
<tr><td>Bottom-Right</td><td>Justifies the lower right of the window and object.</td></tr>
<tr><td>Bottom-Left</td><td>Justifies the lower left of the window and object.</td></tr>
</table>
</td></tr>
<tr><td>Description(f)</td><td>Enters the description in the object.</td></tr>
</table>

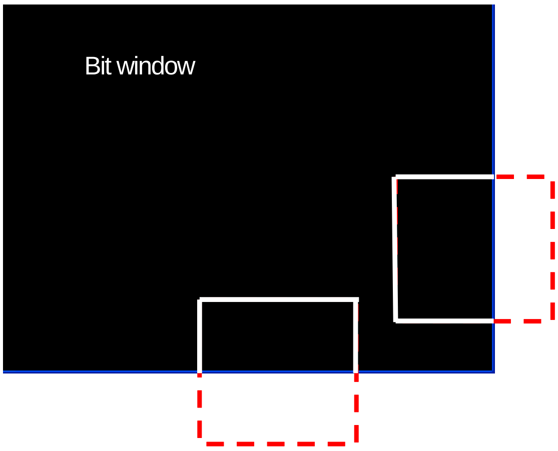
Note

If the invoked window area is out of the upper or left part of the base screen, it cannot be displayed in XGT Panel. In such a case, an error occurs in the editing window and cannot be downloaded.

If the invoked window area is out of the lower or right part of the base screen, only the part of the entire window area which is not out of the base screen in XGT Panel is displayed.



The upper or left part is out of the bit window



The lower or right part is out of the bit window

When the window is displayed with the condition set in the bit window object met, you can close it in the following two ways.

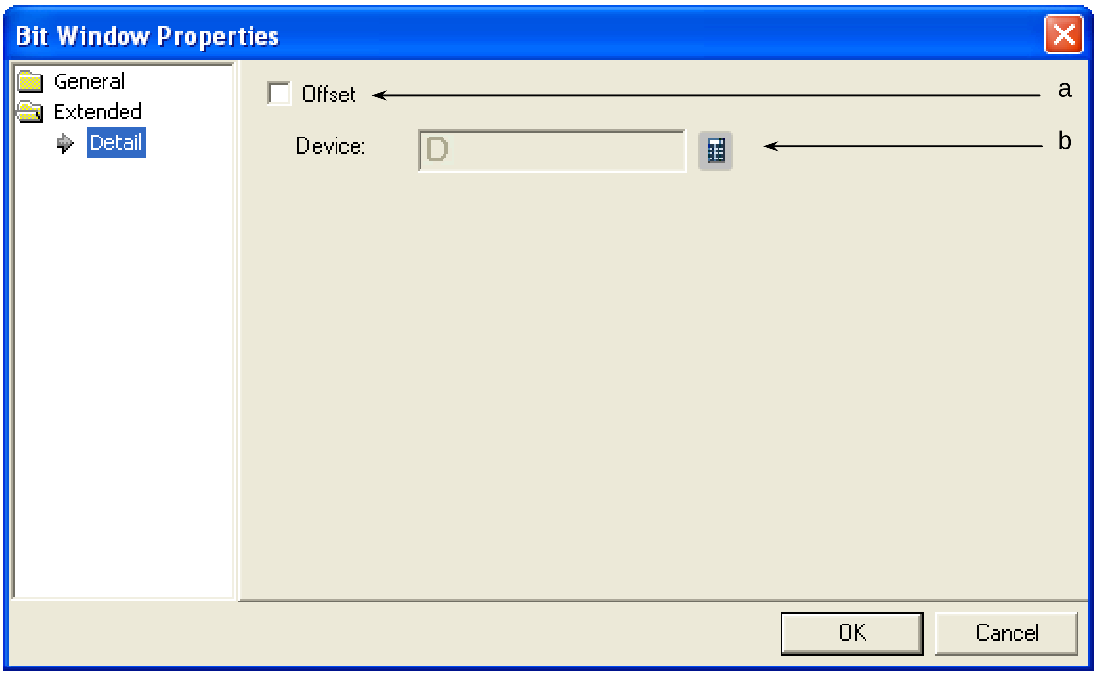
Inverse the state of the reference device.

In case of a pop-up, press the End button in the currently displayed window. In this case, the state of the reference device of the relevant window object is automatically inversed. (In case of overlaying, you cannot use this method because there is no End button.)

The difference between the justification of the window and that of parts is as follows.

Object Type	Justification Point
Window	The start point of the edited window screen
Parts	The start point where the parts are drawn in the edited part screen (☞ See Justification of Parts)

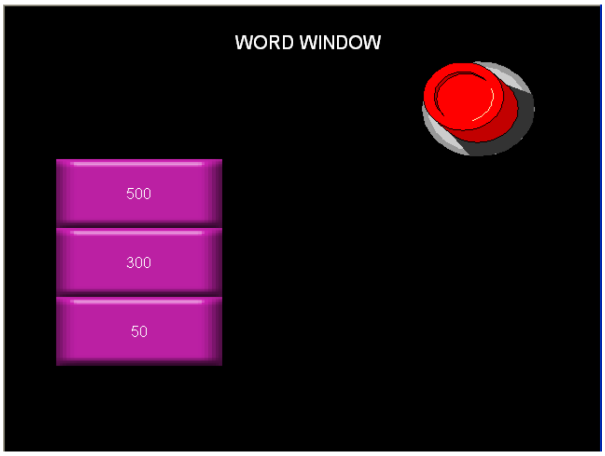
(2) Detail


Bit Window Properties
General
Extended
Detail
☐ Offset
a
Device:
D
b
OK
Cancel

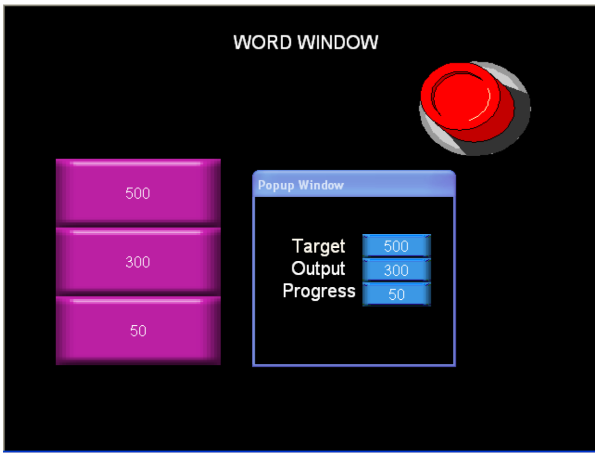
Items	Settings
Offset(a)	Set when you use the offset function.
Device(b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

17.5.4 Word Window Settings

This is invoking the window corresponding to the relevant word device value or its range condition.


WORD WINDOW
500
300
50

IW.0.0 = 0

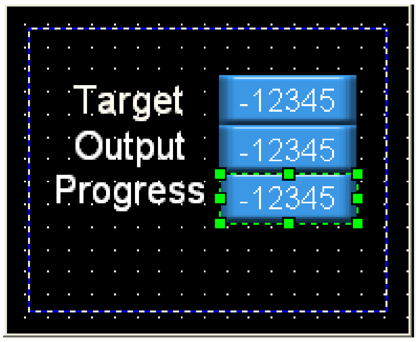

WORD WINDOW
500
300
50
Popup Window
Target 500
Output 300
Progress 50

40 < IW.0.0 < 80

As in the example above, when the condition made in the word window is mete, you can invoke the window where the target, output and progress are edited as follows.

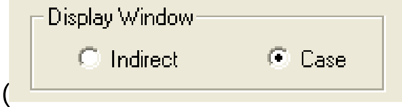
[Method]

(a) Create window screen 1.
(b) Edit the object which can screen the target, output and progress in the created window screen as follows.


Target -12345
Output -12345
Progress -12345

Edited Window Screen 1

(c) Create the word window in the base screen and set [Basic Item]-[Display Window]



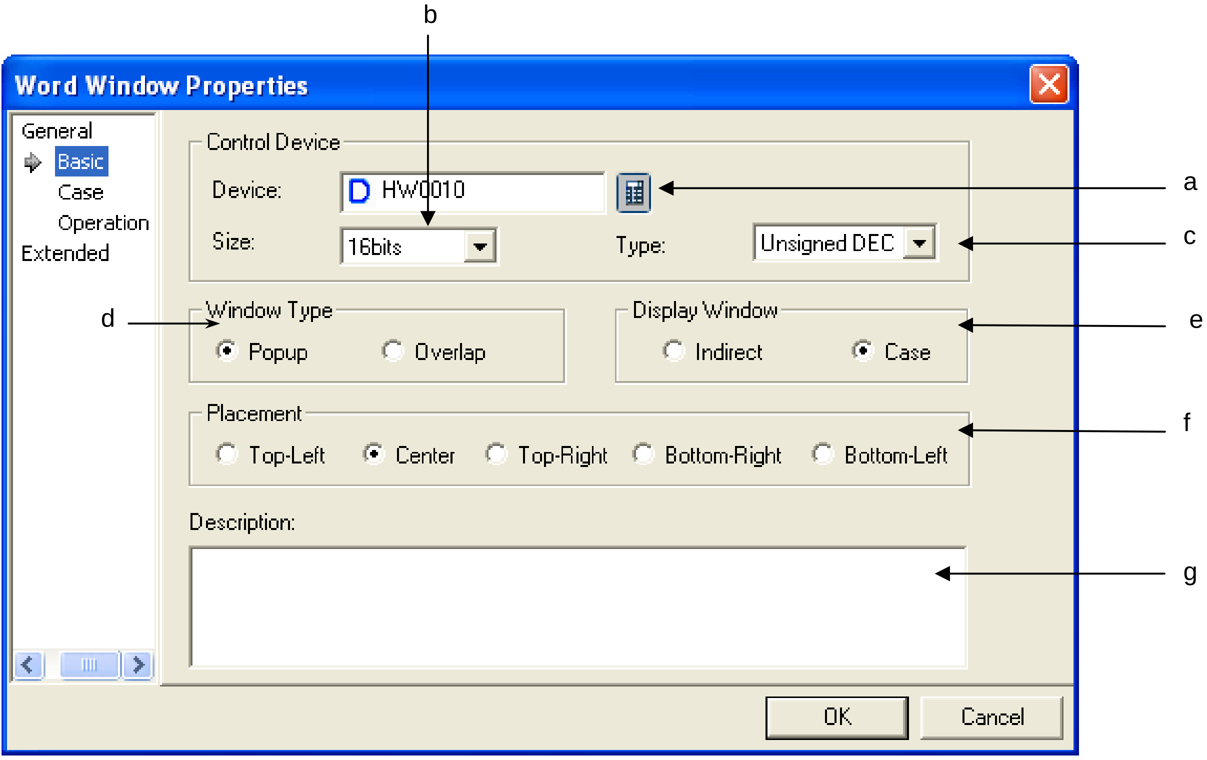
Display Window
○ Indirect ● Case

( ) as the state.

(d) Build a conditional sentence to invoke the window in [Case] of the word window.

When you have set the word window as shown above, the window is invoked in the screen as a pop-up or an overlapping window when the conditional sentence is met.

(1) Basic Items



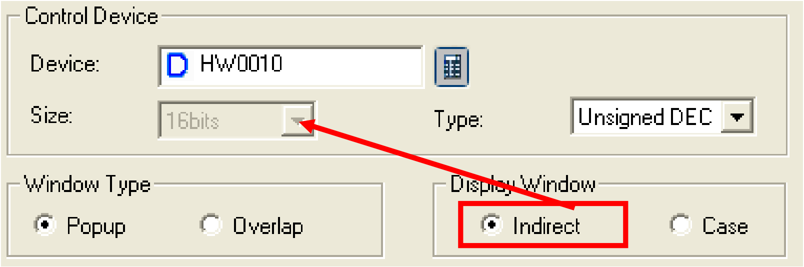
Control Device
Device: HW0010
Size: 16bits
Type: Unsigned DEC

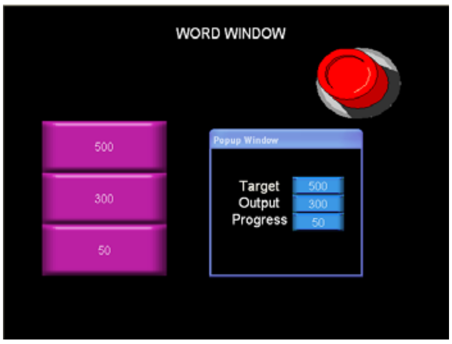
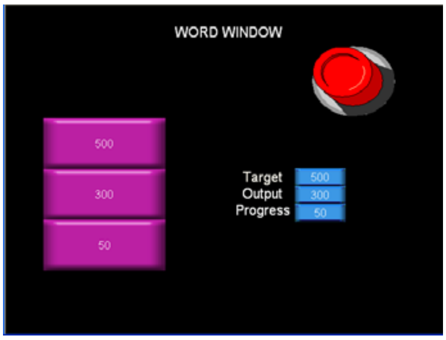
Window Type: ● Popup ○ Overlap

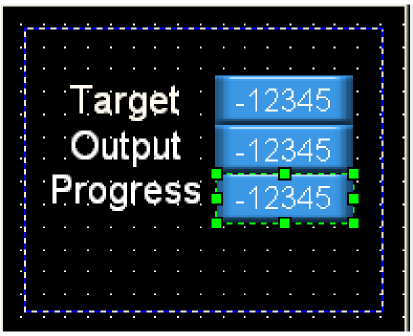
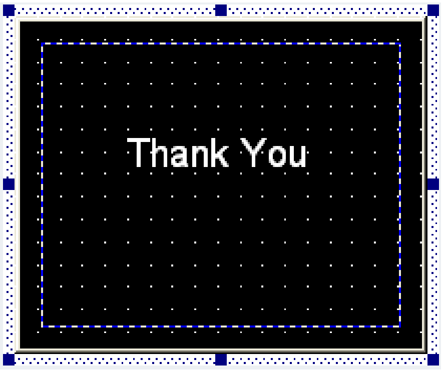
Display Window: ○ Indirect ● Case

Placement: ○ Top-Left ● Center ○ Top-Right ○ Bottom-Right ○ Bottom-Left

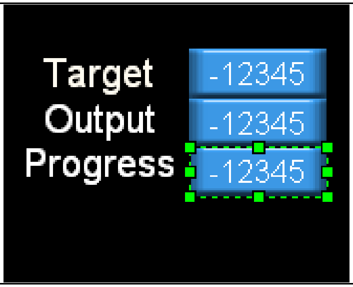
Description:

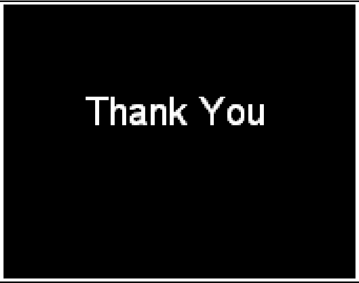
Items	Settings
Device (a)	Sets the device to be referred to in the object. You can either set by using the device button or directly enter it on the keyboard.
Size (b)	Sets the data size of the device (16 bit, 32 bit). In case of Indirect, the window number to be displayed is specified according to the device value. The maximum window screen that can be created can be displayed by 15 bit devices. Therefore, if you set the [Display Window] as [indirect], the size is fixed at 16 bit and the size cannot be changed.  Control Device Device: HW0010 Size: 16bits Type: Unsigned DEC Window Type: ● Popup ○ Overlap Display Window: ● Indirect ○ Case
Type (c)	Sets the data form of the device (signed decimal, unsigned decimal, BCD).

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Window type (d)</td><td>Sets the display type of the invoked window.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Popup</td><td>The window is displayed in the form of a dialog box and the basic screen under the window screen is not shown.</td></tr>
<tr><td>Overlap</td><td>The base screen is overlaid with the window screen and the part where no figure or object is in the screen is transparent so that the basic screen is directly shown.</td></tr>
</table>

WORD WINDOW
500
300
50
Popup Window
Target
Output
Progress
500
300
50
Pop-up

WORD WINDOW
500
300
50
Target
Output
Progress
500
300
50
Overlap

In the former case, a new dialog box is invoked and in the latter case, the basic window is overlaid with the window screen without a new dialog box.</td></tr>
<tr><td>Display Window (e)</td><td>Sets the method of numbering the invoked window screen.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Indirect</td><td>Displays the window number corresponding to the device value.
The device value is the invoked window number.</td></tr>
<tr><td>Case</td><td>Displays the corresponding window screen when the conditional sentence is met.</td></tr>
</table>
When the window is inserted and edited as follows.

Target
Output
Progress
-12345
-12345
-12345
Window screen 1


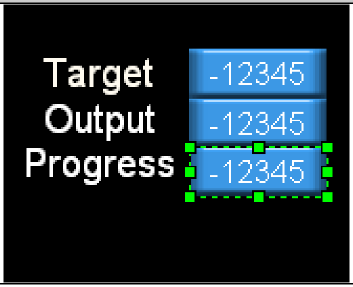
Window screen 2</td></tr>
</table>

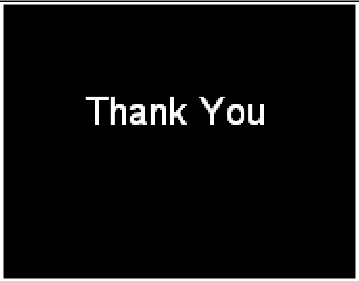
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
Example 1. The reference device is set at M000 and message selection is set as [Indirect].
<table>
<tr><th>Device Value</th><th>Window displayed in XGT Panel word window</th></tr>
<tr><td>M000 = 0</td><td>Not displayed</td></tr>
<tr><td>M000 = 1</td><td>
Target
-12345
Output
-12345
Progress
-12345

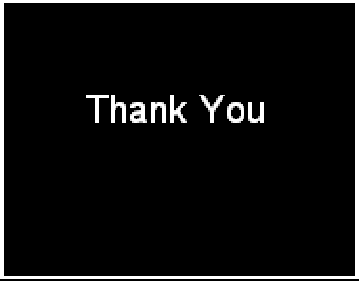
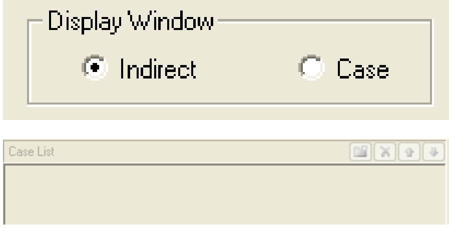
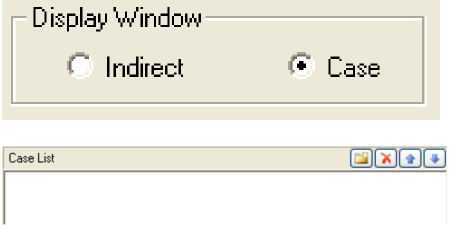
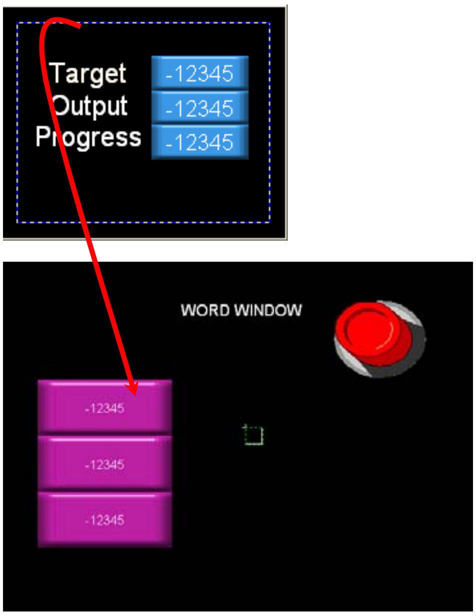
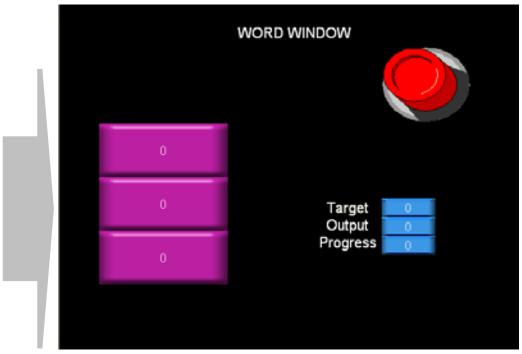
</td></tr>
<tr><td>M000 = 2</td><td>
</td></tr>
</table>

Example 2. Reference device is set as M000, message selection is set as [Case] and the following three conditional sentences are made in the [Case].

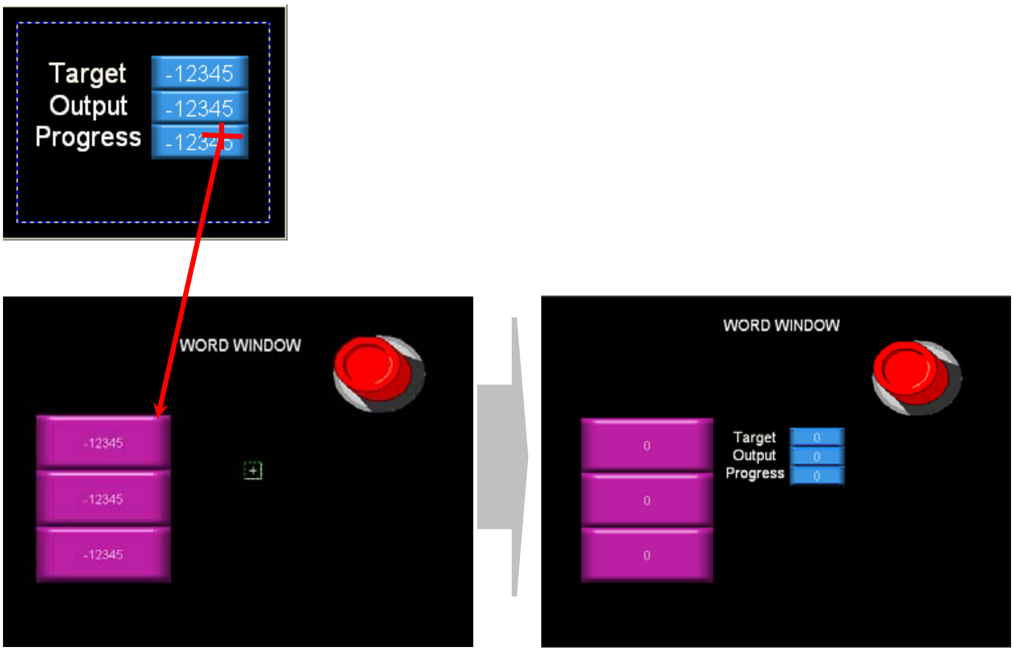
$V == 0 window #1
0 < $V <10 window #2
$V == 10 window #1
($V refers to the object device)

<table>
<tr><th>Device value</th><th>Message displayed in XGT Panel bit message</th></tr>
<tr><td>M000 = 0</td><td>
Target
-12345
Output
-12345
Progress
-12345

</td></tr>
<tr><td>M000 = 1</td><td>
</td></tr>
</table>
</td></tr>
</table>

Items	Settings
	M000 = 2  If you set message selection as [Case], you can set a conditional sentence in [Case] and if as [Indirect], you cannot.  Display Window ● Indirect ○ Case Case List  Display Window ○ Indirect ● Case Case List
Placement(f)	Sets the justification reference of the window screen and the bit window object. This is for adjusting the justification point of the window screen start and bit object. Example 1. If you set the justification at the upper left, the upper left part of the window screen is shown on the left of the object.  Target Output Progress -12345 -12345 -12345 WORD WINDOW -12345 -12345 -12345 Adjustment of the upper left of the window and the upper left of the object  WORD WINDOW 0 0 0 Target Output Progress 0 0 0 Adjustment of the upper left to screen the overlaying

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
Example 2. If they are justified at the middle, the middle of the window is displayed at the middle of the object.


Target
Output
Progress
-12345
-12345
-12345
WORD WINDOW
-12345
-12345
-12345
WORD WINDOW
0
0
0
Target
Output
Progress
0
0
0

Types of justification are as follows.

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Top-Left</td><td>Justifies the upper left of the window and object.</td></tr>
<tr><td>Center</td><td>Justifies the middle of the window and object.</td></tr>
<tr><td>Top-Right</td><td>Justifies the upper right of the window and object.</td></tr>
<tr><td>Bottom-Right</td><td>Justifies the lower right of the window and object.</td></tr>
<tr><td>Bottom-Left</td><td>Justifies the lower left of the window and object.</td></tr>
</table>
</td></tr>
<tr><td>Description(g)</td><td>Enters the description in the object.</td></tr>
</table>

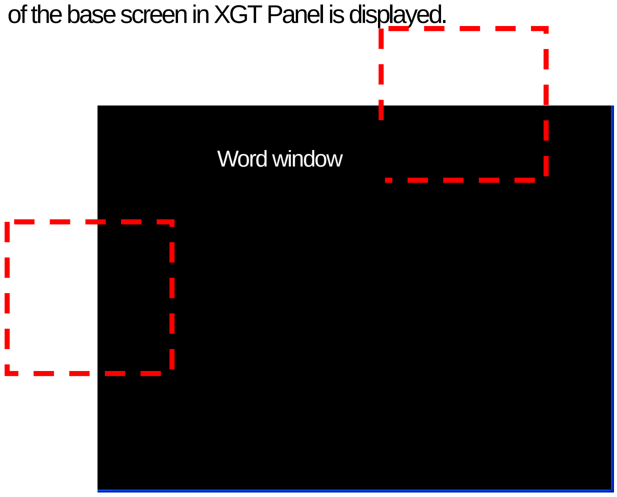
Note

(1) If the data size and type change, the input condition and display condition that have been made are deleted.

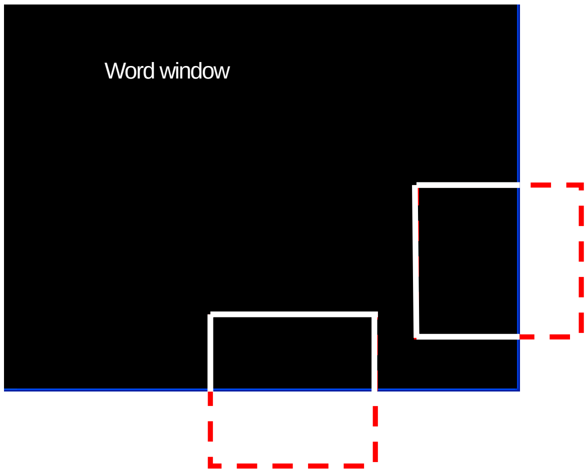
(2) If the method of viewing the window screen changes from Case into Indirect, the input condition and display condition that have been made are deleted.

(3) If the invoked window area is out of the upper or left part of the base screen, it cannot be displayed in the XGT Panel series. In such a case, an error occurs in the editing window and cannot be downloaded.

(4) If the invoked window area is out of the lower or right part of the base screen, only the part of the entire window area which is not out of the base screen in XGT Panel is displayed.



The upper or left part is out of the word window



The lower or right part is out of the word window

In case of the word window object, the window screen which meets the settings is always shown on the base screen and the user cannot close it. (There is no End button)

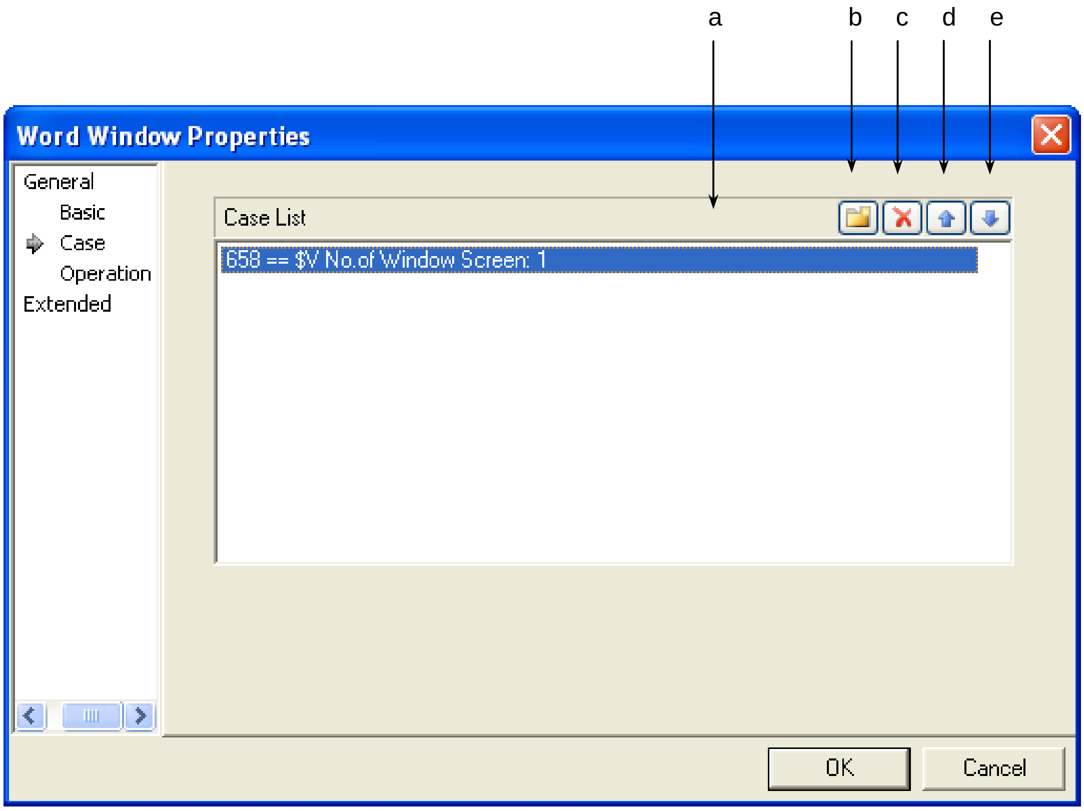
Why is that? : In case of a bit window object, the state of the reference device is either ON or OFF and accordingly a window screen should be invoked or disappear. Therefore, if the user closes the window screen, it is clear how the state of the corresponding reference device should change. However, in case of the word window, window screens can be allotted to two or more states respectively, so it cannot be determined how the reference device state should change even if the present window screen is closed.

When the window is displayed with the condition set in the bit window object met, you can close it in the following two ways.
Inverse the state of the reference device.
In case of a pop-up, press the End button in the currently displayed window. In this case, the state of the reference device of the relevant window object is automatically inversed. (In case of overlap, you cannot use this method because there is no End button.)
The difference between the justification of the window and that of parts is as follows.

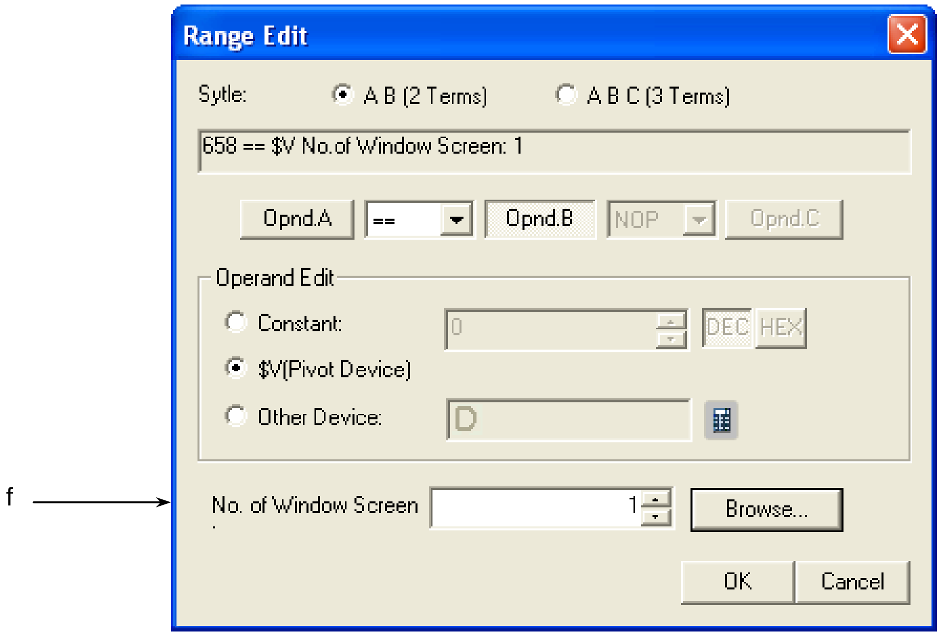
Object Type	Placement Point
Window	The start point of the edited window screen
Parts	The start point where the parts are drawn in the edited part screen (☞ See Placement of Parts)

(2) Case

Window


a
b
c
d
e
Word Window Properties
General
Basic
Case
Operation
Extended
Case List
OK
Cancel

658 == $V No.of Window Screen: 1


f
Range Edit
Opnd.A
Opnd.B
NOP
Opnd.C
Operand Edit
DEC
HEX
Browse...
OK
Cancel

Sytle: ● A B (2 Terms) ○ A B C (3 Terms)

658 == $V No.of Window Screen: 1

Opnd.A == Opnd.B

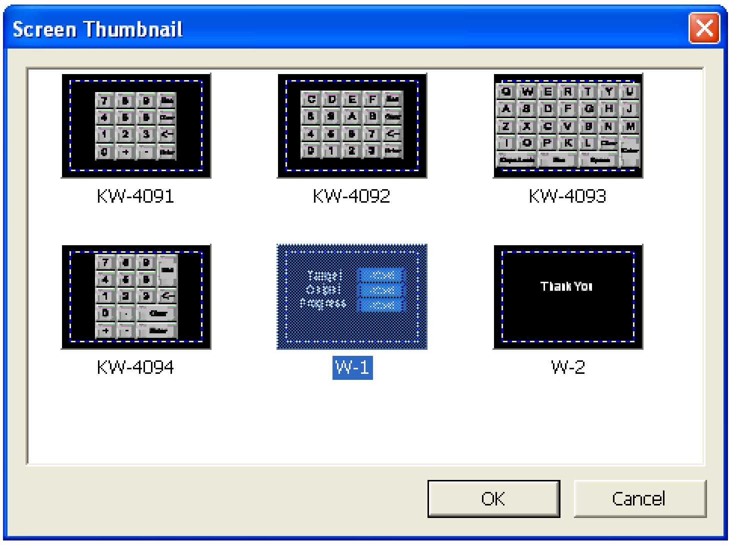
○ Constant: 0

● $V(Pivot Device)

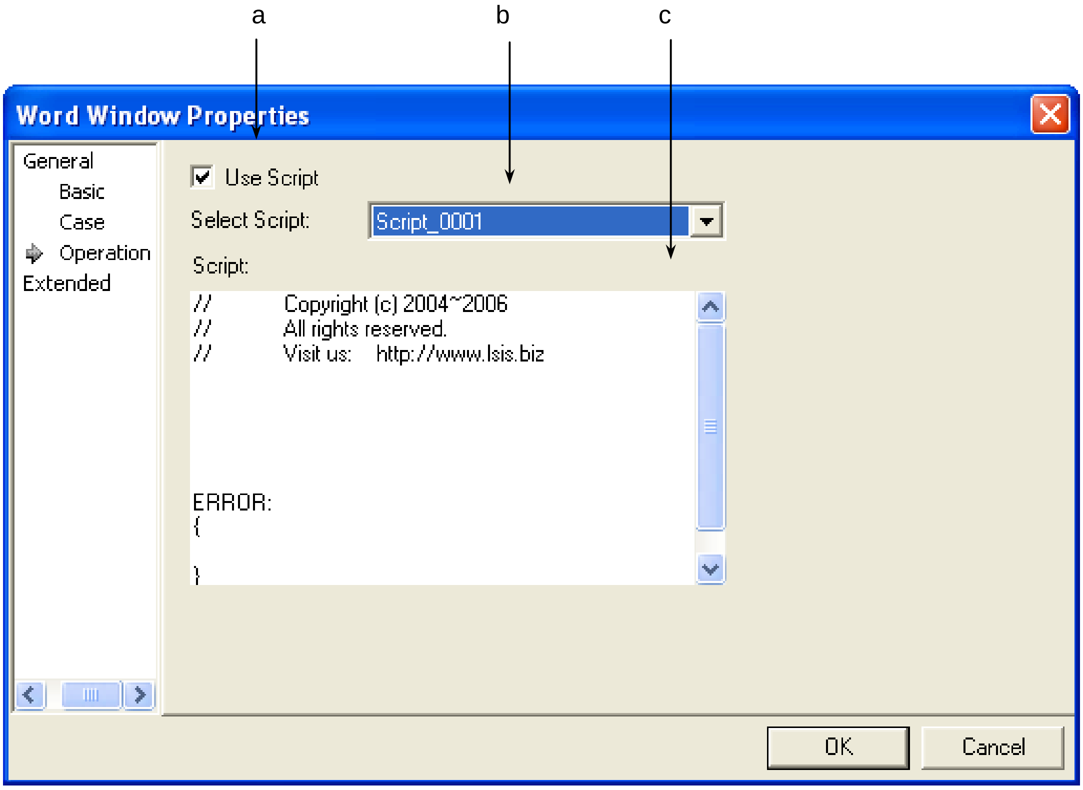
○ Other Device: D

No. of Window Screen: 1

[Display Condition Defining Window]

Items	Settings
Conditions(a)	Defines the condition of the word window.
Create(b)	(☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete(c)	Deletes the conditional sentences.
A column up(d)	Shifts up the priority of the conditional sentences being edited.
A column down(e)	Shifts down the priority of the conditional sentences being edited.
No. of Window Screen (f)	Specifies the window number to display as a pop-up or overlaid when the condition is met. You can specify the window either by directly entering it or by using the Search button. If you click on the button, all the created window screens are shown in a small size as follows.  Screen Thumbnail KW-4091 KW-4092 KW-4093 KW-4094 W-1 W-2 OK Cancel If you select the window to display and double-click on it, the corresponding number is specified.

(3) Operation


a
b
c
Word Window Properties
General
Basic
Case
Operation
Extended
OK
Cancel

☑ Use Script

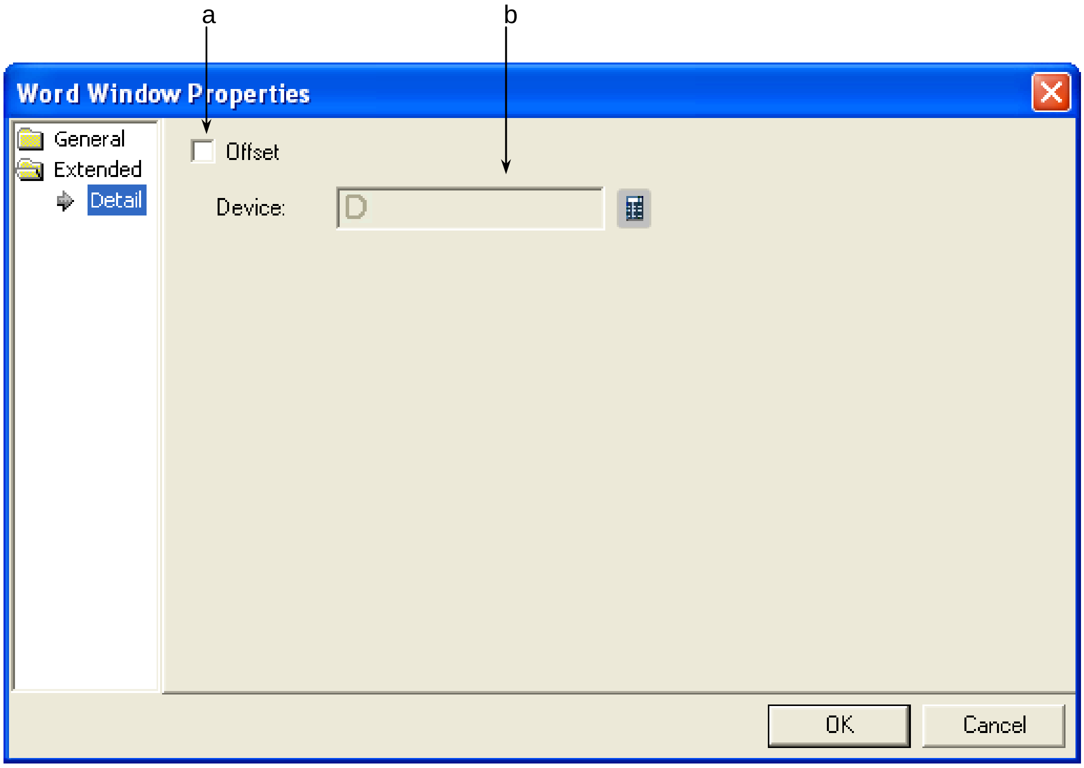
Select Script: Script_0001

Script:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz



ERROR:
{

}
```

Items	Settings
Use script(a)	Select this when you want to use script.
Select script(b)	Select the list of script you have made.
Script contents(c)	The contents of the selected script are displayed.

(4) Detail


a
b
Word Window Properties
General
Extended
Detail
☐ Offset
Device:
D
OK
Cancel

Items	Settings
Offset (a)	Set when you use the offset function.
Device(b, c)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

17.6 Part Object

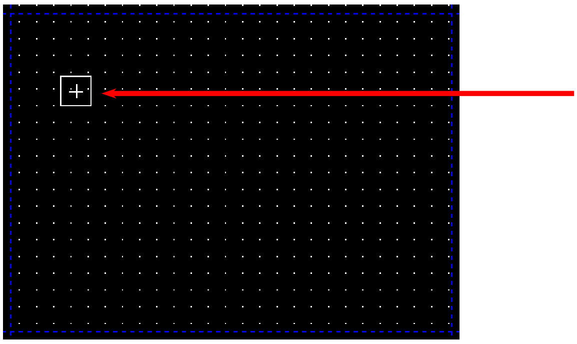
17.6.1 Overview

The part object invokes and displays parts according to the conditions. Here, the part refers to the part screen. The registered part window number is specified and it is displayed as a part in the part screen function or part shift function according to the state or value of the device.

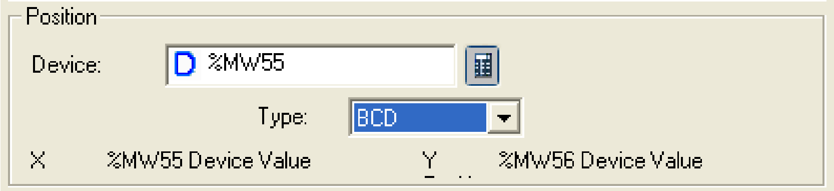
17.6.2 Types of Part Invocation

Type	Description
Bit part	Invokes corresponding parts according to ON/OFF of the relevant bit device.
Word part	Invokes the part corresponding to the relevant word device value or its range condition.

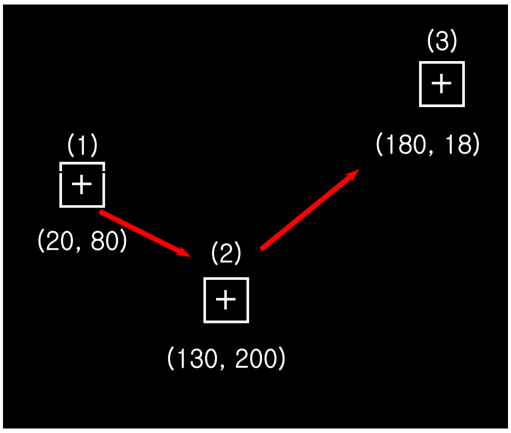
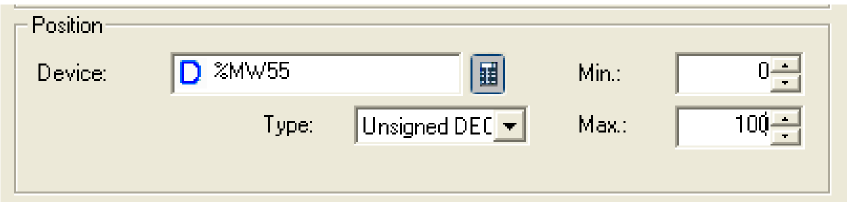
The bit part and word part are divided into Fixed, XY, Line and Route according to the indication method.

Type	Description
Fixed	Parts are indicated according to the condition where the registered object is.  The part is displayed where the part object is in XP-Builder.

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>XY</td><td>The parts are indicated at the coordinates of dots specified by device values.

XY coordinates are set according to the device values set regardless of the coordinates locating the part object in XP-Builder.

Position
Device: %MW55
Type: BCD
X %MW55 Device Value
Y %MW56 Device Value

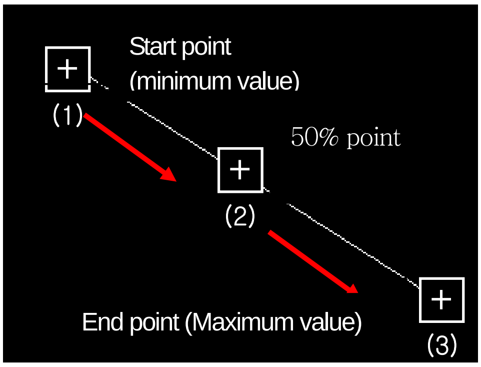
If the device is %MW55 in the setting above, the coordinates are as follows.
X coordinates: set device value (device value of %MW55)
Y coordinates: set device value + 1 (device value of %MW56)

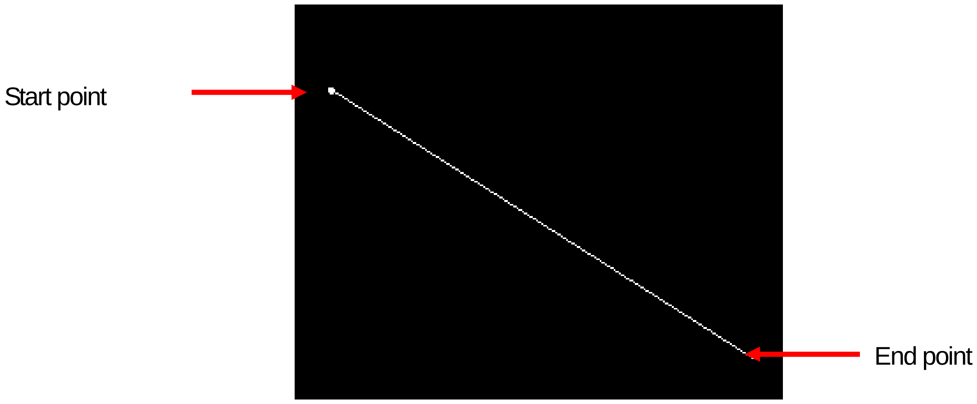
Example) The bit coordinates part moves to the coordinates according to the device values of %MW55 and %MW56.

<table>
<tr><th></th><th>(1)</th><th>(2)</th><th>(3)</th></tr>
<tr><td>Location device(X axis coordinates) : %MW55</td><td>20</td><td>130</td><td>180</td></tr>
<tr><td>Location device(Y axis coordinates): %MW56</td><td>80</td><td>200</td><td>18</td></tr>
</table>
</td></tr>
<tr><td>Line</td><td>The part moves in a straight line between the start point and end point which have been set.
The minimum and maximum are set at the start point and end point respectively and the part is indicated with the minimum being the location device value and maximum being the relative value.

Position
Device: %MW55
Type: Unsigned DEC
Min.: 0
Max.: 100</td></tr>
</table>

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Line</td><td>
In the settings above, the coordinates according to the device size are as follows.
X coordinates: relative location according to the set device value (device value of %MW55), minimum and maximum values
Y coordinates: relative location according to the set device value + 1 (device value of %MW56), minimum and maximum values

If the value read from the specified %MW55 16bit device is between the minimum and maximum values, the location is settled by calculating the ratio.

If the value of %MW55 is 50 in the settings above, with the length of the straight column connecting the start point and end point edited by the user being 100%, the part is located at the point corresponding to 50% from the start point, that is, (50 from the start point)/(maximum-minimum) * 100.

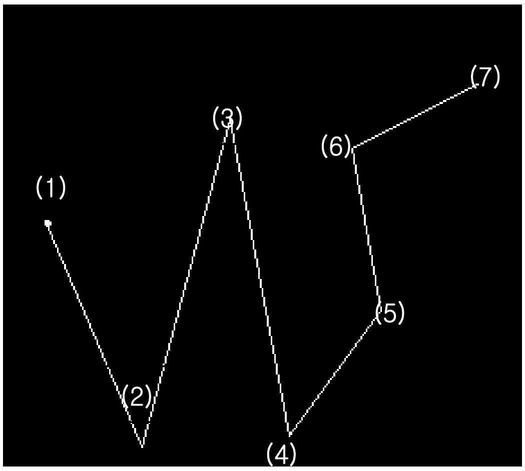
Example) Part XY according to the device value of %MW55 and %MW56

Start point
(minimum value)
(1)
50% point
(2)
End point (Maximum value)
(3)
<table>
<tr><th></th><th>(1)</th><th>(2)</th><th>(3)</th></tr>
<tr><td>Location device value
(%MW55)</td><td>0</td><td>50</td><td>100</td></tr>
</table>

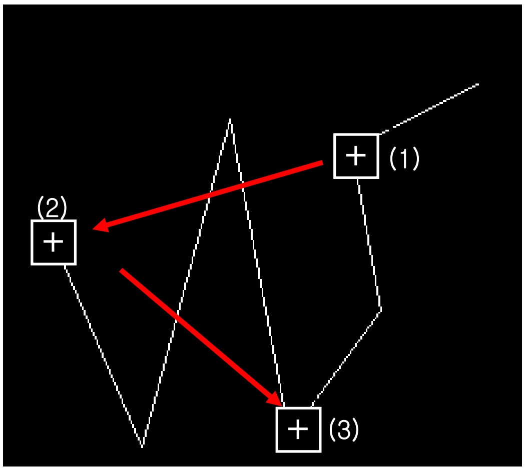
The distinction of the start point and end point is as follows.


</td></tr>
</table>

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Route</td><td>The part is indicated at the indication point set in advance.
The indication point is set by registering the straight line (part movement path) connecting multiple points.
The part is indicated with the same point number as the location device value.

Example) With the path parts edited in the sequence of numbers as shown on the left below, the path is as shown on the right below.



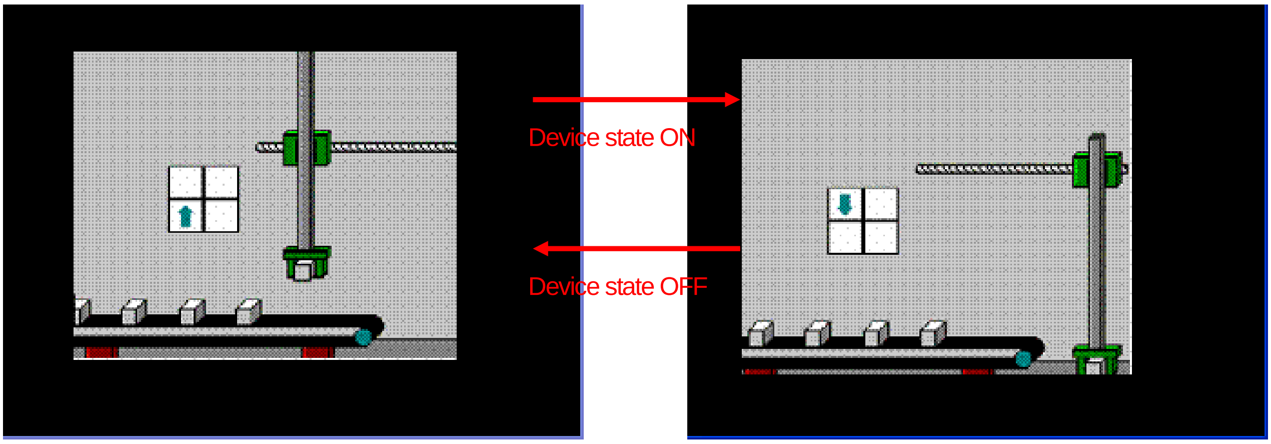


<table>
<tr><th></th><th>(1)</th><th>(2)</th><th>(3)</th></tr>
<tr><td>Location device value (%MW55)</td><td>6</td><td>1</td><td>4</td></tr>
</table>

As shown above, if the location device value(%MW55) is 6, it moves along path #6. If 1 and 4, it moves along paths # 1 and 4 respectively.</td></tr>
</table>

17.6.3 Bit Part Settings

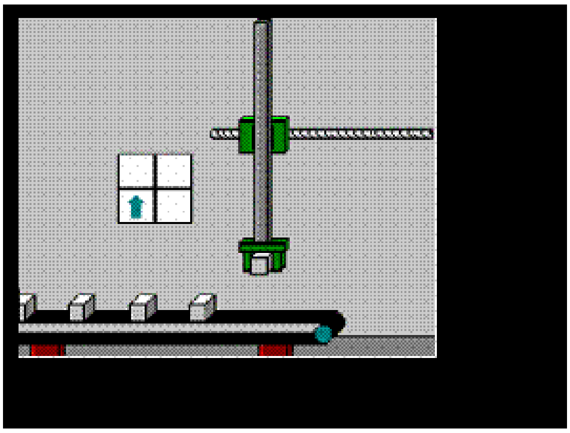
The corresponding part according to ON/OFF of the relevant bit device is invoked as follows.



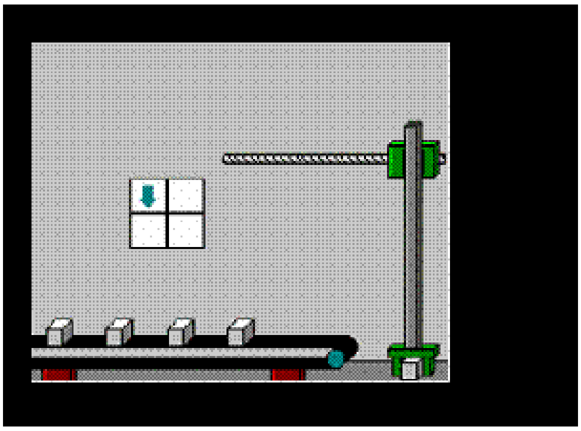
You can set the part screen specified according to the reference device state of the bit part as shown in the example above.

[Method]

(a) Create part screens 1 and 2.
(b) Edit the image or figure of the system graphic library or the user graphic library in part screens 1 and 2 respectively.



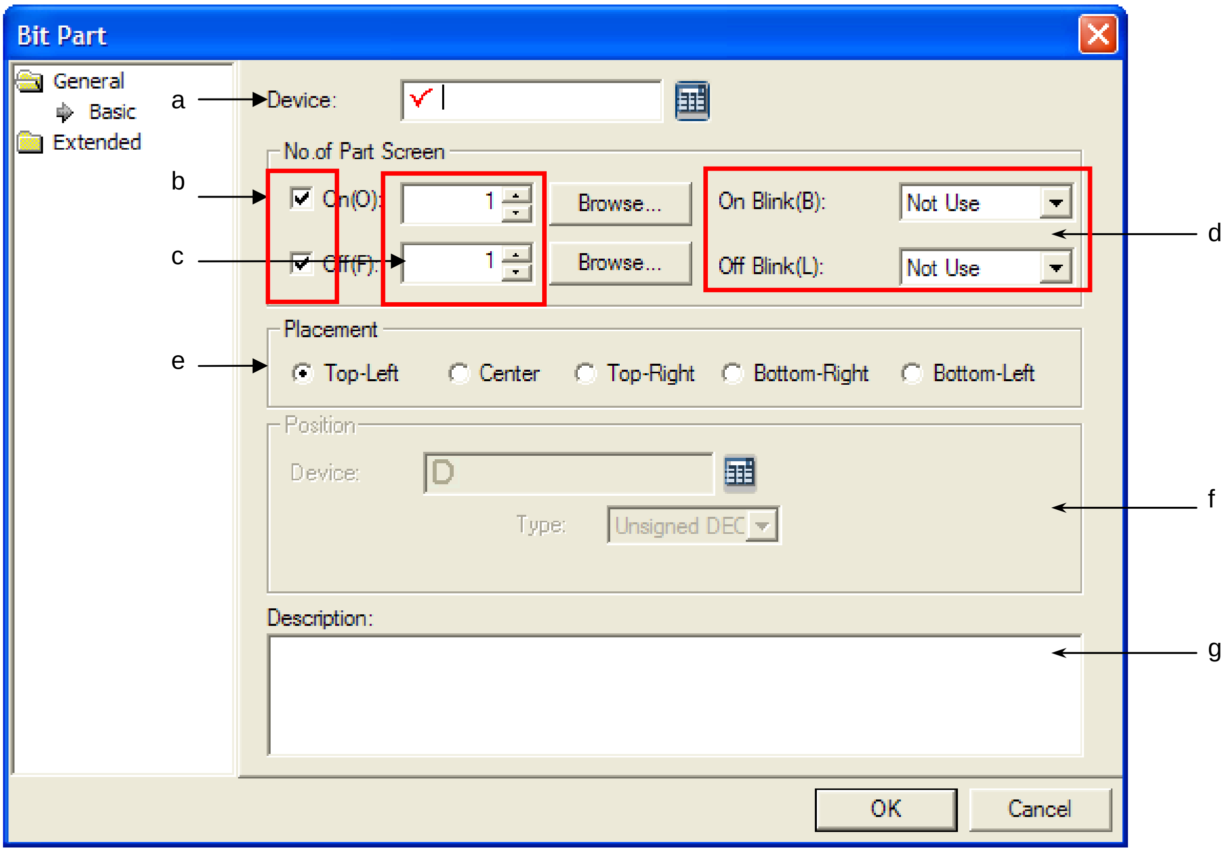
Part screen 1



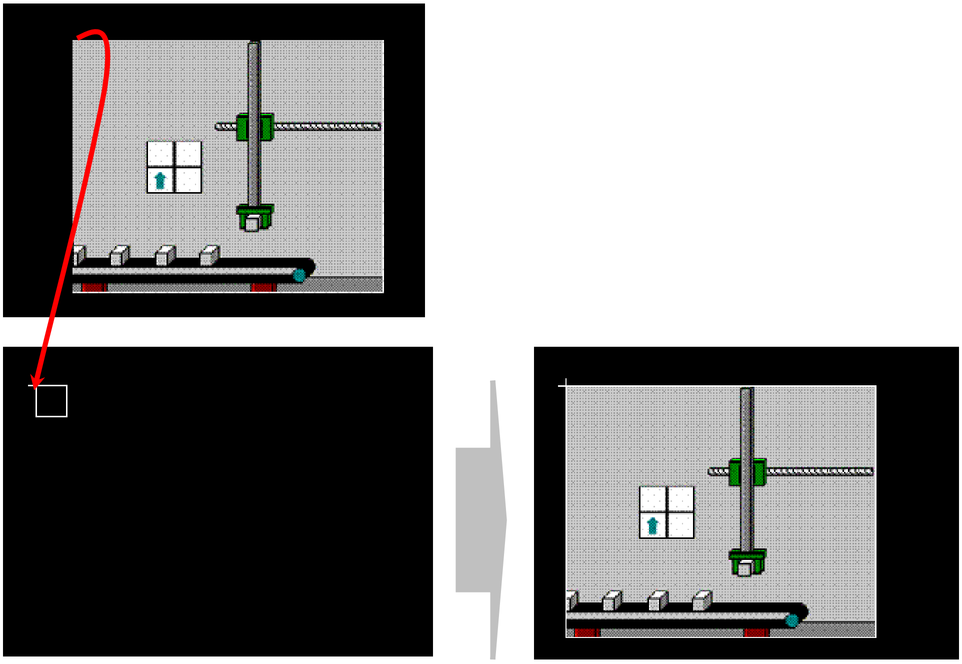
Part screen 2

(c) Create the bit part in the base screen and set the part screen number.
(d) Set the location device to set the location of the part.

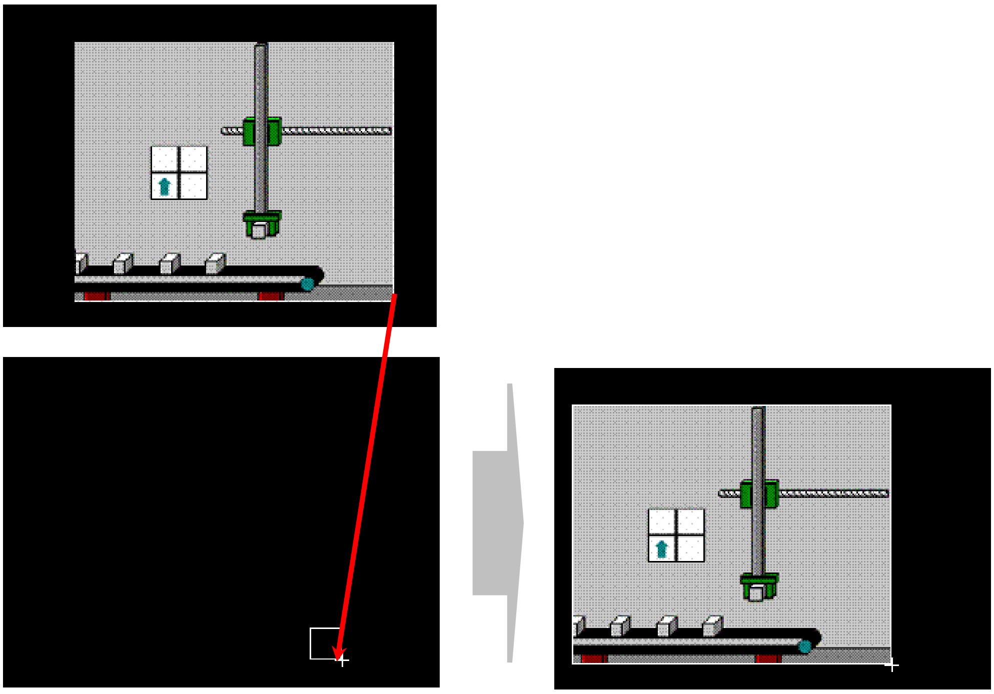
(1) Basic


Bit Part
General
Basic
Extended
a
b
c
d
e
f
g
Device:
No.of Part Screen
☑ On(O):
☑ Off(F):
1
1
Browse...
Browse...
On Blink(B):
Off Blink(L):
Not Use
Not Use
Placement
● Top-Left
○ Center
○ Top-Right
○ Bottom-Right
○ Bottom-Left
Position
Device:
D
Type:
Unsigned DEC
Description:
OK
Cancel

Items	Settings
Device (a)	Sets the device to be referred to in the relevant object.
Whether using part screen or not (b)	It sets whether calling the part depending on the status of On, Off. Namely, a user can select whether calling the components or not depending on the status of On, Off.
No. of Part Screen (c)	Sets the part number to invoke. On: sets the part number to invoke when the device value is ON. Off: sets the part number to invoke when the device value is OFF. You can specify the number either by directly entering it or using the Search button. The method is the same of specifying the window screen.
Blink(d)	It sets whether called part will blink or not On: When device value is 0n, it sets blink speed of called part. Off: When device value is 0ff, it sets blink speed of called part. Slow : Once every 3 seconds, at 3 seconds interval Normal :Once every 2 seconds, at 2 seconds interval Fast : Once every 1 second, at 1 second interval
Placement (e)	Sets the placement reference of the part screen and bit part object. This is for adjusting the locations of the start point of the part and bit part object in the part screen. Example 1. If you set the placement at the Top-Left, the upper left part of the location where the part of the edited part screen starts is indicated on the upper left of the object.

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>


Example 2. If you set the justification at the lower right, the lower right part of the location where the part of the edited part screen is is indicated on the lower right of the object.



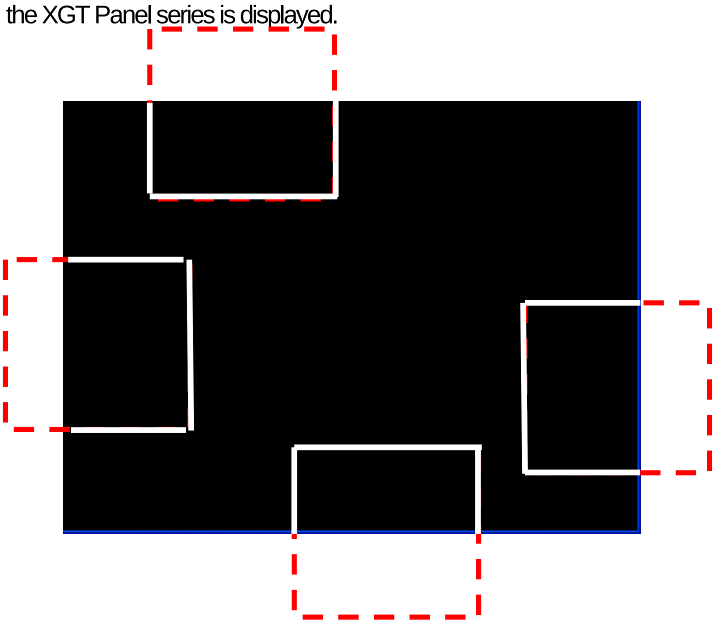
Types of justification are as follows.

<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Top-Left</td><td>Justifies the location where the part starts in the part screen and the upper left part of the object.</td></tr>
<tr><td>Center</td><td>Justifies the middle of the locations where the part starts and ends in the part screen to the middle of the object.</td></tr>
</table>
</td></tr>
</table>

Items	Settings
	<table><tr><td>Top-Right</td><td>Justifies the upper right of the locations where the part starts and ends in the part screen to the upper right part of the object.</td></tr><tr><td>Bottom-Right</td><td>Justifies the lower right of the locations where the part starts and ends in the part screen to the lower right part of the object.</td></tr><tr><td>Bottom-Left</td><td>Justifies the lower left of the locations where the part starts and ends in the part screen to the lower left part of the object.</td></tr></table>
Position(f)	In case of coordinates, straight column and path, you should set the location in which to indicate the part. ☞ **See Part Movement Method above.** In the bit part, the size of the path location device is fixed at 16 bit. The maximum and minimum are set to indicate the relative location according to the device value. The maximum and minimum can be set only in case of a straight column.
Description(g)	Enters the description in the relevant object.

Note

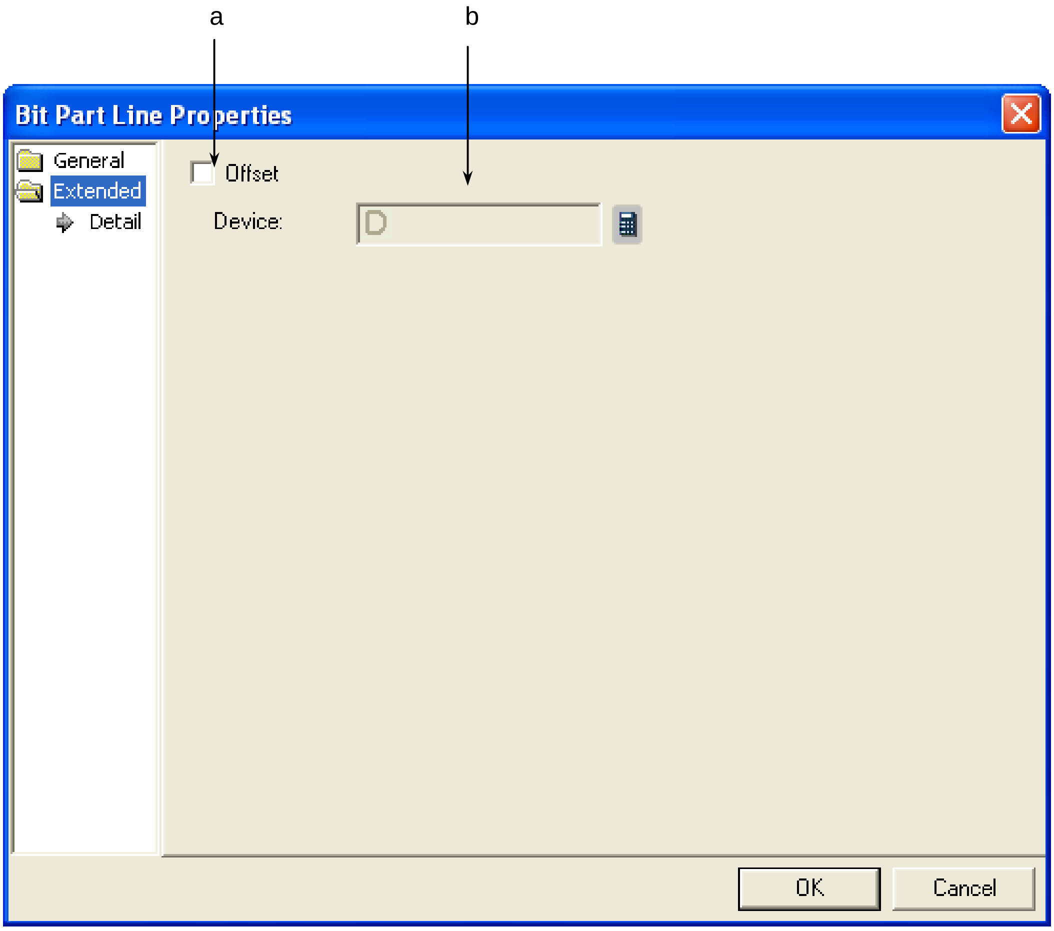
- If the invoked part window area is out of the base screen, only the part of the entire window area which is not out of the base screen in the XGT Panel series is displayed.



- The difference of the justification of the window and part is as follows.

Object Type	Reference Point of Justification
Window	The start point of the edited window screen **(☞ See Justification of Window)**
Part	The start point where the part is drawn in the edited part screen

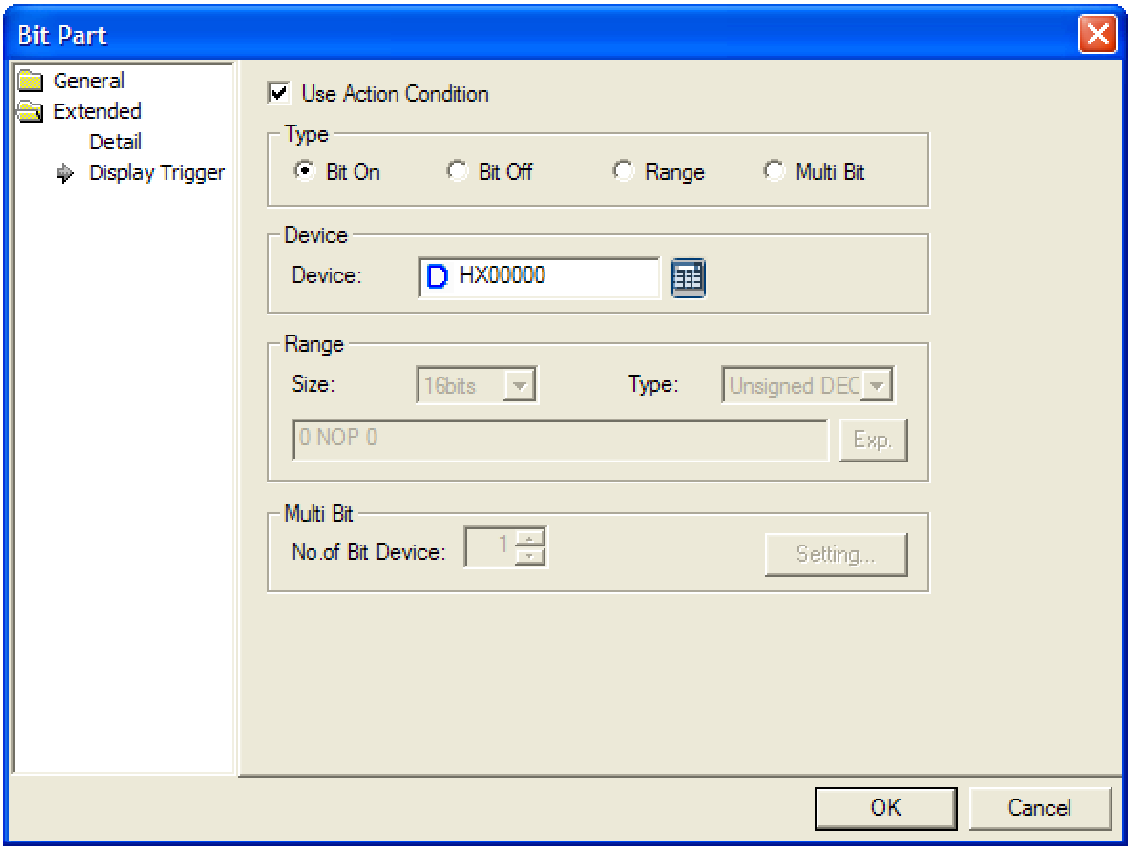
(2) Detail


a
b
Bit Part Line Properties
General
Extended
Detail
☐ Offset
Device:
D
OK
Cancel

Items	Settings
Offset(a)	Set when you use the offset function.
Device(b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(3) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Bit Part
General
Extended
Detail
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range — Size: 16bits Type: Unsigned DEC

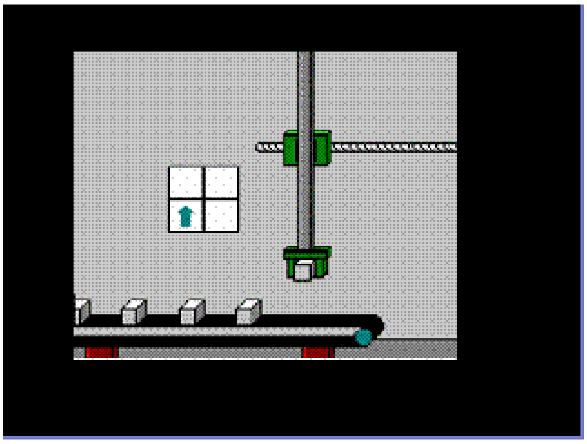
0 NOP 0

Multi Bit — No.of Bit Device: 1

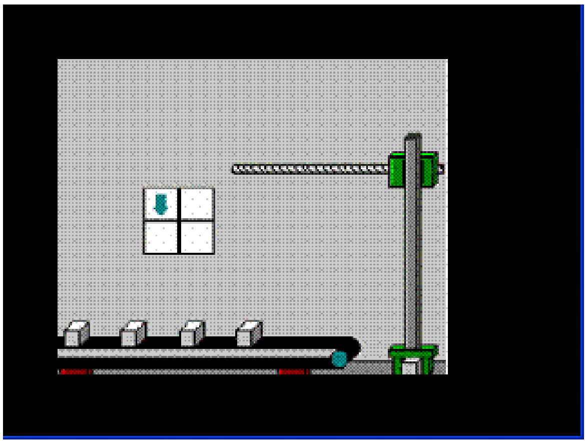
(☞ refer to 16.9 display trigger.)

17.6.4 Word Part Settings

The parts corresponding to the word device state are invoked as follows.



Display when device IW0.0.2 value is 1

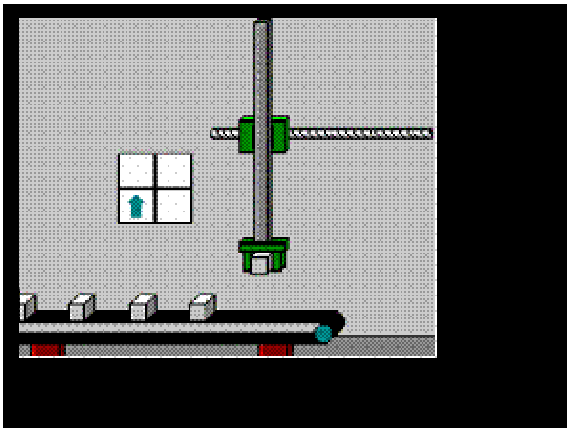


Display when device IW0.0.2 value is 2

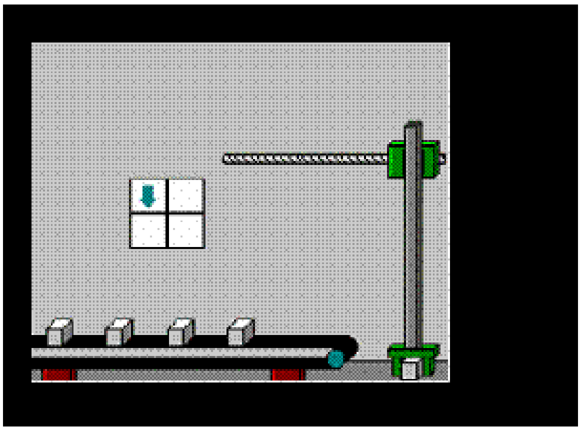
You can set the part window specified according to the reference device state of the bit part as shown in the example above.

[Method]

(a) Create part screens 1 and 2.
(b) Edit the image or figure of the system graphic library or the user graphic library in part screens 1 and 2 respectively.
(c) Create the word part in the base screen and set the Part screen number as [Case]. (In this case, the screen number corresponding to the device value is invoked)
(d) Set the location device to set the location in which the part is to be indicated.

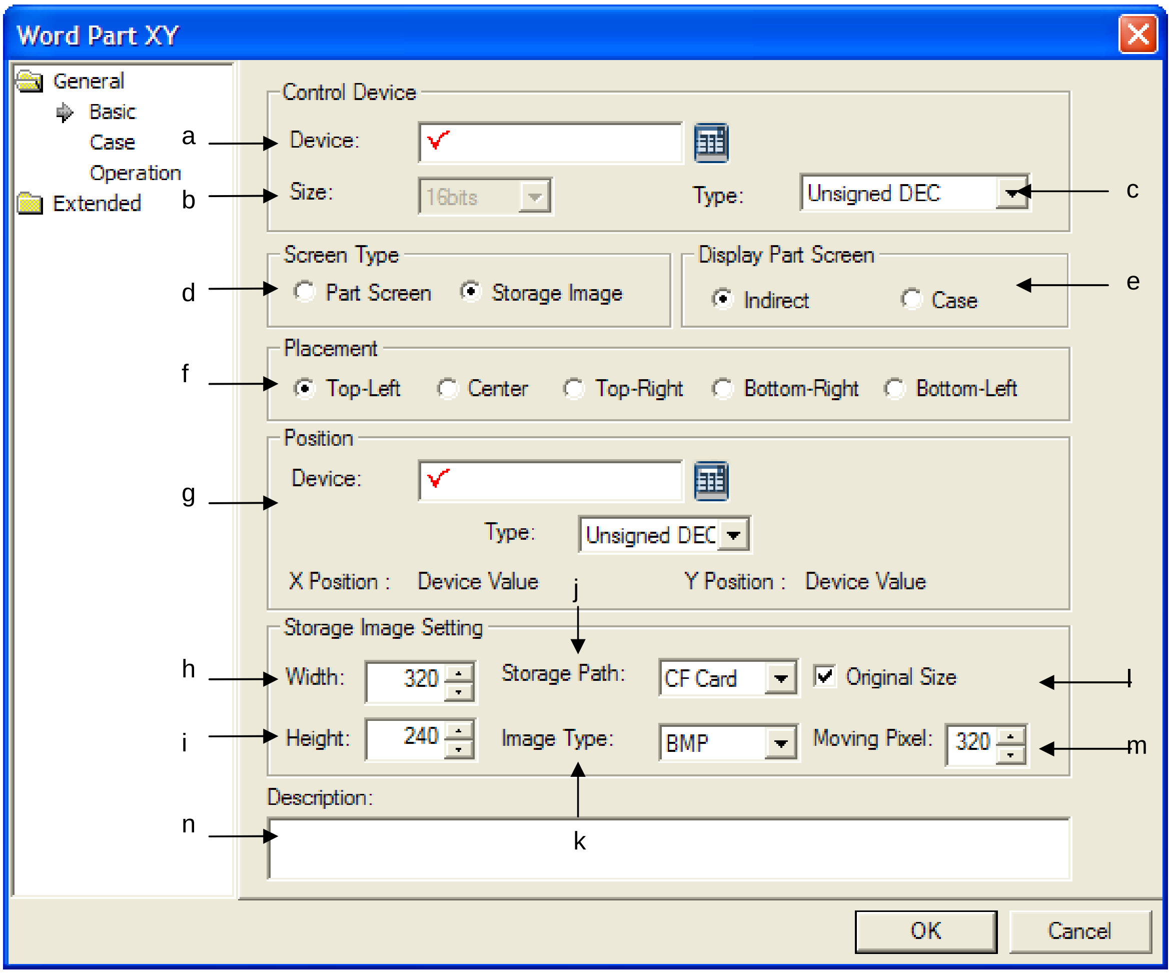


Part screen 1



Part screen 2

(1) Basic



Control Device
Device:
Size: 16bits
Type: Unsigned DEC

Screen Type
○ Part Screen ● Storage Image

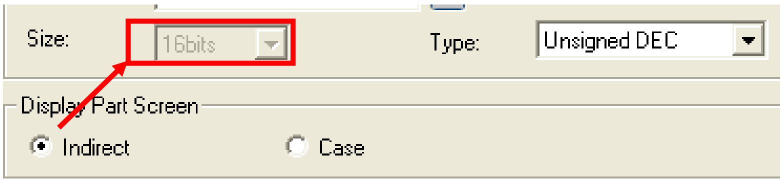
Display Part Screen
● Indirect ○ Case

Placement
● Top-Left ○ Center ○ Top-Right ○ Bottom-Right ○ Bottom-Left

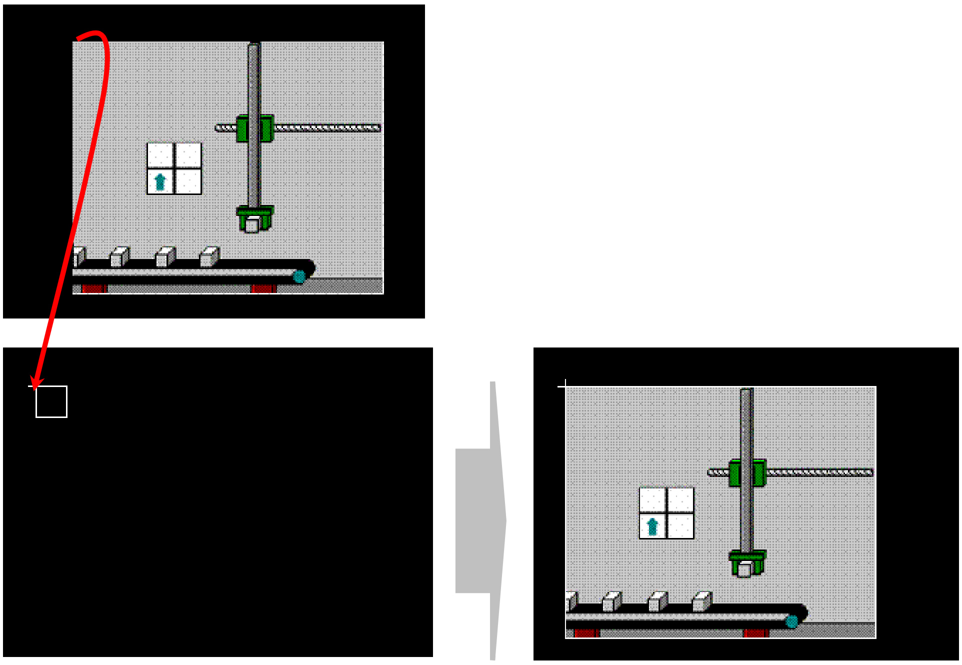
Position
Device:
Type: Unsigned DEC
X Position : Device Value
Y Position : Device Value

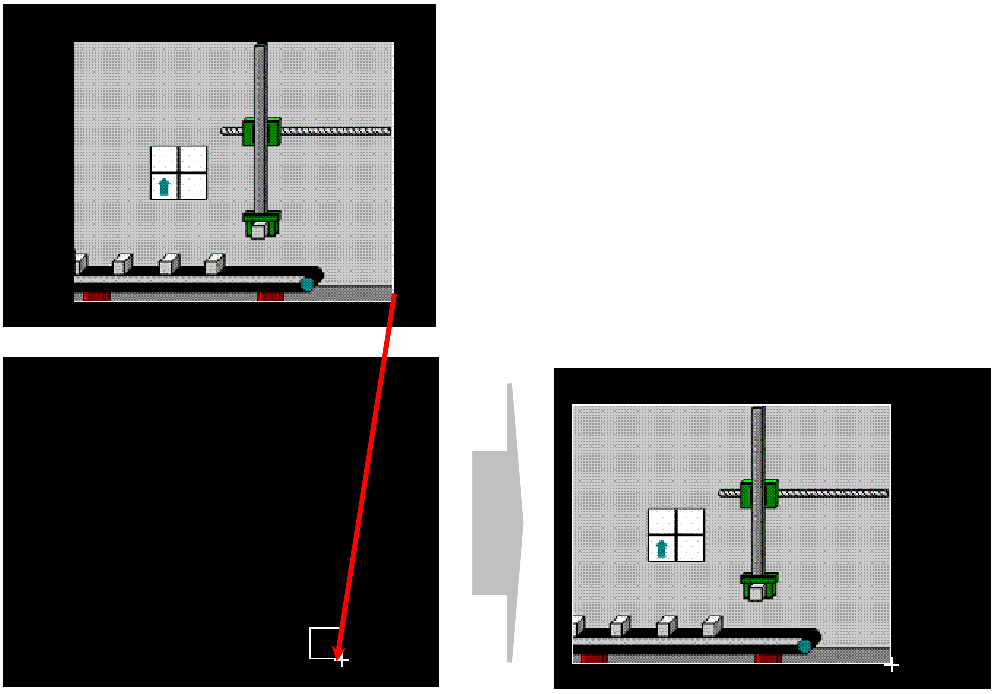
Storage Image Setting
Width: 320
Height: 240
Storage Path: CF Card
☑ Original Size
Image Type: BMP
Moving Pixel: 320

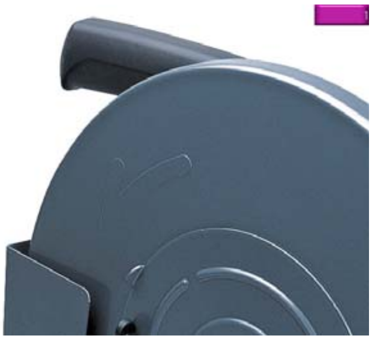
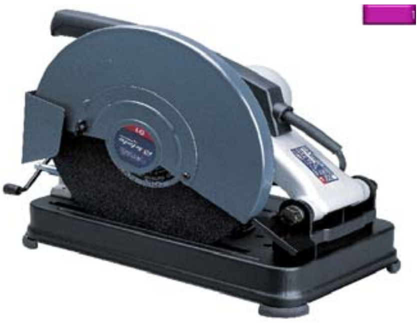
Description:

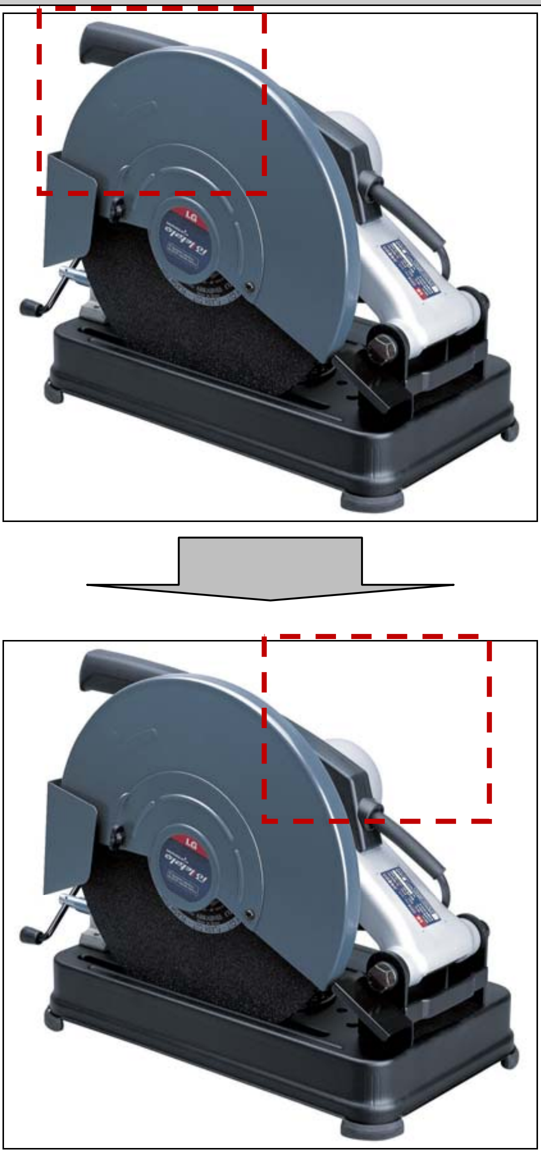
Items	Settings
Device (a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Device data size (b)	Sets the device data size (16 bit, 32 bit). In case of Indirect, the part screen number is specified according to the device value. The maximum number of part screens that can be created can be expressed in 16 bit devices. Therefore, if you select the [No. of Part Screen] selection method as [indirect], the size is fixed at 16 bit and the size cannot be changed.  Size: 16bits Type: Unsigned DEC Display Part Screen ● Indirect ○ Case
Type (c)	Sets the data form of the device (signed decimal, unsigned decimal, BCD).

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Screen type (d)</td><td>It selects the type of the screen to be called.<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>part screen</td><td>It calls the subsidiary screen edited by XP-Builder.</td></tr>
<tr><td>Storage Image</td><td>It calls the image file saved storage devices (CF Card, USB).
It can call and display the files with the name of imgXXXXX.bmp or imgXXXXX.jpg only from XP_UserImage folder.
Img00000.bmp or img00000.jpg image can not be called. Namely image No.0 is not called.</td></tr>
</table></td></tr>
<tr><td>Display part screen (e)</td><td>It selects how to designate component No. to be called.<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Indirect</td><td>It displays subsidiary screen No. for applicable device value with subsidiary screen No. called by device value or the file name of storage devices For example, supposing that device value is 1 and the kind of a screen is [Subsidiary Screen], No. 1 subsidiary screen will be called. However, the kind of a screen is [Storage Devices Image], img00001.bmp will be called.</td></tr>
<tr><td>Status</td><td>If prepared conditional sentence is fulfilled, the related subsidiary screen is displayed.</td></tr>
</table></td></tr>
<tr><td>Placement (f)</td><td>Sets the justification reference of the part screen and bit part object.
This is for adjusting the locations of the start point of the part and bit part object in the part screen.

Example 1. If you set the placement at the Top-Left, the upper left part of the location of the part edited part screen starts is indicated in the upper left of the object.

Example 2. If you set the placement at the Bottom-Right, the lower right part of the location where the part of the edited part screen is is indicated on the lower right of the object.</td></tr>
</table>

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
Types of justification are as follows.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Top-Left</td><td>Justifies the location where the part starts in the part screen and the upper left part of the object.</td></tr>
<tr><td>Center</td><td>Justifies the middle of the locations where the part starts and ends in the part screen to the middle of the object.</td></tr>
<tr><td>Top-Right</td><td>Justifies the upper right of the locations where the part starts and ends in the part screen to the upper right part of the object.</td></tr>
<tr><td>Bottom-Right</td><td>Justifies the lower right of the locations where the part starts and ends in the part screen to the lower right part of the object.</td></tr>
<tr><td>Bottom-Left</td><td>Justifies the lower left of the locations where the part starts and ends in the part screen to the lower left part of the object.</td></tr>
</table></td></tr>
<tr><td>Position(g)</td><td>In the case of coordinate, straight line, route, you need to set the position to display the components. For word component, the size of route position device is fixed as 16 bit.
Max./Min. is established to relative position depending on device value for straight line. Max./Min. can be applied for straight line only.</td></tr>
<tr><td>Width (h)</td><td>When calling not subsidiary screen but storage image, it sets X size(width) of the image to be displayed at XGT Panel.
Supposing that the X size(width) of storage image is 1240, at XGT Panel,
1) The image of X size only set by a user is displayed among 1240 size
2) The image will displayed with being reduced or expanded based on the size set by a user.</td></tr>
<tr><td>Height (i)</td><td>When calling not subsidiary screen but storage image, it sets Y size(length) of the image to be displayed at XGT Panel.
Supposing that the Y size(length) of storage image is 1240, at XGT Panel,
1) The image of Y size only set by a user is displayed among 1240 size</td></tr>
</table>

Items	Settings
	2) The image will displayed with being reduced or expanded based on the size set by a user.
Storage path(j)	It sets storage devices where the image to be called exists. CF card and USB are available for storage devices.
Image type(k)	It sets the format of image to be called. BMP and JPG are available for image format. If there is the same file name in storage devices, the file that coincides with image format is displayed.
Original size (l)	It selects whether remaining original size or not. If the size of called image is larger than XGT Panel and [Remaining original size] is applied, it displays only the area covered by XGT Panel among storage device images. On the other hand, [Remaining original size] is not applied, the storage image is reduced to meet the size of X-axis, Y-axis established by a user and displayed. Ex.) Supposing there is the original image as below with X sise-640, Y size-480, the results are different depending on whether using [Remaining original size] or now.  Remaining original size (Displaying only 640 * 480 among the original image)  Reducing the original image into 640 * 480
Moving pixel (m)	It sets the transmission unit and the function can be set only when using [Keeping original size]. If you establish [Keeping original size] when the image to be called is larger than XGT Panel screen, the part that can be displayed at XGT Panel only is shown among storage devices images. In this case, if you touch upper·lower·right·left button of XGT Panel to call undisplayed part, the image will move to your intended direction and undisplayed part will be shown. Ex.) When calling the image of 1328 * 1260 to XGT Panel of 640 * 480, the dotted line area is displayed as below. At this time, when you touch the left area of XGT Panel with your hand, only displayed area will move to left side.

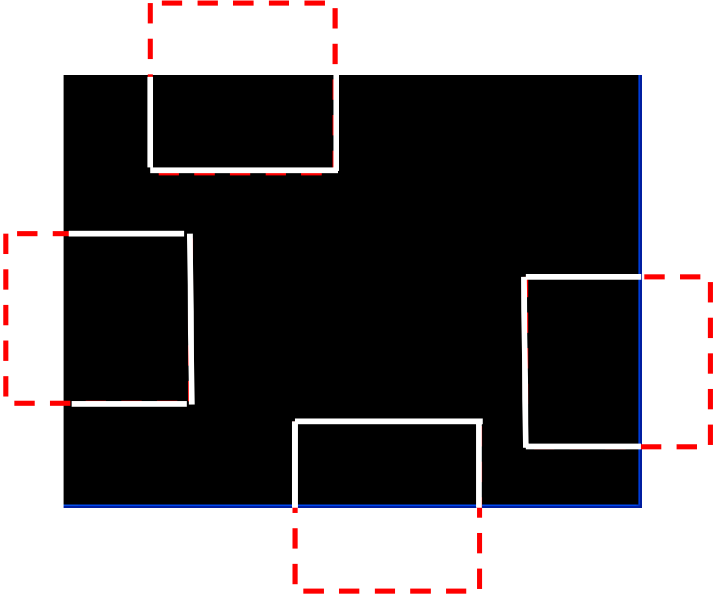
Items	Settings
	 In the above case, a user can establish the unit for up·down·left·right transference.
Description(g)	Enters the description in the relevant object.

Note

(1) If the data size and form change, the input condition and indication condition are deleted.

(2) If the part screen numbering method changes from Indirect to Case, the input condition and indication condition are deleted.

(3) If the invoked part window Range is out of the base screen, only the part of the entire window area which is not out of the basic screen in the XGT Panel series is displayed.



The difference of the justification of the window and part is as follows.

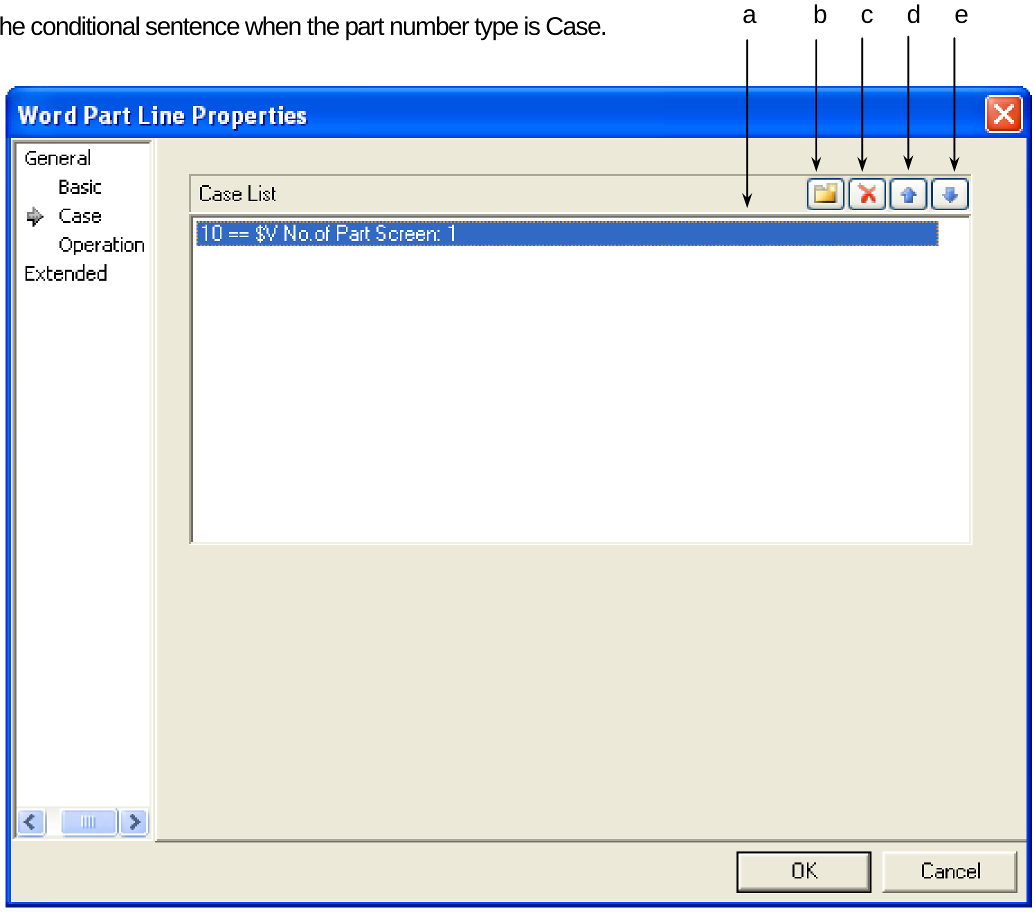
Object Type	Reference Point of Justification
Window	The start point of the edited window screen **(☞ See Justification of Window)**
Part	The start point where the part is drawn in the edited part screen

(4) File name should be imgXXXXX consisting of img and 5-digit number

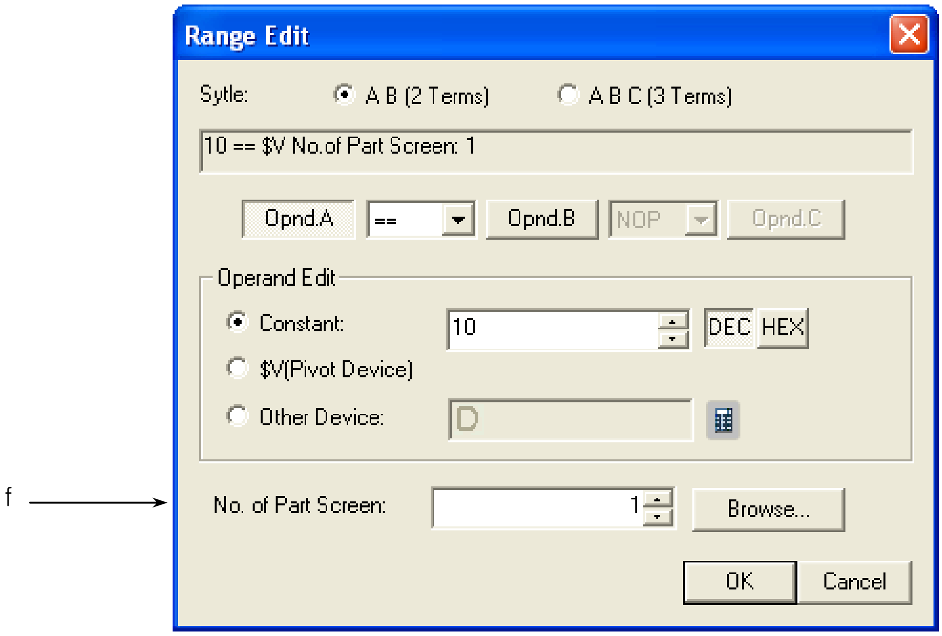
(5) In case storage type is set as [Storage Image], part screen number is set as [Indirect], image file in the storage device is displayed based on the value of control device.

(2) Case

This is setting the conditional sentence when the part number type is Case.


a
b
c
d
e
Word Part Line Properties
General
Basic
Case
Operation
Extended
Case List
OK
Cancel

10 == $V No.of Part Screen: 1


Range Edit
Sytle:
A B (2 Terms)
A B C (3 Terms)
Opnd.A
Opnd.B
NOP
Opnd.C
Operand Edit
$V(Pivot Device)
Other Device:
DEC
HEX
Browse...
OK
Cancel
f

● A B (2 Terms)

10 == $V No.of Part Screen: 1

Opnd.A ==

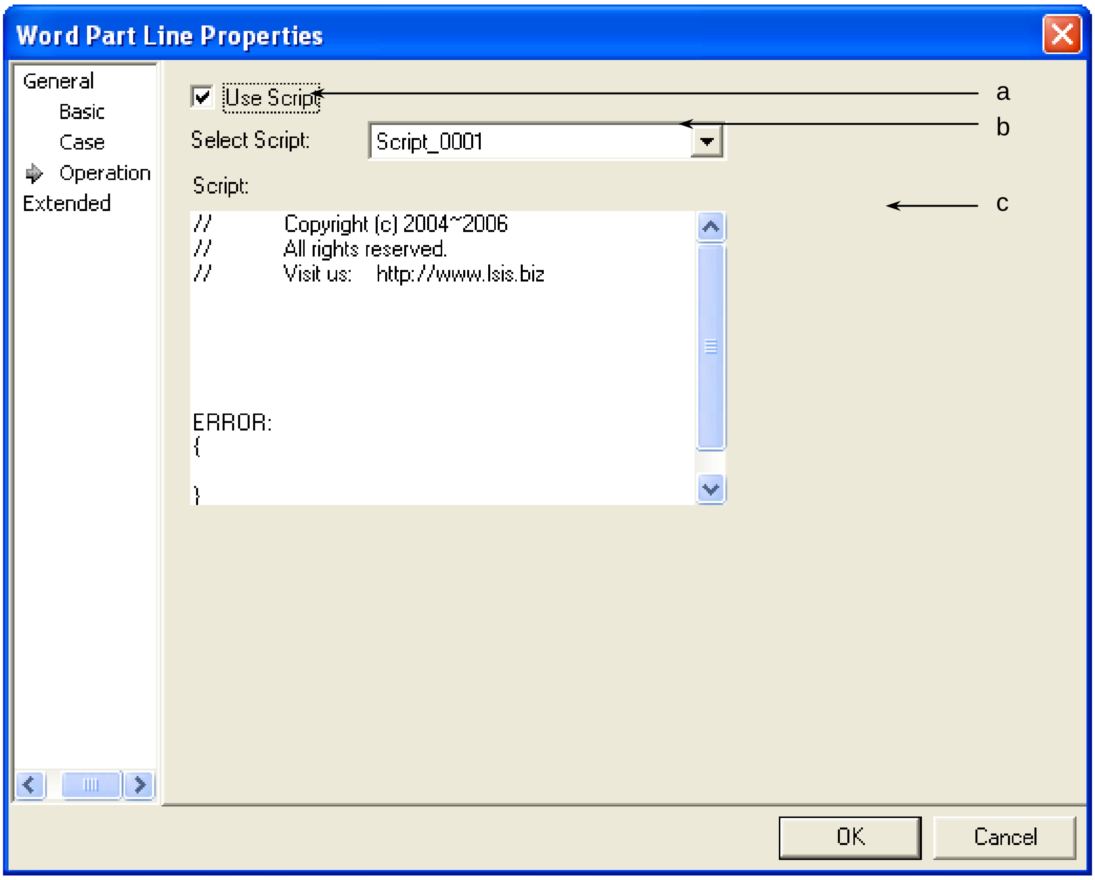
● Constant: 10

No. of Part Screen: 1

[Display Condition Defining Window]

Items	Settings
Condition list(a)	Defines the condition of a word part straight column.
Create(b)	(☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete(c)	Deletes the conditional sentences.
A column up(d)	Shifts up the priority of the conditional sentences being edited.
A column down(e)	Shifts down the priority of the conditional sentences being edited.
No. of Part screen(f)	Sets the screen number indicated when the condition is met.

(3) Operation



☑ Use Script

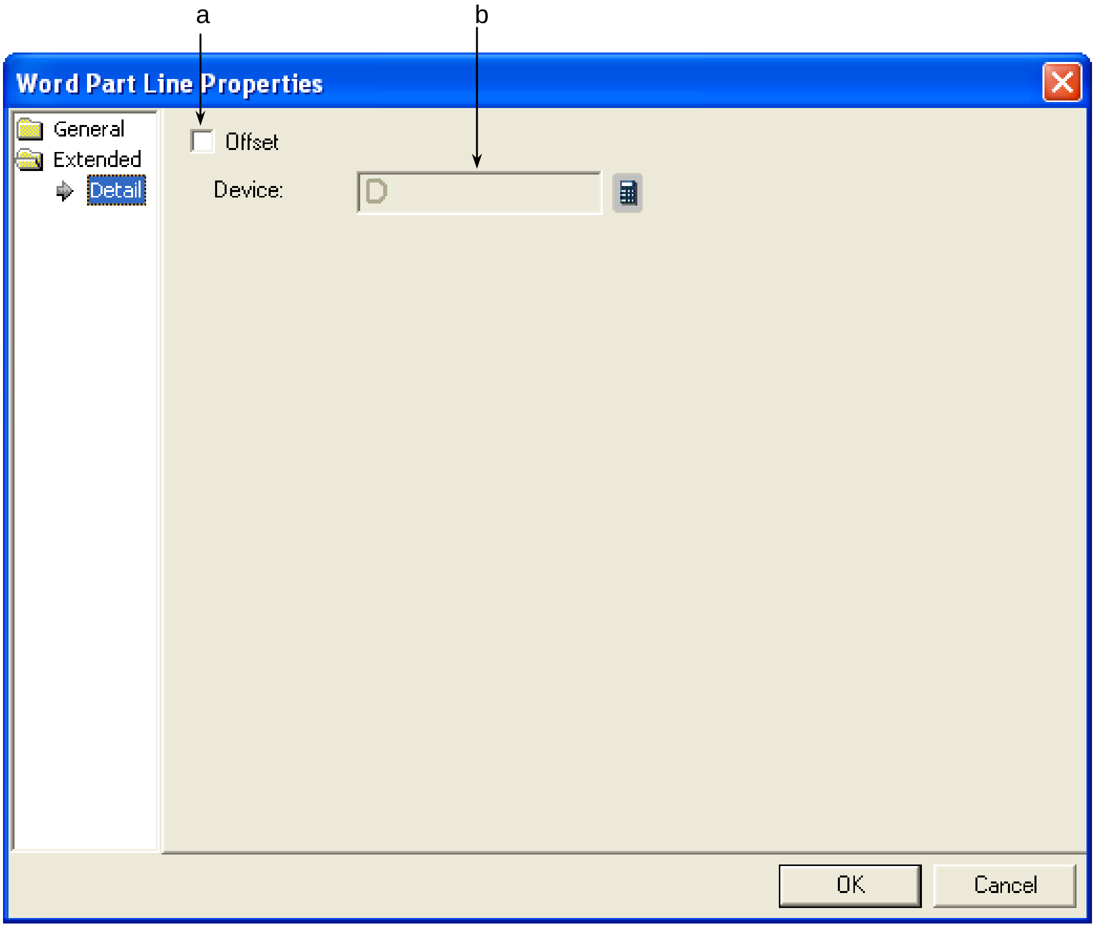
Select Script: Script_0001

Script:

```
//        Copyright (c) 2004~2006
//        All rights reserved.
//        Visit us:    http://www.lsis.biz




ERROR:
{

}
```

Items	Settings
Use script (a)	Select this when you want to use script.
Select script (b)	Select the list of script which you have made.
Script contents (c)	The contents of the selected script are displayed.

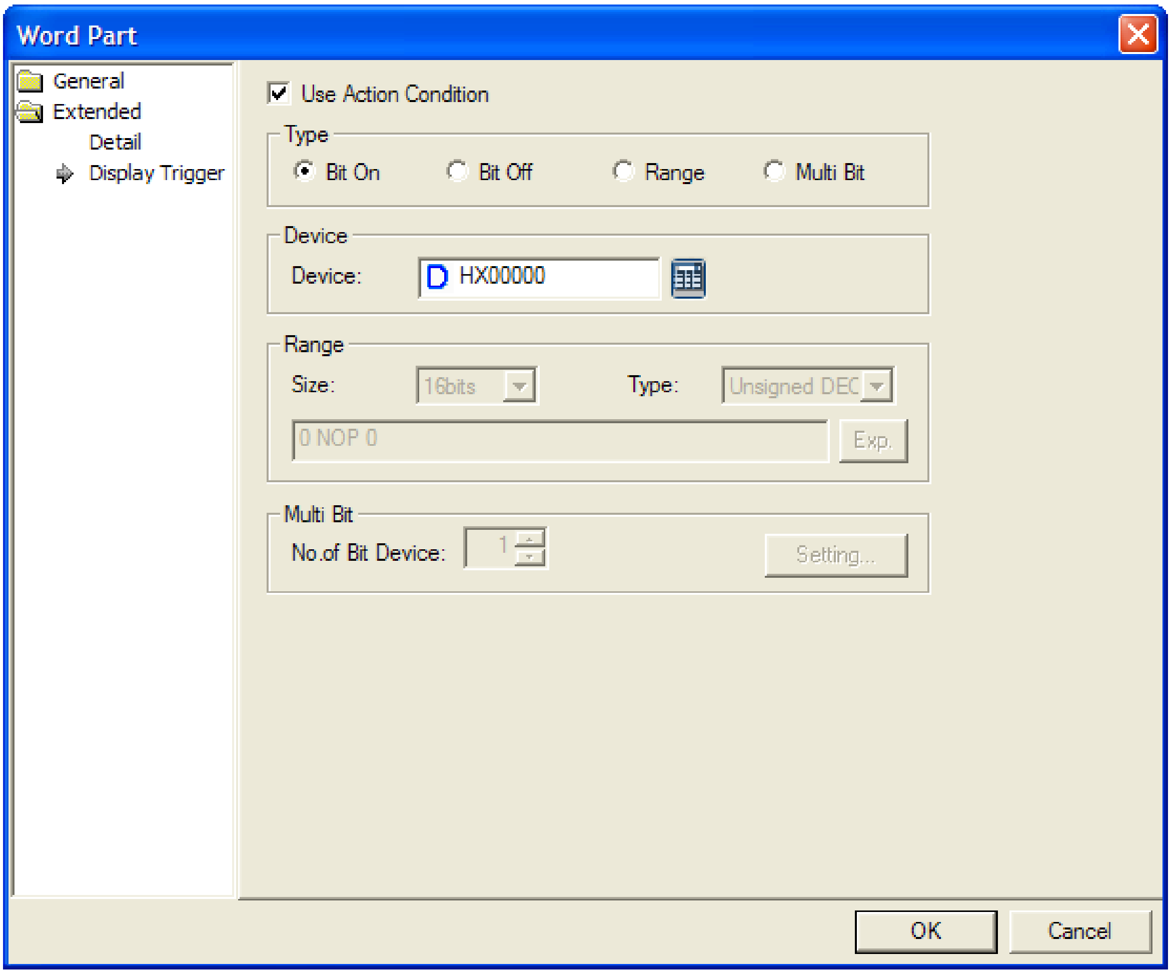
(4) Detail


a
b
Word Part Line Properties
General
Extended
Detail
☐ Offset
Device:
D
OK
Cancel

Items	Settings
Offset (a)	Set when you use the offset function.
Device (b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(5) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Word Part
General
Extended
Detail
Display Trigger
OK
Cancel

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range — Size: 16bits Type: Unsigned DEC

0 NOP 0 Exp.

Multi Bit — No.of Bit Device: 1 Setting...

(☞ refer to 16.9 display trigger.)

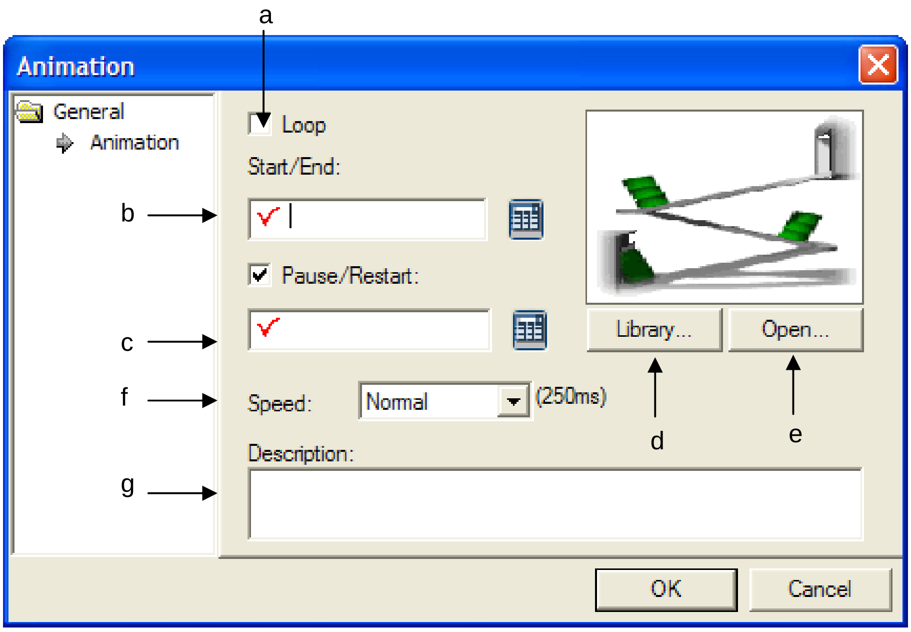
17.7 Animation Object

17.7.1 Overview

An animation object performs the function of displaying GIF graphics, which operate according to the conditions, in an animation.

17.7.2 Animation Settings

(1) Basic


a
Animation
General
Animation
b
c
f
g
☐ Loop
Start/End:
☑ Pause/Restart:
Library...
Open...
d
e
Speed:
Normal
(250ms)
Description:
OK
Cancel

Items	Settings
Loop(c)	Decides whether to repeat an animation after it operates once. In this case, the animation does not operate according to the states of the Start/End, Stop/Resume devices but the GIF images continue to move. If you select Repeat, you cannot set the Start/End, Stop/Resume devices.
Start/End(a)	Sets the bit device operating an animation. Animation GIF operates when the set bit device state turns ON.
Pause/Restart(b)	Sets the device that stops or resumes an animation halfway. To set this device, set the check box.
Library(d)	Sets the animation file registered in the user graphic library and the animation registered in the system graphic library.
Open(e)	You can select a GIF file which you can directly operate other than the user graphic library and the system graphic library.

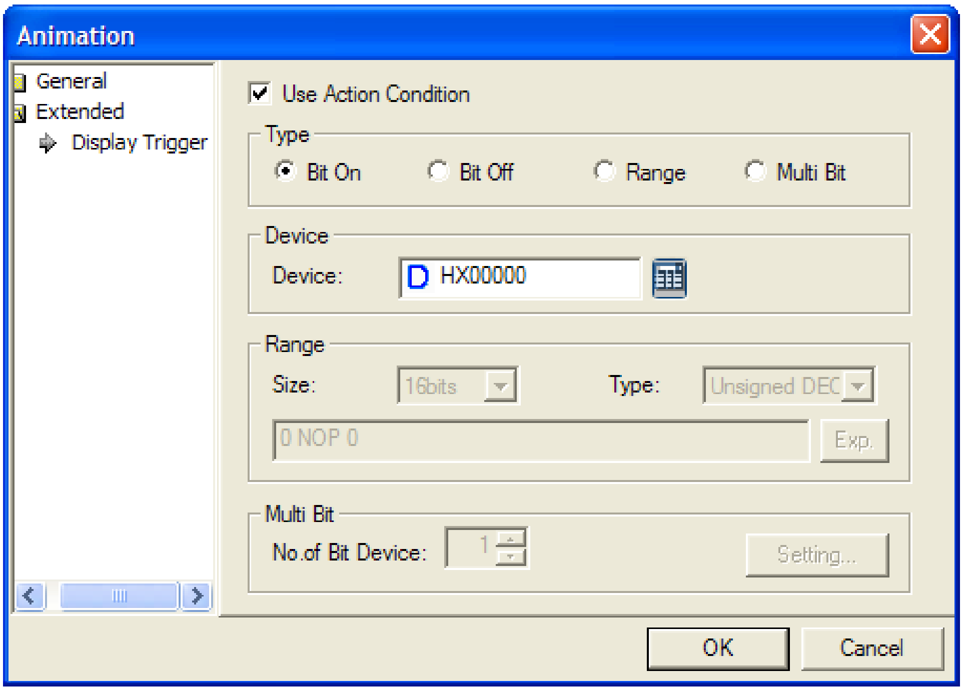
<table>
<tr><td>Speed (f)</td><td>Sets operation speed of animation. Speed options are as follows.
<table>
<tr><th>Speed</th><th>Detail</th></tr>
<tr><td>Slow</td><td>400ms</td></tr>
<tr><td>Normal</td><td>250ms</td></tr>
<tr><td>Fast</td><td>100ms</td></tr>
</table>
</td></tr>
<tr><td>Description(g)</td><td>Enters description in the relevant object.</td></tr>
</table>

Note

In XP30-BTA (BTE) of the XGT Panel series, you can only choose GIF in black and white.

(2) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Animation
General
Extended
Display Trigger
Exp.
Setting...
OK
Cancel

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.8 Graph Object

17.8.1 Overview

This performs the function of expressing device values in various graphs.

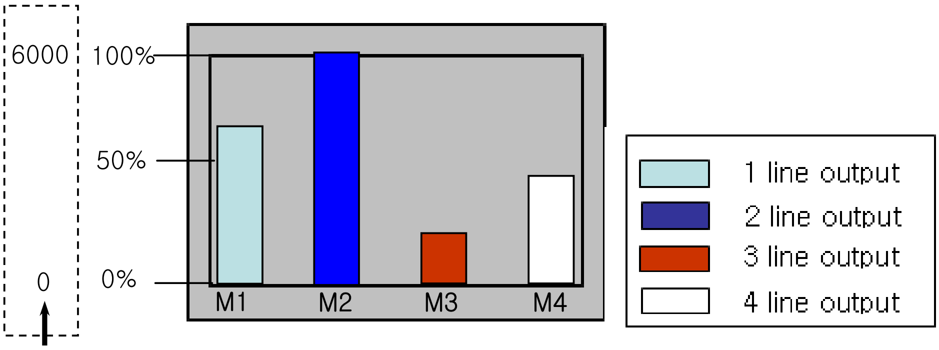
17.8.2 Types of Graph Objects

Type	Description
Bar Graph	Indicates the set word device values from the datum within the range of the minimum and maximum in bars.
Pie Graph	Adds the selected device values and indicates the percentage of each device in the form of a pie.
Meter Graph	Indicates the set word device values in the form of pointer in a circular gauge.
Closed Graph	Indicates word device values by filling certain Range of a graph according to the percentage within the range of the minimum and maximum.
Trend Graph	Collects consecutively set word device values, puts them in dots on the screen and then connect them in a straight column.
Logging Trend Graph	When a certain time or conditions are fulfilled, it logs the device value and displays them to a screen with dots that are linked in a line. (It displays each device value for one established logging group among generated loggings)
Logging Scatter Graph	When a certain time or conditions are fulfilled, it logs the device value and for one logging, displays continuous device data values with linking a dot or a line. (It displays continuous device value for several logging groups among generated loggings)
Real-time Scatter Graph	After collecting continuous word device data values as many as the number of established devices, it displays the data value with linking a dot or a line.

17.8.3 Bar Graph Settings

Example) You can use the four bar graphs to indicate the trend of the output of each column as follows.

Output (Each graph indicates the device value)



Maximum/minimum specified by the user

[Method]

(a) Create a bar graph in the window.

(b) Set the device address to refer to in the bar graph [Basic]-[Device].

(c) Fix a value by using the fixed or device value in the bar graph [Basic]-[Upper/Lower Value].

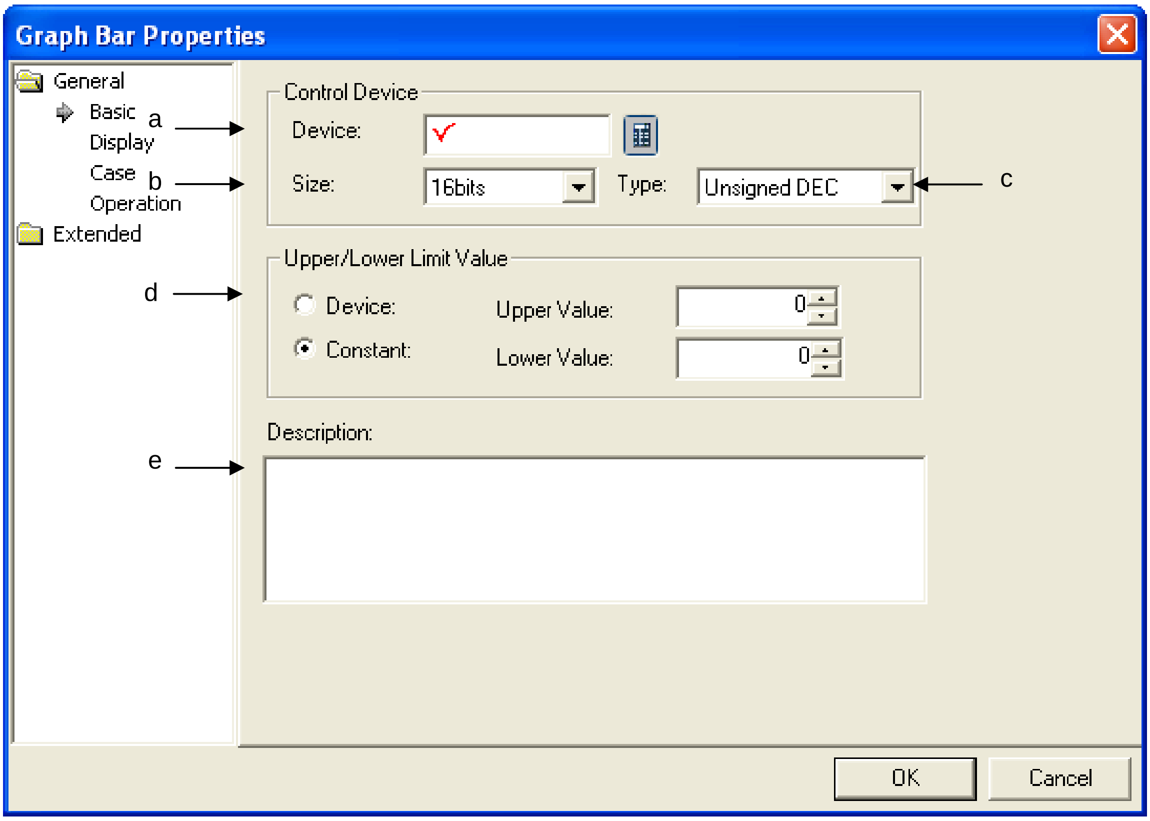
(The percentage taken up in the bar is calculated by (reference device value – Lower Value)/(Upper Value – Lower Value) * 100.)

In the example above, say, the user has set the maximum as 6000 and minimum as 0 and the object device value is 2000, it is indicated at 20%.

Set the graph area colors, pattern color and scale of the bar graphs in [Display] of the bar graphs.

(d) Edit the three bar graphs in the method shown above.

(1) Basic


Graph Bar Properties
General
Basic
Display
Case
Operation
Extended
a
b
c
d
e
Control Device
Device:
Size:
16bits
Type:
Unsigned DEC
Upper/Lower Limit Value
○ Device:
● Constant:
Upper Value:
0
Lower Value:
0
Description:
OK
Cancel

Items	Settings
Device(a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Size(b)	Sets the data size of the device (16 bit, 32 bit).
Type (c)	Sets the data form of the device (signed decimal, unsigned decimal, BCD).
Upper/Lower Value(d)	Sets the maximum and minimum of the data to display. You can set the maximum and minimum either by selecting them by the device or using the constant. (see table below) The percentage taken up in the bar is calculated by (reference device value – minimum)/(maximum – minimum) * 100.)
Description(e)	Enters description in the relevant object.

Type	Description
Device	Sets the specified device value as the Upper and Lower Value.
Constant	Sets the specified fixed value as the Upper and Lower Value.

Note

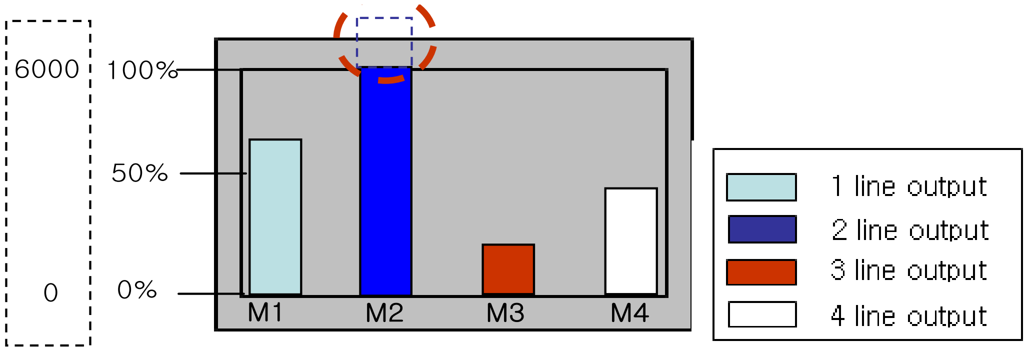
(1) If the data size and type of the device change, the conditional sentences are all deleted.

(2) If you have entered the maximum and minimum as a fixed constant, it cannot be beyond the range of the constant available according to the size and type of the reference device.

Device size	Device form	Minimum	Maximum
16bit	Signed decimal	-32768	32767
16bit	Unsigned decimal	0	65535
16bit	BCD	0	9999
32bit	Signed decimal	-2147483648	2147483647
32bit	Unsigned decimal	0	4294967295
32bit	BCD	0	99999999

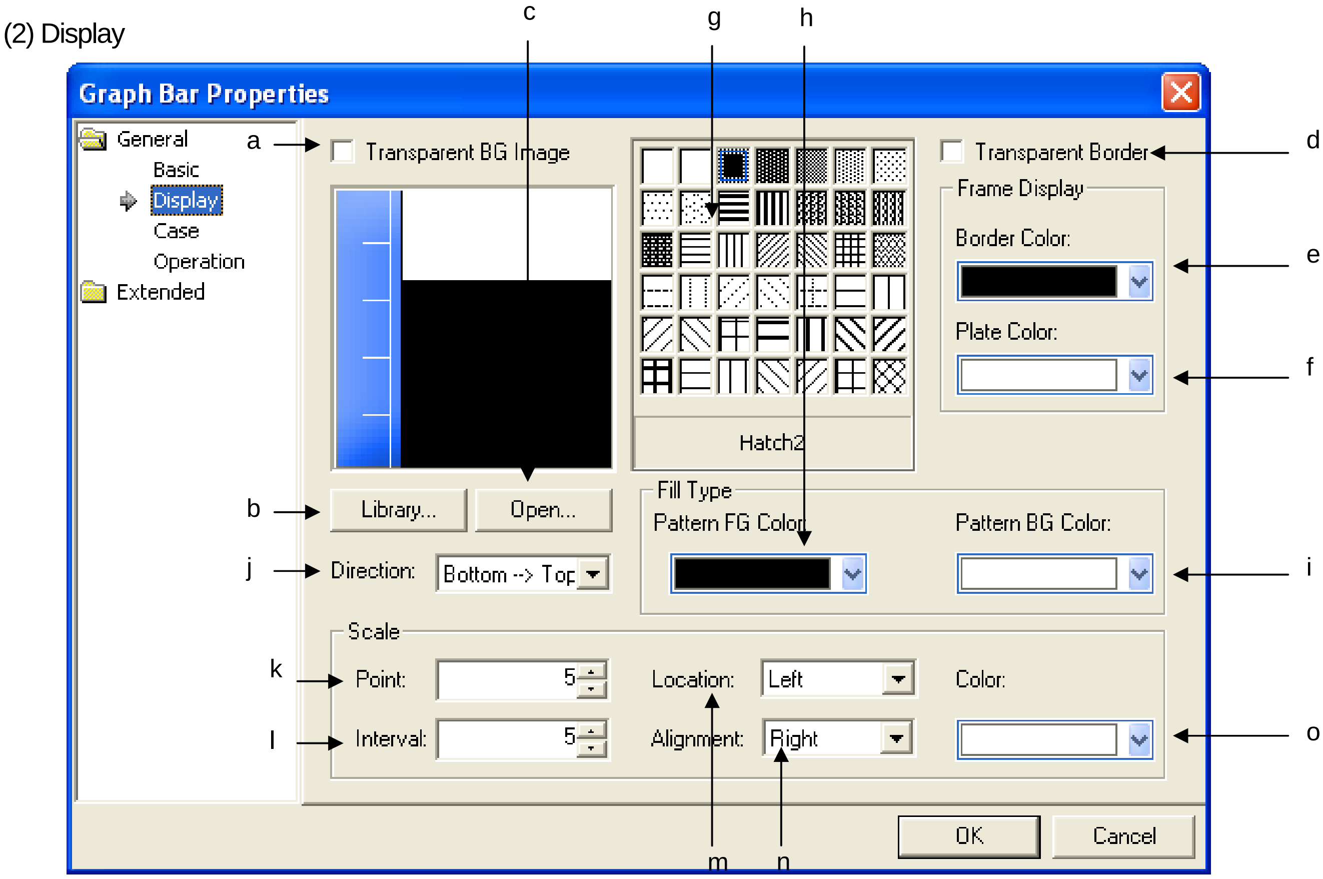
(3) If the device values to be monitored exceed the Upper and Lower Value, they are displayed in the Upper and Lower Value on the graph.

Output (Each graph indicates the device value)



Upper/Lower Value specified by the user

(2) Display


Graph Bar Properties
General
Basic
Display
Case
Operation
Extended
Library...
Open...
Hatch2
OK
Cancel
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o

☐ Transparent BG Image

☐ Transparent Border

Frame Display

Border Color:

Plate Color:

Fill Type

Pattern FG Color

Pattern BG Color:

Direction: Bottom --> Top

Scale

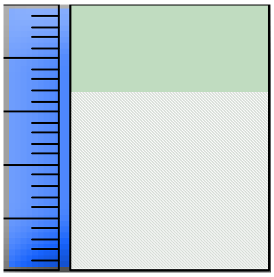
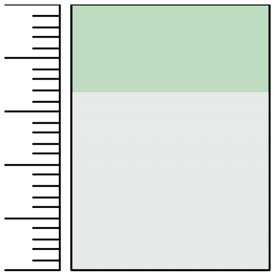
Point: 5

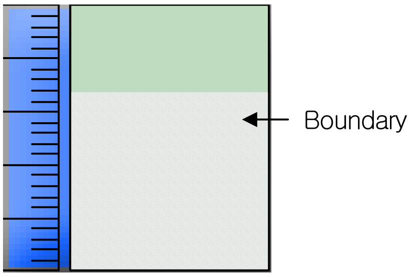
Interval: 5

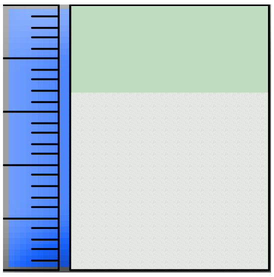
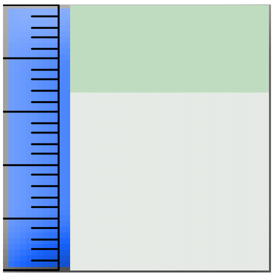
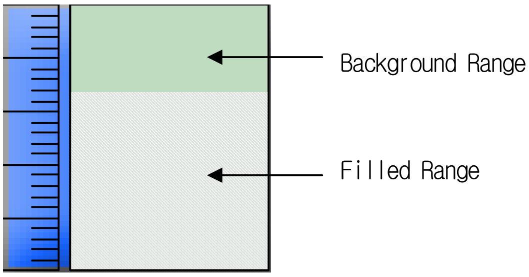
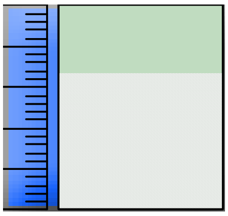
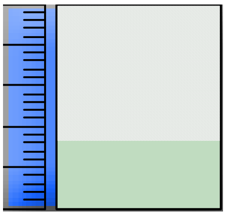
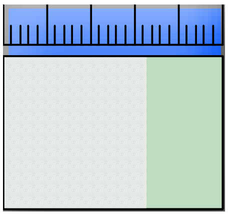
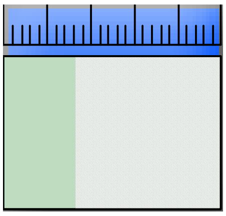
Location: Left

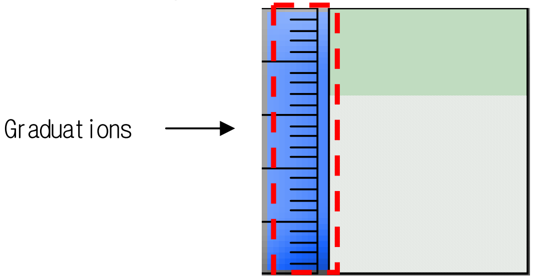
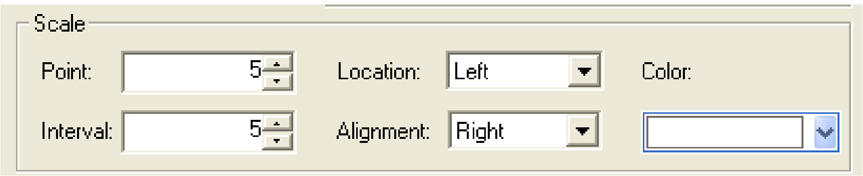
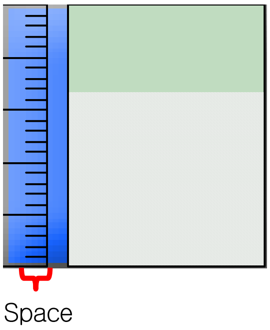
Alignment: Right

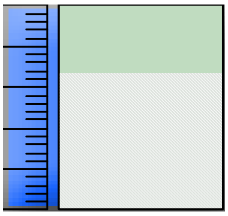
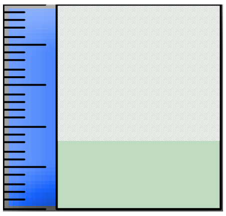
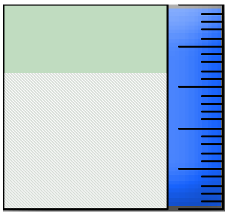
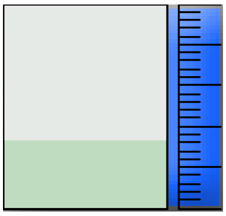
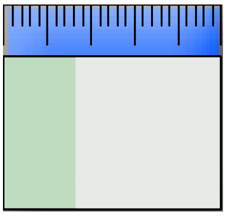
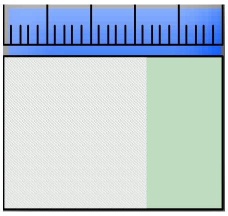
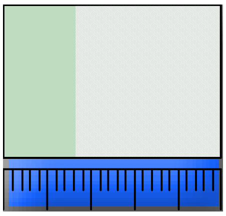
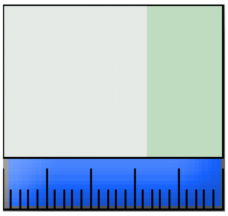
Color:

Items	Settings
Transparent BG Image (a)	This is selected when you do not use the background image of the bar graph  Background image used  Background image not used
Library (b)	Select the image to display as the graphic background in the system graphic library or user graphic library.
Open (c)	The image to display as the graphic background can be directly selected in image file. **(☞ See Open of Lamp Display Condition)**

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td colspan="2">Transparent Border (d)</td><td>This is set when you do not use the outcolumn of the bar graph.
The outcolumn refers to the following.


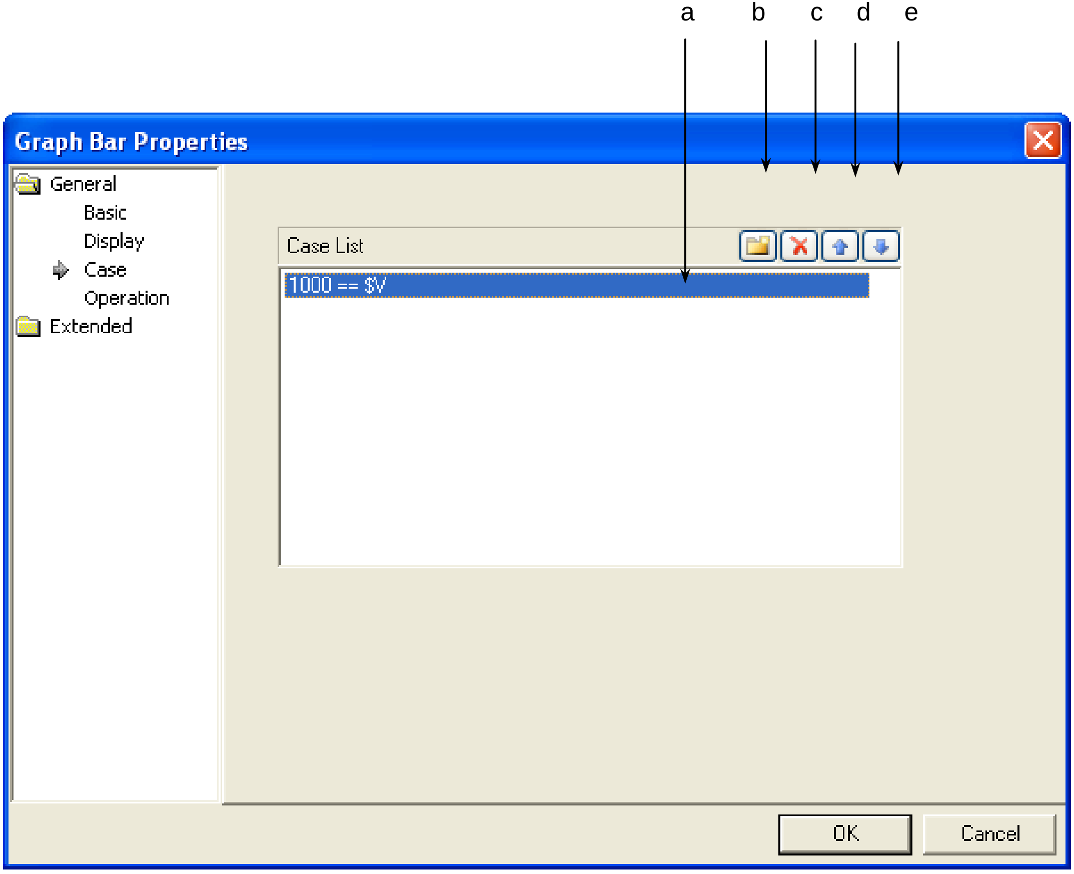

Boundary used

Boundary not used</td></tr>
<tr><td colspan="2">Border color (e)</td><td>Sets the boundary color.
(☞ See No Boundary(boundary in the example above: black)</td></tr>
<tr><td colspan="2">Plate color (f)</td><td>Sets the background color.
The background Range refers to the part other than the filled Range in the bar graph.

 </td></tr>
<tr><td rowspan="3">Pattern</td><td>Type (g)</td><td>Selects the pattern of the filled Range of the graph.
(☞ See Background Color(f))</td></tr>
<tr><td>Foreground Color (h)</td><td>Sets the foreground color of the pattern.</td></tr>
<tr><td>Background Color (i)</td><td>Sets the background color of the pattern.</td></tr>
<tr><td colspan="2">Direction (j)</td><td>Sets the direction of filling the bar graph.
(up->down, down->up, left->right, right->left)

down->up

up->down

left->right

right->left</td></tr>
</table>

Items		Settings
Scale	Point (k)	Sets the number of scales. Scales refer to the following.  The number of scales can range between 0 and 255. Scales are longer than the others at every five levels and the size of the scales differ according to the size of the graph. If the number of scales is 0, no setting is available.  Scale Point: 5 Location: Left Color: Interval: 5 Alignment: Right
	Interval (l)	Sets the space between the scales and the graph. The space can range between 0 and 10. 

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td></td><td>Location (m)</td><td>Sets the place of scales.
The relationship between the scales position and justification is as follows according to the filling direction.
<table>
<tr><th>Filling Direction</th><th colspan="3">Scales Direction</th></tr>
<tr><td rowspan="4">Top -> Bottom
Bottom -> Top</td><td>Position</td><td colspan="2">Justification</td></tr>
<tr><td rowspan="2">Left</td><td>Right</td><td>Left</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Right</td><td></td><td></td></tr>
<tr><td rowspan="3">Right -> Left
Left -> Right</td><td rowspan="2">Top</td><td>Top</td><td>Bottom</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Bottom</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td>Alignment(n)</td><td>Sets in which of the right, left, top and bottom of the ruler the scales should be.
If the scales are on the left or right, they can be justified to the left or right only.
If the scales are at the top or bottom, they can be justified to the top or bottom only.
(☞ See Position(m))</td></tr>
<tr><td></td><td>Color(o)</td><td>Sets the color of scales.</td></tr>
</table>

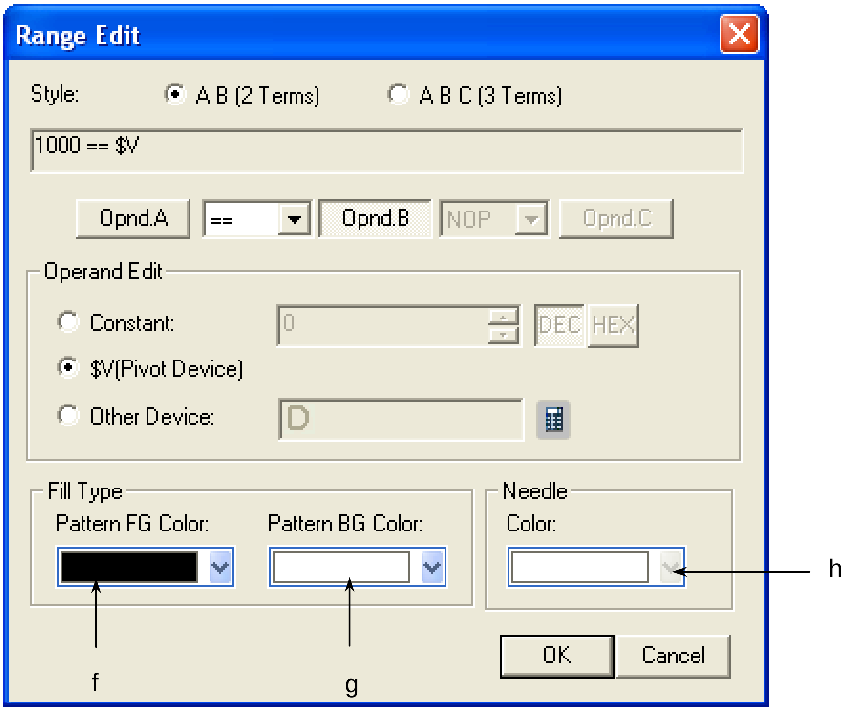
(3) Case

This is setting conditions when the color is changed according to the value.


a
b
c
d
e
Graph Bar Properties
General
Basic
Display
Case
Operation
Extended
OK
Cancel

Case List

1000 == $V


Range Edit
Opnd.A
Opnd.B
Opnd.C
DEC
HEX
OK
Cancel
f
g
h

Style: ● A B (2 Terms) ○ A B C (3 Terms)

1000 == $V

Opnd.A == Opnd.B NOP Opnd.C

Operand Edit

○ Constant: 0

● $V(Pivot Device)

○ Other Device: D

Fill Type

Pattern FG Color: ■

Pattern BG Color: □

Needle

Color: □

[The window defining the device Range of the graph]

Items	Settings
Conditions (a)	Defines the condition of a bar graph.
Create (b)	(☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete (c)	Deletes the conditional sentences.
A column up (d)	Shifts up the priority of the conditional sentences being edited.
A column down (e)	Shifts down the priority of the conditional sentences being edited.
Pattern FG color (f)	Sets the foreground color of the graph displayed when the range condition of the set word device value is met.
Pattern BG color (g)	Sets the background color of the graph displayed when the range condition of the set word device value is met.
Needle color (h)	Sets the pointer color of the graph displayed when the Range condition of the set word device value is met. In case of a bar graph, there is no pointer, so this color cannot be selected.

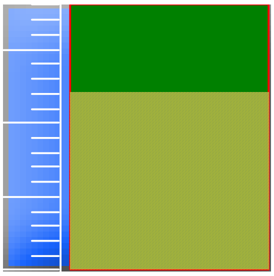
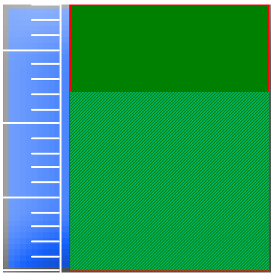
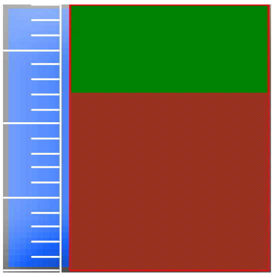
[Example of Display Condition]

$V refers to the device value to be monitored.

When the display condition is as follows:

	Conditional Expression	Pattern FG Color	Pattern BG Color	Needle color
Condition 1	200 <= $V < 300	Blue	Yellow	Not Used
Condition 2	$V < 1000	Sky-blue	Green	Not Used
General	N/A	Green	Red	Not Used

The changes of the indications of the bar graph in XGT Panel are as follows according to the changes of the device values to be monitored.

State	Result
Device value to be monitored = -200	Not displayed
Device value to be monitored = 199	
Device value to be monitored = 250	
Device value to be monitored = 870	

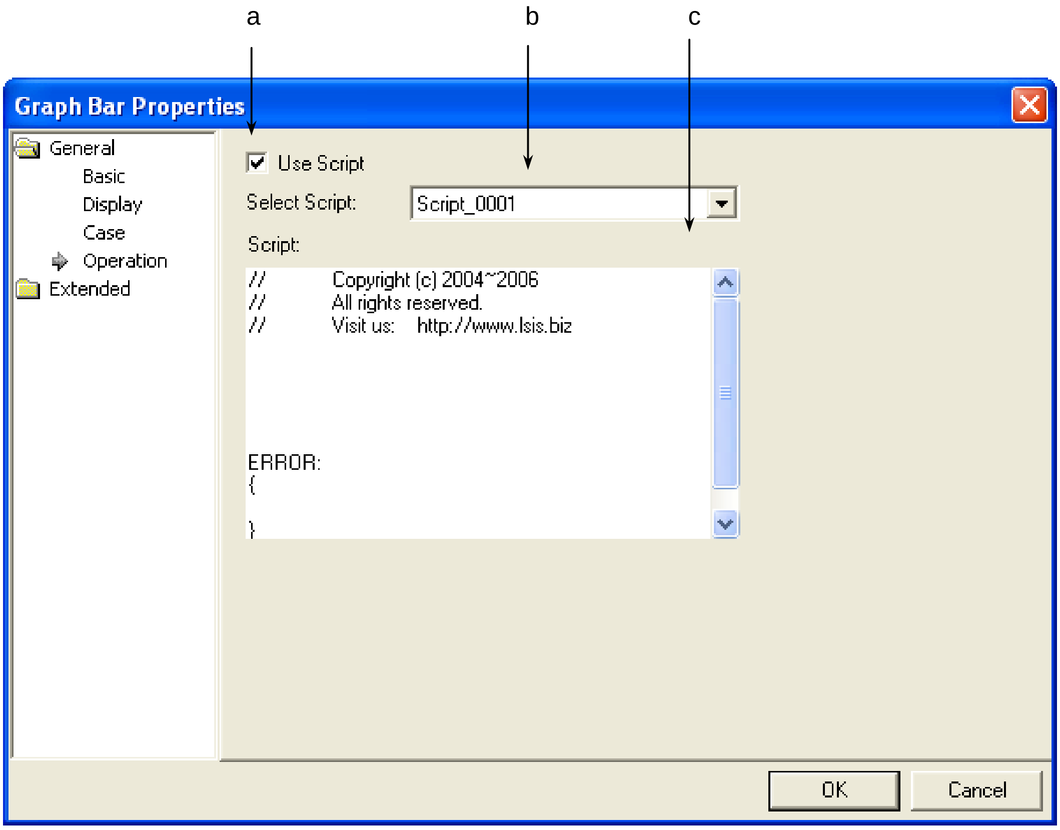
Note

(1) If the data size and form of the device change, the conditional sentences are all deleted.

(2) If you have entered the maximum and minimum as a fixed constant, it cannot be beyond the range of the constant available according to the size and form of the reference device.

Device size	Device form	Minimum	Maximum
16bit	Signed decimal	-32768	32767
16bit	Unsigned decimal	0	65535
16bit	BCD	0	9999
32bit	Signed decimal	-2147483648	2147483647
32bit	Unsigned decimal	0	4294967295
32bit	BCD	0	99999999

(4) Operation


a
b
c
Graph Bar Properties
General
Basic
Display
Case
Operation
Extended
OK
Cancel

☑ Use Script

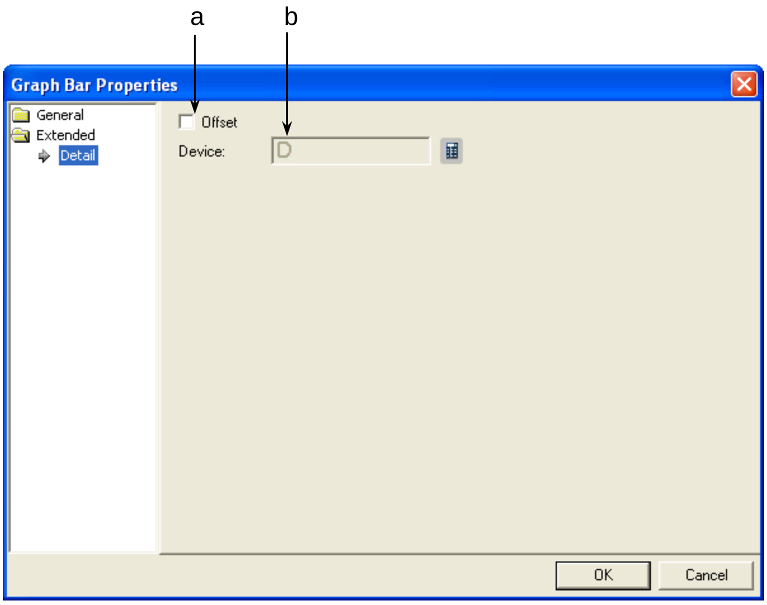
Select Script: Script_0001

Script:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz



ERROR:
{

}
```

Items	Settings
Use script(a)	Select this when you want to use script.
Select script(b)	The list of all the scripts inserted and edited in the project window is displayed in the combo box. Select the script for the word lamp to operate in the combo box.
Script contents(c)	The contents of the selected script are displayed.

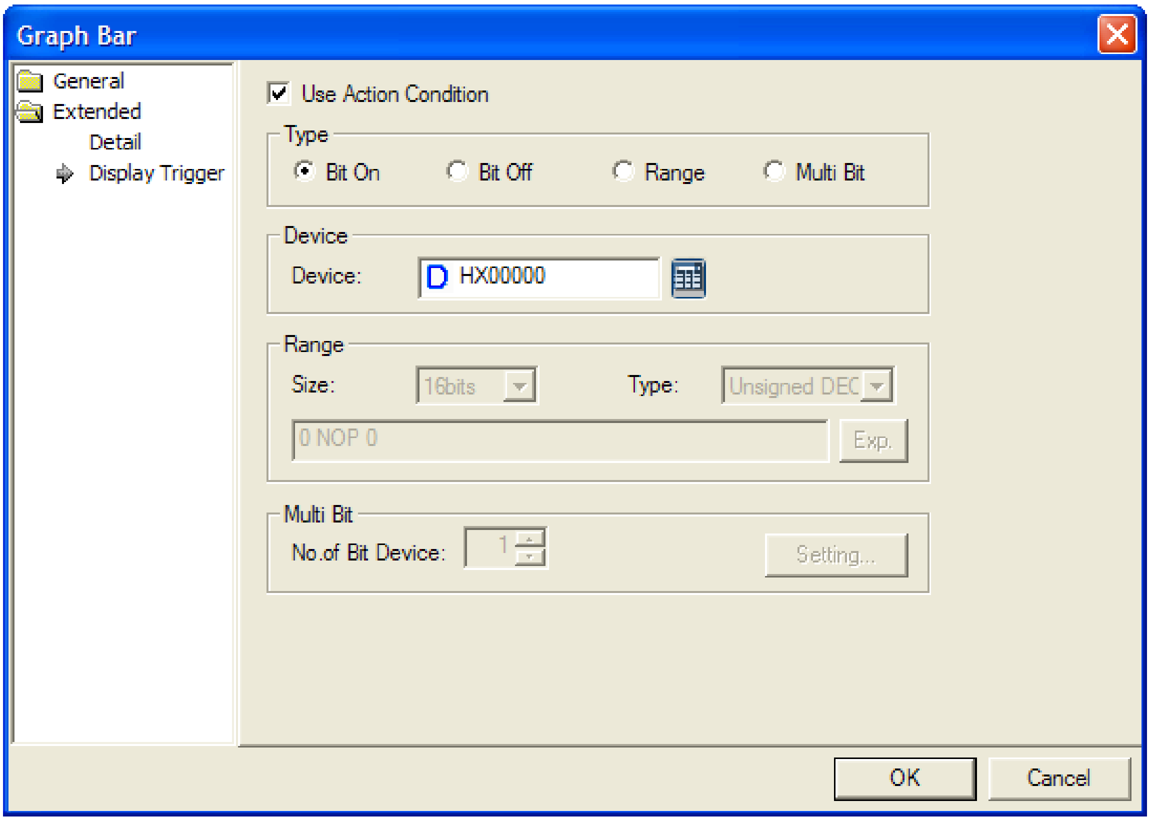
(5) Detail


a
b
Graph Bar Properties
General
Extended
Detail
Offset
Device:
D
OK
Cancel

Items	Settings
Offset(a)	Set when you use the offset function.
Device(b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Graph Bar

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: D HX00000

Range — Size: 16bits Type: Unsigned DEC

0 NOP 0

Multi Bit — No.of Bit Device: 1

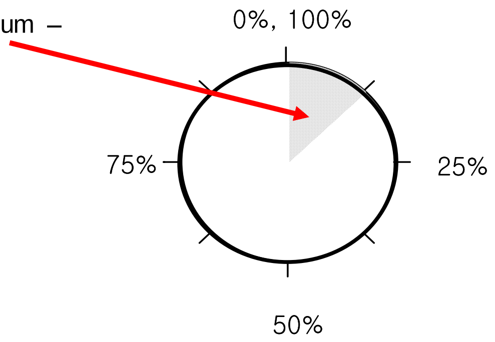
General
Extended
Detail
Display Trigger
Exp.
Setting...
OK
Cancel

(☞ refer to 16.9 display trigger.)

17.8.4 Pie Graph Settings

A pie graph indicates the percentage taken up by each device in a pie.

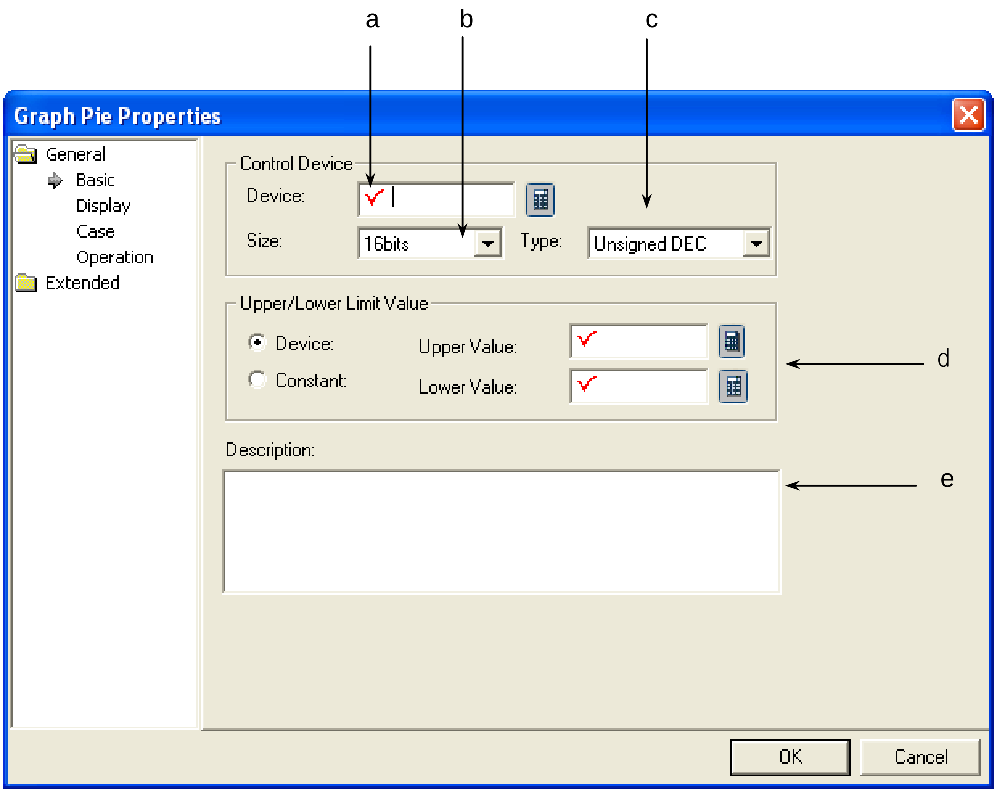
Production (graph is of the device value)



(reference device value – minimum)/(maximum – minimum) * 100

Max/Min Value designated by the user	0			6000
Reference Device Value	0	1500	3000	6000
Divided value indicated on the meter graph	0%	25%	50%	100%

(1) Basic


a
b
c
d
e
Graph Pie Properties
General
Basic
Display
Case
Operation
Extended
Control Device
Upper/Lower Limit Value
Description:
OK
Cancel

Device:

Size: 16bits

Type: Unsigned DEC

● Device:

○ Constant:

Upper Value:

Lower Value:

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Device (a)</td><td>Sets the device to be referred to in the relevant object.
You can set it by using the device button or directly enter it on the keyboard.</td></tr>
<tr><td>Size (b)</td><td>Sets the data size of the device (16 bit, 32 bit).</td></tr>
<tr><td>Type (c)</td><td>Sets the data form of the device (signed decimal, unsigned decimal, BCD).</td></tr>
<tr><td>Upper/Lower Value (d)</td><td>Sets the maximum and minimum of the data to display.
You can set the maximum and minimum either by selecting them by the device or using the constant.
<table>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Device</td><td>Sets the specified device value as the maximum and minimum.</td></tr>
<tr><td>constant</td><td>Sets the specified fixed value as the maximum and minimum.</td></tr>
</table>
The percentage taken up in the pie graph is calculated by (reference device value – minimum)/(maximum – minimum) * 100.</td></tr>
<tr><td>Description (e)</td><td>Enters description in the relevant object.</td></tr>
</table>

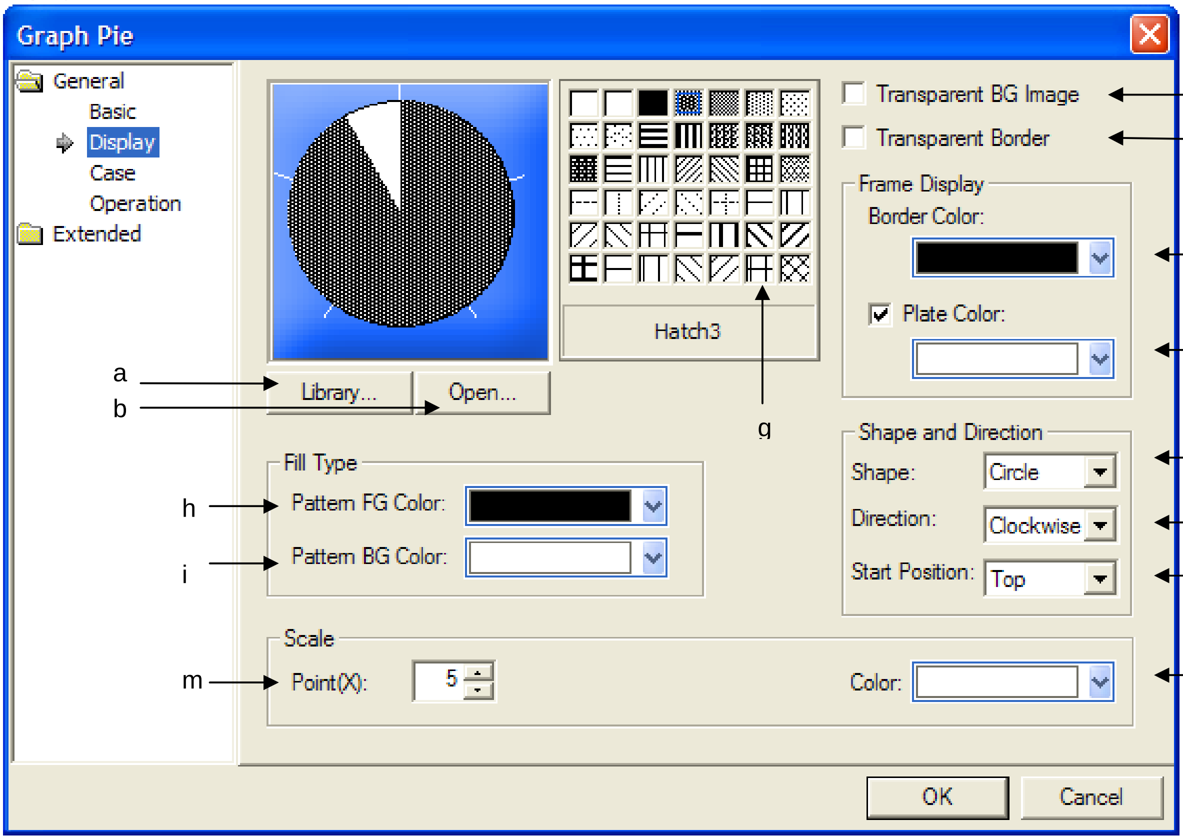
Note

(1) If the data size and form of the device change, the conditional sentences are all deleted
(2) If you have entered the maximum and minimum as a fixed constant, it cannot be beyond the range of the constant available according to the size and form of the reference device.

Device size	Device form	Minimum	Maximum
16bit	Signed decimal	-32768	32767
16bit	Unsigned decimal	0	65535
16bit	BCD	0	9999
32bit	Signed decimal	-2147483648	2147483647
32bit	Unsigned decimal	0	4294967295
32bit	BCD	0	99999999

If the device values to be monitored exceed the maximum and minimum, they are displayed in the maximum and minimum on the graph.

(2) Display


Graph Pie
General
Basic
Display
Case
Operation
Extended
Library...
Open...
Transparent BG Image
Transparent Border
Frame Display
Border Color:
Plate Color:
Fill Type
Pattern FG Color:
Pattern BG Color:
Shape and Direction
Shape:
Direction:
Start Position:
Scale
Point(X):
Color:
OK
Cancel
a
b
c
d
e
f
g
h
i
i
k
l
m
n

Hatch3

☐ Transparent BG Image

☐ Transparent Border

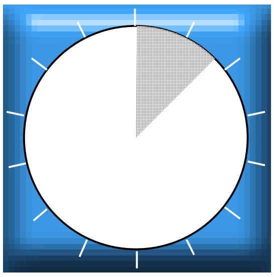
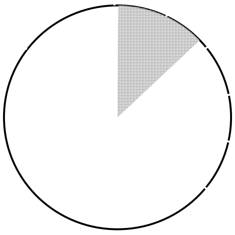
☑ Plate Color:

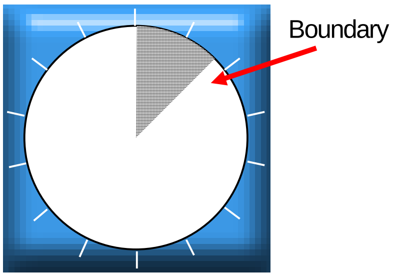
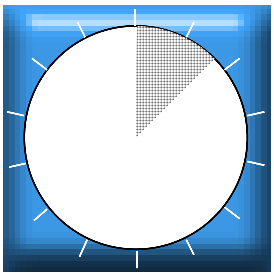
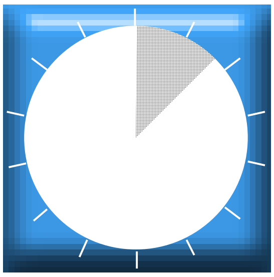
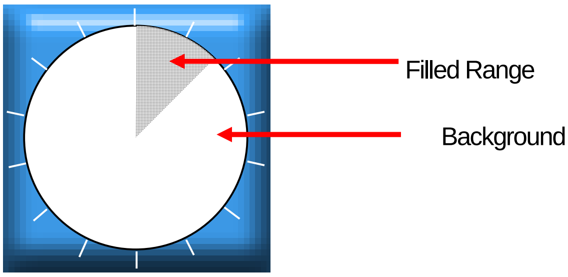
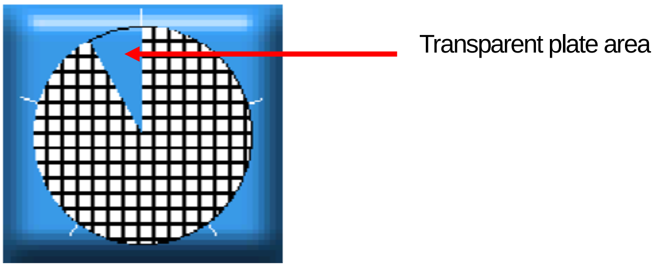
Shape: Circle

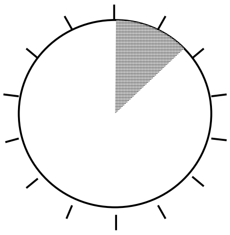
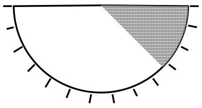
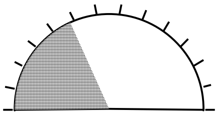
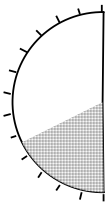
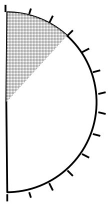
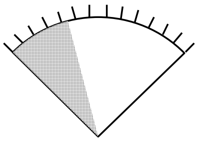
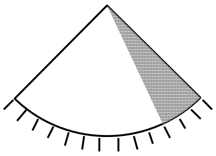
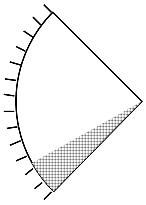
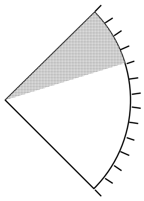
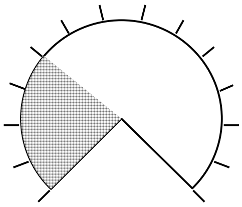
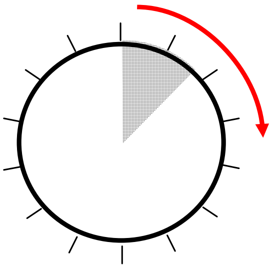
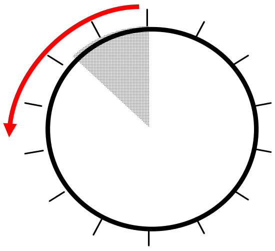
Direction: Clockwise

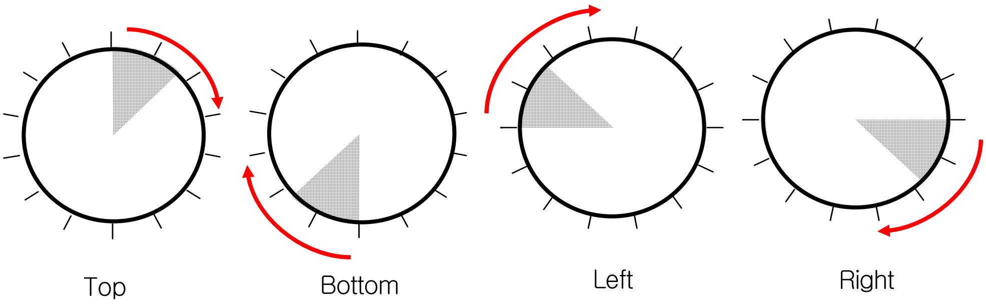
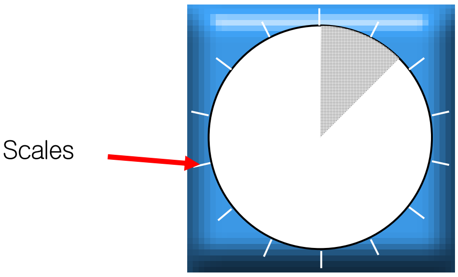
Start Position: Top

Point(X): 5

Items	Settings
Library (a)	Select the image to display as the graphic background in the system graphic library or user graphic library.
Open (b)	The image to display as the graphic background can be directly selected in the system graphic library or user graphic library. **(☞ See Open of Lamp Display Condition)**
Transparent BG Image (c)	This is selected when you do not use the background image of the pie graph.  Background image used  Background image not used
Transparent Border (d)	This is set when you do not use the outcolumn of the pie graph.

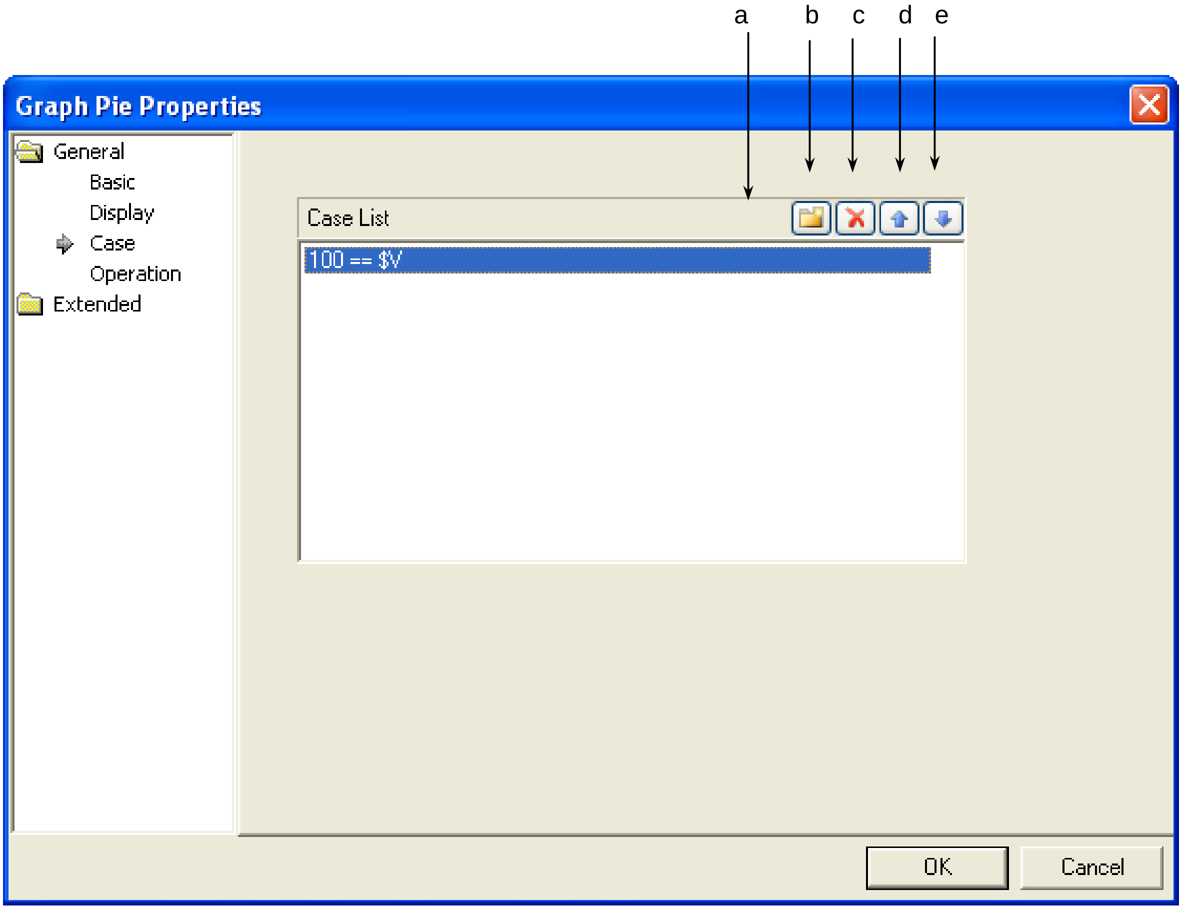
Items		Settings
		  Boundary used  Boundary not used
Border color (e)		Sets the boundary color. **(☞ See No Boundary)**
Plate color (f)		Sets the background color. The background color in the meter graph below is white.  At this time, in case you don't set Plate color (☑ Plate Color:), plate area is displayed transparently. 
Pattern	Type (g)	Selects the pattern of the filled Range of the graph. **(☞ See Background Color(f))**
	Foreground Color (h)	Sets the foreground color of the pattern.
	Background Color (i)	Sets the background color of the pattern.

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Shape (j)</td><td>Sets the form of the pie.
<table>
<tr><th>Form</th><th colspan="4">Type</th></tr>
<tr><td>Circle</td><td colspan="4"></td></tr>
<tr><td rowspan="2">Semi-circle</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Lower Cemi-circle</td><td>Upper Cemi-circle</td><td>Left Cemi-circle</td><td>Right Cemi-circle</td></tr>
<tr><td rowspan="4">Sector 3/4</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Upper Sector</td><td>Lower Sector</td><td>Left Sector</td><td>Right Sector</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="4">3/4 Sector</td></tr>
</table></td></tr>
<tr><td>Direction (k)</td><td>Sets the direction of filling the pie graph.

Clockwise

Anti-clockwise</td></tr>
<tr><td>Start Position (l)</td><td>Sets the start position of the pointer when the pie takes the form of a circle. This can be set only when the pie takes the form of a circle.
If the pie graph is formed clockwise, the direction of the pointer is as follows according to the start position.</td></tr>
</table>

Items	Settings
	 Top Bottom Left Right
Scale Point (m)	Sets the number of scales of the pie graph. 
Scale Color (n)	Sets the color of scales of the pie graph.

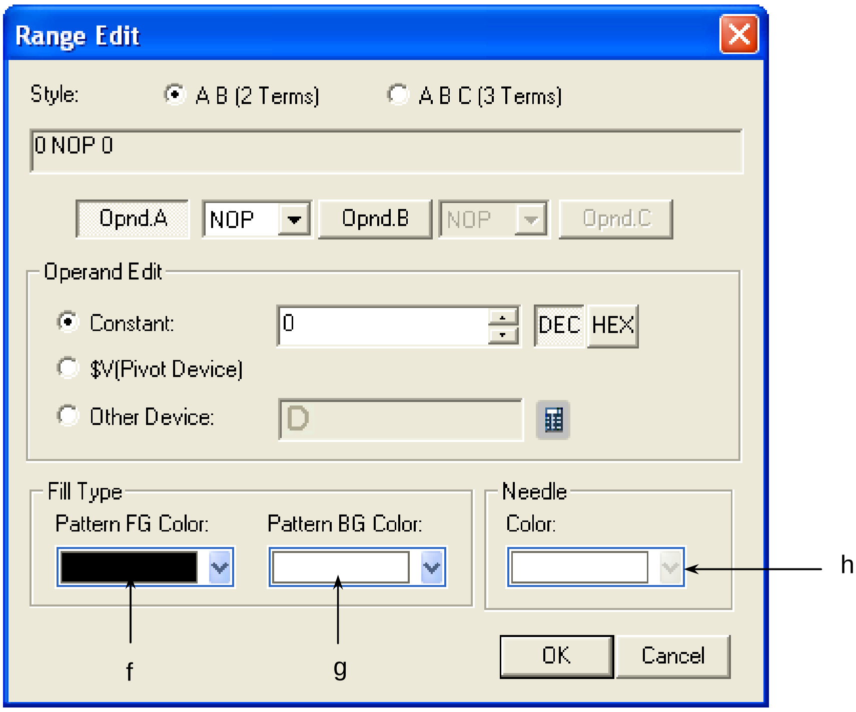
(3) Case

This is setting conditions when the color to fill the graph with is changed according to the value.



a
b
c
d
e
Graph Pie Properties
General
Basic
Display
Case
Operation
Extended
Case List
OK
Cancel

100 == $V



Style: ● A B (2 Terms) ○ A B C (3 Terms)

0 NOP 0

● Constant: 0

○ $V(Pivot Device)

○ Other Device: D

[The window defining the device Range of the graph]

Items	Settings
Conditions(a)	Defines the condition of a pie graph.
Create(b)	(☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete(c)	Deletes the conditional sentences.
A column up(d)	Shifts up the priority of the conditional sentences being edited.
A column down(e)	Shifts down the priority of the conditional sentences being edited.
Pattern foreground color(f)	Sets the foreground color of the graph displayed when the Range condition of the set word device value is met.
Pattern background color (g)	Sets the background color of the graph displayed when the Range condition of the set word device value is met.
Needle color(h)	Sets the pointer color of the graph displayed when the Range condition of the set word device value is met. In case of a pie graph, there is no pointer, so this color cannot be selected.

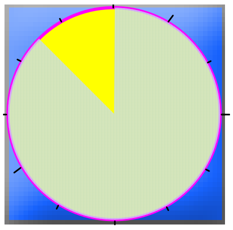
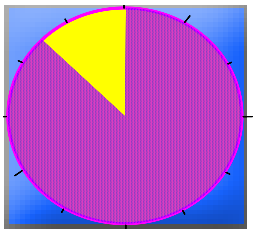
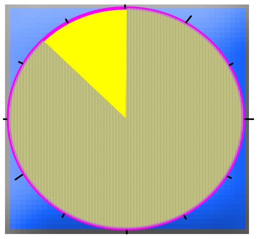
[Example of Display Condition]

$V refers to the device value to be monitored.

When the display condition is as follows

Classification	Conditional Expression	Pattern Foreground Color	Pattern Foreground Color	Pointer color
Condition 1	200 <= $V < 300	White	Sky-blue	Not Used
Condition 2	$V < 1000	Blue	Pink	Not Used
General	N/A	Black	White	Not Used

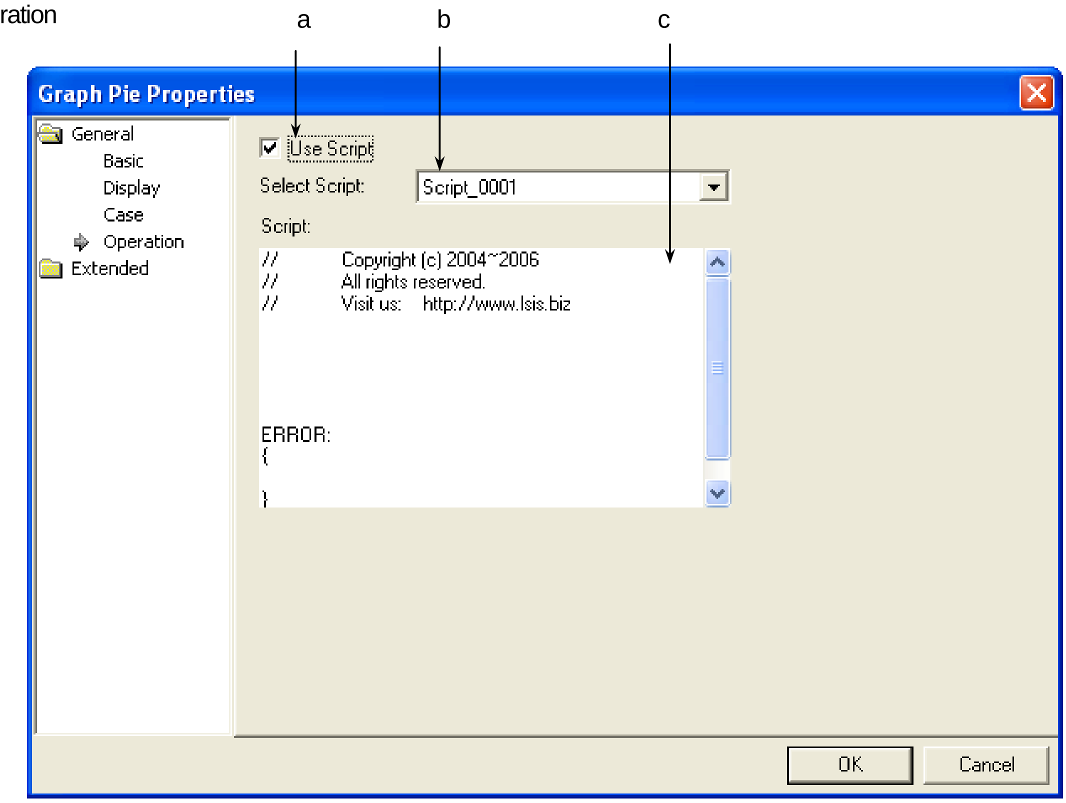
The changes of the indications of the pie graph in XGT Panel are as follows according to the changes of the device values to be monitored.

State	Result
Device value to be monitored = -200	Not displayed
Device value to be monitored = 199	
Device value to be monitored = 250	
Device value to be monitored = 870	

Note

(1) If the device value meets multiple conditional sentences, the display depends on the settings of the first met conditional sentence.
(2) If the example above, say, the device value to monitor = 250, it is displayed according to the settings of condition #1 although condition 1 and 2 are both met.

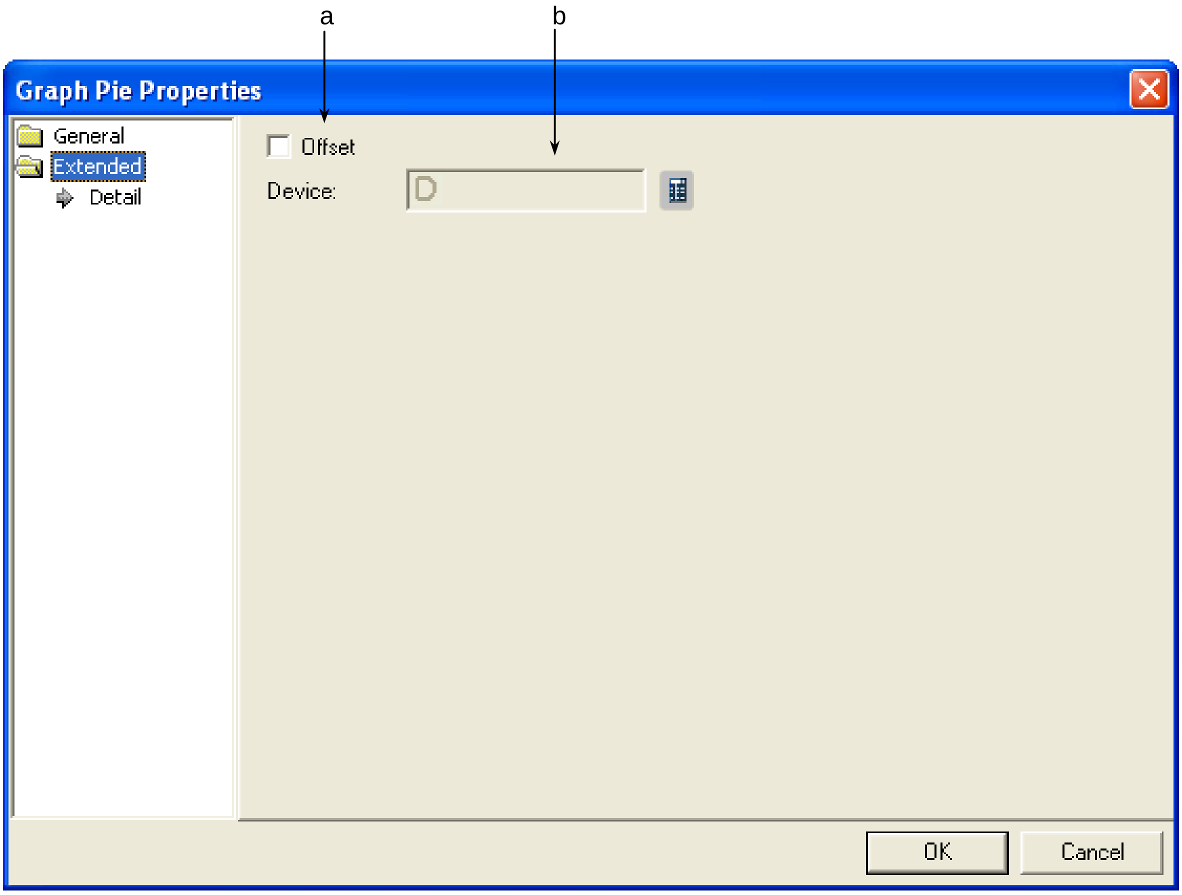
(4) Operation


a
b
c
Graph Pie Properties
General
Basic
Display
Case
Operation
Extended
☑ Use Script
Select Script:
Script_0001
Script:
OK
Cancel

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz



ERROR:
{

}
```

Items	Settings
Use script (a)	Selects this when you want to use script.
Select script (b)	Selects the list of devices which you have made.
Script contents (c)	The contents of the selected script are displayed.

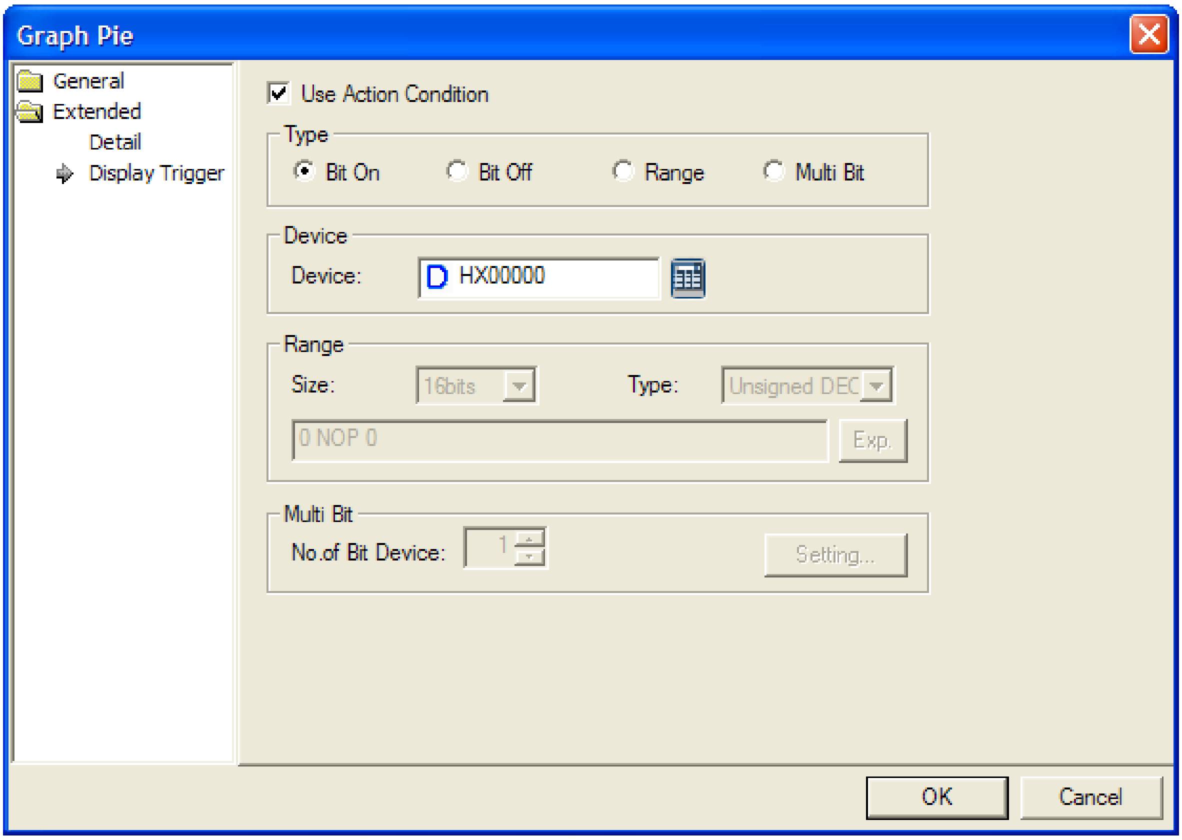
(5) Detail


a
b
Graph Pie Properties
General
Extended
Detail
☐ Offset
Device:
D
OK
Cancel

Items	Settings
Offset (a)	Set when you use the offset function.
Device (b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Graph Pie
General
Extended
Detail
Display Trigger
OK
Cancel

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Exp.

Multi Bit

No.of Bit Device: 1

Setting...

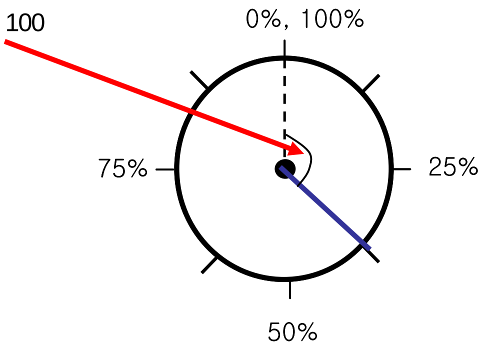
(☞ refer to 16.9 display trigger.)

17.8.5 Meter Graph Settings

A meter graph indicates the set word device value in the form of a pointer in a circular gauge.

Production (graph is of the device value)

(reference device value – minimum)/(maximum – minimum) * 100



Max/Min Value designated by the user	0			6000
Reference Device Value	0	1500	3000	6000
Divided value indicated on the meter graph	0%	25%	50%	100%

[Method]

(a) Create a meter graph in the window.

(b) Set the device address to refer to in the meter graph [Basic]-[Device].

(c) Fix a value by using the fixed or device value in the meter graph [Basic]-[Upper/Lower Value].

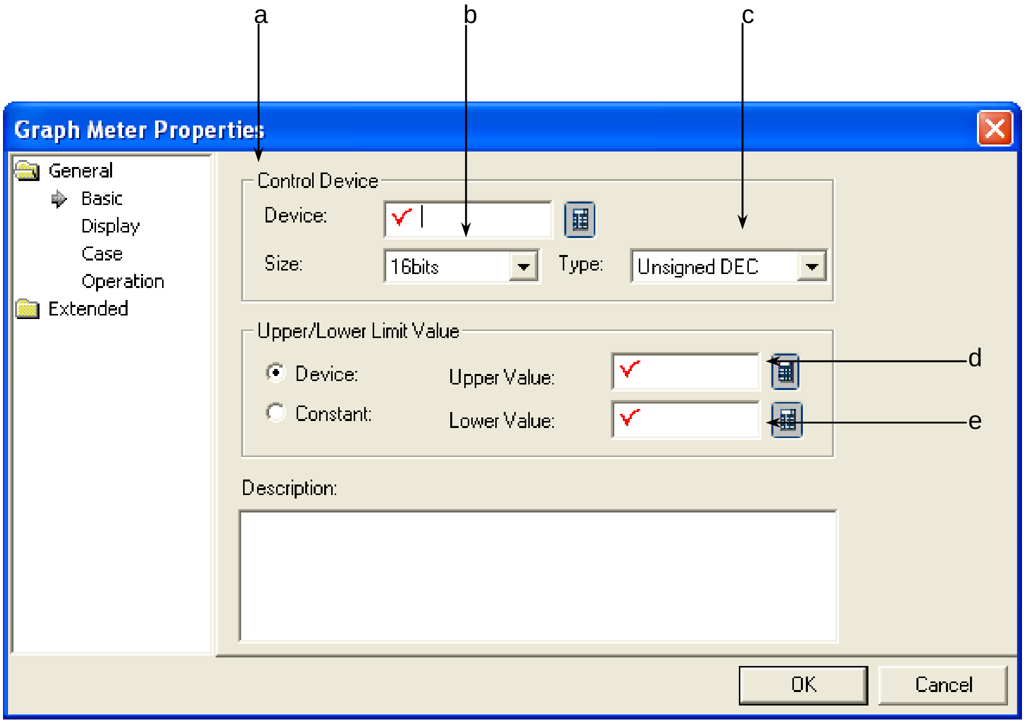
(The percentage taken up in the bar is calculated by (reference device value – minimum)/(maximum – minimum) * 100.)
In the example above, say, the user has set the maximum as 6000 and minimum as 0 and the object device value as 2000, it is indicated as 20%.

(d) Set the graph area colors, pattern color and scale of the meter graphs in [Display] of the meter graphs.

☞ **See Display Items.**

(e) Edit the three graphs in the method shown above.

(1) Basic


a
b
c
d
e
Graph Meter Properties
General
Basic
Display
Case
Operation
Extended
Control Device
Upper/Lower Limit Value
Description:
OK
Cancel

Device:

Size: 16bits

Type: Unsigned DEC

● Device:

○ Constant:

Upper Value:

Lower Value:

Items	Settings
Device (a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Size (b)	Sets the data size of the device(16 bit, 32 bit).
Type (c)	Sets the data form of the device(signed decimal, unsigned decimal, BCD).
Upper/Lower (d)	Sets the maximum and minimum of the data to display. You can set the maximum and minimum either by selecting them by the device or using the constant. <table><tr><th>Type</th><th>Description</th></tr><tr><td>Device</td><td>Sets the specified device value as the maximum and minimum.</td></tr><tr><td>Constant</td><td>Sets the specified fixed value as the maximum and minimum.</td></tr></table> The percentage taken up in the meter graph is calculated by (reference device value – minimum)/(maximum – minimum) * 100.)
Description (e)	Enters description in the relevant object.

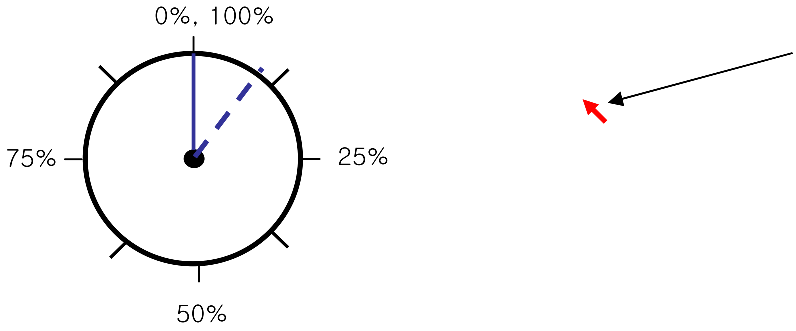
Note

(1) If the data size and form of the device change, the conditional sentences are all deleted.

(2) If you have entered the maximum and minimum as a fixed constant, it cannot be beyond the range of the constant available according to the size and form of the reference device.

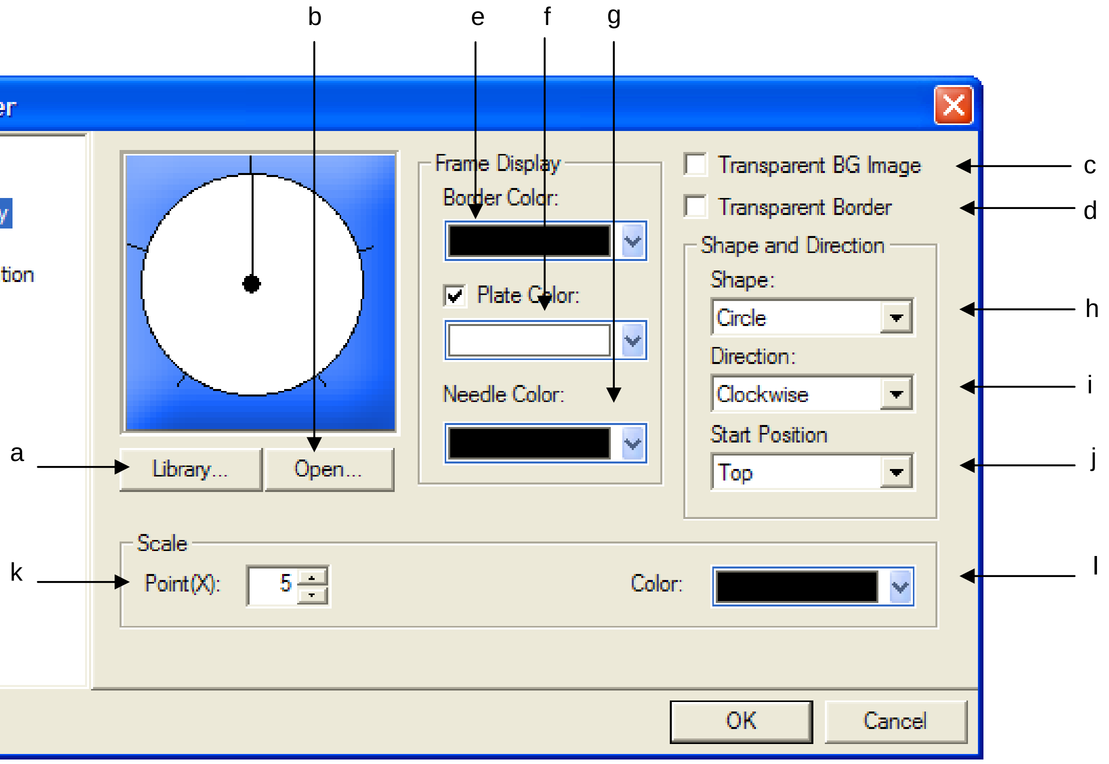
Device size	Device form	Minimum	Maximum
16bit	Signed decimal	-32768	32767
16bit	Unsigned decimal	0	65535
16bit	BCD	0	9999
32bit	Signed decimal	-2147483648	2147483647
32bit	Unsigned decimal	0	4294967295
32bit	BCD	0	99999999

- In case the device value to be monitored is larger than max value or less than min. value, it is displayed as max. value or min. value in the graph.



In case of exceeding max. value, displayed as max.value

(2) Display


b
e
f
g
c
d
h
i
j
a
k
l
Graph Meter
General
Basic
Display
Case
Operation
Extended
Library...
Open...
Scale
OK
Cancel

Frame Display

Border Color:

☑ Plate Color:

Needle Color:

☐ Transparent BG Image

☐ Transparent Border

Shape and Direction

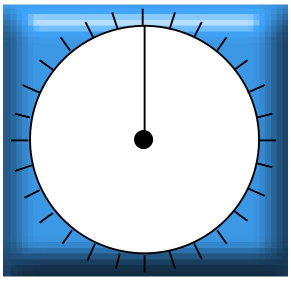
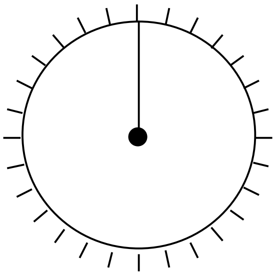
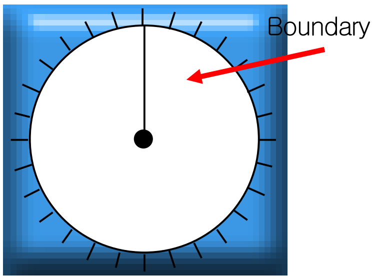
Shape: Circle

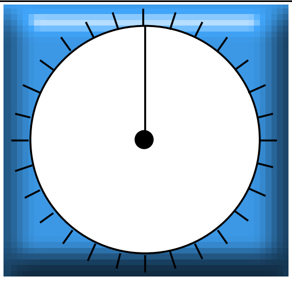
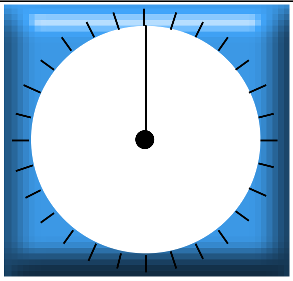
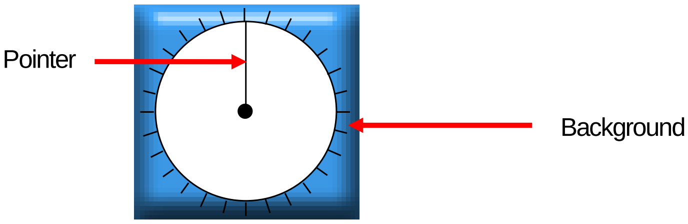
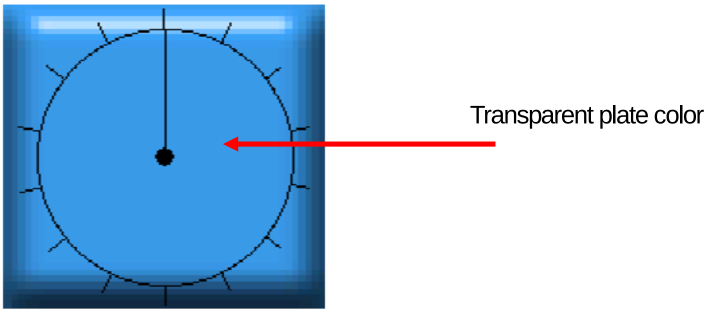
Direction: Clockwise

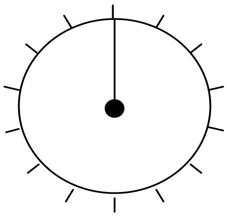
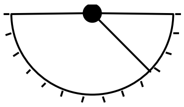
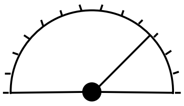
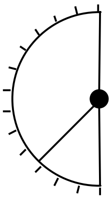
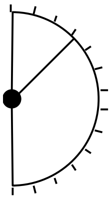
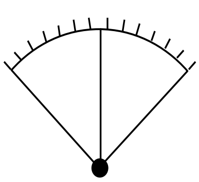
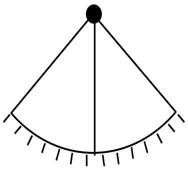
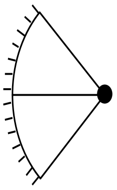
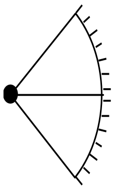
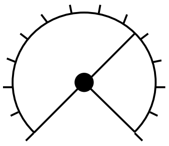
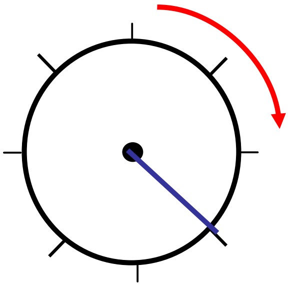
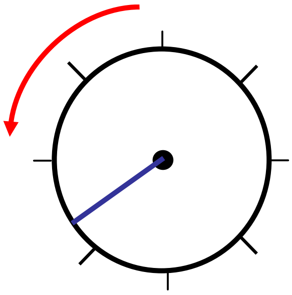
Start Position: Top

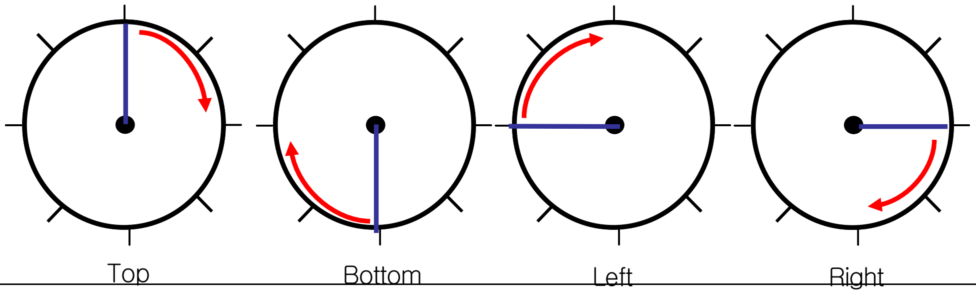
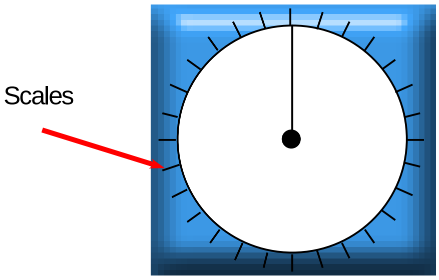
Point(X): 5

Color:

Items	Settings
Library (a)	Select the image to display as the graphic background in the system graphic library or user graphic library.
Open (b)	The image to display as the graphic background can be directly selected in the system graphic library or user graphic library. **(☞ See Open of Lamp Display Condition)**
Transparent BG Image (c)	This is selected when you do not want to display the background image of the meter graph.  Background image used  Background image not used
Transparent Border (d)	This is selected when you do not want the outcolumn of the meter graph. 

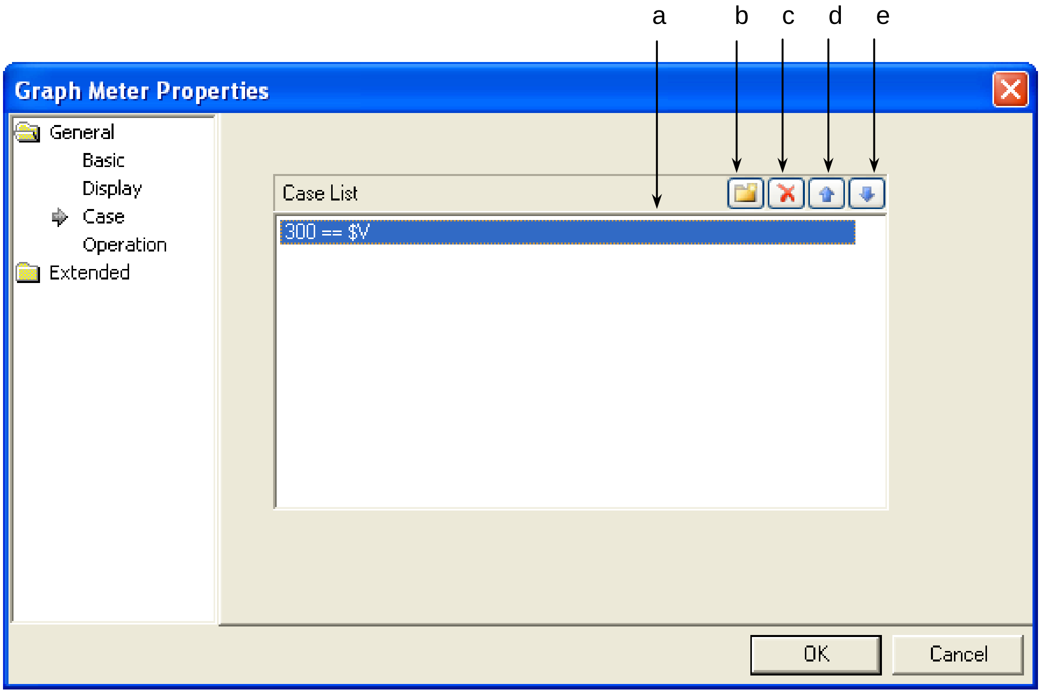
Items	Settings
	 Boundary used  Boundary not used
Border color (e)	Sets the boundary color. **(☞ See No Boundary)**
Plate color (f)	Sets the background color. In the meter graph below the background color is white.  Pointer Background At this time, in case you don't set Plate color (☑ Plate Color:), plate area is displayed transparently  Transparent plate color
Needle color (g)	Sets the pointer color. **(☞ See Background Color)**

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Shape (h)</td><td>Sets the form of the meter.
<table>
<tr><th>Form</th><th colspan="4">Type</th></tr>
<tr><td>Circle</td><td colspan="4"></td></tr>
<tr><td rowspan="2">Cemi-circle</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Lower Cemi-circle</td><td>Upper Cemi-circle</td><td>Left Cemi-circle</td><td>Right Cemi-circle</td></tr>
<tr><td rowspan="4">Sector 3/4</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Upper Sector</td><td>Lower Sector</td><td>Left Sector</td><td>Right Sector</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="4">3/4 Sector</td></tr>
</table></td></tr>
<tr><td>Direction (i)</td><td>Sets the direction of the movement of the pointer.

Clockwise

Anti−clockwise</td></tr>
</table>

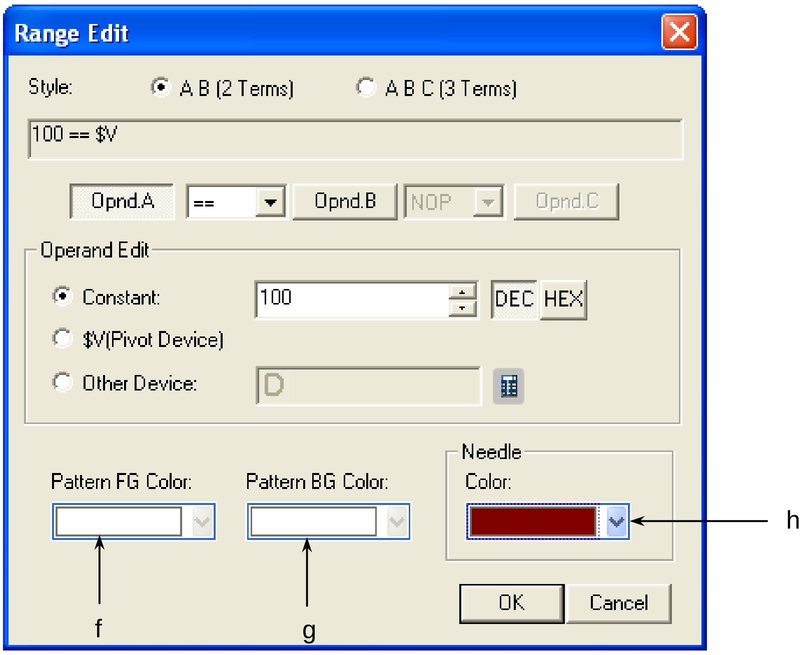
Items		Settings
Start Position (j)		Sets the start position of the pointer when the meter takes the form of a circle. This can be set only when the meter takes the form of a circle. If the pointer moves clockwise, the direction of the pointer is as follows according to the start position. 
Scales	Point (k)	Sets the number of scales. 
	Color (l)	Sets the color of scales. **(☞ See Number of Scales)**

(3) Case

This is setting conditions when the color to fill the graph with is changed according to the value.


a
b
c
d
e
Graph Meter Properties
General
Basic
Display
Case
Operation
Extended
Case List
OK
Cancel

300 == $V


Range Edit
Style:
A B (2 Terms)
A B C (3 Terms)
Opnd.A
Opnd.B
NOP
Opnd.C
Operand Edit
Constant:
$V(Pivot Device)
Other Device:
DEC
HEX
Pattern FG Color:
Pattern BG Color:
Needle
Color:
OK
Cancel
f
g
h

Style: ● A B (2 Terms) ○ A B C (3 Terms)

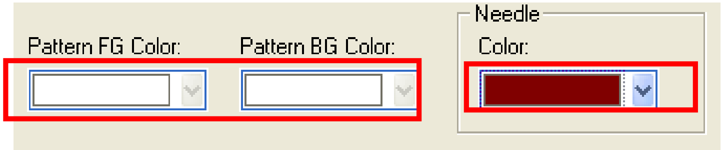
100 == $V

Opnd.A == Opnd.B

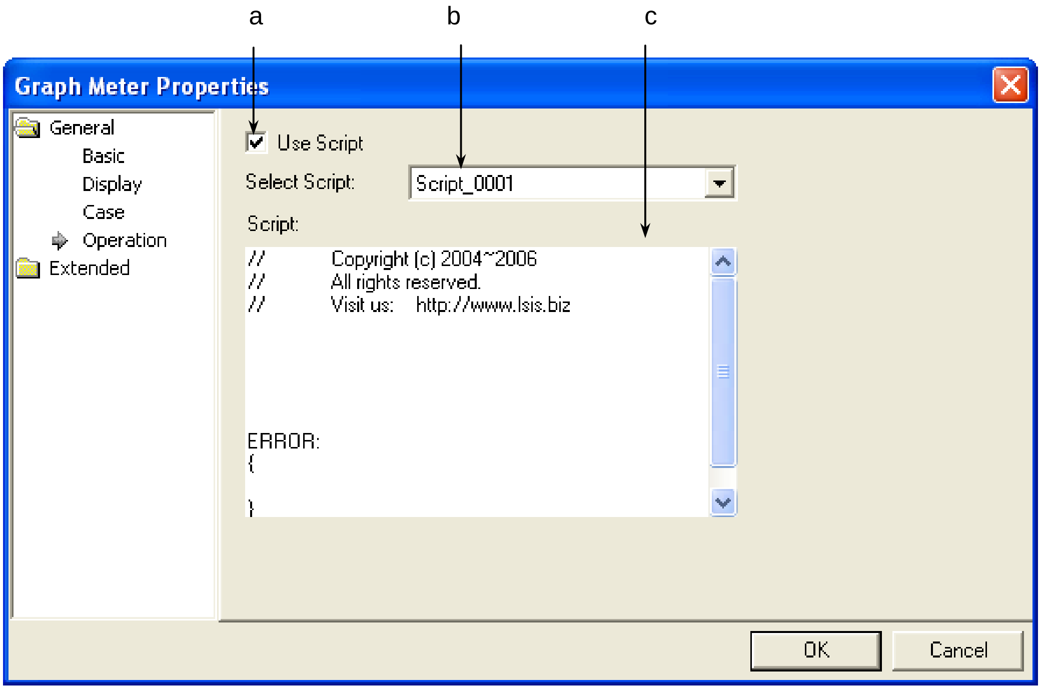
Operand Edit: ● Constant: 100

[The window defining the device Range of the graph]

Items	Settings
Conditions (a)	Defines the condition of a meter graph.
Create (b)	(☞ **See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.

Items	Settings
Delete (c)	Deletes the conditional sentences.
A column up (d)	Shifts up the priority of the conditional sentences being edited.
A column down (e)	Shifts down the priority of the conditional sentences being edited.
Pattern FG color (f)	Sets the foreground color of the graph displayed when the Range condition of the set word device value is met. You cannot set this color because a meter graph has no pattern filling.  Pattern FG Color: Pattern BG Color: Needle Color:
Pattern BG color (g)	Sets the background color of the graph displayed when the Range condition of the set word device value is met. You cannot set this color because a meter graph has no pattern filling.
Needle color (h)	Sets the pointer color of the graph displayed when the Range condition of the set word device value is met.

(4) Operation


a
b
c
Graph Meter Properties
General
Basic
Display
Case
Operation
Extended
OK
Cancel

☑ Use Script

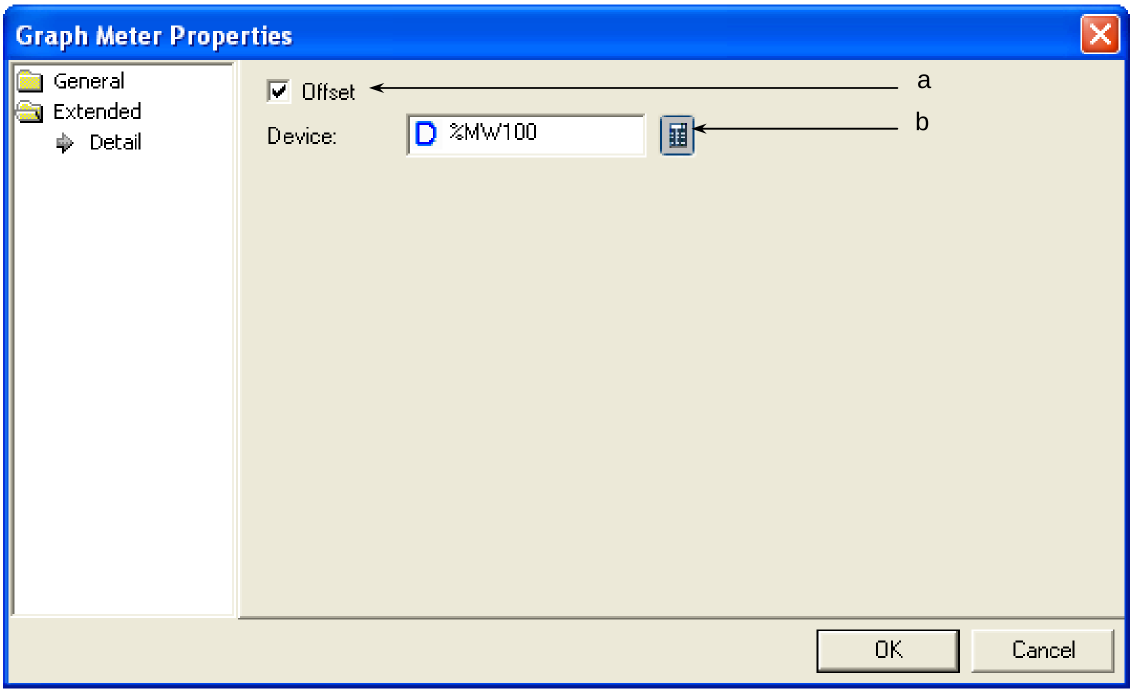
Select Script: Script_0001

Script:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:    http://www.lsis.biz



ERROR:
{

}
```

Items	Settings
Use script (a)	Selects this when you want to use script.
Select script (b)	Selects the list of scripts you have made.
Script contents (c)	The contents of the selected script are displayed.

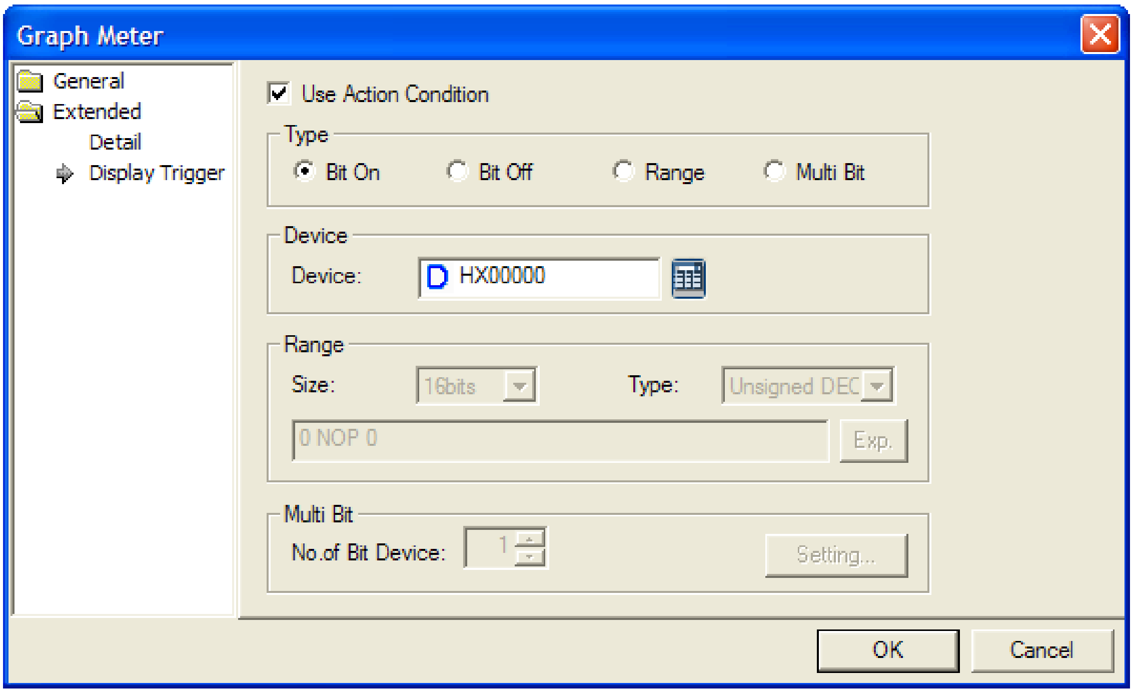
(5) Detail


Graph Meter Properties
General
Extended
Detail
☑ Offset
a
Device:
%MW100
b
OK
Cancel

Items	Settings
Offset (a)	Set when you use the offset function.
Device (b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Graph Meter
General
Extended
Detail
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range — Size: 16bits Type: Unsigned DEC

0 NOP 0

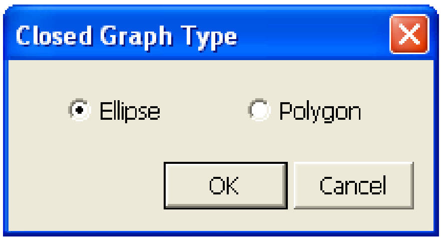
Multi Bit — No.of Bit Device: 1

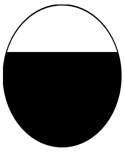
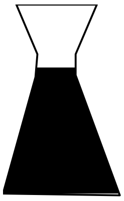
(☞ refer to 16.9 display trigger.)

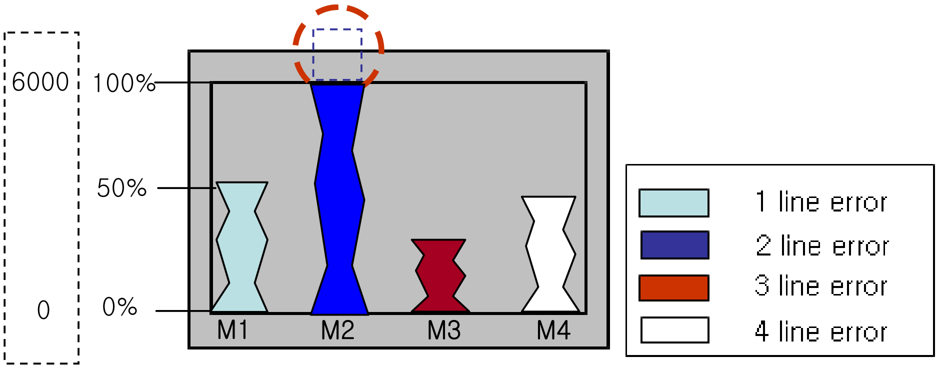
17.8.6 Closed Graph Settings

A closed curve indicates word device values in the forms of a graph or ellipse which the user wants instead of a bar or circle.

As a closed curve, you can select an ellipse or polygon. If you choose the closed curve graph, the following diagram box is invoked. Choose a desired form of closed curve in the dialog box, create it in the window and set the properties.


Closed Graph Type
● Ellipse
○ Polygon
OK
Cancel

Type	Description	Shape
Ellipse	An elliptical closed curve is created.	
Polygon	You can make the shape as you want.	


6000
0
100%
50%
0%
M1
M2
M3
M4
1 line error
2 line error
3 line error
4 line error

Max/Min values specified by the user

[Method]

(a) Create a polygonal closed curve graph in the window. **(☞ See the Note on How To Draw Polygon)**
(b) Set the device address to refer to in the polygonal closed curve graph [Basic]-[Device].
(c) Fix a value by using the fixed or device value in the polygonal closed curve graph [Basic]-[Upper/Lower Value].

(The percentage taken up in the bar is calculated by (reference device value – minimum)/(maximum – minimum) * 100.)
In the example above, say, the user has set the maximum as 6000 and minimum as 0 and the object device value is 2000, it is indicated at 20%.

(d) Set the graph Range color, pattern color and scale of the polygonal closed curve graph in [Display] of the polygonal closed curve graph.

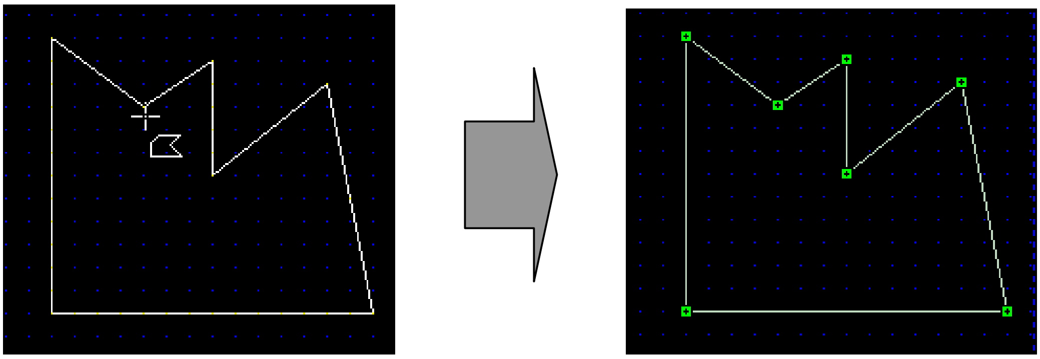
(e) The three polygonal closed curve graphs in the method shown above.

Note

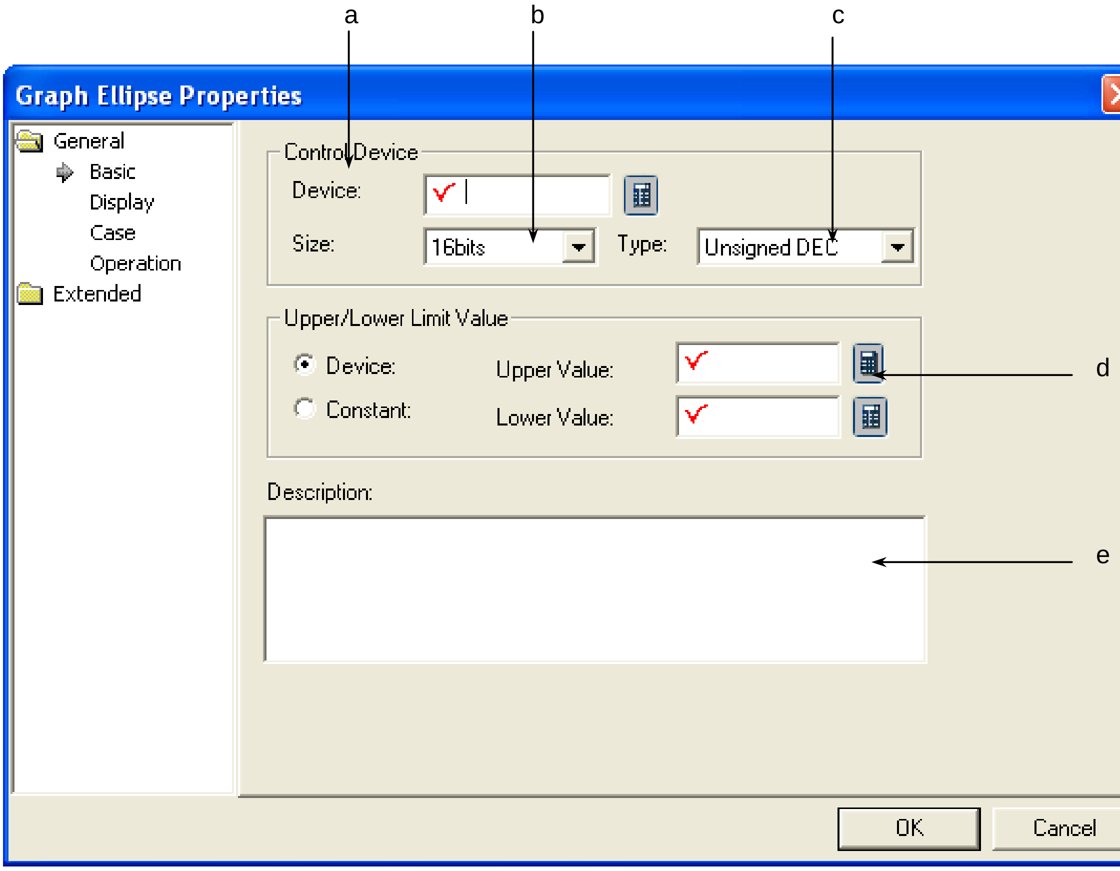
(1) You can create a polygon in the following method.

a) Click on every corner where you want the polygon to be. After you clicking on them all, a closed curve is drawn with each corner connected to each other.

b) Click on every corner and double click on the last corner.



(1) Basic


a
b
c
d
e
Graph Ellipse Properties
General
Basic
Display
Case
Operation
Extended
Control Device
Device:
Size:
16bits
Type:
Unsigned DEC
Upper/Lower Limit Value
Device:
Constant:
Upper Value:
Lower Value:
Description:
OK
Cancel

Items	Settings
Device(a)	Sets the device to be referred to in the relevant object. You can set it by using the device button or directly enter it on the keyboard.
Size(b)	Sets the data size of the device(16 bit, 32 bit).
Type(c)	Sets the data form of the device(signed decimal, unsigned decimal, BCD).
Upper/Lower Value(d)	Sets the maximum and minimum of the data to display. You can set the maximum and minimum either by selecting them by the device or using the constant. The percentage taken up in the closed curve graph is calculated by (reference device value – minimum)/(maximum – minimum) * 100.).
Description(e)	Enters description in the relevant object.

Type	Description
Device	Sets the specified device value as the maximum and minimum.
Constant	Sets the specified fixed value as the maximum and minimum.

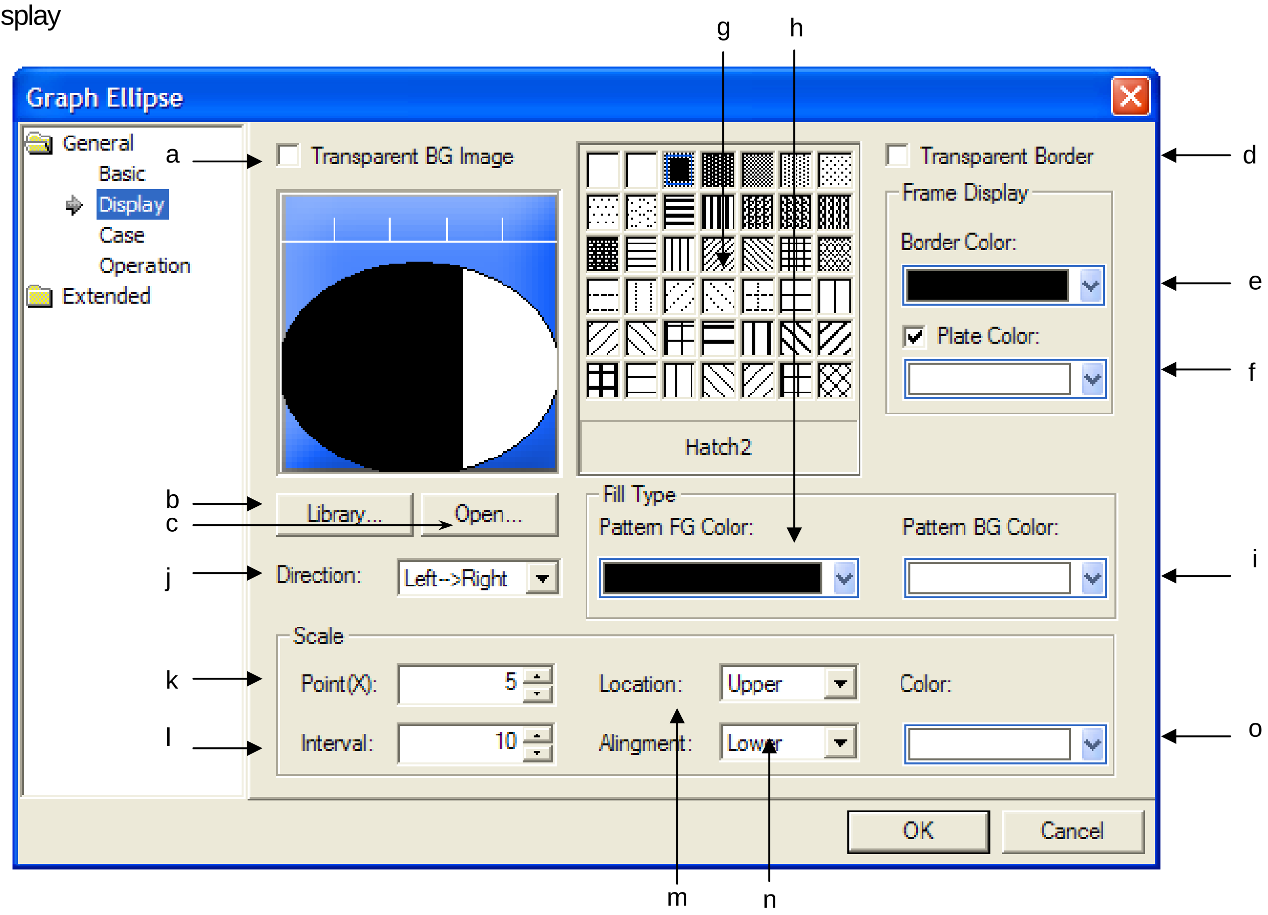
Note

(1) If the data size and form of the device change, the conditional sentences are all deleted.

(2) If you have entered the maximum and minimum as a fixed constant, it cannot be beyond the range of the constant available according to the size and form of the reference device.

Device size	Device form	Minimum	Maximum
16bit	Signed decimal	-32768	32767
16bit	Unsigned decimal	0	65535
16bit	BCD	0	9999
32bit	Signed decimal	-2147483648	2147483647
32bit	Unsigned decimal	0	4294967295
32bit	BCD	0	99999999

(2) Display



g
h
Graph Ellipse
General
Basic
Display
Case
Operation
Extended
a
b
c
j
k
l
d
e
f
i
o
m
n
Library...
Open...
OK
Cancel

☐ Transparent BG Image

Hatch2

☐ Transparent Border

Frame Display

Border Color:

☑ Plate Color:

Fill Type

Pattern FG Color:

Pattern BG Color:

Direction: Left-->Right

Scale

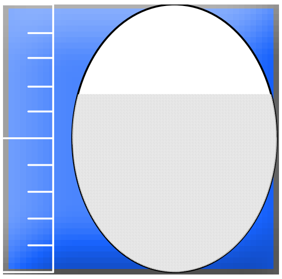
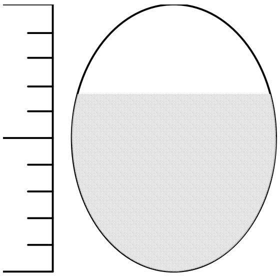
Point(X): 5

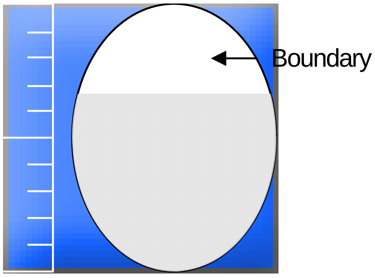
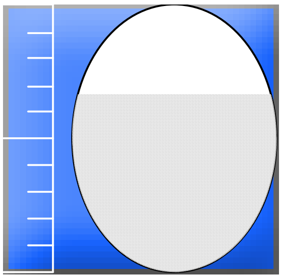
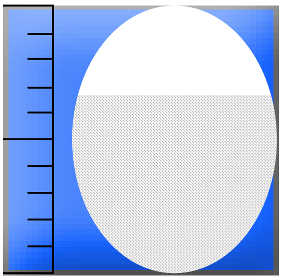
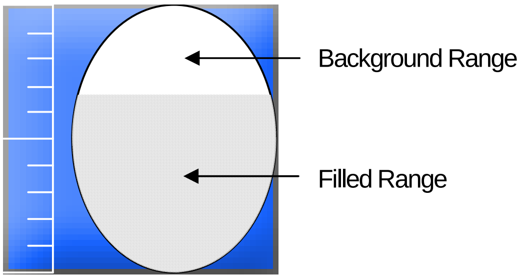
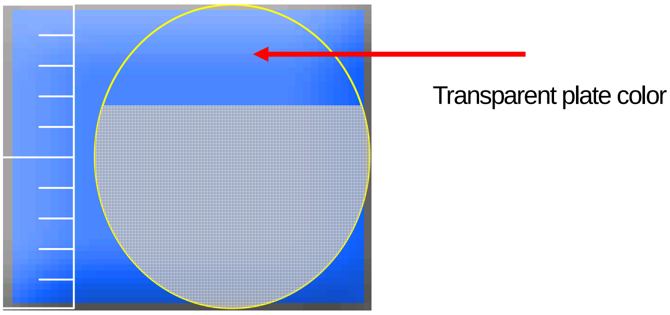
Interval: 10

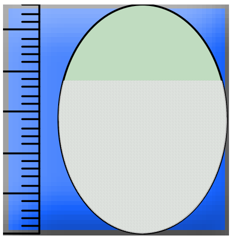
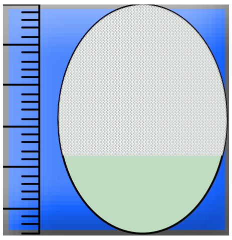
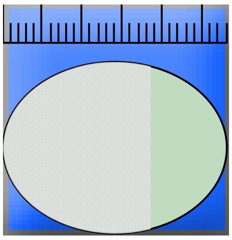
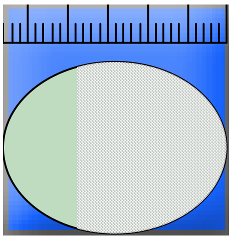
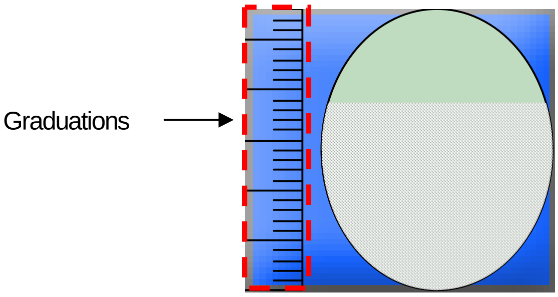
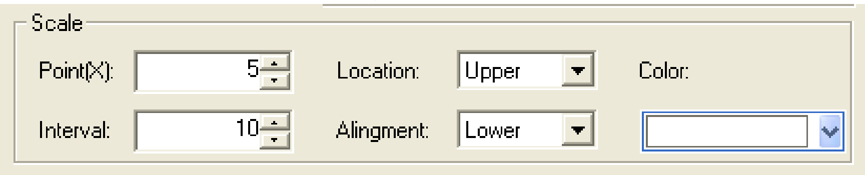
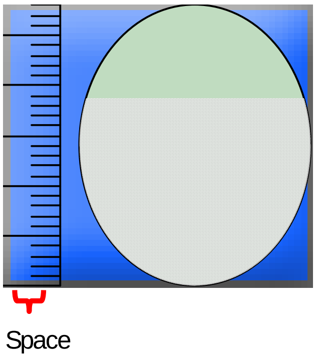
Location: Upper

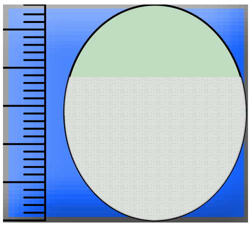
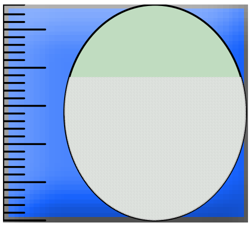
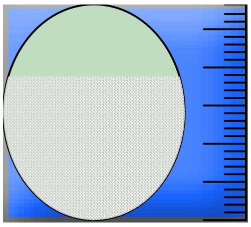
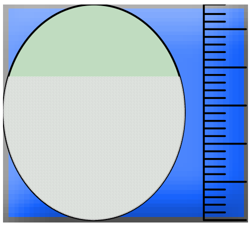
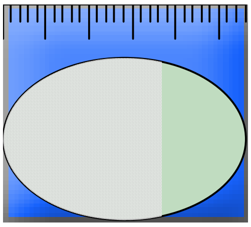
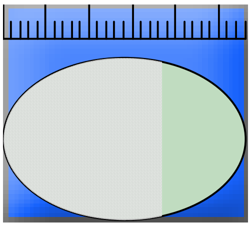
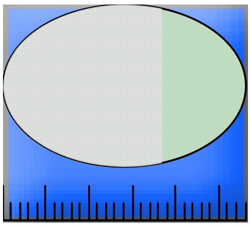
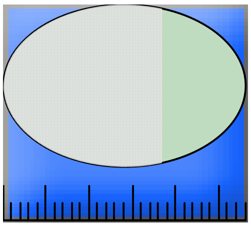
Alingment: Lower

Color:

Items	Settings
Transparent BG Image(a)	This is selected when you do not use the background image of the closed curve graph.  Background image used  Background image not used
Library(b)	Selects the image to display as the background of the graph in the system graphic library or user graphic library.
Open(c)	Directly selects the image to display as the background of the graph in the image file. **(☞ See Open of Lamp Display Condition)**
Transparent Border(d)	This is set when you do not use the outcolumn of the closed curve graph. The outcolumn refers to the following.

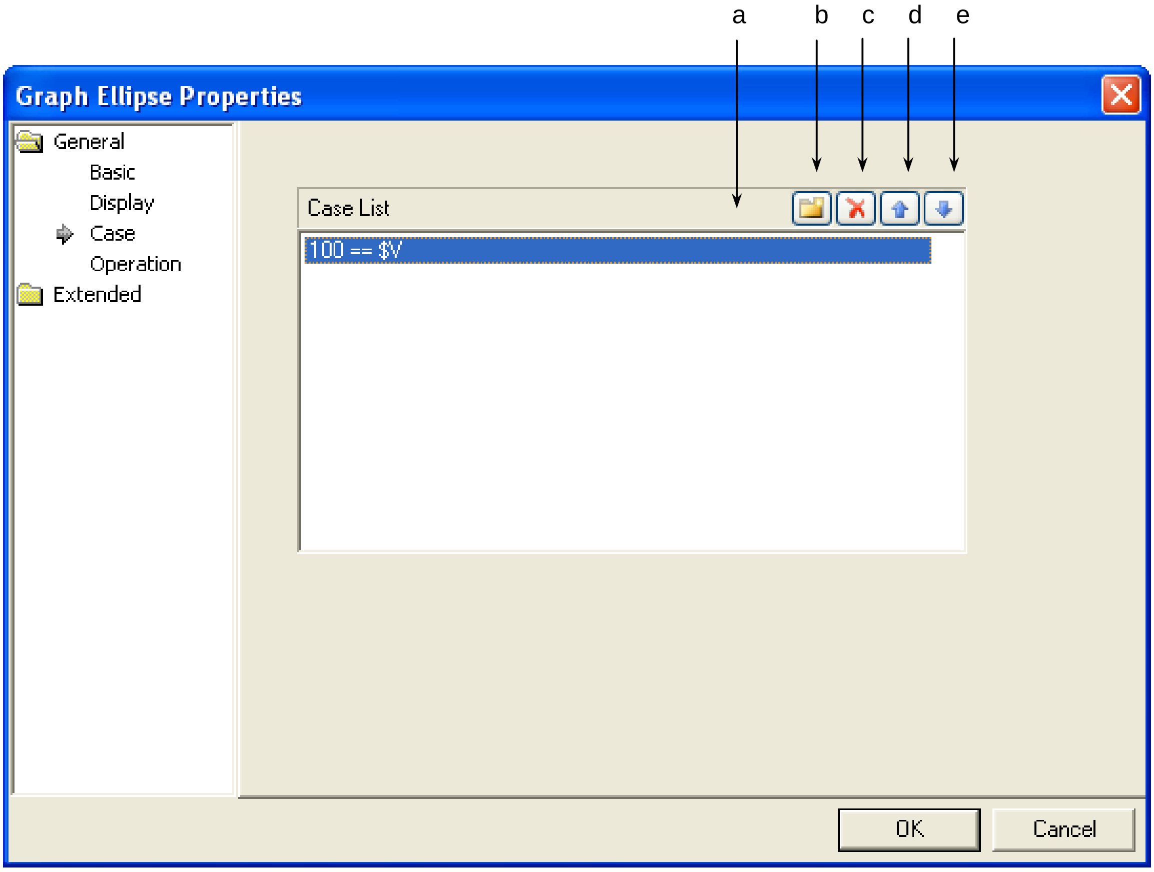
Items		Settings
		  Boundary used  Boundary not used
Border color(e)		Sets the boundary color. **(☞ See No Boundary(boundary in the example above: black))**
Plate color(f)		Sets the background color. The background Range refers to the part other than the filled Range in the graph.  At this time, in case you don't set Plate color (☑ Plate Color:), plate area is displayed transparently 
Pattern	Type(g)	Selects the pattern of the filled Range of the graph. **(☞ See Background Color(f))**
	Foreground color(h)	Sets the foreground color of the pattern.
	Background color(i)	Sets the background color of the pattern.

Items		Settings
Direction(j)		Sets the direction in which the closed curve graph is filled. (top -> bottom, bottom -> top, left -> right, right -> left)  Bottom -> Top  Top -> Bottom  Left -> Right  Right -> Left
Scale	Point(k)	Sets the number of scales. Scales refer to the following.  The number of scales can range between 0 and 255. Scales are longer than the others at every five levels and the size of the scales differ according to the size of the graph. If the number of scales is 0, no setting is available  Scale Point(X): 5 Location: Upper Color: Interval: 10 Alingment: Lower
	Interval(l)	Sets the space between the scales and the graph. The space can range between 0 and 10. 
	Location (m)	Sets the place of scales. The relationship between the scales position and justification is as follows according to the filling direction.

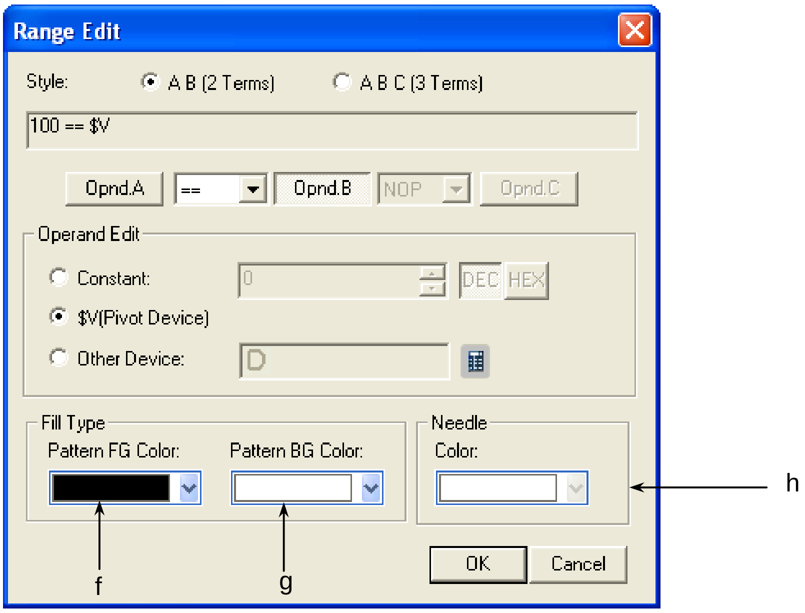
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Filling Direction</th><th colspan="3">Scales Direction</th></tr>
<tr><td rowspan="4">Top -> Bottom
Bottom -> Top</td><td>Position</td><td colspan="2">Justification</td></tr>
<tr><td rowspan="2">Left</td><td>Right</td><td>Left</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Right</td><td></td><td></td></tr>
<tr><td rowspan="3">Right -> Left
Left -> Right</td><td rowspan="2">Top</td><td>Top</td><td>Bottom</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Bottom</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td>Alignment
(n)</td><td>Sets in which of the right, left, top and bottom of the ruler the scales should be.
If the scales are on the left or right, they can be justified to the left or right only.
If the scales are at the top or bottom, they can be justified to the top or bottom only.
(☞ See Position(m))</td></tr>
<tr><td></td><td>Color(o)</td><td>Sets the color of scales.</td></tr>
</table>

(3) Case

This is setting conditions when the color is changed according to the value


a
b
c
d
e
Graph Ellipse Properties
General
Basic
Display
Case
Operation
Extended
Case List
OK
Cancel

100 == $V


Range Edit
Opnd.A
Opnd.B
NOP
Opnd.C
Operand Edit
DEC
HEX
Fill Type
Pattern FG Color:
Pattern BG Color:
Needle
Color:
h
f
g
OK
Cancel

Style: ● A B (2 Terms) ○ A B C (3 Terms)

100 == $V

Opnd.A == Opnd.B

○ Constant: 0

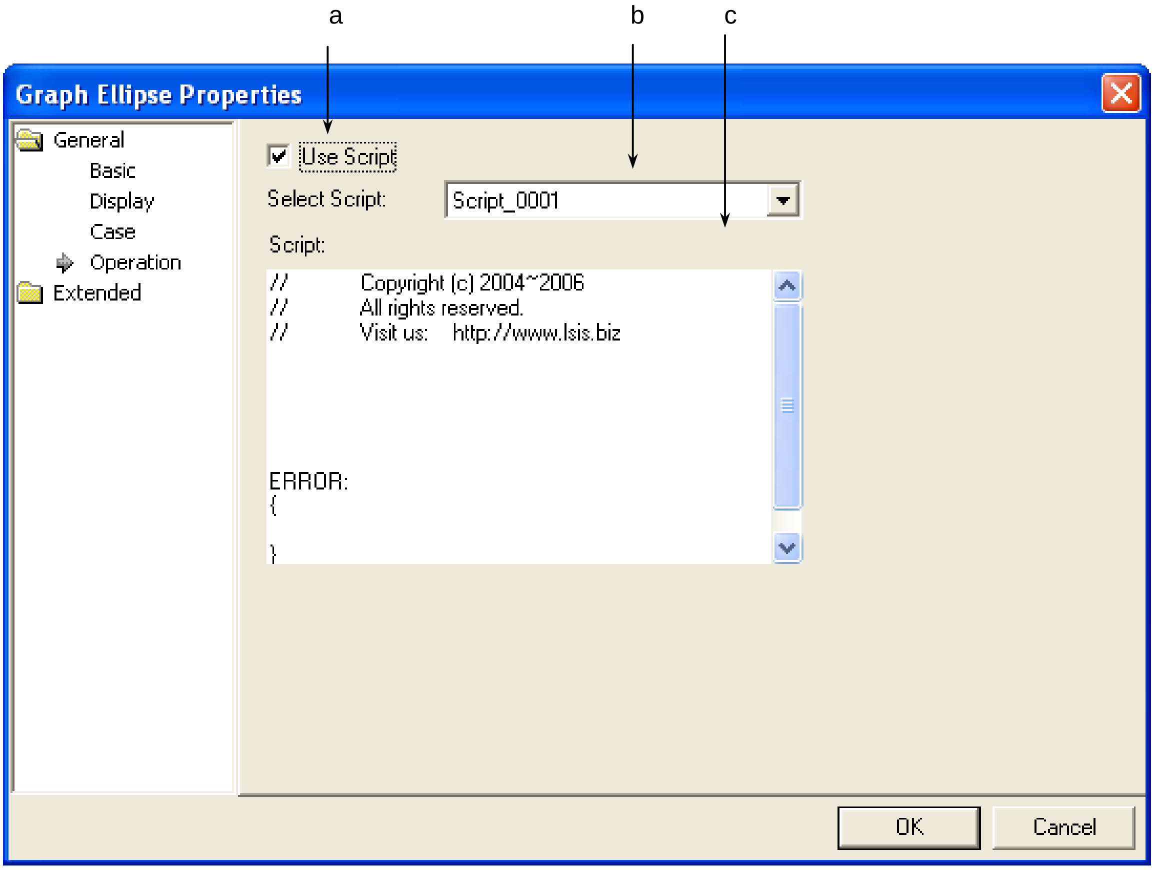
● $V(Pivot Device)

○ Other Device: D

[The window defining the device range of the graph]

Items	Settings
Conditions(a)	Defines the condition of the elliptical closed curve graph.
Create(b)	(☞ **See 16 Conditional Sentence setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete(c)	Deletes the conditional sentences.
A column up(d)	Shifts up the priority of the conditional sentences being edited.
A column down(e)	Shifts down the priority of the conditional sentences being edited.
Pattern FG color(f)	Sets the foreground color of the graph displayed when the Range condition of the set word device value is met.
Pattern BG color (g)	Sets the background color of the graph displayed when the Range condition of the set word device value is met.
Pointer color(h)	Sets the pointer color of the graph displayed when the Range condition of the set word device value is met. In case of a closed curve graph, there is no pointer, so this color cannot be selected.

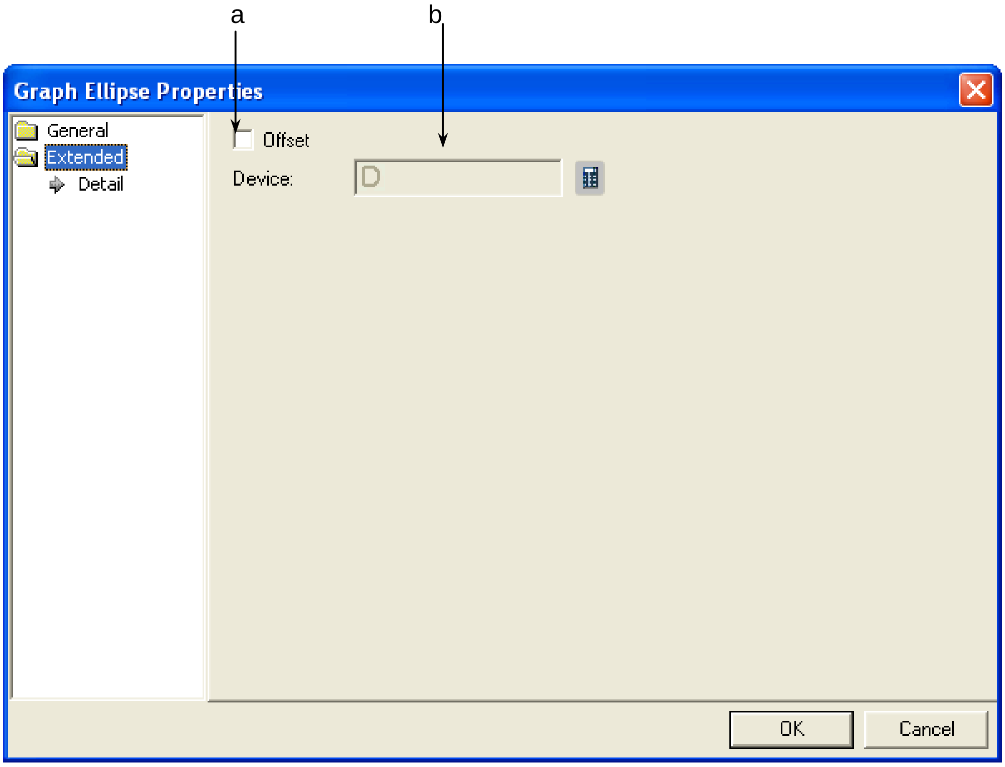
(4) Operation


a
b
c
Graph Ellipse Properties
General
Basic
Display
Case
Operation
Extended
☑ Use Script
Select Script:
Script_0001
Script:
OK
Cancel

```
//	Copyright (c) 2004~2006
//	All rights reserved.
//	Visit us:	http://www.lsis.biz



ERROR:
{

}
```

Items	Settings
Use script (a)	Selects this when you want to use script.
Select script (b)	Selects the list of devices which you have made.
Script contents (c)	The contents of the selected script are displayed.

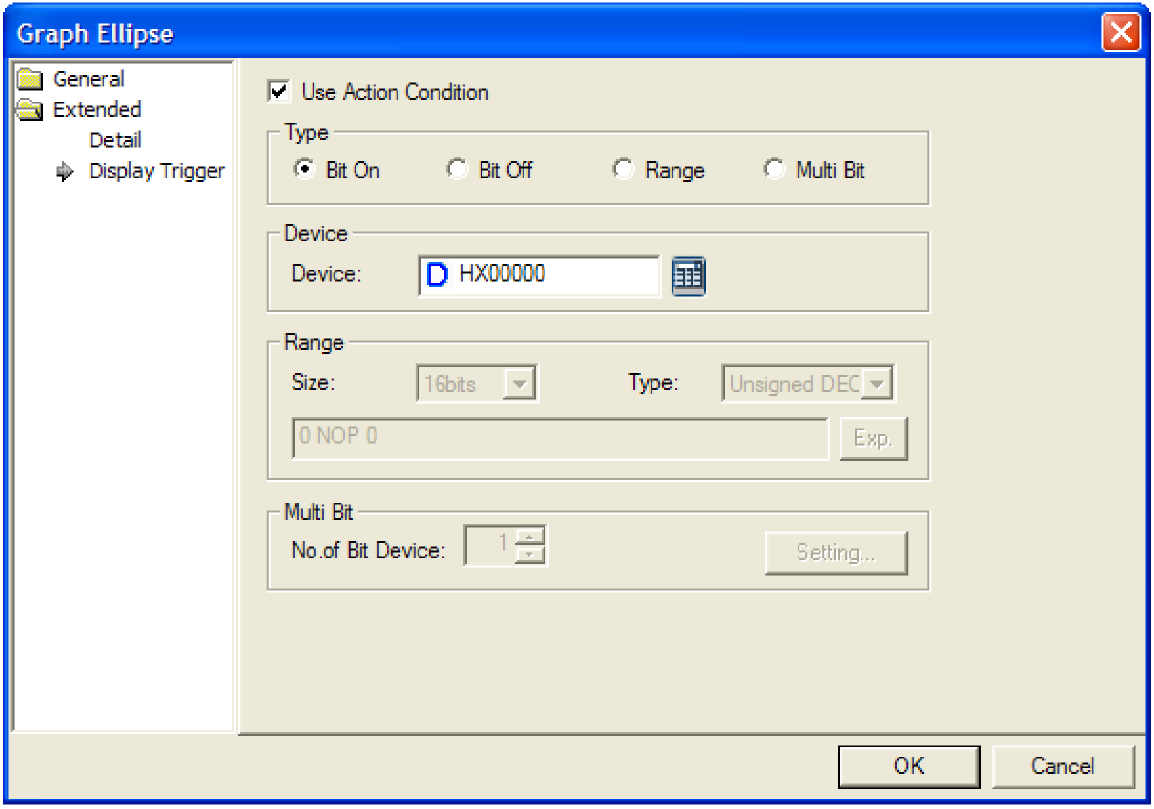
(5) Detail


a
b
Graph Ellipse Properties
General
Extended
Detail
☐ Offset
Device:
D
OK
Cancel

Items	Settings
Offset (a)	Sets the offset device when you use the offset function.
Device (b)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Graph Ellipse
General
Extended
Detail
Display Trigger
OK
Cancel

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

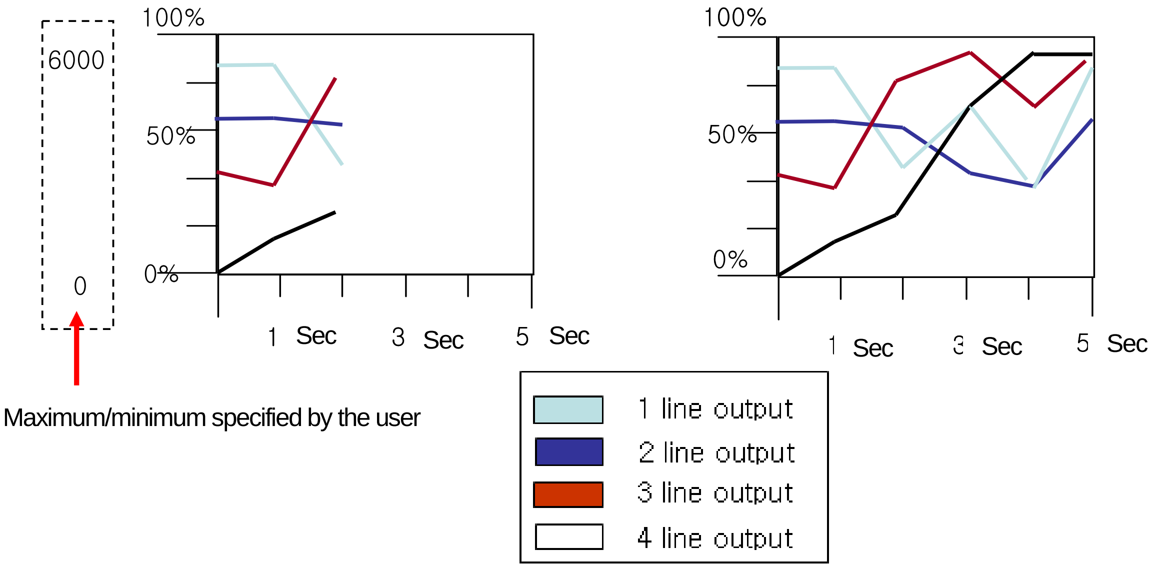
Range
Size: 16bits Type: Unsigned DEC
0 NOP 0 Exp.

Multi Bit
No.of Bit Device: 1 Setting...

(☞ refer to 16.9 display trigger.)

17.8.7 Trend Graph Settings

A trend graph collects set word device values at a particular intervals as follows and indicate them by connecting them in a column.



[Method]

(a) Create a trend graph in the window.

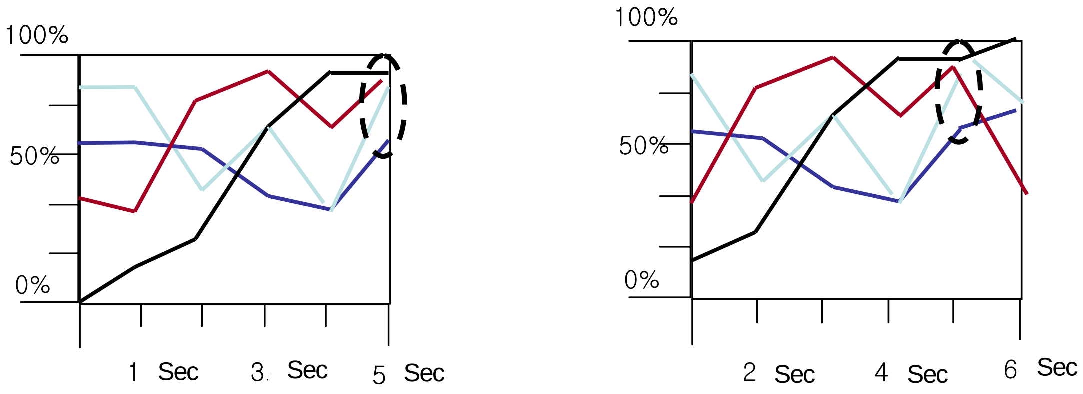
(b) Set the object device value, max/min values and column color in [Basic] of the trend graph and hen click on the [Add] button.

(c) Set the collection cycle in [Display] of the trend graph. (The cycle refers to the intervals at which the values are collected.)

(d) Set the number of X-axis indicators of the trend graph. (total device monitoring time = collection cycle * number of X-axis indicators)

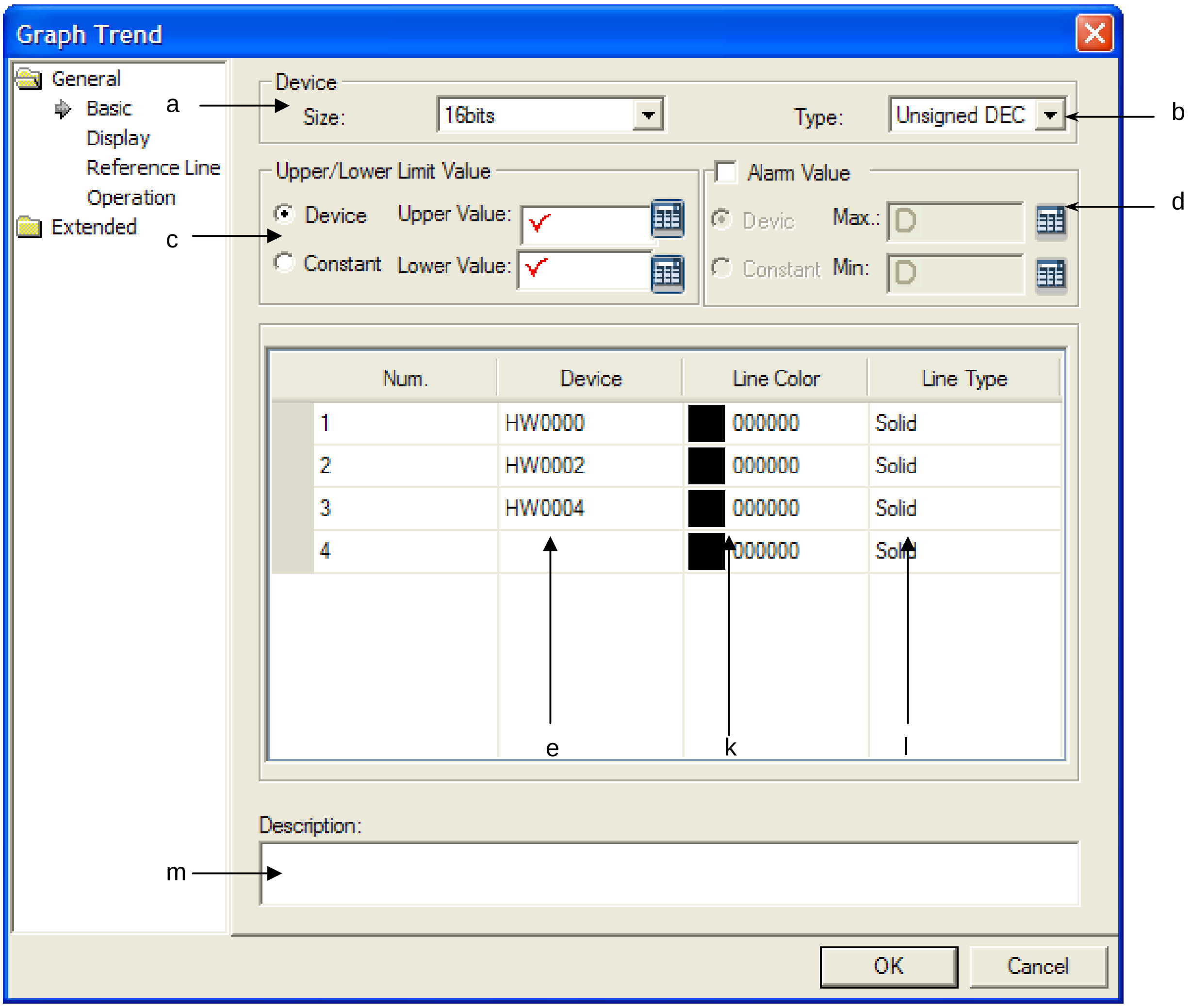
Note

(1) As many indicators of X-axis (time) as have been collected the most recently from the present time are displayed in the window. That is, the values prior to (collection cycle * number of X-axis indicators) from the present are displayed.



(2) When the window is switched, communication is interrupted and resumed. In such a case, the graph might be broken in the middle of it. In addition, the graph might be broken when the communication briefly fails due to an external impact such as noise.

(1) Basic Items



Device

Size: 16bits

Type: Unsigned DEC

Upper/Lower Limit Value

● Device Upper Value: ✓

○ Constant Lower Value: ✓

☐ Alarm Value

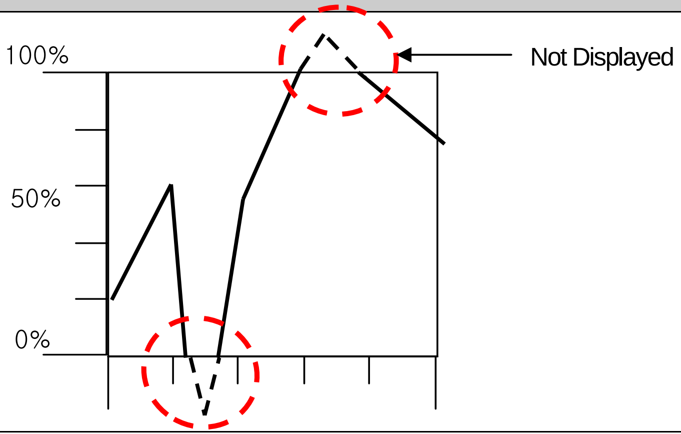
● Devic Max.: D

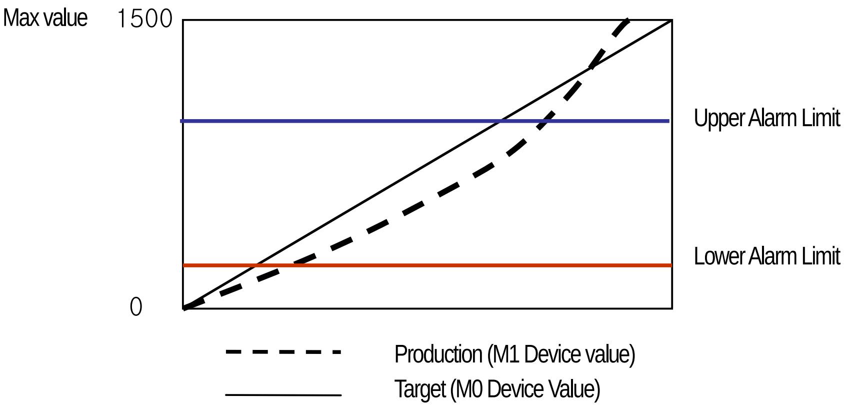
○ Constant Min.: D

Num.	Device	Line Color	Line Type
1	HW0000	■ 000000	Solid
2	HW0002	■ 000000	Solid
3	HW0004	■ 000000	Solid
4		■ 000000	Solid

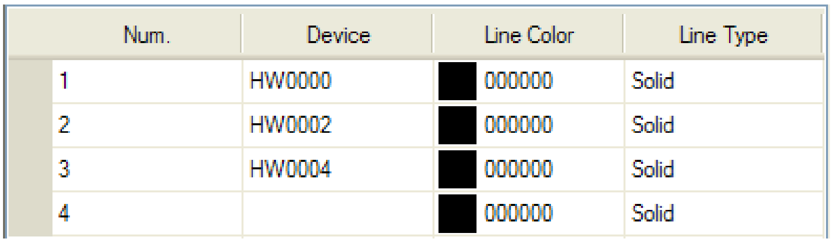
Description:

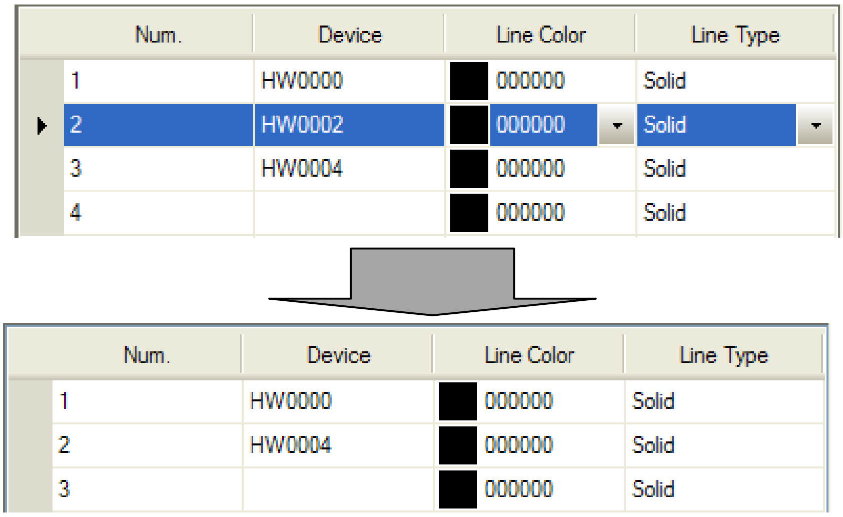
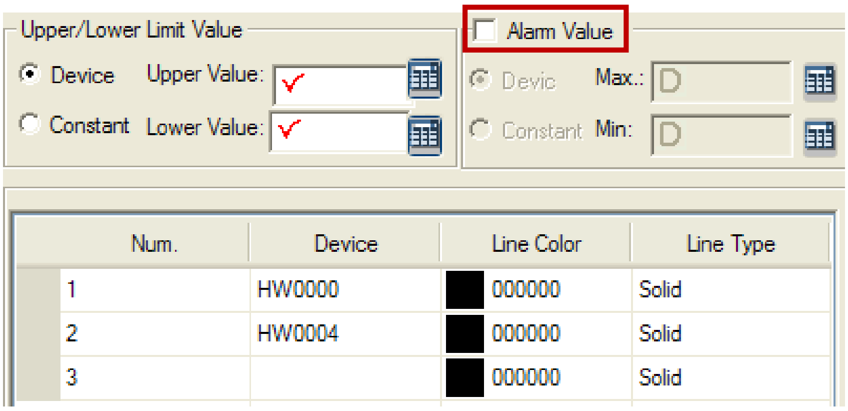
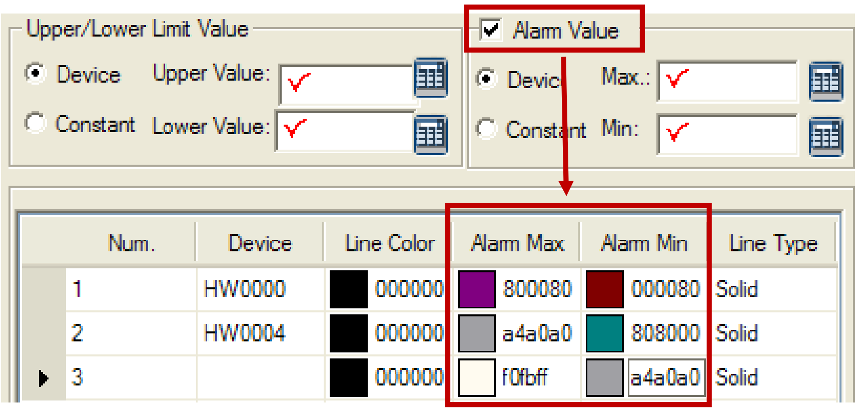
Items	Settings
Size (b)	Sets the data size of the device (16 bit, 32 bit).
Type (c)	Sets the data form of the device (signed decimal, unsigned decimal, BCD).
Upper/Lower Limit Value (c)	Sets the maximum and minimum of the data to display. You can set the maximum and minimum either by selecting them by the device or using the constant In the trend graph above, in which the target is compared with the output, 0 is the minimum and 1500 is the maximum in the range between 0 and 1500. If the device to monitor exceeds the maximum or minimum, it is indicated as the maximum or minimum in the graph.

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td></td><td>
</td></tr>
<tr><td>Alarm value (d)</td><td>Sets the warning upper limit and lower limit of the trend graph.
If the device value is above the upper limit, it is not indicated as the specified column color but as the upper limit color. If the device value is below the lower limit, it is indicated as the set lower limit color

Example. Trend graph above, in which the target is compared with the output


As shown above, the warning upper limit and lower limit are in straight columns respectively in XGT Panel.</td></tr>
<tr><td>Device(e)</td><td>You can set the device to be referred for the object. You can set it with device button or input it directly.

To add new item of trend graph, input the device address to be controlled to blank device screen and press [Enter] key. If a new item is added, blank control device screen is created to the next row and you can also add another item up to 8EA.

<table>
<tr><th>Num.</th><th>Device</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td>1</td><td>HW0000</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td>2</td><td>HW0002</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td>3</td><td>HW0004</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td>4</td><td></td><td>■ 000000</td><td>Solid</td></tr>
</table>
On the other hand, to delete input items, click the row No. to be deleted and press [Delete] button.
Ex.) To delete the second item among the below list, click No. 2 and press [Delete] button.</td></tr>
</table>

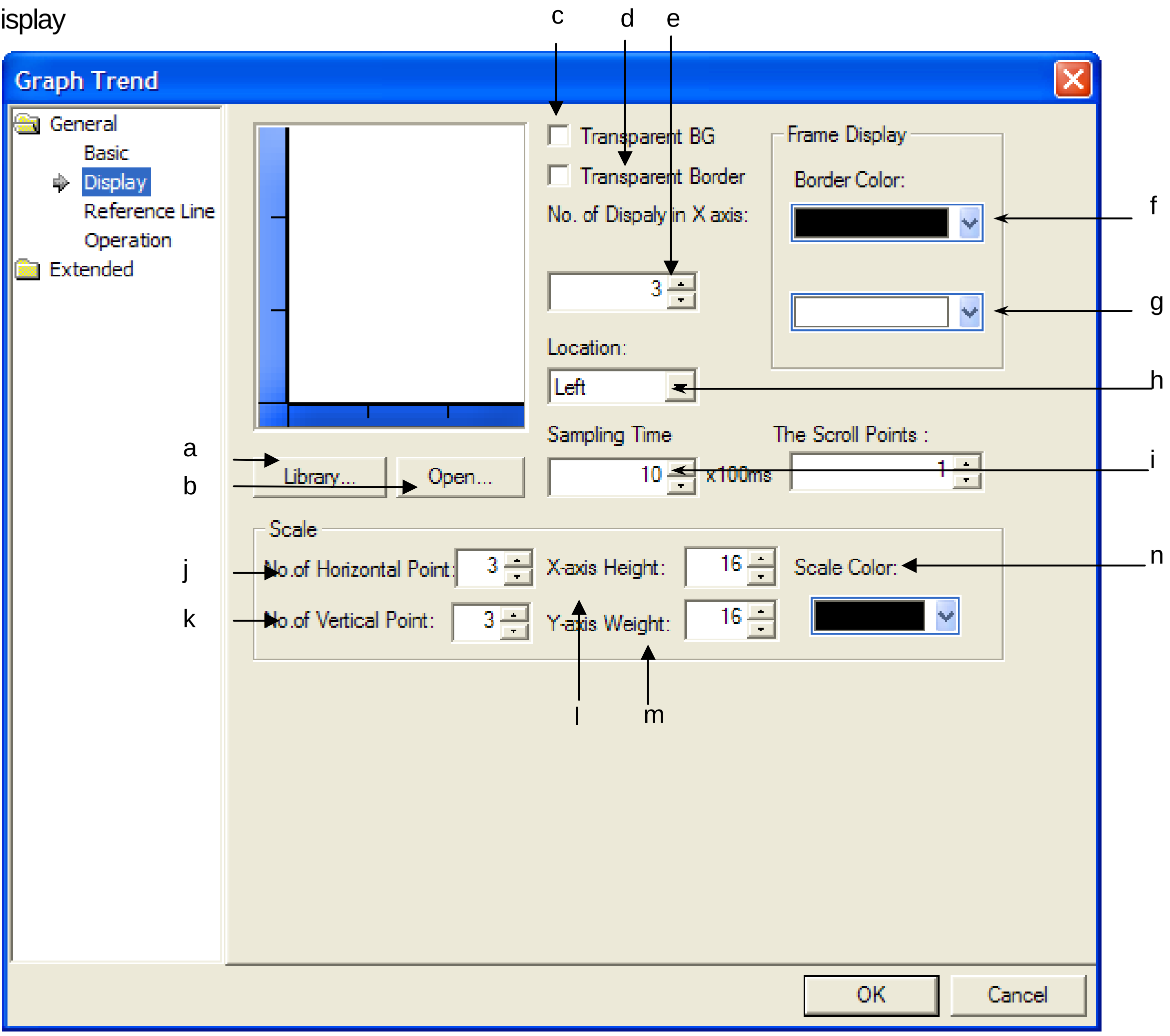
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td colspan="2"></td><td>

<table>
<tr><th></th><th>Num.</th><th>Device</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td></td><td>1</td><td>HW0000</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td>▶</td><td>2</td><td>HW0002</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td></td><td>3</td><td>HW0004</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td></td><td>4</td><td></td><td>■ 000000</td><td>Solid</td></tr>
</table>
<table>
<tr><th></th><th>Num.</th><th>Device</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td></td><td>1</td><td>HW0000</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td></td><td>2</td><td>HW0004</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td></td><td>3</td><td></td><td>■ 000000</td><td>Solid</td></tr>
</table>
</td></tr>
<tr><td rowspan="2">Line</td><td>Color (f)</td><td>Sets the color of the graph columns.</td></tr>
<tr><td>Type (g)</td><td>Sets the form of the graph columns.
You can choose two kinds of column (dotted, solid).</td></tr>
<tr><td rowspan="2">Alarm Line</td><td>Alarm max (h)</td><td>
You can set alarm line when you set [Alarm Value]. In case you set alarm value, the row available set alarm max/min color appears.

Upper/Lower Limit Value
● Device Upper Value: ✓
○ Constant Lower Value: ✓
☐ Alarm Value
○ Devic Max.: D
○ Constant Min: D
<table>
<tr><th></th><th>Num.</th><th>Device</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td></td><td>1</td><td>HW0000</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td></td><td>2</td><td>HW0004</td><td>■ 000000</td><td>Solid</td></tr>
<tr><td></td><td>3</td><td></td><td>■ 000000</td><td>Solid</td></tr>
</table>

Upper/Lower Limit Value
● Device Upper Value: ✓
○ Constant Lower Value: ✓
☑ Alarm Value
● Devic Max.: ✓
○ Constant Min: ✓
<table>
<tr><th></th><th>Num.</th><th>Device</th><th>Line Color</th><th>Alarm Max</th><th>Alarm Min</th><th>Line Type</th></tr>
<tr><td></td><td>1</td><td>HW0000</td><td>■ 000000</td><td>■ 800080</td><td>■ 000080</td><td>Solid</td></tr>
<tr><td></td><td>2</td><td>HW0004</td><td>■ 000000</td><td>■ a4a0a0</td><td>■ 808000</td><td>Solid</td></tr>
<tr><td>▶</td><td>3</td><td></td><td>■ 000000</td><td>□ f0fbff</td><td>■ a4a0a0</td><td>Solid</td></tr>
</table>
Sets the graph line color when device value exceeds the alarm max value.
</td></tr>
<tr><td>Alarm min (i)</td><td>Sets the graph line color when device value is under the alarm min value.</td></tr>
</table>

Items	Settings
Description (m)	Enters description in the relevant object.

Note

(1) You cannot add another device if it is already registered.
(2) You cannot add a device without setting the device value.
(3) The device size, form, max/min, warning value, use of the warning value and warning upper/lower limits apply equally to al the devices.
(4) If you have added a device and changed the data size/form, the last changed data size applies to all the devices.

(2) Display


c
d
e
Graph Trend
General
Basic
Display
Reference Line
Operation
Extended
f
g
h
i
a
b
j
k
n
l
m
Library...
Open...
OK
Cancel

☐ Transparent BG

☐ Transparent Border

No. of Dispaly in X axis: 3

Location: Left

Sampling Time 10 x100ms

The Scroll Points : 1

Frame Display

Border Color: ■

Scale

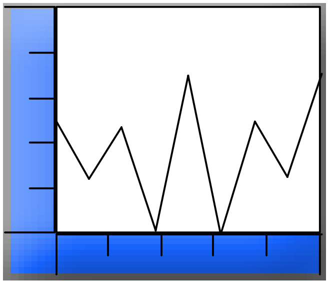
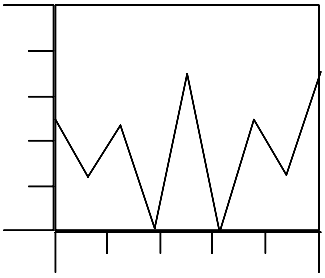
No.of Horizontal Point: 3

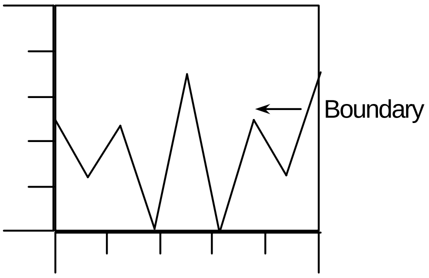
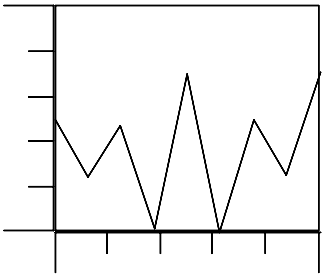
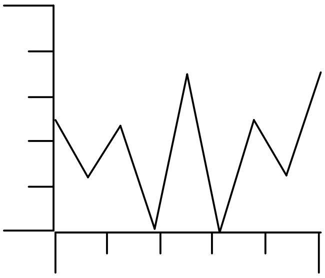
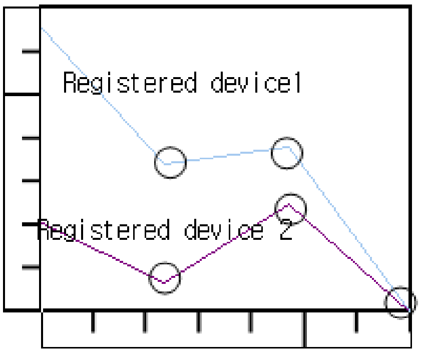
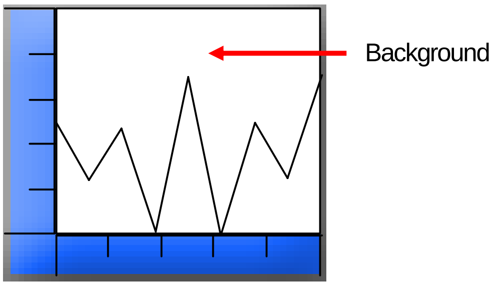
No.of Vertical Point: 3

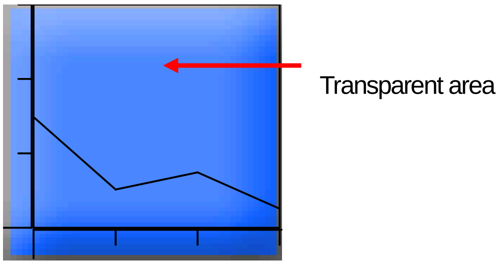
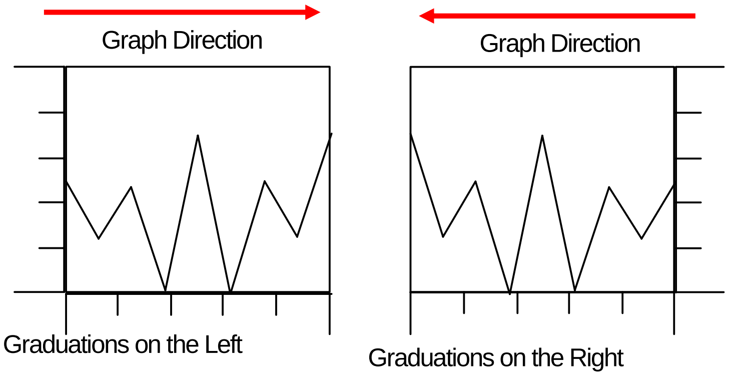
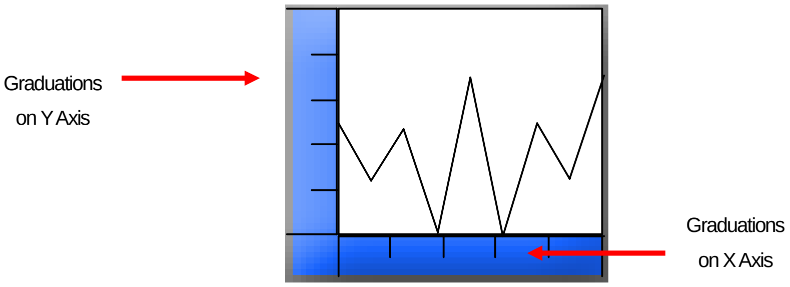
X-axis Height: 16

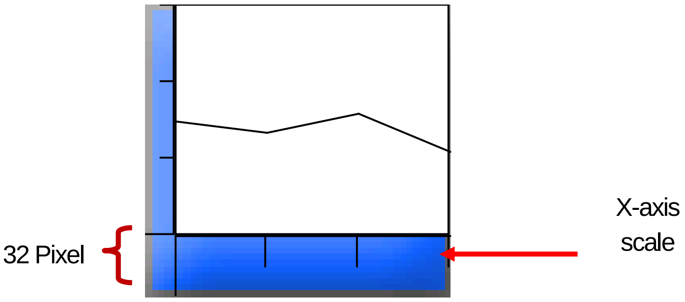
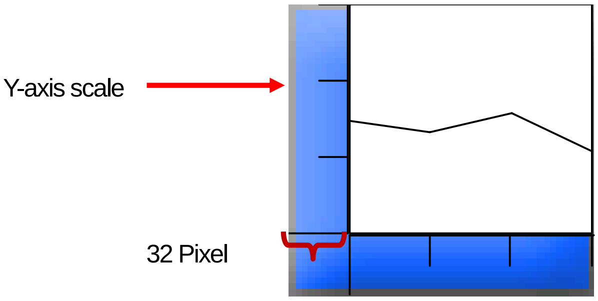
Y-axis Weight: 16

Scale Color: ■

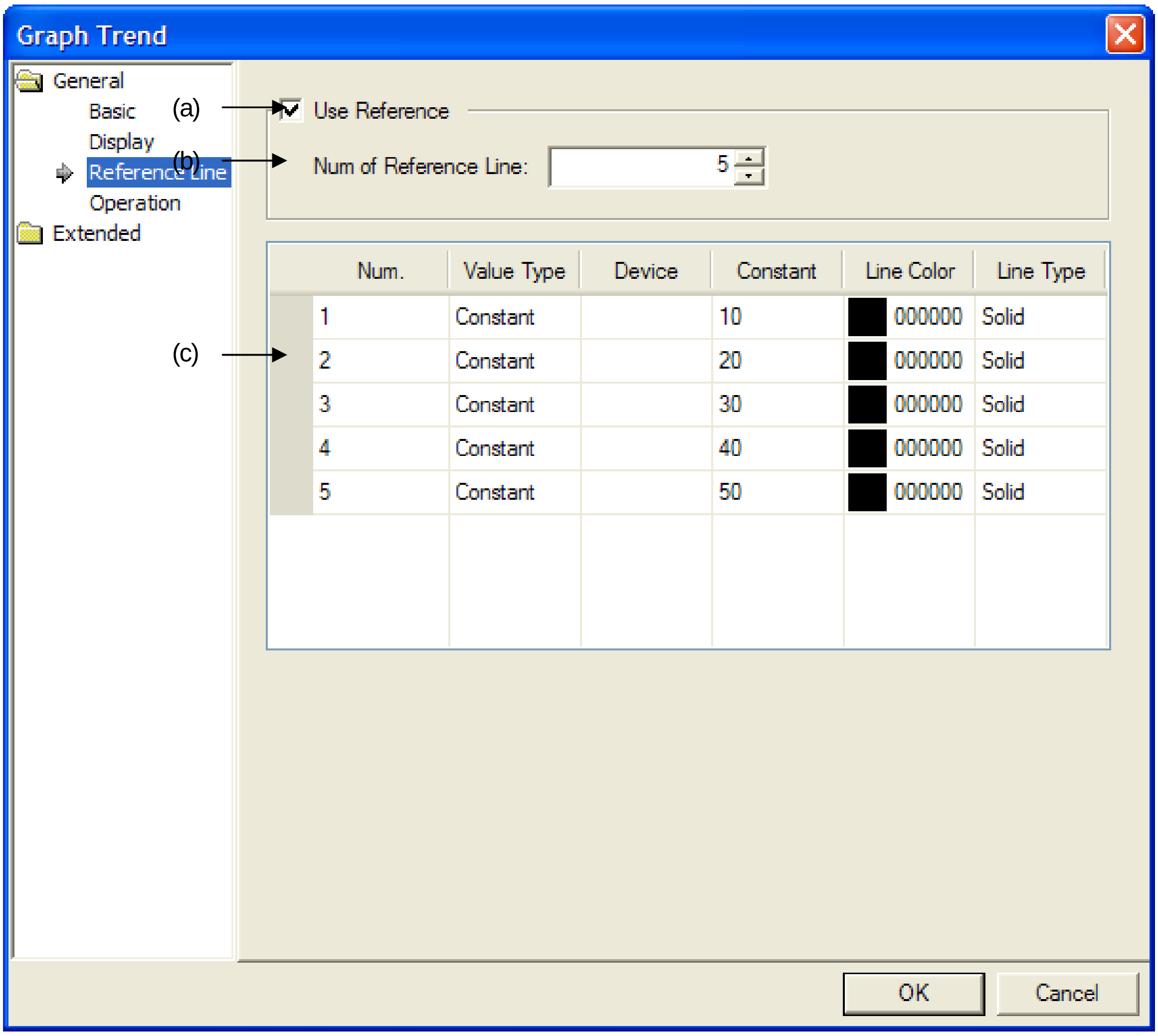
Items	Settings
Library (a)	Selects the image to display as the graphic background in the system graphic library or user graphic library.
Open (b)	The image to display as the graphic background can be directly selected in the image file. **(☞ See Open of Lamp Display Condition)**
Transparent BG (c)	This is selected when you do not use the background image of the trend graph.  Background image used  Background image not used

Items	Settings
Transparent Border (d)	This is set when you do not use the boundary of the trend graph.   Boundary used  Boundary not used
X-axis Sampling Point (e)	Sets the number of indicators to be displayed on X axis. The number should be at least 3 and can range between 3 and 120. E.g. When there are three indicators:  Registered device1 Registered device 2
Border color (f)	Sets the boundary color. **(☞ See No Boundary(d))**
Plate color (g)	Sets the background color.  Background At this time, in case you don't set Plate color (☑ Plate Color:), plate area is displayed transparently

Items	Settings
	 Transparent area
Location (h)	You can put the scales on the left or right.  Graph Direction Graph Direction Graduations on the Left Graduations on the Right
Sampling time (i)	Sets the cycle in which to collect the data. The unit is ms. You can set it between 1 and 6000.
No. of X-axis point (j)	Sets the number of scales on X axis.  Graduations on Y Axis Graduations on X Axis
No. of Y-axis point (k)	Sets the number of scales on Y axis
X-axis weight (l)	It sets length of X-axis scale. X-axis is indicated as many as the value input with absolute pixel. However, length of X-axis scale is higher than the length of trend graph object, trend graph is not displayed at a screen. For example, supposing that area of X-axis scale is designated as 32, the scale is displayed as 32 pixel size.

Items	Settings
	
Y-axis Height (m)	It sets width of Y-axis scale. Y-axis is indicated as many as the value input with absolute pixel. However, width of Y-axis scale is larger than the width of trend graph object, trend graph is not displayed at a screen. For example, supposing that width of Y-axis scale is designated as 32, the scale is displayed as 32 pixel size. 
Scale color (n)	Sets the scale color.

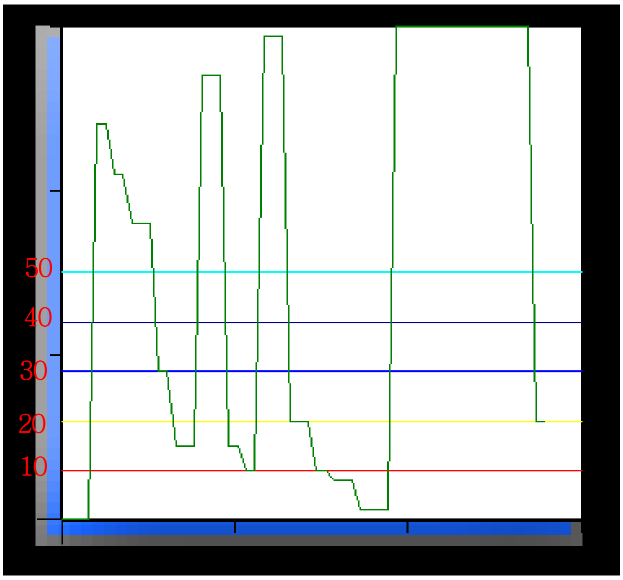
(3) Reference line


Graph Trend
General
Basic
Display
Reference Line
Operation
Extended
(a)
(b)
(c)
OK
Cancel

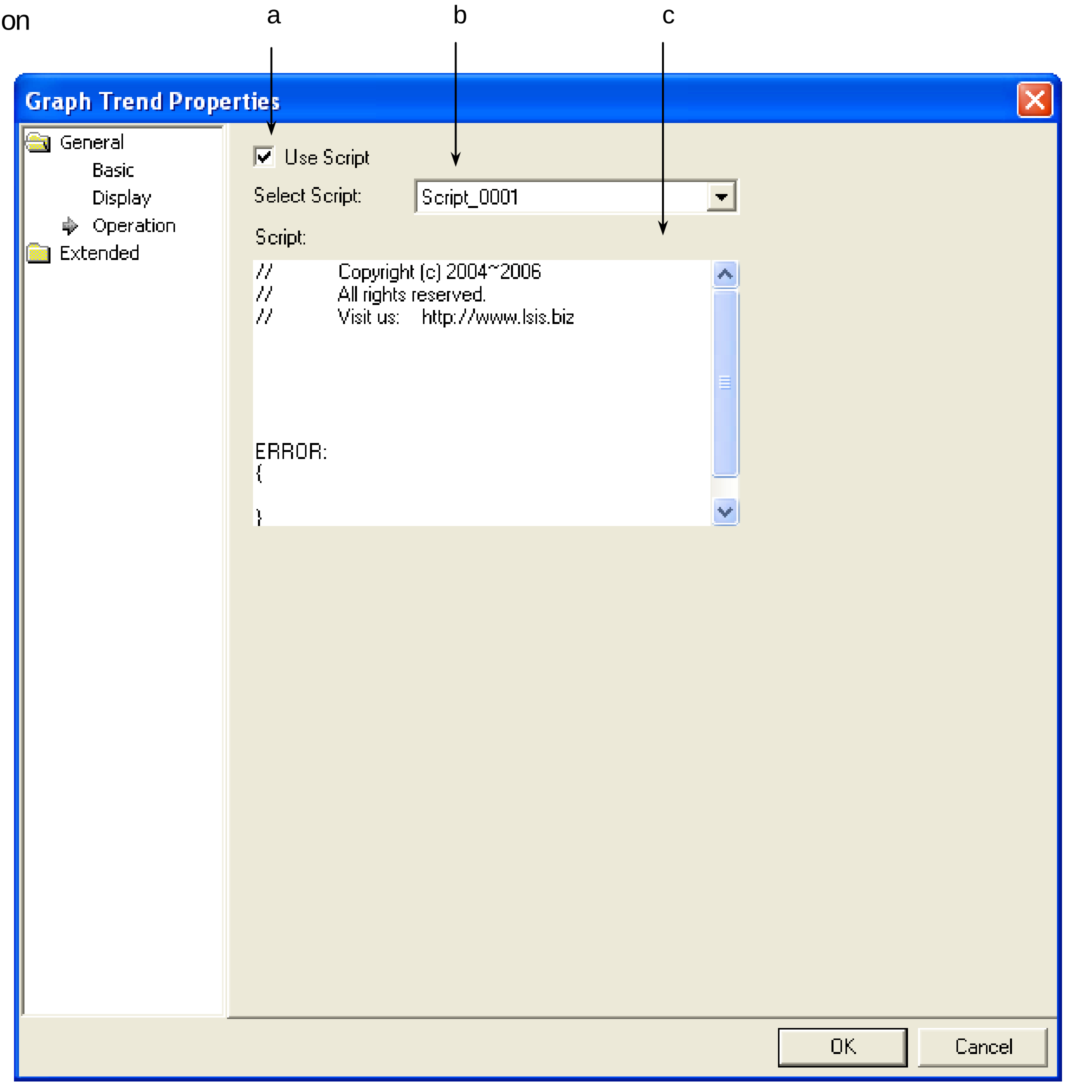
☑ Use Reference

Num of Reference Line: 5

Num.	Value Type	Device	Constant	Line Color	Line Type
1	Constant		10	■ 000000	Solid
2	Constant		20	■ 000000	Solid
3	Constant		30	■ 000000	Solid
4	Constant		40	■ 000000	Solid
5	Constant		50	■ 000000	Solid

Items	Settings
Using Reference Line(a)	It sets whether using reference line or not. It the is line that a user indicates the position of specific value besides the min./max. value at trend graph.  Reference fixed the position with fixed value or device value.
The number of Reference Lines (b)	You can find the number of reference lines to be displayed. After inputting the number of reference lines and moving to the screen to set its properties, the row will be created so that you can establish the reference line as many as the number o f data.
Setting property of reference lien (c)	Only when “Using Reference Line” is activated, edition is available. You can establish each property of reference line. If [Vale Format] is set as [Fixed value], you can not input device. On the other hand, If [Vale Format] is set as device, you can not input [Fixed value]. The row No. means the No. of reference line. You can not edit the row No. and not change the position of each row.

(4) Operation


a
b
c
Graph Trend Properties
General
Basic
Display
Operation
Extended
OK
Cancel

☑ Use Script

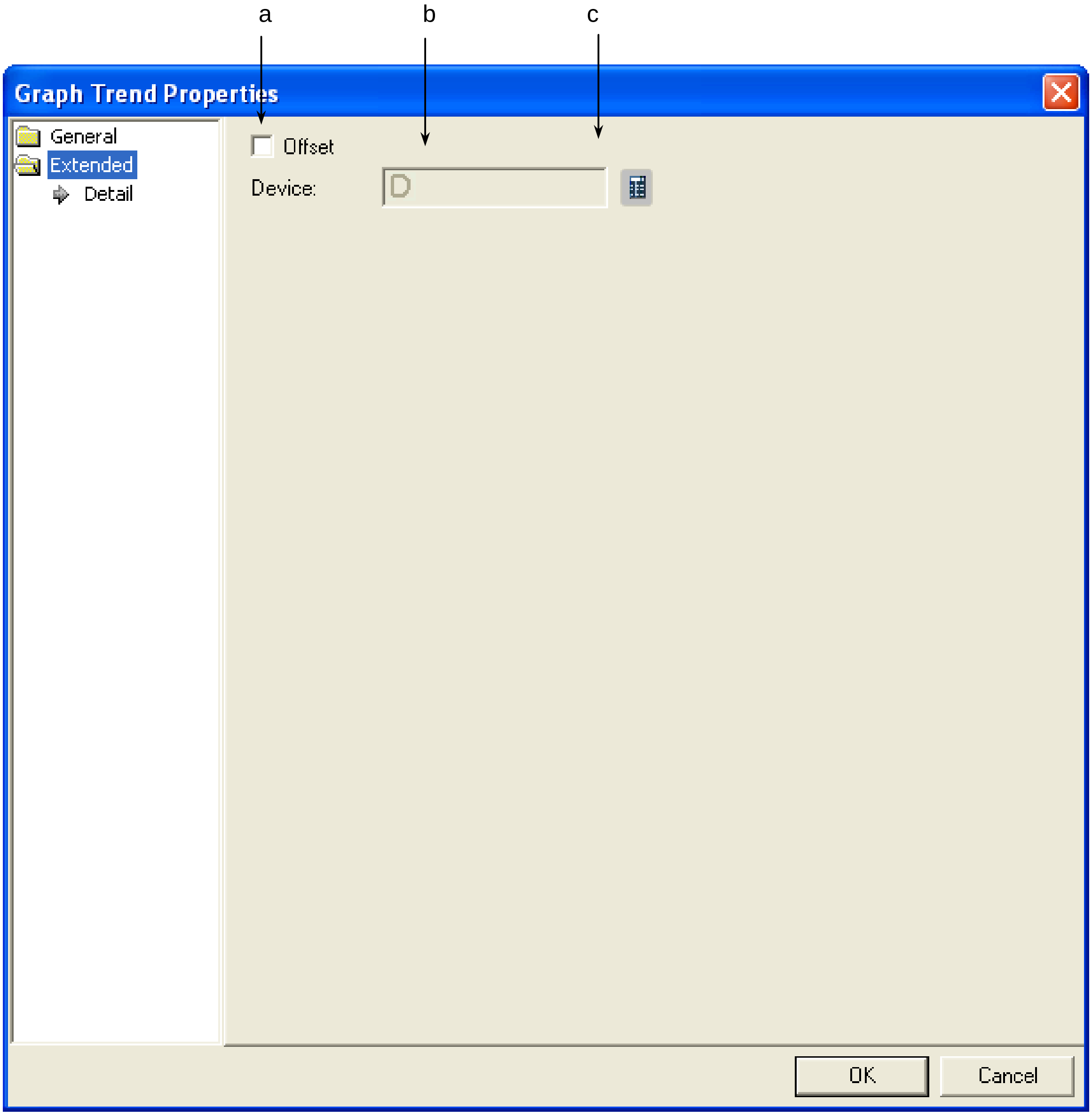
Select Script: Script_0001

Script:

```
//          Copyright (c) 2004~2006
//          All rights reserved.
//          Visit us:     http://www.lsis.biz




ERROR:
{

}
```

Items	Settings
Use script (a)	Selects this when you want to use script.
Select script (b)	Selects the list of devices which you have made.
Script contents (c)	The contents of the selected script are displayed.

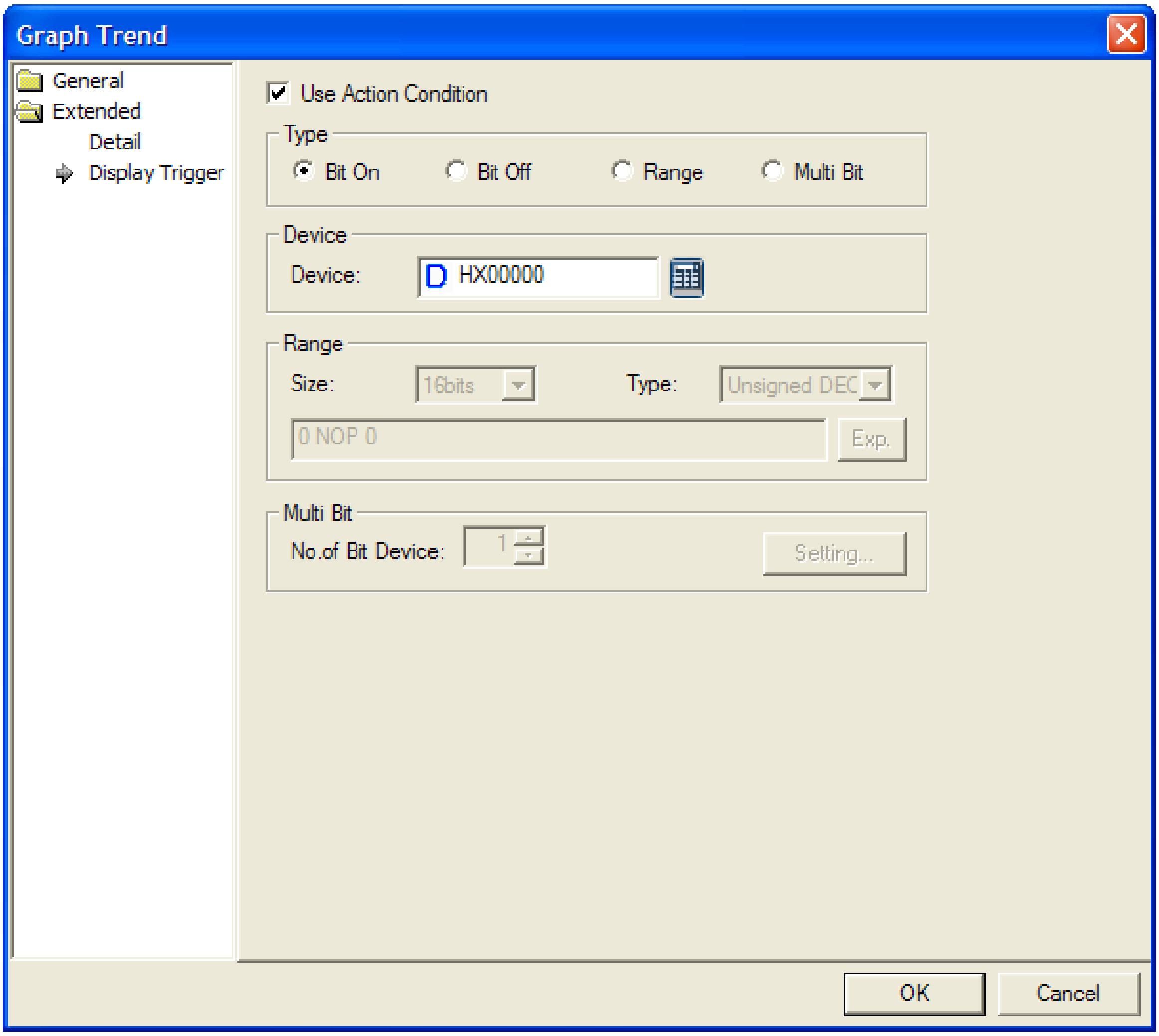
(5) Detail


a
b
c
Graph Trend Properties
General
Extended
Detail
☐ Offset
Device:
D
OK
Cancel

Items	Settings
Offset (a)	Sets the offset device when you use the offset function.
Device (b, c)	Set when you determine the device address by adding the device value set by the offset device to the device to monitor. It is set in the same size and form as the device to be referred to, which has been set in the basic items.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Graph Trend
General
Extended
Detail
Display Trigger
Exp.
Setting...
OK
Cancel

☑ Use Action Condition

Type

● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

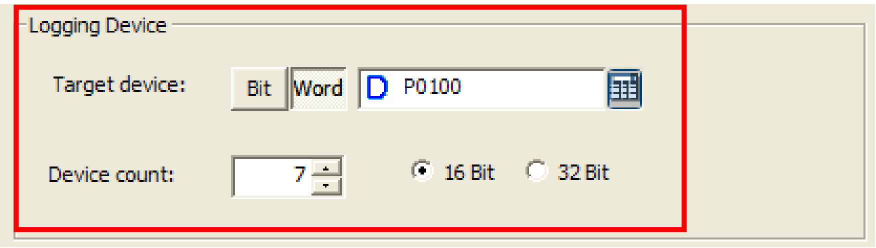
No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.8.8 Items to set Logging Trend Graph

When a certain time or conditions are fulfilled, it logs the device value and displays them to a screen with dots that are linked in a line.

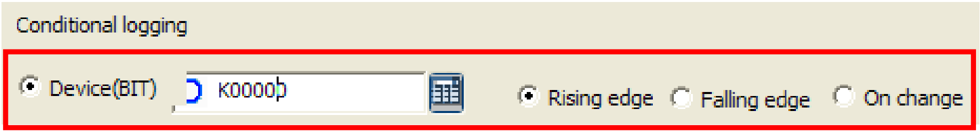
At [Logging] of common data, supposing that bit device KO is in rising edge as below, if the devices between P100 and P107 are edited for logging, it displays each log data at a screen with dots that are linked in a line.



Logging Device

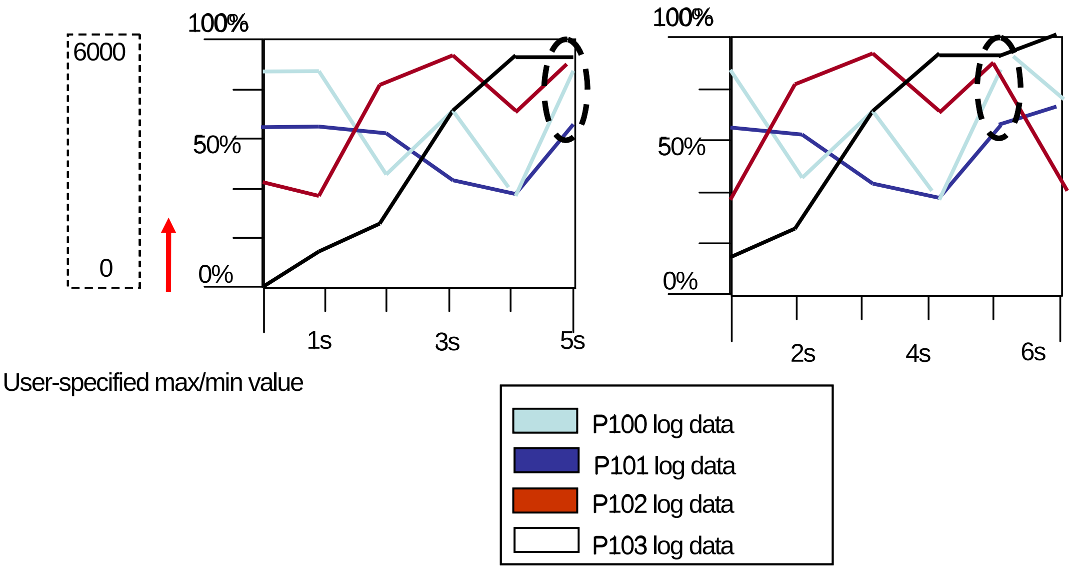
Target device: Bit Word P0100

Device count: 7 ● 16 Bit ○ 32 Bit



Conditional logging

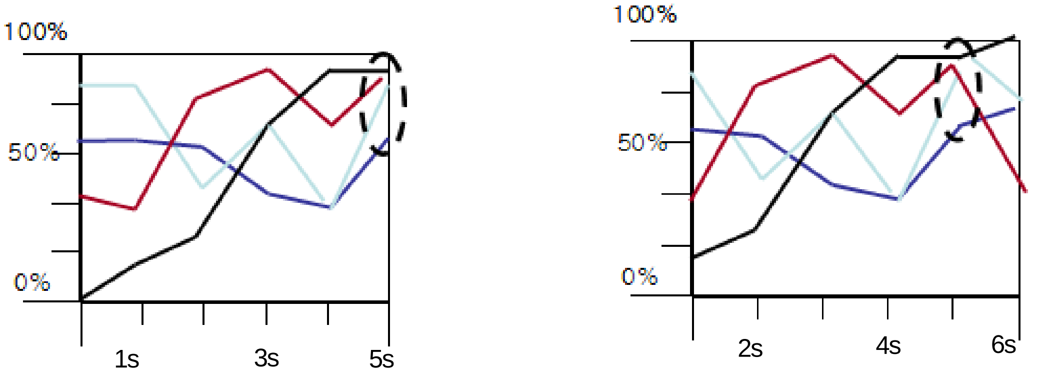
● Device(BIT) K0000 ● Rising edge ○ Falling edge ○ On change



[Method]
(a) Create logging trend graph to the screen.
(b) After establishing the logging group and logging index to be displayed, index, min./max. value, line color at [Basic Items] of logging trend graph, click [Add] button.

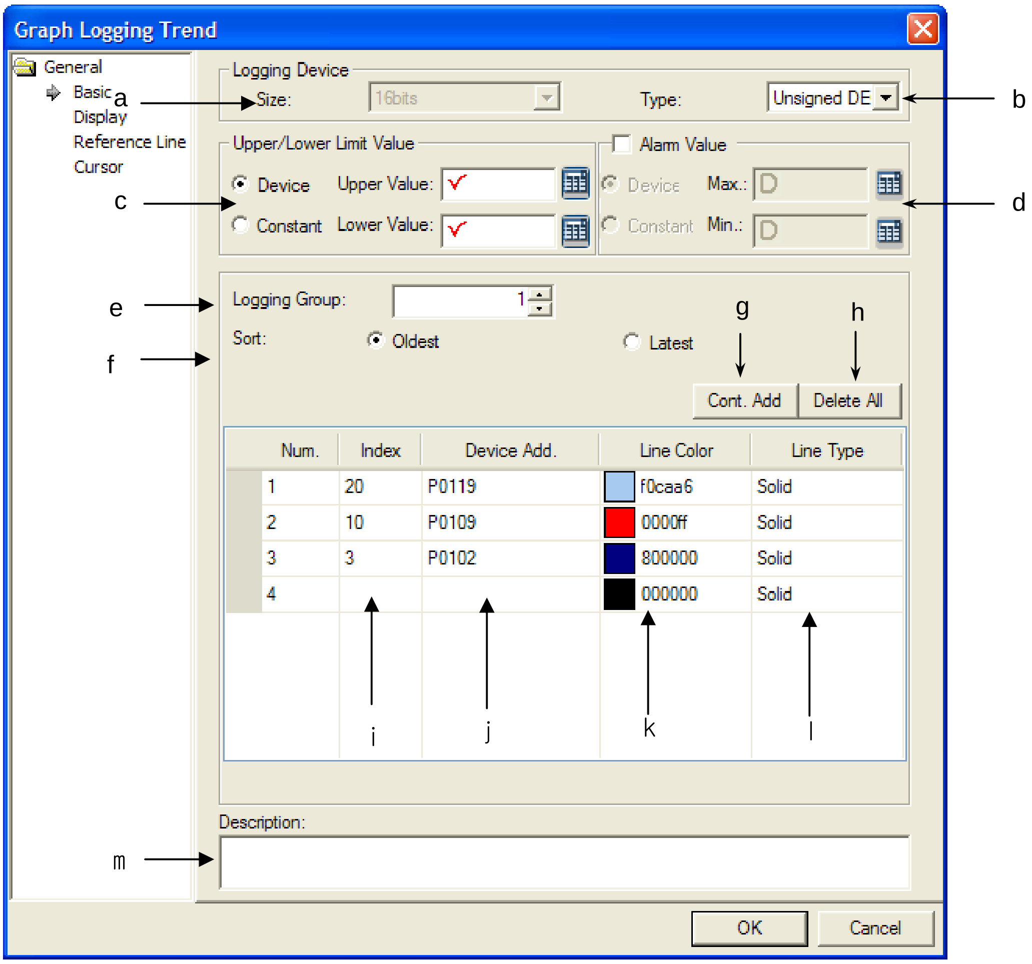
Note

(1) It displays solely the number of the latest collected X-axes (axis of time) with current time as its starting point is indicated at a screen.



(2) During logging, communication may be disconnected instantaneously due to external circumstances such as noise and in this case, logging is not available any more. The related data is not regarded as normal one so logging tend graph does not display it. Accordingly, trend line may seem to be disconnected.

(1) Basic Items


Graph Logging Trend
General
Basic
Display
Reference Line
Cursor
a
b
c
d
e
f
g
h
i
j
k
l
m
Cont. Add
Delete All
OK
Cancel

Logging Device

Size: 16bits

Type: Unsigned DE

Upper/Lower Limit Value

● Device ○ Constant

Upper Value: ✓

Lower Value: ✓

☐ Alarm Value

● Device ○ Constant

Max.: D

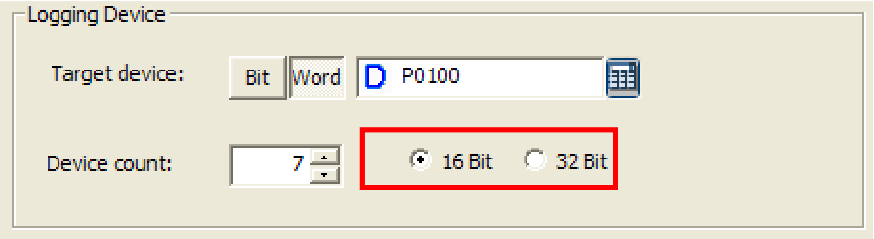
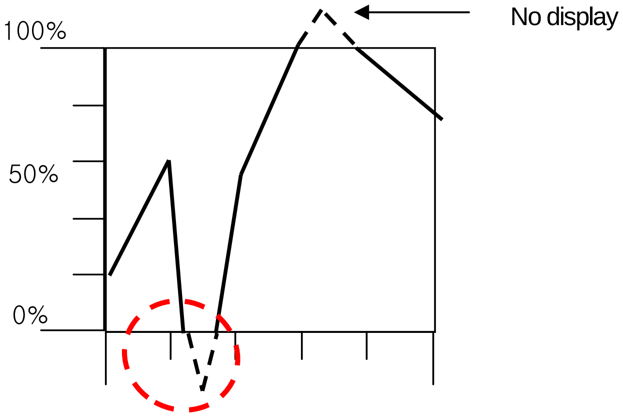
Min.: D

Logging Group: 1

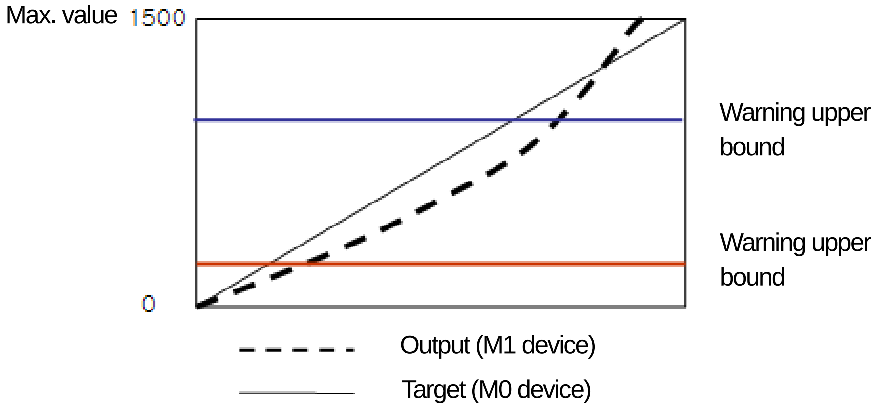
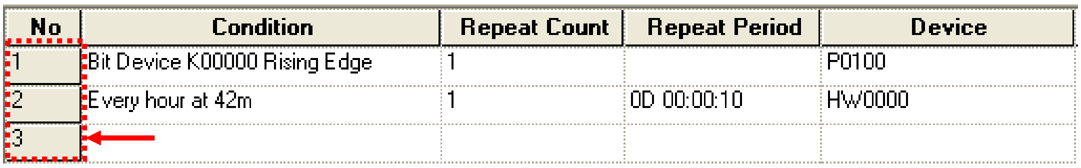
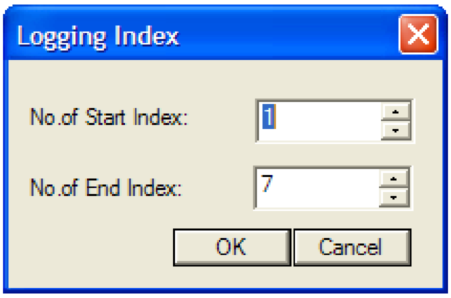
Sort: ● Oldest ○ Latest

Num.	Index	Device Add.	Line Color	Line Type
1	20	P0119	f0caa6	Solid
2	10	P0109	0000ff	Solid
3	3	P0102	800000	Solid
4			000000	Solid

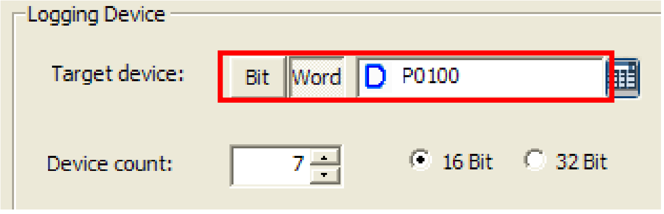
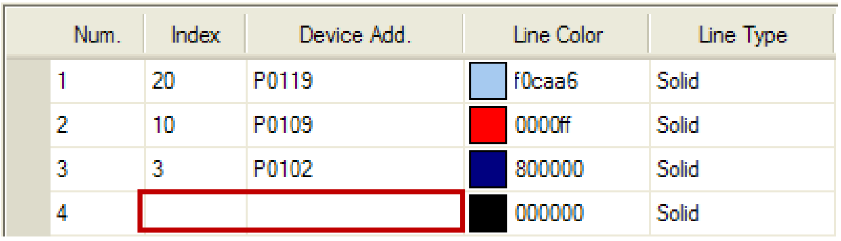
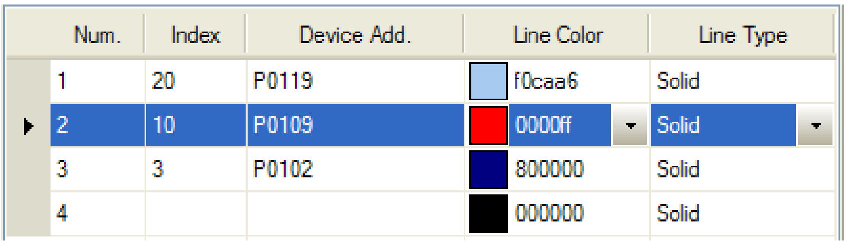
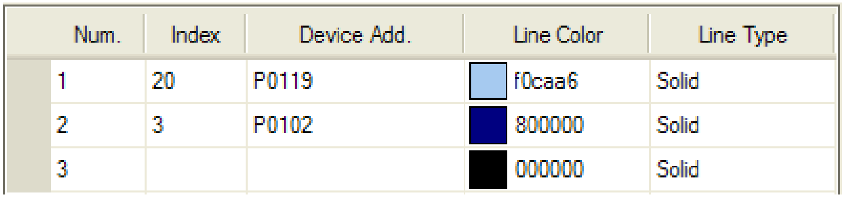
Description:

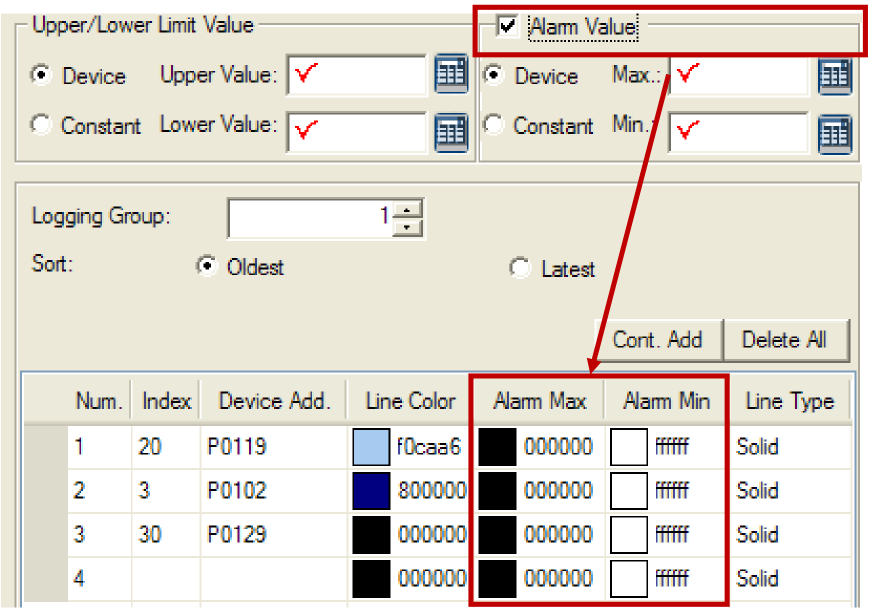
Items	Descriptions
Size(a)	It displays the size of data to be logged based on logging device size established at common data. (16 bit, 32 bit)  Logging Device Target device: Word D P0100 Device count: 7 ● 16 Bit ○ 32 Bit
Type(b)	It fixed the data type of device (decimal number with a sign, decimal number without a sign, BCD)
Min./Max. value(c)	It displays the min./max. value of the data to be displayed. To set min/max value, you can use a device or a constant value. At the above logging trend graph example, among the range of (0~1500), 0 indicates the min. value and 1500 indicates the max. value. If the device to be monitored exceeds the min., max. value, it is displayed as the min., max. value at a graph. 

<table>
<tr><th>Items</th><th>Descriptions</th></tr>
<tr><td>Warning upper bound/Warning lower bound(d)</td><td>It establishes warning upper bound and warning lower bound for logging trend graph.
If the device value is more than warning upper bound, it is not shown as established color but displayed as upper bound color. On the other hand, if the device value is less than lower bound, it is displayed as established lower bound color.

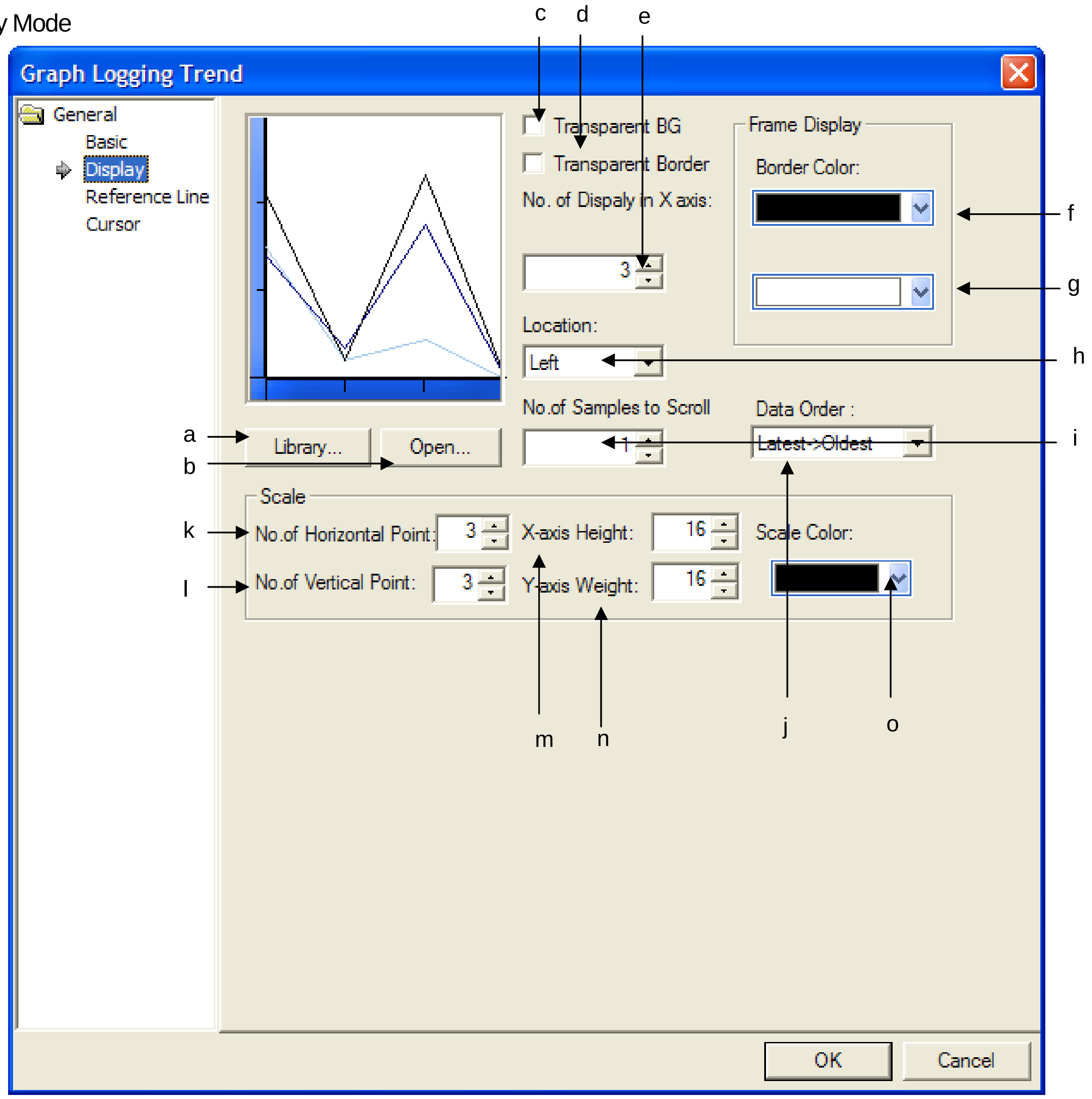
Example 1)

As above, warning upper bound and warning lower bound are displayed as a straight line at XGT Panel.</td></tr>
<tr><td>Logging group ID(e)</td><td>It sets logging No. that is established at logging of Common data.

<table>
<tr><th>No</th><th>Condition</th><th>Repeat Count</th><th>Repeat Period</th><th>Device</th></tr>
<tr><td>1</td><td>Bit Device K00000 Rising Edge</td><td>1</td><td></td><td>P0100</td></tr>
<tr><td>2</td><td>Every hour at 42m</td><td>1</td><td>0D 00:00:10</td><td>HW0000</td></tr>
<tr><td>3</td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Preferred Display (f)</td><td>It selects alignment type for data display; the oldest data or the latest data based on logging time.</td></tr>
<tr><td>Continuous Add(g)</td><td>If you press a button, you can input from a starting index to the last one and all index values of the range are added automatically.

No.of Start Index: 1
No.of End Index: 7
When establish as above; the index to be added:1, last index: 7, all indexes between 1 and 7 are added at once.

You can add up to 20 items. Accordingly, it allows the items to the extent of last index to be added –starting index +1.</td></tr>
<tr><td>Delete All(h)</td><td>It deletes all input data at once.</td></tr>
</table>

<table>
<tr><th>Items</th><th>Descriptions</th></tr>
<tr><td>Logging index(i)</td><td>
Index No. starts from logging device of 1 and when the device address increase, logging index increases by 1.
For example, you edit 32 logging devices from P100 as below, among continuous 32 devices, the No. for 4 indexes; P0101, P0104, P0109, P0117 is as below.

Logging Device
Target device: Bit Word D P0100
Device count: 7 ● 16 Bit ○ 32 Bit
<table>
<tr><th>Device address</th><th>Logging Index</th></tr>
<tr><td>P0100 (Object device)</td><td>1</td></tr>
<tr><td>P0101</td><td>2</td></tr>
<tr><td>…</td><td>…</td></tr>
<tr><td>P0104</td><td>5</td></tr>
<tr><td>…</td><td>…</td></tr>
<tr><td>P0109</td><td>10</td></tr>
<tr><td>…</td><td>…</td></tr>
<tr><td>P0117</td><td>18</td></tr>
</table>
To add a new item to logging trend graph, input displayed logging group No. to blank index screen and press [Enter] key. If a new item is added, the index screen is added to the next row and you can also add another item up to 20EA.

<table>
<tr><th>Num.</th><th>Index</th><th>Device Add.</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td>1</td><td>20</td><td>P0119</td><td>🟦 f0caa6</td><td>Solid</td></tr>
<tr><td>2</td><td>10</td><td>P0109</td><td>🟥 0000ff</td><td>Solid</td></tr>
<tr><td>3</td><td>3</td><td>P0102</td><td>🟦 800000</td><td>Solid</td></tr>
<tr><td>4</td><td></td><td></td><td>⬛ 000000</td><td>Solid</td></tr>
</table>
On the other hands, to delete input item, click the row No. to be deleted and press [Delete] key.
Ex.) To delete the second item from the above, click No. 2 and press [Delete] key.

<table>
<tr><th></th><th>Num.</th><th>Index</th><th>Device Add.</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td></td><td>1</td><td>20</td><td>P0119</td><td>🟦 f0caa6</td><td>Solid</td></tr>
<tr><td>▶</td><td>2</td><td>10</td><td>P0109</td><td>🟥 0000ff</td><td>Solid</td></tr>
<tr><td></td><td>3</td><td>3</td><td>P0102</td><td>🟦 800000</td><td>Solid</td></tr>
<tr><td></td><td>4</td><td></td><td></td><td>⬛ 000000</td><td>Solid</td></tr>
</table>

<table>
<tr><th>Num.</th><th>Index</th><th>Device Add.</th><th>Line Color</th><th>Line Type</th></tr>
<tr><td>1</td><td>20</td><td>P0119</td><td>🟦 f0caa6</td><td>Solid</td></tr>
<tr><td>2</td><td>3</td><td>P0102</td><td>🟦 800000</td><td>Solid</td></tr>
<tr><td>3</td><td></td><td></td><td>⬛ 000000</td><td>Solid</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th colspan="2">Items</th><th>Descriptions</th></tr>
<tr><td colspan="2">Device address(j)</td><td>It displays the starting address that is applicable for logging group, logging index. You can not input device address and address value is changed depending on logging index value. Refer to Logging Index(i) for displayed delivery address.</td></tr>
<tr><td rowspan="2">Line</td><td>Color(k)</td><td>Sets the color of graph line.</td></tr>
<tr><td>Shape(l)</td><td>Sets the shape of graph line.
You can select two kinds of lines; dotted line, continuous line.</td></tr>
<tr><td rowspan="2">Warning line</td><td>Upper bound color</td><td>It sets the line color of a graph line when device value exceeds warning upper bound. Only when warning value is established, warning upper/lower bound color can be selected. If you undo using warning value, the related row is not displayed.

Upper/Lower Limit Value
● Device Upper Value: ✓
○ Constant Lower Value: ✓
☑ Alarm Value
● Device Max.: ✓
○ Constant Min.: ✓
Logging Group: 1
Sort: ● Oldest ○ Latest
Cont. Add Delete All
<table>
<tr><th>Num.</th><th>Index</th><th>Device Add.</th><th>Line Color</th><th>Alarm Max</th><th>Alarm Min</th><th>Line Type</th></tr>
<tr><td>1</td><td>20</td><td>P0119</td><td>f0caa6</td><td>000000</td><td>ffffff</td><td>Solid</td></tr>
<tr><td>2</td><td>3</td><td>P0102</td><td>800000</td><td>000000</td><td>ffffff</td><td>Solid</td></tr>
<tr><td>3</td><td>30</td><td>P0129</td><td>000000</td><td>000000</td><td>ffffff</td><td>Solid</td></tr>
<tr><td>4</td><td></td><td></td><td>000000</td><td>000000</td><td>ffffff</td><td>Solid</td></tr>
</table></td></tr>
<tr><td>Lower bound color</td><td>It sets the line color of a graph when device value is less than warning lower bound.</td></tr>
<tr><td colspan="2">Explanation(m)</td><td>You can input explanation for the object.</td></tr>
</table>

(1) Display Mode


c
d
e
Graph Logging Trend
General
Basic
Display
Reference Line
Cursor
f
g
h
i
a
b
Library...
Open...
k
l
m
n
j
o
OK
Cancel

☐ Transparent BG

☐ Transparent Border

No. of Dispaly in X axis: 3

Location: Left

No.of Samples to Scroll 1

Frame Display

Border Color:

Data Order : Latest->Oldest

Scale

No.of Horizontal Point: 3

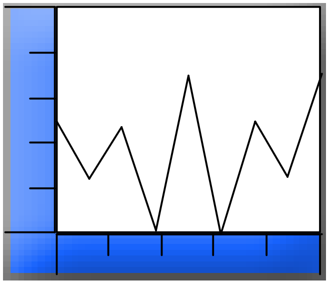
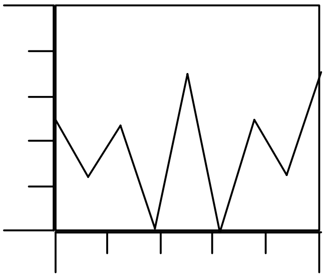
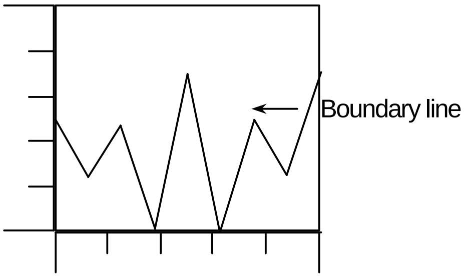
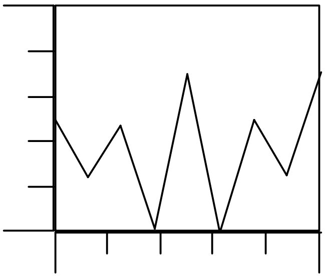
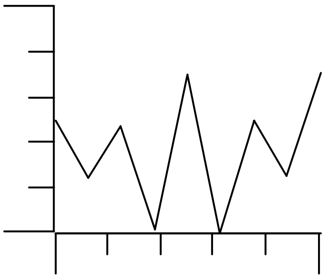
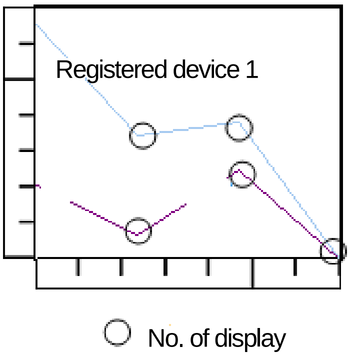
No.of Vertical Point: 3

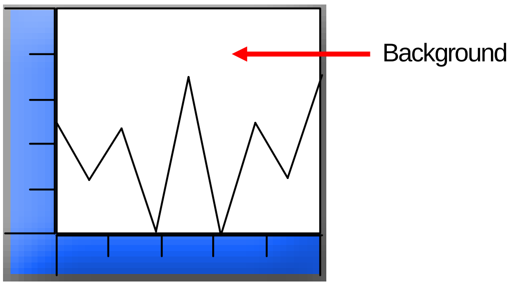
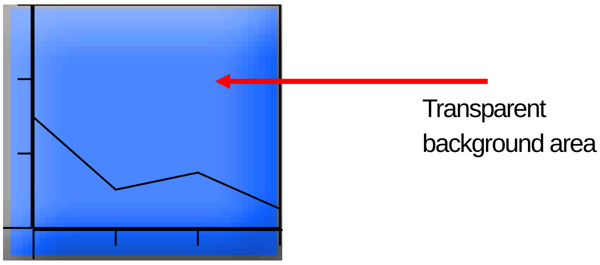
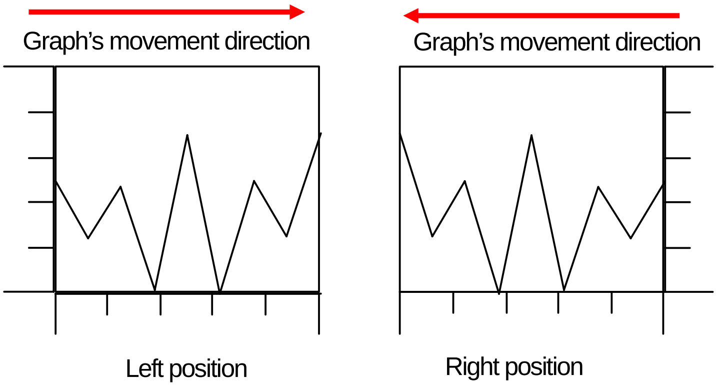
X-axis Height: 16

Y-axis Weight: 16

Scale Color:

Items	Setting Descriptions
Library(a)	Select the background image for a graph from system graphic library and user graphic library.
Open (b)	Select the background image for a graph from image file (☞ Refer to 17.1.3 Bit Lamp Setting Items.

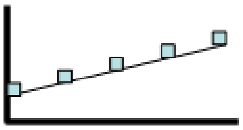
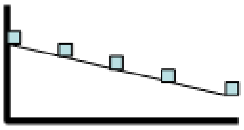
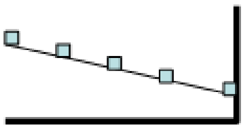
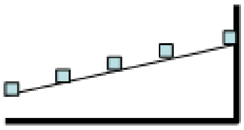
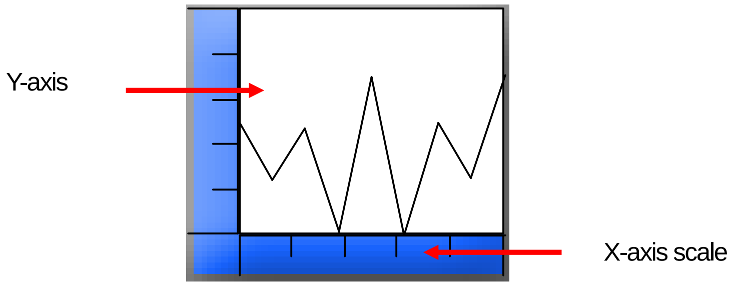
Items	Setting Descriptions
Not using image(c)	When you want not to display logging trend graph's background image, the function is applied.  Using background image  No background image
No boundary line(d)	The boundary line of logging trend graph is not applied.   Using boundary line  Not using boundary line
The number of Display in X-axis (e)	The function fixes the number of value to be displayed in X-axis. It should be more than 3EA between 3~120. In case that the number of displayed devices is 3, 
Border color(f)	It fixes the color of border. (☞ Refer to No Border(d).)

Items	Setting Descriptions
Background color(g)	It sets the background color.  In case that you do not establish Using background color ☑ Plate Color: , the background area will be displayed with transparent color. 
Position(h)	You can fix the position of scale; left or right.  Graph's movement direction Graph's movement direction Left position Right position
Screen Transference Unit (i)	A user can refer to the data of his intended position with the special switch; Previous Data/Next Data View. However, in the below two cases (The latest data tracking mode/the oldest data tracking mode), a screen is automatically updated and it displays the data since the present time. Through Screen Transference Unit, you can fix how many data unit will be applied to transfer a screen. (a) The latest data tracking mode When a user edits and downloads logging trend graph after setting Preferred View Mode as the latest data tracking mode, logging trend is set as the latest data tracking mode and it updates a screen every time logging is performed newly and then, it tracks and shows the latest logging data. When you press Previous Data View, the mode is canceled. If you want to set the mode again, press the special switch; the latest data view. (b) The oldest data tracking mode The logging type linked to logging trend graph is set as circular buffer, the data displayed at the current screen will be removed someday with continuous logging process. Then, the equipment updates a screen automatically and displays the oldest data.

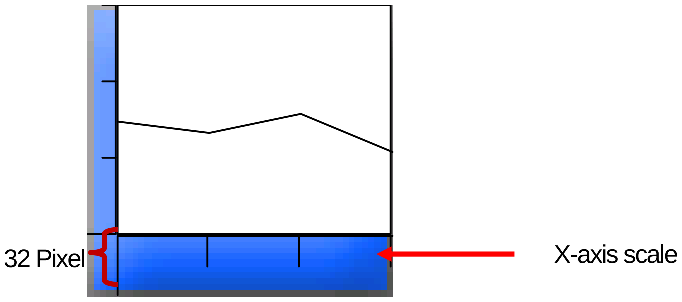
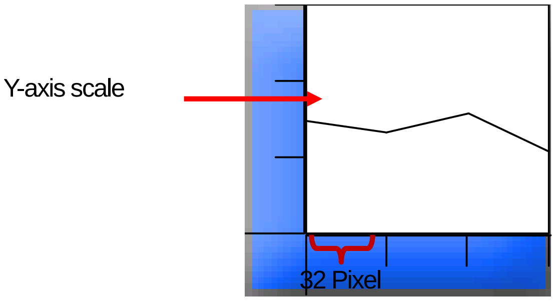
<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td></td><td>As above, when updating a screen automatically, through Screen Transference Unit, you can select the number of data to be transferred.</td></tr>
<tr><td>The order of displayed data (j)</td><td>The procedure of data displayed at a screen. The below description is based on the assumption that the scale position (h) is left.
<table>
<tr><th>Items</th><th>Description</th></tr>
<tr><td>The oldest one -> The latest one
(Forward Alignment)</td><td>On the basis of left lower point of graph area, while the latest data is displayed in the right, the previous one is displayed in the left.</td></tr>
<tr><td>The latest one -> The oldest one
(Reverse Alignment)</td><td>On the basis of left lower point of graph area, while the latest data is displayed in the left, the previous one is displayed in the right.</td></tr>
</table>
Added field->Data alignment / Order, Time, Data,

[Display]->[Location] : Left
Data alignment: Forward alignment

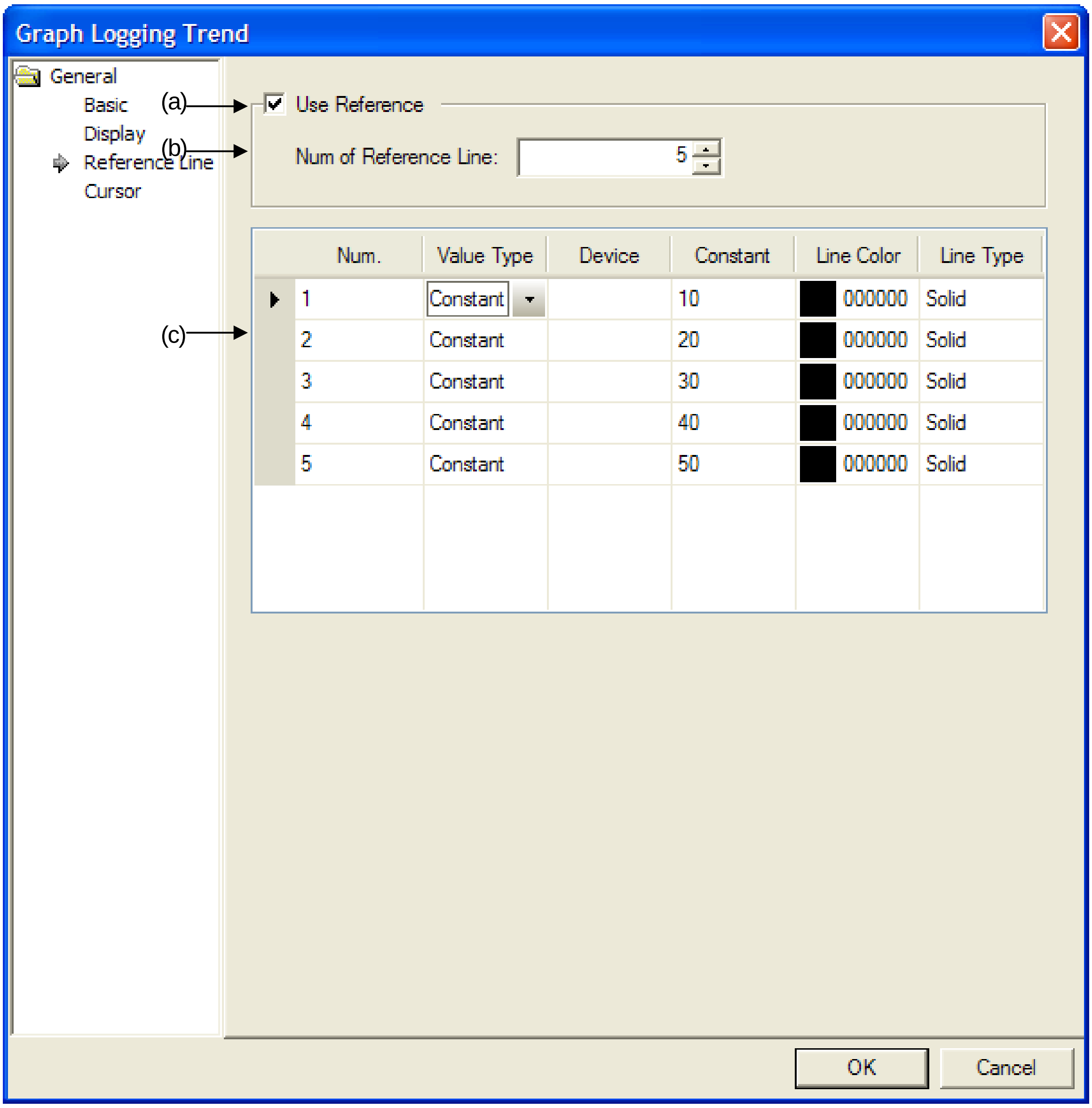
[Display]->[Location] : Right
Data alignment: Reverse alignment

Added field → Data array
<table>
<tr><th>No.</th><th>Time</th><th>Data</th></tr>
<tr><td>1</td><td>8:10</td><td>10</td></tr>
<tr><td>2</td><td>8:20</td><td>20</td></tr>
<tr><td>3</td><td>8:30</td><td>30</td></tr>
<tr><td>4</td><td>8:40</td><td>40</td></tr>
<tr><td>5</td><td>8:50</td><td>50</td></tr>
</table>
[Display] → [Location]: left
Data alignment: forward alignment

[Display] → [Location]: left
Data alignment: reverse alignment

[Display] → [Location]: right
Data alignment: forward alignment

[Display] → [Location]: right
Data alignment: reserve alignment

</td></tr>
<tr><td>The number of X-axis scales (k)</td><td>It sets the number of X-axis scales.


</td></tr>
<tr><td>The number of Y-axis scales (j)</td><td>It sets the number of Y-axis scales.</td></tr>
</table>

Items	Setting Descriptions
Length of X-axis scale (l)	It sets length of X-axis scale. X-axis is indicated as many as the value input with absolute pixel. However, length of X-axis scale is higher than the length of trend graph object, trend graph is not displayed at a screen. For example, supposing that area of X-axis scale is designated as 32, the scale is displayed as 32 pixel size. 
Width of Y-axis scale (m)	It sets width of Y-axis scale. Y-axis is indicated as many as the value input with absolute pixel. However, width of Y-axis scale is larger than the width of trend graph object, trend graph is not displayed at a screen. For example, supposing that width of Y-axis scale is designated as 32, the scale is displayed as 32 pixel size. . 
Scale color(m)	It sets the color of scale.

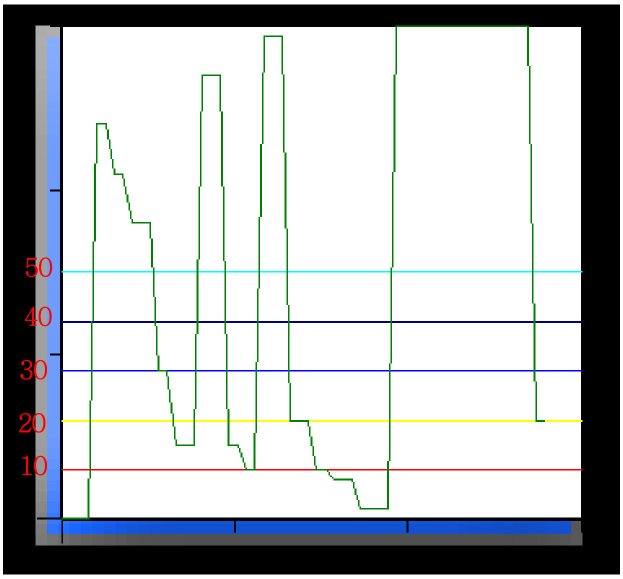
(3) Reference Line


Graph Logging Trend
General
Basic
Display
Reference Line
Cursor
(a)
(b)
(c)
OK
Cancel

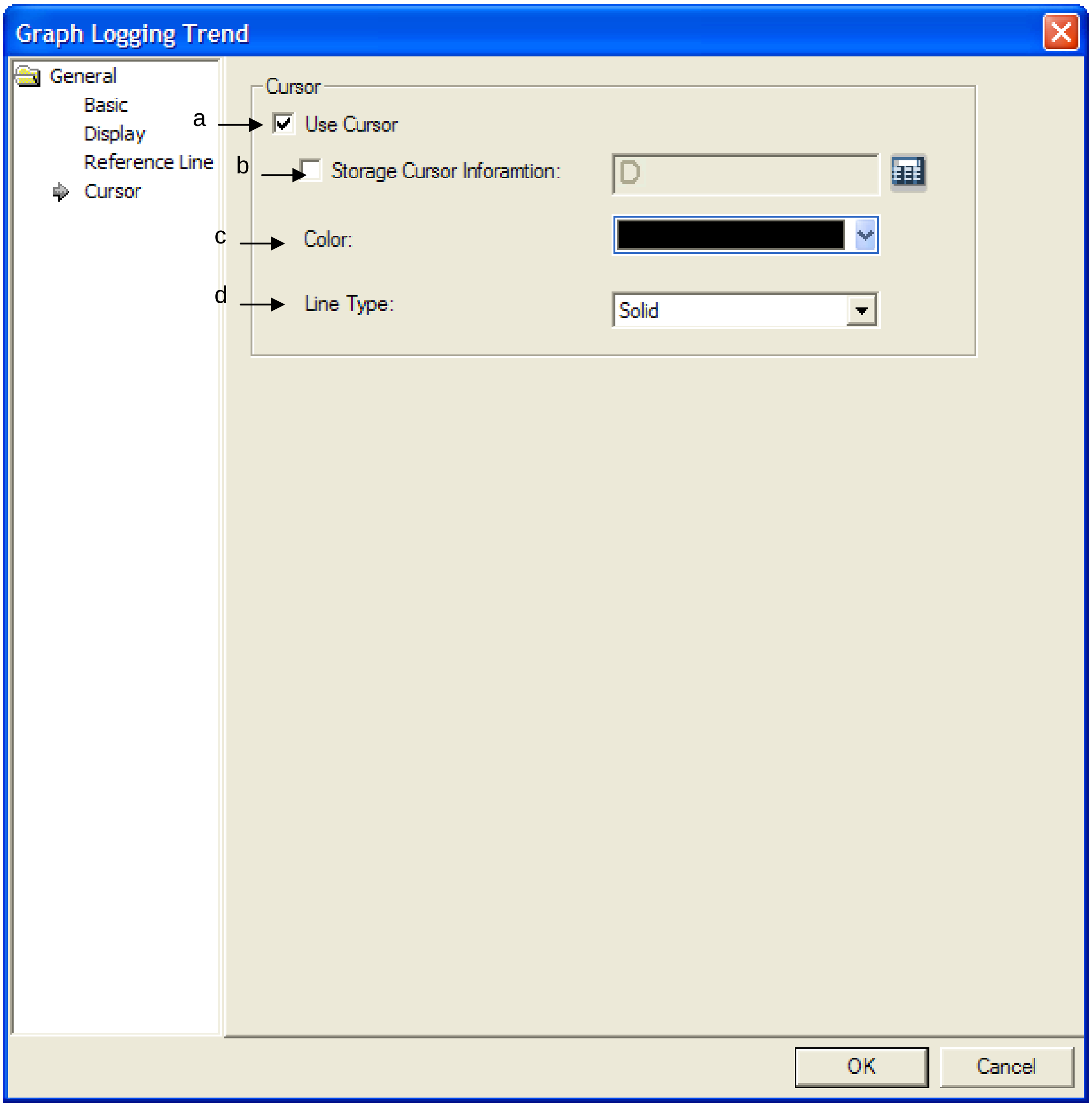
☑ Use Reference

Num of Reference Line: 5

	Num.	Value Type	Device	Constant	Line Color	Line Type
▶	1	Constant		10	■ 000000	Solid
	2	Constant		20	■ 000000	Solid
	3	Constant		30	■ 000000	Solid
	4	Constant		40	■ 000000	Solid
	5	Constant		50	■ 000000	Solid

Items	Setting Descriptions
Using Reference Line (a)	It sets whether using Reference Line or not. It means the line that displays position of a certain value besides the min./max. value at logging trend graph.  Reference Line can fix the position with fixed value or device value.
The number of Reference Lines(b)	It sets the number of Reference Lines to be displayed. If you input the number of Reference Lines and move to the screen to set the property of Reference Line, the row is created so that you can establish it as many as the number of set lines. Allowable number of Reference Lines is between 1 and 8.
Setting the property of Reference Line (c)	Only when you establish Using Reference Line, edition is allowable. You can set each property of Reference Line. If you set [Value Type] as [Fixed value], you can not input device. On the other hand, if you establish [Value Type] as device, you can not input [Fixed value]. Row No. means the No. of Reference Line. You can not edit each row and change the position of each row.

(4) Cursor Type



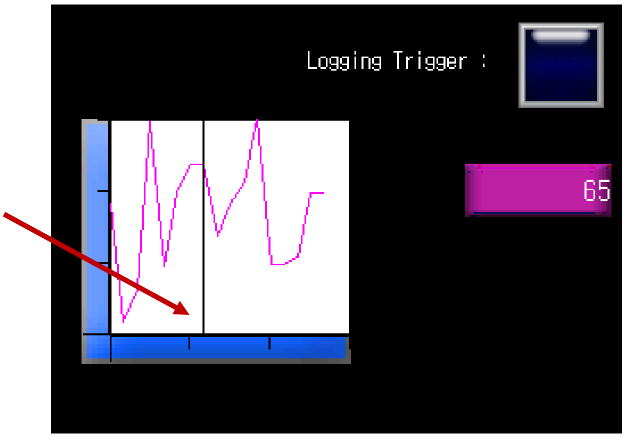
Graph Logging Trend
General
Basic
Display
Reference Line
Cursor
Cursor
a
b
c
d
OK
Cancel

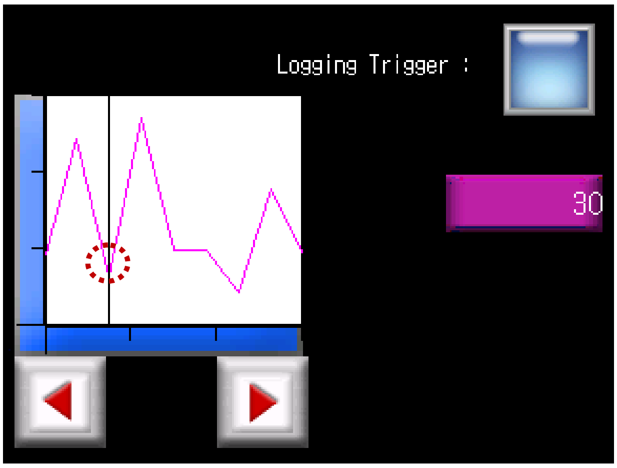
☑ Use Cursor

☐ Storage Cursor Inforamtion: D

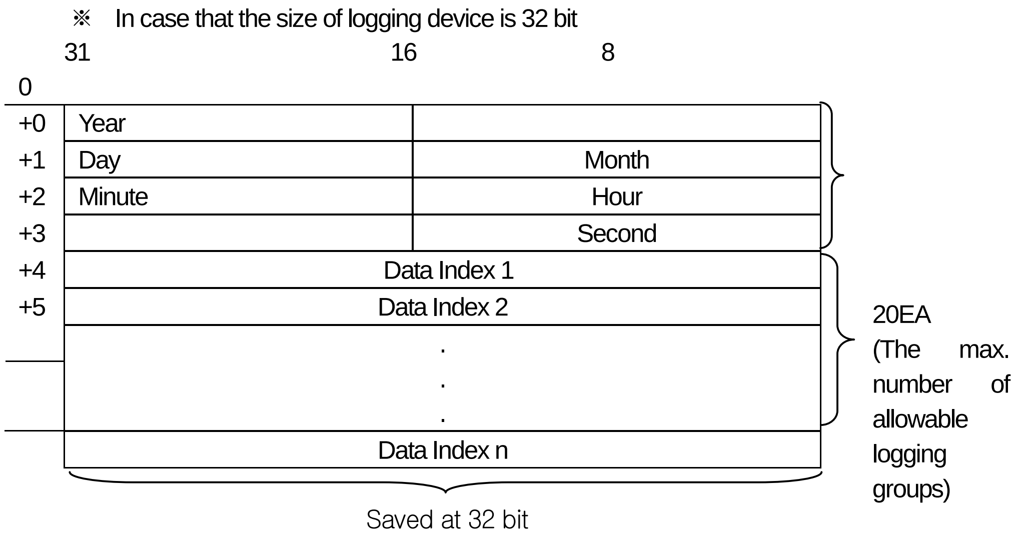
Color:

Line Type: Solid

<table>
<tr><th>Items</th><th>Description</th></tr>
<tr><td>Using cursor(a)</td><td>It sets whether displaying cursor at XGT screen or now as below.


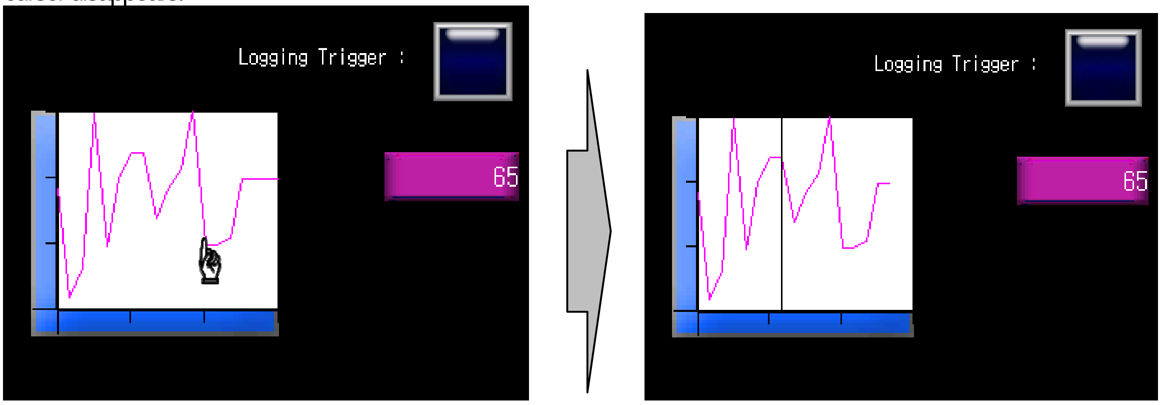
Cursor</td></tr>
<tr><td>Saving Cursor Data (b)</td><td>It sets whether saving cursor data or not.
Cursor data means logging time of current cursor position and the related values.
Saving logging time and value


Cursor data is saved at device and the size of device is always 32 bit. Cursor data is saved as below on the basis of designated device.
※ In case that the size of logging device is 16 bit
31 16 8
0
<table>
<tr><td>+0</td><td>Year</td><td></td></tr>
<tr><td>+1</td><td>Day</td><td>Month</td></tr>
<tr><td>+2</td><td>Minute</td><td>Hour</td></tr>
<tr><td>+3</td><td></td><td>Second</td></tr>
<tr><td>+4</td><td></td><td>16bit data index 1</td></tr>
<tr><td>+5</td><td></td><td>16bit data index 2</td></tr>
<tr><td></td><td>.
.
.</td><td>.
.
.</td></tr>
<tr><td></td><td></td><td>16bit data index n</td></tr>
</table>
Saved as 16bit without a signal respectively
20EA (the max. number of allowable logging groups(
Saved at lower 16 bit</td></tr>
</table>

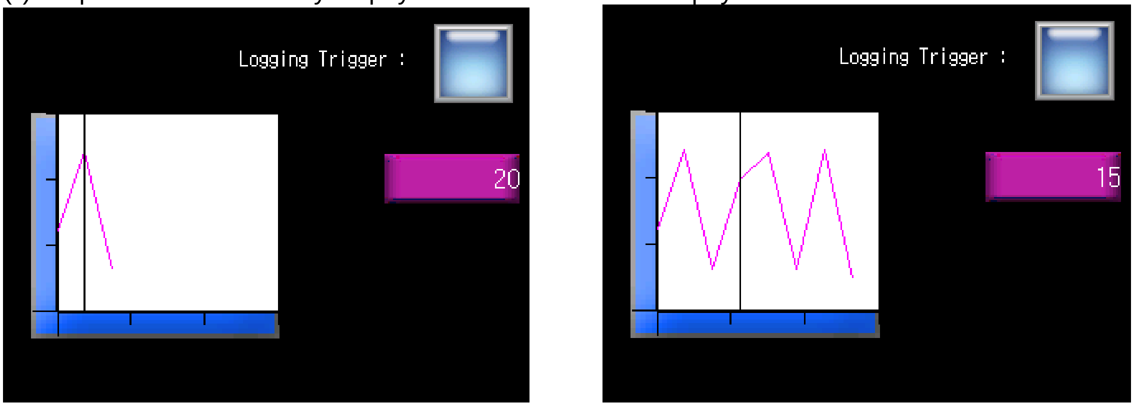
	※ In case that the size of logging device is 32 bit  31 16 8 0 +0 Year +1 Day Month +2 Minute Hour +3 Second +4 Data Index 1 +5 Data Index 2 . . . Data Index n Saved at 32 bit 20EA (The max. number of allowable logging groups) When applying Cursor Data Save, it displays the cursor data to designated device every time the data of current cursor changes or cursor moves. .
Color(c)	It designates the color of cursor.
Shape(d)	It designate the shape of cursor; solid line, dotted line

Note

(1) If you click the area of logging trend object one at XGT Panel screen, cursor appears and if you click the area once again, cursor disappears.


Logging Trigger :
65
Logging Trigger :
65

(2) The position of cursor is always displayed at the middle of current displayed data as below.

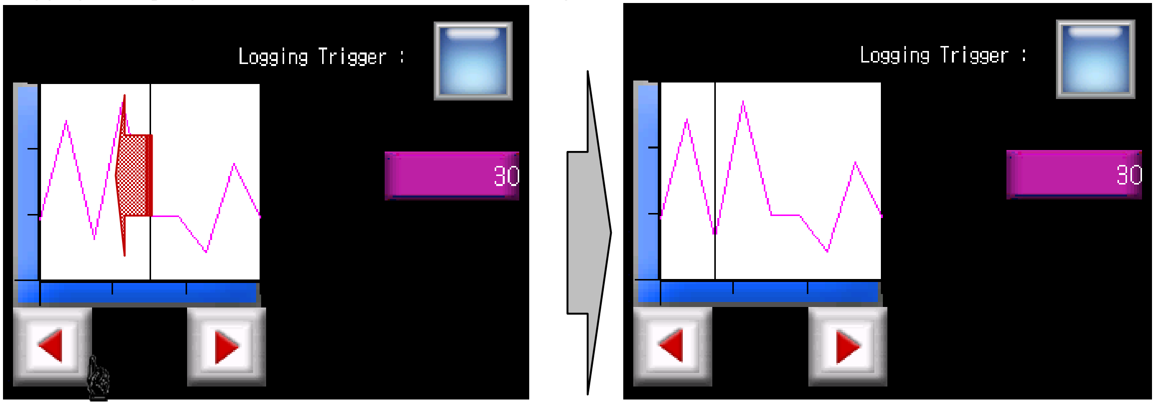

Logging Trigger :
20
Logging Trigger :
15

In the case of 3 displayed data

In the case of 8 displayed data

(3) When the data to be displayed for a graph disappears due to area deletion of cursor display mode, cursor disappears. Logging is resumed, it is displayed again.

(4)The position of cursor does not move. If you apply [Viewing the data prior to Logging Trend], [Viewing the data after Logging Trend], it generates the same effects as moving cursor.


Logging Trigger :
30
Logging Trigger :
30

(5) If there is no data that is obtained before/after the current data, cursor moves to previous/next data.

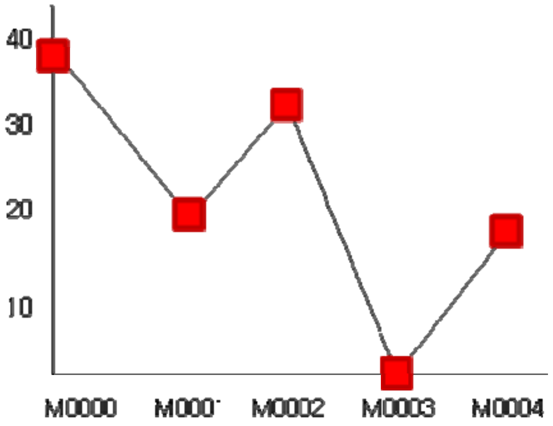
17.8.9 Items to set Logging Distribution Graph

When a certain time or conditions are fulfilled, it logs the device value and displays continuous device data values for one logging with linking a dot or line. (For established several logging groups, it displays continuous device value) Logging distribution chart can be divided into Y-Distribution chart and X-Y Distribution chart depending on the way to display device.

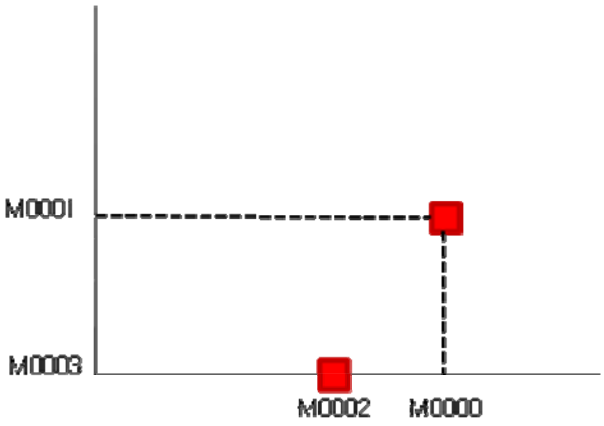
At [Logging] of common data, supposing that bit device KO is in rising edge as below, if the devices between P100 and P107 are edited for logging, it displays each log data at a screen with dots that are linked in a line.

Ex.) In the case of common data logging, supposing that logging group No.1 logs 5 devices from M0000, the distribution of each value is displayed as a dot or line every time the data is logged. If logged data values are as below, they are indicated as below depending on the type of distribution chart.

Device Address	M0000	M0001	M0002	M0003	M0004
Device Value	40	20	35	0	16



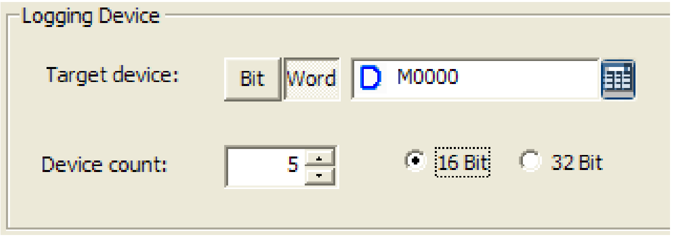
Y -Distribution chart



X-Y Distribution chart

[Method]

(a) Set logging group, conditions, logging object from common data.



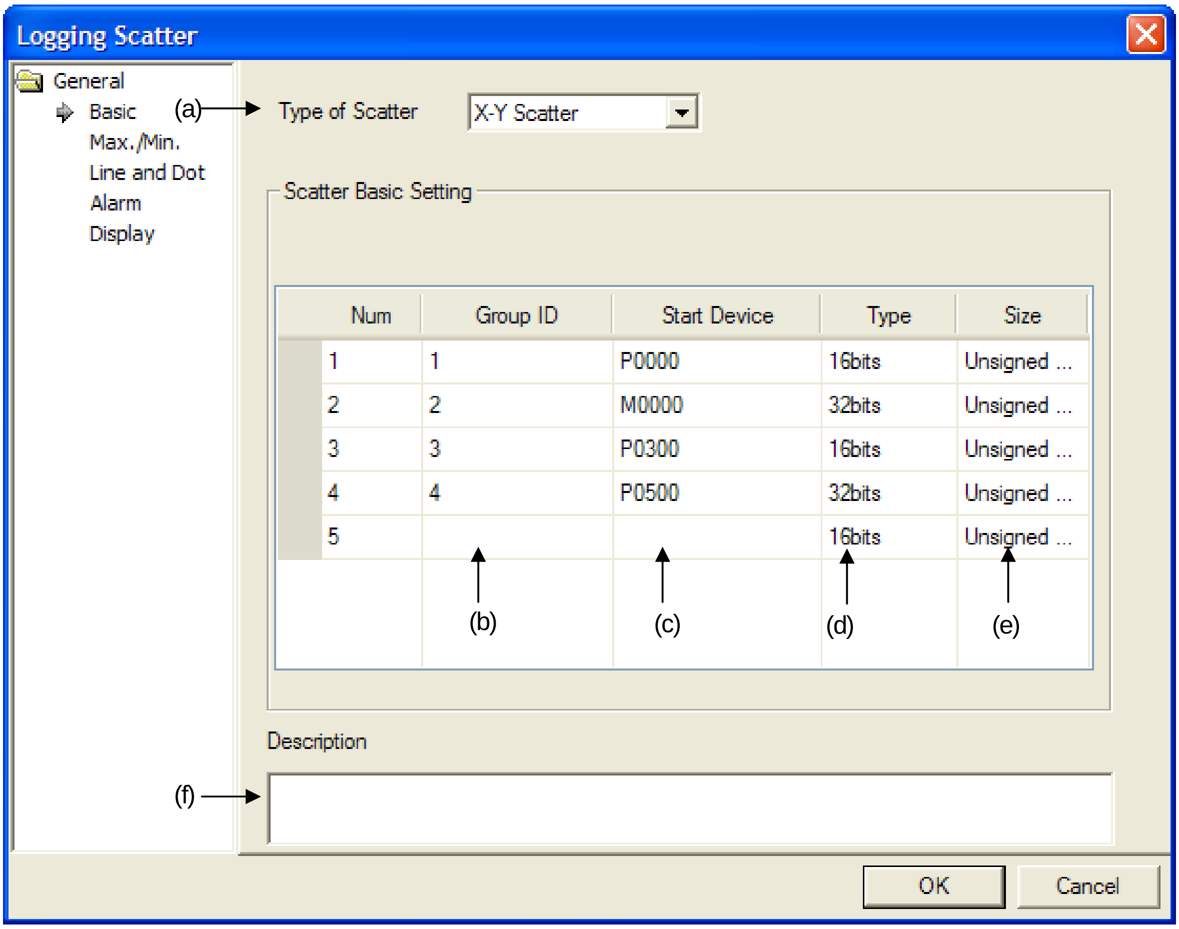
Target device: D M0000

Device count: 5 ● 16 Bit ○ 32 Bit

[Logging setting screen of common data]

(b) Select the type of distribution chart at [Basic Items] of Logging Distribution Chart Graph.
(c) Select logging group to be displayed for a graph at [Basic Items] of Logging Distribution Chart Graph.
(d) Set the min., max. value of X-axis or Y-axis at logging distribution chart.
(e) Select the color and type of a dot or line with whether using a dot·line or not.
(f) After all setting is completed, press [Add] button to resister the logging to be displayed.

(1) Basic Items



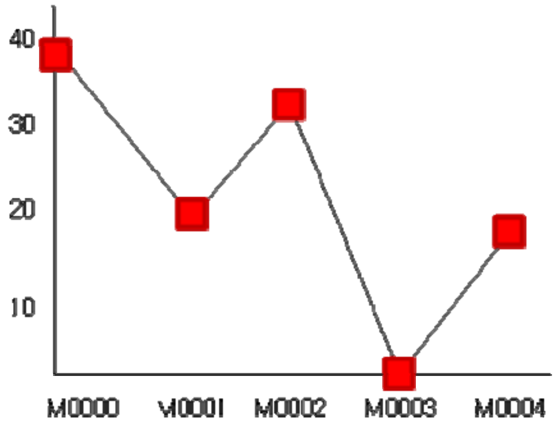
Logging Scatter
General
Basic
Max./Min.
Line and Dot
Alarm
Display
(a)
(b)
(c)
(d)
(e)
(f)
OK
Cancel

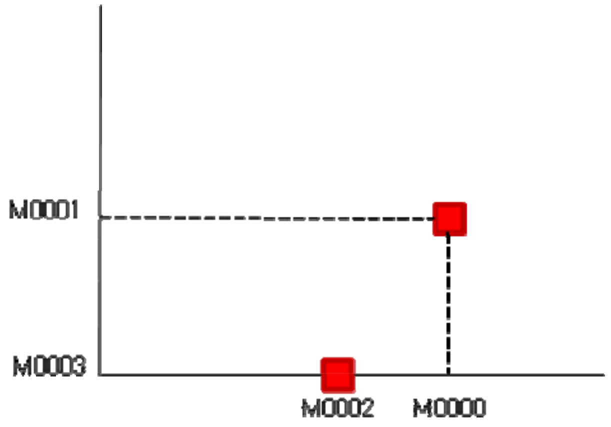
Type of Scatter: X-Y Scatter

Scatter Basic Setting

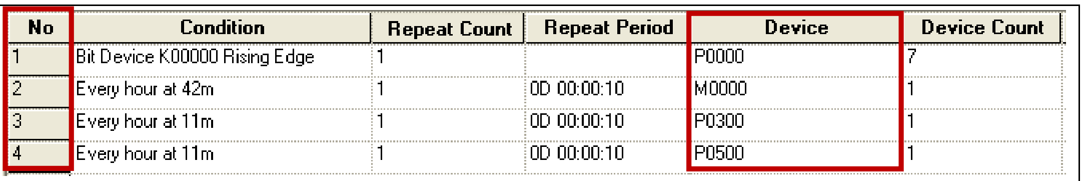
Num	Group ID	Start Device	Type	Size
1	1	P0000	16bits	Unsigned ...
2	2	M0000	32bits	Unsigned ...
3	3	P0300	16bits	Unsigned ...
4	4	P0500	32bits	Unsigned ...
5			16bits	Unsigned ...

Description

<table>
<tr><th>Items</th><th>Setting Description</th></tr>
<tr><td>Distribution chart type(a)</td><td>It sets Y-distribution chart or X-Y distribution chart. The characteristics of each distribution chart are as below.
<table>
<tr><th>Distribution chart type</th><th>Characteristics</th></tr>
<tr><td>Y- distribution chart</td><td>It indicates respectively continuous device address including logging starting device in X-axis in order.


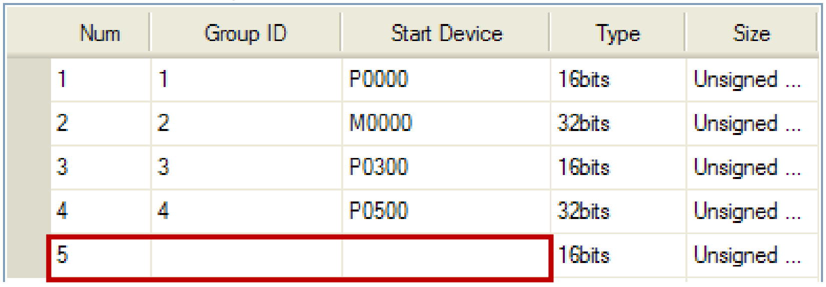
(X-axis displays successively the device so you do not need to designate X-axis's min.,max.value)</td></tr>
<tr><td>X-Y distribution chart</td><td>For two continuous device addresses from starting device, it indicates the previous device value in X-axis, next device value in Y-axis with displaying dot or value at the point where two coordinates meet.
Supposing that the data value of M0000 ~ M0004 as above, X-Y distribution chart is indicated as below.


(You need to designate the min., max. value of X-axis, Y-axis.)</td></tr>
</table></td></tr>
<tr><td>Logging Group No. (b)</td><td>The logging group No. to be displayed can be established among 1~32.
It can be fixed among Logging group No. established [Project]-[Logging].</td></tr>
</table>



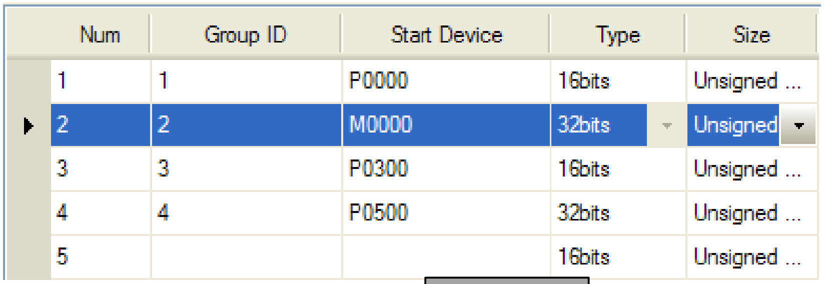
No	Condition	Repeat Count	Repeat Period	Device	Device Count
1	Bit Device K00000 Rising Edge	1		P0000	7
2	Every hour at 42m	1	0D 00:00:10	M0000	1
3	Every hour at 11m	1	0D 00:00:10	P0300	1
4	Every hour at 11m	1	0D 00:00:10	P0500	1

To add a new item to logging distribution chart, input logging group No. to logging group screen and press [Enter] key. If a new item is added, the screen for logging group No. is added to the next row and you can also add another item up to 20EA.

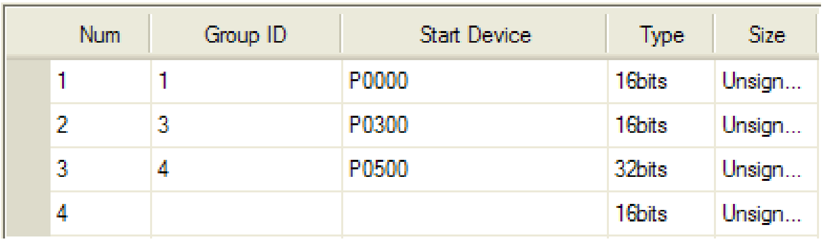


Num	Group ID	Start Device	Type	Size
1	1	P0000	16bits	Unsigned ...
2	2	M0000	32bits	Unsigned ...
3	3	P0300	16bits	Unsigned ...
4	4	P0500	32bits	Unsigned ...
5			16bits	Unsigned ...

To delete input item, click the row No. to be deleted and press [Delete] key.
Ex.) To delete the second item from the above, click No. 2 and press [Delete] key.

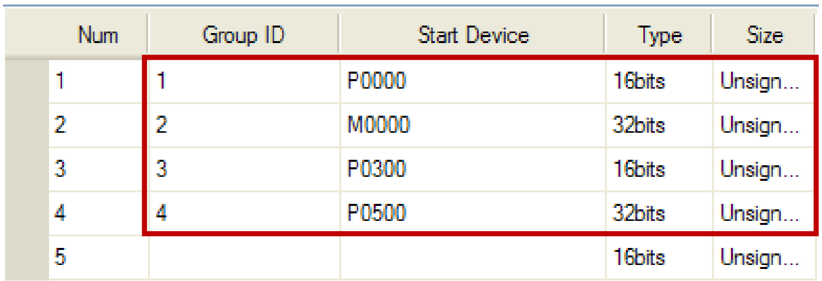


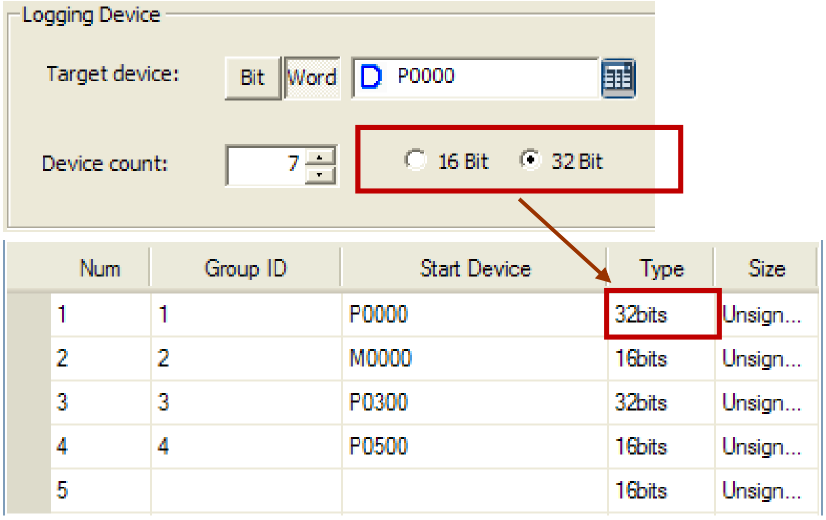
Num	Group ID	Start Device	Type	Size
1	1	P0000	16bits	Unsigned ...
2	2	M0000	32bits	Unsigned
3	3	P0300	16bits	Unsigned ...
4	4	P0500	32bits	Unsigned ...
5			16bits	Unsigned ...



Num	Group ID	Start Device	Type	Size
1	1	P0000	16bits	Unsign...
2	3	P0300	16bits	Unsign...
3	4	P0500	32bits	Unsign...
4			16bits	Unsign...

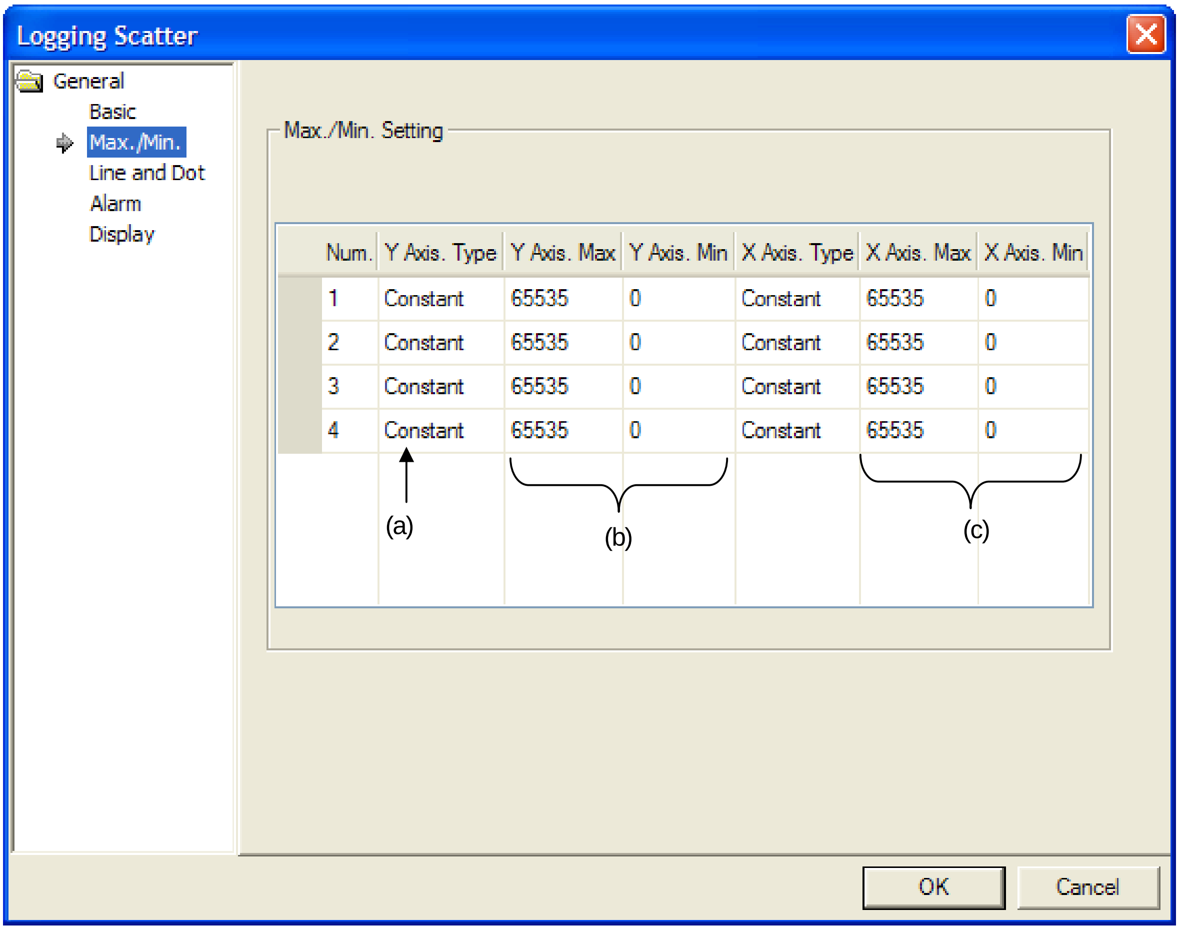
<table>
<tr>
<td>Starting device(c)</td>
<td>
It displays a starting device that is applicable to input logging group No.

At the table for logging group No.(b), Group No. 1-P0, Group No. 2-MO, Group No. 3-P300, Group No. 4-P500 are established as a starting address. Accordingly, starting device for each group No. is displayed at starting device rows. A starting device can not be established at logging distribution chart so you need to edit it at each group of [Project]-[Logging]

<table>
<tr><th>Num</th><th>Group ID</th><th>Start Device</th><th>Type</th><th>Size</th></tr>
<tr><td>1</td><td>1</td><td>P0000</td><td>16bits</td><td>Unsign...</td></tr>
<tr><td>2</td><td>2</td><td>M0000</td><td>32bits</td><td>Unsign...</td></tr>
<tr><td>3</td><td>3</td><td>P0300</td><td>16bits</td><td>Unsign...</td></tr>
<tr><td>4</td><td>4</td><td>P0500</td><td>32bits</td><td>Unsign...</td></tr>
<tr><td>5</td><td></td><td></td><td>16bits</td><td>Unsign...</td></tr>
</table>
Each control device data is initialized as 0 after completing each operation.
</td>
</tr>
<tr>
<td>Size(d)</td>
<td>
It displays the size of device to be logged. The value established at logging of common data is applied to the size of logging device and a user can not set it up.

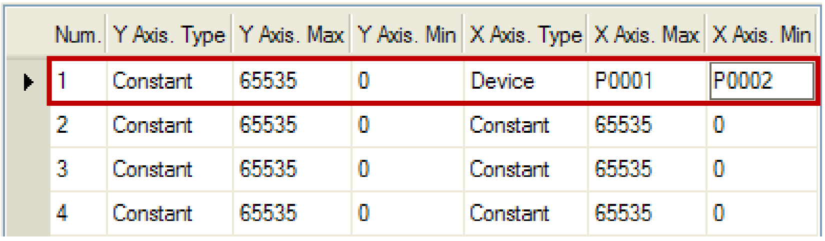
At the table for logging group No.(b), when establishing the device of Group No. 1-32bit, Group No. 2-16bit, Group No. 3-32bit, Group No. 4-16bit, the size of logging device is displayed.


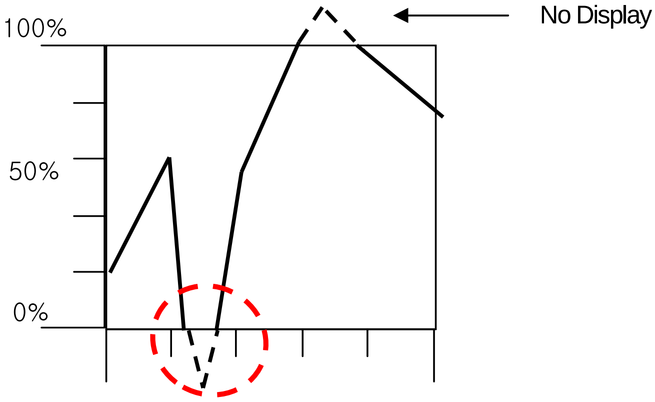
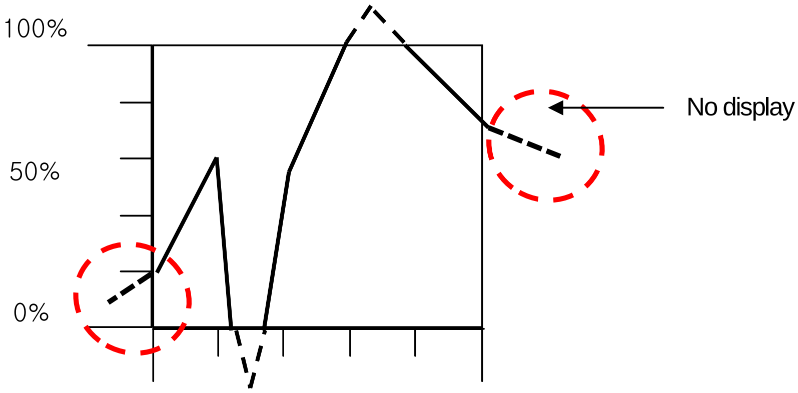
<table>
<tr><th>Num</th><th>Group ID</th><th>Start Device</th><th>Type</th><th>Size</th></tr>
<tr><td>1</td><td>1</td><td>P0000</td><td>32bits</td><td>Unsign...</td></tr>
<tr><td>2</td><td>2</td><td>M0000</td><td>16bits</td><td>Unsign...</td></tr>
<tr><td>3</td><td>3</td><td>P0300</td><td>32bits</td><td>Unsign...</td></tr>
<tr><td>4</td><td>4</td><td>P0500</td><td>16bits</td><td>Unsign...</td></tr>
<tr><td>5</td><td></td><td></td><td>16bits</td><td>Unsign...</td></tr>
</table>
The size can not be established at logging distribution chart so you need to edit it at each group of [Project]-[Logging].
</td>
</tr>
<tr>
<td>Type(e)</td>
<td>It sets the data type of device. (decimal number with a sign, decimal number without a sing, BCD)</td>
</tr>
<tr>
<td>Explanation(f)</td>
<td>You can input explanation for the object.</td>
</tr>
</table>

(2) Items to Set the Min./Max. Value

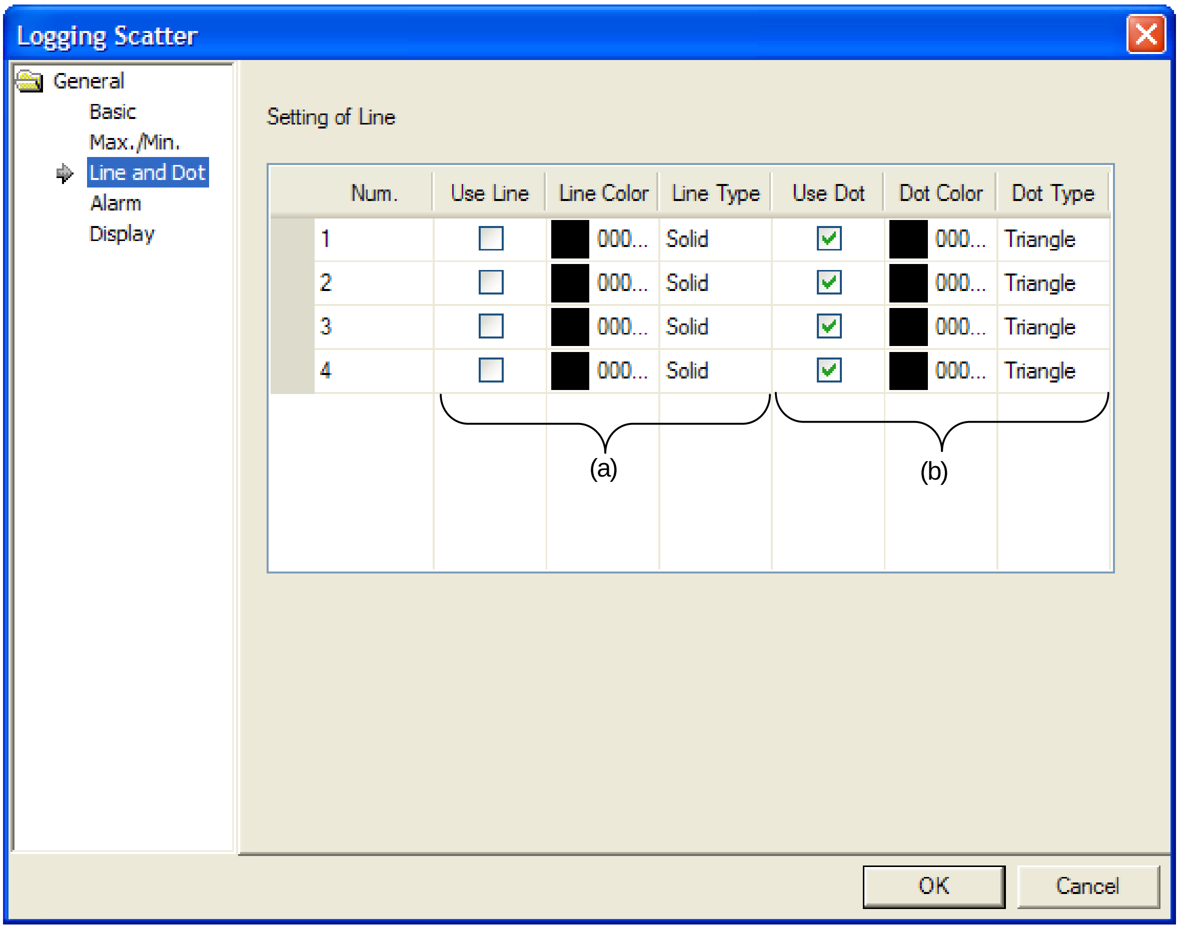


Num.	Y Axis. Type	Y Axis. Max	Y Axis. Min	X Axis. Type	X Axis. Max	X Axis. Min
1	Constant	65535	0	Constant	65535	0
2	Constant	65535	0	Constant	65535	0
3	Constant	65535	0	Constant	65535	0
4	Constant	65535	0	Constant	65535	0

Items	Setting Descriptions
X/Y axis type (a)	In the case of X-Y Distribution chart, you can select the min., max. value for X-axis, Y-axis at [Basic] Items. In the meanwhile, in the case of Y- Distribution chart, you can set the min., max. value for Y-axis only. You can set the min., max. value as many as the items of logging distribution charts added at [Basic] Items. Namely, you can not add·delete the items on the min., max. value. The type of the min., max value can be established as [Fixed value], [Device value]. While [Fixed value] allows an only constant value only for the min., max value of X-axis, Y-axis, [Device value] allows a device only for them.  Num. | Y Axis. Type | Y Axis. Max | Y Axis. Min | X Axis. Type | X Axis. Max | X Axis. Min 1 | Constant | 65535 | 0 | Device | P0001 | P0002 2 | Constant | 65535 | 0 | Constant | 65535 | 0 3 | Constant | 65535 | 0 | Constant | 65535 | 0 4 | Constant | 65535 | 0 | Constant | 65535 | 0

Items	Setting Descriptions
Y axis's min., max. value (b)	You can set the min., max value of Y-axis for the data to be displayed. To fix the min., max value, you can use a device value or a constant value. If the device exceeds the min., max. value, it is displayed as the min., max. value at a graph. 
X axis's min., max. value (c)	You can set the min., max value of X-axis for the data to be displayed. To fix the min., max value, you can use a device value or a constant value. If the device exceeds the min., max. value, it is displayed as the min., max. value at a graph.  (X-axis displays the device in order so you do not need to designate the min., max. value.)

(3) Items to Set a Line and Dot



Setting of Line

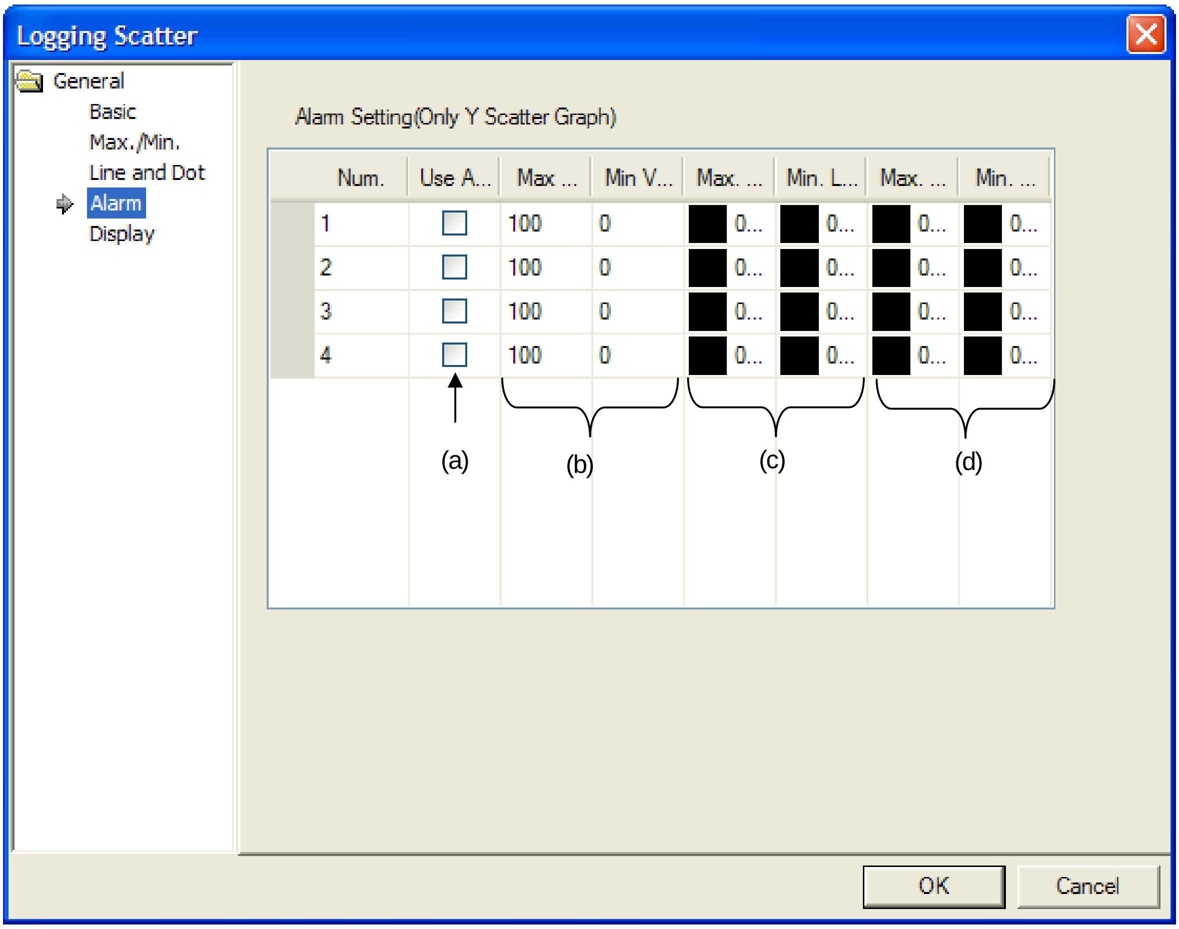
Num.	Use Line	Line Color	Line Type	Use Dot	Dot Color	Dot Type
1	☐	■ 000...	Solid	☑	■ 000...	Triangle
2	☐	■ 000...	Solid	☑	■ 000...	Triangle
3	☐	■ 000...	Solid	☑	■ 000...	Triangle
4	☐	■ 000...	Solid	☑	■ 000...	Triangle

Items	Setting Description
Line color and shape(a)	You can set the min./max value as many as the items of logging distribution chart added at [Basic] Items. Namely, you can not add or delete the item on the min./max value. After selecting whether data will be displayed with a line or now, you can also select the color and type of a line. If you try to undo Using Line when using dot is not applied, undo process is not allowable. Then, make sure that you need to establish either a line or a dot. If you do not apply Using Line, you can not select the color and shape of a line.

<table>
<tr><th>Items</th><th>Setting Description</th></tr>
<tr><td>Dot color and shape(b)</td><td>After whether data will be displayed with a dot or not, you can select the color and shape of a dot. The kinds of dots are as below.
<table>
<tr><th>Kinds of dots</th><th>Shape</th></tr>
<tr><td>Normal Circle</td><td>○</td></tr>
<tr><td>Normal Square</td><td>□</td></tr>
<tr><td>Normal Triangle</td><td>△</td></tr>
<tr><td>Filled Circle</td><td>●</td></tr>
<tr><td>Filled Square</td><td>■</td></tr>
<tr><td>Filled Triangle</td><td>▲</td></tr>
</table>
It is filled with the same color with a dot and a user can not select the size of a dot.

If you try to undo Using Line when using dot is not applied, undo process is not allowable. Then, make sure that you need to establish either a line or a dot. If you do not apply Using Dot, you can not select the color and shape of a dot.</td></tr>
</table>

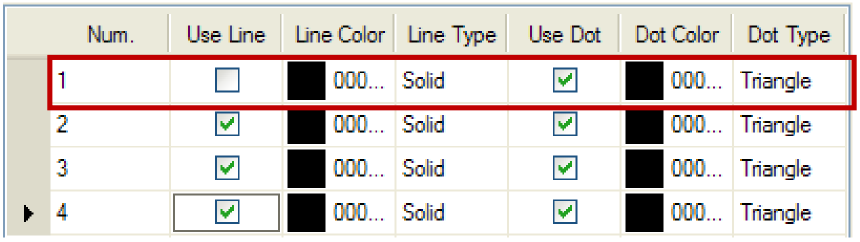
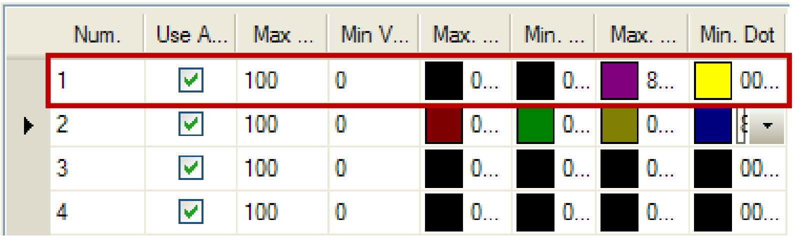
(4) Items to Set Warning Value



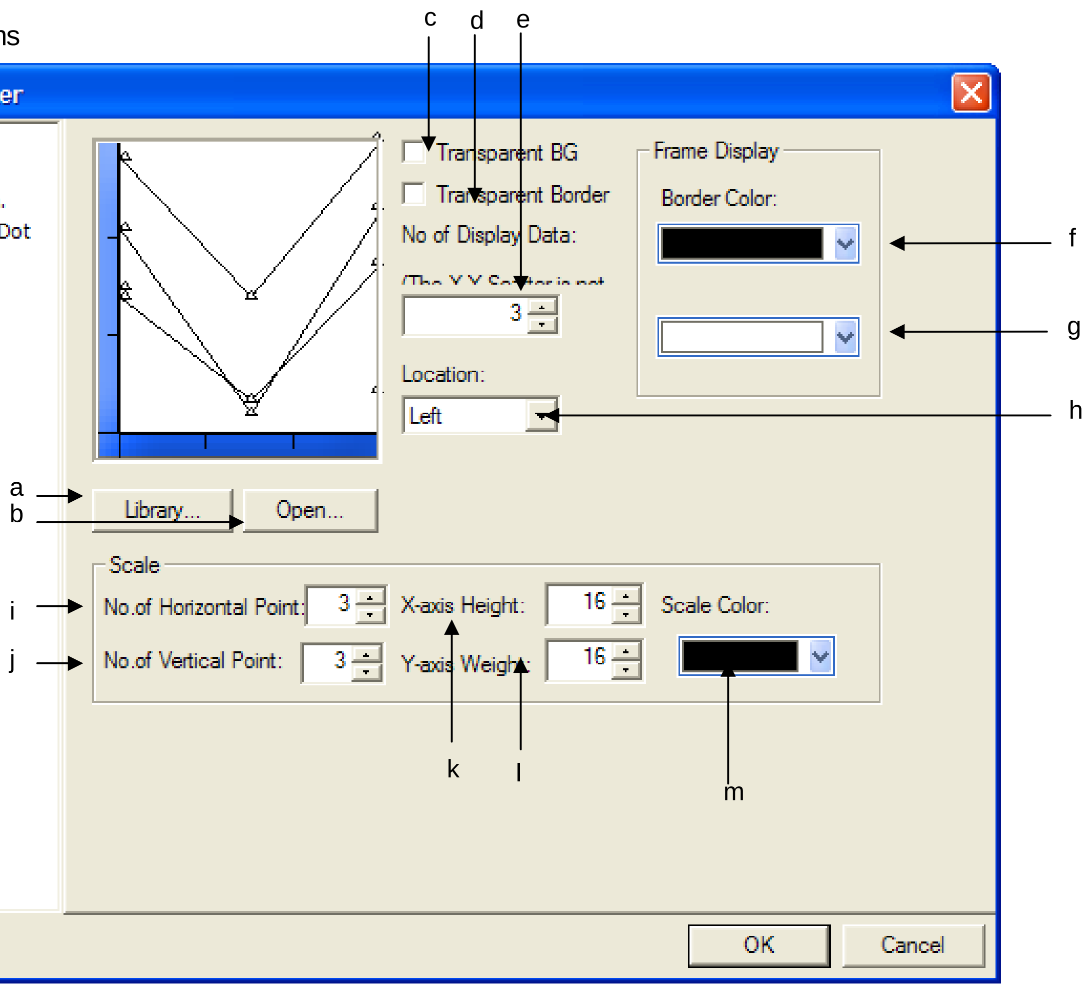
Alarm Setting(Only Y Scatter Graph)

Num.	Use A...	Max ...	Min V...	Max. ...	Min. L...	Max. ...	Min. ...
1	☐	100	0	■ 0...	■ 0...	■ 0...	■ 0...
2	☐	100	0	■ 0...	■ 0...	■ 0...	■ 0...
3	☐	100	0	■ 0...	■ 0...	■ 0...	■ 0...
4	☐	100	0	■ 0...	■ 0...	■ 0...	■ 0...

Items	Setting Descriptions
Using warning(a)	It fixes whether using warning value or not. You can not set the warning value of X-Y Distribution chart at [Basic] Items, namely the warning values of both X-axis and Y-axis can not be displayed.
Warning upper/lower bound (b)	It establishes warning upper bound and warning lower bound for logging trend graph. If the device value is more than warning upper bound, it is not shown as established line or dot color but displayed as upper bound line or dot color. On the other hand, if the device value is less than lower bound, it is displayed as established lower bound line or dot color.
Warning upper/lower bound Line color (c)	You can set the color of a line to be applied when it is more/less than the warning upper bound of logging distribution graph. If the device value exceeds warning upper bound, it is displayed as upper bourn line color. On the other hand, if it is less than warning upper bound, it is displayed as lower bound line color. However, only when you apply Using Line at [Line and Dot] item, you can establish upper/lower bound line.

<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td></td><td>

<table>
<tr><th>Num.</th><th>Use Line</th><th>Line Color</th><th>Line Type</th><th>Use Dot</th><th>Dot Color</th><th>Dot Type</th></tr>
<tr><td>1</td><td>☐</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
<tr><td>2</td><td>☑</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
<tr><td>3</td><td>☑</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
<tr><td>4</td><td>☑</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
</table>
At [Line and Dot] item, when establishing Using Dot only for item No.1

<table>
<tr><th>Num.</th><th>Use A...</th><th>Max ...</th><th>Min V...</th><th>Max. ...</th><th>Min. ...</th><th>Max. ...</th><th>Min. Dot</th></tr>
<tr><td>1</td><td>☑</td><td>100</td><td>0</td><td>■ 0...</td><td>■ 0...</td><td>🟪 8...</td><td>🟨 00...</td></tr>
<tr><td>2</td><td>☑</td><td>100</td><td>0</td><td>🟥 0...</td><td>🟩 0...</td><td>🟫 0...</td><td>🟦</td></tr>
<tr><td>3</td><td>☑</td><td>100</td><td>0</td><td>■ 0...</td><td>■ 0...</td><td>■ 0...</td><td>■ 00...</td></tr>
<tr><td>4</td><td>☑</td><td>100</td><td>0</td><td>■ 0...</td><td>■ 0...</td><td>■ 0...</td><td>■ 00...</td></tr>
</table>
You can not set the upper/lower bound line color at No.1 item of [Warning Value].
</td></tr>
</table>

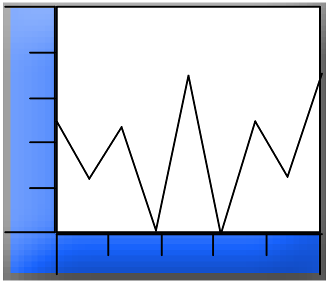
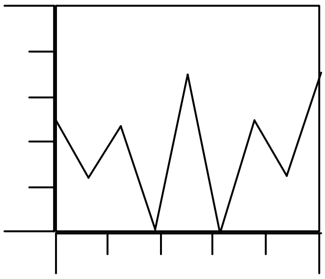
(5) Display Items

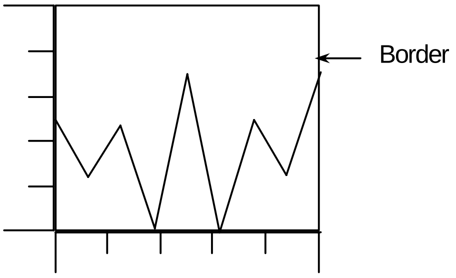
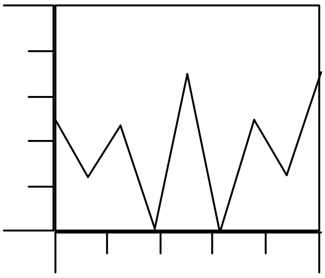
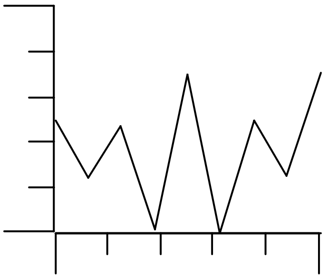
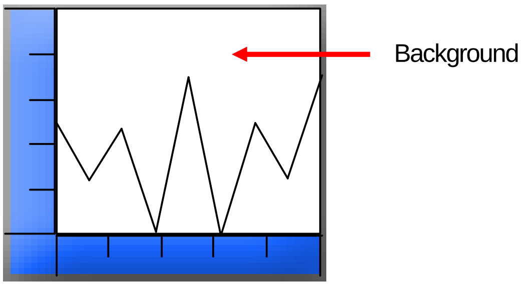

Logging Scatter
General
Basic
Max./Min.
Line and Dot
Alarm
Display
Library...
Open...
OK
Cancel
a
b
c
d
e
f
g
h
i
j
k
l
m

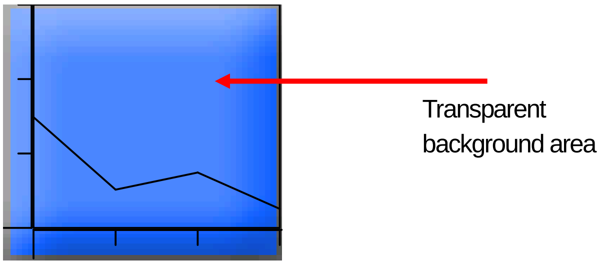
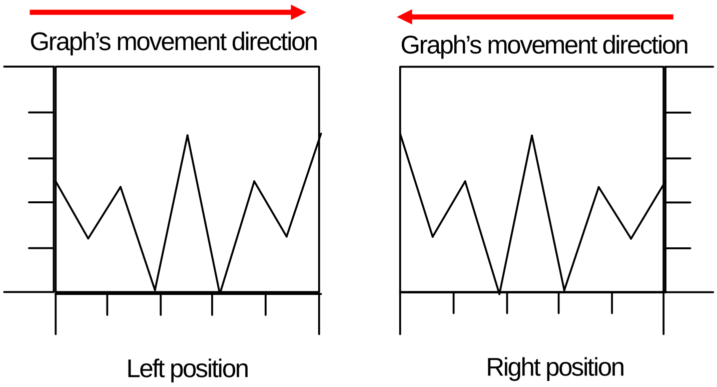
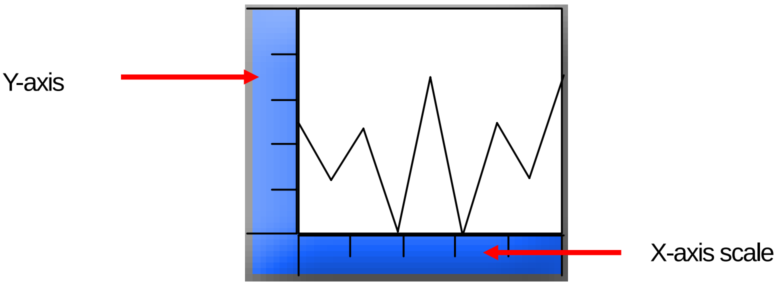
☐ Transparent BG
☐ Transparent Border
No of Display Data: 3
(The X-Y Scatter is not
Location: Left

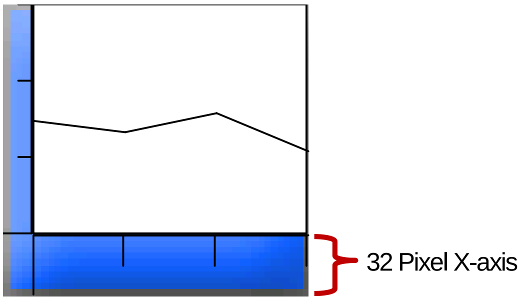
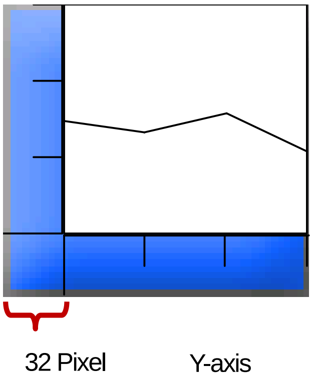
Frame Display
Border Color:

Scale
No.of Horizontal Point: 3
No.of Vertical Point: 3
X-axis Height: 16
Y-axis Weight: 16
Scale Color:

Items	Setting Descriptions
Library(a)	Select the background image for a graph from system graphic library and user graphic library.
Open (b)	Select the background image for a graph from image file (☞ Refer to 17.1.3 Bit Lamp Setting Items.
No Image (c)	When logging trend graph background image is not displayed, the function is applied.  Using background image  No background image

Items	Setting Descriptions
No Border(d)	It does not apply the border of logging trend graph.  Using Border No Border
The number of displayed data (e)	It fixes the number of dots to be displayed at a screen. (a) XY graph indicates a dot as two device values. Then, supposing that the devices of M0~M10 to be monitored are registered at the logging No. of logging distribution chart and the number of displayed data is 5, 5 dots will be displayed with regarding the 10 device values as data. (b) Y graph indicates respectively each device value with a dot. Then, supposing that the devices of M0~M10 to be monitored are registered at the logging No. of logging distribution chart and the number of displayed data are 5, 5 dots will be displayed with regarding the 5 device values of M0 ~ M4 as data.
Border color (f)	It fixes the color of border. (☞ Refer to No Border (d).)
Background Color (g)	It sets the background color.  In case that you do not establish Using background color ☑ Plate Color: , the background area will be displayed with transparent color.

Items	Setting Descriptions
	 Transparent background area
Position (h)	You can fix the position of scale; left or right.  Graph's movement direction Graph's movement direction Left position Right position
The number of X-axis scales (i)	It sets the number of X-axis scales.  Y-axis X-axis scale
The number of Y-axis scales (j)	It sets the number of Y-axis scales.
Length of X-axis scale (k)	It sets length of X-axis scale. X-axis is indicated as many as the value input with absolute pixel. However, length of X-axis scale is higher than the length of trend graph object, trend graph is not displayed at a screen. For example, supposing that area of X-axis scale is designated as 32, the scale is displayed as 32 pixel size.

Items	Setting Descriptions
	
Width of Y-axis scale(l)	It sets width of Y-axis scale. Y-axis is indicated as many as the value input with absolute pixel. However, width of Y-axis scale is larger than the width of trend graph object, trend graph is not displayed at a screen. For example, supposing that width of Y-axis scale is designated as 32, the scale is displayed as 32 pixel size. 
Scale color(m)	It sets the color of scale.

Note

(1) The main purpose of Logging distribution is to indicate distribution trend of data so it does not remove the data displayed once. If logging setting connected logging distribution chart is circular buffer type, the displayed data will be deleted someday with logging, in this case, the dot and lines that are applicable to deleted data.

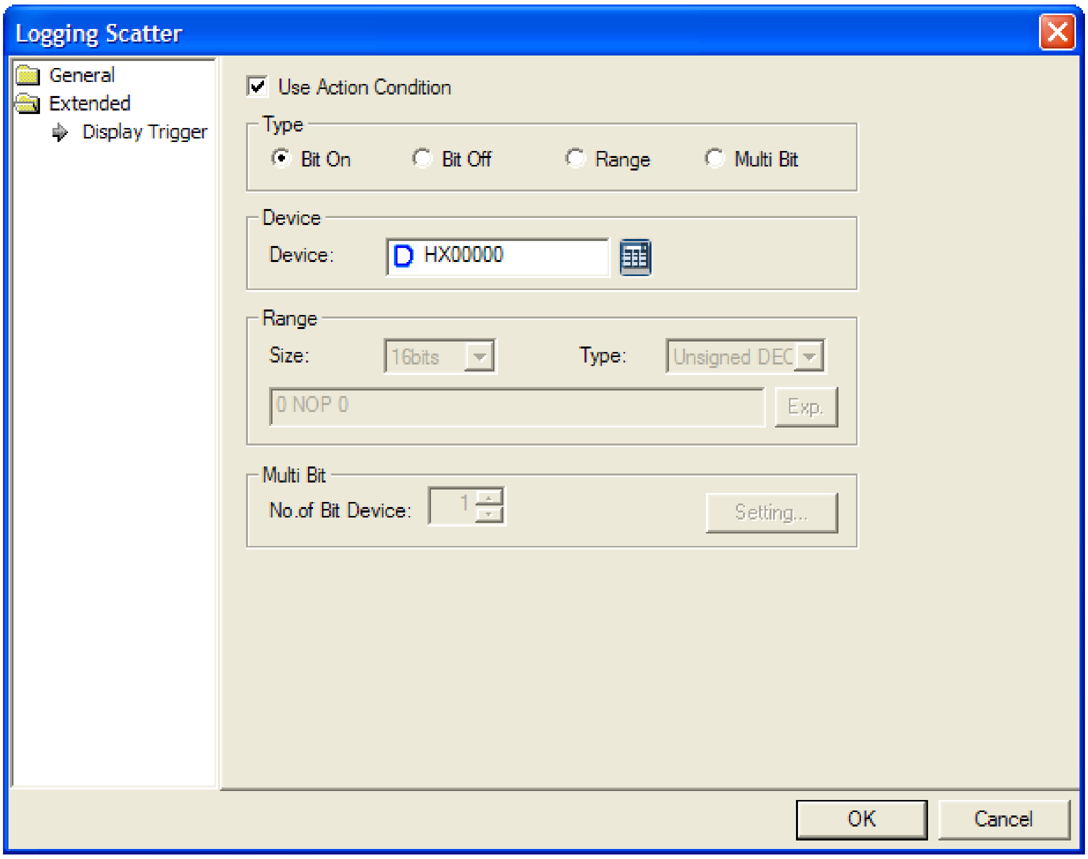
(2) If the distributed dot and line are initialized when logging area is deleted. Namely, if you try to initialize distribution chart screen, you can use the device to delete logging area.

(3) When using connected several logging groups, there may be short interval to display each group's data. Each logging group operates individually with having separate execution conditions and device to be monitored, area. Accordingly, although the execution conditions for several logging groups are fulfilled at once, some kind of sequence relation may occur when collecting data. As the result of this, when displaying data of each group at data distribution chart, short interval is expected.

(4) When obtaining data, logging function is based on communication with the device connected to the existing object. Therefore, the more logging groups are set, the shorter vale acquisition cycle of each logging group is, the more communication speed is affected. Accordingly, you need some adjustment during edition that logging should be performed only if necessary.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Logging Scatter
General
Extended
Display Trigger
OK
Cancel

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range — Size: 16bits Type: Unsigned DEC

0 NOP 0 Exp.

Multi Bit — No.of Bit Device: 1 Setting...

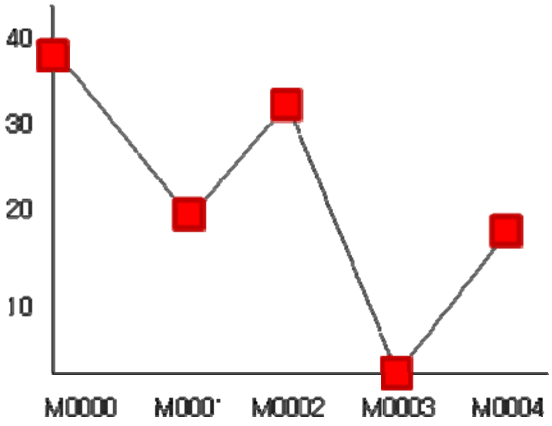
(☞ refer to 16.9 display trigger.)

17.8.10 Items to set Real-Time Distribution Chart Graph

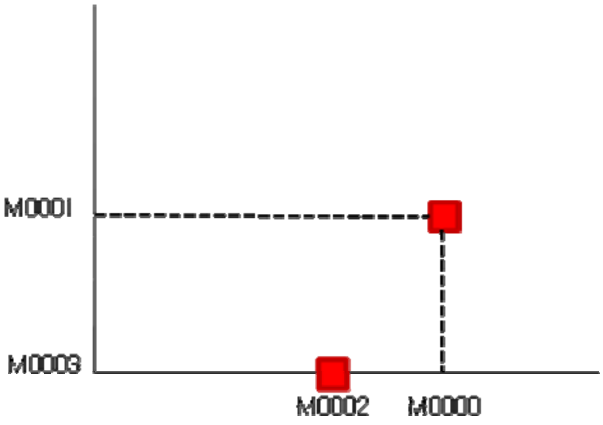
After collecting continuous word device data values as many as the number of established devices from a starting address, it displays the data value with linking a dot or a line.

Ex,) Supposing that 5 continuous devices from M0000 has the same data, it displays each value's distribution with a dot or a line. It is displayed depending on the kinds of distribution chart.

Device address	M0000	M0001	M0002	M0003	M0004
Device value	40	20	35	0	16



Y Distribution chart



X-Y Distribution chart

[Method]

(a) Set control device at [Basic Items] of real-time distribution chart.

(b) Set the number of continuous devices to be monitored at [Basic Items] of real-time distribution chart.

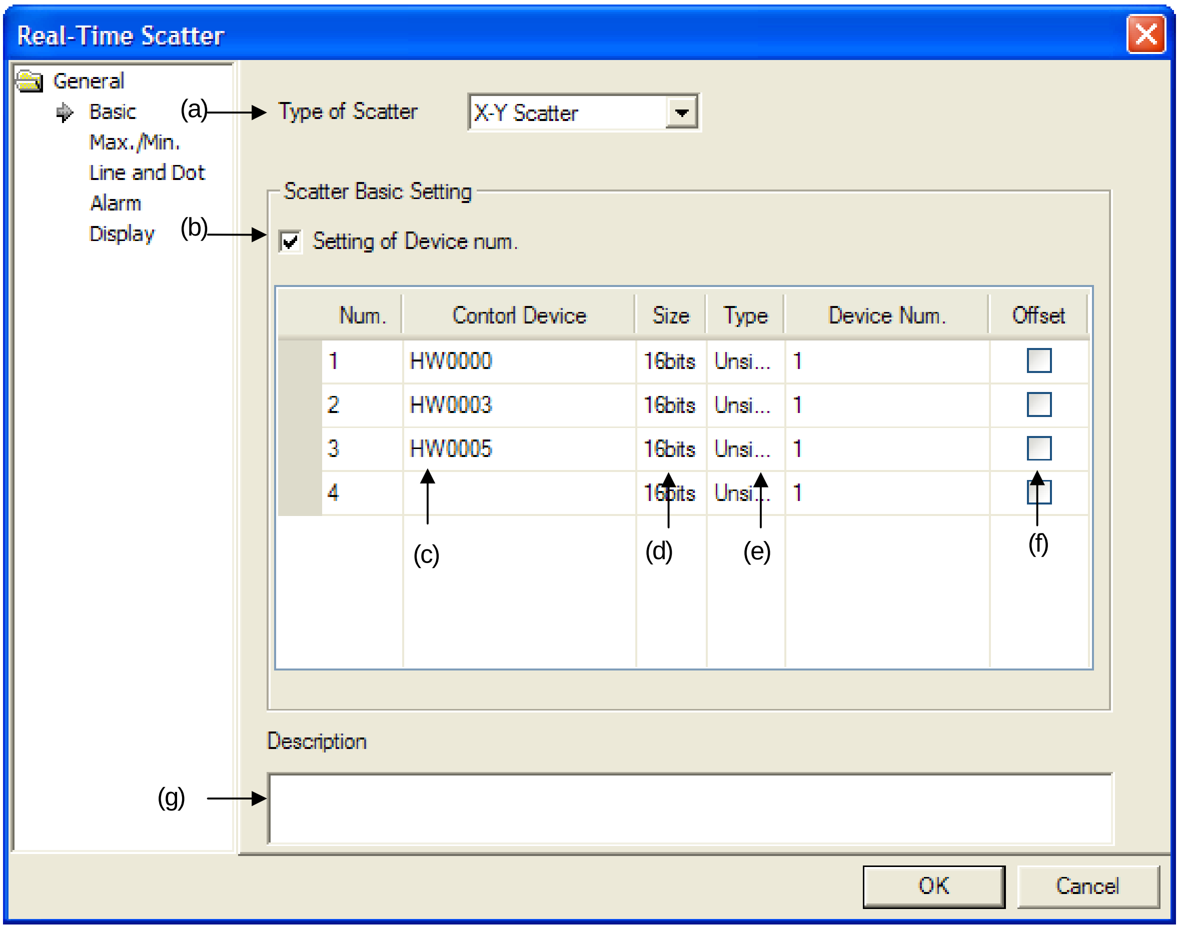
(c) When using offset, set Using Offset at [Basic Items] of real-time distribution chart.

(d) Set the min./max. value of X-axis or Y-axis in real-time distribution chart.

(e) Set whether using a dot, line with their color and type.

(f) After completing all settings, press [Add] button and register the logging to be registered.

(1) Basic Items


Real-Time Scatter
General
Basic
Max./Min.
Line and Dot
Alarm
Display
(a)
(b)
(c)
(d)
(e)
(f)
(g)
OK
Cancel

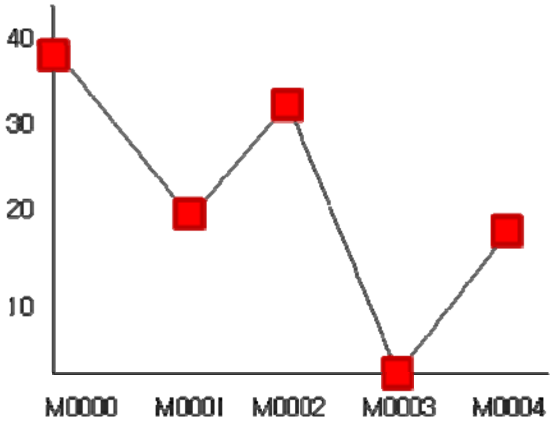
Type of Scatter: X-Y Scatter

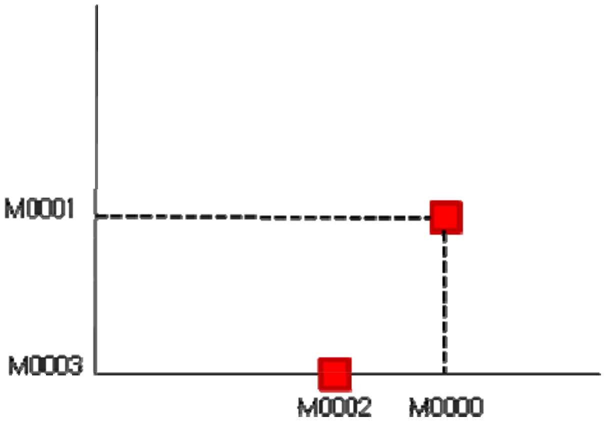
Scatter Basic Setting

☑ Setting of Device num.

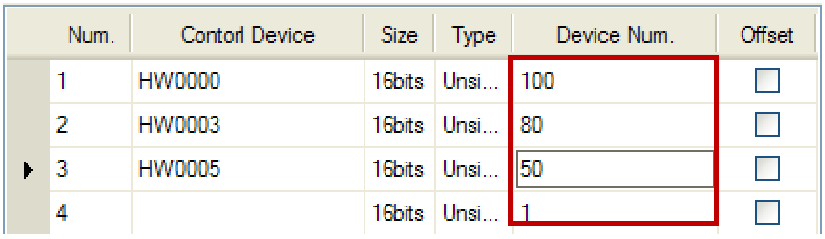
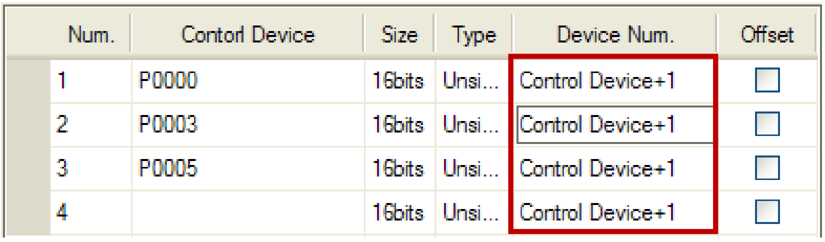
Num.	Contorl Device	Size	Type	Device Num.	Offset
1	HW0000	16bits	Unsi...	1	☐
2	HW0003	16bits	Unsi...	1	☐
3	HW0005	16bits	Unsi...	1	☐
4		16bits	Unsi...	1	☐

Description

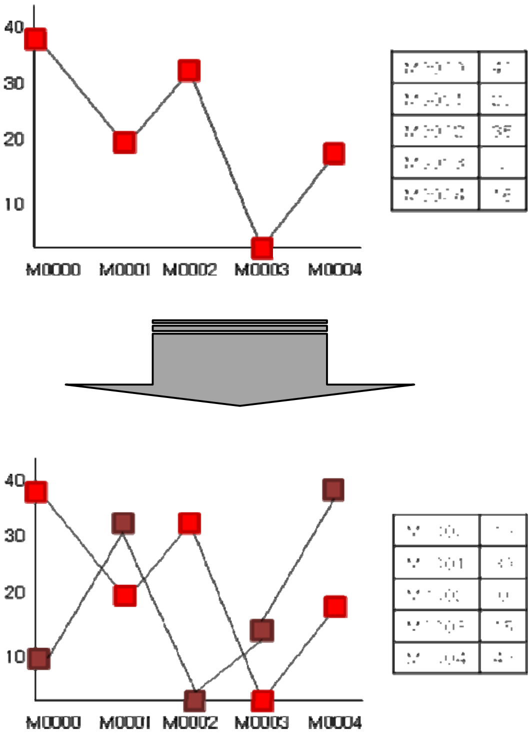
<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td>Distribution chart type (a)</td><td>It sets Y-distribution chart or X-Y distribution chart. The characteristics of each distribution chart are as below.
<table>
<tr><th>Distribution chart type</th><th>Characteristics</th></tr>
<tr><td>Y- distribution chart</td><td>It indicates respectively continuous device address including logging starting device in X-axis in order.


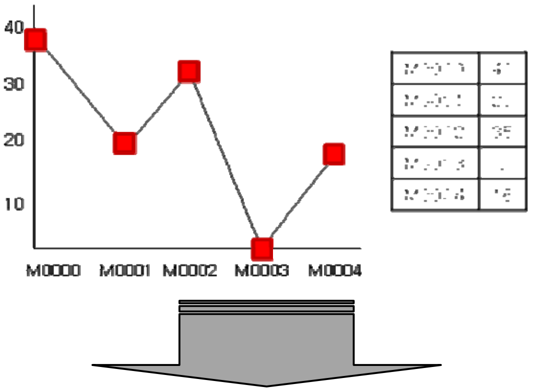
X-axis displays successively the device so you do not need to designate X-axis's min.,max.value)</td></tr>
<tr><td>X-Y distribution chart</td><td>For two continuous device addresses from starting device, it indicates the previous device value in X-axis, next device value in Y-axis with displaying dot or value at the point where two coordinates meet.
Supposing that the data value of M0000 ~ M0004 as above, X-Y distribution chart is indicated as below.


(You need to designate the min., max. value of X-axis, Y-axis.)</td></tr>
</table></td></tr>
<tr><td>The number of devices (b)</td><td>It sets the number of devices to be monitored.
It indicates continuous device data as many as the number of devices established from starting device.</td></tr>
</table>

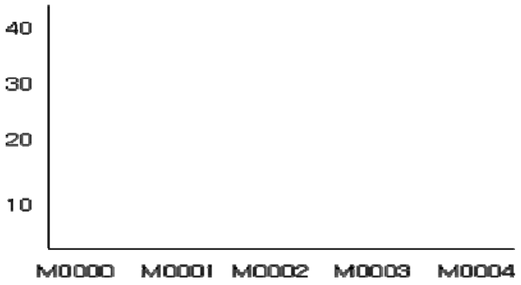
<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td></td><td>
<p>A user can establish the number of devices to be monitored or control device + 1 address value can be used as the number of devices.</p>
<p>When a user establishes the number of devices, setting the process is as below. The number of devices should be established up to 1000EA.</p>

<table>
<tr><th>Num.</th><th>Contorl Device</th><th>Size</th><th>Type</th><th>Device Num.</th><th>Offset</th></tr>
<tr><td>1</td><td>HW0000</td><td>16bits</td><td>Unsi...</td><td>100</td><td>☐</td></tr>
<tr><td>2</td><td>HW0003</td><td>16bits</td><td>Unsi...</td><td>80</td><td>☐</td></tr>
<tr><td>3</td><td>HW0005</td><td>16bits</td><td>Unsi...</td><td>50</td><td>☐</td></tr>
<tr><td>4</td><td></td><td>16bits</td><td>Unsi...</td><td>1</td><td>☐</td></tr>
</table>
<p>On the other hand, if a user does not establish the number of devices, [Control Device +1] is automatically used for the number of devices. For example, supposing that P0000 is set as control device and offset is not applied, if P0001 data value is 5, continuous device data of P0002 ~ P0006 will be displayed.</p>

<table>
<tr><th>Num.</th><th>Contorl Device</th><th>Size</th><th>Type</th><th>Device Num.</th><th>Offset</th></tr>
<tr><td>1</td><td>P0000</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>2</td><td>P0003</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>3</td><td>P0005</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>4</td><td></td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
</table>
<p>Setting description on the number of devices is commonly applied to all added items.</p>
</td></tr>
</table>

<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td>Control Device(c)</td><td>
If the first bit of word control device is On, it displays the number of continuous devices from a starting device at a graph. If the second bit is On, it removes the current graph area.

When control device has the below values, you can refer to the following operation.
<table>
<tr><th>Control Device value</th><th>Operation Description</th></tr>
<tr><td>1</td><td>
<table><tr><td>15</td><td>…</td><td>02</td><td>01</td><td>00</td></tr></table>
It displays continuous device value at a screen.


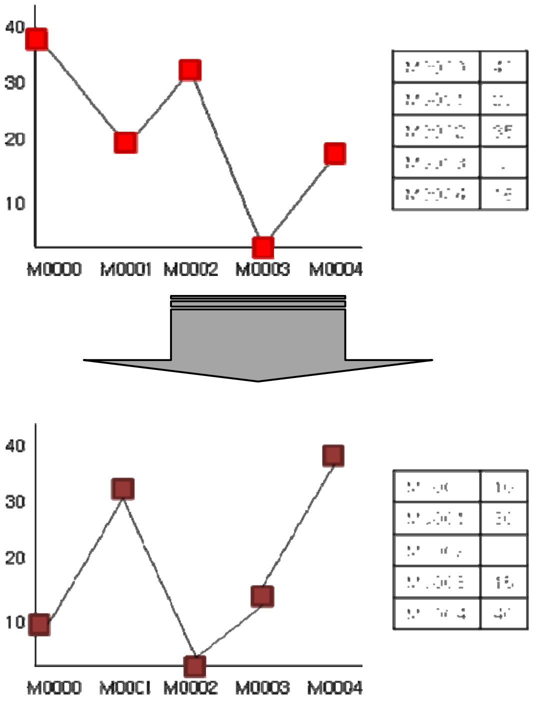
</td></tr>
<tr><td>2</td><td>
<table><tr><td>15</td><td>…</td><td>02</td><td>01</td><td>00</td></tr></table>
It removes the current graph area all.


</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td></td><td>
<table>
<tr><td></td><td>


</td></tr>
<tr><td>3</td><td>
<table>
<tr><td>15</td><td>…</td><td>02</td><td>01</td><td>▨ 00</td></tr>
</table>

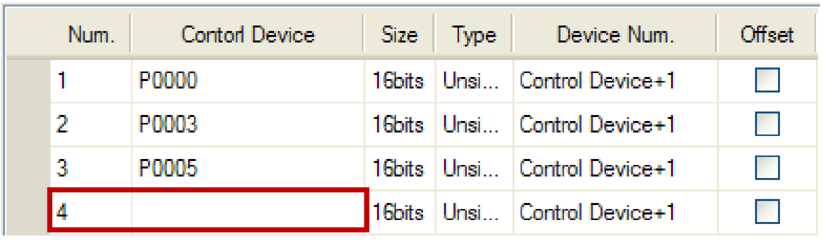
After deleting the current graph area all, it displays continuous device value at a screen.



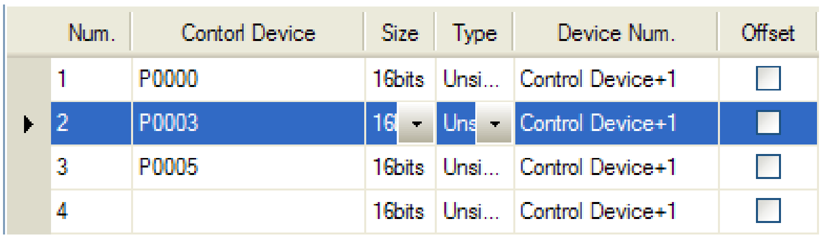
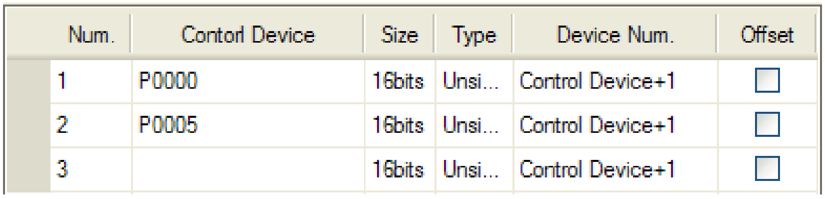
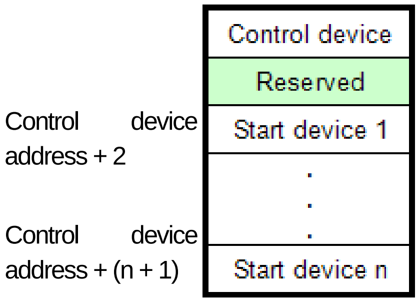
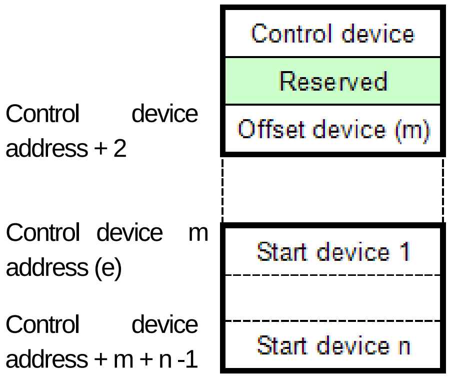
</td></tr>
</table>

Each control device data is initialized into 0 after completing each operation.

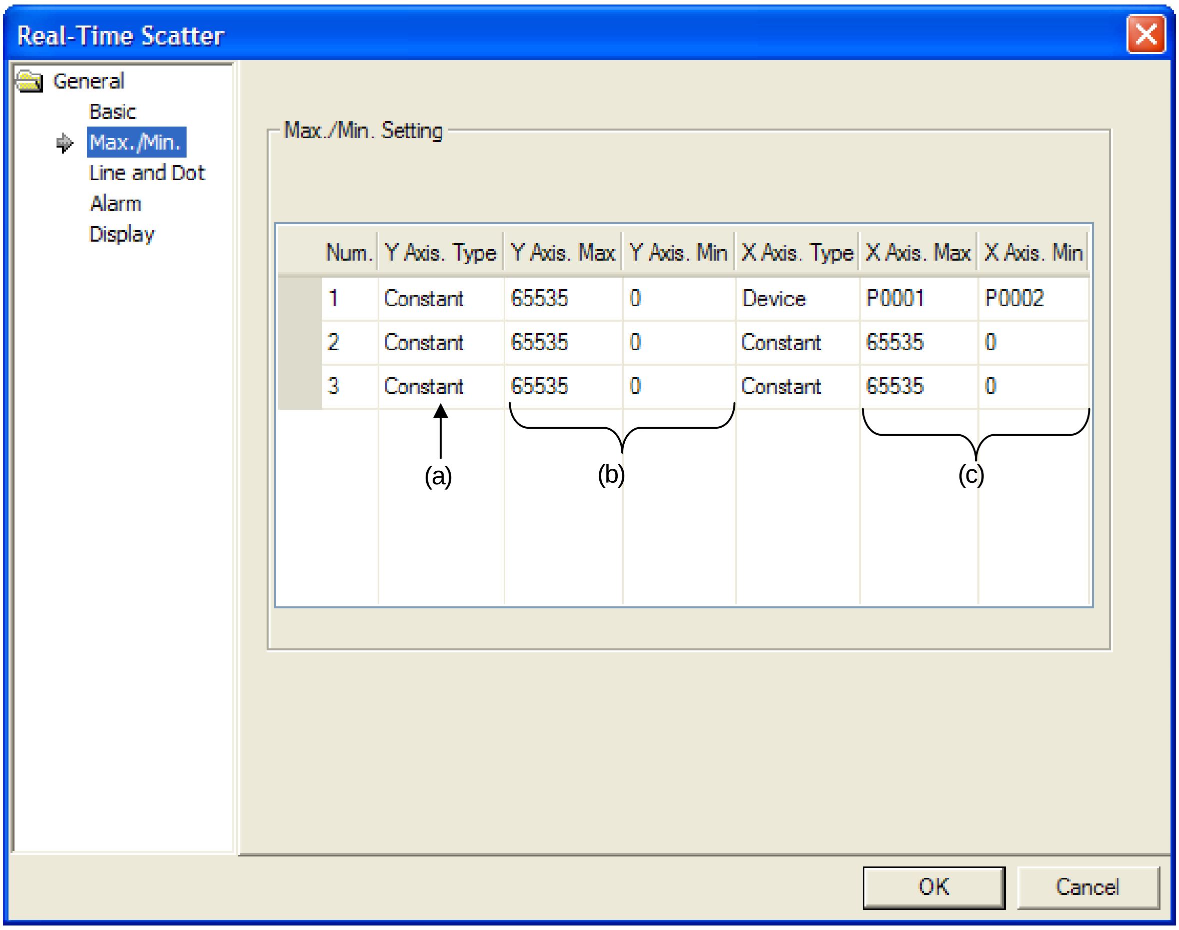
To add a new item of real-time distribution chart, input the device address to be controlled to black control device screen and press [Enter] key. If a new item is added, the blank control device screen is created to next row and you can add another item up to 8EA.



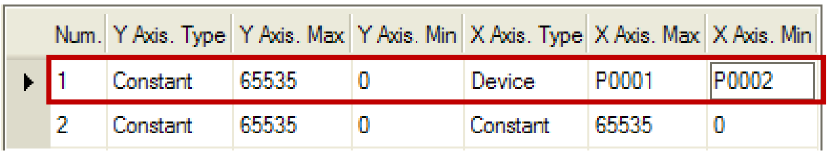
<table>
<tr><th>Num.</th><th>Contorl Device</th><th>Size</th><th>Type</th><th>Device Num.</th><th>Offset</th></tr>
<tr><td>1</td><td>P0000</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>2</td><td>P0003</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>3</td><td>P0005</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>4</td><td></td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Items</th><th>Setting Descriptions</th></tr>
<tr><td></td><td>
<p>On the other hand, to delete input items, click the intended row No. and press [Delete] BUTTON.</p>
<p>Ex.) If you try to delete No.2 item from the below, click No.2 and press [Delete] button.</p>

<table>
<tr><th>Num.</th><th>Contorl Device</th><th>Size</th><th>Type</th><th>Device Num.</th><th>Offset</th></tr>
<tr><td>1</td><td>P0000</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>2</td><td>P0003</td><td>16</td><td>Uns</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>3</td><td>P0005</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>4</td><td></td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
</table>

<table>
<tr><th>Num.</th><th>Contorl Device</th><th>Size</th><th>Type</th><th>Device Num.</th><th>Offset</th></tr>
<tr><td>1</td><td>P0000</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>2</td><td>P0005</td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
<tr><td>3</td><td></td><td>16bits</td><td>Unsi...</td><td>Control Device+1</td><td>☐</td></tr>
</table>
</td></tr>
<tr><td>Size(d)</td><td>It displays the size of device to be displayed at a screen.</td></tr>
<tr><td>Type(e)</td><td>It fixes the data type of device
(decimal number with a sign, decimal number without a sing, BCD)</td></tr>
<tr><td>Using offset(f)</td><td>
<p>Based on control device the relation between device and the number of established devices is as below depending on whether offset is applied or not.</p>

Control device
Reserved
Start device 1
Start device n
Control device address + 2
Control device address + (n + 1)

Control device
Reserved
Offset device (m)
Start device 1
Start device n
Control device address + 2
Control device m address (e)
Control device address + m + n -1
</td></tr>
<tr><td>Explanation(g)</td><td>You can input explanation for the object.</td></tr>
</table>

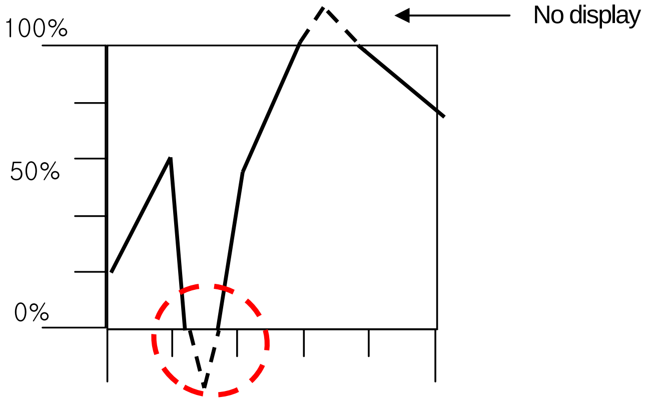
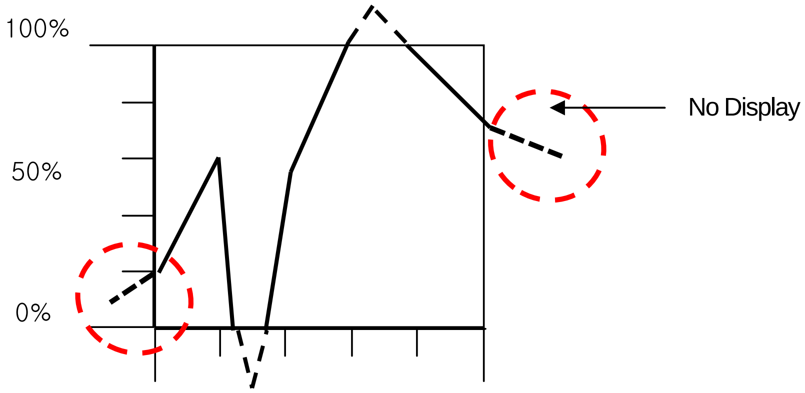
(2) Items to set the Min./Max. values



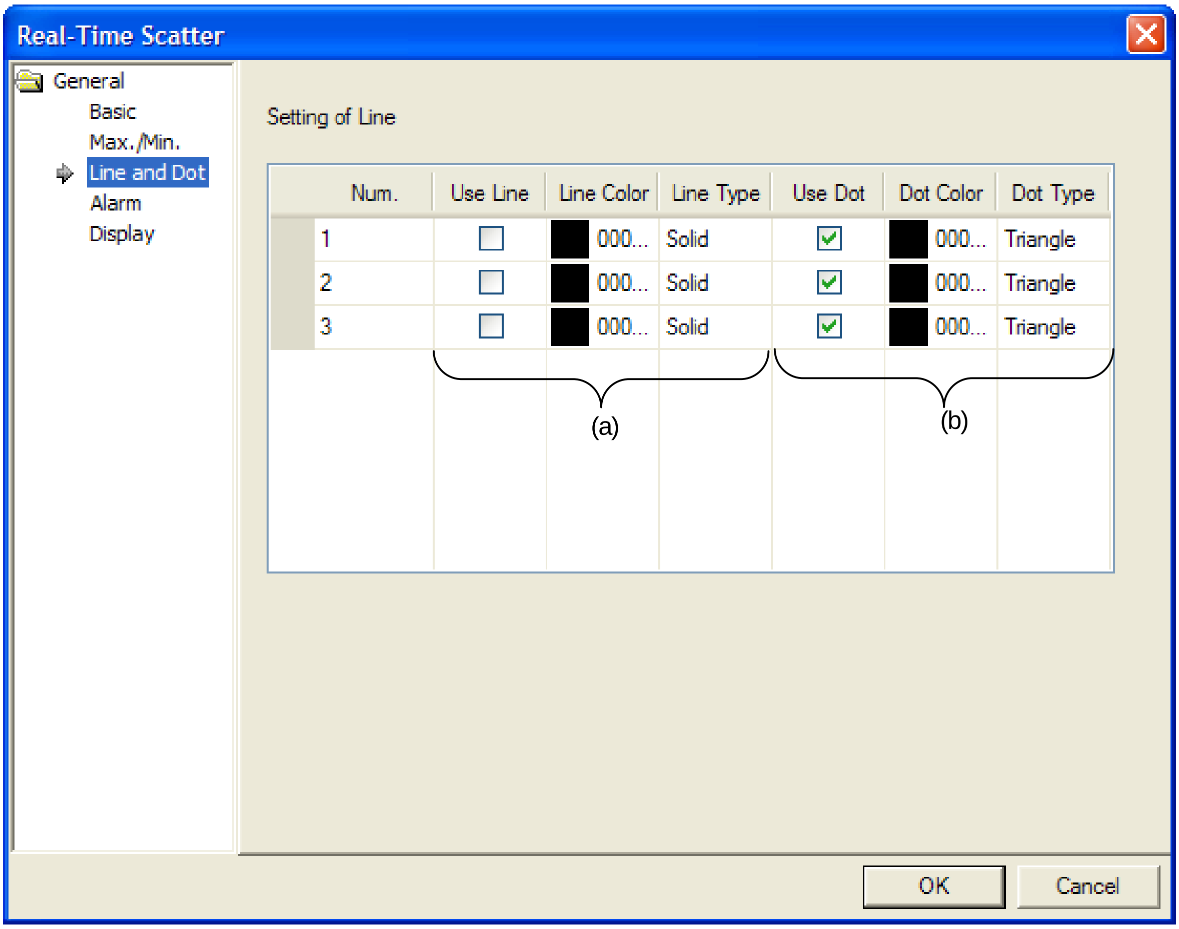
Num.	Y Axis. Type	Y Axis. Max	Y Axis. Min	X Axis. Type	X Axis. Max	X Axis. Min
1	Constant	65535	0	Device	P0001	P0002
2	Constant	65535	0	Constant	65535	0
3	Constant	65535	0	Constant	65535	0

Items	Setting Des
X/Y axis type (a)	In the case of X-Y Distribution chart, you can select the min., max. value for X-axis, Y-axis at [Basic] Items. In the meanwhile, in the case of Y- Distribution chart, you can set the min., max. value for Y-axis only. You can set the min., max. value as many as the items of logging distribution charts added at [Basic] Items. Namely, you can not add·delete the items on the min., max. value. The type of the min., max value can be established as [Fixed value], [Device value]. While [Fixed value] allows a only constant value only for the min., max value of X-axis, Y-axis, [Device value] allows a device only for them. 

Num.	Y Axis. Type	Y Axis. Max	Y Axis. Min	X Axis. Type	X Axis. Max	X Axis. Min
1	Constant	65535	0	Device	P0001	P0002
2	Constant	65535	0	Constant	65535	0

Items	Setting Des
Y axis's min., max. value (b)	You can set the min., max value of Y-axis for the data to be displayed. To fix the min., max value, you can use a device value or a constant value. If the device exceeds the min., max. value, it is displayed as the min., max. value at a graph. 
X axis's min., max. value (c)	You can set the min., max value of X-axis for the data to be displayed. To fix the min., max value, you can use a device value or a constant value. If the device exceeds the min., max. value, it is displayed as the min., max. value at a graph.  (X-axis displays the device in order so you do not need to designate the min., max. value.)

(3) Items to Set a Line and Dot


Real-Time Scatter
General
Basic
Max./Min.
Line and Dot
Alarm
Display
(a)
(b)
OK
Cancel

Setting of Line

Num.	Use Line	Line Color	Line Type	Use Dot	Dot Color	Dot Type
1	☐	■ 000...	Solid	☑	■ 000...	Triangle
2	☐	■ 000...	Solid	☑	■ 000...	Triangle
3	☐	■ 000...	Solid	☑	■ 000...	Triangle

<table>
<tr><th>Item</th><th>Setting Descriptions</th></tr>
<tr><td>Line color and shape(a)</td><td>You can set the min./max value as many as the items of real-time logging distribution chart added at [Basic] Items. Namely, you can not add or delete the item on the min./max value.

After selecting whether data will be displayed with a line or now, you can also select the color and type of a line.

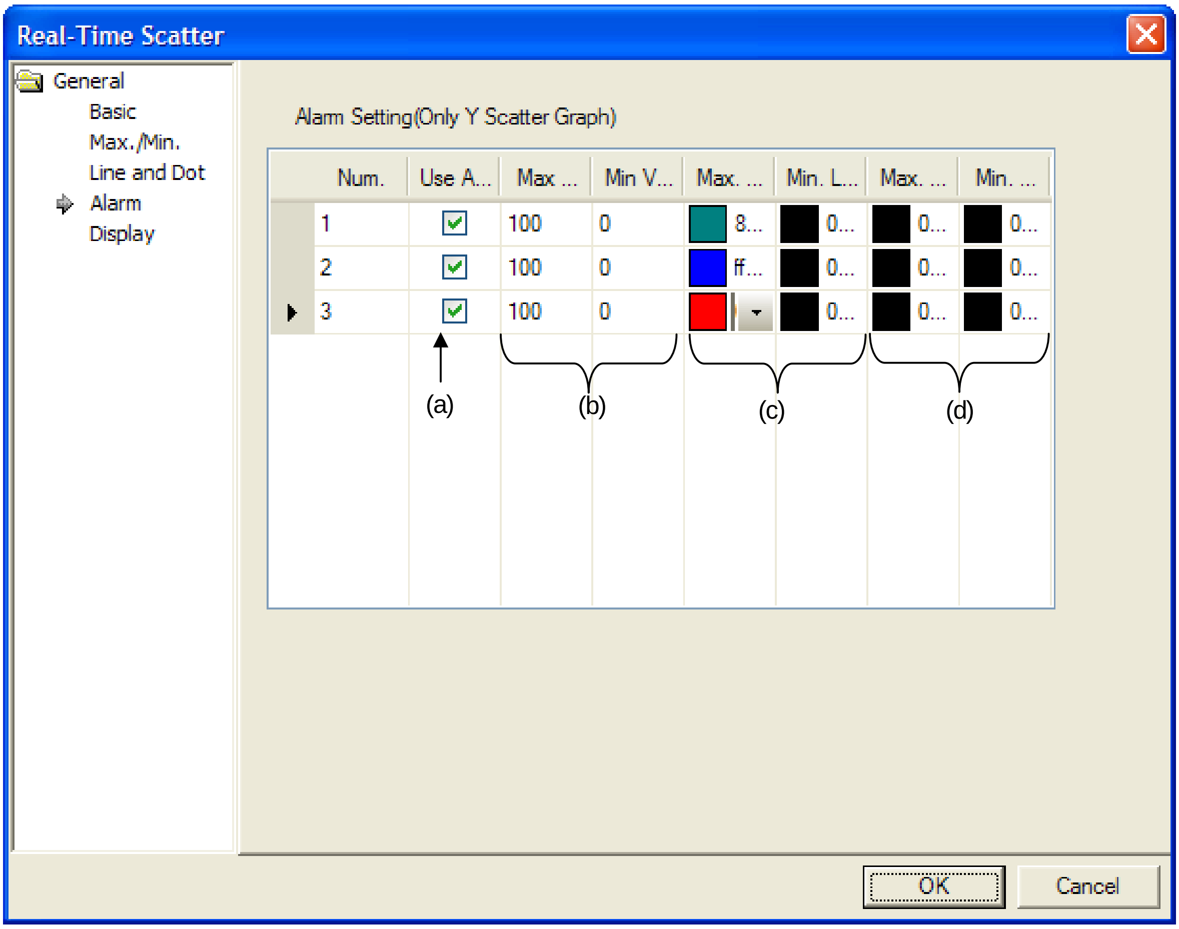
If you try to undo Using Line when using dot is not applied, undo process is not allowable. Then, make sure that you need to establish either a line or a dot. If you do not apply Using Line, you can not select the color and shape of a line.</td></tr>
<tr><td>Dot color and shape(b)</td><td>After whether data will be displayed with a dot or not, you can select the color and shape of a dot. The kinds of dots are as below.

<table>
<tr><th>Kinds of dots</th><th>Shape</th></tr>
<tr><td>Normal Circle</td><td>○</td></tr>
<tr><td>Normal Square</td><td>□</td></tr>
<tr><td>Normal Triangle</td><td>△</td></tr>
<tr><td>Filled Circle</td><td>●</td></tr>
<tr><td>Filled Square</td><td>■</td></tr>
<tr><td>Filled Triangle</td><td>▲</td></tr>
</table>

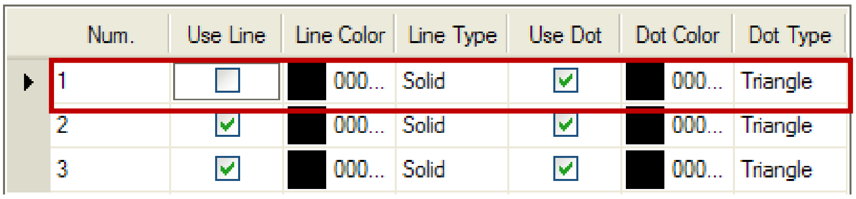
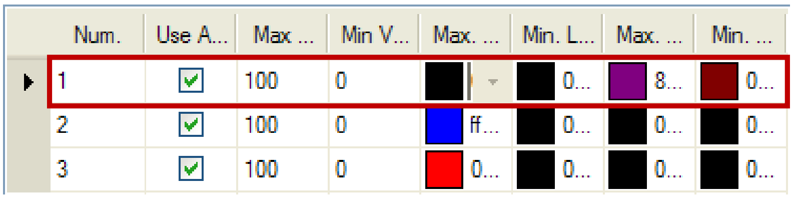
It is filled with the same color with a dot and a user can not select the size of a dot.

If you try to undo Using Line when using dot is not applied, undo process is not allowable. Then, make sure that you need to establish either a line or a dot. If you do not apply Using Dot, you can not select the color and shape of a dot.</td></tr>
</table>

(4) Items to Set Warning Value

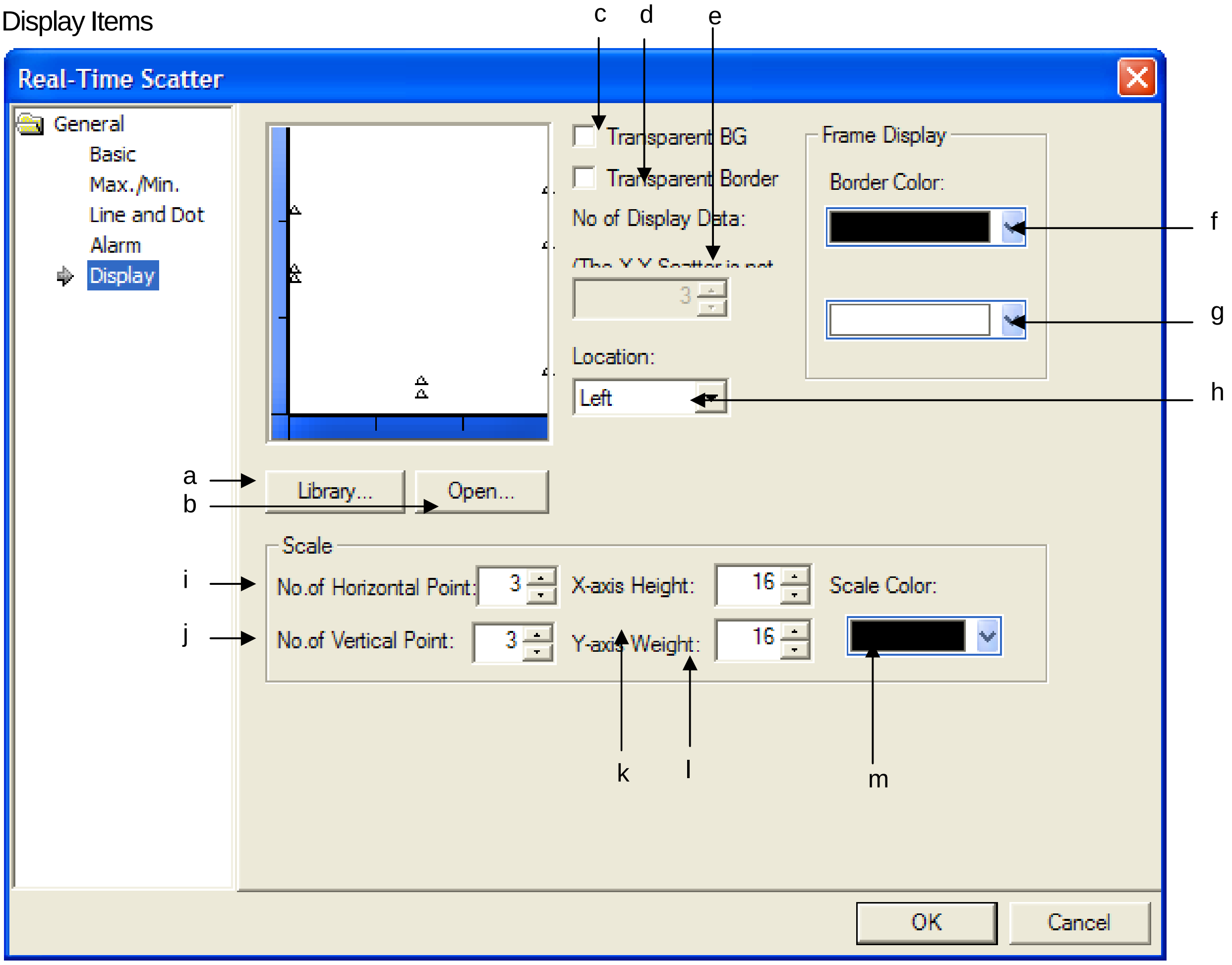

Real-Time Scatter
General
Basic
Max./Min.
Line and Dot
Alarm
Display
Alarm Setting(Only Y Scatter Graph)
Num.
Use A...
Max ...
Min V...
Max. ...
Min. L...
Max. ...
Min. ...
1
100
0
8...
0...
2
ff...
3
(a)
(b)
(c)
(d)
OK
Cancel

Items	Setting Description
Using Warning(a)	It fixes whether applying warning value or not. You can not set the warning value of X-Y Distribution chart at [Basic] Items, namely the warning values of both X-axis and Y-axis can not be displayed.
Warning upper bound / Warning lower bound(b)	It establishes warning upper bound and warning lower bound for logging trend graph. If the device value is more than warning upper bound, it is not shown as established line or dot color but displayed as upper bound line or dot color. On the other hand, if the device value is less than lower bound, it is displayed as established lower bound line or dot color.
Warning upper/lower line color(c)	You can set the color of a line to be applied when it is more/less than the warning upper bound of real-time distribution graph. If the device value exceeds warning upper bound, it is displayed as upper bourn line color. On the other hand, if it is less than warning upper bound, it is displayed as lower bound line color. However, only when you apply Using Line at [Line and Dot] item, you can establish upper/lower bound line.

<table>
<tr><th>Items</th><th>Setting Description</th></tr>
<tr><td></td><td>

<table>
<tr><th>Num.</th><th>Use Line</th><th>Line Color</th><th>Line Type</th><th>Use Dot</th><th>Dot Color</th><th>Dot Type</th></tr>
<tr><td>1</td><td>☐</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
<tr><td>2</td><td>☑</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
<tr><td>3</td><td>☑</td><td>■ 000...</td><td>Solid</td><td>☑</td><td>■ 000...</td><td>Triangle</td></tr>
</table>
At [Line and Dot] item, when establishing Using Dot only for item No.1

<table>
<tr><th>Num.</th><th>Use A...</th><th>Max ...</th><th>Min V...</th><th>Max. ...</th><th>Min. L...</th><th>Max. ...</th><th>Min. ...</th></tr>
<tr><td>1</td><td>☑</td><td>100</td><td>0</td><td>■</td><td>■ 0...</td><td>🟪 8...</td><td>🟥 0...</td></tr>
<tr><td>2</td><td>☑</td><td>100</td><td>0</td><td>🟦 ff...</td><td>■ 0...</td><td>■ 0...</td><td>■ 0...</td></tr>
<tr><td>3</td><td>☑</td><td>100</td><td>0</td><td>🟥 0...</td><td>■ 0...</td><td>■ 0...</td><td>■ 0...</td></tr>
</table>
You can not set the upper/lower bound line color at No.1 item of [Warning Value].
</td></tr>
<tr><td>Warning upper/lower dot color (d)</td><td>You can set the color of a dot to be applied when it is more/less than the warning upper bound of real-time distribution graph. If the device value exceeds warning upper bound, it is displayed as upper bourn dot color. On the other hand, if it is less than warning upper bound, it is displayed as lower bound dot color.

However, only when you apply Using Dot at [Line and Dot] item, you can establish upper/lower bound line.</td></tr>
</table>

(5) Display Items


c
d
e
Real-Time Scatter
General
Basic
Max./Min.
Line and Dot
Alarm
Display
Transparent BG
Transparent Border
No of Display Data:
(The X-Y Scatter is not
Frame Display
Border Color:
f
g
Location:
h
a
b
Library...
Open...
Scale
i
j
X-axis Height:
Scale Color:
Y-axis Weight:
k
l
m
OK
Cancel

☐ Transparent BG

☐ Transparent Border

No of Display Data: 3

Location: Left

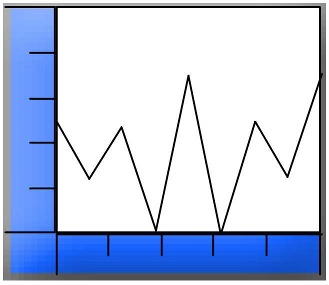
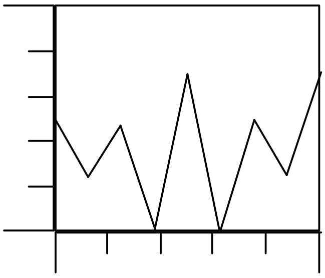
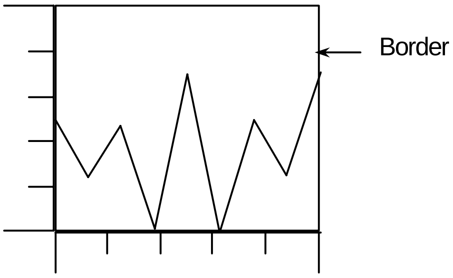
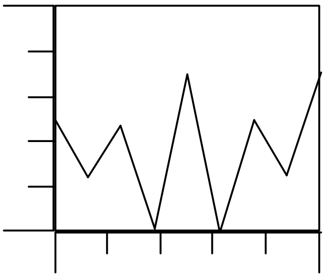
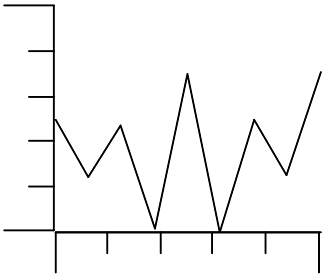
No.of Horizontal Point: 3

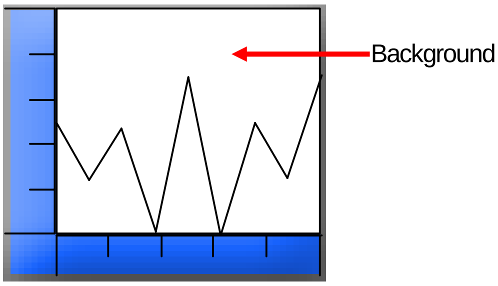
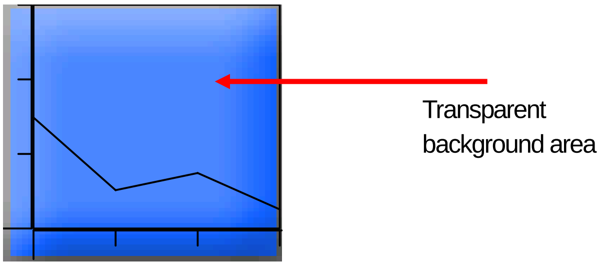
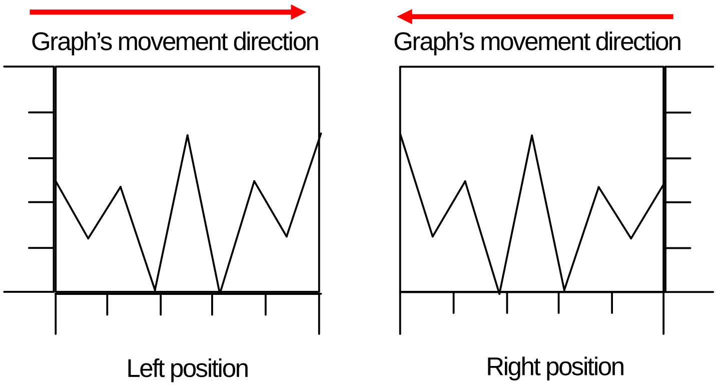
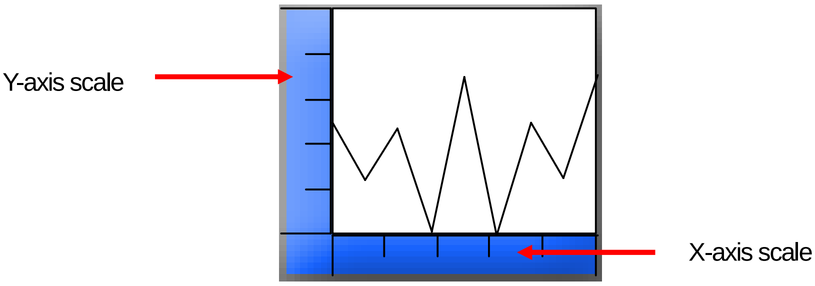
No.of Vertical Point: 3

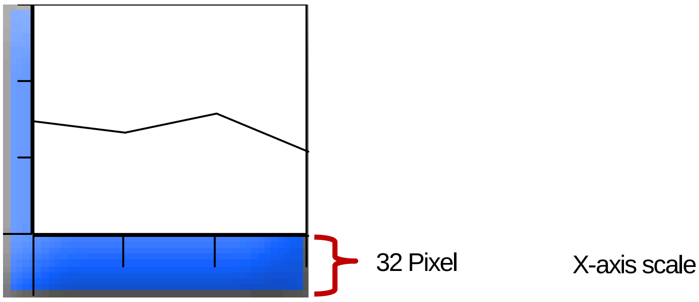
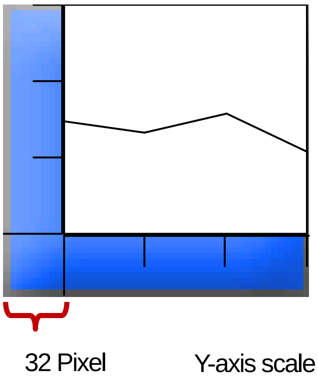
X-axis Height: 16

Y-axis Weight: 16

Items	Setting Descriptions
Library(a)	Select the background image for a graph from system graphic library and user graphic library.
Open (b)	Select the background image for a graph from image file (☞ Refer to 17.1.3 Bit Lamp Setting Items.

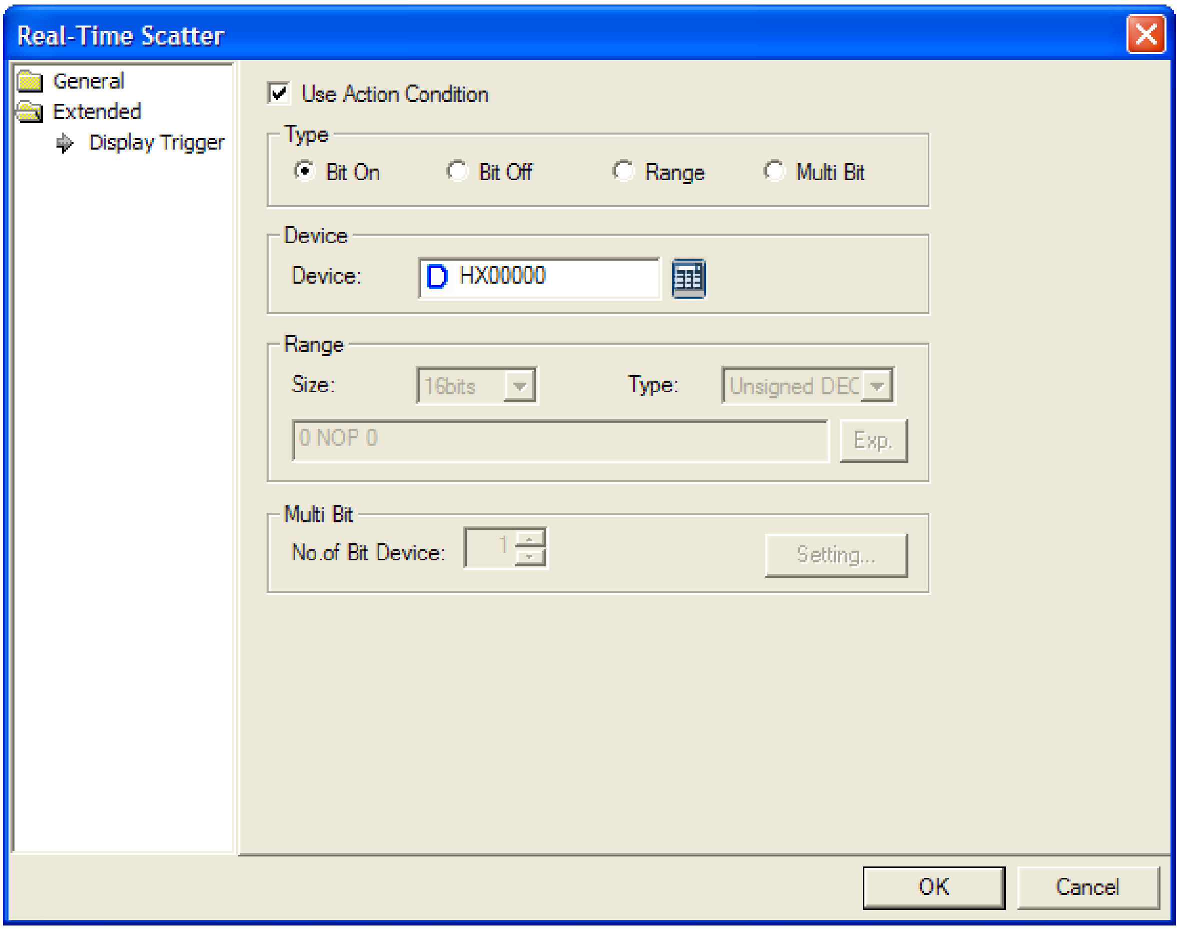
Items	Setting Descriptions
No image (c)	When logging trend graph background image is not displayed, the function is applied.  Using background image  No background image
No Border(d)	It does not apply the border of logging trend graph.   Using border  No border
The number of displayed data (e)	It fixes the number of dots to be displayed at a screen. If the distribution chart type of [Basic] items is X-Y, you can not establish the number of data and indicate up to 500EA. (a) XY graph indicates two device values as a dot. Then, supposing that the devices of M0~M10 to be monitored are registered at the logging No. of logging distribution chart and the number of displayed data is 5, 5 dots will be displayed with regarding the 10 device values as data. (b) Y graph indicates respectively each device value with a dot. Then, supposing that the devices of M0~M10 to be monitored are registered at the logging No. of logging distribution chart and the number of displayed data are 5, 5 dots will be displayed with regarding the 5 device values of M0 ~ M4 as data.
Border color (f)	It fixes the color of border. (☞ Refer to No Border (d).)

Items	Setting Descriptions
Background color(g)	It sets the background color.  Background In case that you do not establish Using background color ☑ Plate Color: , the background area will be displayed with transparent color.  Transparent background area
Position(h)	You can fix the position of scale; left or right.  Graph's movement direction Graph's movement direction Left position Right position
The number of X-axis scales (i)	It sets the number of X-axis scales.  Y-axis scale X-axis scale
The number of Y-axis scales (j)	It sets the number of Y-axis scales.
Length of X-axis scale (k)	It sets length of X-axis scale. X-axis is indicated as many as the value input with absolute pixel. However, length of X-axis scale is higher than the length of trend graph object, trend graph is not displayed at a screen.

Items	Setting Descriptions
	For example, supposing that area of X-axis scale is designated as 32, the scale is displayed as 32 pixel size. 
Width of Y-axis scale(l)	It sets width of Y-axis scale. Y-axis is indicated as many as the value input with absolute pixel. However, width of Y-axis scale is larger than the width of trend graph object, trend graph is not displayed at a screen. For example, supposing that width of Y-axis scale is designated as 32, the scale is displayed as 32 pixel size. 
Scale color(m)	It sets the color of scale.

(6) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Real-Time Scatter
General
Extended
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

No.of Bit Device: 1

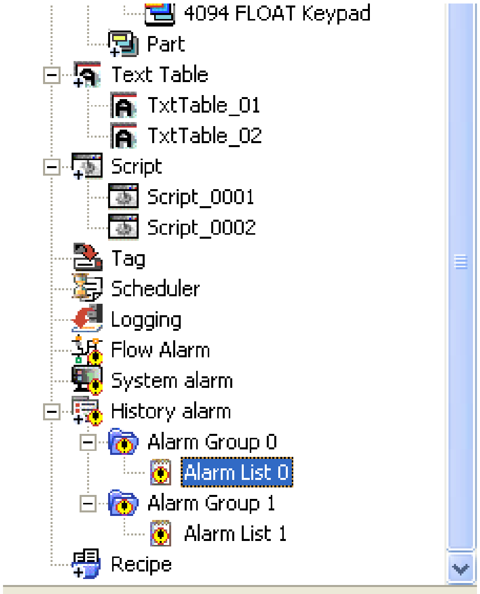
(☞ refer to 16.9 display trigger.)

17.9 History Alarm Viewer Object

17.9.1 Overview

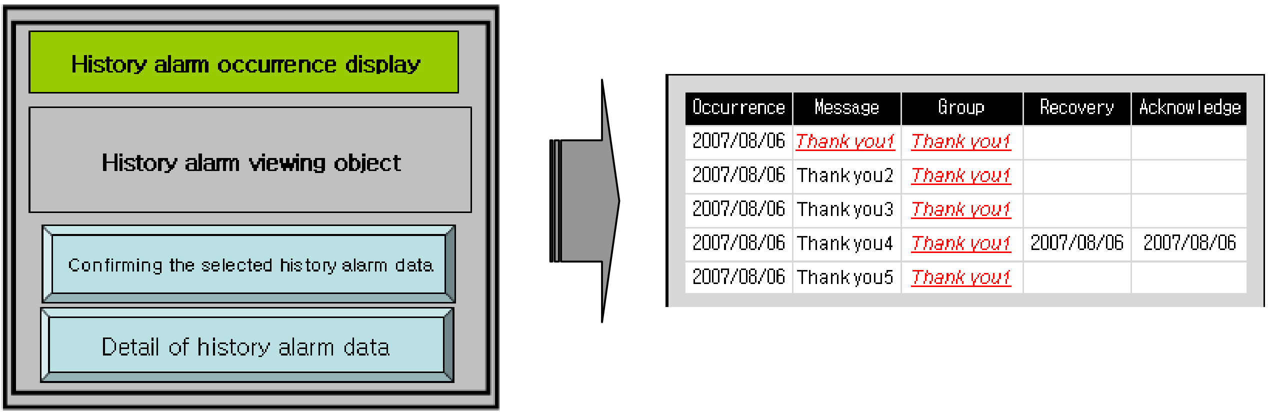
This performs the function of displaying the history alarm that occurred in case of an error in the connected device. You can check the state, cause and restoration time of the error.

☞ **For making history alarm, see Common Data History Alarm.**


4094 FLOAT Keypad
Part
Text Table
TxtTable_01
TxtTable_02
Script
Script_0001
Script_0002
Tag
Scheduler
Logging
Flow Alarm
System alarm
History alarm
Alarm Group 0
Alarm List 0
Alarm Group 1
Alarm List 1
Recipe

(1) History Alarm

An alarm occurs according to the change of the device in the history alarm that has been built.

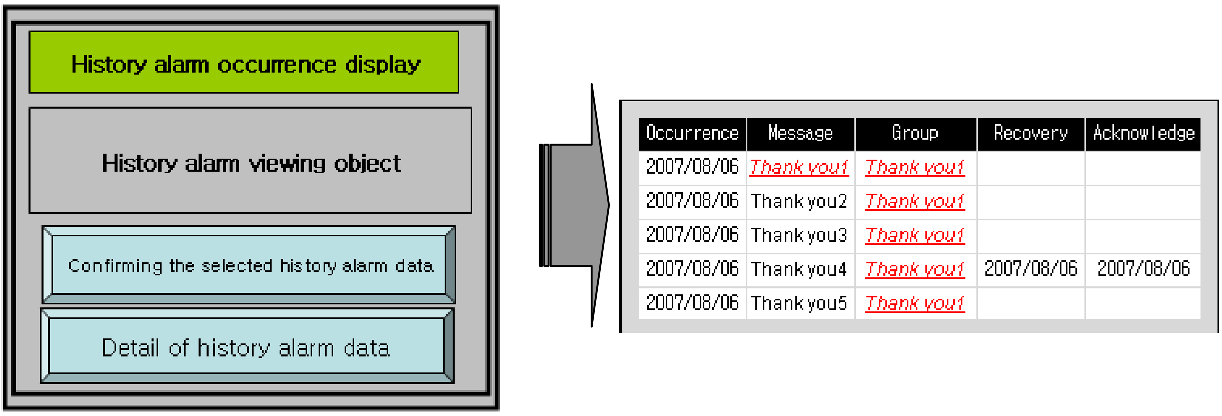

History alarm occurrence display
History alarm viewing object
Confirming the selected history alarm data
Detail of history alarm data

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/06	Thank you1	Thank you1		
2007/08/06	Thank you2	Thank you1		
2007/08/06	Thank you3	Thank you1		
2007/08/06	Thank you4	Thank you1	2007/08/06	2007/08/06
2007/08/06	Thank you5	Thank you1		

(2) View Details of History Alarm

To invoke the window of the desired history alarm, choose the history alarm which requires additional description and touch the View Details of History Alarm Data special switch.

(☞ See Special Switch View Details of History Alarm Data)

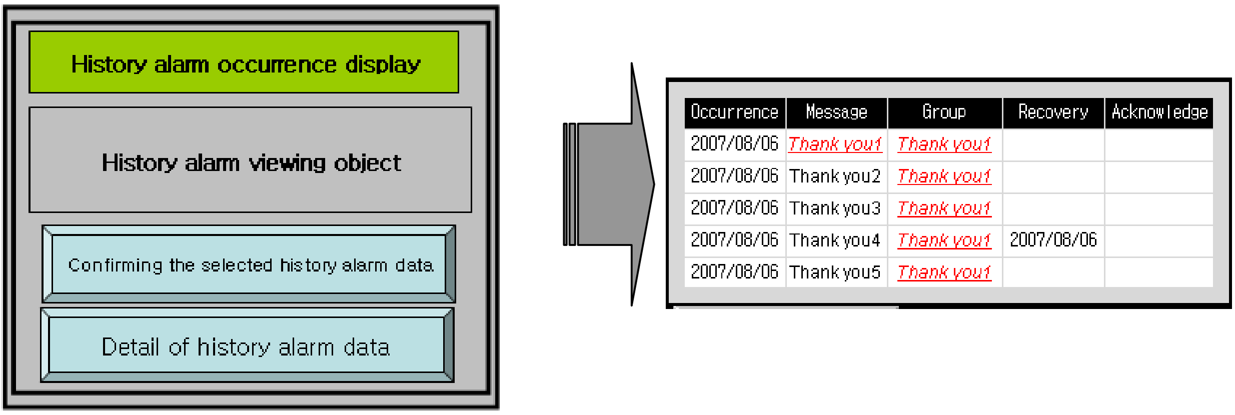

History alarm occurrence display
History alarm viewing object
Confirming the selected history alarm data
Detail of history alarm data

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/06	Thank you1	Thank you1		
2007/08/06	Thank you2	Thank you1		
2007/08/06	Thank you3	Thank you1		
2007/08/06	Thank you4	Thank you1	2007/08/06	2007/08/06
2007/08/06	Thank you5	Thank you1		

(3) Acknowledge

You can check the relevant alarm data by using the special switch in the data of the history alarm that has occurred.

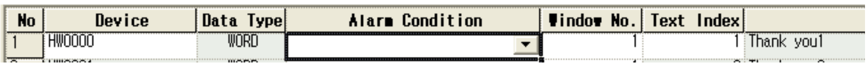
(☞ See Special Switch Check Selected History Alarm Data, Special Switch Check History Alarm Data of Current Page)

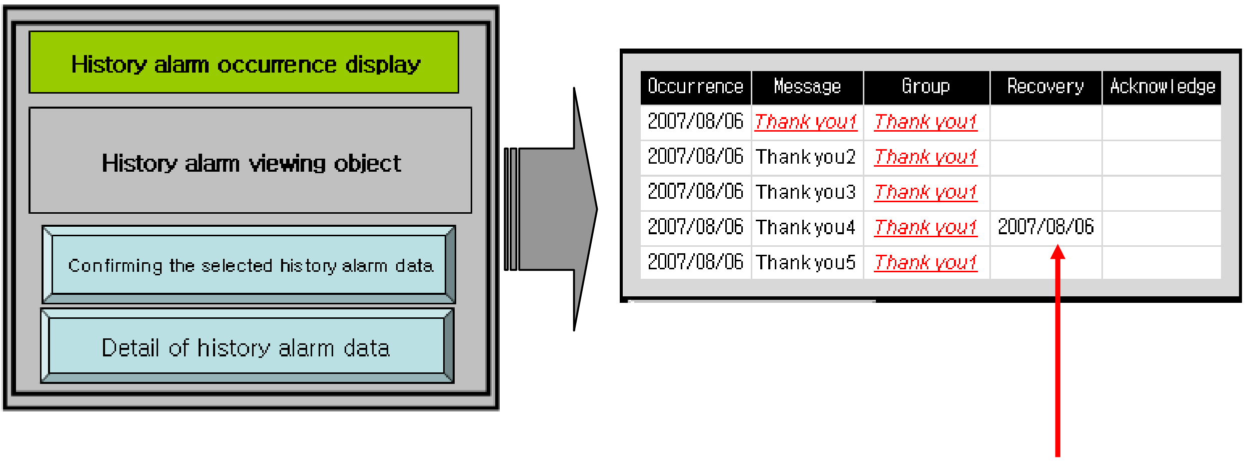

History alarm occurrence display
History alarm viewing object
Confirming the selected history alarm data
Detail of history alarm data

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/06	Thank you1	Thank you1		
2007/08/06	Thank you2	Thank you1		
2007/08/06	Thank you3	Thank you1		
2007/08/06	Thank you4	Thank you1	2007/08/06	
2007/08/06	Thank you5	Thank you1		

(4) Recovery

The conditions in which an error is caused or restored by a device are as follows. When an alarm has been restored, the restoration time is indicated.

Types of History Alarm Object Device	Occurrence and Restoration of Alarm	
Bit Device	Occurrence	Alarm occurs at the moment when the object device turns ON.
	Restoration	Alarm occurs at the moment when the object device turns OFF.
Word Device	Occurrence	An alarm occurs when the object device meets the set conditional sentence. When you have edited as follows in the history alarm list:  No / Device / Data Type / Alarm Condition / Window No. / Text Index 1 / HW0000 / WORD / / 1 / 1 / Thank you1 The alarm occurs when the IW0.0.0 device becomes a negative number data.
	Recovery	The alarm is restored when the object device which caused the alarm no more meets the conditional sentence. In the example above, the alarm is restored when the IW0.0.0 device becomes more than 0.


History alarm occurrence display
History alarm viewing object
Confirming the selected history alarm data
Detail of history alarm data

Occurrence	Message	Group	Recovery	Acknowledge
2007/08/06	Thank you1	Thank you1		
2007/08/06	Thank you2	Thank you1		
2007/08/06	Thank you3	Thank you1		
2007/08/06	Thank you4	Thank you1	2007/08/06	
2007/08/06	Thank you5	Thank you1		

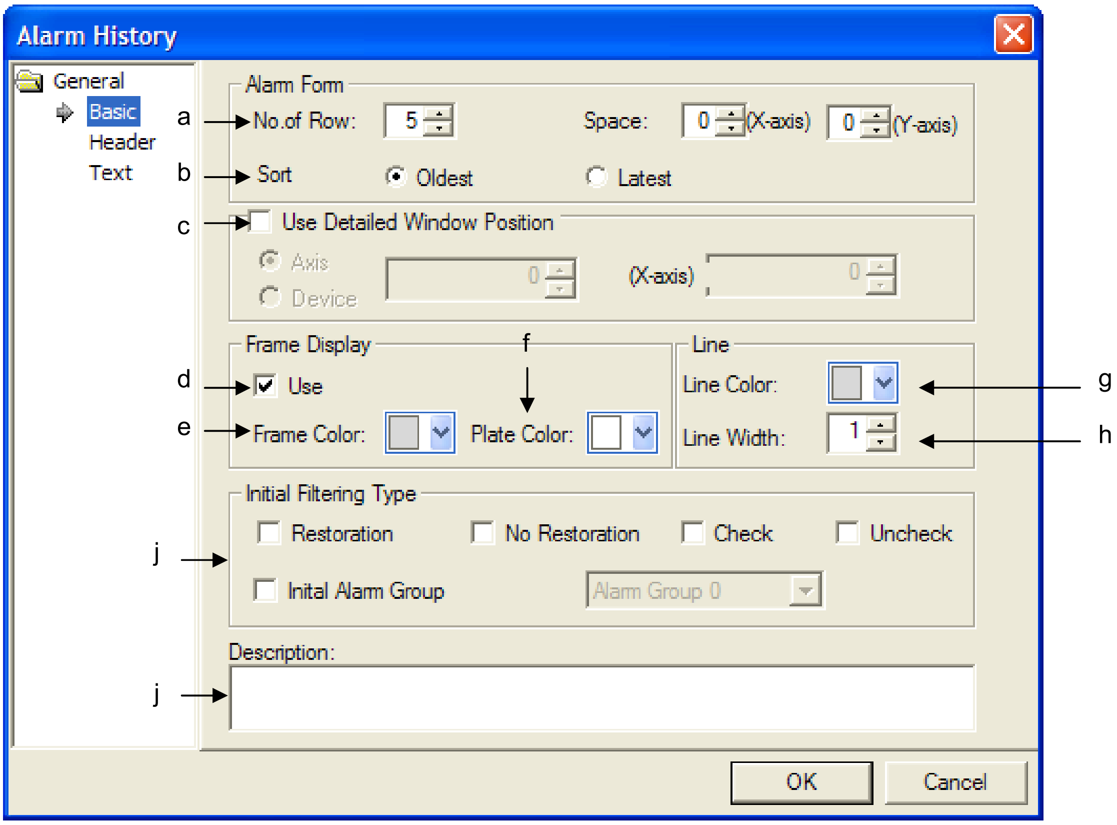
The recovery time is indicated.

Note

Items	Description
Collect alarm history data	The XGT Panel continuously collects and stores the alarm history data. The alarm history data is always collected and updated even in a window where the View Alarm History Object is not edited.
Delete alarm history data	You can delete the alarm history data by using [Delete Selected History Alarm Data] or [Delete History Alarm Data of Current Page] in the special switch. However, unrestored data cannot be deleted.
Page shift	If more history alarm data have occurred than the columns of the view history alarm objects, to shift to the page next to the current page, use [Move Down History Alarm List Page] of the special switch. To move to the precious page, use [Move Up History Alarm List Page] of the special switch. ☞ See Special Switch.
Print alarm history data	To print the history alarm data currently displayed in the window, see [Print story Alarm List Page] of the special switch.

17.9.2 History Alarm Viewer Settings

(1) Basic



Alarm History

General
Basic
Header
Text

Alarm Form
No.of Row: 5
Space: 0 (X-axis) 0 (Y-axis)
Sort ● Oldest ○ Latest

☐ Use Detailed Window Position
● Axis ○ Device 0 (X-axis) 0

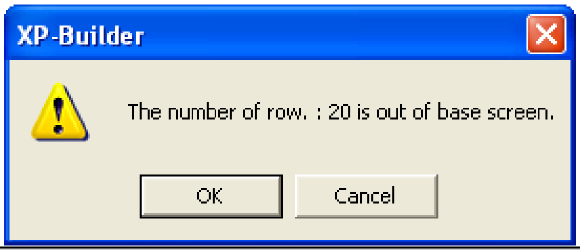
Frame Display
☑ Use
Frame Color:
Plate Color:

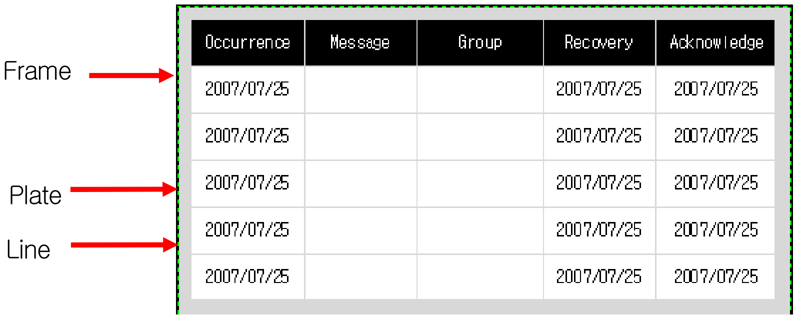
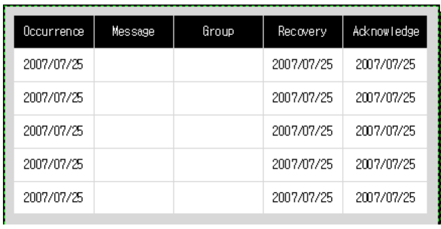
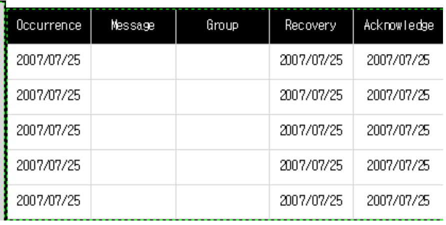
Line
Line Color:
Line Width: 1

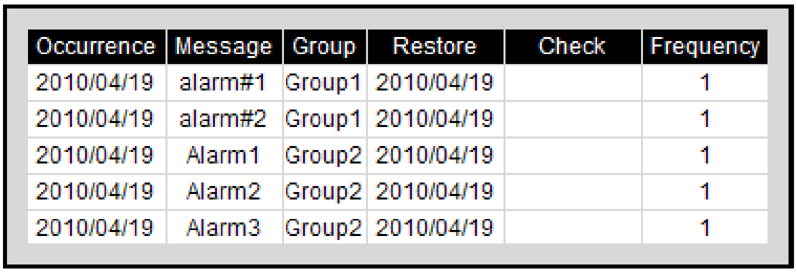
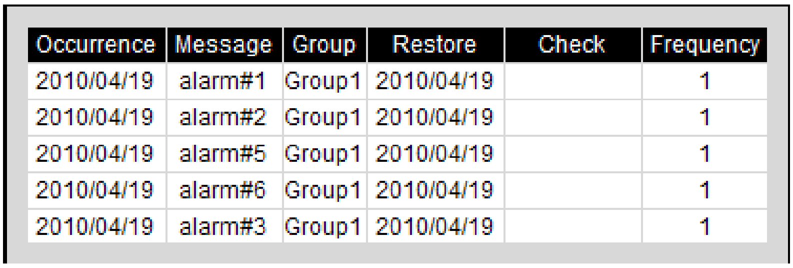
Initial Filtering Type
☐ Restoration ☐ No Restoration ☐ Check ☐ Uncheck
☐ Inital Alarm Group Alarm Group 0

Description:

OK Cancel

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td rowspan="2">Alarm Form</td><td>No. of Row (a)</td><td>Sets the number of columns to be displayed in View History Alarm.
If the number of columns exceeds the window scope, a warning window appears.

XP-Builder
The number of row. : 20 is out of base screen.
OK Cancel
<table><tr><th>Type</th><th>Result</th></tr><tr><td>OK</td><td>Displays the set number of columns beyond the window scope.</td></tr><tr><td>Cancel</td><td>The dialog box is not closed and you should re-enter the number of columns.</td></tr></table></td></tr>
<tr><td>Sort (c)</td><td>Decides the sequence in which the data that have occurred are displayed.
The oldest data: the oldest data comes first.
The newest data: the newest data comes first.</td></tr>
</table>

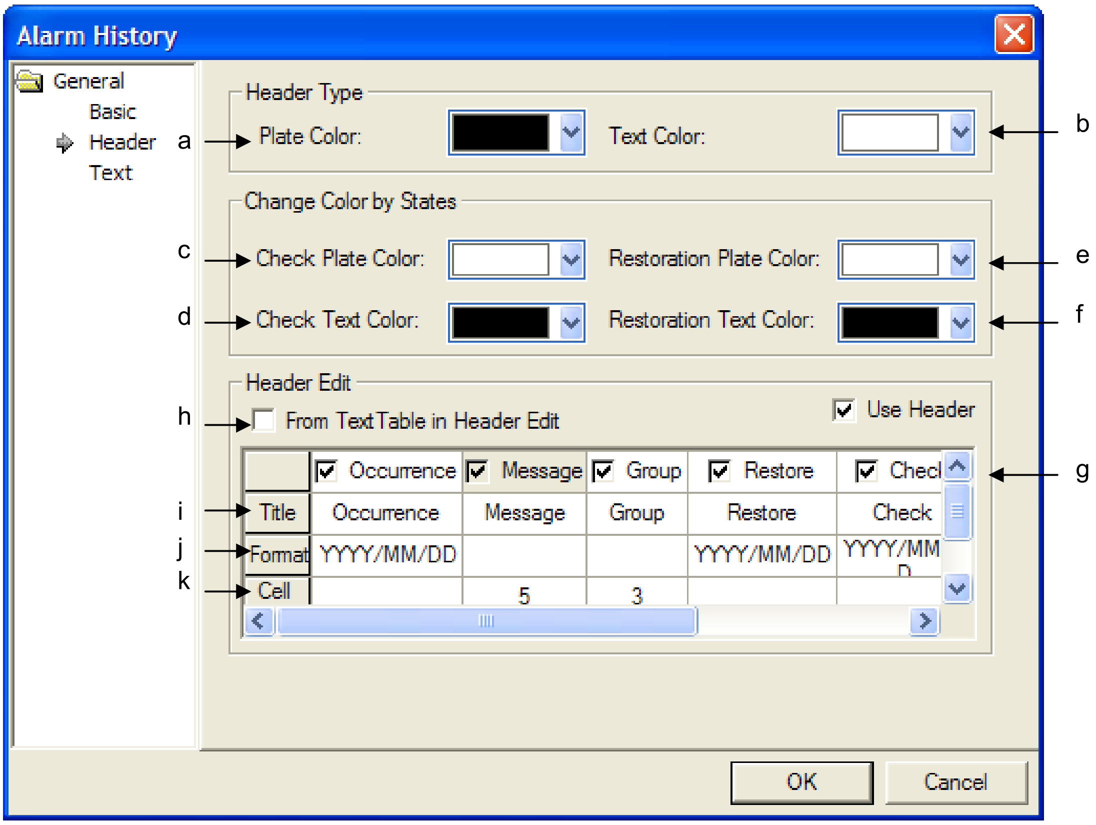
Items		Settings
Alarm Form	Use detailed window position (c)	It displays Alarm Details View. After preparing Details View Windows, establish Detailed Description View when editing alarm list of common data. If the below function is set at Alarm History View object, the details will be pop-upped at Windows screen. A user can designate the position where popup Windows will be shown. In terms of position, both absolute coordinate and relative coordinate whose value changes depending on device value are available. (☞Refer to 17.2.6 Items to set special switch)
Frame Display	Use (d)	This is set when you use a frame. The frame, background and line are as follows.  Occurrence Message Group Recovery Acknowledge 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25 2007/07/25  Frame Used  Frame Not Used
	Frame color (e)	Sets the frame color of View History Alarm.
	Plate color (f)	Sets the background color of View History Alarm.
	Line color (g)	Sets the lines color of View History Alarm.
	Line Width (h)	Sets the Boldness of the lines of View History Alarm.
Initial filtering status (i)	Recovery	When displaying alarm history screen initially at XGT Panel, it filters and displays recovered alarm history data.
	Unrecovery	When displaying alarm history screen initially at XGT Panel, it filters and displays unrecovered alarm history data.
	Recovery	When displaying alarm history screen initially at XGT Panel, it filters and displays recovered alarm history data.
	Unrecovery	When displaying alarm history screen initially at XGT Panel, it filters and displays unrecovered alarm history data.
Designating Initial alarm group(i)	Designating alarm group	In the case of alarm history view object registered to XGT Panel, it displays the alarms history occurred at all groups initially. If you establish [Designating Initial Alarm Group], it can display the alarm history only occurred at a certain group initially.

Items		Settings
		 [Displaying all alarms history occurred at Group 1 and Group 2 initially]  [Displaying the alarms history only occurred at Group 1 initially]

Occurrence	Message	Group	Restore	Check	Frequency
2010/04/19	alarm#1	Group1	2010/04/19		1
2010/04/19	alarm#2	Group1	2010/04/19		1
2010/04/19	Alarm1	Group2	2010/04/19		1
2010/04/19	Alarm2	Group2	2010/04/19		1
2010/04/19	Alarm3	Group2	2010/04/19		1

Occurrence	Message	Group	Restore	Check	Frequency
2010/04/19	alarm#1	Group1	2010/04/19		1
2010/04/19	alarm#2	Group1	2010/04/19		1
2010/04/19	alarm#5	Group1	2010/04/19		1
2010/04/19	alarm#6	Group1	2010/04/19		1
2010/04/19	alarm#3	Group1	2010/04/19		1

(2) Header



Header Type

Plate Color: ■ Text Color: ☐

Change Color by States

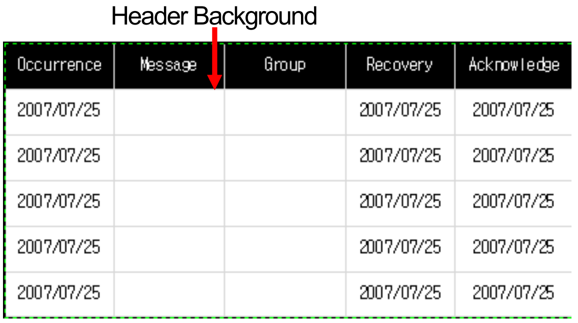
Check Plate Color: ☐ Restoration Plate Color: ☐

Check Text Color: ■ Restoration Text Color: ■

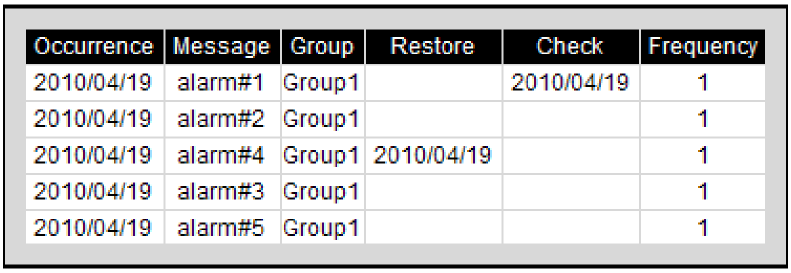
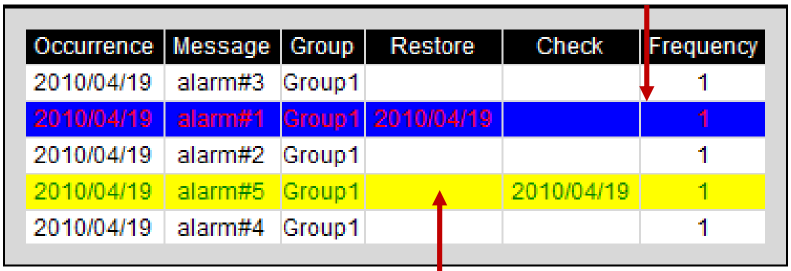
Header Edit

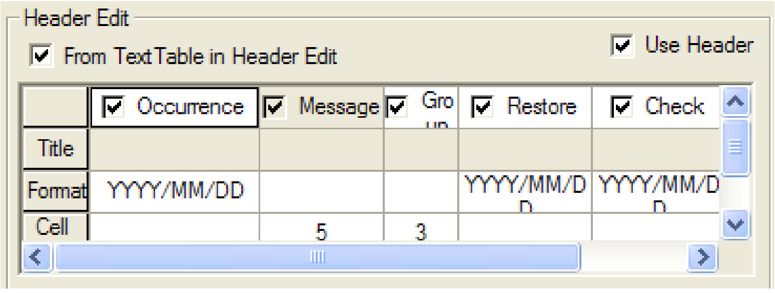
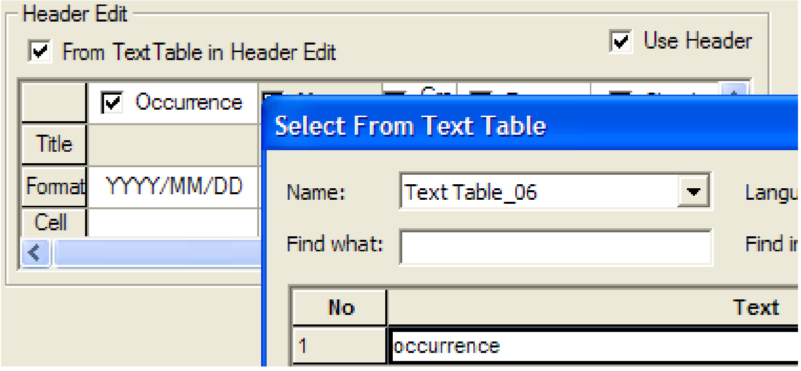
☐ From TextTable in Header Edit ☑ Use Header

	☑ Occurrence	☑ Message	☑ Group	☑ Restore	☑ Checl
Title	Occurrence	Message	Group	Restore	Check
Format	YYYY/MM/DD			YYYY/MM/DD	YYYY/MM D
Cell		5	3		

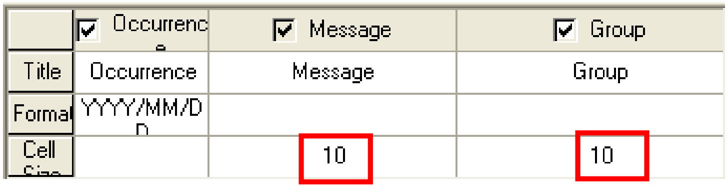
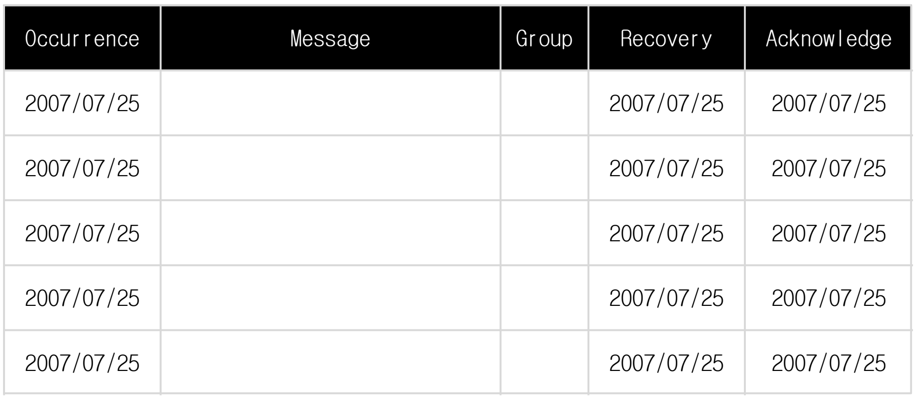
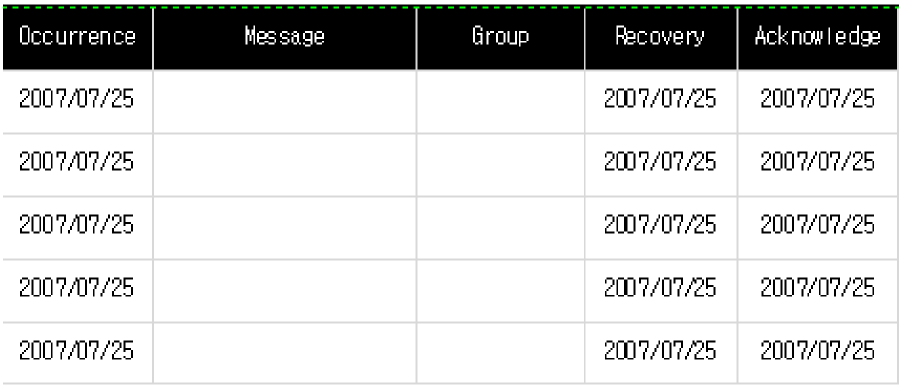
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td rowspan="2">Header Form</td><td>Plate color (a)</td><td>Sets the background color of the header of View History Alarm.
In the example below, the parts edited as [Occurrence], [Message] and [Group] are the headers.


Background color of header: black, Color of header: white</td></tr>
<tr><td>Text color (b)</td><td>Sets the text color of the header of View History Alarm.</td></tr>
<tr><td rowspan="2">Changing color Depending on alarm status</td><td>Confirm Background color (c)</td><td>In the case of [Confirm] list among alarms history occurred at XGT Panel, it designates the background color to indicate that the appropriate row is checked.
If a user does not designate the background of [Confirmed Data], it displays the background color with [Basic]-[Frame Background Color].</td></tr>
<tr><td>Confirm Character color(d)</td><td>In the case of [Confirm] list among alarms history occurred at XGT Panel, it designates the character color to indicate that the appropriate row is checked.
If a user does not designate the character color of [Confirmed Data], it displays the character color with [Character]-[Character Color].</td></tr>
</table>

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td rowspan="2"></td><td>Recovery Background (e)</td><td>In the case of [Recovery] list among alarms history occurred at XGT Panel, it designates the background color to indicate that the appropriate row is recovered.
If a user does not designate the background of [Recovery Data], it displays the background color with [Basic]-[Frame Background Color].</td></tr>
<tr><td>Recovery Character color (f)</td><td>In the case of [Recovery] list among alarms history occurred at XGT Panel, it designates the character color to indicate that the appropriate row is checked.
If a user does not designate the background of [Confirmed Data], it displays the character color with [Character]-[Character Color].

<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Restore</th><th>Check</th><th>Frequency</th></tr>
<tr><td>2010/04/19</td><td>alarm#1</td><td>Group1</td><td></td><td>2010/04/19</td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#2</td><td>Group1</td><td></td><td></td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#4</td><td>Group1</td><td>2010/04/19</td><td></td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#3</td><td>Group1</td><td></td><td></td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#5</td><td>Group1</td><td></td><td></td><td>1</td></tr>
</table>
[The same color is displayed for Occurrence, Recovery, Recognition]
Changing recovered alarm background, character color

<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Restore</th><th>Check</th><th>Frequency</th></tr>
<tr><td>2010/04/19</td><td>alarm#3</td><td>Group1</td><td></td><td></td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#1</td><td>Group1</td><td>2010/04/19</td><td></td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#2</td><td>Group1</td><td></td><td></td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#5</td><td>Group1</td><td></td><td>2010/04/19</td><td>1</td></tr>
<tr><td>2010/04/19</td><td>alarm#4</td><td>Group1</td><td></td><td></td><td>1</td></tr>
</table>
[The different color is displayed for Occurrence, Recovery, Recognition]
Changing recognized alarm background color, character color</td></tr>
<tr><td rowspan="2">Headline Edition</td><td>Using Headline (g)</td><td>You can select whether the headline of alarm history will be used or not. If you no not designate using headline, you can not input headline title and it is not displayed at XGT Panel.</td></tr>
<tr><td>Headline from Text table(h)</td><td>You can select the headline title of logging list view from text table. If you apply [Headline from Text Table], you need to select the headline for every row (Occurrence, Message, Group) from string and direct input is not allowable.
After selecting [Headline from Text Table], if you press the related row, the dialog box to select text table will be shown.</td></tr>
</table>

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td rowspan="4"></td><td></td><td>
Header Edit
☑ From TextTable in Header Edit
☑ Use Header
☑ Occurrence
☑ Message
☑ Gro up
☑ Restore
☑ Check
Title
Format
Cell
Format: YYYY/MM/DD, YYYY/MM/DD, YYYY/MM/DD
Cell: 5, 3
Press a headline

Header Edit
☑ From TextTable in Header Edit
☑ Use Header
☑ Occurrence
Title
Format
Cell
Select From Text Table
Langu
Find i
Format: YYYY/MM/DD
Name: Text Table_06
Find what:
No | Text
1 | occurrence
Select your intended string from text table.</td></tr>
<tr><td>Header title (i)</td><td>Sets the title of the header of View History Alarm. The user can decide the header title which can express each column.</td></tr>
<tr><td>Format (j)</td><td>Sets the data form of View History Alarm.
(The data form can be set only with respect to occurrence, restoration and check columns)

• Data Forms You Can Select
<table>
<tr><th>Data Form</th><th>Meaning</th></tr>
<tr><td>YYYY/MM/DD</td><td>yy/mm/dd (4 digit year)</td></tr>
<tr><td>YY/MM/DD</td><td>yy/mm/dd (2 digit year)</td></tr>
<tr><td>MM/DD/YYYYY</td><td>mm/dd/yy (4 digit year)</td></tr>
<tr><td>HH/MM</td><td>hh/mm</td></tr>
<tr><td>HH/MM/SS</td><td>hh/mm/ss</td></tr>
<tr><td>YYYY/MM/DD/HH/MM/SS</td><td>yy/mm/dd/hh/mm/ss(4 digit year)</td></tr>
<tr><td>YYYY/MM/DD/HH/MM</td><td>yy/mm/dd/hh/mm(4 digit year)</td></tr>
<tr><td>YY/MM/DD/HH/MM/SS</td><td>yy/mm/dd/hh/mm/ss(2 digit year)</td></tr>
<tr><td>YY/MM/DD/HH/MM</td><td>yy/mm/dd/hh/mm(2 digit year)</td></tr>
<tr><td>MM/DD/HH/MM/SS</td><td>mm/dd/hh/mm/ss</td></tr>
<tr><td>MM/DD/HH/MM</td><td>mm/dd/hh/mm</td></tr>
</table></td></tr>
<tr><td>Cell size (k)</td><td>You can adjust the width of the message and group.
(The width of Occurrence, Restoration and Check is determined according to the header form, text size and font.)
Enter the size of the message and group in the editing window.</td></tr>
</table>

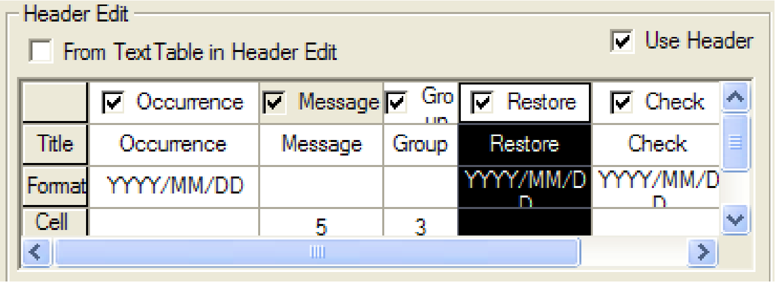
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td></td><td></td><td>

<table>
<tr><th></th><th>☑ Occurrence</th><th>☑ Message</th><th>☑ Group</th></tr>
<tr><td>Title</td><td>Occurrence</td><td>Message</td><td>Group</td></tr>
<tr><td>Forma</td><td>YYYY/MM/DD</td><td></td><td></td></tr>
<tr><td>Cell Size</td><td></td><td>10</td><td>10</td></tr>
</table>

<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
</table>
Message Cell Size: 26, Group Cell Size: 4

<table>
<tr><th>Occurrence</th><th>Message</th><th>Group</th><th>Recovery</th><th>Acknowledge</th></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
<tr><td>2007/07/25</td><td></td><td></td><td>2007/07/25</td><td>2007/07/25</td></tr>
</table>
Message Cell Size: 20, Group Cell Size: 10
</td></tr>
</table>

Note

You can change the order of headline such as Occurrence, Message, Group, Recovery, Recognition, etc.

Method
1. Click the headline to be moved with a left mouse button.
2. Move the headline to your intended place with keeping the click.
3. Release a left mouse button at your intended place.

Ex.) If you try to move the position of headline of [Recovery] to the previous place of [Occurrence] headline, the procedure is as below.(Namely, change the order of [Occurrence]-[Message]-[Group]-[Recovery]-[Recognition] into [Recovery]-[Occurrence]-[Message]-[Group]-[Recognition]/



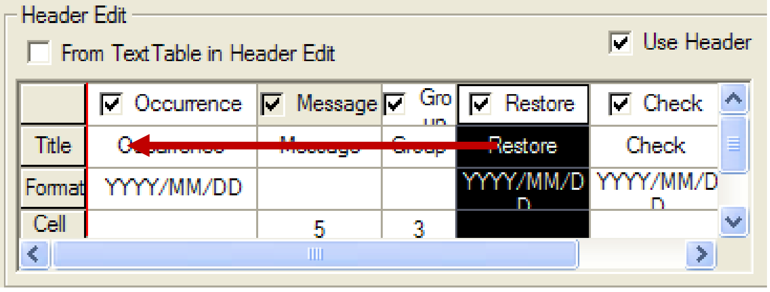
Header Edit

☐ From Text Table in Header Edit

☑ Use Header

	☑ Occurrence	☑ Message	☑ Gro	☑ Restore	☑ Check
Title	Occurrence	Message	Group	Restore	Check
Format	YYYY/MM/DD			YYYY/MM/DD	YYYY/MM/DD
Cell		5	3		

Press the headline of [Recovery] to be moved with a left mouse button.



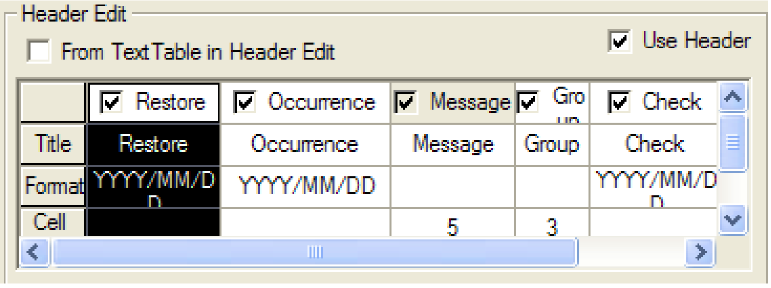
Header Edit

☐ From Text Table in Header Edit

☑ Use Header

	☑ Occurrence	☑ Message	☑ Gro	☑ Restore	☑ Check
Title	Occurrence	Message	Group	Restore	Check
Format	YYYY/MM/DD			YYYY/MM/DD	YYYY/MM/DD
Cell		5	3		

Move the headline of [Recovery] to the previous place of [Occurrence] headline
A red line will be shown at the moved place.



Header Edit

☐ From Text Table in Header Edit

☑ Use Header

	☑ Restore	☑ Occurrence	☑ Message	☑ Gro	☑ Check
Title	Restore	Occurrence	Message	Group	Check
Format	YYYY/MM/DD	YYYY/MM/DD			YYYY/MM/DD
Cell			5	3	

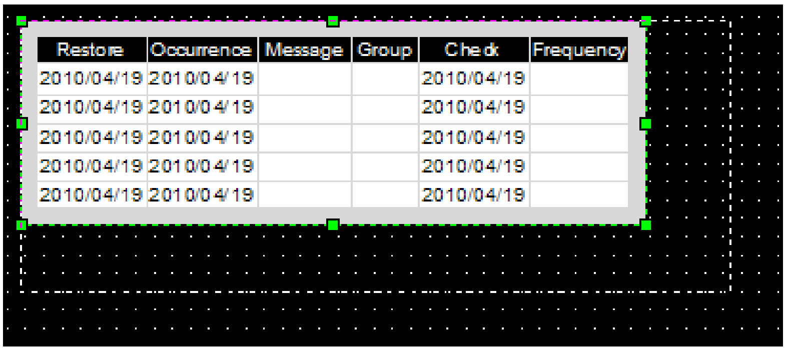
The position of [Recovery] headline is moved.

Note

A user can select the size of history alarm object.

Method

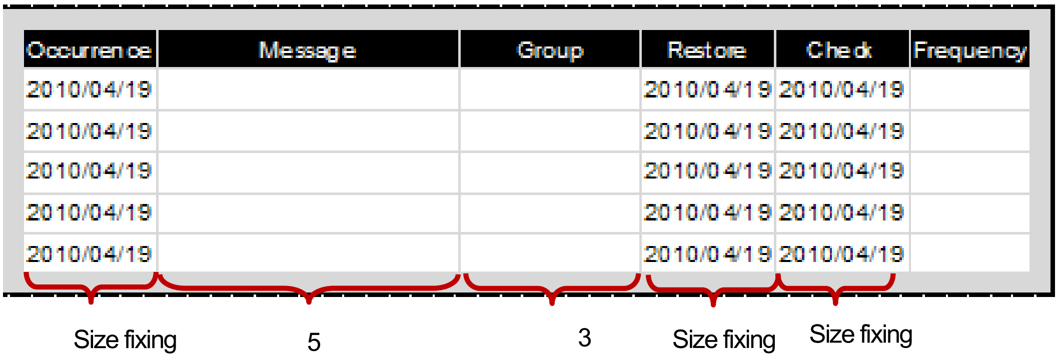
1. After selecting the object at XP Builder screen, set the size that you need with a mouse.



Restore	Occurrence	Message	Group	Check	Frequency
2010/04/19	2010/04/19			2010/04/19	
2010/04/19	2010/04/19			2010/04/19	
2010/04/19	2010/04/19			2010/04/19	
2010/04/19	2010/04/19			2010/04/19	
2010/04/19	2010/04/19			2010/04/19	

2. [Occurrence], [Recovery], [Recognition] rows are fixed based on font and character size.
3. [Message], [Group] areas are adjusted depending on relative size established by a user.

(Width of [Message] row + width of [Group] row = Width set by a user-width of [Occurrence] row- width of [Recovery] row - width of [Recognition] row

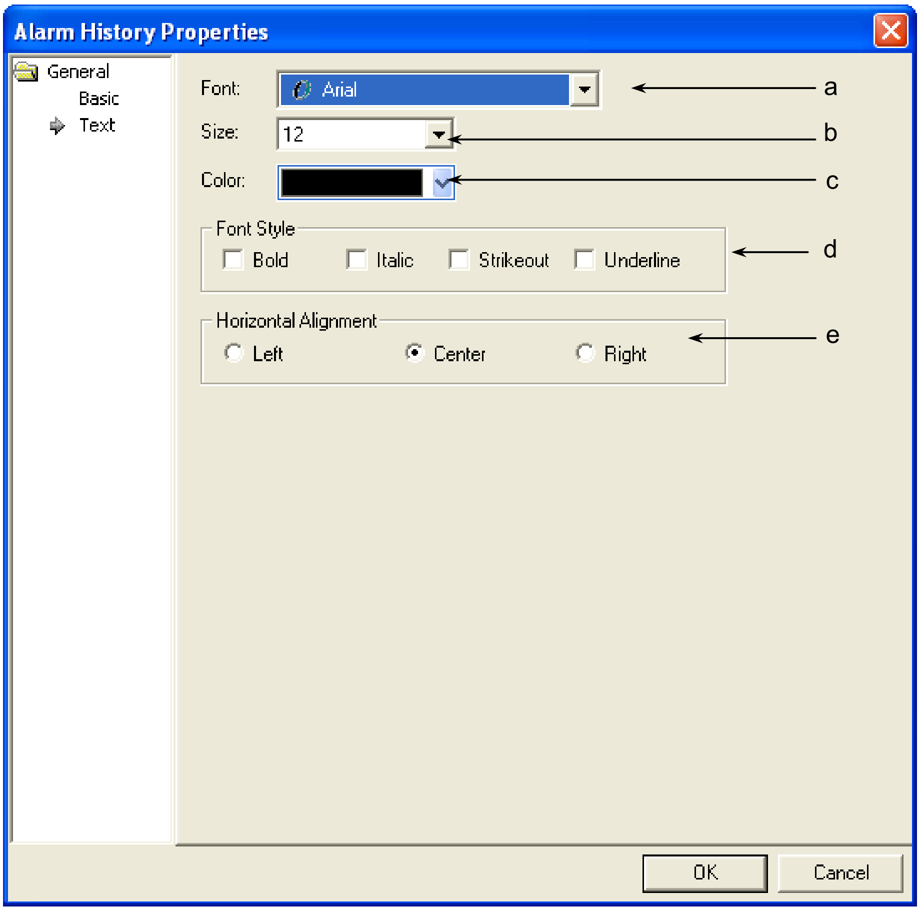


Occurrence	Message	Group	Restore	Check	Frequency
2010/04/19			2010/04/19	2010/04/19	
2010/04/19			2010/04/19	2010/04/19	
2010/04/19			2010/04/19	2010/04/19	
2010/04/19			2010/04/19	2010/04/19	
2010/04/19			2010/04/19	2010/04/19	

Notice)

1. Reducing size is allowed under the condition that it can express the data of selected row or headline. Namely, the size that can realize the data of all selected rows and headline is the minimum size.
2. Vertical length is fixed based on font and character size.

(3) Text



Font: Arial

Size: 12

Color:

Font Style

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

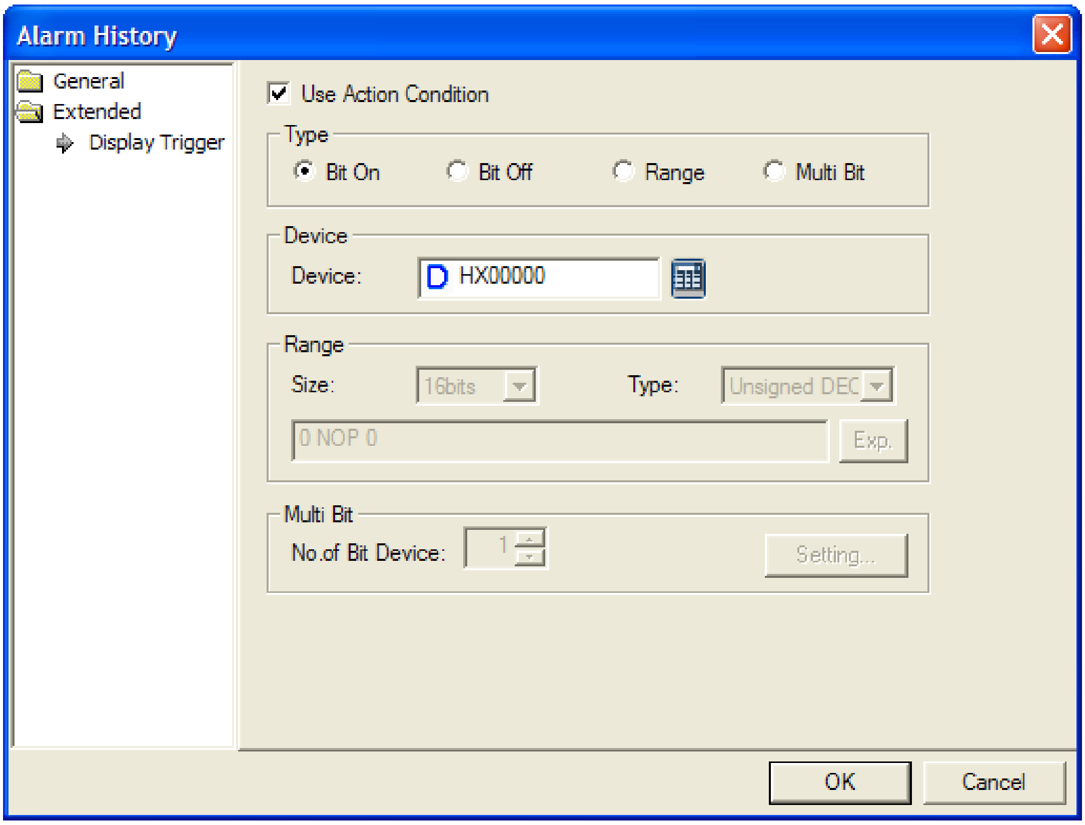
Horizontal Alignment

○ Left ● Center ○ Right

Items	Settings
Font (a)	Sets the type of font to be displayed in the history alarm list object. The font which has been set applies to both header and data. A warning occurs when the set font cannot express the header. A warning window is invoked when you have edited a header in Korean by using the [Arial] font, which can only express English texts.
Size (b)	Sets the text size. The text size which has been set applies to both header and data.
Color (c)	Sets the color of data texts. The text color which has been set applies only to data. You can set the color of the header in [Basic Items]-[Header Type]-[Text Color].
Font Style (d)	Sets the text form(Bold, Italic, Strikeout, underlined). You can select two or more of them at a time. The text size which has been set applies to both header and data.
Horizontal Alignment (e)	Selects the horizontal location of texts(left, middle, right). The text size which has been set applies to both header and data. Vertical justification is not available in View Data List.

(4) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Alarm History
General
Extended
Display Trigger
OK
Cancel

☑ Use Action Condition

Type
● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device
Device: HX00000

Range
Size: 16bits
Type: Unsigned DEC
0 NOP 0
Exp.

Multi Bit
No.of Bit Device: 1
Setting...

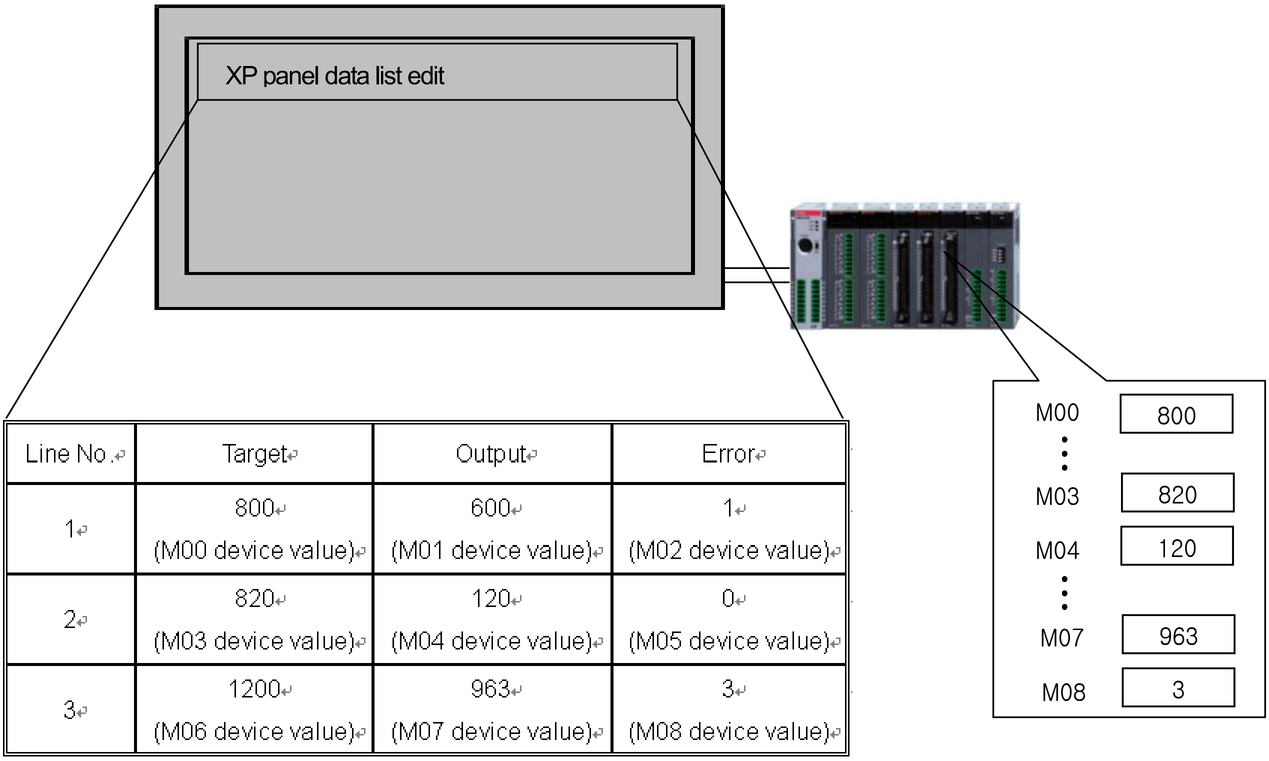
(☞ refer to 16.9 display trigger.)

17.10 Data List Object

17.10.1 Overview

The data list viewer object performs the function of reading consecutive values and displaying them in a table.

Example)



Line No.	Target	Output	Error
1	800 (M00 device value)	600 (M01 device value)	1 (M02 device value)
2	820 (M03 device value)	120 (M04 device value)	0 (M05 device value)
3	1200 (M06 device value)	963 (M07 device value)	3 (M08 device value)

If 9 consecutive device values, which begin with the M00 device of the PLC as above, are displayed, you can use the Data List viewer Object.

[Method]

Set the start device in [Basic]-[Device].

(a) Set [Display]-[N0. of Col.], [No. of Row].

The number of displayed devices is [object device address + (number of columns * number of row) – 1] from the object device.

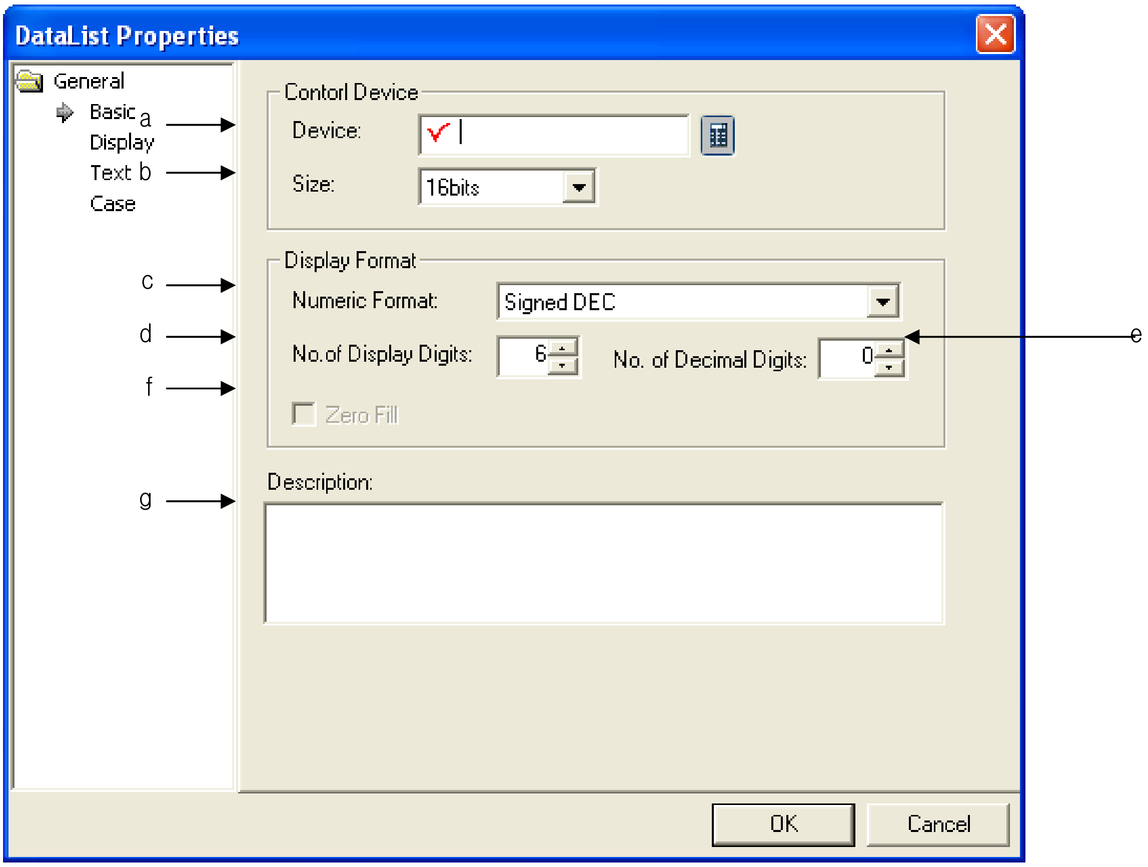
(b) Edit the header displaying each column.

Note

(1) Only View Consecutive Device List is available..

17.10.2 Data List Settings

(1) Basic



Contorl Device

Device:

Size: 16bits

Display Format

Numeric Format: Signed DEC

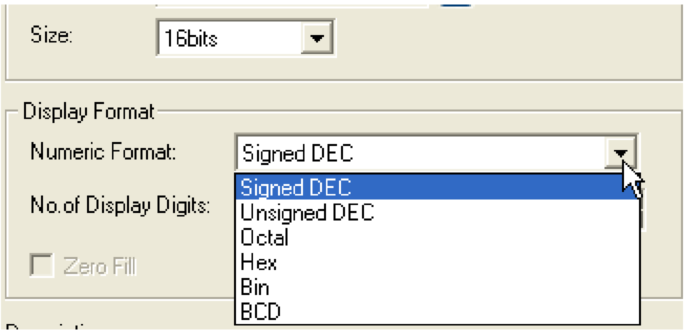
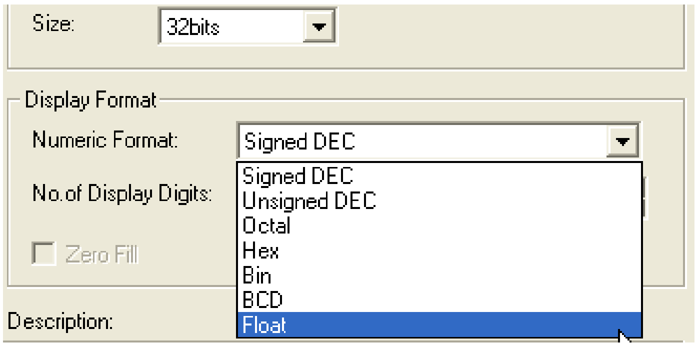
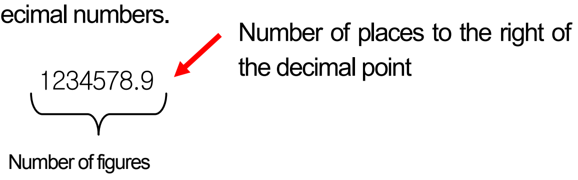
No.of Display Digits: 6

No. of Decimal Digits: 0

☐ Zero Fill

Description:

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Device (a)</td><td>Sets the device to be referred to in the relevant object.
Displays consecutive device values beginning with the set device.</td></tr>
<tr><td>Size (b)</td><td>Sets the size of the device data(16 bit, 32 bit).</td></tr>
<tr><td>Numeric Format (c)</td><td>Selects the display type.
<table>
<tr><th>Display type</th><th>Description</th><th>Example</th></tr>
<tr><td>Signed decimal</td><td>Displayed in signed decimal numbers.</td><td>-2184</td></tr>
<tr><td>Unsigned decimal</td><td>Displayed in unsigned decimal numbers.</td><td>2184</td></tr>
<tr><td>Octal</td><td>Displayed in octal numbers.</td><td>4210</td></tr>
<tr><td>Hexadecimal</td><td>Displayed in hexadecimal numbers.</td><td>888</td></tr>
<tr><td>Binary</td><td>Displayed in binary numbers.</td><td>10010001000</td></tr>
<tr><td>BCD</td><td>Displayed in BCD.</td><td>888</td></tr>
<tr><td>Actual number</td><td>Displayed in actual numbers.</td><td>2184.0</td></tr>
</table>
Actual numbers can be set only if the device size is 32 bit as follows.</td></tr>
</table>

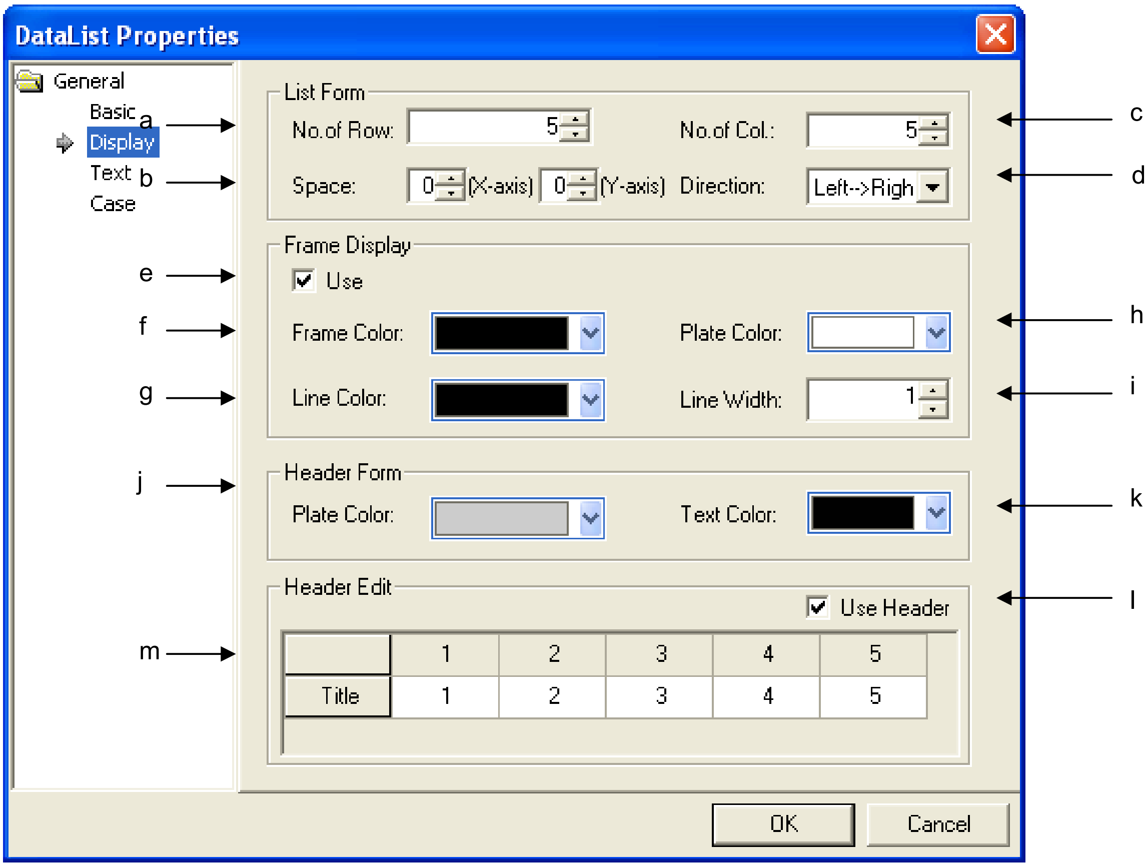
	 Size: 16bits Display Format Numeric Format: Signed DEC Signed DEC Unsigned DEC Octal Hex Bin BCD No.of Display Digits: ☐ Zero Fill No float number in case of 16Bit  Size: 32bits Display Format Numeric Format: Signed DEC Signed DEC Unsigned DEC Octal Hex Bin BCD Float No.of Display Digits: ☐ Zero Fill Description: Float number exists in case of 32bit
No. of Display Digits (d)	Sets in how many figures to display the numbers. You can set up to 64 figures. If the number of set numbers is below the reading and writing device values, it is displayed as * in the object. If the device value cannot be displayed in the form of BCD, it is expressed as ~.
No. of Decimal Digits (e)	Sets how many places to put to the right of the decimal point when you select all types of numbers other than binary, octal and hexadecimal numbers.  Number of places to the right of the decimal point 1234578.9 Number of figures
Zero Fill 0 (f)	Selected when you put 0 before the number in selecting justification to the right in arrangement. This can be set only when [Text]-[Horizontal Alignment] is justification to the right. In case of alignment to the middle or left, filling with 0 is not available.
Description (h)	Enters description in the relevant object.

Note

(1) The device data type (signed decimal, unsigned decimal and BCD) is decided by the "Display Format"(Display Format).

(2) If the data size changed, the set item is deleted in the [Case].
(3) If communication fails with the PLC, the data value is not displayed in the data list viewer object.
(4) If the set number of devices exceeds the maximum device range, all the values displayed in the data list viewer might be differently displayed from the real PLC values.

(2) Display



List Form

No.of Row: 5

No.of Col.: 5

Space: 0 (X-axis) 0 (Y-axis)

Direction: Left-->Righ

Frame Display

☑ Use

Frame Color:

Plate Color:

Line Color:

Line Width: 1

Header Form

Plate Color:

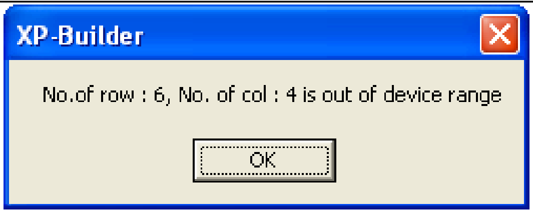
Text Color:

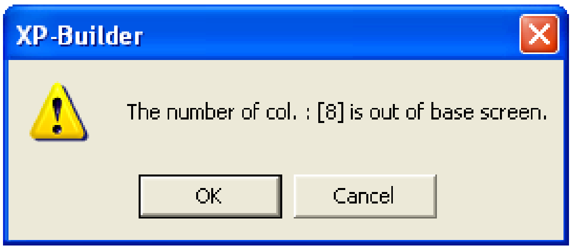
Header Edit

☑ Use Header

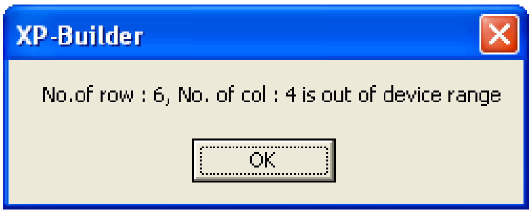
	1	2	3	4	5
Title	1	2	3	4	5

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td>List Form</td><td>No. of Row (a)</td><td>Sets the number of columns to display.
The column and line refer to the following.
<table>
<tr><th>Line #</th><th>Target</th><th>Output</th><th>Defectives</th></tr>
<tr><td>1
(Line 1)</td><td>800
(M00 device value)</td><td>600
(M01 device value)</td><td>1
(M02 device value)</td></tr>
<tr><td>2
(Line 2)</td><td>820
(M03 device value)</td><td>120
(M04 device value)</td><td>0
(M05 device value)</td></tr>
<tr><td>3
(Line 3)</td><td>1200
(M06 device value)</td><td>963
(M07 device value)</td><td>3
(M08 device value)</td></tr>
</table>Columns
Lines
If the number of columns from the device set in [Basic]-[Device] exceeds the number of devices, a warning window appears.</td></tr>
</table>

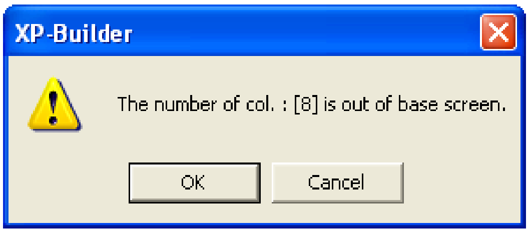
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td></td><td></td><td>


No.of row : 6, No. of col : 4 is out of device range
If the number of columns to display exceeds the maximum window scope, a warning window appears.


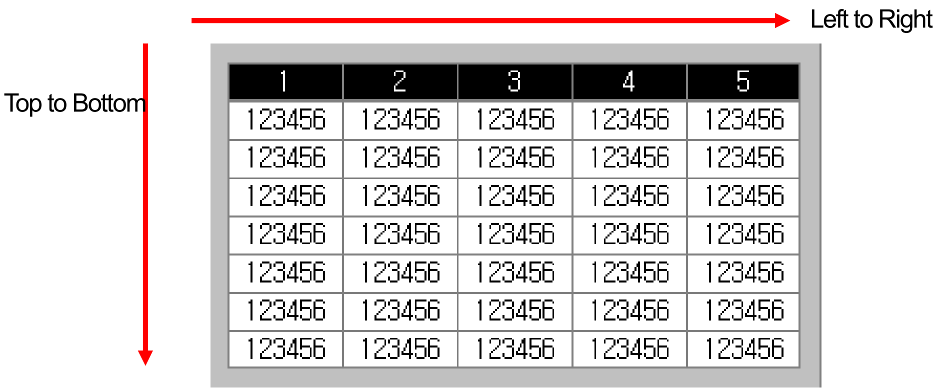
The number of col. : [8] is out of base screen.
<table>
<tr><th>Type</th><th>Result</th></tr>
<tr><td>OK</td><td>Displays the set number of columns beyond the window scope.</td></tr>
<tr><td>Cancel</td><td>The dialog box is not closed and you should re-enter the number of columns.</td></tr>
</table>
</td></tr>
<tr><td></td><td>No. of Col. (c)</td><td>
Sets the number of lines to display.
The header is not included in the number of lines.

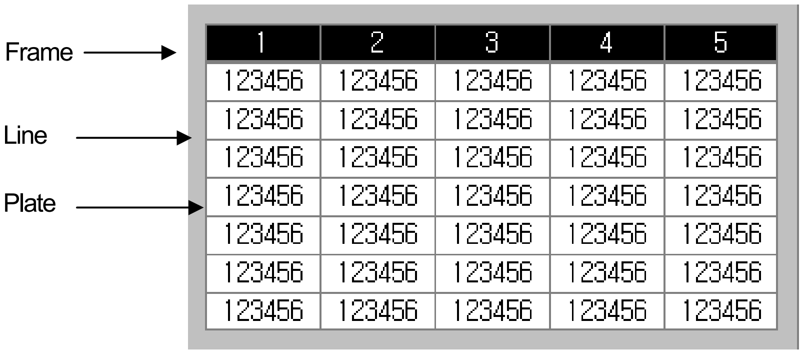
If the number of lines from the device set in [Basic]-[Object Device] exceeds the maximum number of devices that can be displayed, a warning window appears.


No.of row : 6, No. of col : 4 is out of device range

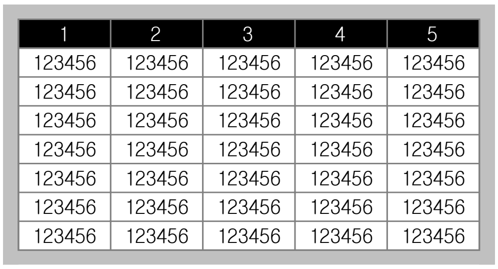
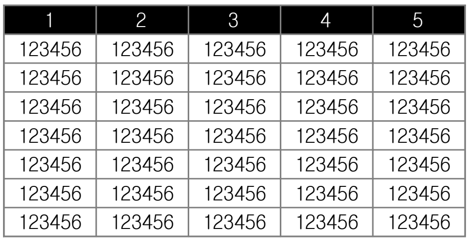
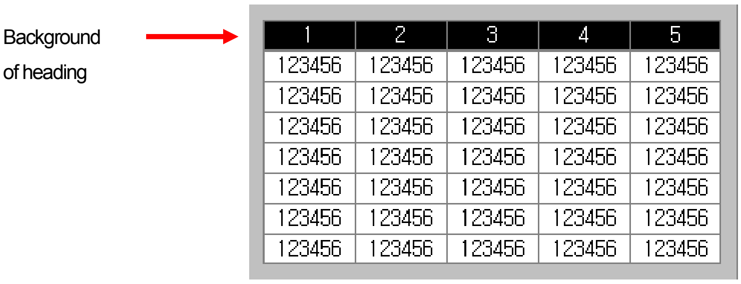
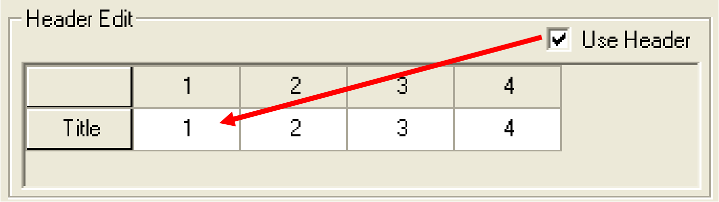
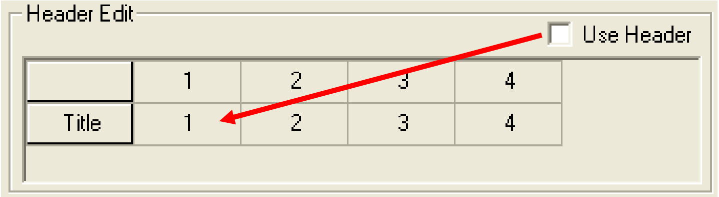
If the number of lines to display exceeds the maximum window scope, a warning window appears.


The number of col. : [8] is out of base screen.
<table>
<tr><th>Type</th><th>Result</th></tr>
<tr><td>OK</td><td>Displays the set number of columns beyond the window scope.</td></tr>
<tr><td>Cancel</td><td>The dialog box is not closed and you should re-enter the number of columns.</td></tr>
</table>
</td></tr>
<tr><td></td><td>Space (b)</td><td>You can set the space of X and Y axes where you want to have the data of data list viewer to be displayed.</td></tr>
</table>

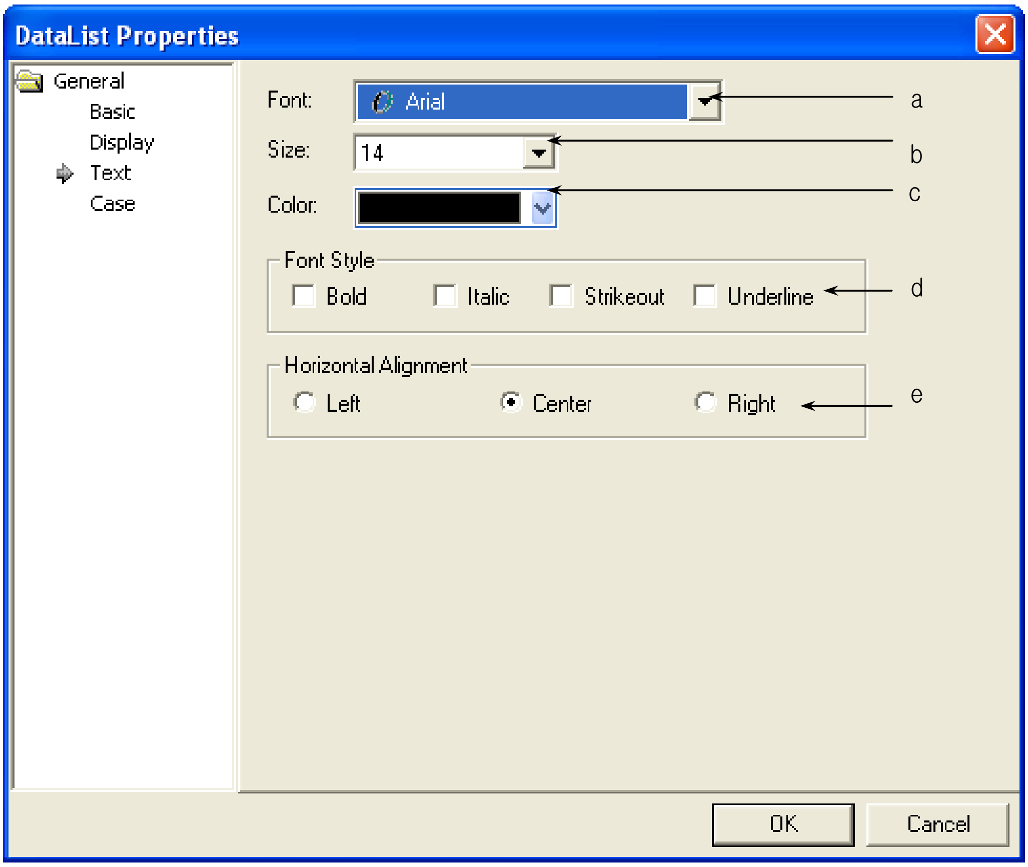
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td>List
Form</td><td>Direction
(d)</td><td>
You can set the data display sequence with respect to display of data of data list viewer.
Left to Right: The data is displayed from left to right.
Top to Bottom: The data is displayed from top to bottom.


<table>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
</table>
[Left to Right]
<table>
<tr><th>Line #</th><th>Target</th><th>Output</th><th>Defectives</th></tr>
<tr><td>1
(Line 1)</td><td>800
(M00 device value)</td><td>600
(M01 device value)</td><td>1
(M02 device value)</td></tr>
<tr><td>2
(Line 2)</td><td>820
(M03 device value)</td><td>120
(M04 device value)</td><td>0
(M05 device value)</td></tr>
<tr><td>3
(Line 3)</td><td>1200
(M06 device value)</td><td>963
(M07 device value)</td><td>3
(M08 device value)</td></tr>
</table>
[Top to Bottom]
<table>
<tr><th>Line #</th><th>Target</th><th>Output</th><th>Defectives</th></tr>
<tr><td>1
(Line 1)</td><td>1
(M02 device value)</td><td>120
(M04 device value)</td><td>1200
(M06 device value)</td></tr>
<tr><td>800
(M00 device value)</td><td>2
(Line 2)</td><td>0
(M05 device value)</td><td>963
(M07 device value)</td></tr>
<tr><td>600
(M01 device value)</td><td>820
(M03 device value)</td><td>3
(Line 3)</td><td>3
(M08 device value)</td></tr>
</table>
The direction applies to the data Range only. The header is displayed at a fixed position.
</td></tr>
<tr><td>Frame
Display</td><td>Use (e)</td><td>
This is set when you use a frame.


<table>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
<tr><td>123456</td><td>123456</td><td>123456</td><td>123456</td><td>123456</td></tr>
</table>
</td></tr>
</table>

Items		Settings
		 Frame Used  Frame Not Used
	Frame color (f)	Sets the frame color of View Data List. **(☞ See the Example of Use of Frame)**
	Plate color (h)	Sets the background color of View Data List. **(☞ See the Example of Use of Frame)**
	Line color (g)	Sets the line color of View Data List. **(☞ See the Example of Use of Frame)**
	Line width (i)	Sets the Boldness of lines of View Data List. **(☞ See the Example of Use of Frame)**
Header form (c)	Plate color (j)	Sets the background color of the header of data list viewer. 
	Text color (k)	Sets the text color of the header of data list viewer. **(☞ See the Example of Use of Frame)**
Header Edit	Use Header (l)	You can decide whether to use a header or not. If you do not display the header of data list viewer, you cannot edit the header.  Header Used  Header Not Used
	Header title (m)	Sets the title of the header of data list viewer. You can edit the as many lines of headers as you have set only when you use a header.

(3) Texts



Font: Arial

Size: 14

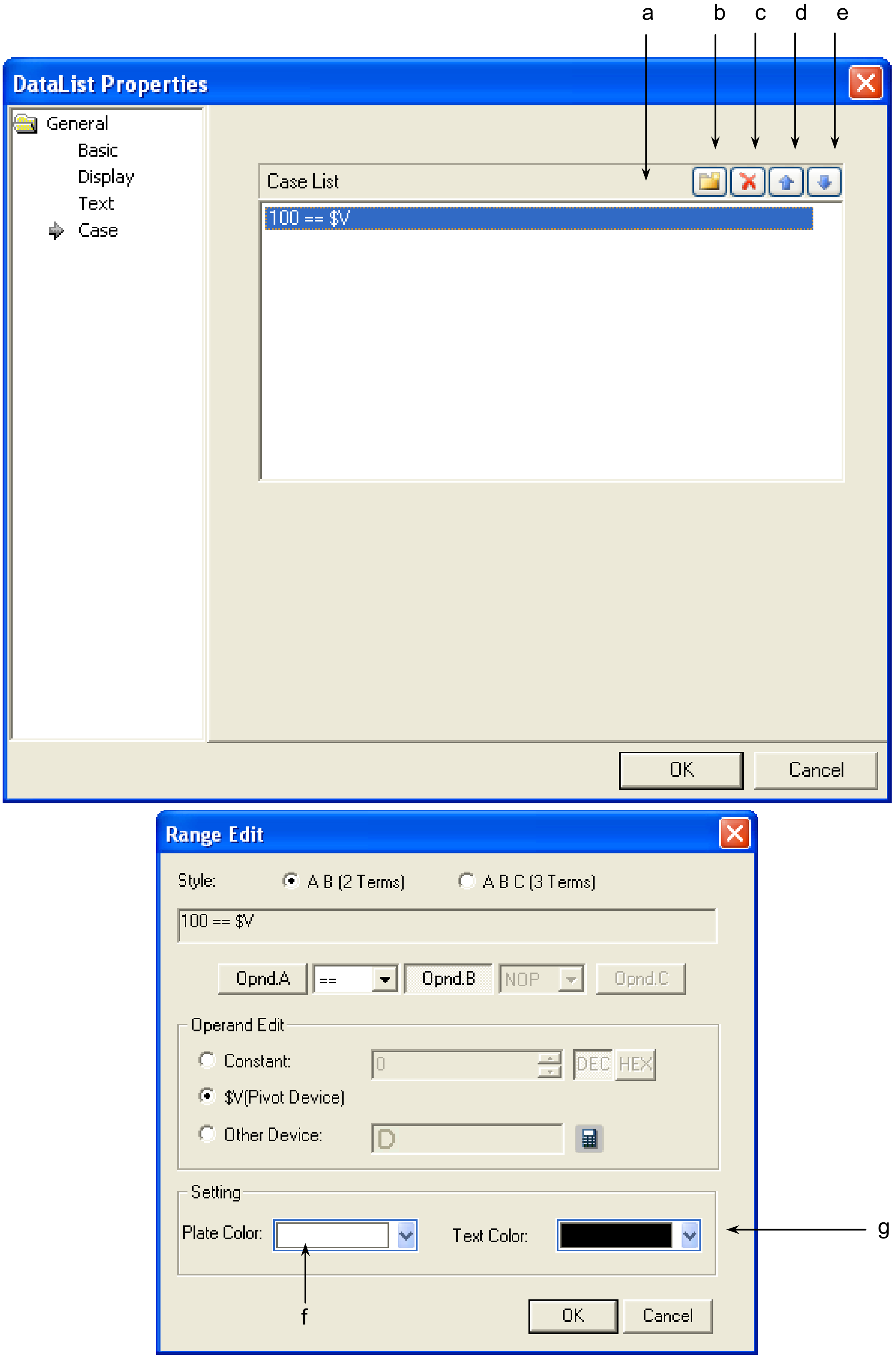
Color:

☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

○ Left ● Center ○ Right

Items	Settings
Font (a)	Sets the type of font to be displayed in the logging viewer object. The font which has been set applies to both header and data. A warning occurs when the set font cannot express the header. A warning window is invoked when you have edited a header in Korean by using the [Arial] font, which can only express English texts
Size (b)	Sets the text size. The text size which has been set applies to both header and data.
Color (c)	Sets the color of data texts. The text color which has been set applies only to data. You can set the color of the header in [Display]-[Header Form]-[Text Color].
Font Style (d)	Sets the text form (Bold, Italic, Strikeout, underlined). You can select two or more of them at a time. The text size which has been set applies to both header and data.
Horizontal Alignment (e)	Selects the horizontal location of texts (left, middle, right). The text size which has been set applies to both header and data. Vertical justification is not available in View Data List.

(4) Case


a
b
c
d
e
DataList Properties
General
Basic
Display
Text
Case
Case List
OK
Cancel
Range Edit
Opnd.A
Opnd.B
NOP
Opnd.C
Operand Edit
DEC
HEX
Setting
OK
Cancel
f
g

Case List: 100 == $V

Style: ● A B (2 Terms) ○ A B C (3 Terms)

100 == $V

Opnd.A == Opnd.B

○ Constant: 0

● $V(Pivot Device)

○ Other Device: D

Plate Color:

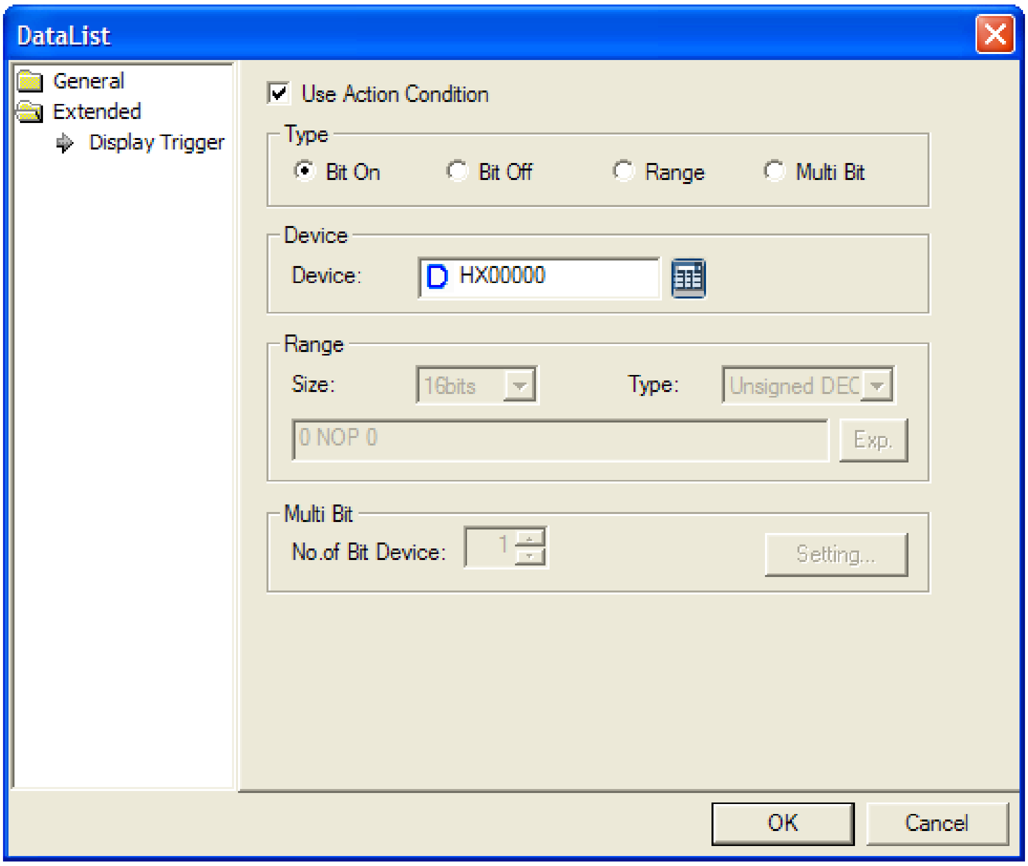
Text Color:

[Condition Setting Window]

Items	Settings
Conditions (a)	Defines the condition.
Create (b)	**(☞ See 16.4 Conditional Sentence Setting of Chapter 16 Object Setting)** You can set up to 8 conditional sentences.
Delete (c)	Deletes the conditional sentences.
A line up (d)	Shifts up the priority of the conditional sentences being edited.
A line down (e)	Shifts down the priority of the conditional sentences being edited.
Plate color (f)	You can change the background color of the data list according to the list.
Text color (g)	You can change the data text color of the data list according to the list.

(5) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


DataList
General
Extended
Display Trigger
Type
Device
Range
Size:
Type:
Exp.
Multi Bit
Setting...
OK
Cancel

☑ Use Action Condition

● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Size: 16bits Type: Unsigned DEC

0 NOP 0

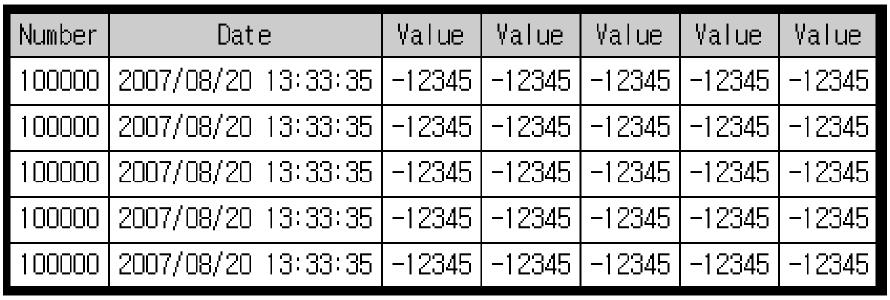
No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.11 Logging Viewer Object

17.11.1 Overview

This performs the function of logging the device value when a certain time or condition is met and displaying the data in a table.
If the state of bit device IX0.0.0 is a rising edge and the data of IX0.0.0 is logged, it is displayed as follows by logging the logging time and IX0.0.0 device value in the XGT Panel series.

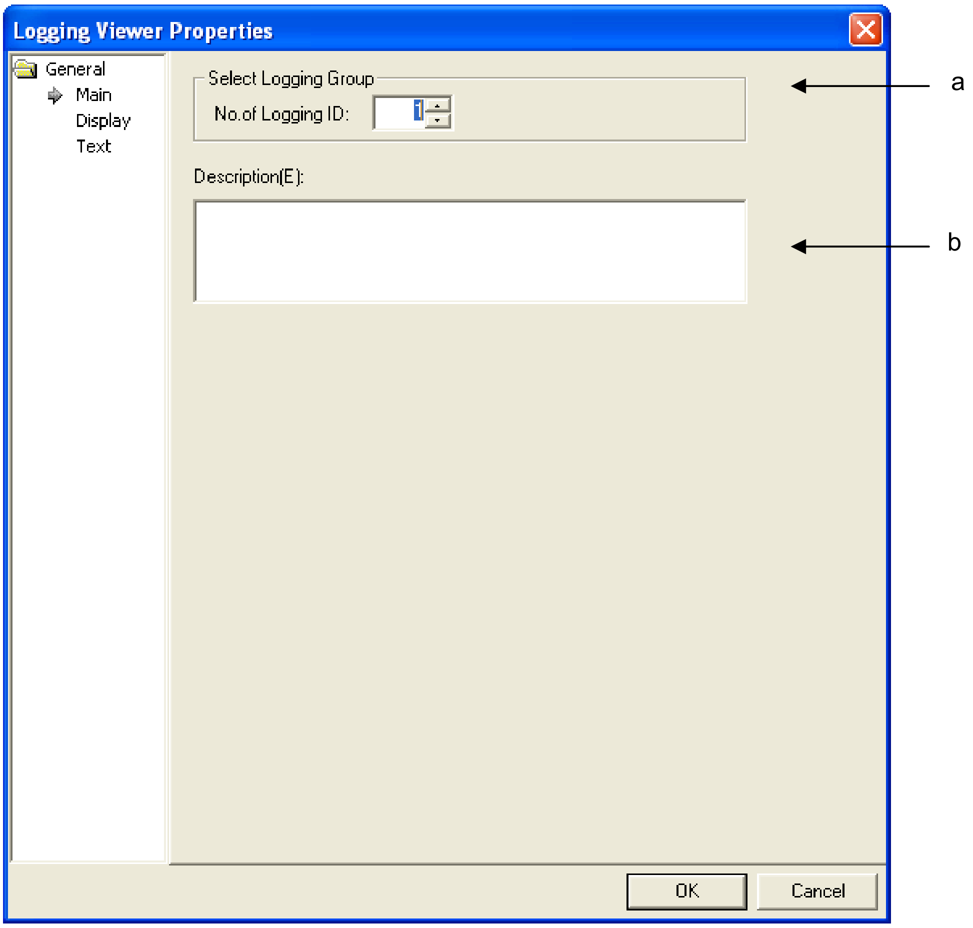


Number	Date	Value	Value	Value	Value	Value
100000	2007/08/20 13:33:35	-12345	-12345	-12345	-12345	-12345
100000	2007/08/20 13:33:35	-12345	-12345	-12345	-12345	-12345
100000	2007/08/20 13:33:35	-12345	-12345	-12345	-12345	-12345
100000	2007/08/20 13:33:35	-12345	-12345	-12345	-12345	-12345
100000	2007/08/20 13:33:35	-12345	-12345	-12345	-12345	-12345

(☞ For the logging start condition and repetition, see Logging of Common Data)

17.11.2 Logging Viewer Settings

(1) Main



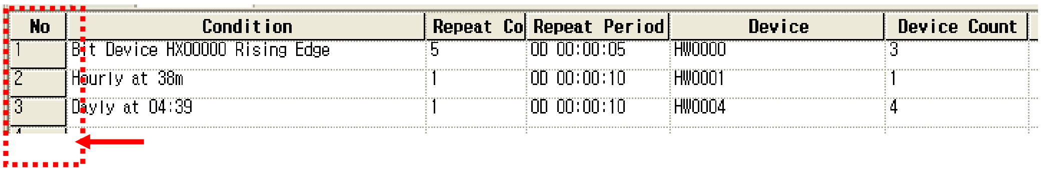
Logging Viewer Properties

Select Logging Group

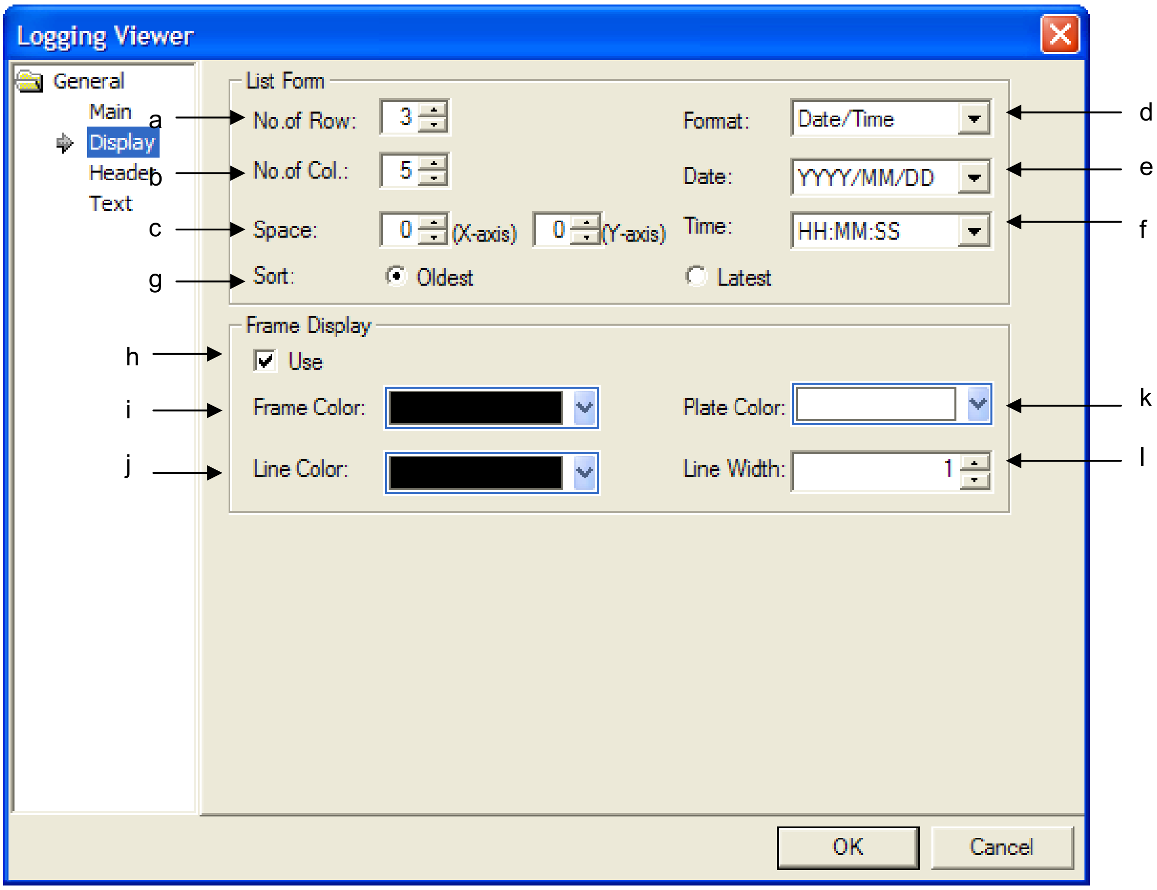
No.of Logging ID: 1

Description(E):

<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>No. of Logging ID (a)</td><td>Sets the method of numbering loggings.

The logging number is the number set in logging construction of common data.

<table>
<tr><th>No</th><th>Condition</th><th>Repeat Co</th><th>Repeat Period</th><th>Device</th><th>Device Count</th></tr>
<tr><td>1</td><td>Bit Device HX00000 Rising Edge</td><td>5</td><td>00 00:00:05</td><td>HW0000</td><td>3</td></tr>
<tr><td>2</td><td>Hourly at 38m</td><td>1</td><td>00 00:00:10</td><td>HW0001</td><td>1</td></tr>
<tr><td>3</td><td>Dayly at 04:39</td><td>1</td><td>00 00:00:10</td><td>HW0004</td><td>4</td></tr>
</table></td></tr>
<tr><td>Description (d)</td><td>Enters description in the relevant object.</td></tr>
</table>

(2) Display


Logging Viewer
General
Main
Display
Header
Text
a
b
c
d
e
f
g
h
i
j
k
l
OK
Cancel

List Form

No.of Row: 3

No.of Col.: 5

Space: 0 (X-axis) 0 (Y-axis)

Sort: ● Oldest ○ Latest

Format: Date/Time

Date: YYYY/MM/DD

Time: HH:MM:SS

Frame Display

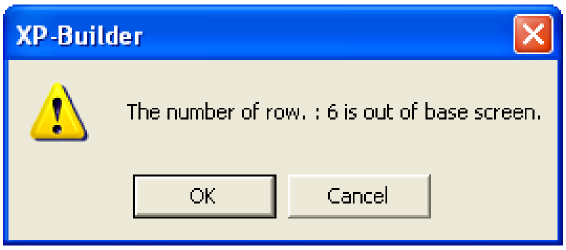
☑ Use

Frame Color:

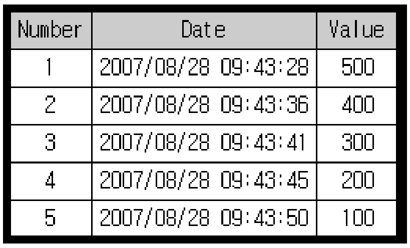
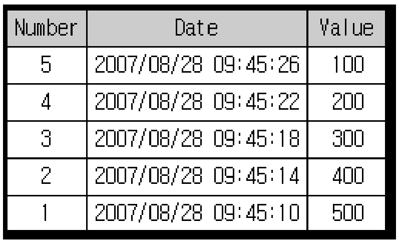
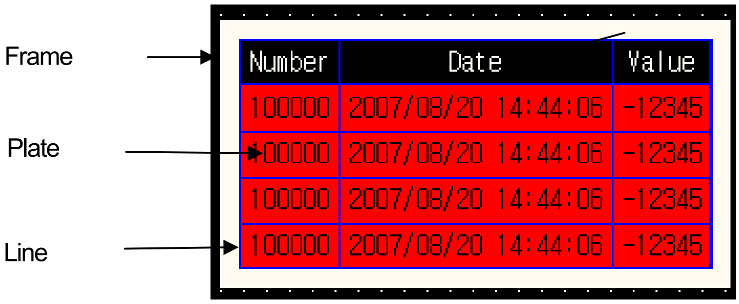
Plate Color:

Line Color:

Line Width: 1

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td>List Form</td><td>No. of Row (a)</td><td>Sets the number of row to be displayed.
If the number of columns exceeds the maximum window scope, a warning window appears


The number of row. : 6 is out of base screen.
<table>
<tr><th>Type</th><th>Result</th></tr>
<tr><td>OK</td><td>Displays the set number of columns beyond the window scope.</td></tr>
<tr><td>Cancel</td><td>The dialog box is not closed and you should re-enter the number of columns.</td></tr>
</table></td></tr>
<tr><td></td><td>No. of Col. (b)</td><td>Sets the number of row to be displayed.
Each column is available to indicate specific logging value by setting specific logging value among present logging.
For example, in case you edit to log the 32 devices starting P0001, viewing only the 4 devices (P0001, P0005, P0010 and P0018) is available.
<Method>
1. Set the No. of Col. as 4.
2. Set the Logging Index as 1,5,10 and 18 respectively.
If the number of columns exceeds the maximum window scope, a warning window appears
<table>
<tr><th>Type</th><th>Result</th></tr>
<tr><td>OK</td><td>Displays the set number of columns beyond the window scope.</td></tr>
<tr><td>Cancel</td><td>The dialog box is not closed and you should re-enter the number of columns.</td></tr>
</table></td></tr>
<tr><td></td><td>Space (c)</td><td>You can put X and Y axes spaces in the Range where the logging view data is to be displayed. The space can arrange between 0 and 32.
(☞ See Space of History Alarm Viewer Object)</td></tr>
<tr><td></td><td>Type (d,e,f)</td><td>Sets the type date and time of the logging data.
• Data Types You Can Select
<table>
<tr><th>Data form</th><th>Meaning</th></tr>
<tr><td>YYYY/MM/DD</td><td>YYYY/MM/DD (4 digit year)</td></tr>
<tr><td>YY/MM/DD</td><td>YY/MM/DD (2 digit year)</td></tr>
<tr><td>MM/DD/YYYY</td><td>MM/DD/YYYY (4 digit year)</td></tr>
<tr><td>MM/DD</td><td>MM/DD</td></tr>
<tr><td>HH:MM</td><td>HH:MM</td></tr>
<tr><td>HH:MM:SS</td><td>HH:MM:SS</td></tr>
<tr><td>YYYY/MM/DD HH:MM:SS</td><td>YYYY/MM/DD HH:MM:SS (4 digit year)</td></tr>
<tr><td>YYYY/MM/DD HH:MM</td><td>YYYY/MM/DD HH:MM (4 digit year)</td></tr>
<tr><td>YY/MM/DD HH:MM:SS</td><td>YY/MM/DD HH:MM:SS (2 digit year)</td></tr>
<tr><td>YY/MM/DD HH:MM</td><td>YY/MM/DD HH:MM (2 digit year)</td></tr>
<tr><td>MM/DD/YYYY HH:MM:SS</td><td>MM/DD/YYYY HH:MM:SS (4 digit year)</td></tr>
</table></td></tr>
</table>

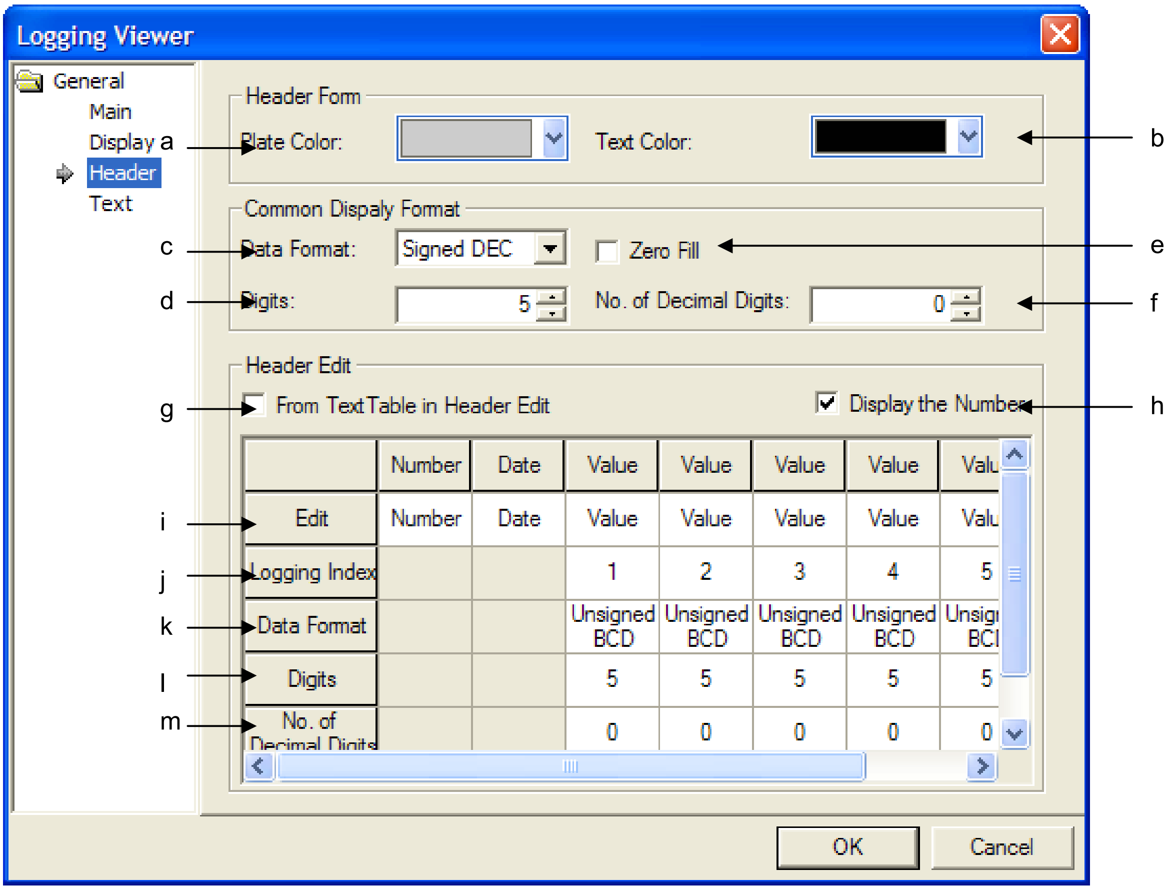
<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td></td><td></td><td><table>
<tr><td>MM/DD/YYYY HH:MM</td><td>MM/DD/YYYY HH:MM (4 digit year)</td></tr>
<tr><td>MM/DD HH:MM:SS</td><td>MM/DD HH:MM:SS</td></tr>
<tr><td>MM/DD HH:MM</td><td>MM/DD HH:MM</td></tr>
<tr><td>MM/DD/YY</td><td>MM/DD/YY (2 digit year)</td></tr>
<tr><td>DD/MM/YY</td><td>DD/MM/YY (2 digit year)</td></tr>
<tr><td>DD/MM/YYYY HH:MM:SS</td><td>DD/MM/YYYY HH:MM:SS (4 digit year)</td></tr>
<tr><td>DD/MM/YYYY HH:MM</td><td>DD/MM/YYYY HH:MM (4 digit year)</td></tr>
<tr><td>DD/MM/YY HH:MM:SS</td><td>DD/MM/YY HH:MM:SS (2 digit year)</td></tr>
<tr><td>DD/MM/YY HH:MM</td><td>DD/MM/YY HH:MM (2 digit year)</td></tr>
</table></td></tr>
<tr><td></td><td>Sort (g)</td><td>Chooses the method of arranging the oldest data first or the newest data first to display them. Either the oldest or newest data from the moment when the logging was conducted is displayed.

<table>
<tr><th>Number</th><th>Date</th><th>Value</th></tr>
<tr><td>1</td><td>2007/08/28 09:43:28</td><td>500</td></tr>
<tr><td>2</td><td>2007/08/28 09:43:36</td><td>400</td></tr>
<tr><td>3</td><td>2007/08/28 09:43:41</td><td>300</td></tr>
<tr><td>4</td><td>2007/08/28 09:43:45</td><td>200</td></tr>
<tr><td>5</td><td>2007/08/28 09:43:50</td><td>100</td></tr>
</table>
Oldest

<table>
<tr><th>Number</th><th>Date</th><th>Value</th></tr>
<tr><td>5</td><td>2007/08/28 09:45:26</td><td>100</td></tr>
<tr><td>4</td><td>2007/08/28 09:45:22</td><td>200</td></tr>
<tr><td>3</td><td>2007/08/28 09:45:18</td><td>300</td></tr>
<tr><td>2</td><td>2007/08/28 09:45:14</td><td>400</td></tr>
<tr><td>1</td><td>2007/08/28 09:45:10</td><td>500</td></tr>
</table>
Newest</td></tr>
<tr><td>Frame Display</td><td>Use (h)</td><td>This is set when you use a frame.


<table>
<tr><th>Number</th><th>Date</th><th>Value</th></tr>
<tr><td>100000</td><td>2007/08/20 14:44:06</td><td>-12345</td></tr>
<tr><td>100000</td><td>2007/08/20 14:44:06</td><td>-12345</td></tr>
<tr><td>100000</td><td>2007/08/20 14:44:06</td><td>-12345</td></tr>
<tr><td>100000</td><td>2007/08/20 14:44:06</td><td>-12345</td></tr>
</table>
(☞ For difference in use of frame, see Use of History Alarm Viewer Frame)</td></tr>
<tr><td></td><td>Frame color (i)</td><td>Sets the frame color of logging viewer.
(☞ See Use of Frame(In the example above, the frame color is grey))</td></tr>
<tr><td></td><td>Line color (j)</td><td>Sets the line color of logging viewer.
(☞ See Use of Frame(In the example above, the frame color is grey))</td></tr>
<tr><td></td><td>Plate color (k)</td><td>Sets the background color of logging viewer.
(☞ See Use of Frame(In the example above, the frame color is white))</td></tr>
<tr><td></td><td>Line Width (l)</td><td>Sets the line Boldness of logging viewer.
(☞ See Use of Frame)</td></tr>
</table>

Note

(1) You can set only one logging viewer object in a window.
(2) For indication of # or * in the logging viewer object, see Logging of Common Data.
(3) The size of the logging object is automatically set just as the font, text size, text type and length of the header are. That is, the user cannot change it.

(3) Header



Logging Viewer

- General
  - Main
  - Display
  - Header
  - Text

Header Form

Plate Color: Text Color:

Common Dispaly Format

Data Format: Signed DEC ☐ Zero Fill

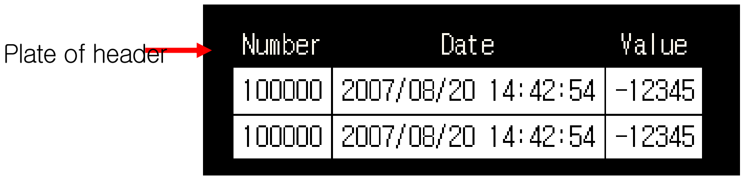
Digits: 5 No. of Decimal Digits: 0

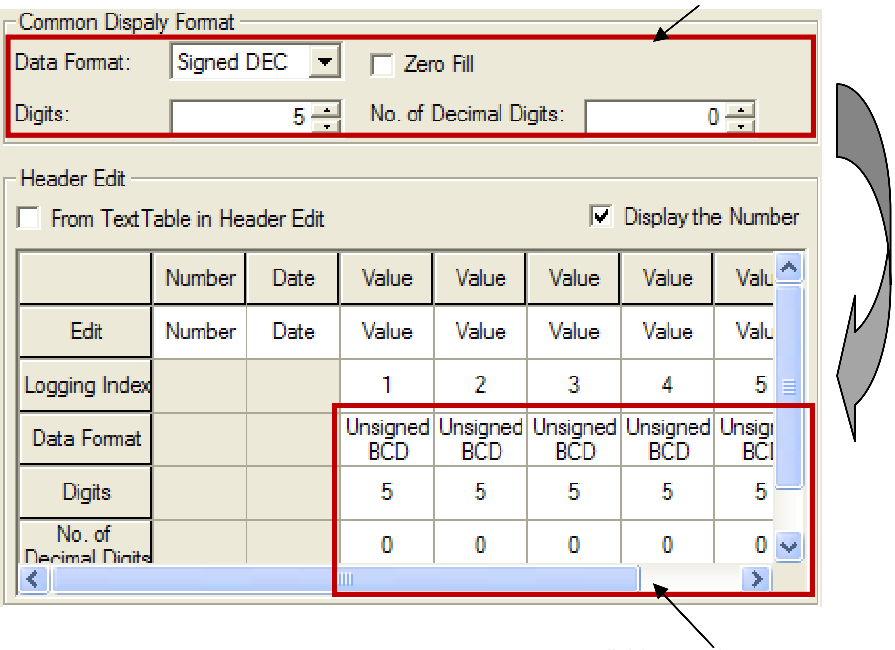
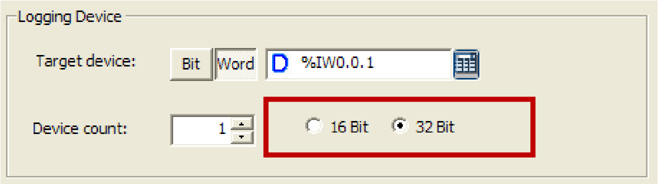
Header Edit

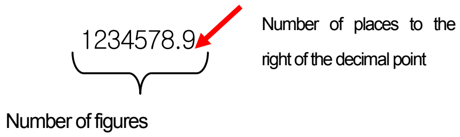
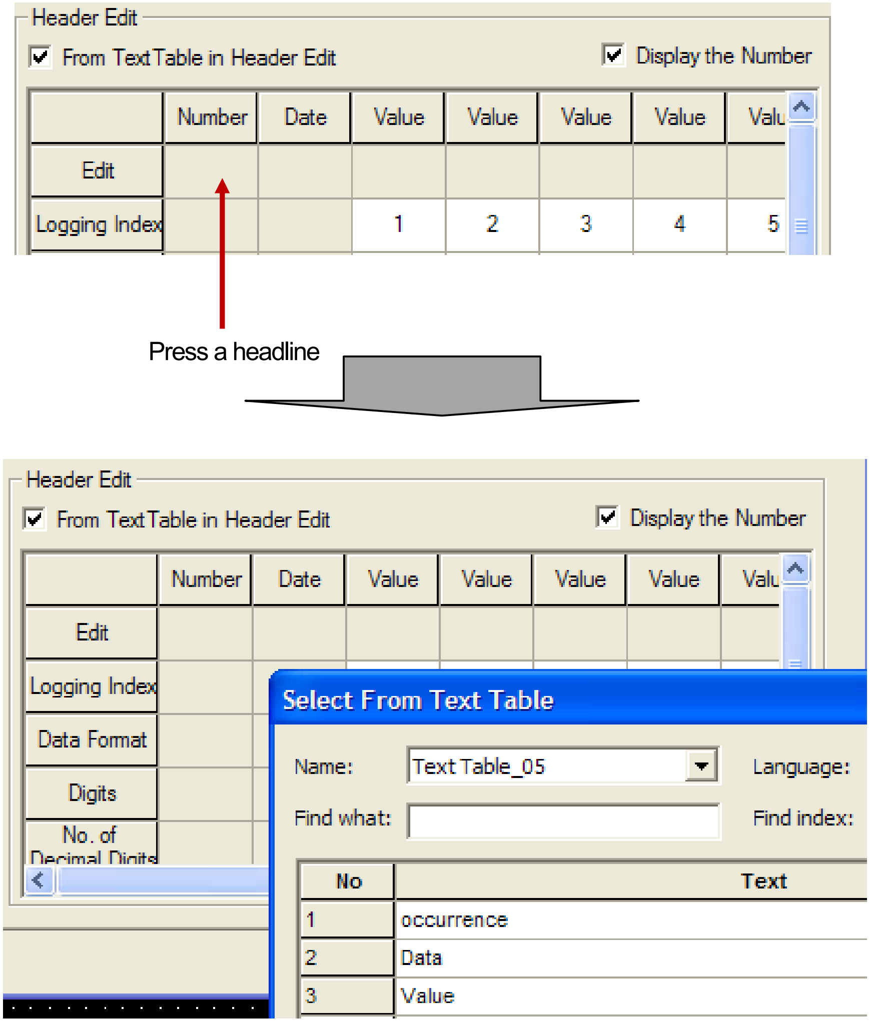
☐ From Text Table in Header Edit ☑ Display the Number

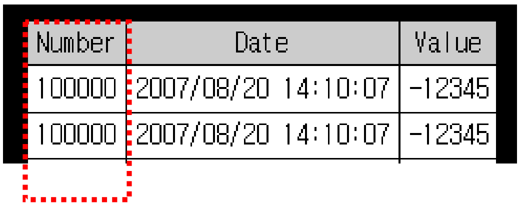
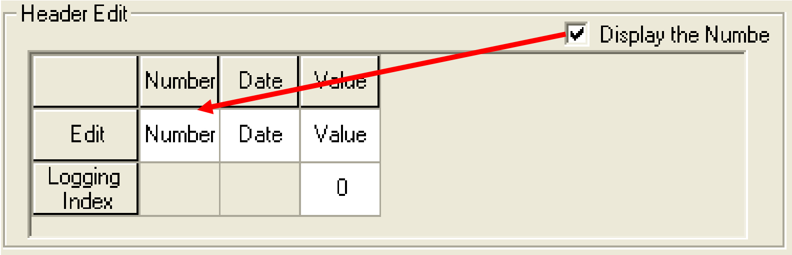
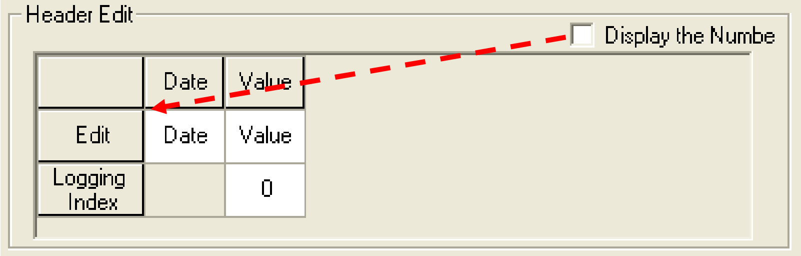
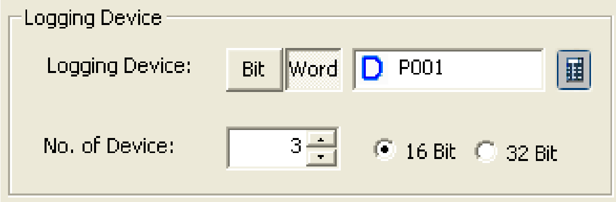
	Number	Date	Value	Value	Value	Value	Valu
Edit	Number	Date	Value	Value	Value	Value	Valu
Logging Index			1	2	3	4	5
Data Format			Unsigned BCD	Unsigned BCD	Unsigned BCD	Unsigned BCD	Unsigi BCI
Digits			5	5	5	5	5
No. of Decimal Digits			0	0	0	0	0

OK Cancel

Items		Settings
Header Form	Plate color (a)	Sets the plate color of the header of the logging viewer.  Plate of header Number Date Value 100000 2007/08/20 14:42:54 -12345 100000 2007/08/20 14:42:54 -12345 The plate color of the header above is black.
	Text color (b)	Sets the text color of the logging viewer. **(☞ See Use of Background Color of Header Type(In the example above, the frame color is white))**

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td rowspan="2">Common Display Format</td><td colspan="2">The below items (display mode, the number of display, zero filling, the number of decimal digits) established by common display mode are applied to all logging indexes commonly. Namely, you can set individual setting for each logging index at [Headline Edition] and the contents set by [Common Display Mode] are applied to all index rows.
Common setting

Common Dispaly Format
Data Format: Signed DEC ☐ Zero Fill
Digits: 5 No. of Decimal Digits: 0
Header Edit
☐ From TextTable in Header Edit ☑ Display the Number
<table>
<tr><td></td><td>Number</td><td>Date</td><td>Value</td><td>Value</td><td>Value</td><td>Value</td><td>Valu</td></tr>
<tr><td>Edit</td><td>Number</td><td>Date</td><td>Value</td><td>Value</td><td>Value</td><td>Value</td><td>Valu</td></tr>
<tr><td>Logging Index</td><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>Data Format</td><td></td><td></td><td>Unsigned BCD</td><td>Unsigned BCD</td><td>Unsigned BCD</td><td>Unsigned BCD</td><td>Unsig BC</td></tr>
<tr><td>Digits</td><td></td><td></td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>No. of Decimal Digits</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>
Individual setting</td></tr>
<tr><td>Display type(c)</td><td>You can select display type.
<table>
<tr><th>Display type</th><th>Description</th><th>Examples</th></tr>
<tr><td>Decimal Number with a sign</td><td>Displayed as Decimal Number with a sign</td><td>-2184</td></tr>
<tr><td>Decimal Number without a sign</td><td>Displayed as Decimal Number without a sign</td><td>2184</td></tr>
<tr><td>Octal Number</td><td></td><td>4210</td></tr>
<tr><td>Hexadecimal number</td><td>Displayed as Hexadecimal number</td><td>888</td></tr>
<tr><td>Binary number</td><td>Displayed as Binary number</td><td>10010001000</td></tr>
<tr><td>BCD</td><td>Displayed as BDC</td><td>888</td></tr>
<tr><td>Real Number</td><td>Displayed as Real Number.</td><td>123.45</td></tr>
</table>
Only when the device of established logging group is 32bit, you can set real number type for display mode.

Logging Device
Target device: Bit Word D %IW0.0.1
Device count: 1 ○ 16 Bit ● 32 Bit
In the case of data logging, it does not provide real number type.</td></tr>
</table>

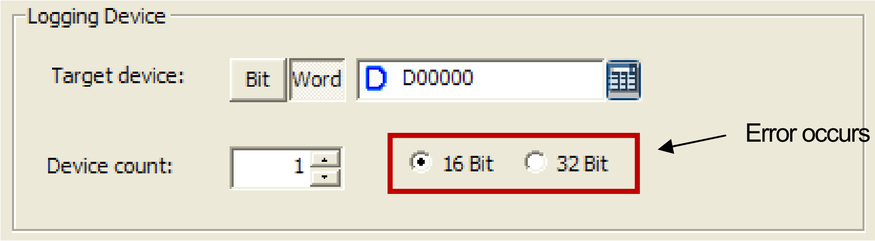
Items		Settings
	Digits (d)	Sets in how many figures to display the numbers. You can set up to 64 figures. If the number of set numbers is below the reading and writing device values, it is displayed as * in the object.
	Zero Fill (e)	If you have selected justification to the right, you select this to put 0 before the number.
	No. of Decimal Digits (f)	Sets how many places to put to the right of the decimal point when you select all types of numbers other than binary, octal and hexadecimal numbers.  1234578.9 Number of places to the right of the decimal point Number of figures
Header Edit	Headline from Text table (g)	You can select the headline title of logging list view from sting table. If you apply [Headline from Text table], you need to select the headline for every row (No., date, index) from string and direct input is not allowable. After selecting [Headline from Text Table], if you press the related row, the dialog box to select string table will be shown.  Header Edit ☑ From TextTable in Header Edit ☑ Display the Number Number, Date, Value, Value, Value, Value, Valu Edit Logging Index: 1, 2, 3, 4, 5 Press a headline Header Edit ☑ From TextTable in Header Edit ☑ Display the Number Number, Date, Value, Value, Value, Value, Valu Edit Logging Index Data Format Digits No. of Decimal Digits Select From Text Table Name: Text Table_05 Language: Find what: Find index: No / Text 1 occurrence 2 Data 3 Value

<table>
<tr><th colspan="2">Items</th><th>Settings</th></tr>
<tr><td rowspan="3"></td><td>Display the Number (h)</td><td>This is set then you display logging numbers with respect to logging data.
(☞ **For the logging numbering method, see Logging of Common Data.)**
<table><tr><th>Number</th><th>Date</th><th>Value</th></tr><tr><td>100000</td><td>2007/08/20 14:10:07</td><td>-12345</td></tr><tr><td>100000</td><td>2007/08/20 14:10:07</td><td>-12345</td></tr></table>If you set [Display the Number](☑ Display the Numbe) during header editing, a cell is invoked in which you can enter the header.
Header Edit
☑ Display the Numbe<table><tr><th></th><th>Number</th><th>Date</th><th>Value</th></tr><tr><td>Edit</td><td>Number</td><td>Date</td><td>Value</td></tr><tr><td>Logging Index</td><td></td><td></td><td>0</td></tr></table>Unless you use [Display the Number](☑ Display the Numbe), you cannot edit the header corresponding to the number.
Header Edit
☐ Display the Numbe<table><tr><th></th><th>Date</th><th>Value</th></tr><tr><td>Edit</td><td>Date</td><td>Value</td></tr><tr><td>Logging Index</td><td></td><td>0</td></tr></table></td></tr>
<tr><td>Edit (i)</td><td>This is used when the user directly enters and uses the header indicating the line in each header.
You can edit the header as many as no. of columns.</td></tr>
<tr><td>Logging Index (j)</td><td>Index no. increase as many as 1 starting Logging Device as 1.
Logging Device
Logging Device: Bit Word P001
No. of Device: 3 ● 16 Bit ○ 32 Bit
For example, in case of logging the 32 devices staring P0001, index no. of P0001, P0005, P0010, P0018 is as follows.<table><tr><th>Device Address</th><th>Logging Index</th></tr><tr><td>P0001(Logging Device)</td><td>1</td></tr><tr><td>P0002</td><td>2</td></tr><tr><td>…</td><td>…</td></tr><tr><td>P0005</td><td>5</td></tr><tr><td>…</td><td>…</td></tr><tr><td>P0010</td><td>10</td></tr></table></td></tr>
</table>

Items		Settings	
		…	…
		P0018	18
	Data format (k)	Refer to [Data format] of [Common Display Format]	
	Digit (l)	Refer to [Digit] of [Common Display Format]	
	No. of Decimal Digits	Refer to [No. of Decimal Digits] of [Common Display Format]	

Note

(1) In case target device of logging group is not 32 bit and Display Data Format is float, error occurs at data check.



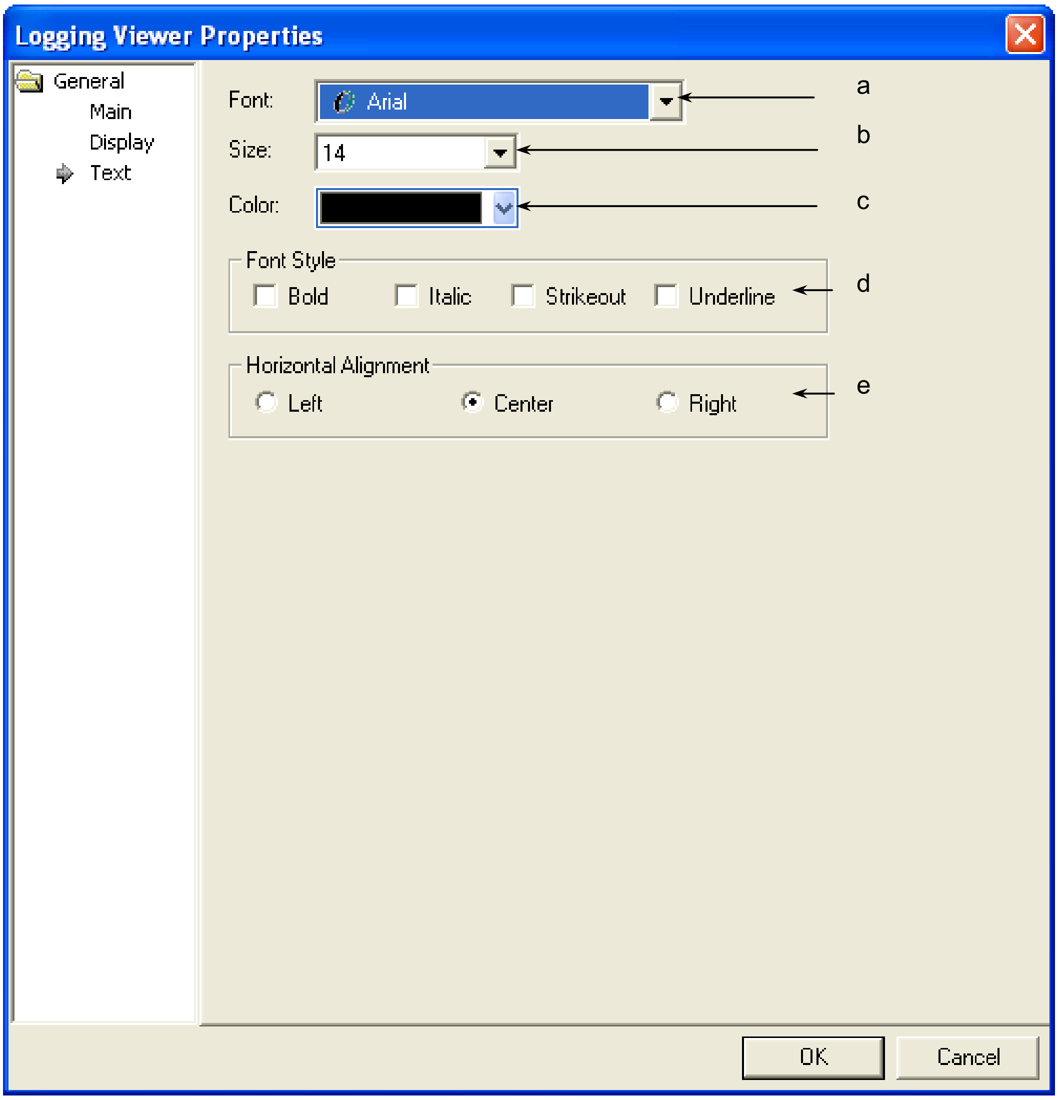
Logging Device

Target device: Bit Word D00000

Device count: 1

● 16 Bit ○ 32 Bit

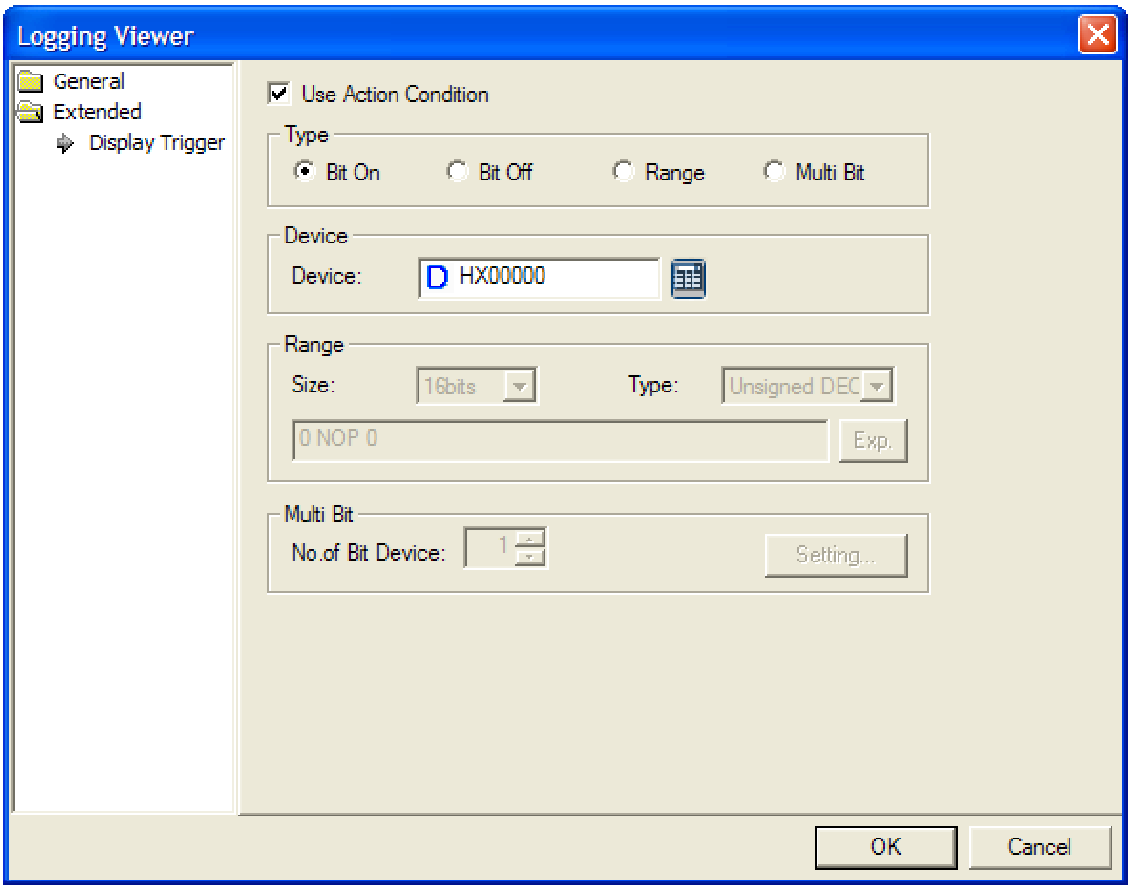
(4) Text


Logging Viewer Properties
General
Main
Display
Text
Font:
Arial
Size:
14
Color:
Font Style
☐ Bold
☐ Italic
☐ Strikeout
☐ Underline
Horizontal Alignment
○ Left
● Center
○ Right
a
b
c
d
e
OK
Cancel

Items	Settings
Font (a)	Sets the type of font to be displayed in the logging viewer object. The font which has been set applies to both header and data. A warning occurs when the set font cannot express the header.
Size (b)	Sets the text size. The text size which has been set applies to both header and data.
Color (c)	Sets the color of data texts. The text color which has been set applies only to data. You can set the color of the header in [Display]-[Header Form]-[Text Color].
Font Style (d)	Sets the text form (Bold, Italic, Strikeout, underlined). You can select two or more of them at a time. The text size which has been set applies to both header and data.
Horizontal Alignment (e)	Selects the horizontal location of texts(left, center, right). The text size which has been set applies to both header and data. Vertical justification is not available in View Data List.

(5) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Logging Viewer
General
Extended
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.12 Alarm Navigator Object

17.12.1 Overview

This performs the function of arranging the alarm history which has been made for it to be clear in each group. If there are a lot of groups that caused an alarm and all the groups appear in the alarm history, this enables them to be seen by putting them in groups.

Occurrence	Message	Group
2006/7/17 18:04:08	Trouble with line 24	1
2006/7/17 18:12:10	Temperature rises in line 42 device	1
2006/7/17 19:12:50	Fuel shortage in line 32 device	2
2006/7/17 19:25:00	Gas leak in line 1 device	3
2006/7/17 20:04:07	Abnormal operation detected in line 9	1

History of all alarms that occurred

\\Alarm Route
☞ Group #1
Group #2
Group #3

Alarm navigator

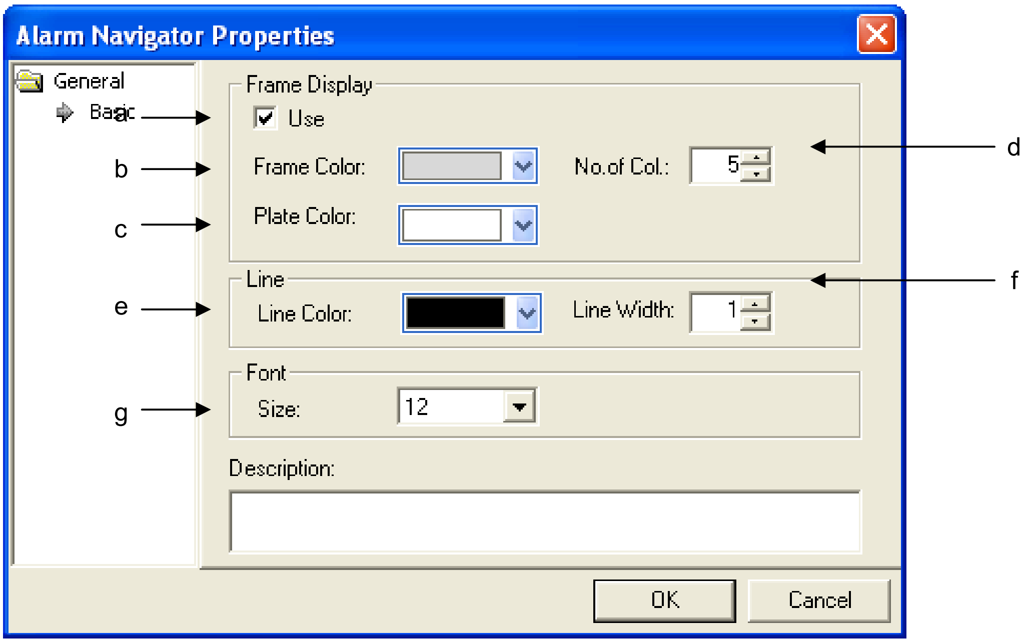
Occurrence	**Message**	**Group**
2006/7/17 18:04:08	Trouble with line 24	1
2006/7/17 18:12:10	Temperature rises in line 42 device	1
2006/7/17 20:04:07	Abnormal operation detected in line 9	1

Screen of alarm history of group 1 only

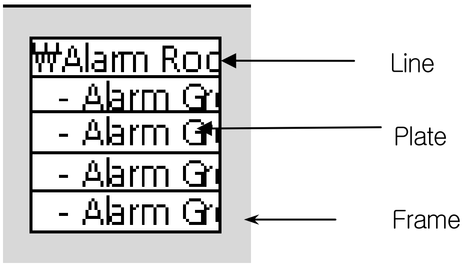
If you select group 1 as shown in the example above, only the history alarms of group 1 are displayed among the history alarms that occurred in several groups.

17.12.2 Alarm Navigator Settings

(1) Basic Items

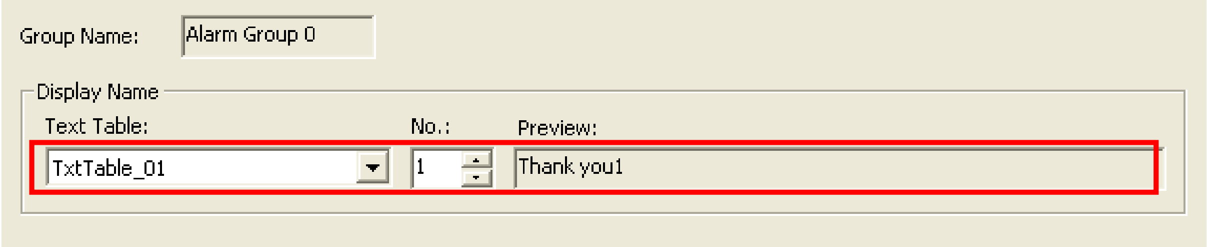

Alarm Navigator Properties
General
Basic
a
b
c
d
e
f
g
OK
Cancel

Frame Display
☑ Use
Frame Color:
No.of Col.: 5
Plate Color:
Line
Line Color:
Line Width: 1
Font
Size: 12
Description:

Items	Settings
Use (a)	This is set when you use a frame.  ₩Alarm Roo - Alarm Gr - Alarm Gr - Alarm Gr - Alarm Gr Line Plate Frame
Frame color (b)	Sets the frame color of the alarm search panel. This can be set only when you use the frame.
Plate color (c)	Sets the background color of the alarm search panel.
No. of Col. (d)	Sets the number of columns the alarm search panel. The number of columns includes the route.
Line color (e)	Sets the line color of the alarm search panel.
Line Width (f)	Sets the line Boldness of the alarm search panel.
Size (g)	Sets the size of the texts displayed in the alarm search panel.

Note

(1) The name of the alarm group displayed in the alarm search panel is that you set when you made the history alarm. Therefore, the text properties and the text color are the values set in the text table specified as the group name.



Group Name: Alarm Group 0

Display Name

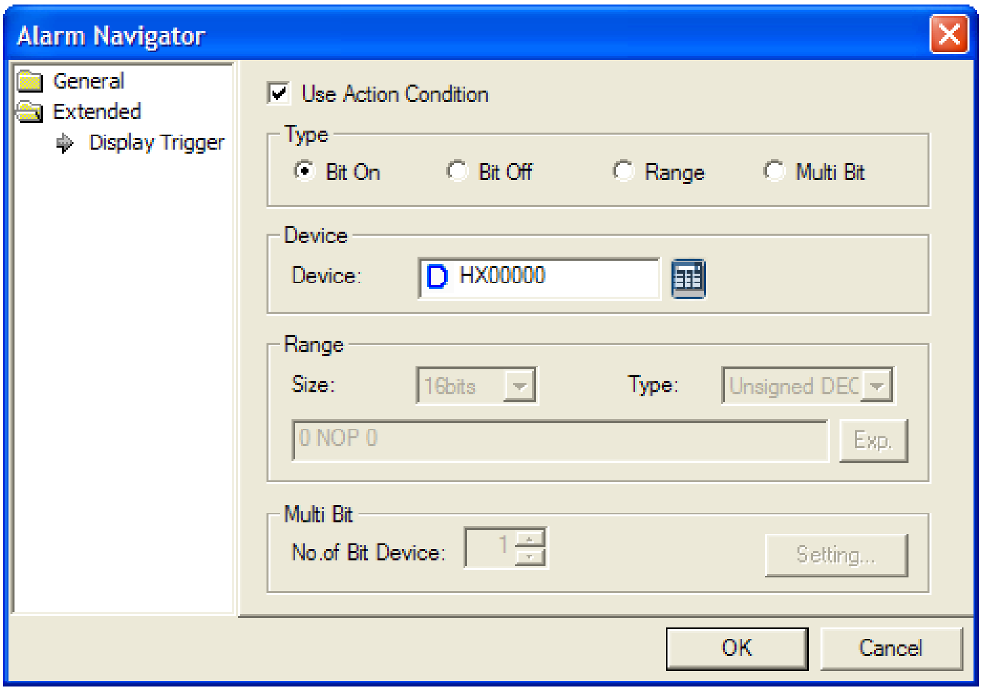
Text Table: TxtTable_01

No.: 1

Preview: Thank you1

(2) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Alarm Navigator

- General
- Extended
  - Display Trigger

☑ Use Action Condition

Type

● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: D HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

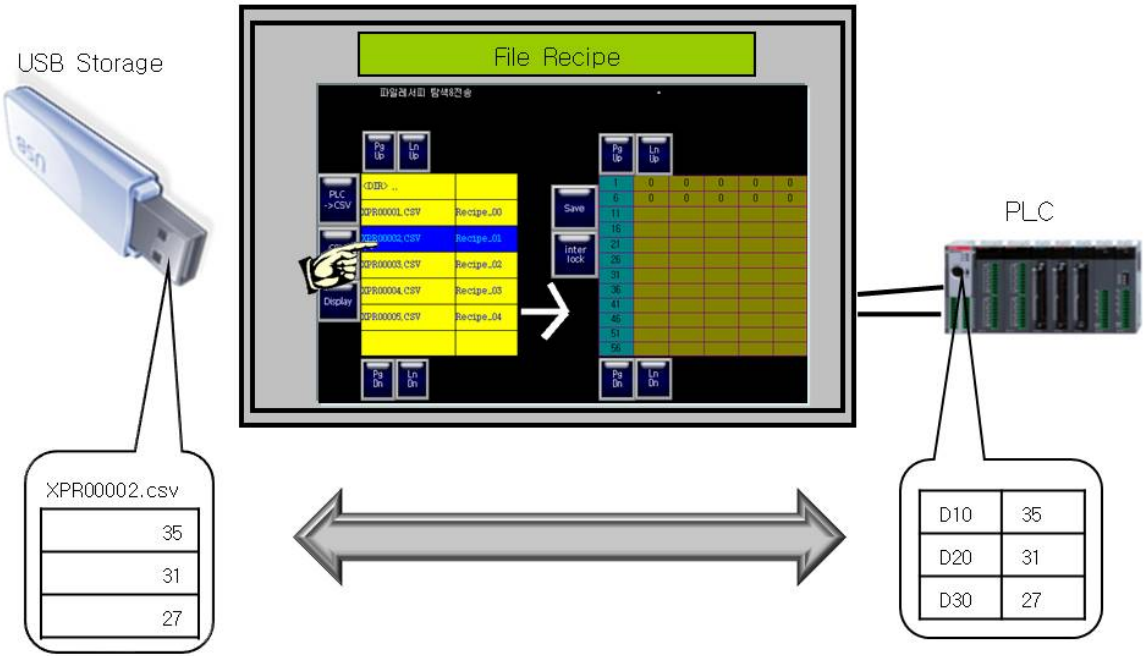
No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

17.13 Recipe Explorer

17.13.1 Overview

Recipe explorer is the object to display the file recipe stored at the storage devices(USB, CF Card) or basic recipe file list edited at XP-Builder. After displaying the kinds of recipe, file that a user wants through explorer, you can write the related data at PLC. Moreover, PLC device value can be written at the recipe stored at the saving equipment.


USB Storage
File Recipe
PLC
Pg Up
Ln Up
PLC ->CSV
Display
Save
inter lock
Pg Dn
Ln Dn
<DIR> ..
XPR00001.CSV Recipe_00
XPR00002.CSV Recipe_01
XPR00003.CSV Recipe_02
XPR00004.CSV Recipe_03
XPR00005.CSV Recipe_04
XPR00002.csv
35
31
27
D10 35
D20 31
D30 27

[Method]

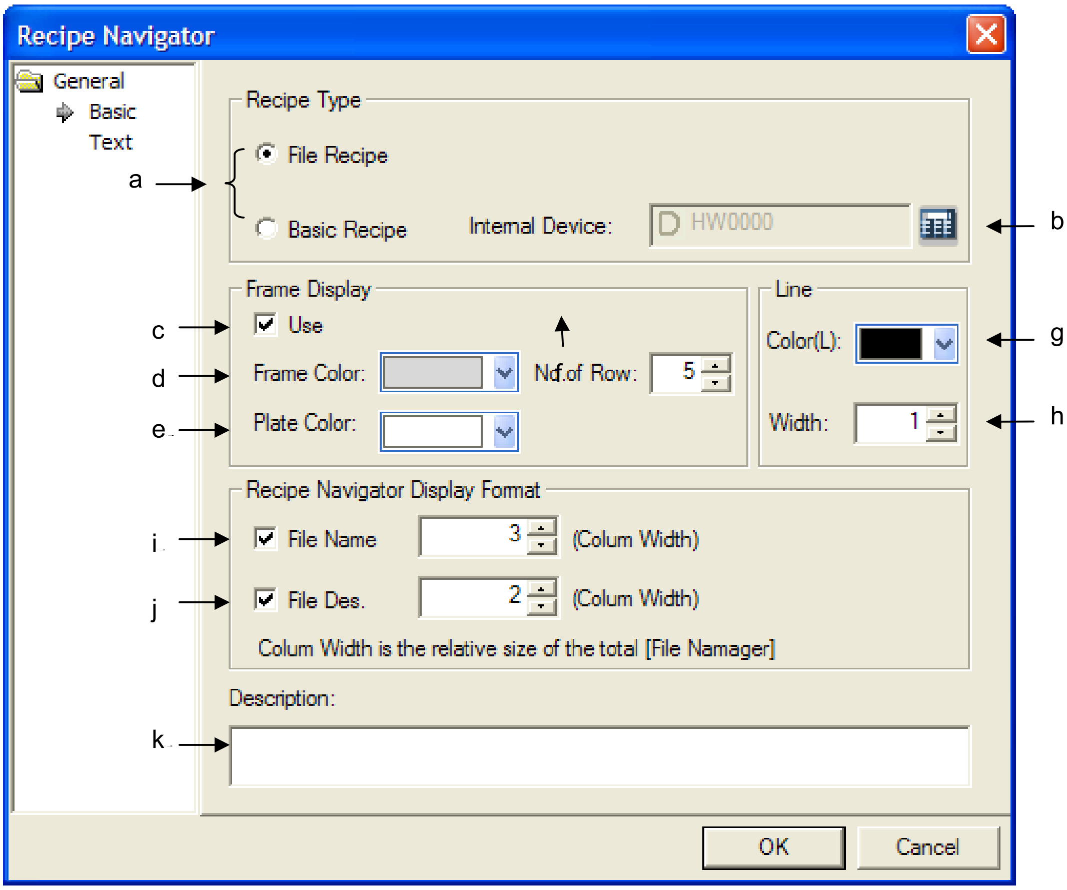
(a) Create a recipe explorer at the screen.

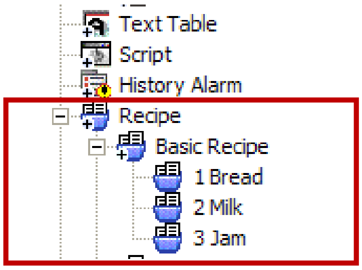
(b) After adding [Project]-[Recipe]-[Basic Recipe] or [Project]-[Recipe]-[File Recipe] and edit them.

(c) Create the special switch at exploring and sending basic recipe/ file recipe of [Recipe]

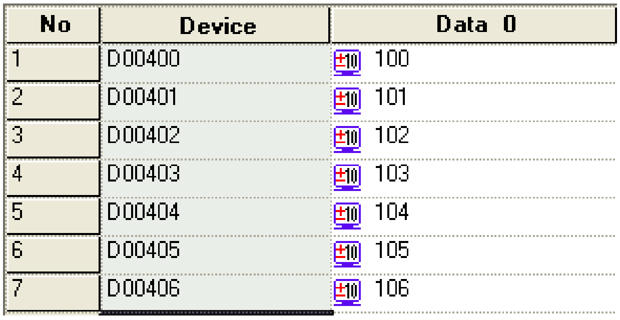
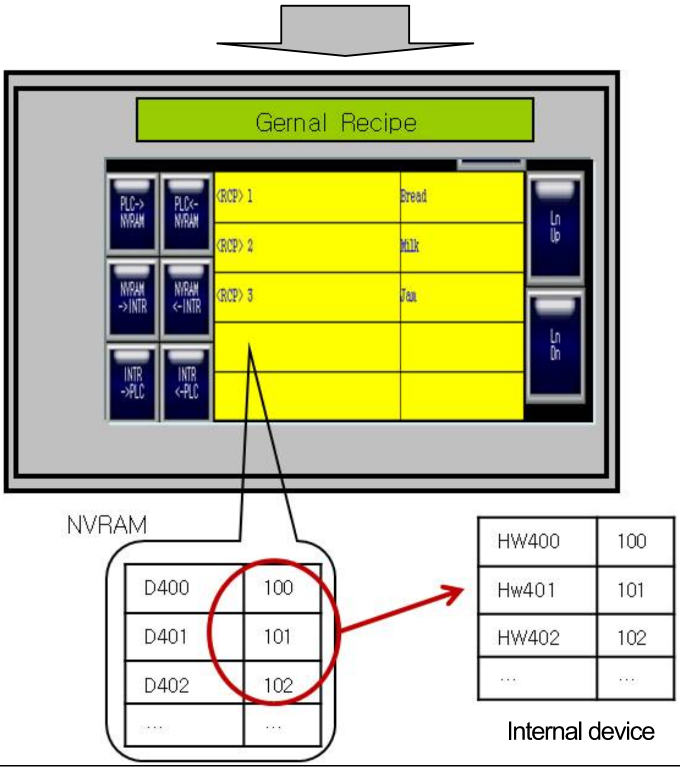
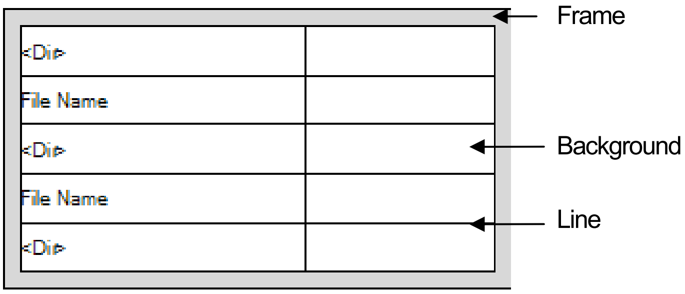
17.13.2 Items to set Recipe Explorer Object

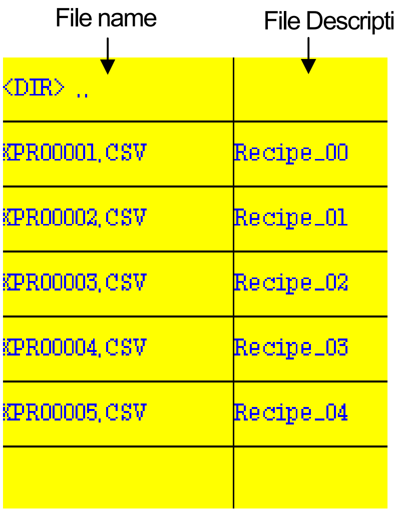
(1) Basic Items

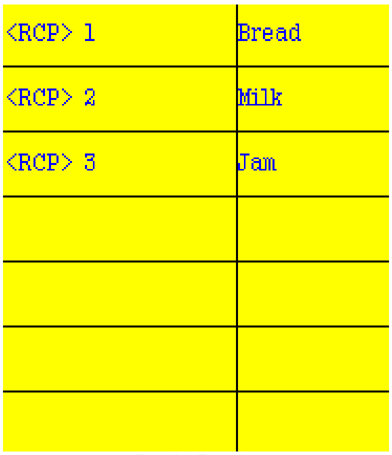
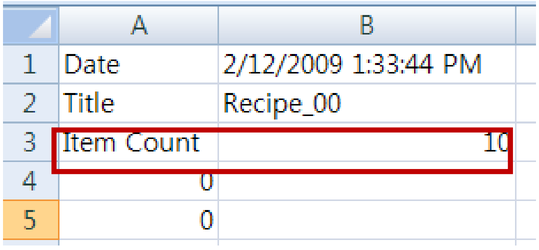
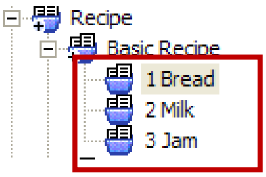

Recipe Navigator
General
Basic
Text
Recipe Type
● File Recipe
○ Basic Recipe
Internal Device:
HW0000
Frame Display
☑ Use
Frame Color:
Plate Color:
No.of Row:
5
Line
Color(L):
Width:
1
Recipe Navigator Display Format
☑ File Name
3
(Colum Width)
☑ File Des.
2
(Colum Width)
Colum Width is the relative size of the total [File Namager]
Description:
OK
Cancel
a
b
c
d
e
g
h
i
j
k

<table>
<tr><th>Items</th><th>Setting Description</th></tr>
<tr><td>Recipe Type(a)</td><td>You can select the recipe type to be displayed at recipe explorer.
<table>
<tr><th>Recipe Type</th><th>Description</th></tr>
<tr><td>File Recipe</td><td>It displays the XPRXXXXX.csv list that exists the recipe folder(\USBStorage\XP_Recipe,\CFCard\XP_Recipe of storage equipment(USB, CF Card).</td></tr>
<tr><td>Basic Recipe</td><td>It displays basic recipe list added by XP-Biuilder.

Text Table
Script
History Alarm
Recipe
Basic Recipe
1 Bread
2 Milk
3 Jam

</td></tr>
</table></td></tr>
</table>

Items	Setting Description
Internal Device(b)	In the case of basic recipe, you can select internal device. If the basic recipe edited at XP-Builder is sent to XGT Panel, it will back-upped at NVRAM. If you try to revise·edit the basic recipe back-upped at NVRAM, you need to move the recipe saved at NVRAM to internal device. In this case, you can select internal device address to be moved. Ex. If you establish the basic recipe at XP-Builder as below, you need to send the device value saved at D400 to PLC. To send PLC value to D400, you are required to move the value to internal device.  No / Device / Data 0 1 / D00400 / 100 2 / D00401 / 101 3 / D00402 / 102 4 / D00403 / 103 5 / D00404 / 104 6 / D00405 / 105 7 / D00406 / 106  Gernal Recipe PLC-> NVRAM PLC<- NVRAM NVRAM ->INTR NVRAM <-INTR INTR ->PLC INTR <-PLC <RCP> 1 Bread <RCP> 2 Milk <RCP> 3 Jam Ln Up Ln Dn NVRAM D400 100 D401 101 D402 102 HW400 100 Hw401 101 HW402 102 Internal device
Using frame(c)	Establishing whether the frame of recipe explorer will be used or not  <Dir> File Name <Dir> File Name <Dir> Frame Background Line
Frame color (d)	Setting the frame color of recipe explorer.
Background color(e)	Setting background color of recipe explorer.

<table>
<tr><th>Items</th><th>Setting Description</th></tr>
<tr><td>The number of lines(f)</td><td>Setting the number of lines of recipe explorer.</td></tr>
<tr><td>Line color(g)</td><td>Setting the line color of recipe explorer.</td></tr>
<tr><td>Line thickness</td><td>Setting line thickness of recipe explorer.</td></tr>
<tr><td>File name</td><td>In the case of file recipe explorer, .csv file name saved at storage equipment will be displayed.
In the case of basic recipe, it will displayed as <RCP 1>, <RCP 2> based on the recipe order made by XP-Builder.


<table>
<tr><td><DIR> ..</td><td></td></tr>
<tr><td>XPR00001.CSV</td><td>Recipe_00</td></tr>
<tr><td>XPR00002.CSV</td><td>Recipe_01</td></tr>
<tr><td>XPR00003.CSV</td><td>Recipe_02</td></tr>
<tr><td>XPR00004.CSV</td><td>Recipe_03</td></tr>
<tr><td>XPR00005.CSV</td><td>Recipe_04</td></tr>
<tr><td></td><td></td></tr>
</table>
File Recipe

<table>
<tr><td><RCP> 1</td><td>Bread</td></tr>
<tr><td><RCP> 2</td><td>Milk</td></tr>
<tr><td><RCP> 3</td><td>Jam</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
</table>
Basic Recipe</td></tr>
<tr><td>File Description</td><td>In the case of file recipe, the description for applicable title is displayed in .csv file.
In the case of basic recipe, the name of basic recipe edited by XP-Builder is displayed.

<table>
<tr><td></td><td>A</td><td>B</td></tr>
<tr><td>1</td><td>Date</td><td>2/12/2009 1:33:44 PM</td></tr>
<tr><td>2</td><td>Title</td><td>Recipe_00</td></tr>
<tr><td>3</td><td>Item Count</td><td>10</td></tr>
<tr><td>4</td><td>0</td><td></td></tr>
<tr><td>5</td><td>0</td><td></td></tr>
</table>
File Recipe


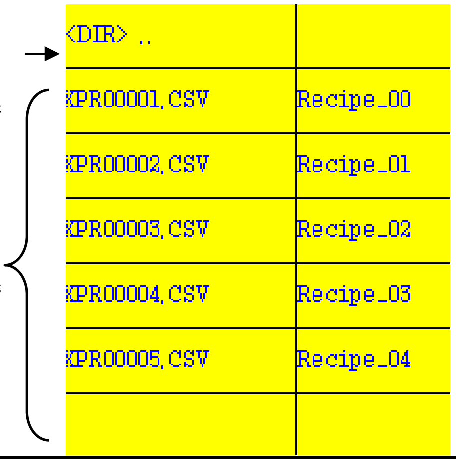
Basic Recipe</td></tr>
<tr><td>Explanation(k)</td><td>You can input explanation for the object.</td></tr>
</table>

Note

(1) The folder displayed at file recipe and display format are as below.

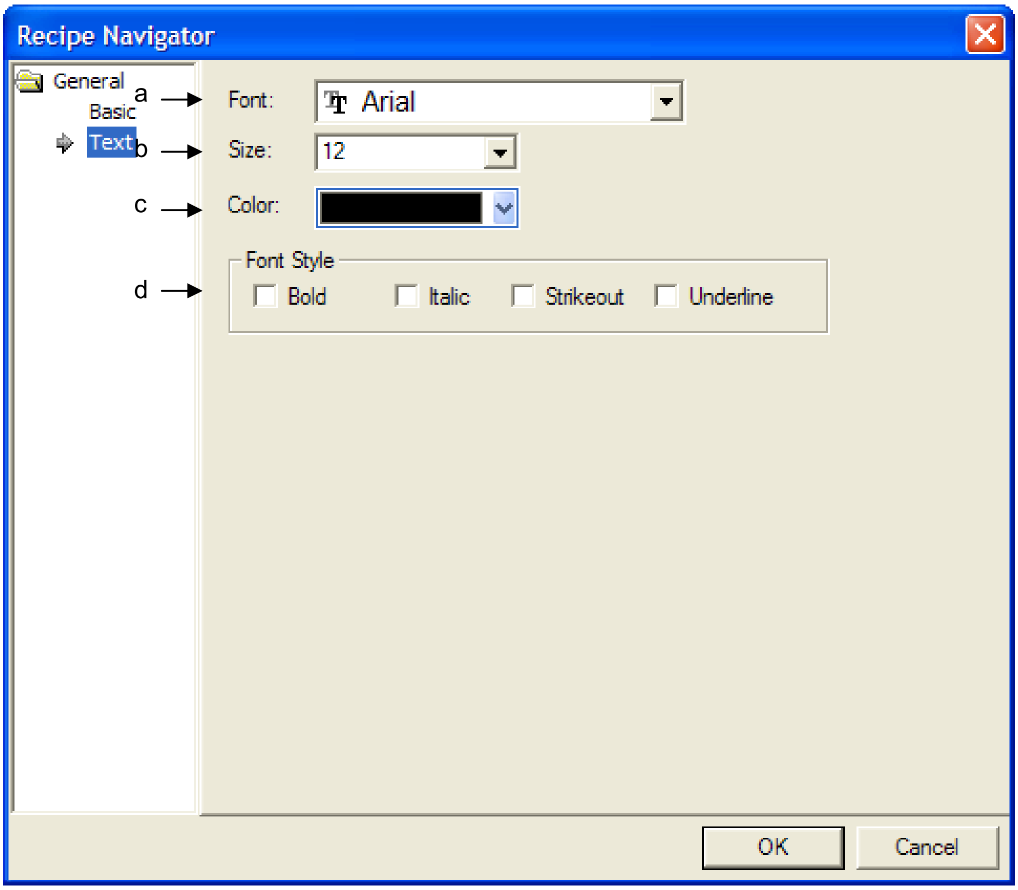
Indicating a directory.
To move to the related directory, after selecting the appropriate row, press 'Selected File View' of [Basic Recipe Exploring and Sending] in a special switch.

Indicating a file name.
To view the related file, after selecting the appropriate row, press 'Selected File View' of [Basic Recipe Exploring and Sending] in a special switch.



<DIR> ..	
XPR00001.CSV	Recipe_00
XPR00002.CSV	Recipe_01
XPR00003.CSV	Recipe_02
XPR00004.CSV	Recipe_03
XPR00005.CSV	Recipe_04

(2) Character Display


Recipe Navigator
General
Basic
Text
a
b
c
d
Font Style
☐ Bold
☐ Italic
☐ Strikeout
☐ Underline
OK
Cancel

Font: Arial

Size: 12

Color: ■

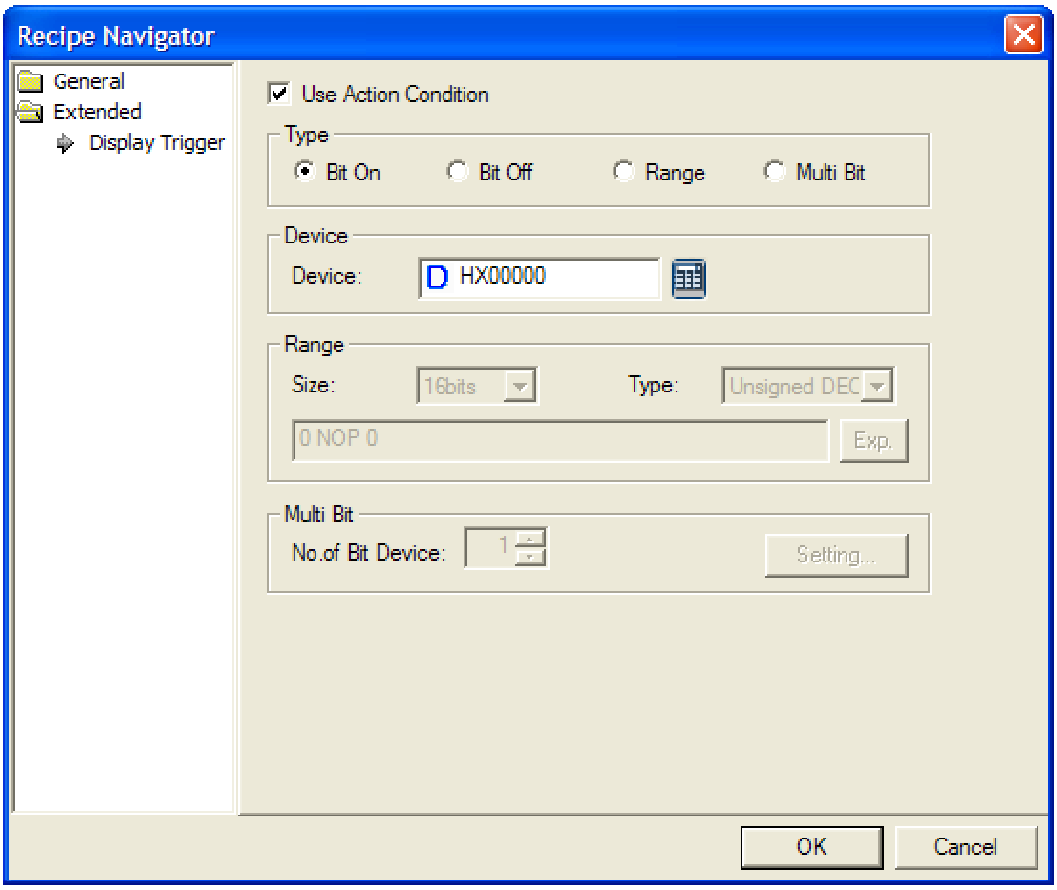
Item	Setting Description
Font(a)	Setting the font type to display a recipe explorer.
Size(b)	Setting the character size to display a recipe explorer
Color(c)	Setting the character color to display a recipe explorer
Character format(d)	Recipe explorer sets up the character format(Bold, Italic, Line-through, Underline) and several options can be selected.

Note

(1) Recipe Explorer editor object can not set up vertical-align and it is displayed based on vertical centering of the object.

(3) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status


Recipe Navigator
General
Extended
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range
Size: 16bits
Type: Unsigned DEC
0 NOP 0

Multi Bit
No.of Bit Device: 1

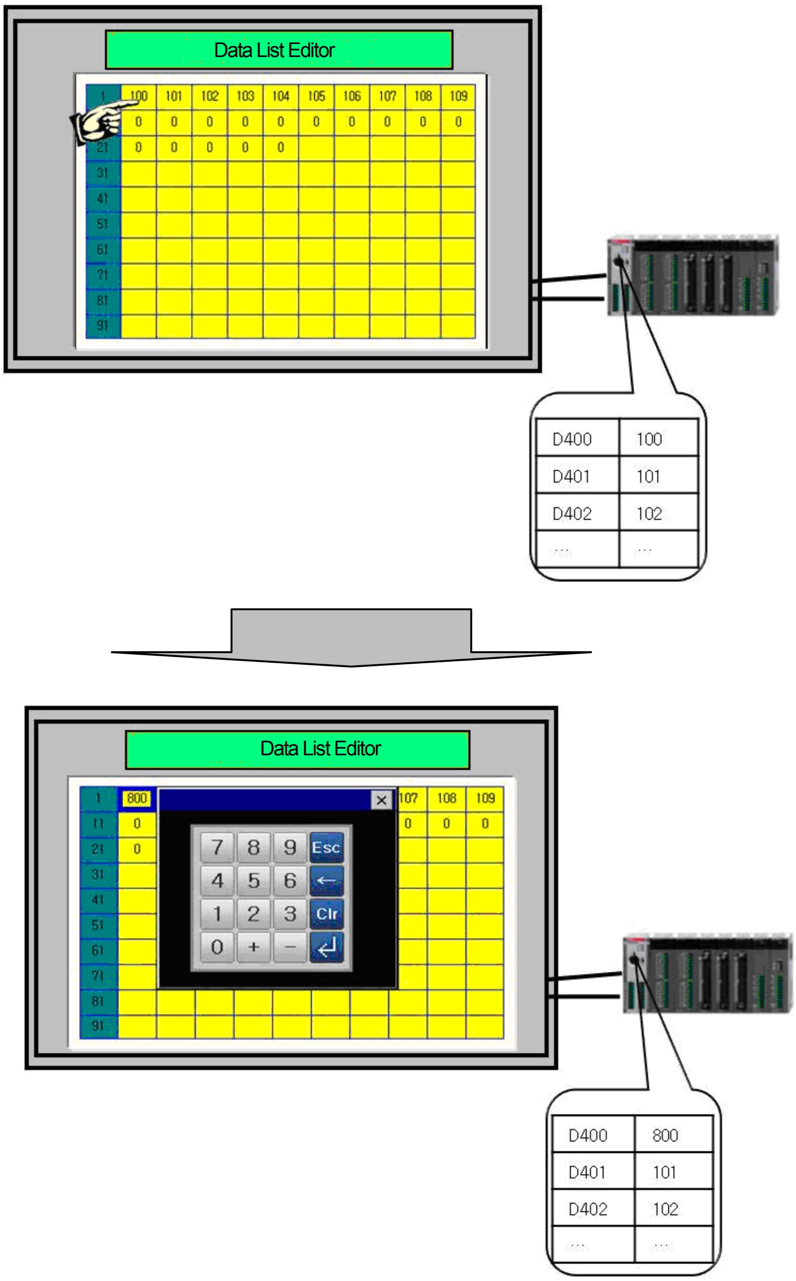
(☞ refer to 16.9 display trigger.)

17.14 Data List Editor

17.14.1 Overview

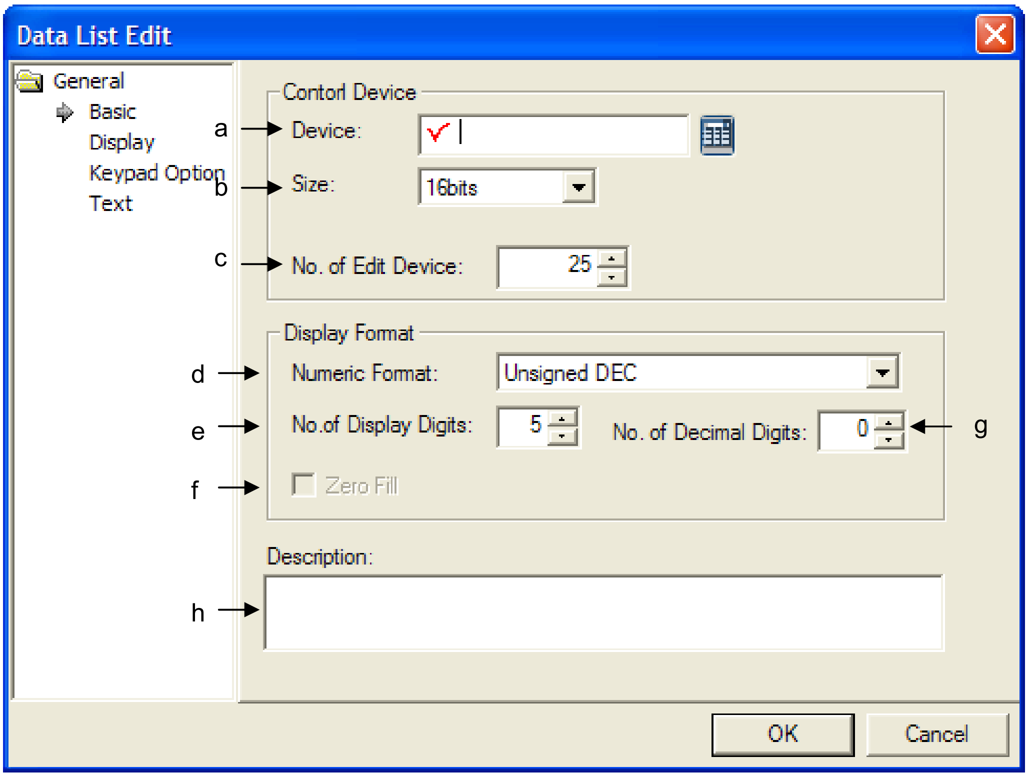
Data List Editor Object that interprets PLC Device values continuously and displays it as a table can edit the related PLC Device value.

At Data List Editor, if you click the cell that you want to edit among the displayed data, a keypad will be displayed and you can change the value. Reflect the changed values to PLC.

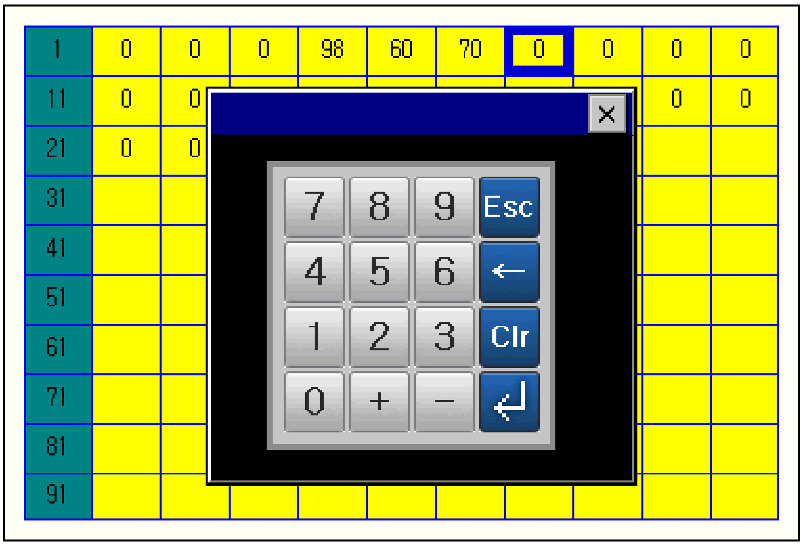
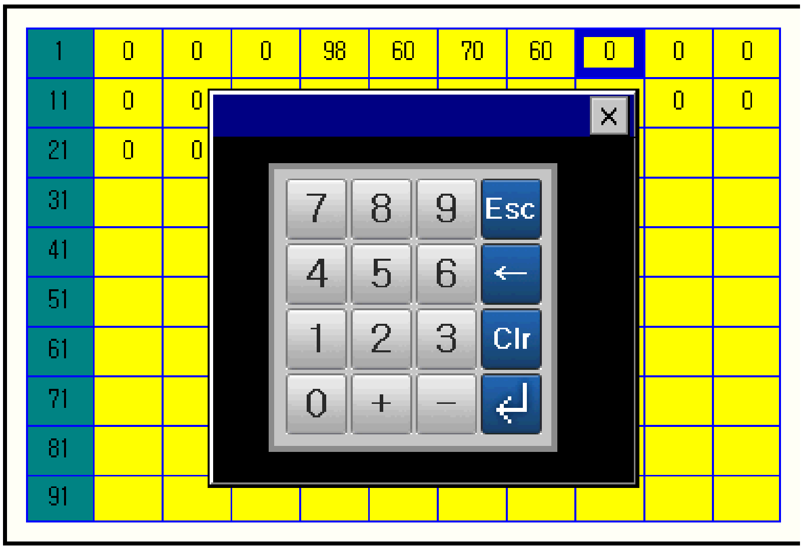

Data List Editor
1
100
101
102
103
104
105
106
107
108
109
21
31
41
51
61
71
81
91
D400
100
D401
101
D402
102
...
Data List Editor
800
7
8
9
Esc
4
5
6
1
2
3
Clr
0
+
−
D400
800
D401
101
D402
102
...

17.14.2 Items to set Data List Editor Object

(1) Basic Items

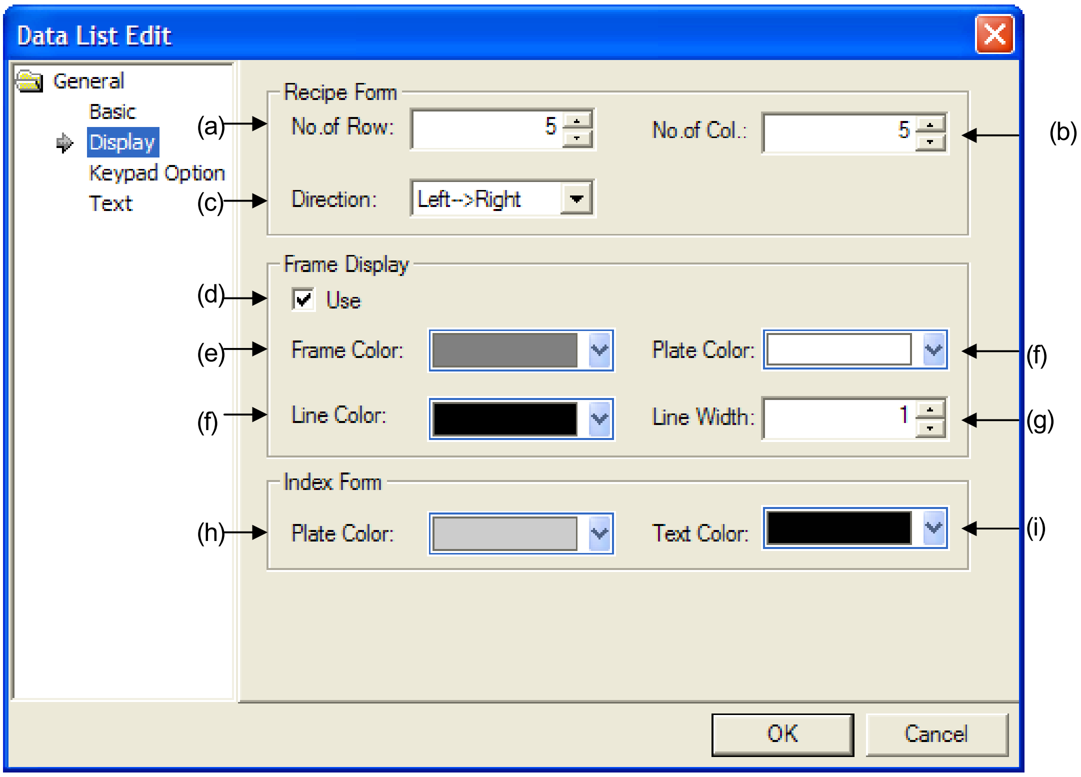

Data List Edit
General
Basic
Display
Keypad Option
Text
a
b
c
d
e
f
g
h
Contorl Device
Device:
Size:
16bits
No. of Edit Device:
25
Display Format
Numeric Format:
Unsigned DEC
No.of Display Digits:
5
No. of Decimal Digits:
0
Zero Fill
Description:
OK
Cancel

Item	Setting Descriptions
Device(a)	Setting the device to be edited among the objects. It displays device values continuously with the established device as a beginning and edits them.
Size(b)	Setting the size of device data.(16 bit, 32 bit)
The number of devices to be edited(c)	Setting the number of devices to be edited among displayed data. While the max. number of devices that can be displayed at the screen is total 600EA ; lines:20EA, rows:30EA, the number of devices that can be edited for XGT Panel is up to 255EA. If you press the cell to be edited from data list editor, the keypad will be displayed. If you press ‘Enter’, keypad focus will automatically move to the next cell for edition. When you try to stop edition, press [ESC] of a keypad.

<table>
<tr><th>Item</th><th>Setting Descriptions</th></tr>
<tr><td></td><td>

1 0 0 0 98 60 70 0 0 0 0
11 0 0 0 0
21 0 0
31
41
51
61
71
81
91
7 8 9 Esc
4 5 6 ←
1 2 3 Clr
0 + – ↵
If you press [Enter] after inputting 60 at the above status, focus will be moved to the next cell as below.

1 0 0 0 98 60 70 60 0 0 0
11 0 0 0 0
21 0 0
31
41
51
61
71
81
91
7 8 9 Esc
4 5 6 ←
1 2 3 Clr
0 + – ↵
</td></tr>
<tr><td>Figure type(d)</td><td>
<table>
<tr><th>Display type</th><th>Description</th><th>Examples</th></tr>
<tr><td>Decimal Number with a sign</td><td>Displayed as Decimal Number with a sign</td><td>-2184</td></tr>
<tr><td>Decimal Number without a sign</td><td>Displayed as Decimal Number without a sign</td><td>2184</td></tr>
<tr><td>Octal Number</td><td>Displayed as Octal number</td><td>4210</td></tr>
<tr><td>Hexadecimal number</td><td>Displayed as Hexadecimal number</td><td>888</td></tr>
<tr><td>Binary number</td><td>Displayed as Binary number</td><td>10010001000</td></tr>
<tr><td>BCD</td><td>Displayed as BDC</td><td>888</td></tr>
<tr><td>Real Number</td><td>Displayed as Real Number.</td><td>2184.0</td></tr>
</table>
Real number format is available only when device size is 32 bit as below.
</td></tr>
</table>

Item	Setting Descriptions
The number of figures(e)	You can select the digits of figures to be displayed. It can be set up to maximum 64 digits. If the established number of figures is less than reading ·writing device value, the object will be shown as *. If the device value is BCD format that can not be displayed, it will be shown as ~.
The number of decimals g)	When selecting all figures except binary, octal, Hexadecimal, you can set the number of decimal digits. $\underbrace{1234578.9}_{\text{The number f figures}}$
Zero Filling (f)	When displaying 0 in front of the number under right alignment, you can select zero filling. The function is available only when [Character Items]-[Horizontal Alignment] is set as right alignment. Namely, zero filling is not available for center·left alignment.
Explanation(h)	You can input explanation for the object.

(2) Display Items

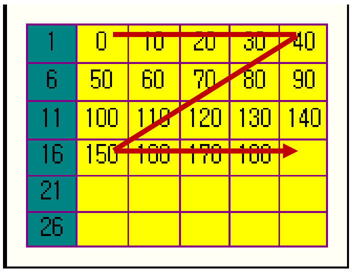
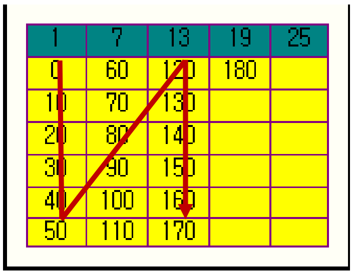
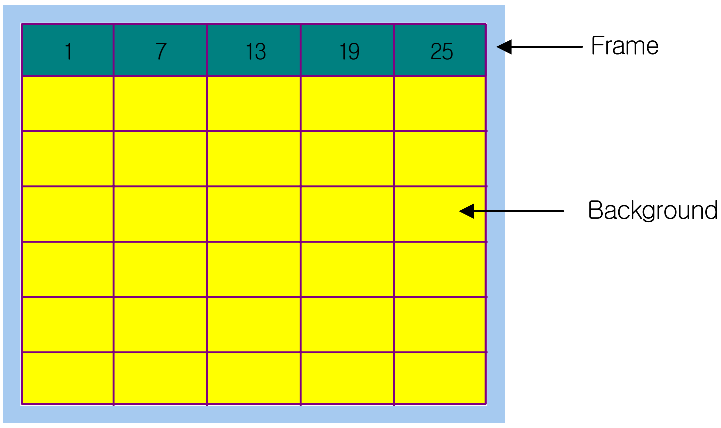
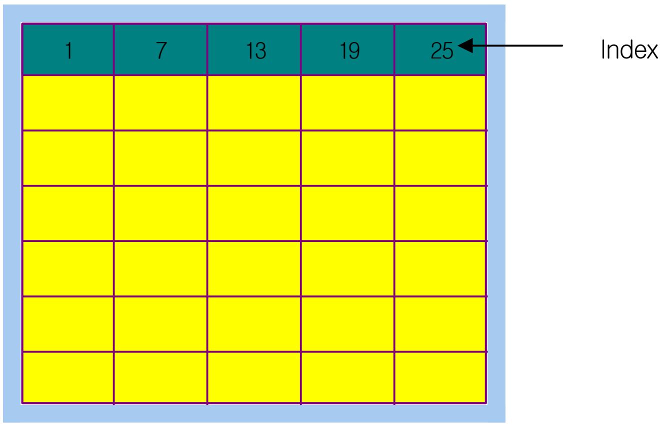


Recipe Form
No.of Row: 5
No.of Col.: 5
Direction: Left-->Right

Frame Display
☑ Use
Frame Color:
Plate Color:
Line Color:
Line Width: 1

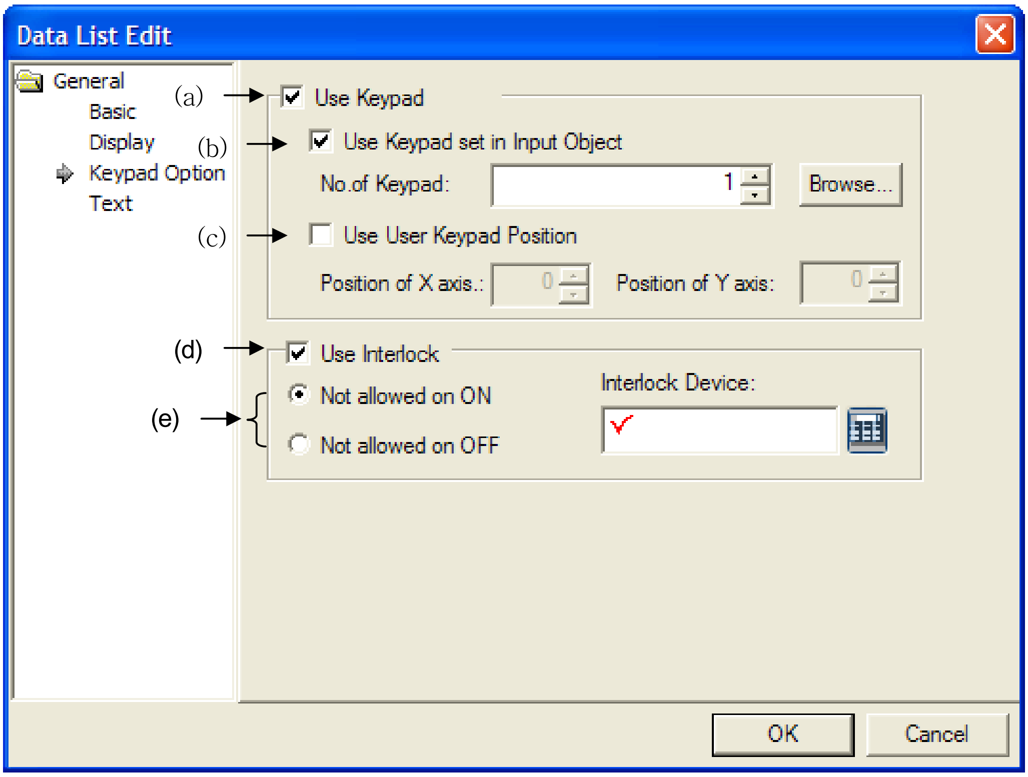
Index Form
Plate Color:
Text Color:

Item	Setting Descriptions
The number of lines(a)	Setting the number of lines displaying File Recipe Editor
The number of rows(b)	Setting the number of rows displaying File Recipe Editor

Item	Setting Descriptions
Direction(c)	Setting the direction displaying File Recipe Editor. In case of [Left->Right], file recipe data will be displayed as Left->Right.  1 0 10 20 30 40 6 50 60 70 80 90 11 100 110 120 130 140 16 150 160 170 180 21 26  1 7 13 19 25 0 60 120 180 10 70 130 20 80 140 30 90 150 40 100 160 50 110 170
Using frame(d)	Setting whether file recipe editor's frame will be applied or not.  1 7 13 19 25 Frame Background
Frame color (e)	Setting the frame color of file recipe editor.
Line color(f)	Setting the line color of file recipe editor.
Background color(g)	Setting background color of file recipe editor.
Line thickness(h)	Setting line thickness of file recipe editor.
Index Background Color(i)	Setting index background color of File Recipe Editor. In case that the direction is Left->Right, index is displayed at all the way to the left row. In case that the direction is Up->Down, index is displayed at the top line.  1 7 13 19 25 Index
Index character color (j)	Setting index character color of File Recipe Editor.

(3) Items for setting a keypad

(For details, refer to (8) Keypad Setting of 17.4.3 Number/Character input·output unit)



☑ Use Keypad

☑ Use Keypad set in Input Object

No.of Keypad: 1

☐ Use User Keypad Position

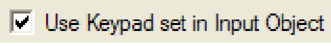
Position of X axis.: 0 Position of Y axis: 0

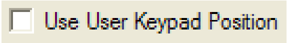
☑ Use Interlock

● Not allowed on ON

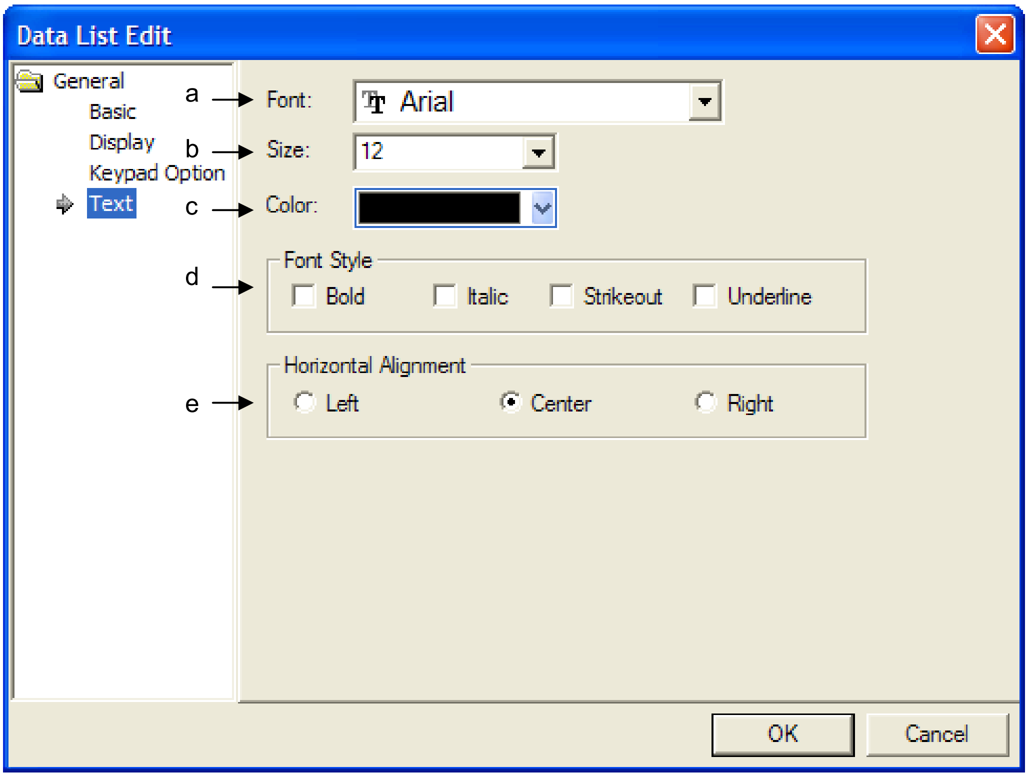
○ Not allowed on OFF

Interlock Device:

Item	Setting Descriptions
Using keypad screen(a)	It is established when pop-upping XP-Builder's keypad windows or key windows made by a user for XGT Panel series. When establishing keypad screen confirmation column, Make sure to set up windows screen No. to be pop-upped. When inputting the values, figures are displayed at the object and they are written at a device the moment Enter key is touched. In case that you do not use a keypad, Windows will not be pop-upped at input mode so you can input the values with a special key switch of the screen.
Using keypad screen established by object (b)	There are two methods to establish keypad Windows as below. (1) Designate the keypad Windows to be pop-upped at [Common]- [Project property]-[Setting key Windows]. (2) After a user draws out a keypad Windows, at number input unit, check [Using keypad screen established by object]  ☑ Use Keypad set in Input Object and select keypad Windows made at [Keypad No.] directly. When a user draw out key Windows and tries to use the related keypad at number input unit, the below functions should be established.

Item	Setting Descriptions
Creating keypad screen at the designated place (c)	Create numeric keypad screen at your favorite place. If you do not select [Creating keypad screen at the designated place]( ☐ Use User Keypad Position), it will be created the left upside or right upside of input unit. The left upside indicates the coordinate (0,0). When establish respectively X-coordinate as 50, Y-coordinate as 150 at the above edition screen, the keypad will be created at the related coordinate of XGT Panel.
Interlock(d)	Setting Interlock. If Interlock Device meets certain conditions, input is not available.
Interlock Conditions(e)	On: When the device is On, Interlock is applied. Off: When the device is Off, Interlock is applied.

(3) Character Display


Data List Edit
General
Basic
Display
Keypad Option
Text
a
b
c
d
e
Font:
Arial
Size:
12
Color:
Font Style
☐ Bold
☐ Italic
☐ Strikeout
☐ Underline
Horizontal Alignment
○ Left
● Center
○ Right
OK
Cancel

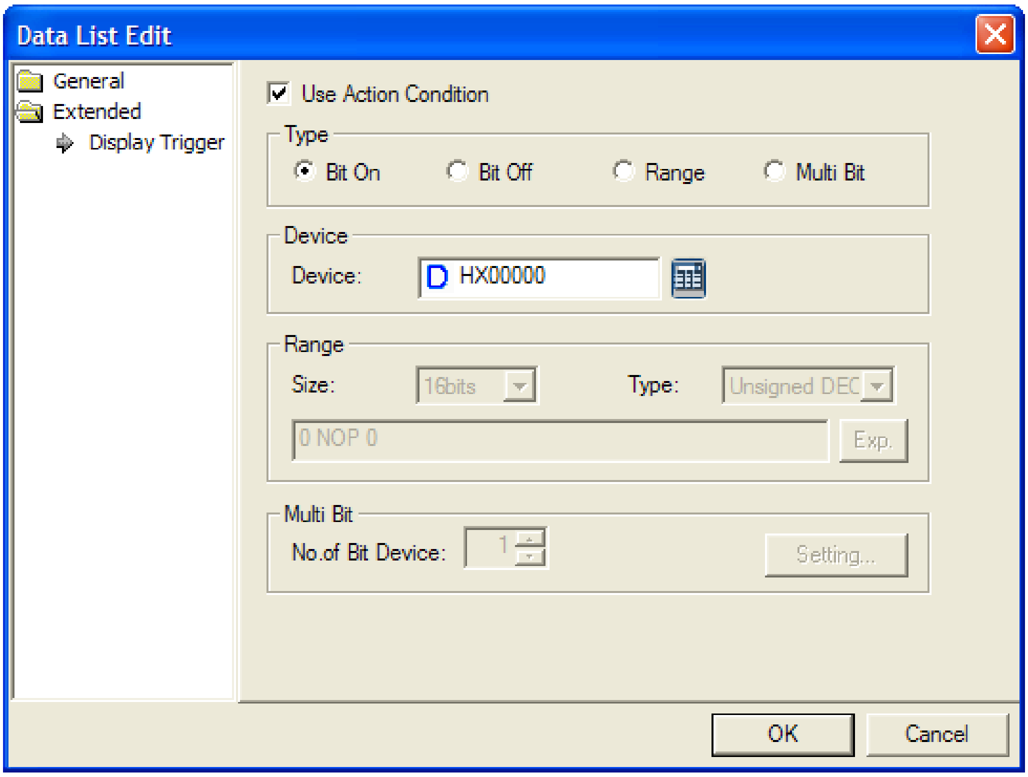
Item	Setting Description
Font(a)	Setting the font type to display a recipe explorer.
Size(b)	Setting the character size to display a recipe explorer
Color(c)	Setting the character color to display a recipe explorer
Character format(d)	Recipe explorer sets up the character format (Bold, Italic, Line-through, Underline) and several options can be selected.

Note

(1) Data list editor object can not set up vertical-align and it is displayed based on vertical centering of the object.

(5) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Data List Edit

- General
- Extended
  - Display Trigger

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

No.of Bit Device: 1

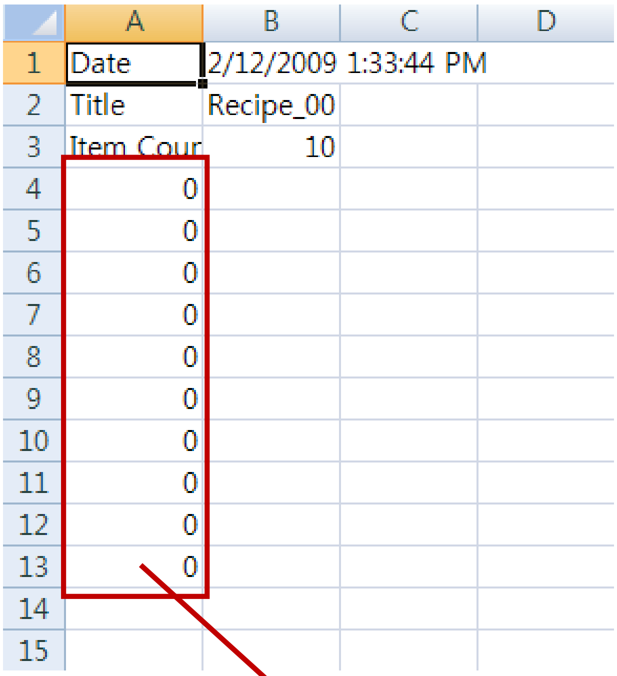
(☞ refer to 16.9 display trigger.)

17.15 File Recipe Editor

17.15.1 Overview

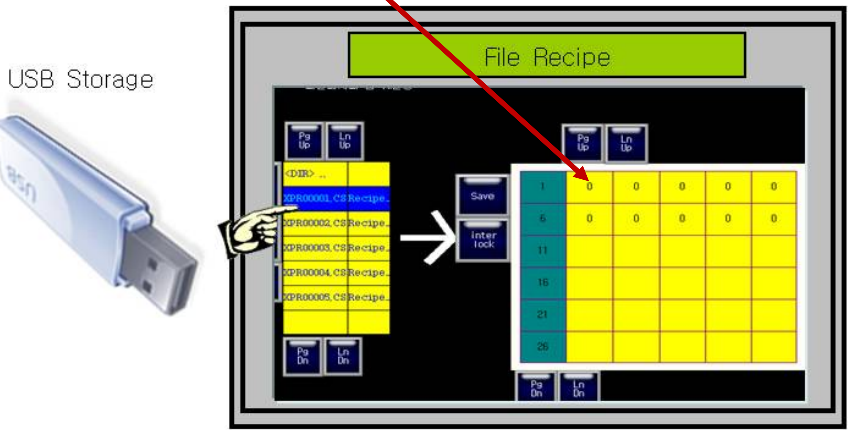
After File Recipe Editor displays the saved file recipe at storage equipment (USB, CF card) and changes a certain data, it can save the data to the appropriate file or record the value at PLC.

1. After selecting the intended file among the file recipe list displayed recipe explorer (referring to Chap.17.16), press [Selected File View] of [File Recipe Exploring and Sending] of a special switch.
2. Then, the related file will be shown at File Recipe Editor.



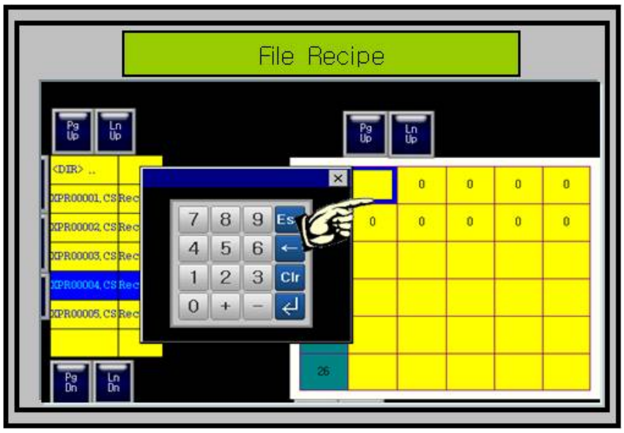
	A	B	C	D
1	Date	2/12/2009 1:33:44 PM		
2	Title	Recipe_00		
3	Item Cour	10		
4	0			
5	0			
6	0			
7	0			
8	0			
9	0			
10	0			
11	0			
12	0			
13	0			
14				
15				

In case the value is input to CSV's data area as above


USB Storage
File Recipe
Pg Up
Ln Up
<DIR> ..
XPR00001.CS Recipe_
XPR00002.CS Recipe_
XPR00003.CS Recipe_
XPR00004.CS Recipe_
XPR00005.CS Recipe_
Pg Dn
Ln Dn
Save
Inter lock
1
6
11
16
21
26

3. If you select the intended cell from recipe editor, the keypad for inputting value will be displayed and you can input the value via keypad.

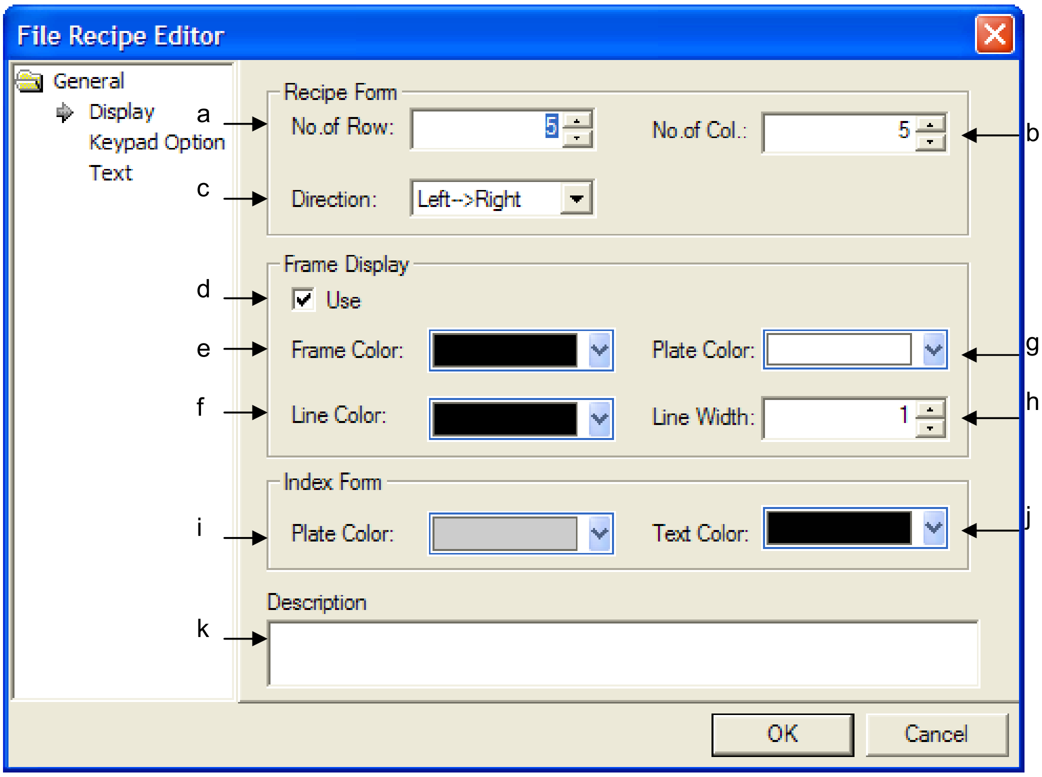
USB Storage


File Recipe
Pg Up
Ln Up
Pg Up
Ln Up
<DIR> ..
XPR00001.CSRec
XPR00002.CSRec
XPR00003.CSRec
XPR00004.CSRec
XPR00005.CSRec
7 8 9 Es
4 5 6 ←
1 2 3 Clr
0 + − ↵
Pg Dn
Ln Dn
Pg Dn
Ln Dn

4. For revised file recipe, press [Save] button at [File Recipe Editor] of a special switch. Then, the data will be saved at storage equipment.

17.15.2 File Recipe Editor Object Setting Items

(1) Display Items


File Recipe Editor
General
Display
Keypad Option
Text
a
b
c
d
e
f
g
h
i
j
k
OK
Cancel

Recipe Form

No.of Row: 5

No.of Col.: 5

Direction: Left-->Right

Frame Display

☑ Use

Frame Color:

Plate Color:

Line Color:

Line Width: 1

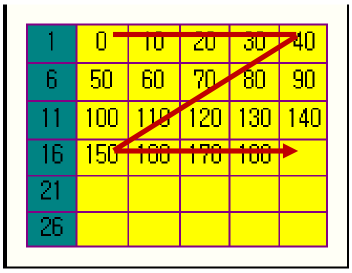
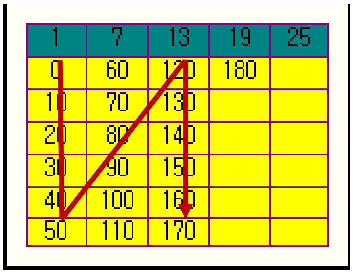
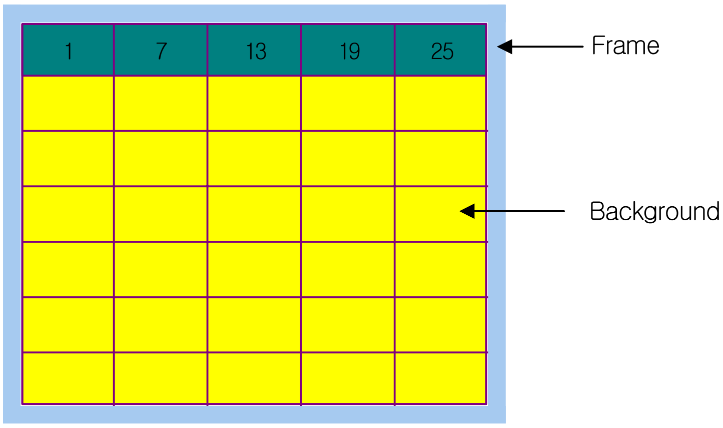
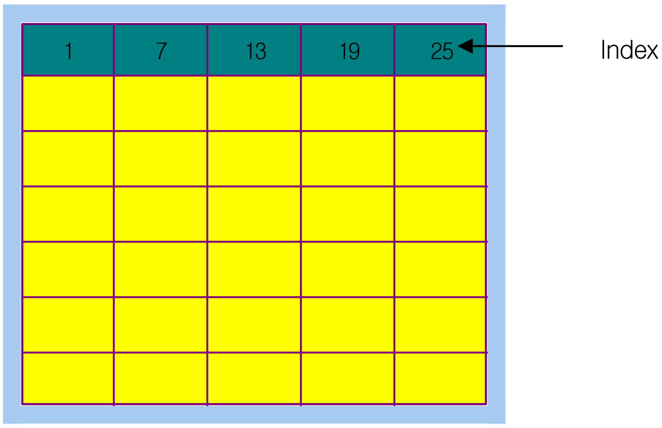
Index Form

Plate Color:

Text Color:

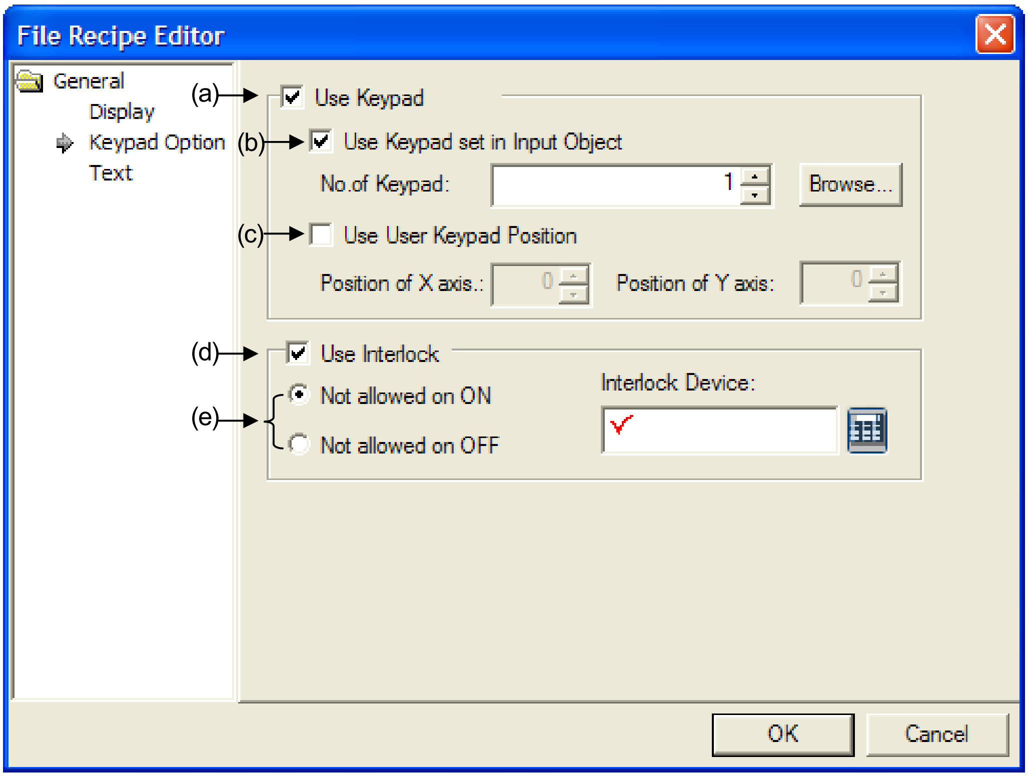
Description

Item	Setting Description
The number of row (a)	Setting the number of row s displaying File Recipe Editor.
The number of column (b)	Setting the number of column s displaying File Recipe Editor.

Item	Setting Description
Direction(c)	Setting the direction displaying File Recipe Editor. In case of [Left->Right File Recipe data will be displayed as Left->Right.  1 0 10 20 30 40 6 50 60 70 80 90 11 100 110 120 130 140 16 150 160 170 180 21 26  1 7 13 19 25 0 60 120 180 10 70 130 20 80 140 30 90 150 40 100 160 50 110 170
Using frame (d)	Setting whether file recipe editor's frame will be applied or not. 
Frame color (e)	Setting the frame color of File Recipe Editor.
Line color(f)	Setting the line color of File Recipe Editor.
Background color(g)	Setting background color of File Recipe Editor.
Line thickness(h)	Setting line thickness of File Recipe Editor.
Index Background Color(i)	Setting index background color of File Recipe Editor. In case that the direction is Left->Right, index is displayed at all the way to the left row. In case that the direction is Up->Down, index is displayed at the top line. 
Index character color (j)	Setting index character color of File Recipe Editor.
Explanation (k)	Inputting explanation to the object.

(2) Items to setup keypad

(For details, refer to (8) Keypad setting of 17.4.3 Number/Character input·output unit)



(a) ☑ Use Keypad

(b) ☑ Use Keypad set in Input Object

No.of Keypad: 1

(c) ☐ Use User Keypad Position

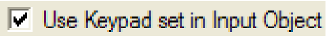
Position of X axis.: 0

Position of Y axis: 0

(d) ☑ Use Interlock

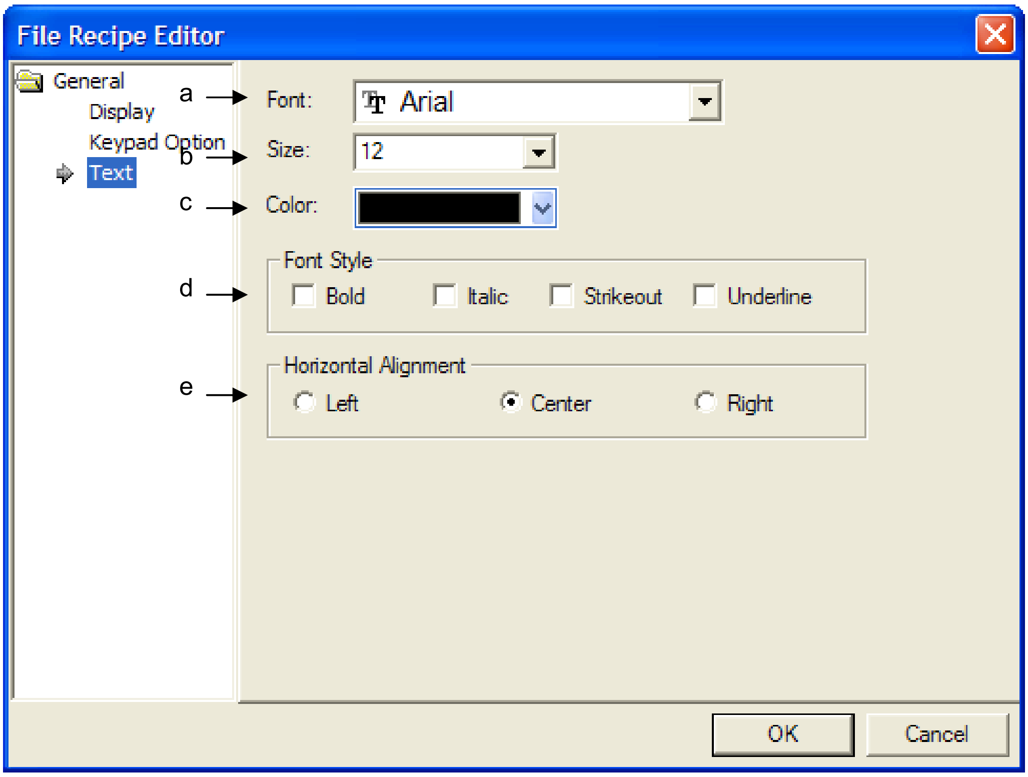
(e) ● Not allowed on ON

○ Not allowed on OFF

Item	Setting Descriptions
Using keypad screen(a)	It is established when pop-upping XP-Builder's keypad windows or key windows made by a user for XGT Panel series. When establishing keypad screen confirmation column, Make sure to set up windows screen No. to be pop-upped. When inputting the values, figures are displayed at the object and they are written at a device the moment Enter key is touched. In case that you do not use a keypad, Windows will not be pop-upped at input mode so you can input the values with a special key switch of the screen.
Using keypad screen established by object (b)	There are two methods to establish keypad Windows as below. (1) Designate the keypad Windows to be pop-upped at [Common]- [Project property]-[Setting key Windows]. (2) After a user draws out a keypad Windows, at number input unit, check [Using keypad screen established by object]  ☑ Use Keypad set in Input Object and select keypad Windows made at [Keypad No.] directly. When a user draw out key Windows and tries to use the related keypad at number input unit, the below functions should be established.

Item	Setting Descriptions
Creating keypad screen at the designated place (c)	Create numeric keypad screen at your favorite place. If you do not select [Creating keypad screen at the designated place](☐ Use User Keypad Position), it will be created the left upside or right upside of input unit. The left upside indicates the coordinate (0,0). When establish respectively X-coordinate as 50, Y-coordinate as 150 at the above edition screen, the keypad will be created at the related coordinate of XGT Panel.
Interlock(d)	Setting Interlock. If Interlock Device meets certain conditions, input is not available.
Interlock Conditions(e)	On: When the device is On, Interlock is applied. Off: When the device is Off, Interlock is applied.

(3) Character Display


File Recipe Editor
General
Display
Keypad Option
Text
a
b
c
d
e
Font:
Size:
Color:
Font Style
Horizontal Alignment
OK
Cancel

Font: Arial

Size: 12

Font Style: ☐ Bold ☐ Italic ☐ Strikeout ☐ Underline

Horizontal Alignment: ○ Left ● Center ○ Right

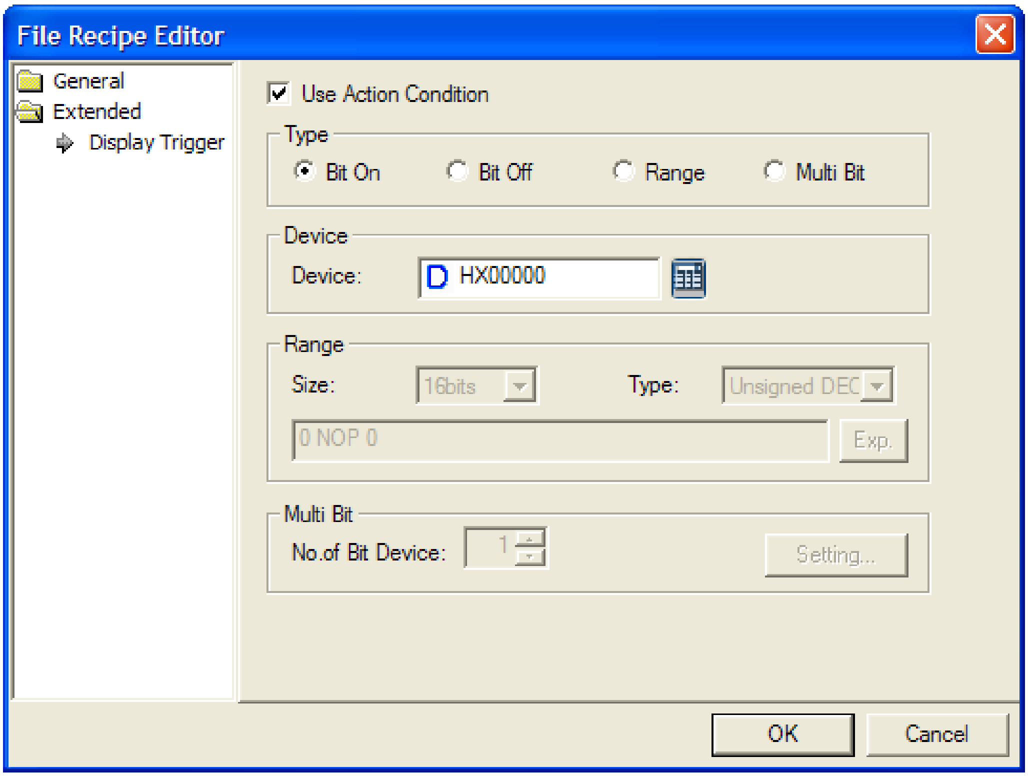
Item	Setting Description
Font(a)	Setting the font type to display a recipe explorer.
Size(b)	Setting the character size to display a recipe explorer
Color(c)	Setting the character color to display a recipe explorer
Character format(d)	Recipe explorer sets up the character format (Bold, Italic, Line-through, and Underline) and several options can be selected.

Note

(1) File Recipe Editor object can not set up vertical-align and it is displayed based on vertical centering of the object.

(4) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



File Recipe Editor

General
Extended
Display Trigger

☑ Use Action Condition

Type

● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device

Device: HX00000

Range

Size: 16bits

Type: Unsigned DEC

0 NOP 0

Multi Bit

No.of Bit Device: 1

Exp.
Setting...
OK
Cancel

(☞ refer to 16.9 display trigger.)

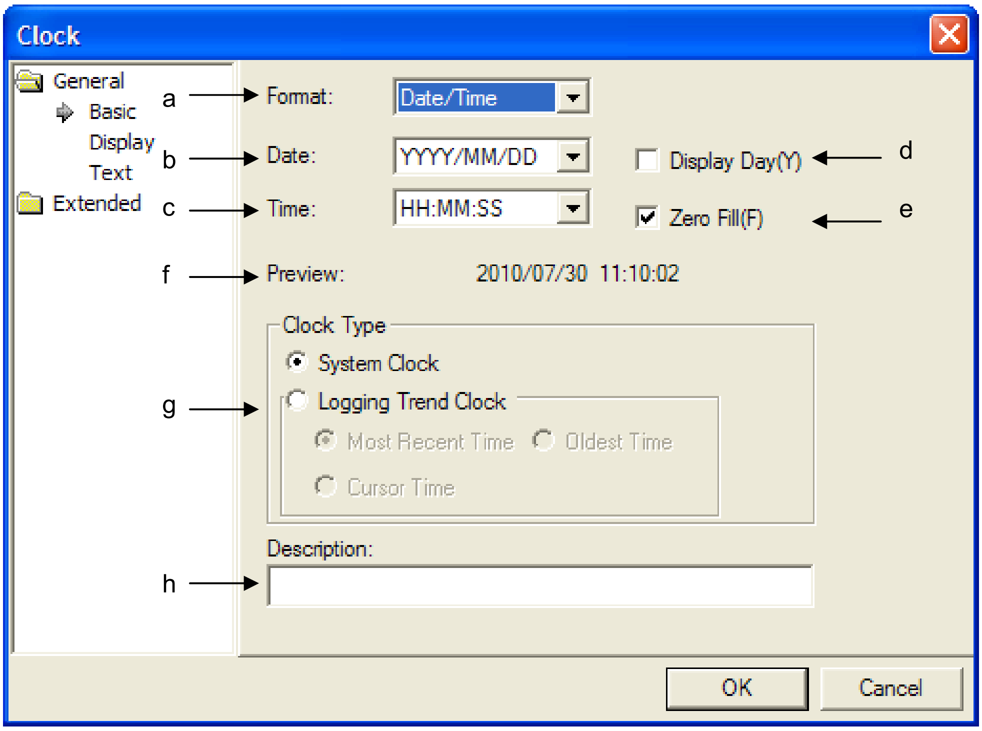
17.16 Clock Object

17.16.1 Overview

This is for displaying the data and time of the main body of the XGT Panel series or the PLC.

17.16.2 Clock Object Settings

(1) Basic



Format: Date/Time

Date: YYYY/MM/DD

☐ Display Day(Y)

Time: HH:MM:SS

☑ Zero Fill(F)

Preview: 2010/07/30 11:10:02

Clock Type

● System Clock

○ Logging Trend Clock

● Most Recent Time ○ Oldest Time

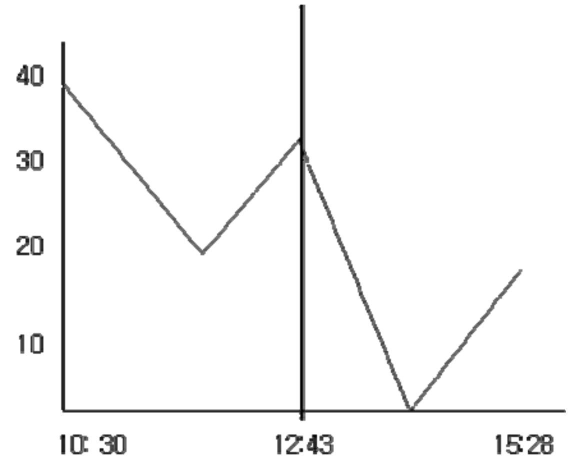
○ Cursor Time

Description:

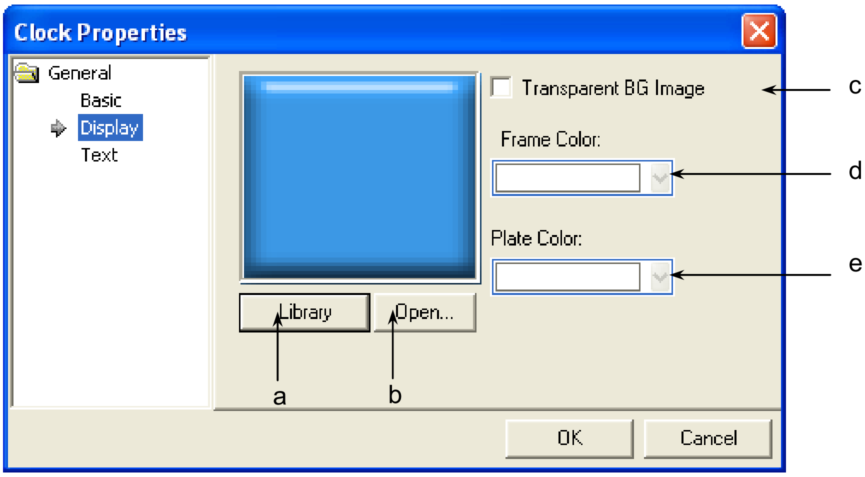
Clock
General
Basic
Display
Text
Extended
a
b
c
d
e
f
g
h
OK
Cancel

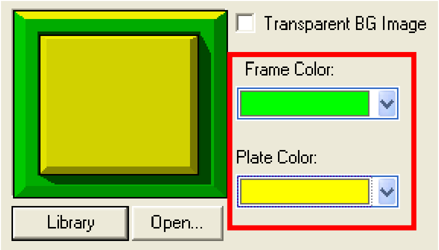
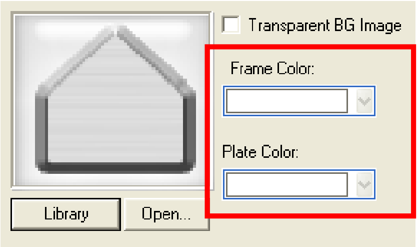
<table>
<tr><th>Items</th><th>Settings</th></tr>
<tr><td>Format (a)</td><td>Sets the type of clock.
You can choose among displaying date and time, displaying data only and displaying time only.

Data Forms You Can Select
<table>
<tr><th>Data format</th><th>Meaning</th></tr>
<tr><td>YYYY/MM/DD</td><td>YYYY/MM/DD (4 digit year)</td></tr>
<tr><td>YY/MM/DD</td><td>YY/MM/DD (2 digit year)</td></tr>
<tr><td>MM/DD/YYYY</td><td>MM/DD/YYYY (4 digit year)</td></tr>
<tr><td>MM/DD</td><td>MM/DD</td></tr>
<tr><td>HH:MM</td><td>HH:MM</td></tr>
<tr><td>HH:MM:SS</td><td>HH:MM:SS</td></tr>
<tr><td>YYYY/MM/DD HH:MM:SS</td><td>YYYY/MM/DD HH:MM:SS (4 digit year)</td></tr>
<tr><td>YYYY/MM/DD HH:MM</td><td>YYYY/MM/DD HH:MM (4 digit year)</td></tr>
<tr><td>YY/MM/DD HH:MM:SS</td><td>YY/MM/DD HH:MM:SS (2 digit year)</td></tr>
<tr><td>YY/MM/DD HH:MM</td><td>YY/MM/DD HH:MM (2 digit year)</td></tr>
<tr><td>MM/DD/YYYY HH:MM:SS</td><td>MM/DD/YYYY HH:MM:SS (4 digit year)</td></tr>
<tr><td>MM/DD/YYYY HH:MM</td><td>MM/DD/YYYY HH:MM (4 digit year)</td></tr>
<tr><td>MM/DD HH:MM:SS</td><td>MM/DD HH:MM:SS</td></tr>
<tr><td>MM/DD HH:MM</td><td>MM/DD HH:MM</td></tr>
<tr><td>MM/DD/YY</td><td>MM/DD/YY (2 digit year)</td></tr>
<tr><td>DD/MM/YY</td><td>DD/MM/YY (2 digit year)</td></tr>
<tr><td>DD/MM/YYYY HH:MM:SS</td><td>DD/MM/YYYY HH:MM:SS (4 digit year)</td></tr>
<tr><td>DD/MM/YYYY HH:MM</td><td>DD/MM/YYYY HH:MM (4 digit year)</td></tr>
<tr><td>DD/MM/YY HH:MM:SS</td><td>DD/MM/YY HH:MM:SS (2 digit year)</td></tr>
<tr><td>DD/MM/YY HH:MM</td><td>DD/MM/YY HH:MM (2 digit year)</td></tr>
</table>
</td></tr>
<tr><td>Date (b)</td><td>Sets the date display type.
You can choose among YYYY/MM/DD, YY/MM/DD, MM/DD/YYYY and MM/DD.</td></tr>
<tr><td>Time (c)</td><td>Sets the time display type.
You can choose among HH:MM:SS and HH:MM.</td></tr>
<tr><td>Display day(d)</td><td>Display a day between date and time.
Display day with three alphabet letters in the bracket.
Ex) 15 o'clock 15 minutes 30 seconds on March 23, 2010 Tuesday.
2010/03/23 (Tue) 15:15:30</td></tr>
<tr><td>Fill with 0 (e)</td><td>If date or time is expressed in one digit, fill wit 0.
Ex) 15 o'clock 15 minutes 3 seconds on March 23, 2010 Tuesday (Set to fill with 0)
2010/03/23 15:15:03
Ex) 15 o'clock 15 minutes 3 seconds on March 23, 2010 Tuesday (Not set to fill with 0)
2010/3/23 15:15:3</td></tr>
<tr><td>Preview (f)</td><td>Preview each item that has set according to the method above (type, date, time, weekday, fill with 0) to check it in advance.</td></tr>
<tr><td>The kind of times (g)</td><td>There are two kinds of time for XGT Panel as below.
<table>
<tr><th>Kinds</th><th>Description</th></tr>
<tr><td>System time</td><td>It indicates system time of XGT Panel hardware.</td></tr>
<tr><td>Logging Trend Time</td><td>It indicates the latest time, cursor point time, the oldest time of the data displayed at logging trend object of current XGT Panel screen.</td></tr>
</table>
</td></tr>
</table>

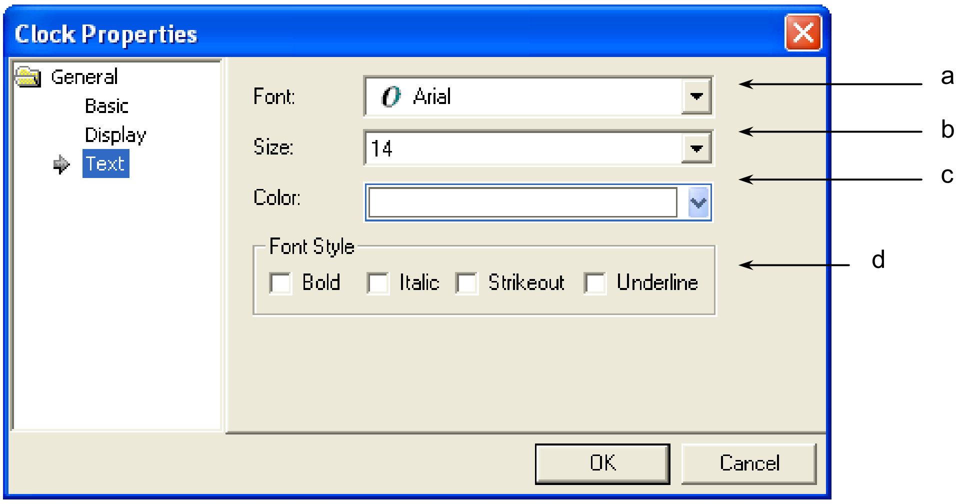
Items	Settings	
		 The latest time The oldest time If there is no logging trend object at a screen, it will be displayed as '-' in accordance with designated format since time can not be indicated.
Description (h)	Enters description in the relevant object.	

(2) Display


Clock Properties
General
Basic
Display
Text
Transparent BG Image
Frame Color:
Plate Color:
Library
Open...
OK
Cancel
a
b
c
d
e

Items	Settings
Library (a)	Selects the form of the clock in the library.
Open (b)	You can directly enter the form of the clock in the user’s image file. (☞ **See 16.2 Display function Setting)**
Transparent BG Image (c)	Check this when you don’t use the background image.
Frame color (d) Plate color (e)	Sets the frame color. The frame color can be set only when the image to be displayed is a vector.  Transparent BG Image Frame Color: Plate Color: Library Open... Vector Image Selected  Transparent BG Image Frame Color: Plate Color: Library Open... Raster Image Selected The frame area and the plate colorarea are different according to the vector image. (☞ **See 16.2 Display function Setting)**

(3) Text


Clock Properties
General
Basic
Display
Text
Font:
Arial
Size:
14
Color:
Font Style
☐ Bold ☐ Italic ☐ Strikeout ☐ Underline
OK
Cancel
a
b
c
d

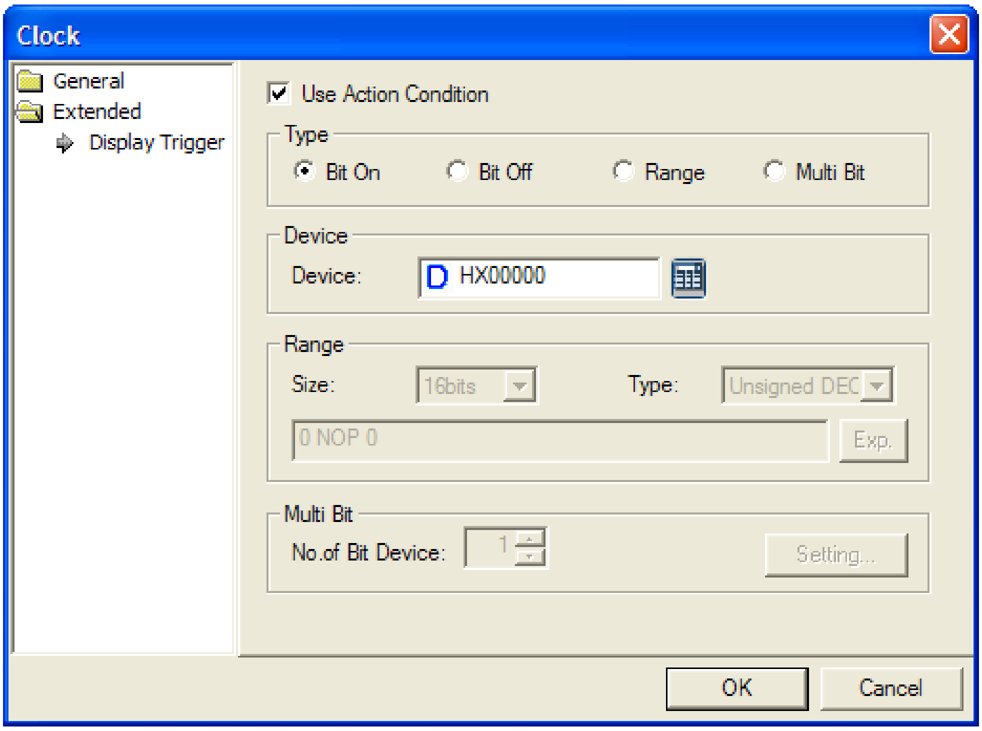
Items	Settings
Font (a)	Sets the type of font to display the clock.
Size (b)	Sets the size of the texts to display the clock.
Color (c)	Sets the color of the texts to display the clock.
Font Style (d)	Sets the font style (Bold, Italic, Strikeout, underlined) in which the clock is displayed. You can select two or more of them at a time.

Note

When it comes to the clock object, alignment, horizontal or vertical, is not available. The middle of the length and width of the object is always the reference point.

(4) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Clock

General
Extended
Display Trigger

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: D HX00000

Range — Size: 16bits Type: Unsigned DEC

0 NOP 0

Multi Bit — No.of Bit Device: 1

Exp.
Setting...
OK
Cancel

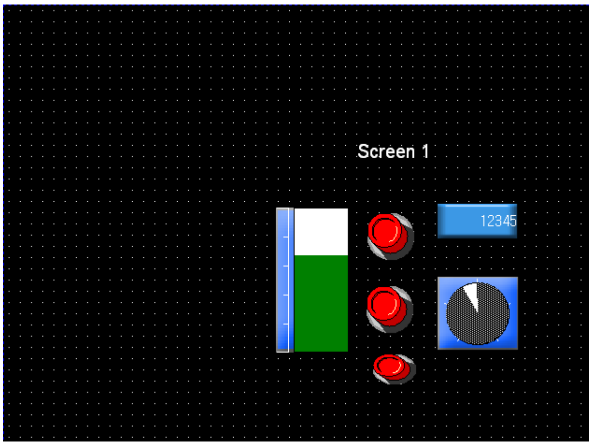
(☞ refer to 16.9 display trigger.)

17.17 Screen Insertion Object

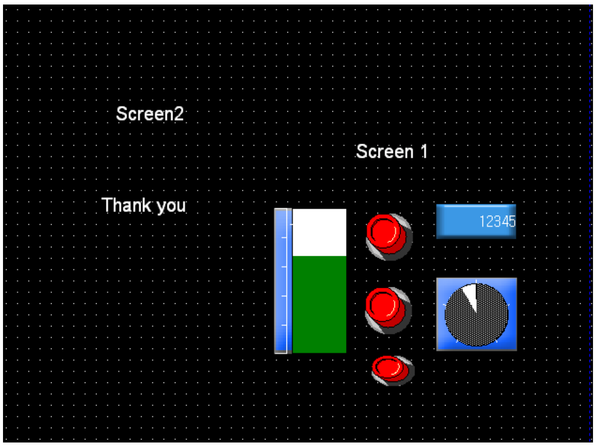
17.17.1 Overview

Screen insertion refers to inserting an entire base screen in the current base screen. You can insert all the edited contents of base screen 1 in basic screen 2 or add and edit a new figure or object in base screen 2.

The beauty about this function is that you can edit a frequently used screen once and then invoke it in another screen.



Editing in base screen 1



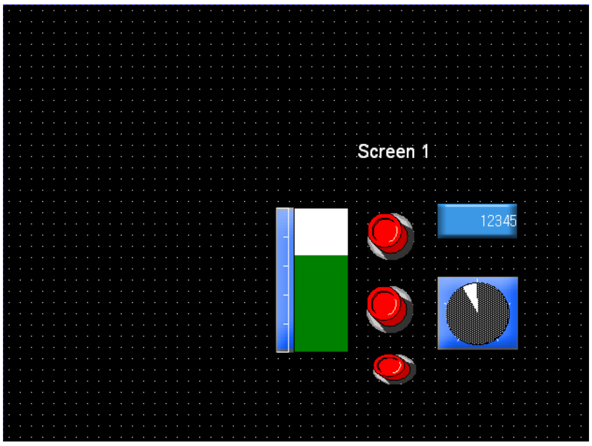
Base screen 1 is invoked in base screen 2 and a new figure is added

As shown in the example above, you can edit frequently edited screen such as the target and output I base screen 1, add the contents of screen 1 in basic screen 2 and then add a figure.

The method is as follows.

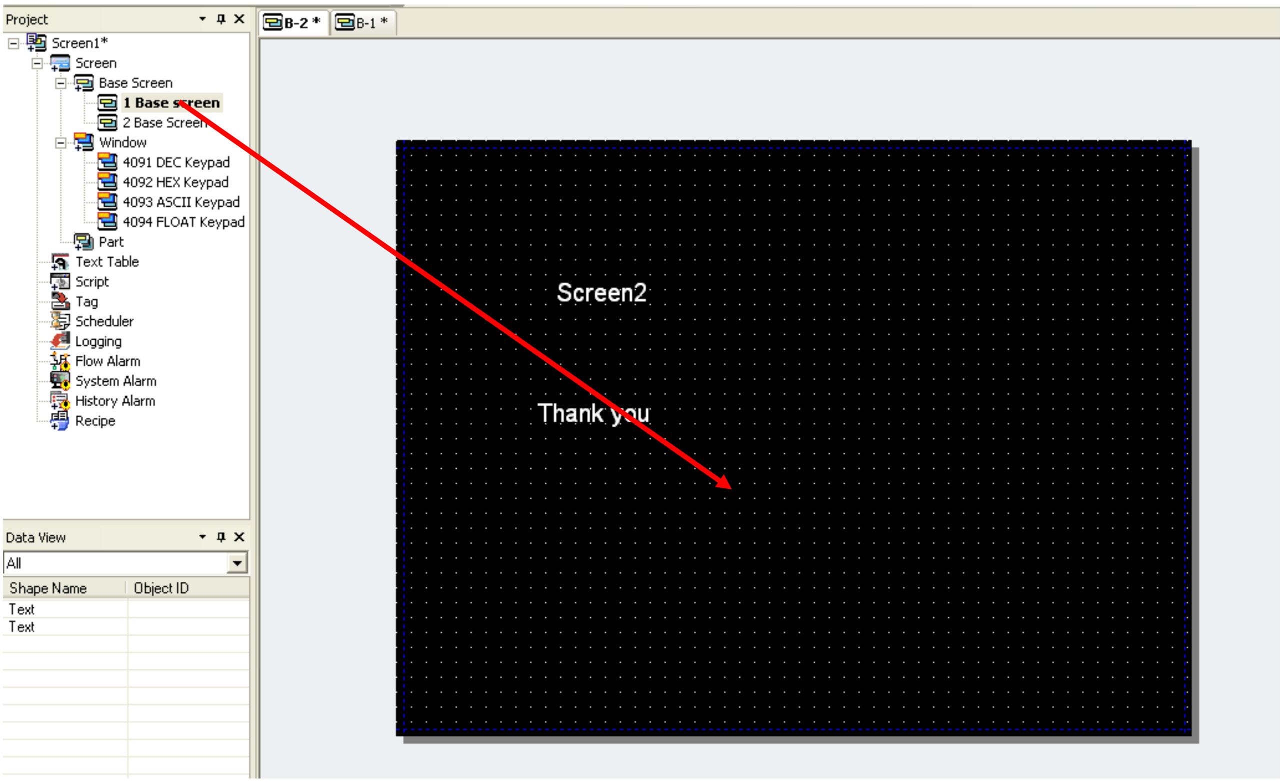
[Sequence]

(a) Edit a frequently used object and figure in base screen 1 as follows.

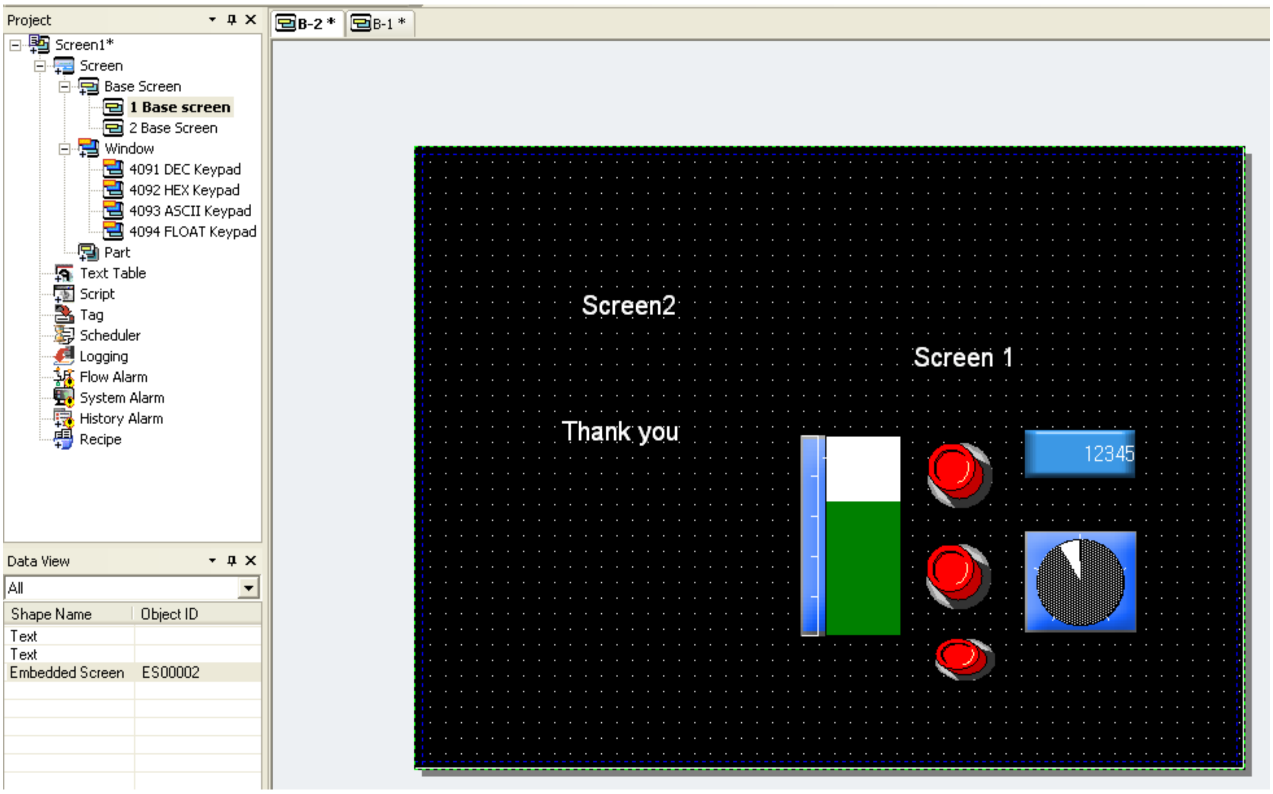


(b) Create base screen 2.

(c) Holding the right button on the mouse on basic screen 1 in the project tree, drag it to basic screen 2as follows.


Project
Screen1*
Screen
Base Screen
1 Base screen
2 Base Screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System Alarm
History Alarm
Recipe
Data View
All
Shape Name
Object ID
Text
Text
B-2 *
B-1 *
Screen2
Thank you

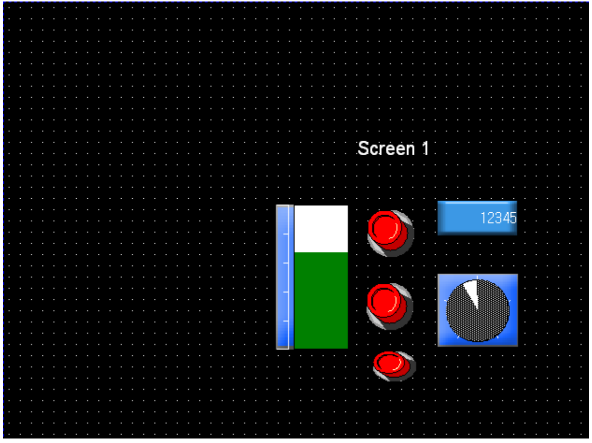
(d) What was edited in basic screen 1 is shown in basic screen 2 as follows.


Project
Screen1*
Screen
Base Screen
1 Base screen
2 Base Screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System Alarm
History Alarm
Recipe
Data View
All
B-2 *
B-1 *
Screen2
Screen 1
Thank you
12345

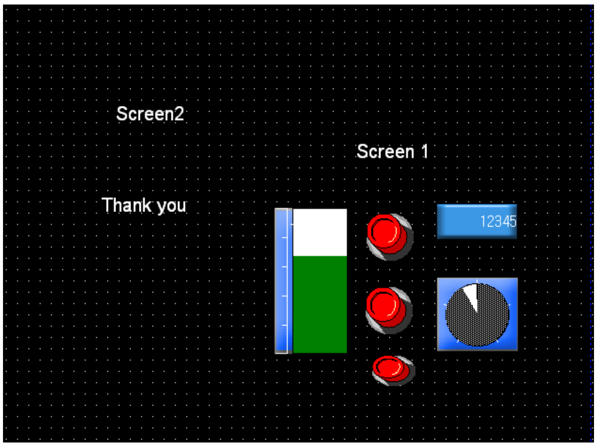
Shape Name	Object ID
Text	
Text	
Embedded Screen	ES00002

Note

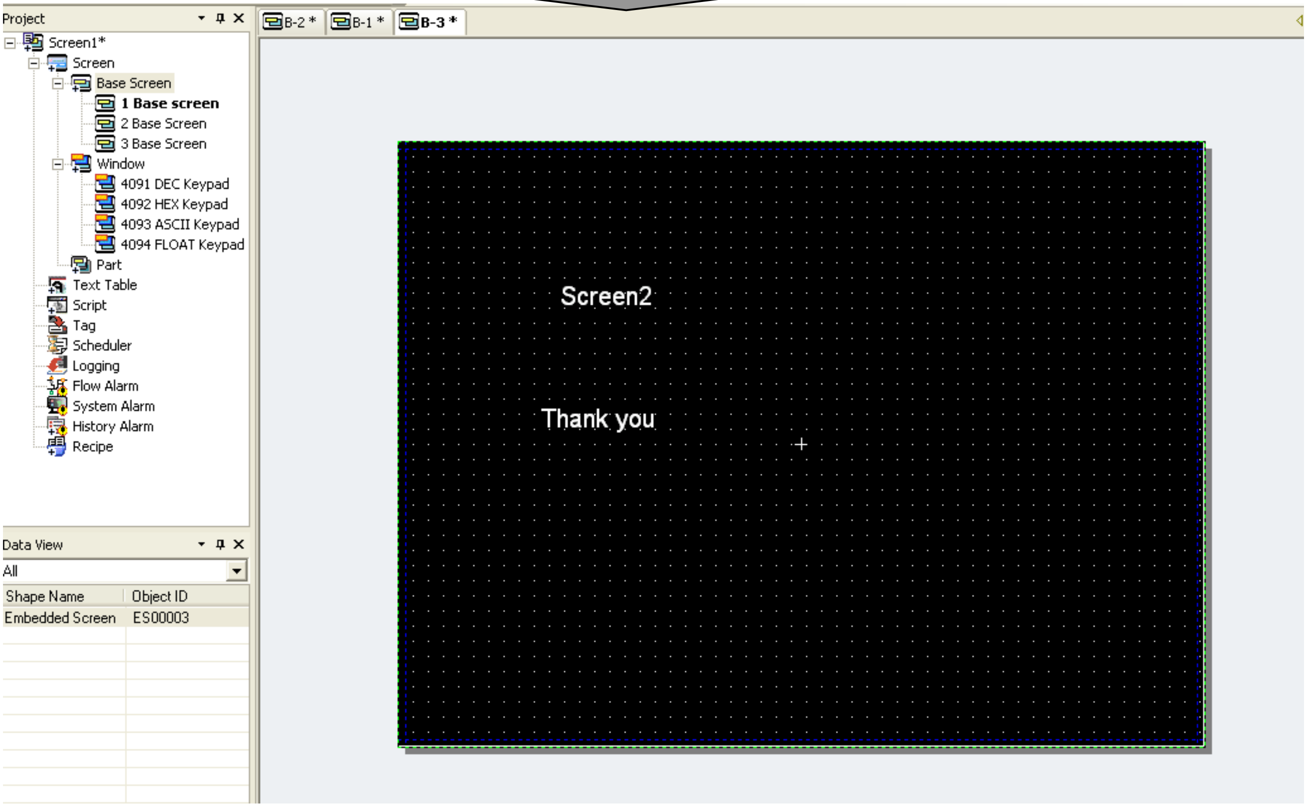
A screen cannot be inserted into itself.
If you insert a screen in which another screen is inserted, the part inserted in the first screen is not inserted in the third screen.
Example) In the example below, base screen 1 is inserted into base screen 2. Then, when you insert base screen 2 into base screen 3, base screen 1 is not inserted but only base screen 2 is inserted.


Screen 1
12345

Editing in base screen 1


Screen2
Screen 1
Thank you
12345

Base screen 1 is invoked in base screen 2 and a new figure is added

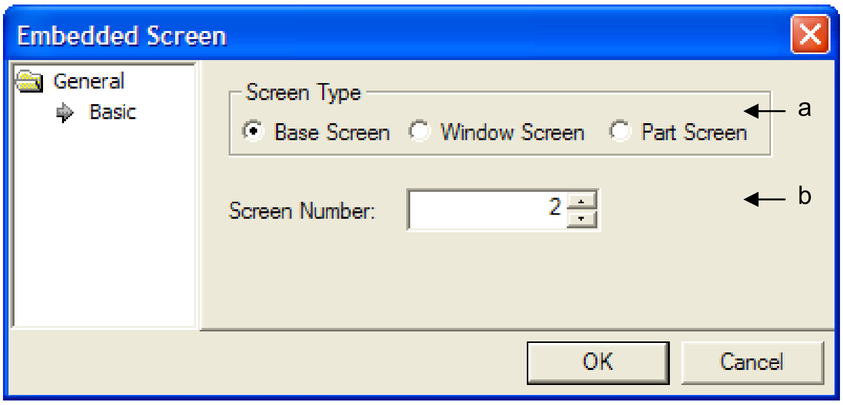

Project
Screen1*
Screen
Base Screen
1 Base screen
2 Base Screen
3 Base Screen
Window
4091 DEC Keypad
4092 HEX Keypad
4093 ASCII Keypad
4094 FLOAT Keypad
Part
Text Table
Script
Tag
Scheduler
Logging
Flow Alarm
System Alarm
History Alarm
Recipe
Data View
All
B-2 *
B-1 *
B-3 *
Screen2
Thank you

Shape Name	Object ID
Embedded Screen	ES00003

Only the editing result in base screen 2 is inserted into base screen 3.

17.17.2 Items to set the object to be inserted to a screen

(1) Basic Items


Embedded Screen
General
Basic
Screen Type
● Base Screen ○ Window Screen ○ Part Screen
a
Screen Number: 2
b
OK
Cancel

Item	Description
The Kind of Screens (a)	Setting the kind of screens to be inserted.
Screen No.(b)	Setting the screen No. to be inserted.

Note

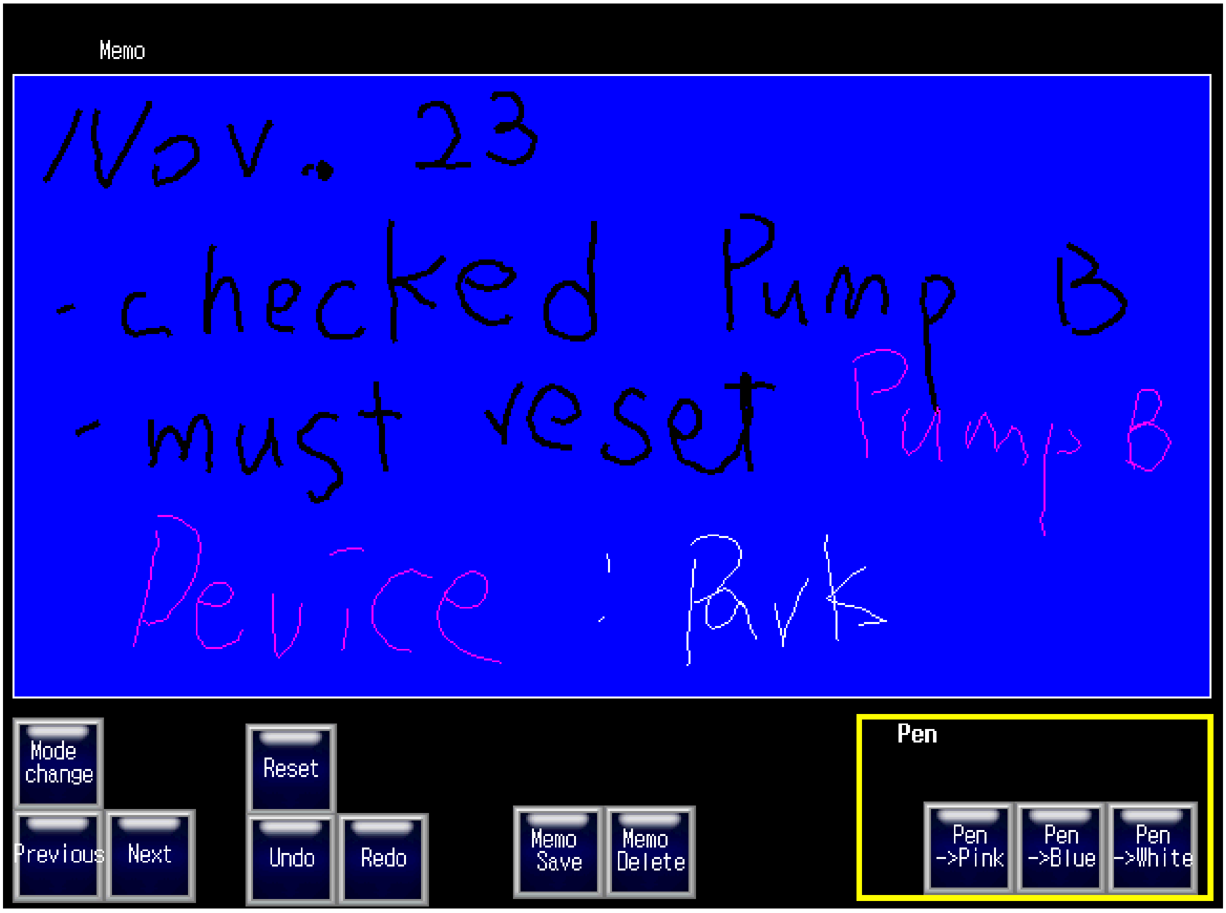
When insert shot is applied to other screen, the below restrictions are expected.

1. Although you apply background to inset shot, it will not be shown.
2. The script established for insert shot does not work.
3. You can not add another insert shot to the existing one since it can cause malfunction of the device.
4. You can not put the inset shot with the same number in a basic screen.

17.18 Memo Pad Object

17.18.1 Overview

Through Memo pad, a user can display·save the specific state as picture, symbol, character when XGT Panel is under operation. If a user moves the pen at memo pad area with keeping touch, it displays the trace. The displayed memo can be saved and you can also load the previous memo with deletion and revision.



Nov. 23

- checked Pump B

- must reset Pump B

Device : Park

Memo
Mode change
Previous
Next
Reset
Undo
Redo
Memo Save
Memo Delete
Pen
Pen ->Pink
Pen ->Blue
Pen ->White

[Method]

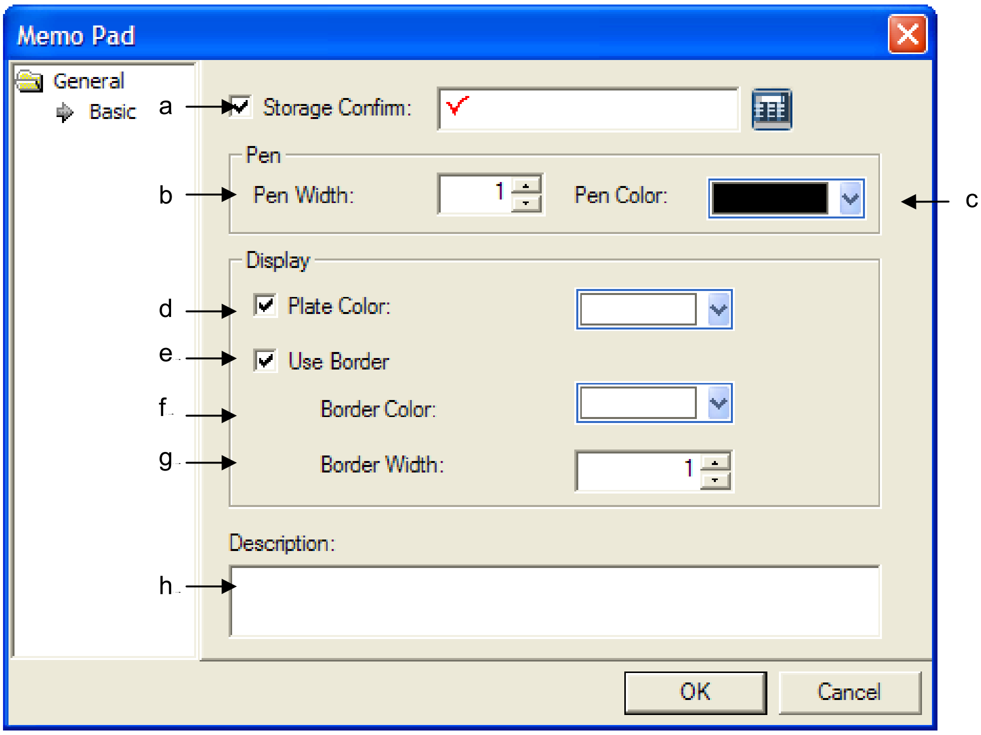
(a) Create a memo pad at the screen.

(b) Set up each item at [Basic Items] of a memo pad.

(c) Create the special switch related to memo pad.

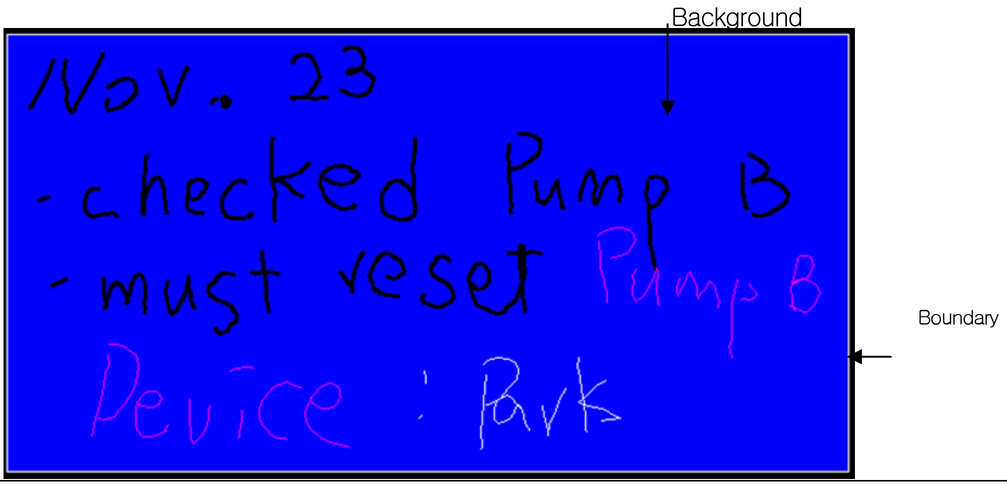
17.18.2 Items to set Memo pad object

(1) Basic Items



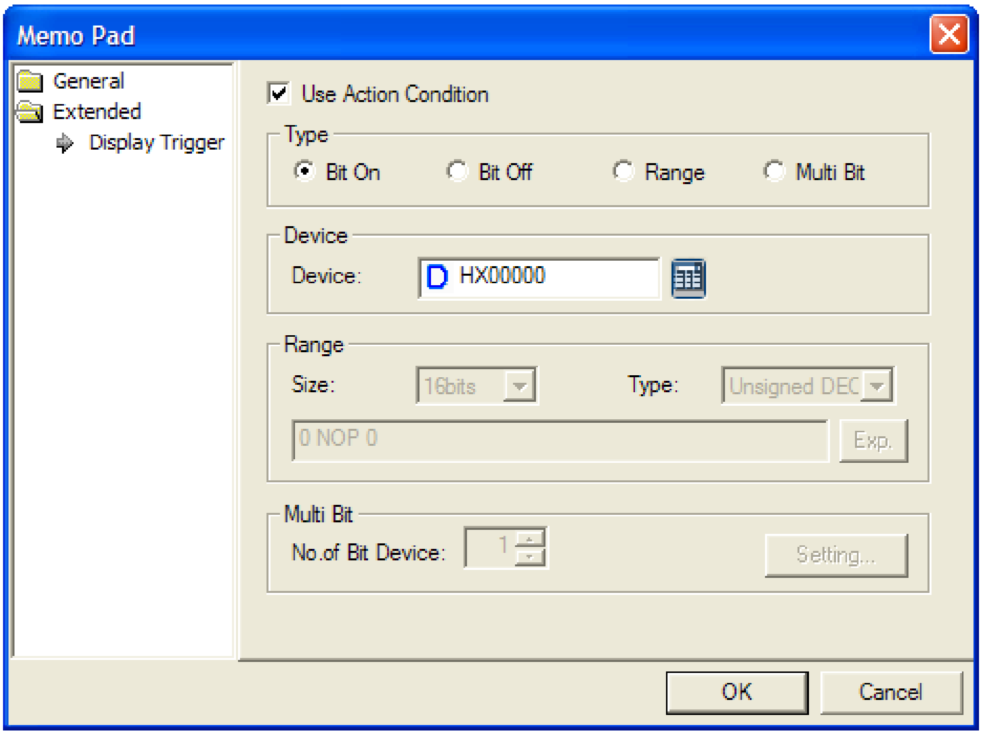
Memo Pad
General
Basic
a
☑ Storage Confirm:
b
Pen
Pen Width: 1
Pen Color:
c
Display
d
☑ Plate Color:
e
☑ Use Border
f
Border Color:
g
Border Width: 1
Description:
h
OK
Cancel

<table>
<tr><th>Item</th><th>Setting Description</th></tr>
<tr><td>Status Check(a)</td><td>You can check the memo status displayed at XGT Panel now. If you try to save the displayed memo, you can establish the device address to check the memo status.

The status for each device bit is as below.
<table><tr><td>15</td><td>…</td><td>11</td><td>10</td><td>09</td><td>08</td><td>07</td><td>06</td><td>05</td><td>04</td><td>03</td><td>02</td><td>01</td><td>00</td></tr></table>
<table>
<tr><th>Device Bit</th><th>Description</th></tr>
<tr><td>00</td><td>While the status that memo input is available is called Active mode, the status that memo input is not available is called Non-Active mode.
00 bit indicates Active/Non-Active status. Namely, in the case of Active mode, 00 bit is On, in the case of Non-Active mode, it is displayed as Off.</td></tr>
<tr><td>01</td><td>[Save] of a special switch saves the XGT Panel's memo displayed now and 01 bit indicates whether save process is successful or not.</td></tr>
<tr><td>02</td><td>[Deletion] of a special switch deletes the XGT Panel's memo displayed now and 02 bit indicates whether deletion process is successful or not.</td></tr>
</table></td></tr>
<tr><td>Pen Thickness(b)</td><td>Setting the pen thickness of a memo pad and it can range between min.1 and max.30.</td></tr>
<tr><td>Pen Color(c)</td><td>Setting the pen color of a memo pad.</td></tr>
<tr><td>Memo pad's Background color(d)</td><td>Setting the background color of a memo pad.
 </td></tr>
<tr><td>Whether using boundary or not (e)</td><td>Establishing whether boundary will be used for a memo pad or not.</td></tr>
<tr><td>Boundary Color(f)</td><td>Selecting boundary color of a memo pad.</td></tr>
<tr><td>Boundary Thickness (g)</td><td>Setting the boundary thickness of a memo pad</td></tr>
<tr><td>Explanation(h)</td><td>You can input explanation for the object.</td></tr>
</table>

(2) Display trigger

Display trigger make the object displayed or not on the XGT Panel screen depending on the device status



Memo Pad
General
Extended
Display Trigger
OK
Cancel
Exp.
Setting...

☑ Use Action Condition

Type: ● Bit On ○ Bit Off ○ Range ○ Multi Bit

Device: HX00000

Range: Size: 16bits Type: Unsigned DEC
0 NOP 0

Multi Bit: No.of Bit Device: 1

(☞ refer to 16.9 display trigger.)

Chapter 18 Script

In this chapter, we are going to learn how to set and use scripts in XP Builder.
Scripts have been designed to control the display in XP Builder.
The following describes the script specifications and how to use them.

18.1 Characteristics of Scripts

(1) You can easily maintain the system by using scripts.
(2) You can control various displays by using scripts.
  (a) A variety of functions are available.
  (b) Complex mathematical operations can be easily performed.
(3) An easy-to-use programming language is provided. (in the form of limited C language)
(4) Programming editors generally available are provided.
(5) Each script can be selected and performed conditionally.
(6) Created scripts are grammatical validated.

18.2 Script Specifications

18.2.1 Specifications

Item	Command	Description
Control statement	If statement	"if" "(" Conditional")" Statement { "else" Statement }
		This command performs the statement if true(a value other than 0) as a result of judgment of the condition and shifts to the location next to the statement if false.
	For statement	"for" "(" [Expression] ";" [Conditional] ";" [Expression] ")" Statement
		This command repeats the statement if true(a value other than 0) as a result of judgment of the condition and shifts to the location next to the statement if false.
	While statement	"while" "(" Conditional ")" Statement
		This command repeats the statement if true(a value other than 0) as a result of judgment of the condition and shifts to the location next to the statement if false.
	Do while statement	"do" Statement "while" "(" Conditional ")" ";"
		This command shifts to the Do location and performs the statement if true(a value other than 0) as a result of judgment of the condition and shifts to another location if false.
	Return statement	"return" [Expression] ";"
		Ends the script.
	Break statement	“break” ";"
		The break statement within the loop gets out of the loop wrapping the break.
	Continue statement	“continue” ";"
		Skips the remaining part within the loop and shifts to the next loop execution.

Item	Command		Description
Operator	Logic	&&	<Term 1> && <Term 2>
			Provides 1 if both <Term 1> and <Term 2> are true and 0 otherwise.
		||	<Term 1> || <Term 2>
			Provides 1 if both <Term 1> and <Term 2> are false and 0 otherwise.
		!	! <Term>
			Provides 1 if <Term> is 0 and otherwise 0.
	Relational	<	<Term 1> < <Term 2>
			Provides 1 if <Term 1> is smaller than <Term 2> and otherwise 0.
		<=	<Term 1> <= <Term 2>
			Provides 1 if <Term 1> is smaller than or equal to <Term 2> and otherwise 0.
		>	<Term 1> > <Term 2>
			Provides 1 if <Term 1> is larger than <Term 2> and otherwise 0.
		>=	<Term 1> >= <Term 2>
			Provides 1 if <Term 1> is larger than or equal to <Term 2> and otherwise 0.
		!=	<Term 1> != <Term 2>
			Provides 1 if <Term 1> is not equal to <Term 2> and otherwise 0.
		==	<Term 1> == <Term 2>
			Provides 1 if <Term 1> is equal to <Term 2> and otherwise 0.
	Arithmetic	+	<Term> + <factor>
			Adds <Term> to <factor>.
		-	<Term> - <factor>
			Subtracts <factor> from <Term>.
		*	<Term> * <factor>
			Multiplies <Term> by <factor>.
		/	<Term> / <factor>
			Divides <Term> by <factor>.
		%	<Term> % <factor>
			Divides <Term> by <factor> and takes the residual.
	Bit	&	<Term> & <factor>
			Performs the bit operation(AND) of <Term> and <factor>.
		|	<Term> | <factor>
			Performs the bit operation(OR) of <Term> or <factor>.
		~	~ <bit>
			Reverses the <bit> value.
		^	<Term> ^ <factor>
			Performs the bit operation(EOR) of <Term> or <factor>.
		<<	<Term> << <factor>
			Shifts <Term> to the left by the value of <factor>.
		>>	<Term> >> <factor>
			Shifts <Term> to the right by the value of <factor>.

Item	Command		Description
Operator	Assignment	=	<Device> = <term>
			Assigns the value of <term> to <Device>.
		+=	<Device> += <term>
			Adds <term> to <Device> and assigns the value of the result of the operation to <Device>.
		-=	<Device> -= <term>
			Subtracts <term> from <Device> and assigns the value of the result of the operation to <Device>.
		*=	<Device> *= <term>
			Multiplies <Device> by <term> and assigns the value of the result of the operation to <Device>.
		/=	<Device> /= <term>
			Divides <Device> by <term> and assigns the value of the result of the operation to <Device>.
		%=	<Device> %= <term>
			Divides <Device> by <term> and takes the residue and then assigns the value of the result of the operation to <Device>.
		|=	<Device> |= <term>
			Performs the bit operation(AND) of <term> to <Device> and assigns the value of the result of the operation to <Device>.
		&=	<Device> &= <term>
			Performs the bit operation(OR) of <term> to <Device> and assigns the value of the result of the operation to <Device>.
		^=	<Device> ^= <term>
			Performs the bit operation(EOR) of <term> to <Device> and assigns the value of the result of the operation to <Device>.
		<<=	<Device> <<= <term>
			Shifts <Device> to the left by <term> and assigns the value of the result of the operation to <Device>.
		>>=	<Device> >>= <term>
			Shifts <Device> to the right by <term> and assigns the value of the result of the operation to <Device>.
	Increment/decrement operator	++	++ <Device> / <Device> ++
			Increases <Device> by 1.
		–	– <Device> / <Device> –
			Decreases <Device> by 1.

18.2.2. Detailed Specifications

(1) Control Statements

(a) if Statement

Form) "if" "(" Conditional")" Statement { "else" Statement }

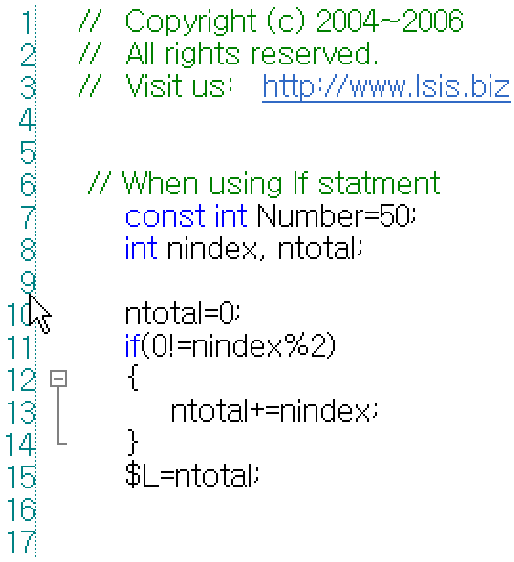
Function)

The statement is performed if the conditional is judged as true but otherwise is skipped.

That is, the two amounts are compared as x > y and c = = 6. If the expression is true(x is larger than y or c equals 6), the statement is performed and otherwise it is ignored. In general, any expression can be used and the expressions with 0 are considered false. For the statement, either a single sentence or a block displayed as {} might come.

Example of use in the program)

1) Only the if statement is used



```
//  Copyright (c) 2004~2006
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 // When using If statment
    const int Number=50;
    int nindex, ntotal;

    ntotal=0;
    if(0!=nindex%2)
    {
        ntotal+=nindex;
    }
    $L=ntotal;


```
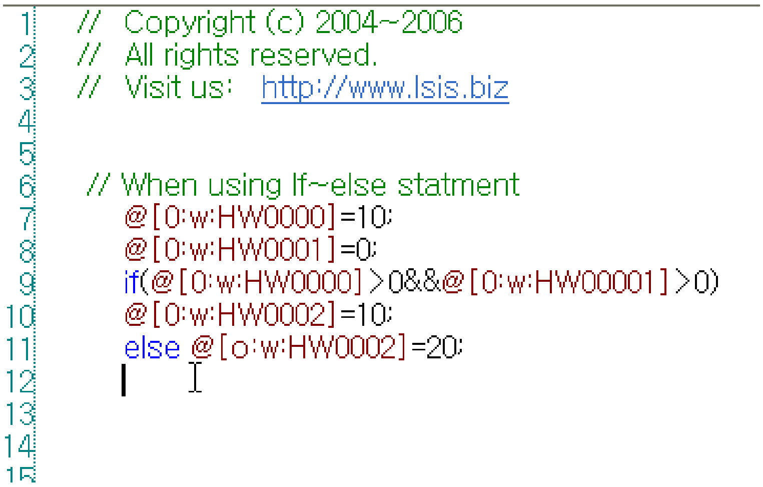

2) if~else statements are used



```
//  Copyright (c) 2004~2006
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 // When using If~else statment
    @[0:w:HW0000]=10;
    @[0:w:HW0001]=0;
    if(@[0:w:HW0000]>0&&@[0:w:HW00001]>0)
    @[0:w:HW0002]=10;
    else @[o:w:HW0002]=20;



```

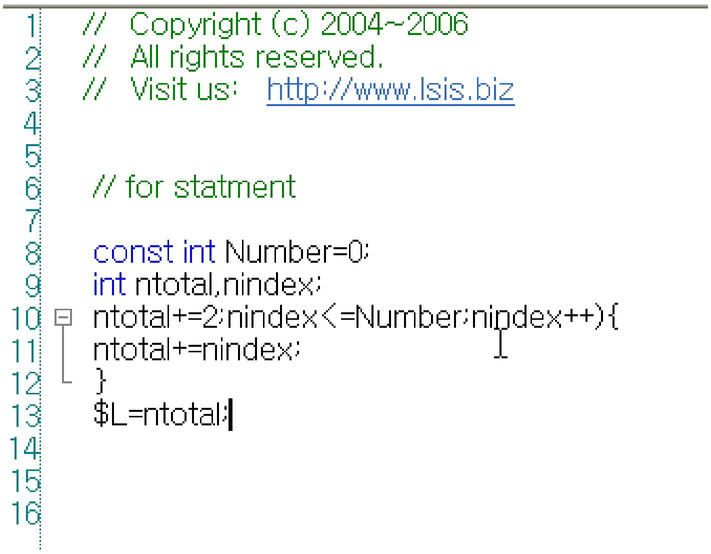
(b) For Statement

Form) "for" "(" [Expression] ";" [Conditional] ";" [Expression] ")" Statement

Function)

The parentheses coming after “for” includes three expressions separated by two semi-colons. The first expression, which is the initialization method, operates only once when the for loop starts. The second expression is the conditional check method and carried out a check before the loop starts. If the expression is false, the loop ends. The third expression is the part where the value is change or renewed and operates at the end of the loop. The for statement is completed by a simple statement or a compound statement coming next.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 // for statment

 const int Number=0;
 int ntotal,nindex;
 ntotal+=2;nindex<=Number;nindex++){
 ntotal+=nindex;
 }
 $L=ntotal;
```

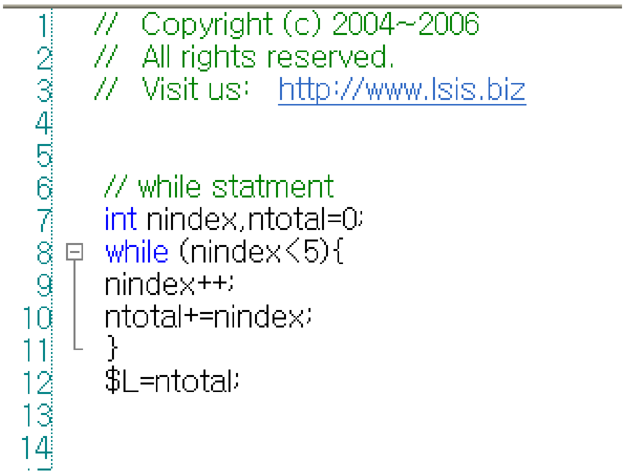
(c) While Statement

Form) "while" "(" Conditional ")" Statement

Function)

The statement might be a simple statement with a semicolon or a compound statement contained by { }. Any type of expression can be used for the conditional. If the conditional is true(in general, if it is not 0), the statement is performed once and the conditional is checked. This conditional check and execution cycle repeats itself until the conditional is 0.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 // while statment
 int nindex,ntotal=0;
 while (nindex<5){
 nindex++;
 ntotal+=nindex;
 }
 $L=ntotal;
```

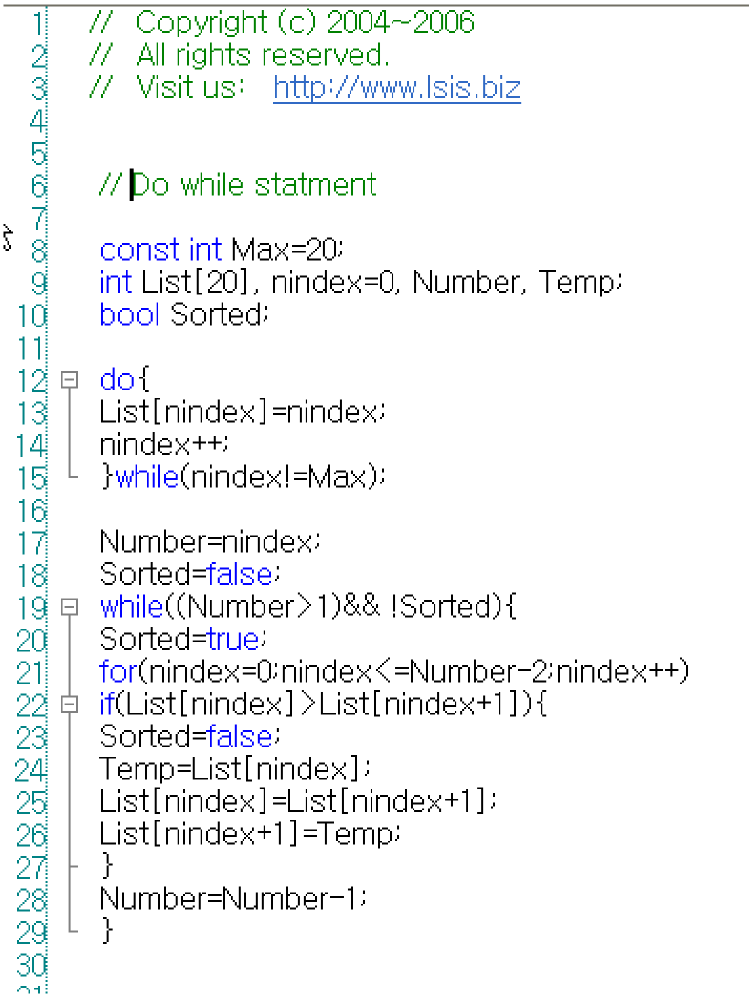
(d) Do~while Statement

Form) "do" Statement "while" "(" Conditional ")" ";"

Function)

The statement might be a simple statement or a compound statement. The Do while loop is itself considered as a statement, so it requires a semicolon. The conditional check of Do while loop is done after the loop body is executed, so it is performed at least once. By contrast, the for loop or while loop conditionals are checked before execution, so they might not be performed at all. The Do while loop shall be used if the loop should be performed at least once.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 //Do while statment

 const int Max=20;
 int List[20], nindex=0, Number, Temp;
 bool Sorted;

 do{
 List[nindex]=nindex;
 nindex++;
 }while(nindex!=Max);

 Number=nindex;
 Sorted=false;
 while((Number>1)&& !Sorted){
 Sorted=true;
 for(nindex=0;nindex<=Number-2;nindex++)
 if(List[nindex]>List[nindex+1]){
 Sorted=false;
 Temp=List[nindex];
 List[nindex]=List[nindex+1];
 List[nindex+1]=Temp;
 }
 Number=Number-1;
 }
```
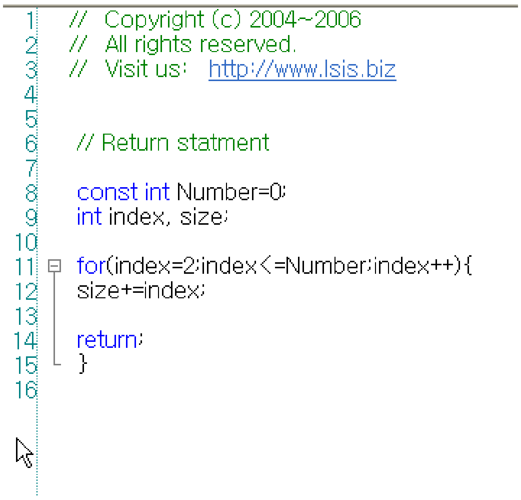

(e) Return Statement

Form) "return" ";"

Function) Ends the script.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 // Return statment

 const int Number=0;
 int index, size;

 for(index=2;index<=Number;index++){
 size+=index;

 return;
 }
```

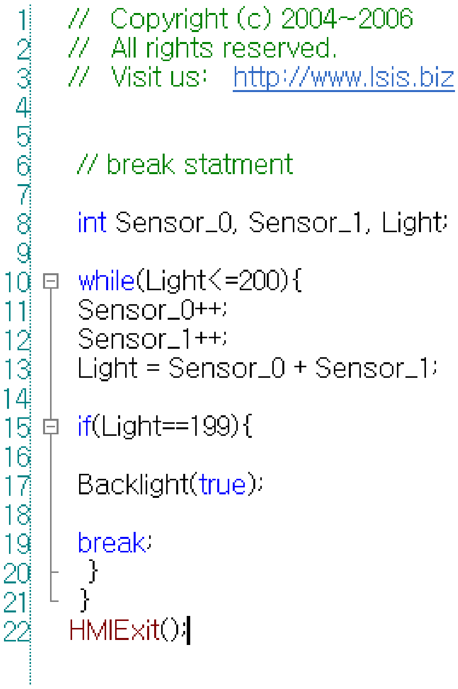
(f) Break Statement

Form) "break" ";"

Function) This statement makes the break statement in the loop get out of the loop wrapping the break and proceed to the next step of the program.

If the break statement is within the nested loop, it only affects the loop which is furthest inwards in the program.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 // break statment

 int Sensor_0, Sensor_1, Light;

 while(Light<=200){
 Sensor_0++;
 Sensor_1++;
 Light = Sensor_0 + Sensor_1;

 if(Light==199){

 Backlight(true);

 break;
  }
 }
HMIExit();
```
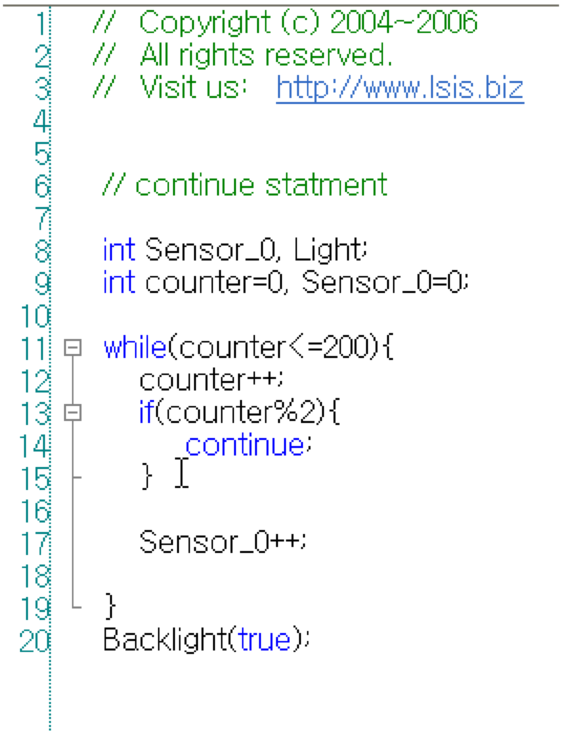

(g) continue Statement

Form) “continue” ";"

Function) Skips remaining part and shifts to next loop execution. If the continue statement is within the nested loop, it only affects the internal loop structure containing it.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 // continue statment

 int Sensor_0, Light;
 int counter=0, Sensor_0=0;

 while(counter<=200){
    counter++;
    if(counter%2){
        continue;
    }

    Sensor_0++;

 }
 Backlight(true);
```

(2) Operator

(a) Logic Operator

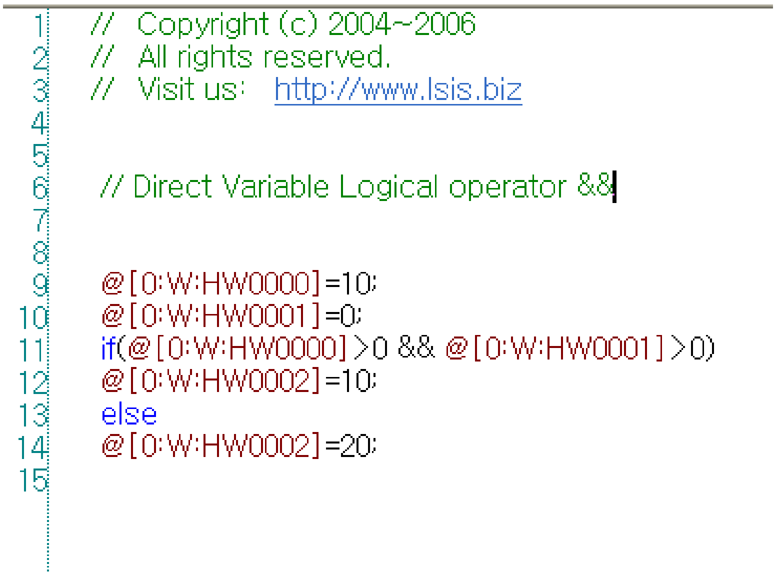
1) && Operator

Form) <Term 1> **&&** <Term 2>

Function) Provides 1 if both <Term 1> and <Term 2> are true and otherwise 0.

Example of use in the program)

a) Direct Variable



```
//  Copyright (c) 2004~2006
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 // Direct Variable Logical operator &&


 @[0:W:HW0000]=10;
 @[0:W:HW0001]=0;
 if(@[0:W:HW0000]>0 && @[0:W:HW0001]>0)
 @[0:W:HW0002]=10;
 else
 @[0:W:HW0002]=20;

```
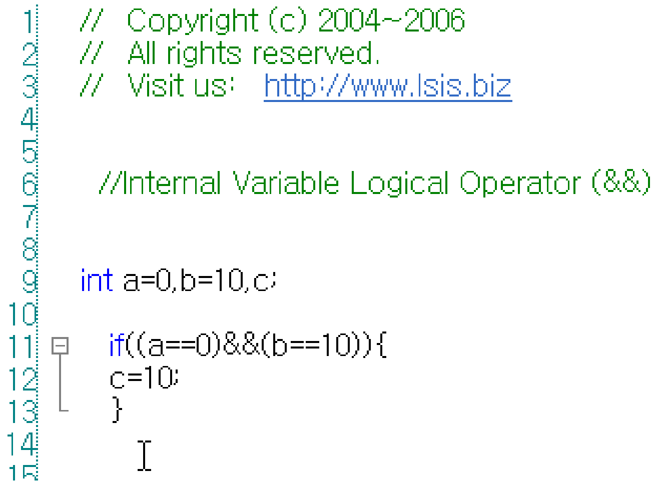

b) Internal Variable



```
//  Copyright (c) 2004~2006
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  //Internal Variable Logical Operator (&&)


int a=0,b=10,c;

   if((a==0)&&(b==10)){
   c=10;
   }

```
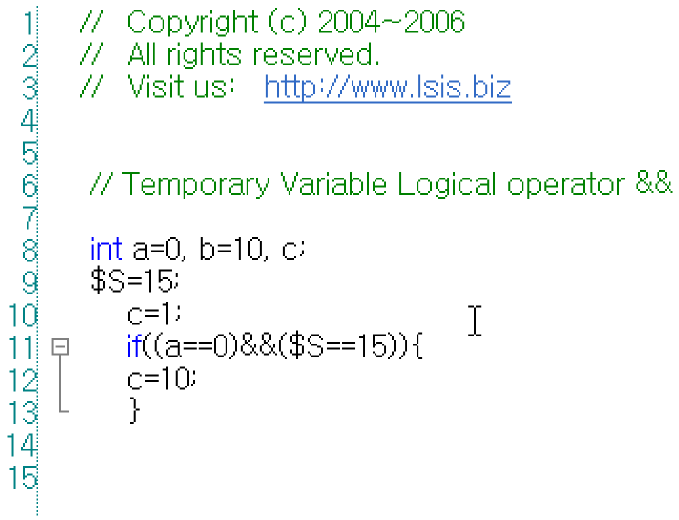

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 // Temporary Variable Logical operator &&

 int a=0, b=10, c;
 $S=15;
    c=1;
    if((a==0)&&($S==15)){
    c=10;
    }
```

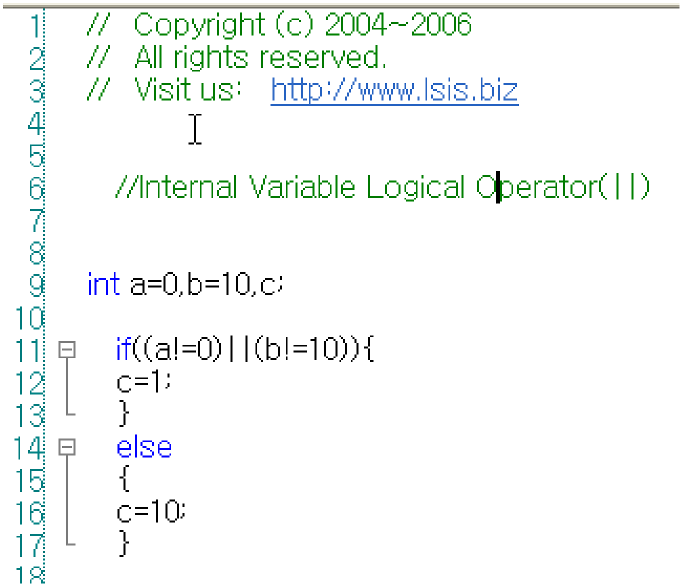
2) || Operator

Form) <Term 1> **||** <Term 2>

Function) Provides 0 if both <Term 1> and <Term 2> are false and otherwise 1.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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   //Internal Variable Logical Operator(||)


int a=0,b=10,c;

   if((a!=0)||(b!=10)){
   c=1;
   }
   else
   {
   c=10;
   }
```
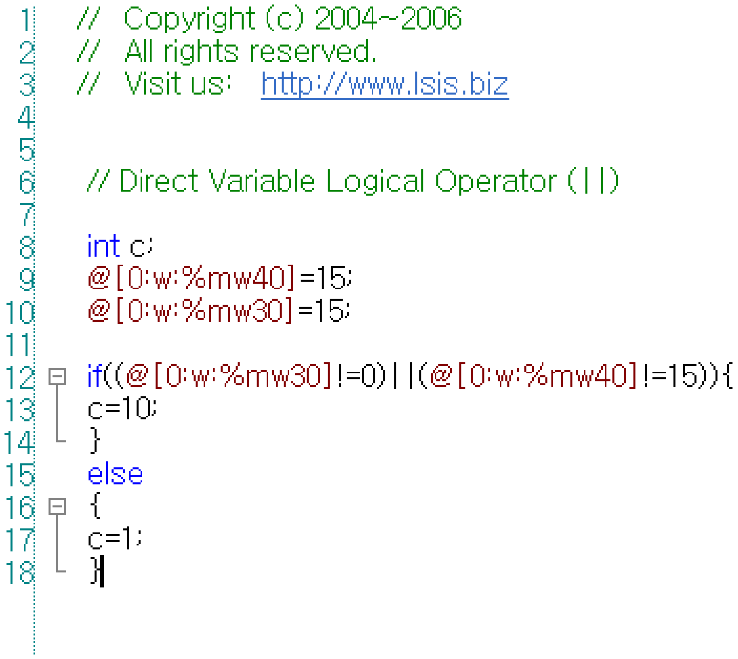

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 // Direct Variable Logical Operator (||)

 int c;
 @[0:w:%mw40]=15;
 @[0:w:%mw30]=15;

 if((@[0:w:%mw30]!=0)||(@[0:w:%mw40]!=15)){
 c=10;
 }
 else
 {
 c=1;
 }
```
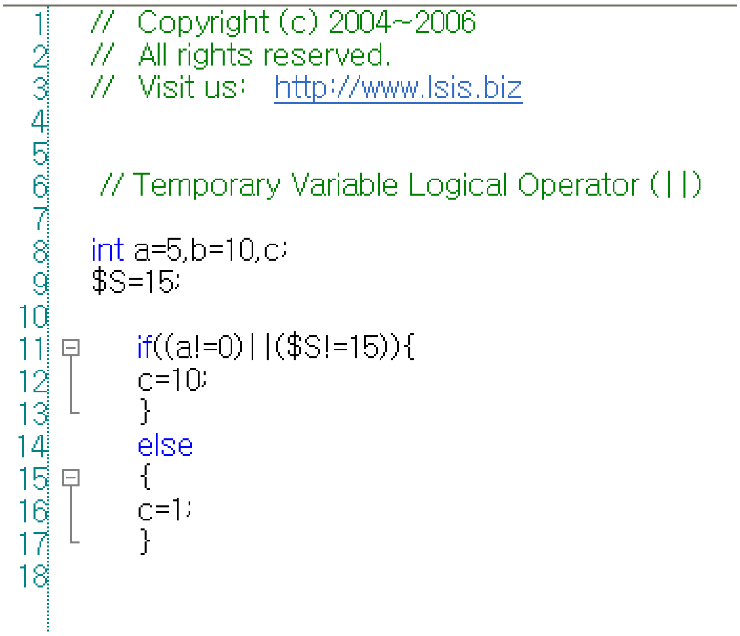

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 // Temporary Variable Logical Operator (||)

int a=5,b=10,c;
$S=15;

    if((a!=0)||($S!=15)){
    c=10;
    }
    else
    {
    c=1;
    }
```

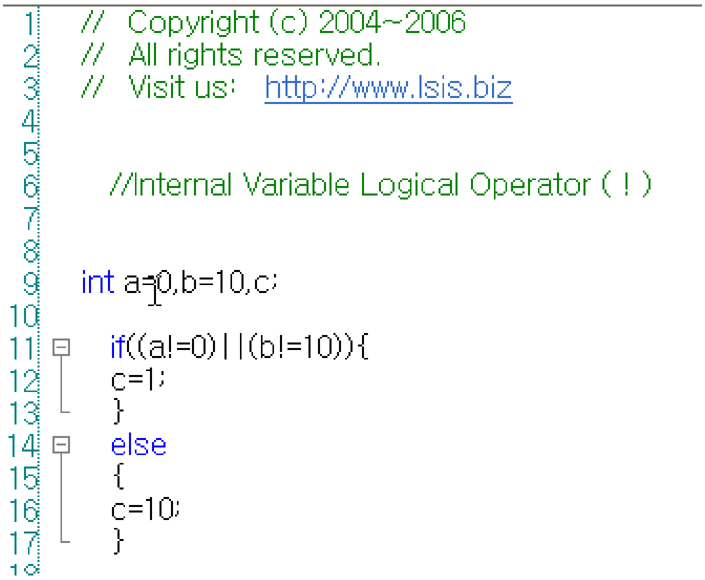
3) ! Operator

Form) **!** <Term>

Function) Provides 1 if <Term> is 0 and otherwise 0.

Example of use in the program)

a) Internal Variable



```
// Copyright (c) 2004~2006
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   //Internal Variable Logical Operator ( ! )


int a=0,b=10,c;

   if((a!=0)||(b!=10)){
   c=1;
   }
   else
   {
   c=10;
   }
```
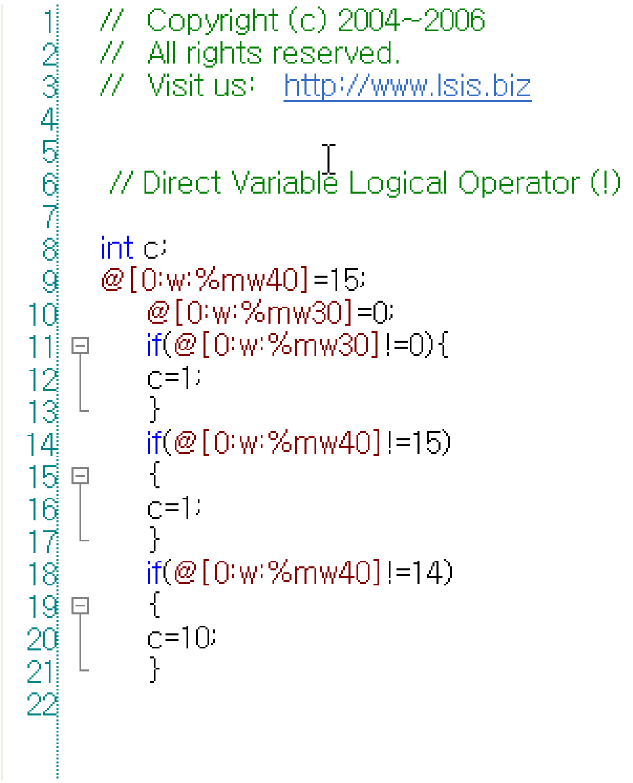

b) Direct Variable



```
// Copyright (c) 2004~2006
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 // Direct Variable Logical Operator (!)

int c;
@[0:w:%mw40]=15;
    @[0:w:%mw30]=0;
    if(@[0:w:%mw30]!=0){
    c=1;
    }
    if(@[0:w:%mw40]!=15)
    {
    c=1;
    }
    if(@[0:w:%mw40]!=14)
    {
    c=10;
    }
```
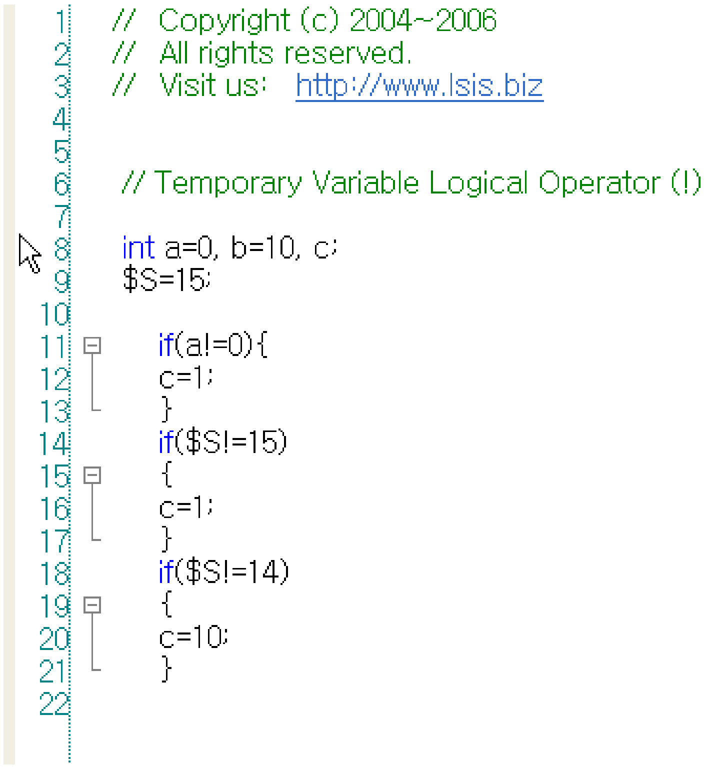

c) Temporary Variable



```
// Copyright (c) 2004~2006
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 // Temporary Variable Logical Operator (!)

 int a=0, b=10, c;
 $S=15;

    if(a!=0){
    c=1;
    }
    if($S!=15)
    {
    c=1;
    }
    if($S!=14)
    {
    c=10;
    }
```

(b) Relational Operator

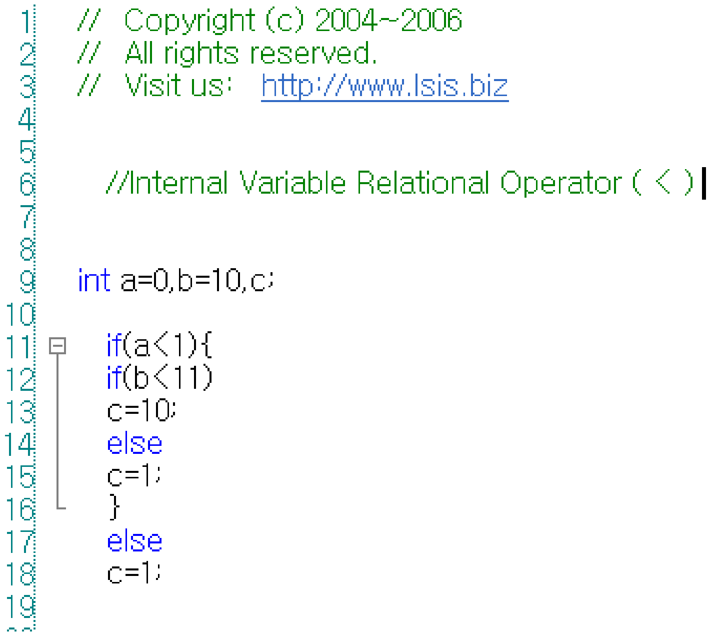
1) < Operator

Form) <Term 1>   < <Term 2>

Function) Provides 1 if <Term 1> is smaller than <Term 2> and otherwise 0

Example of use in the program)

a) Internal Variable



```
// Copyright (c) 2004~2006
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   //Internal Variable Relational Operator ( < )


int a=0,b=10,c;

   if(a<1){
   if(b<11)
   c=10;
   else
   c=1;
   }
   else
   c=1;
```
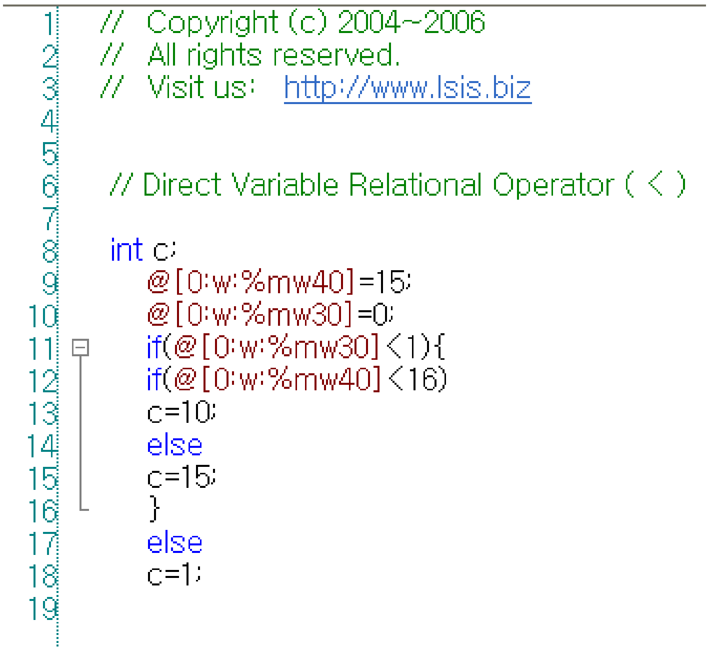

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 // Direct Variable Relational Operator ( < )

 int c;
    @[0:w:%mw40]=15;
    @[0:w:%mw30]=0;
    if(@[0:w:%mw30]<1){
    if(@[0:w:%mw40]<16)
    c=10;
    else
    c=15;
    }
    else
    c=1;
```
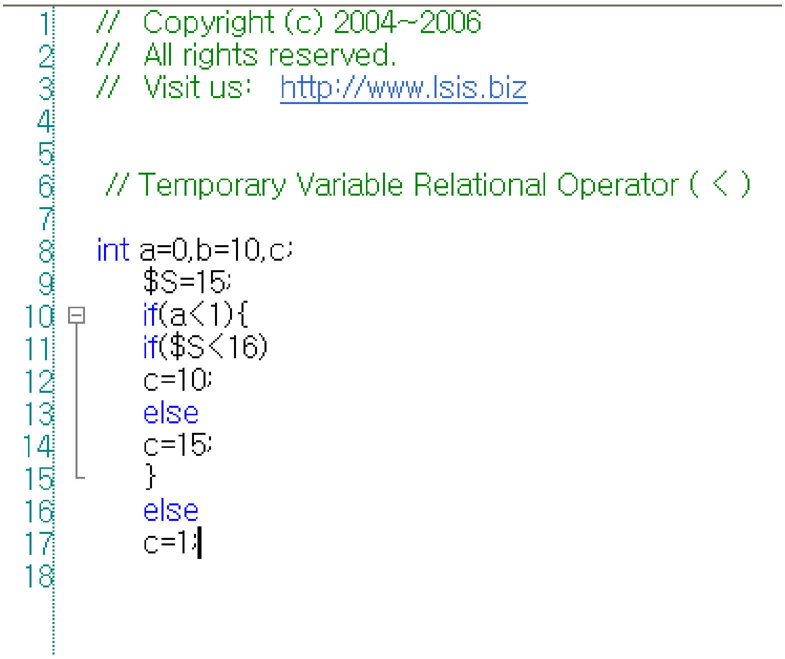

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 // Temporary Variable Relational Operator ( < )

int a=0,b=10,c;
    $S=15;
    if(a<1){
    if($S<16)
    c=10;
    else
    c=15;
    }
    else
    c=1;
```

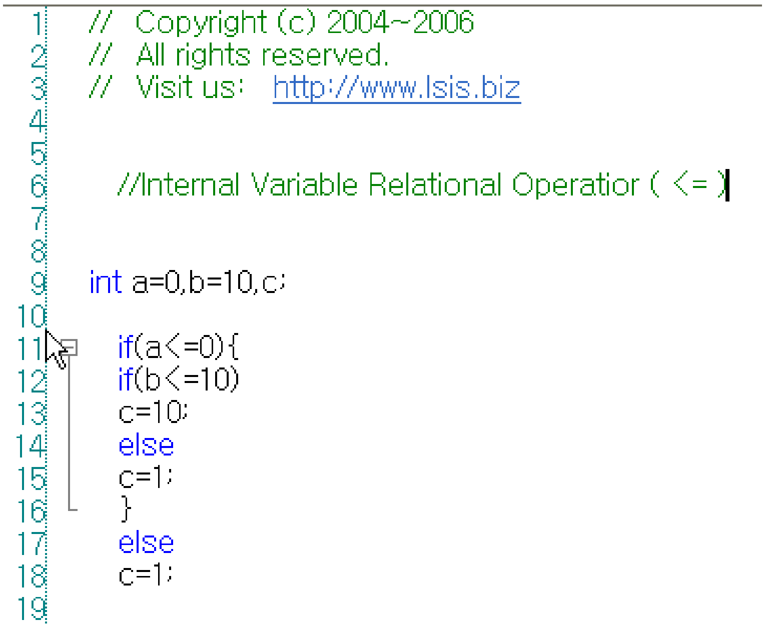
2) <= Operator

Form) <Term 1> <= <Term 2>

Function) Provides 1 if <Term 1> is smaller than or equal to <Term 2> and otherwise 0.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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   //Internal Variable Relational Operatior ( <= )


int a=0,b=10,c;

   if(a<=0){
   if(b<=10)
   c=10;
   else
   c=1;
   }
   else
   c=1;

```
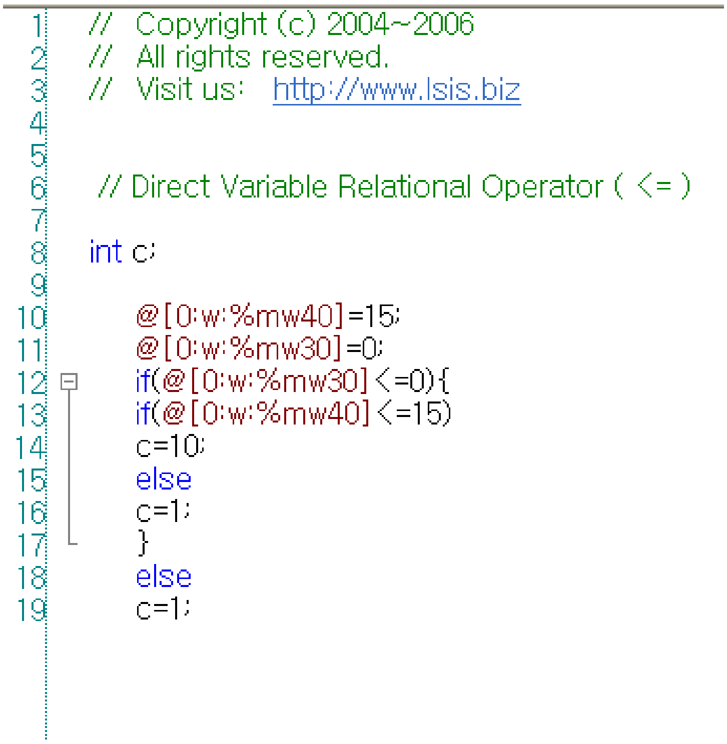

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 // Direct Variable Relational Operator ( <= )

int c;

     @[0:w:%mw40]=15;
     @[0:w:%mw30]=0;
     if(@[0:w:%mw30]<=0){
     if(@[0:w:%mw40]<=15)
     c=10;
     else
     c=1;
     }
     else
     c=1;
```
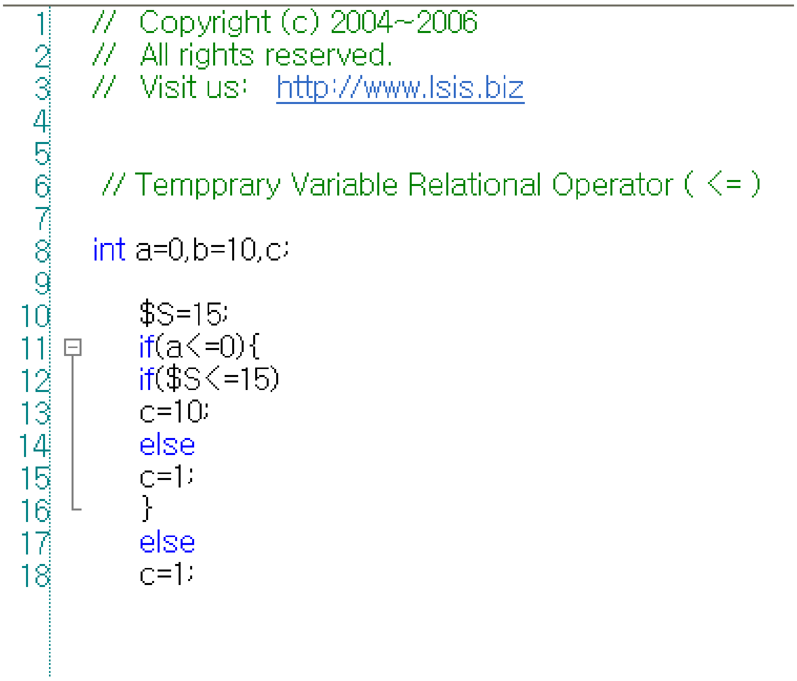

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 // Tempprary Variable Relational Operator ( <= )

int a=0,b=10,c;

    $S=15;
    if(a<=0){
    if($S<=15)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```

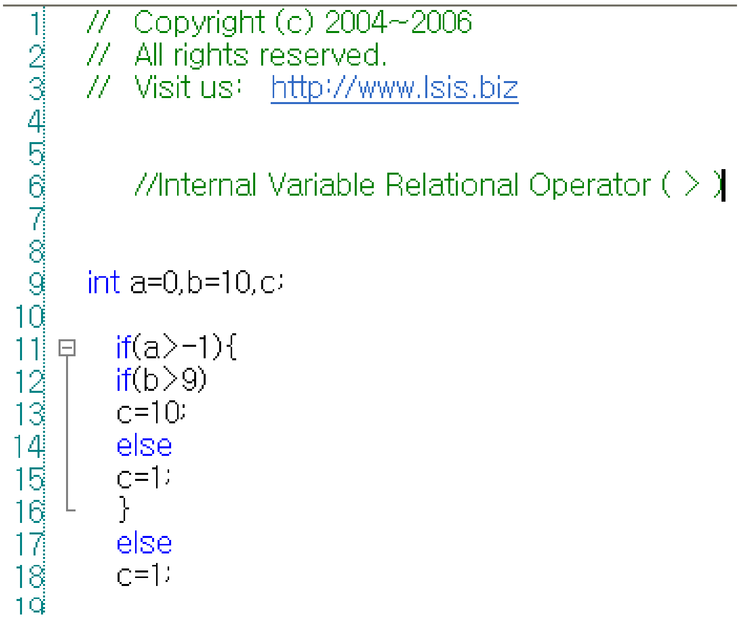
3) > Operator

Form) <Term 1> > <Term 2>

Function) Provides 1 if <Term 1> is larger than <Term 2> and otherwise 0.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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    //Internal Variable Relational Operator ( > )


int a=0,b=10,c;

  if(a>-1){
  if(b>9)
  c=10;
  else
  c=1;
  }
  else
  c=1;
```
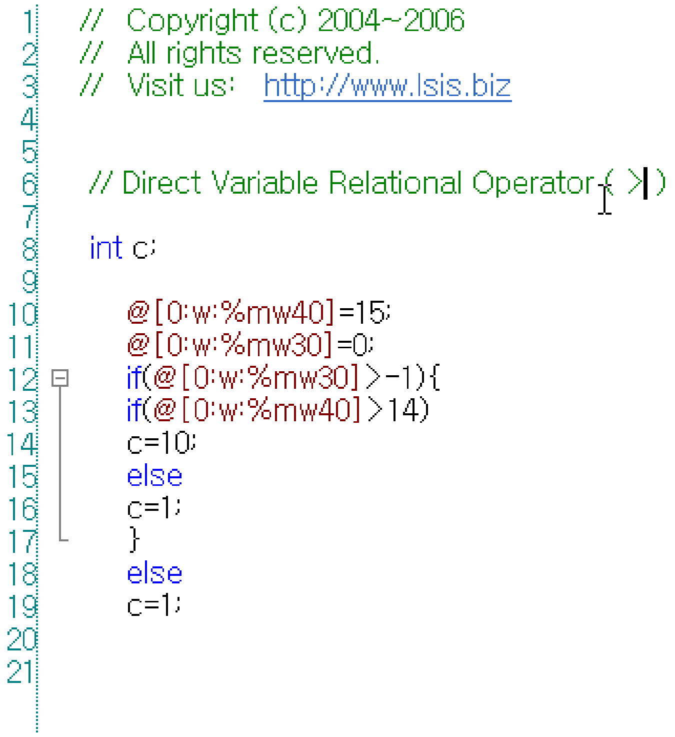

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 // Direct Variable Relational Operator ( > )

 int c;

    @[0:w:%mw40]=15;
    @[0:w:%mw30]=0;
    if(@[0:w:%mw30]>-1){
    if(@[0:w:%mw40]>14)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```
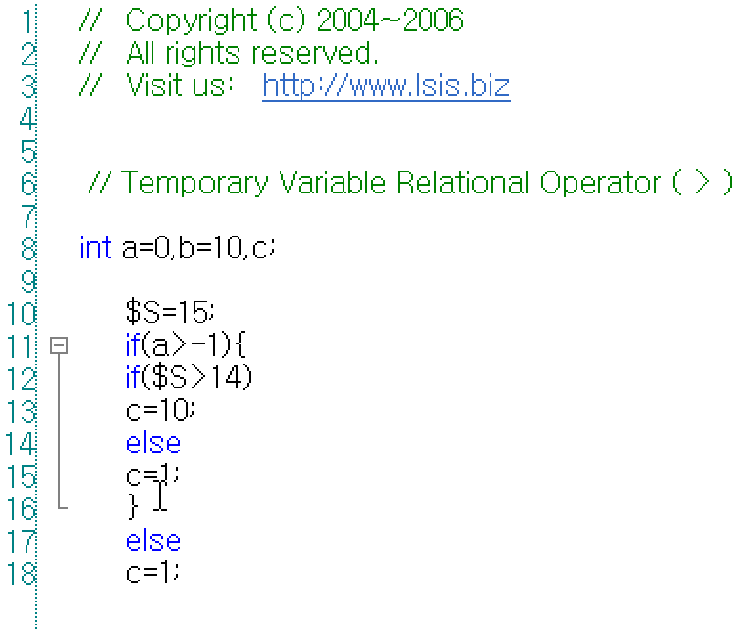

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 // Temporary Variable Relational Operator ( > )

int a=0,b=10,c;

    $S=15;
    if(a>-1){
    if($S>14)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```
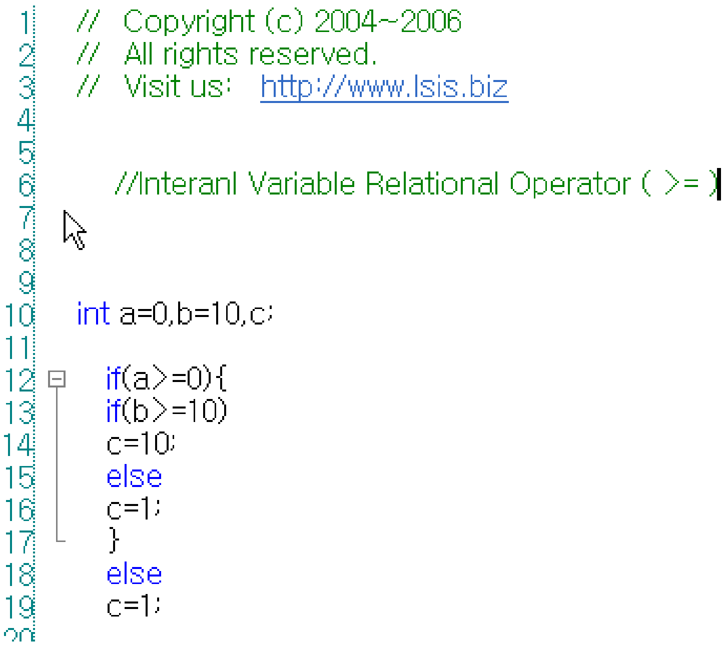

4) >= Operator

Form) <Term 1>　>=<Term 2>

Function) Provides 1 if <Term 1> is larger than or equal to <Term 2> and otherwise 0.

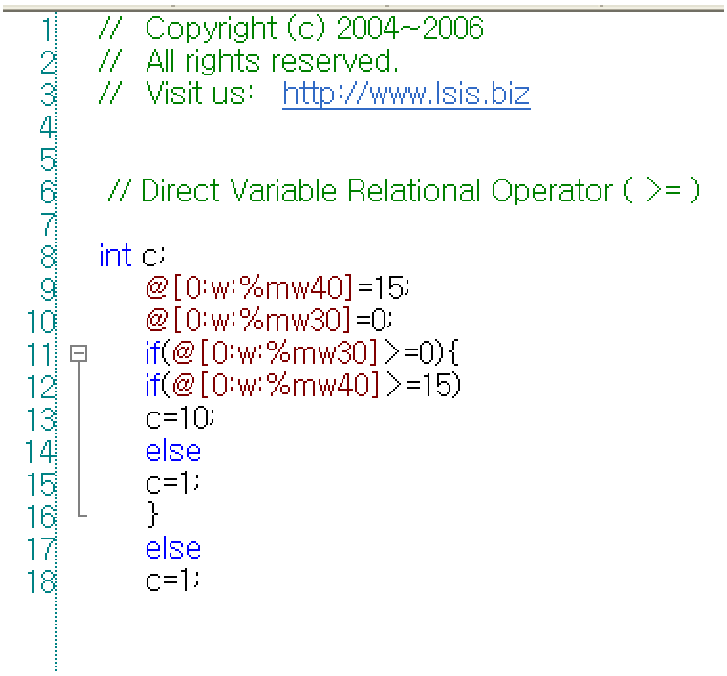
Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:  http://www.lsis.biz


    //Interanl Variable Relational Operator ( >= )



int a=0,b=10,c;

   if(a>=0){
   if(b>=10)
   c=10;
   else
   c=1;
   }
   else
   c=1;
```

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 // Direct Variable Relational Operator ( >= )

int c;
    @[0:w:%mw40]=15;
    @[0:w:%mw30]=0;
    if(@[0:w:%mw30]>=0){
    if(@[0:w:%mw40]>=15)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```
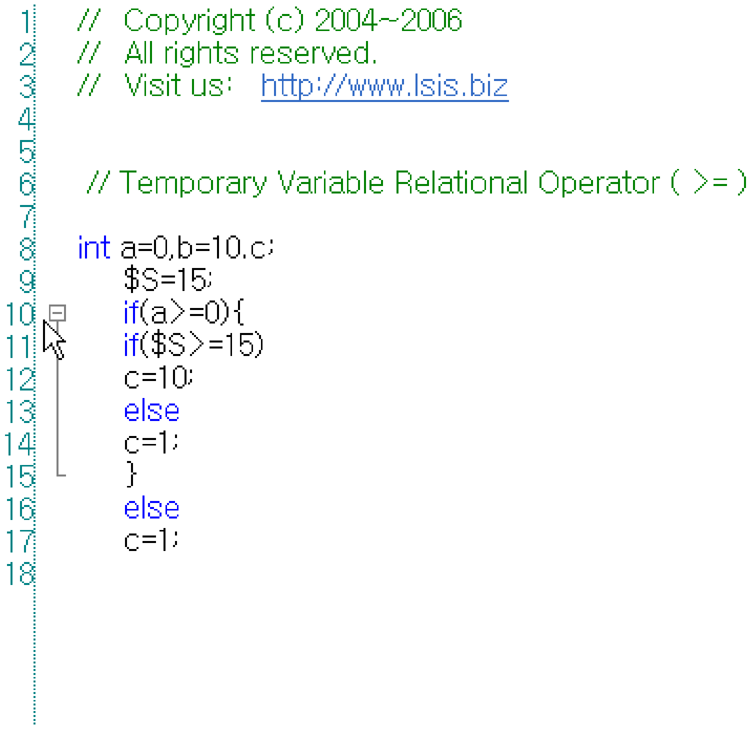

c）Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 // Temporary Variable Relational Operator ( >= )

int a=0,b=10,c;
    $S=15;
    if(a>=0){
    if($S>=15)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```

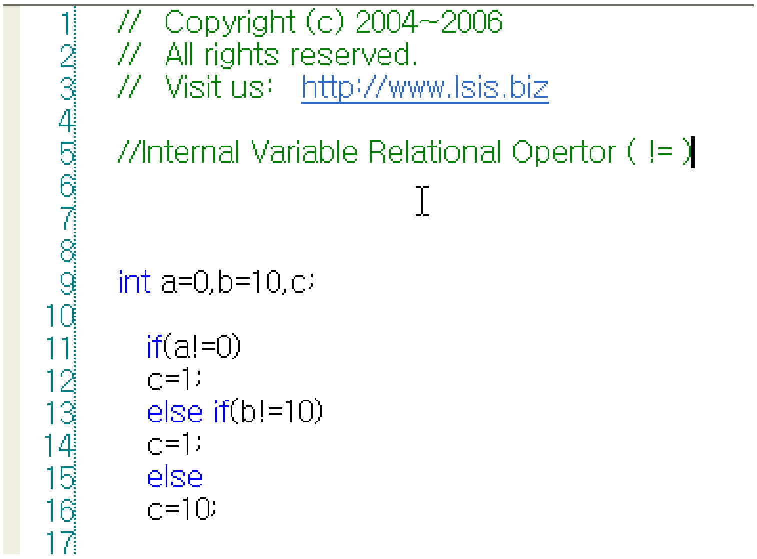
5) != Operator

Form) <Term 1> != <Term 2>

Function) Provides 1 if <Term 1> is not equal to <Term 2> and otherwise 0.

Example of use in the program)

a）Internal Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz

//Internal Variable Relational Opertor ( != )



int a=0,b=10,c;

   if(a!=0)
   c=1;
   else if(b!=10)
   c=1;
   else
   c=10;
```
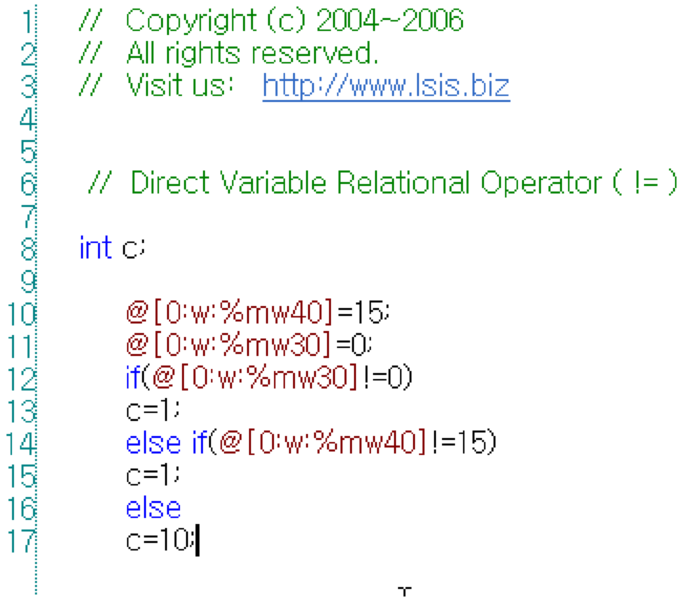

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Relational Operator ( != )

int c;

    @[0:w:%mw40]=15;
    @[0:w:%mw30]=0;
    if(@[0:w:%mw30]!=0)
    c=1;
    else if(@[0:w:%mw40]!=15)
    c=1;
    else
    c=10;
```
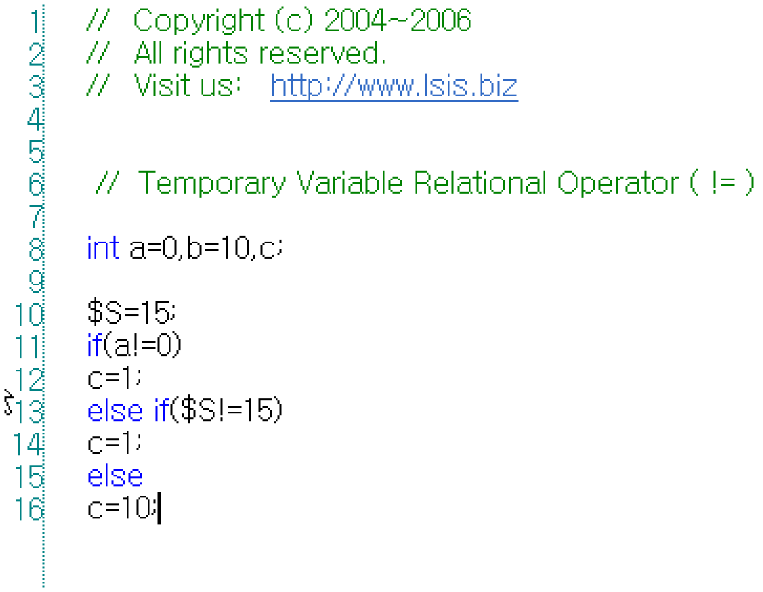

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Temporary Variable Relational Operator ( != )

int a=0,b=10,c;

$S=15;
if(a!=0)
c=1;
else if($S!=15)
c=1;
else
c=10;
```

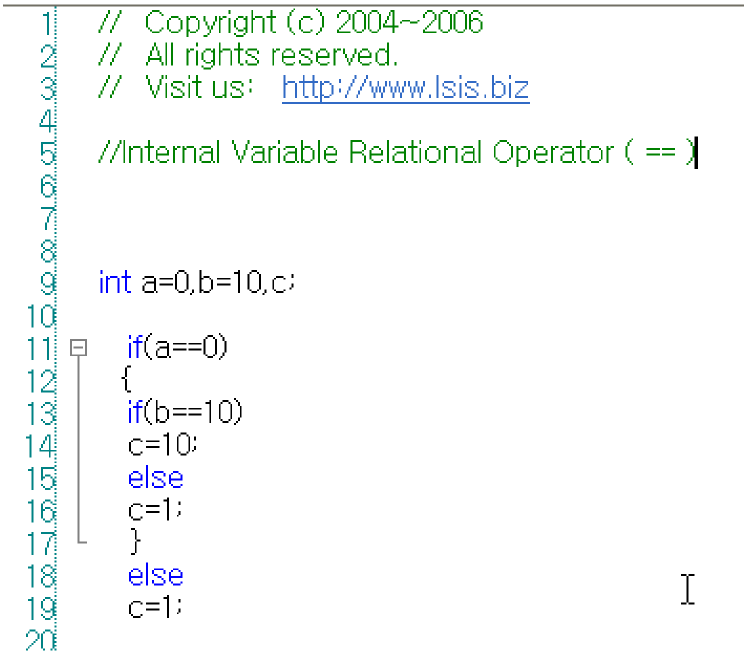
6) = = Operator

Form) <Term 1> == <Term 2>

Function) Provides 1 if <Term 1> is equal to <Term 2> and otherwise 0.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz

//Internal Variable Relational Operator ( == )



int a=0,b=10,c;

   if(a==0)
  {
   if(b==10)
   c=10;
   else
   c=1;
   }
   else
   c=1;

```
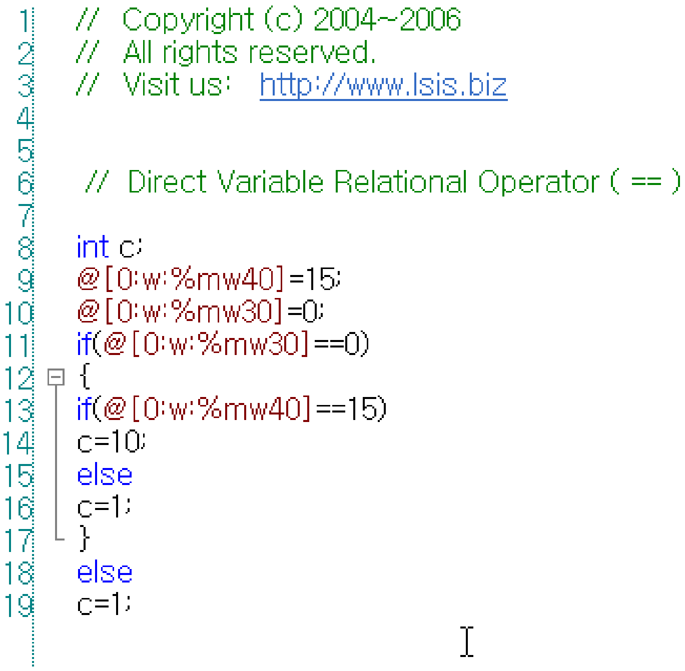

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Relational Operator ( == )

int c;
@[0:w:%mw40]=15;
@[0:w:%mw30]=0;
if(@[0:w:%mw30]==0)
{
if(@[0:w:%mw40]==15)
c=10;
else
c=1;
}
else
c=1;
```
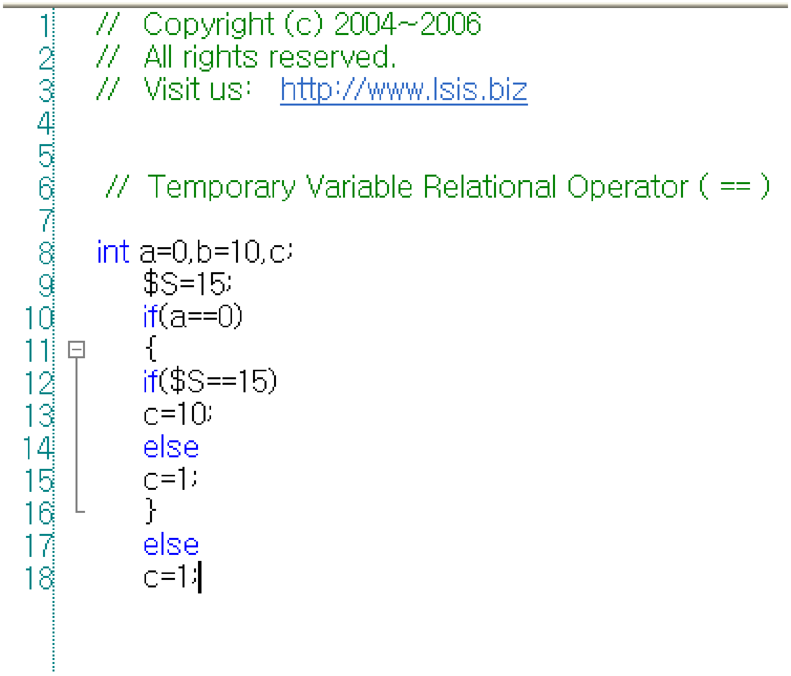

c）Temporary Variable



```
// Copyright (c) 2004~2006
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// Visit us:  http://www.lsis.biz


 // Temporary Variable Relational Operator ( == )

int a=0,b=10,c;
    $S=15;
    if(a==0)
    {
    if($S==15)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```

(c) Arithmetic Operator

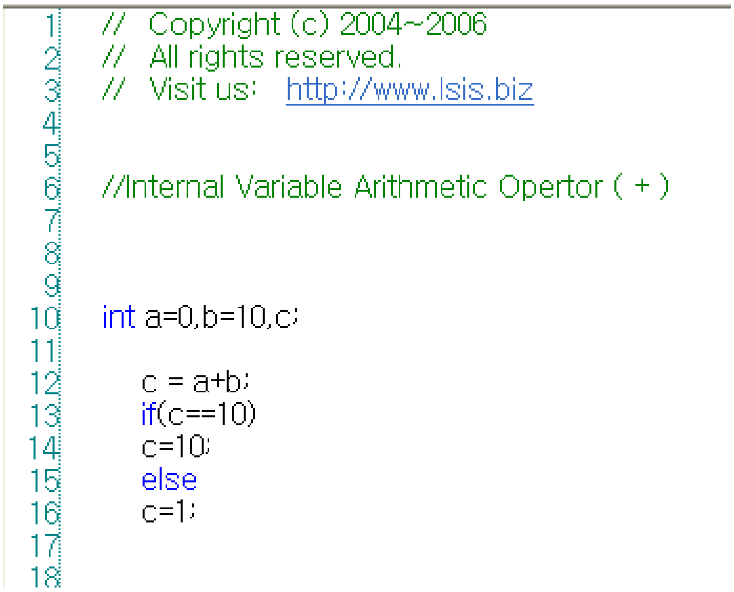
1) + Operator

Form) <Term> + <factor>

Function) Adds <Term> to <factor>.

Example of use in the program)

a）Internal Variable



```
// Copyright (c) 2004~2006
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//Internal Variable Arithmetic Opertor ( + )



int a=0,b=10,c;

   c = a+b;
   if(c==10)
   c=10;
   else
   c=1;
```
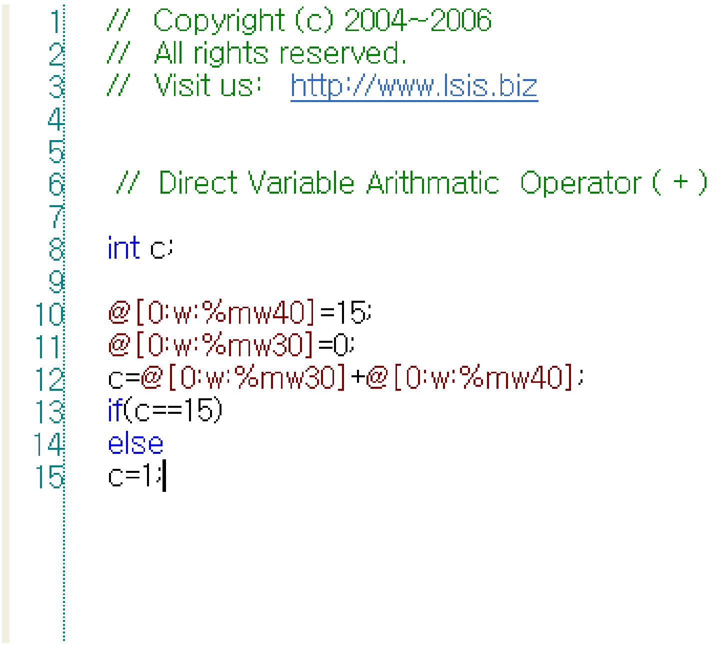

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Arithmatic  Operator ( + )

int c;

@[0:w:%mw40]=15;
@[0:w:%mw30]=0;
c=@[0:w:%mw30]+@[0:w:%mw40];
if(c==15)
else
c=1;
```
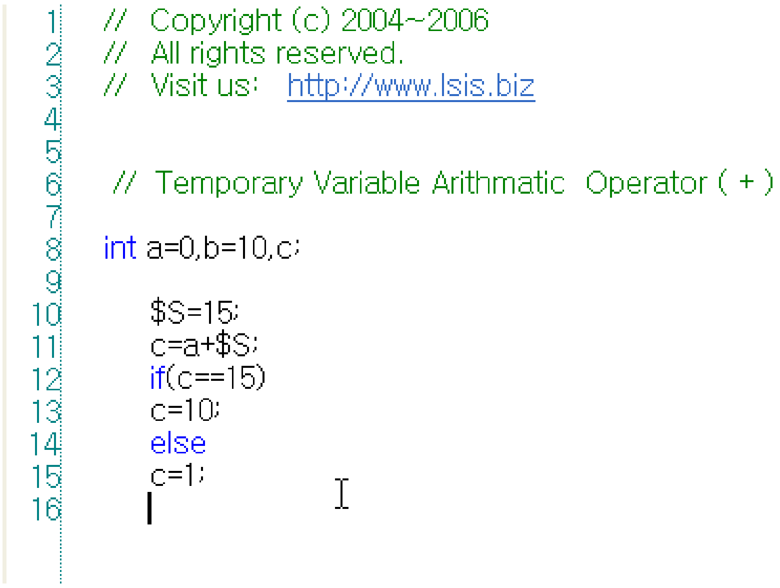

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temporary Variable Arithmatic  Operator ( + )

int a=0,b=10,c;

    $S=15;
    c=a+$S;
    if(c==15)
    c=10;
    else
    c=1;

```

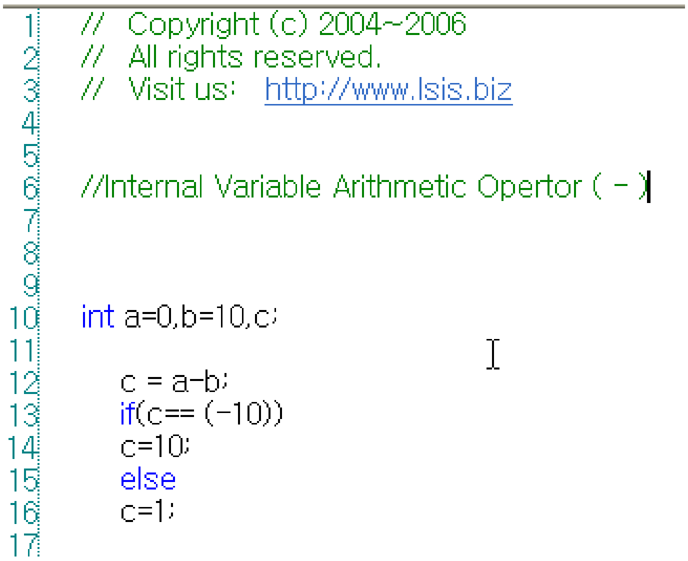
2) – Operator

Form) <Term> - <factor>

Function) Subtracts <factor> from <Term>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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//Internal Variable Arithmetic Opertor ( - )



int a=0,b=10,c;

    c = a-b;
    if(c== (-10))
    c=10;
    else
    c=1;

```
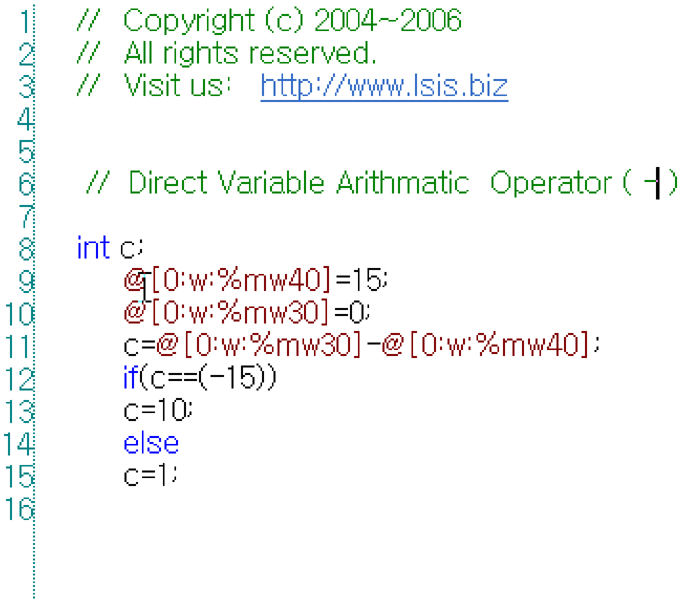

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Arithmatic  Operator ( -)

int c;
    @[0:w:%mw40]=15;
    @[0:w:%mw30]=0;
    c=@[0:w:%mw30]-@[0:w:%mw40];
    if(c==(-15))
    c=10;
    else
    c=1;

```
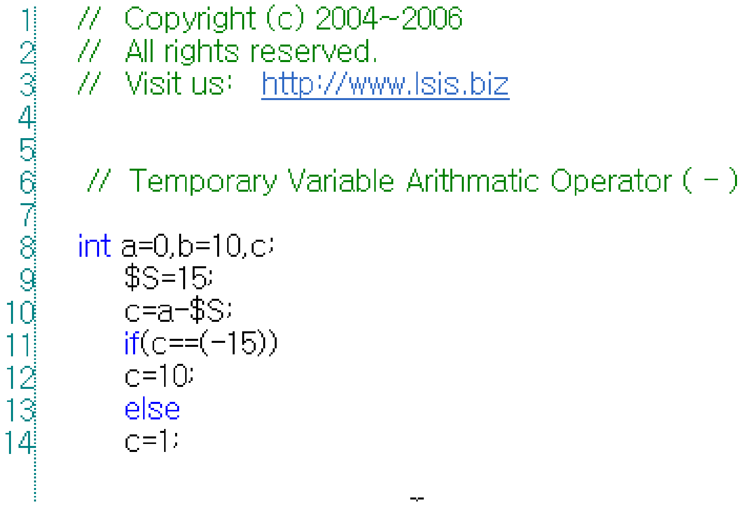

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temporary Variable Arithmatic Operator ( - )

int a=0,b=10,c;
    $S=15;
    c=a-$S;
    if(c==(-15))
    c=10;
    else
    c=1;
```

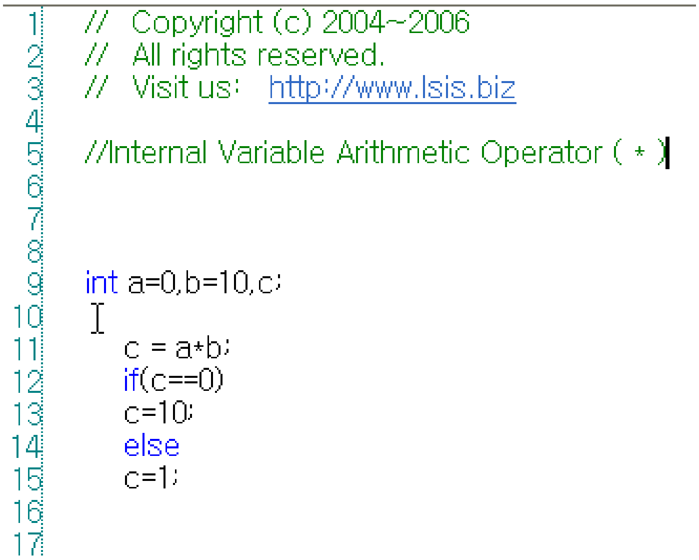
3) * Operator

Form) <Term> * <factor>

Function) Multiplies <Term> by <factor>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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//Internal Variable Arithmetic Operator ( * )



int a=0,b=10,c;

    c = a*b;
    if(c==0)
    c=10;
    else
    c=1;


```
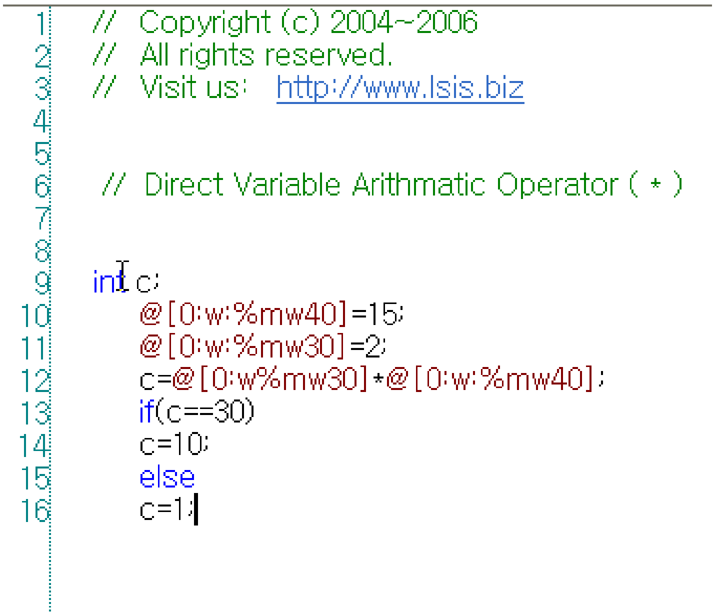

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Arithmatic Operator ( * )


int c;
    @[0:w:%mw40]=15;
    @[0:w:%mw30]=2;
    c=@[0:w%mw30]*@[0:w:%mw40];
    if(c==30)
    c=10;
    else
    c=1;
```
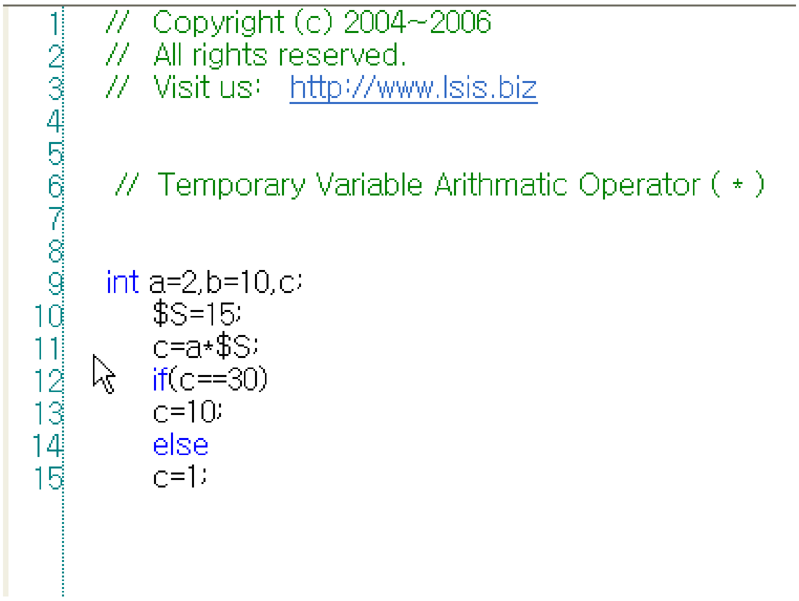

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temporary Variable Arithmatic Operator ( * )


int a=2,b=10,c;
    $S=15;
    c=a*$S;
    if(c==30)
    c=10;
    else
    c=1;
```

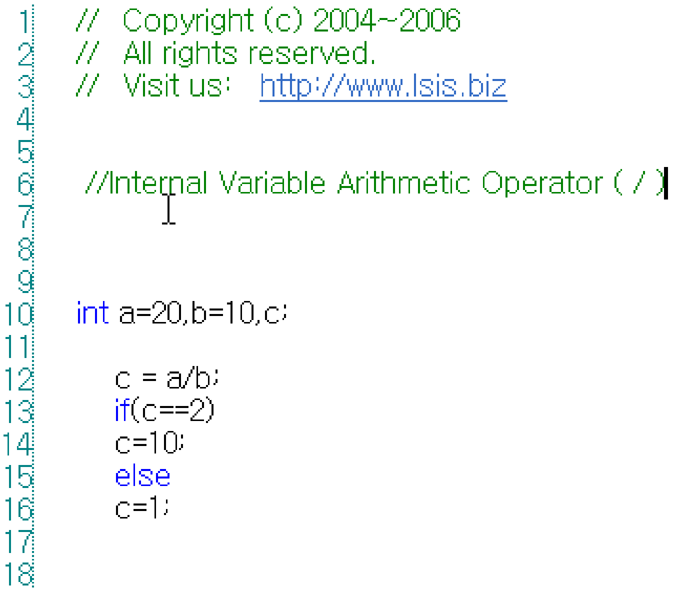
4) / Operator

Form) <Term> / <factor>

Function) Divides <Term> by <factor>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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 //Internal Variable Arithmetic Operator ( / )



int a=20,b=10,c;

    c = a/b;
    if(c==2)
    c=10;
    else
    c=1;


```
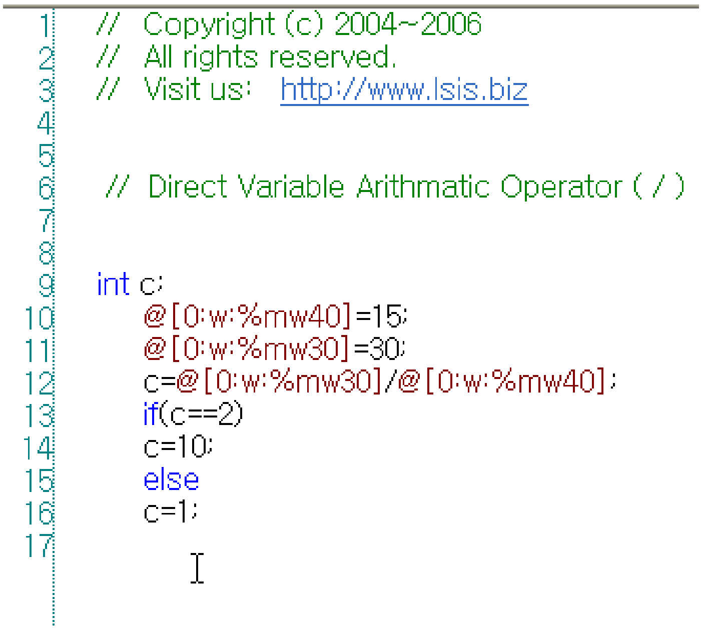

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Arithmatic Operator ( / )


int c;
    @[0:w:%mw40]=15;
    @[0:w:%mw30]=30;
    c=@[0:w:%mw30]/@[0:w:%mw40];
    if(c==2)
    c=10;
    else
    c=1;

```
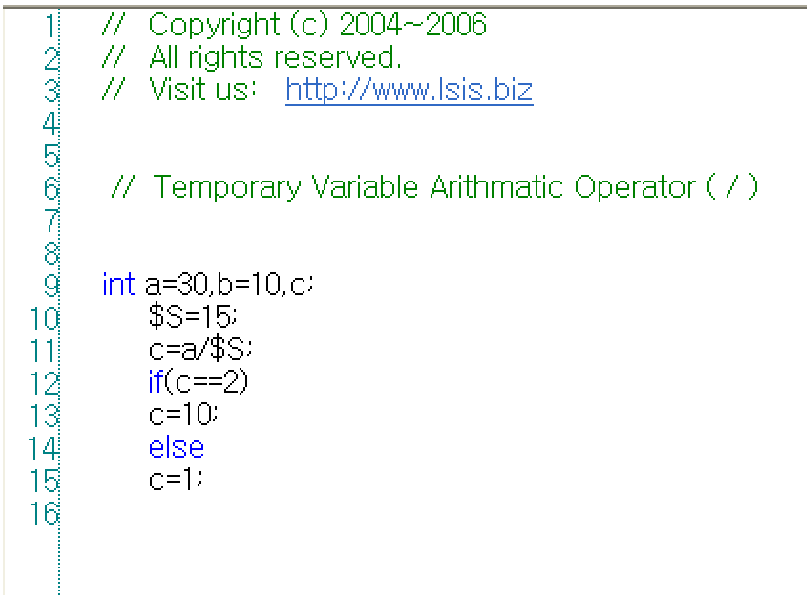

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temporary Variable Arithmatic Operator ( / )


int a=30,b=10,c;
    $S=15;
    c=a/$S;
    if(c==2)
    c=10;
    else
    c=1;

```

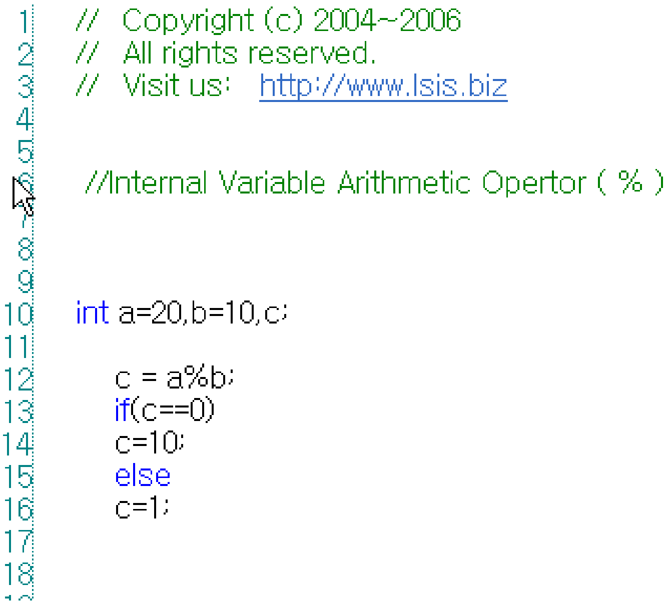
5) % Operator

Form) <Term> % <factor>

Function) Divides <Term> by <factor> and takes the residual.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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 //Internal Variable Arithmetic Opertor ( % )



int a=20,b=10,c;

    c = a%b;
    if(c==0)
    c=10;
    else
    c=1;


```
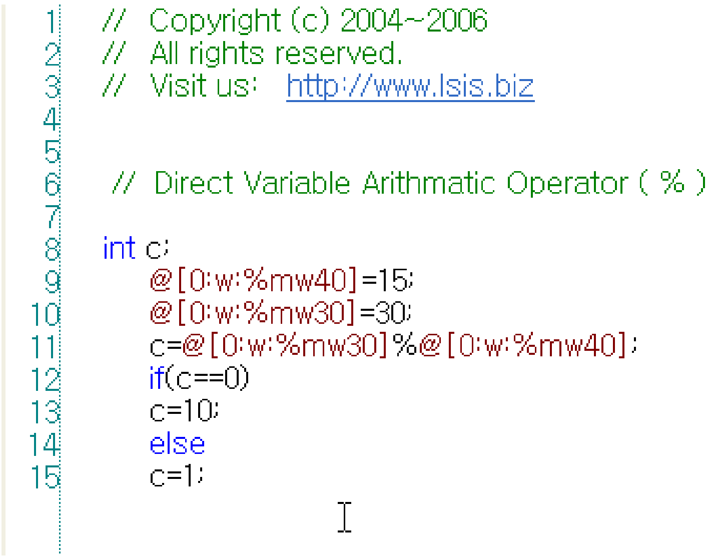

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Arithmatic Operator ( % )

int c;
    @[0:w:%mw40]=15;
    @[0:w:%mw30]=30;
    c=@[0:w:%mw30]%@[0:w:%mw40];
    if(c==0)
    c=10;
    else
    c=1;
```
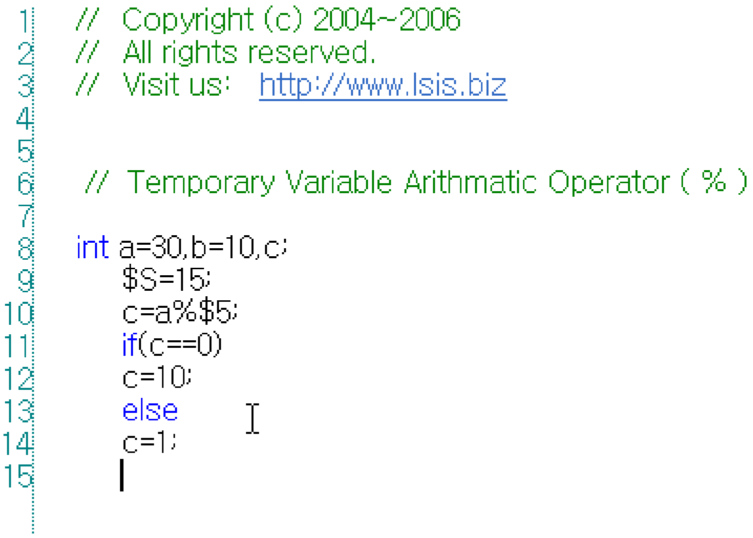

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temporary Variable Arithmatic Operator ( % )

int a=30,b=10,c;
    $S=15;
    c=a%$5;
    if(c==0)
    c=10;
    else
    c=1;

```

Note

(1) The priority of operators is as follows.

Operator	Direction
()	Left -> Right
+ - (Unary Operator)	Left -> Right
*	Left -> Right
+ - (Binary Operator)	Left -> Right
=	Right -> Left

(d) Bit Operator

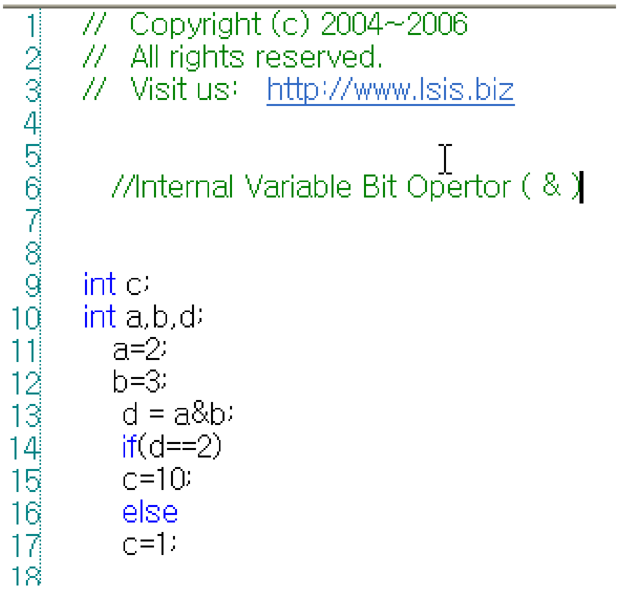
1) & Operator

Form) <Term> & <factor>

Function) Performs the bit operation(AND) of <Term> and <factor>.

Example of use in the program)

a） Internal Variable



```
// Copyright (c) 2004~2006
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   //Internal Variable Bit Opertor ( & )


int c;
int a,b,d;
   a=2;
   b=3;
    d = a&b;
    if(d==2)
    c=10;
    else
    c=1;

```
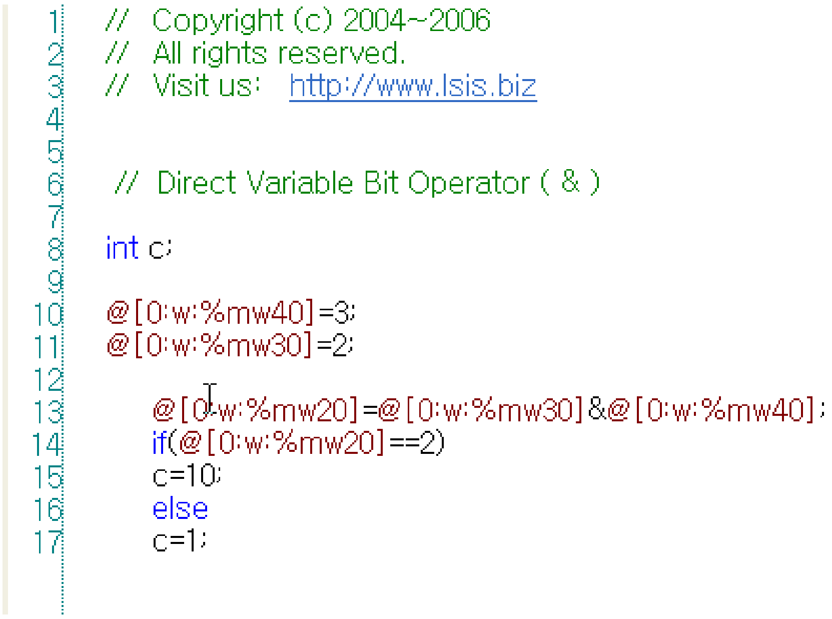

b） Direct Variable



```
// Copyright (c) 2004~2006
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 // Direct Variable Bit Operator ( & )

int c;

@[0:w:%mw40]=3;
@[0:w:%mw30]=2;

    @[0:w:%mw20]=@[0:w:%mw30]&@[0:w:%mw40];
    if(@[0:w:%mw20]==2)
    c=10;
    else
    c=1;
```
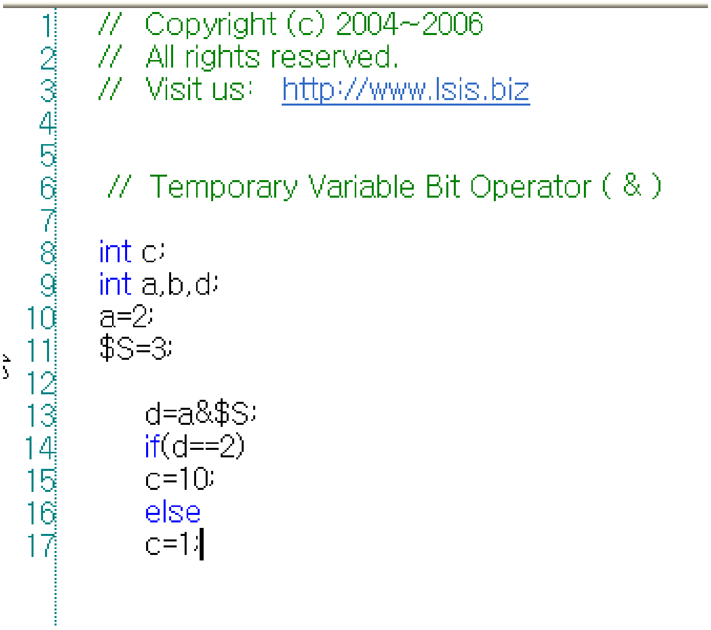

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temporary Variable Bit Operator ( & )

int c;
int a,b,d;
a=2;
$S=3;

    d=a&$S;
    if(d==2)
    c=10;
    else
    c=1;
```

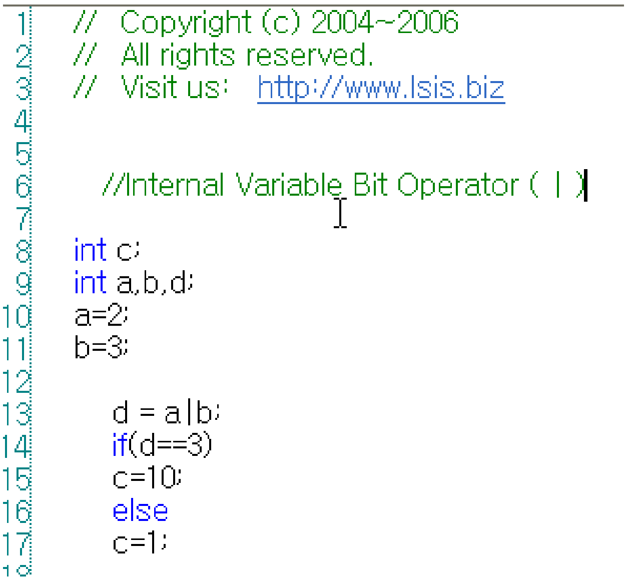
2) | Operator

Form) <Term> | <factor>

Function) Performs the bit operation(OR) of <Term> or <factor>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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   //Internal Variable Bit Operator ( | )

int c;
int a,b,d;
a=2;
b=3;

    d = a|b;
    if(d==3)
    c=10;
    else
    c=1;
```
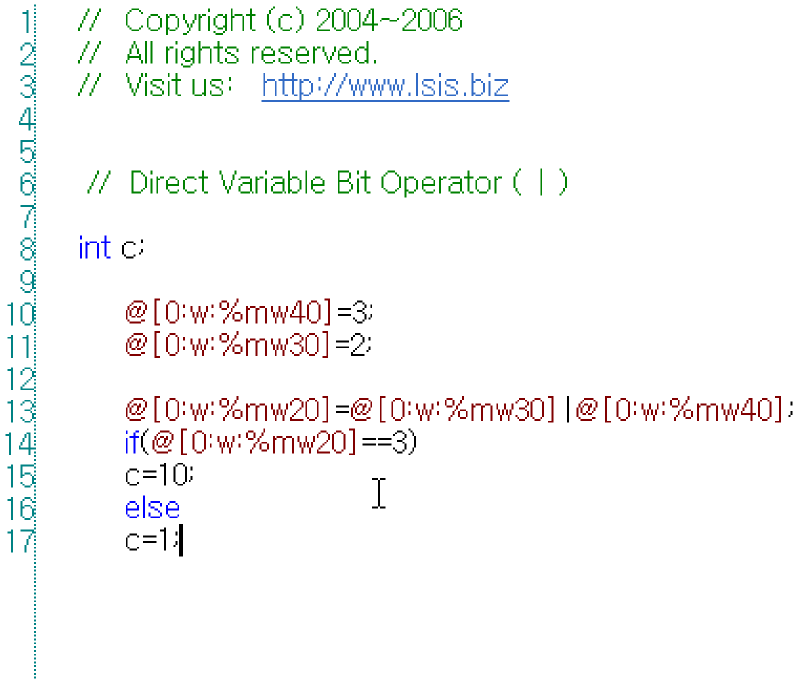

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Bit Operator ( | )

int c;

    @[0:w:%mw40]=3;
    @[0:w:%mw30]=2;

    @[0:w:%mw20]=@[0:w:%mw30]|@[0:w:%mw40];
    if(@[0:w:%mw20]==3)
    c=10;
    else
    c=1;
```
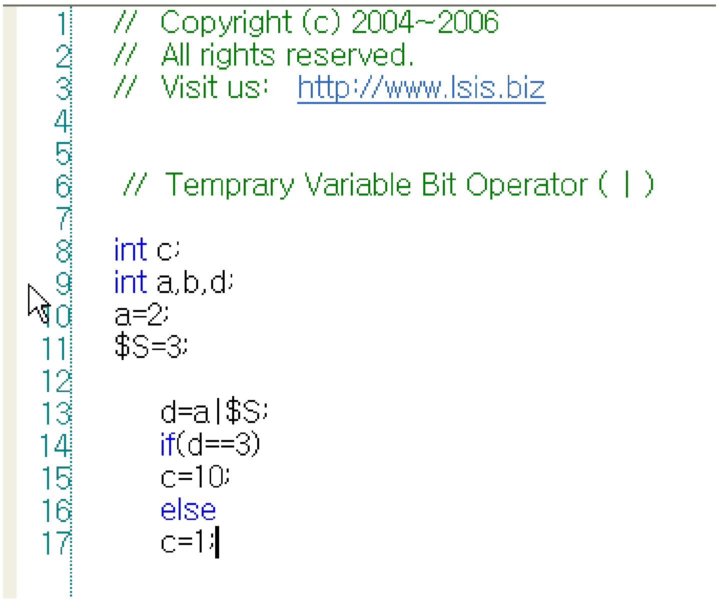

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temprary Variable Bit Operator ( | )

int c;
int a,b,d;
a=2;
$S=3;

    d=a|$S;
    if(d==3)
    c=10;
    else
    c=1;
```

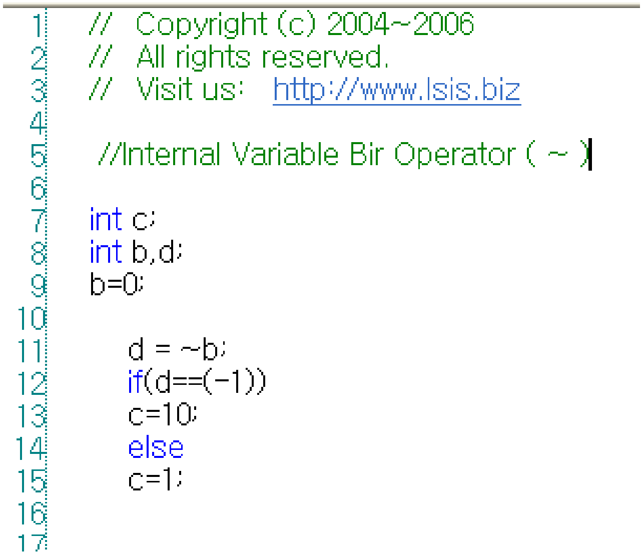
3) ~ Operator

Form) ~ <bit>

Function) Reverses the <bit> value.

Example of use in the program)

a) Internal Variable



```
// Copyright (c) 2004~2006
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 //Internal Variable Bir Operator ( ~ )

int c;
int b,d;
b=0;

    d = ~b;
    if(d==(-1))
    c=10;
    else
    c=1;

```
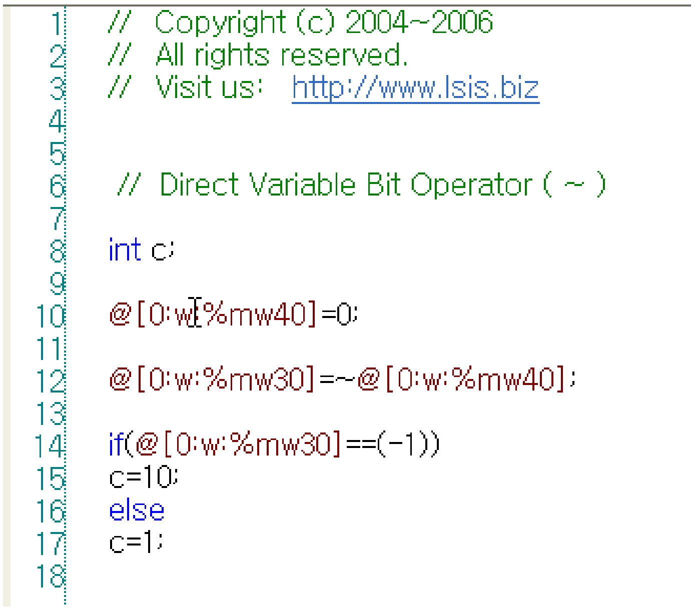

b) Direct Variable



```
// Copyright (c) 2004~2006
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 // Direct Variable Bit Operator ( ~ )

int c;

@[0:w:%mw40]=0;

@[0:w:%mw30]=~@[0:w:%mw40];

if(@[0:w:%mw30]==(-1))
c=10;
else
c=1;

```
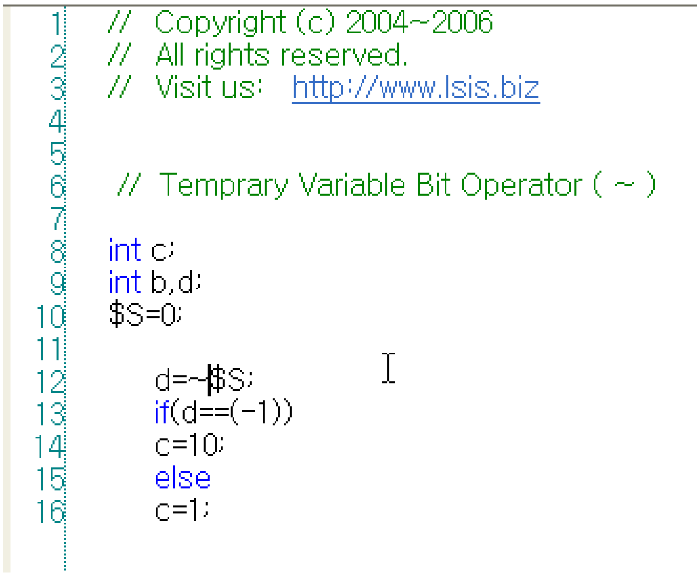

c) Temporary Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:  http://www.lsis.biz


 //  Temprary Variable Bit Operator ( ~ )

int c;
int b,d;
$S=0;

    d=~$S;
    if(d==(-1))
    c=10;
    else
    c=1;
```

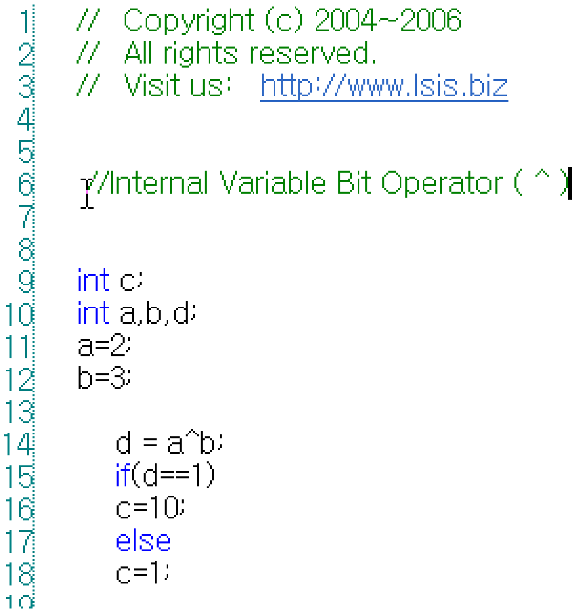
4) ^ Operator

Form) <Term> ^ <factor>

Function) Performs the bit operation(EOR) of <Term> or <factor>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


//Internal Variable Bit Operator ( ^ )


int c;
int a,b,d;
a=2;
b=3;

    d = a^b;
    if(d==1)
    c=10;
    else
    c=1;
```
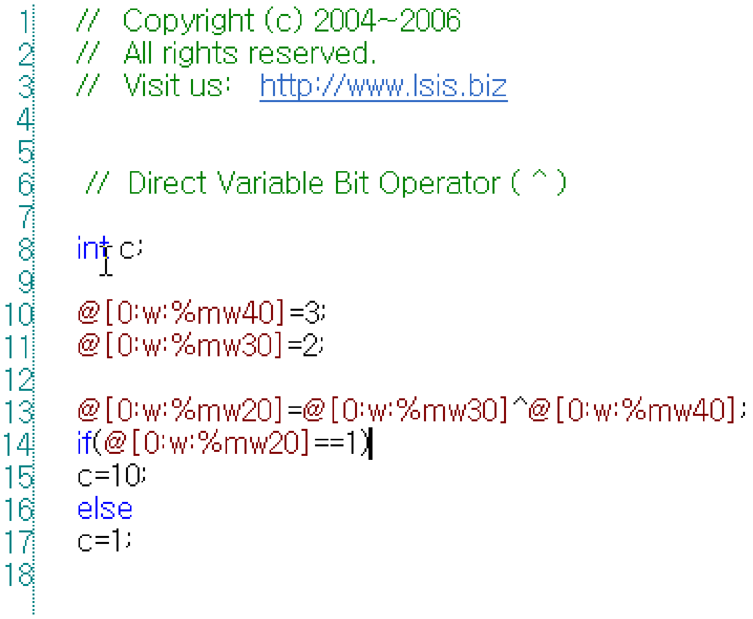
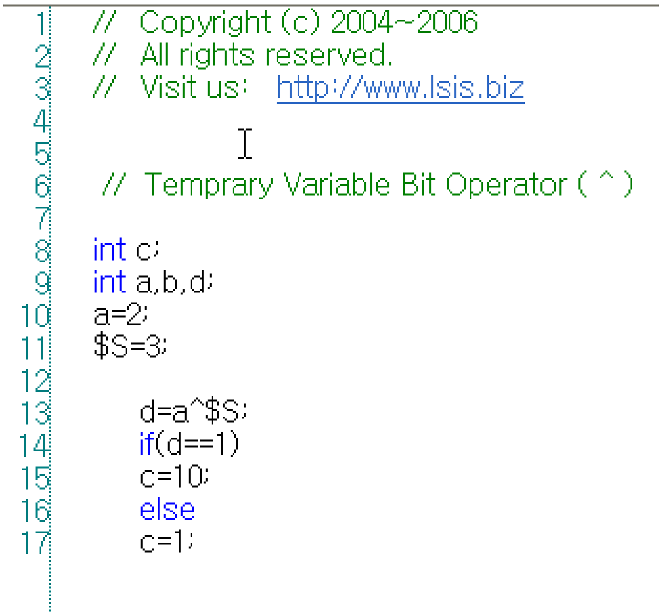

b) Direct Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:   http://www.lsis.biz


 //  Direct Variable Bit Operator ( ^ )

int c;

@[0:w:%mw40]=3;
@[0:w:%mw30]=2;

@[0:w:%mw20]=@[0:w:%mw30]^@[0:w:%mw40];
if(@[0:w:%mw20]==1)
c=10;
else
c=1;

```

c) Temporary Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:   http://www.lsis.biz


 //  Temprary Variable Bit Operator ( ^ )

int c;
int a,b,d;
a=2;
$S=3;

    d=a^$S;
    if(d==1)
    c=10;
    else
    c=1;
```

(e) Shift Operator

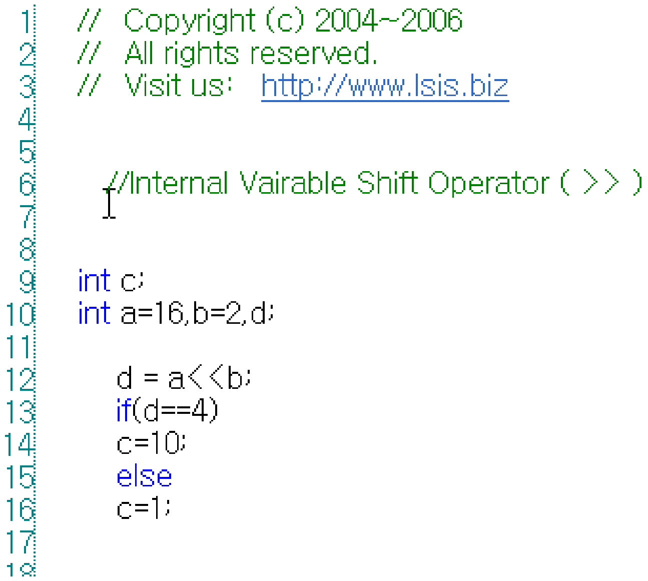
1) >> Operator

Form) <Term> >> <factor>

Function) Shifts <Term> to the left by the value of <factor>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


  //Internal Vairable Shift Operator ( >> )


int c;
int a=16,b=2,d;

   d = a<<b;
   if(d==4)
   c=10;
   else
   c=1;
```
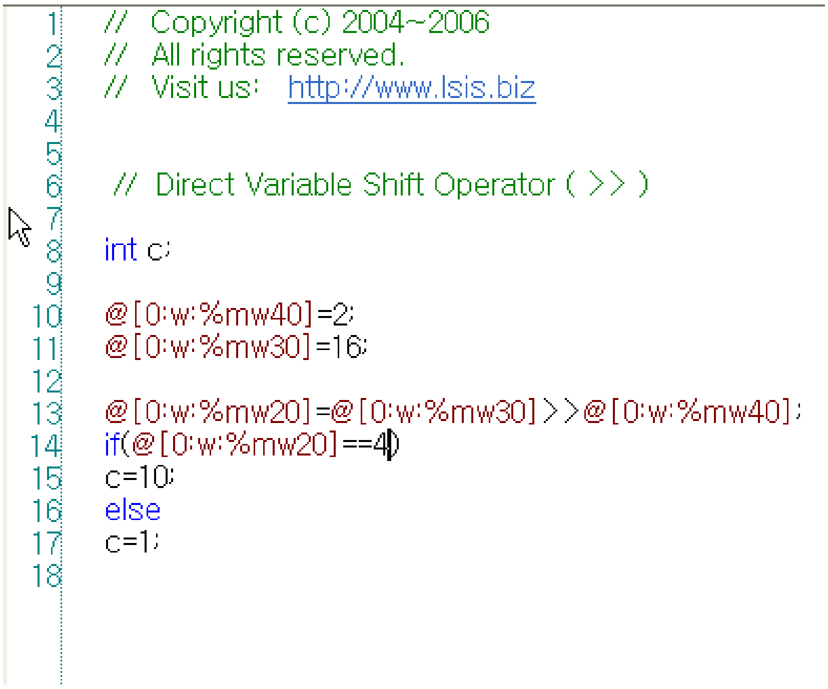

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Shift Operator ( >> )

int c;

@[0:w:%mw40]=2;
@[0:w:%mw30]=16;

@[0:w:%mw20]=@[0:w:%mw30]>>@[0:w:%mw40];
if(@[0:w:%mw20]==4)
c=10;
else
c=1;
```
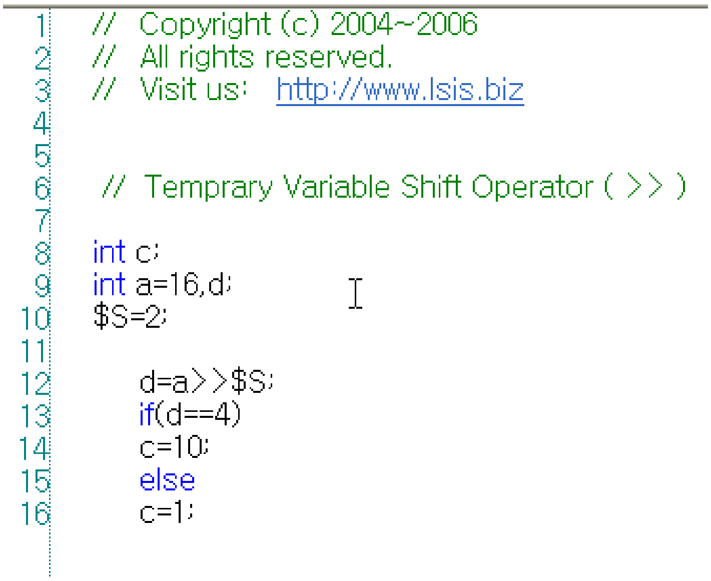

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Temprary Variable Shift Operator ( >> )

int c;
int a=16,d;
$S=2;

    d=a>>$S;
    if(d==4)
    c=10;
    else
    c=1;
```

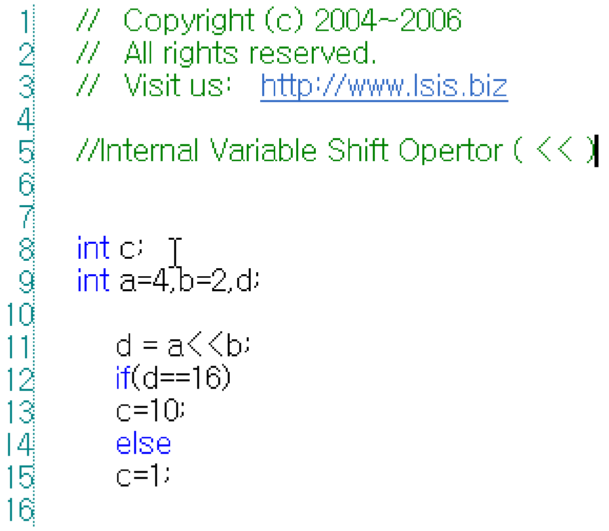
2) << Operator

Form) <Term> << <factor>

Function) Shifts <Term> to the right by the value of <factor>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz

//Internal Variable Shift Opertor ( << )


int c;
int a=4,b=2,d;

   d = a<<b;
   if(d==16)
   c=10;
   else
   c=1;
```
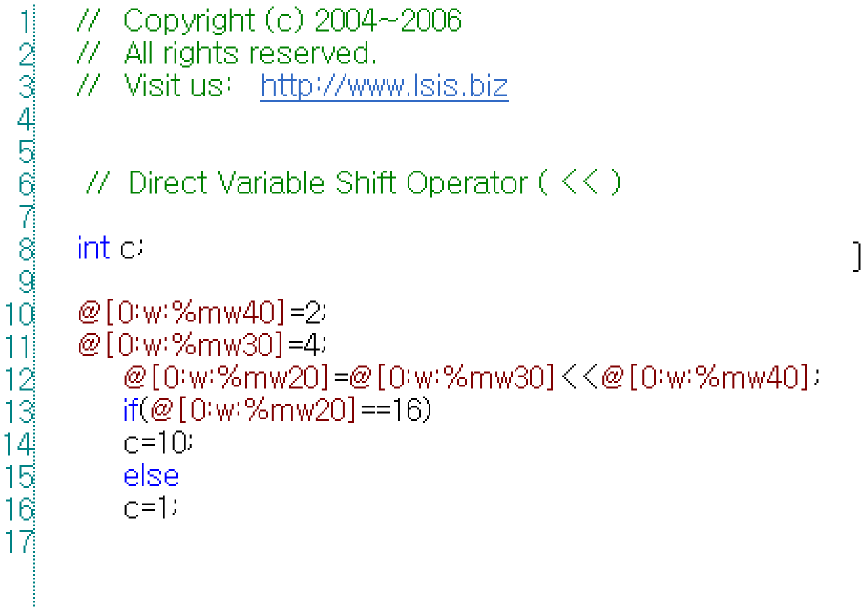

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Shift Operator ( << )

int c;

@[0:w:%mw40]=2;
@[0:w:%mw30]=4;
    @[0:w:%mw20]=@[0:w:%mw30]<<@[0:w:%mw40];
    if(@[0:w:%mw20]==16)
    c=10;
    else
    c=1;
```
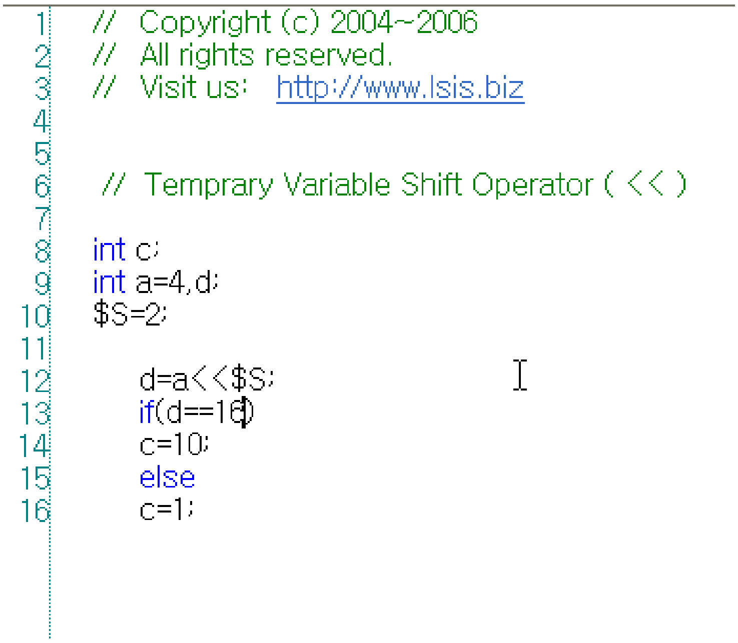

c) Temporary Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:  http://www.lsis.biz


 //  Temprary Variable Shift Operator ( << )

int c;
int a=4,d;
$S=2;

    d=a<<$S;
    if(d==16)
    c=10;
    else
    c=1;
```

(f) Assignment Operator

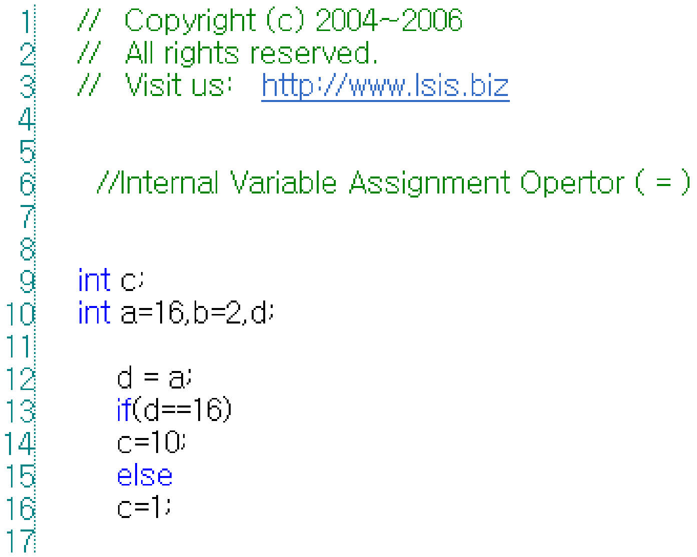
1) = Operator

Form) <Device> = <term>

Function) Assigns the value of <term> to <Device>.

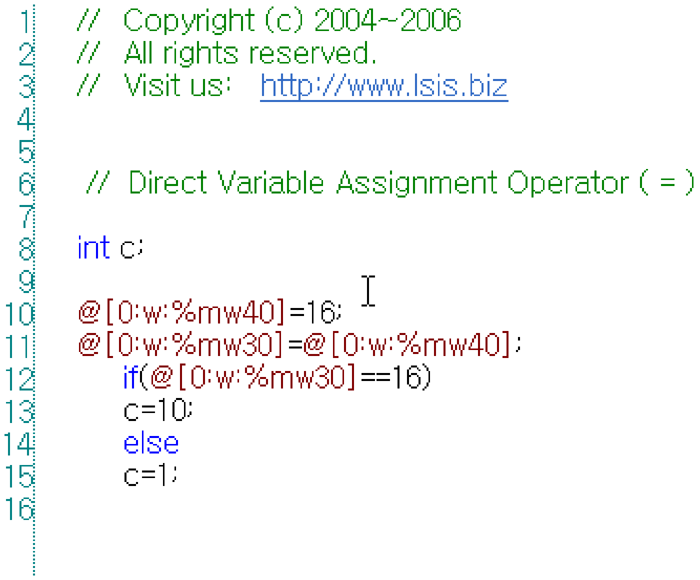
Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:  http://www.lsis.biz


  //Internal Variable Assignment Opertor ( = )


int c;
int a=16,b=2,d;

    d = a;
    if(d==16)
    c=10;
    else
    c=1;

```

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Assignment Operator ( = )

int c;

@[0:w:%mw40]=16;
@[0:w:%mw30]=@[0:w:%mw40];
     if(@[0:w:%mw30]==16)
     c=10;
     else
     c=1;

```
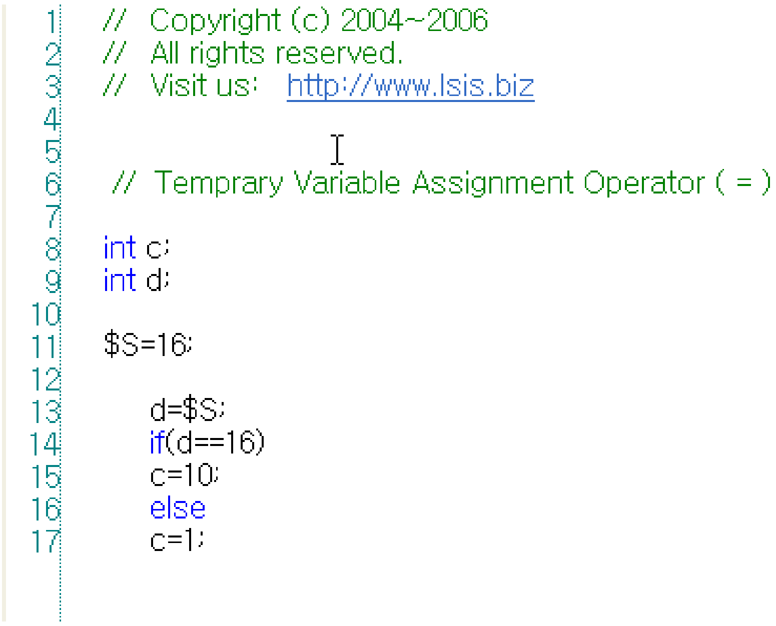

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:   http://www.lsis.biz


 //  Temprary Variable Assignment Operator ( = )

int c;
int d;

$S=16;

    d=$S;
    if(d==16)
    c=10;
    else
    c=1;
```

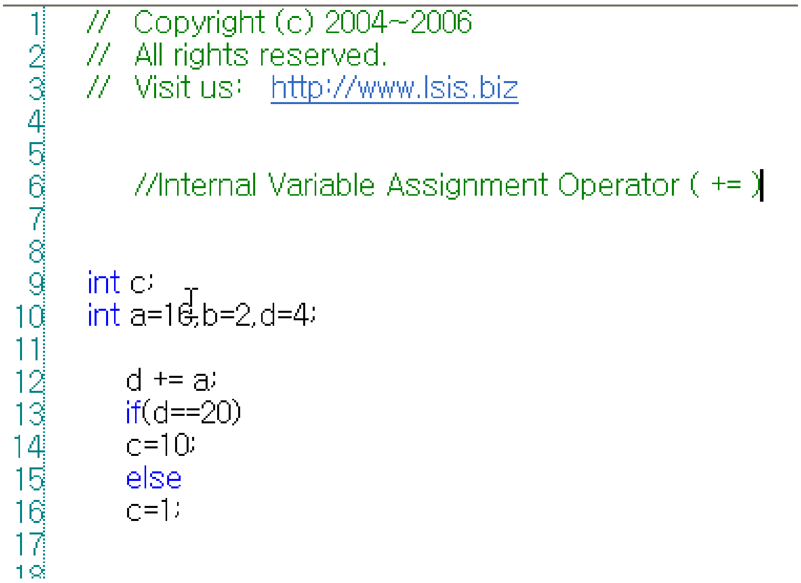
2) += Operator

Form) <Device> += <term>

Function) Adds <term> to <Device> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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    //Internal Variable Assignment Operator ( += )


int c;
int a=16,b=2,d=4;

   d += a;
   if(d==20)
   c=10;
   else
   c=1;
```
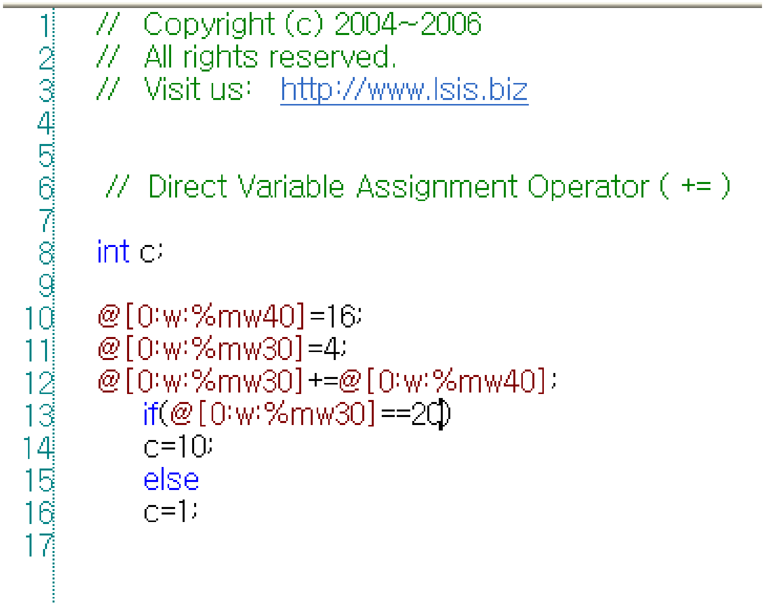

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:   http://www.lsis.biz


 //  Direct Variable Assignment Operator ( += )

int c;

@[0:w:%mw40]=16;
@[0:w:%mw30]=4;
@[0:w:%mw30]+=@[0:w:%mw40];
    if(@[0:w:%mw30]==20)
    c=10;
    else
    c=1;

```
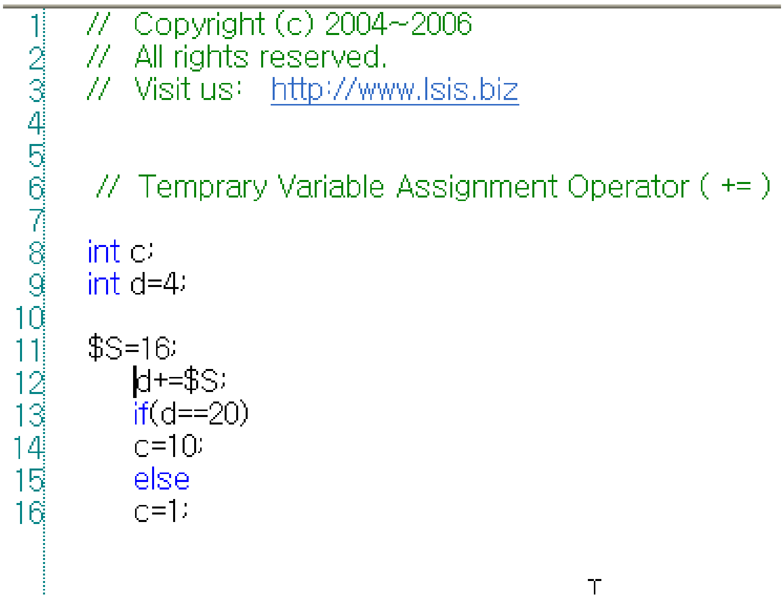

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temprary Variable Assignment Operator ( += )

int c;
int d=4;

$S=16;
    d+=$S;
    if(d==20)
    c=10;
    else
    c=1;
```

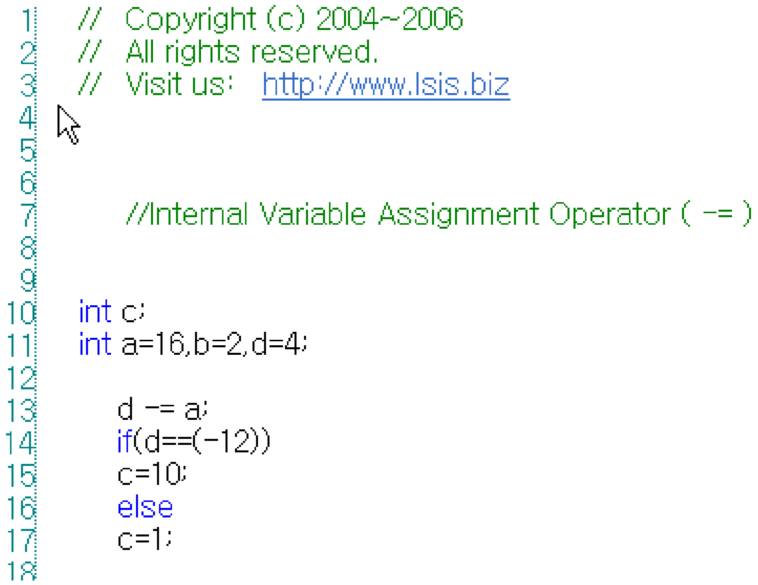
3) -= Operator

Form) <Device> -= <term>

Function) Subtracts <term> from <Device> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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    //Internal Variable Assignment Operator ( -= )


int c;
int a=16,b=2,d=4;

    d -= a;
    if(d==(-12))
    c=10;
    else
    c=1;

```
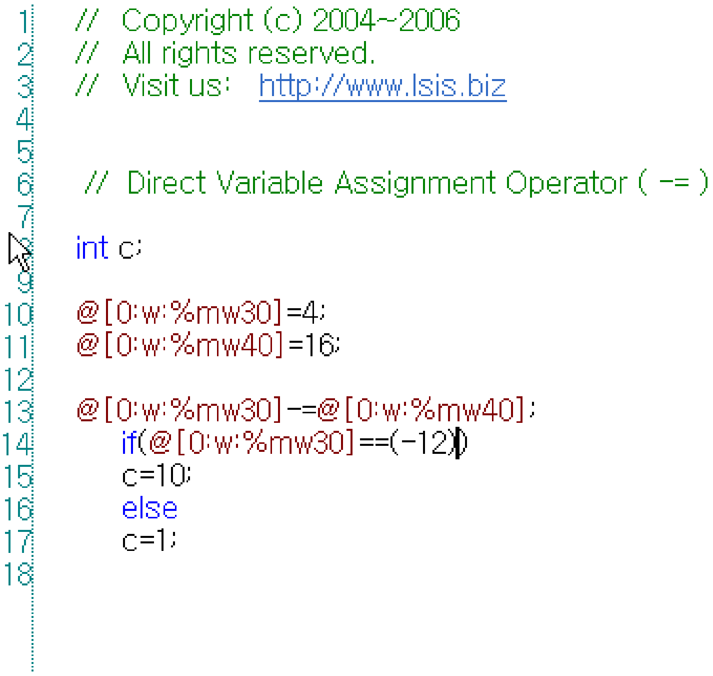

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Assignment Operator ( -= )

int c;

@[0:w:%mw30]=4;
@[0:w:%mw40]=16;

@[0:w:%mw30]-=@[0:w:%mw40];
    if(@[0:w:%mw30]==(-12))
    c=10;
    else
    c=1;

```
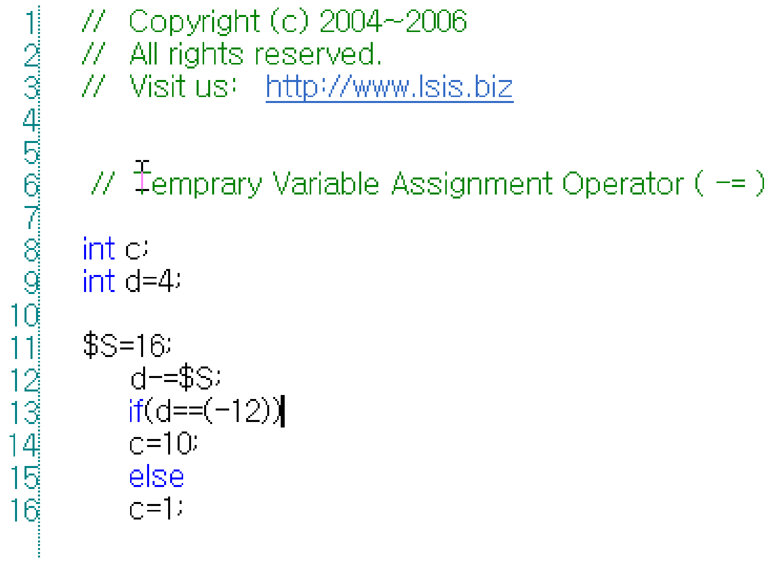

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 // Temprary Variable Assignment Operator ( -= )

int c;
int d=4;

$S=16;
     d-=$S;
     if(d==(-12))
     c=10;
     else
     c=1;
```

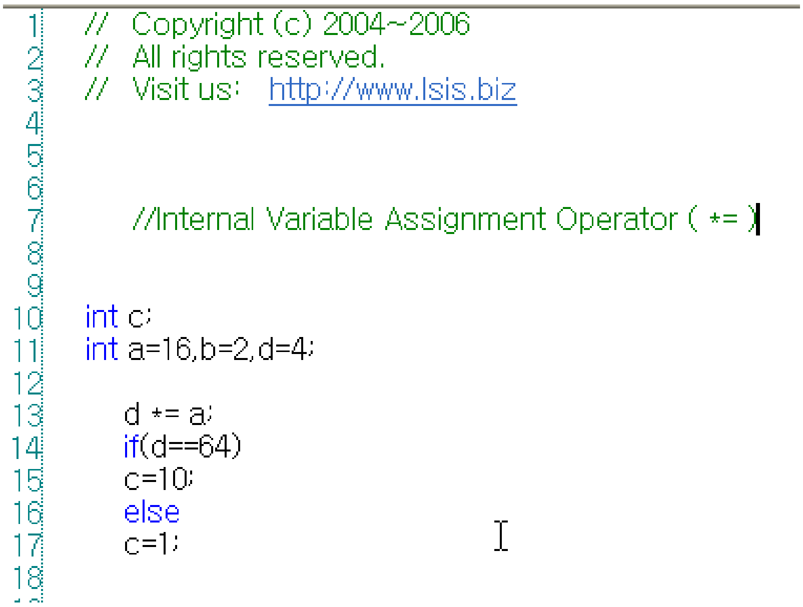
4) *= Operator

Form) <Device> *= <term>

Function) Multiplies <Device> by <term> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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     //Internal Variable Assignment Operator ( *= )


int c;
int a=16,b=2,d=4;

    d *= a;
    if(d==64)
    c=10;
    else
    c=1;
```
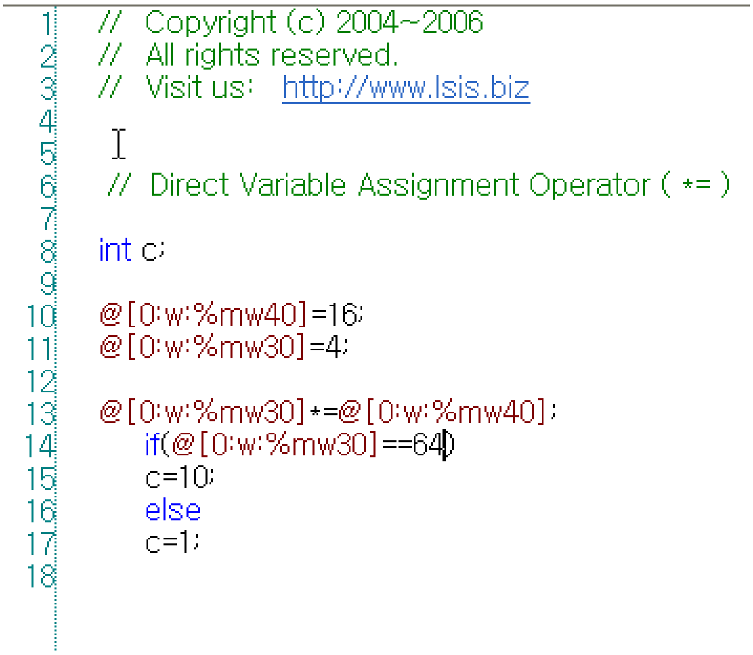

b） Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 // Direct Variable Assignment Operator ( *= )

int c;

@[0:w:%mw40]=16;
@[0:w:%mw30]=4;

@[0:w:%mw30]*=@[0:w:%mw40];
    if(@[0:w:%mw30]==64)
    c=10;
    else
    c=1;

```
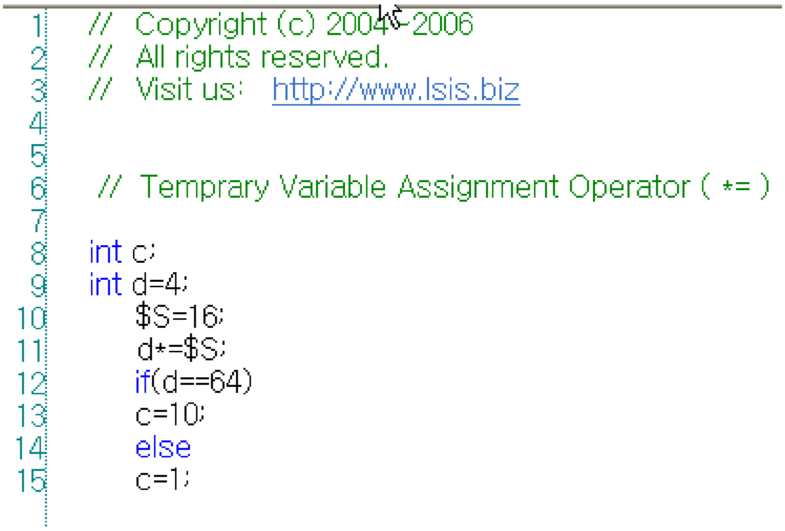

c） Temporary Variable



```
//  Copyright (c) 2004~2006
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 // Temprary Variable Assignment Operator ( *= )

int c;
int d=4;
    $S=16;
    d*=$S;
    if(d==64)
    c=10;
    else
    c=1;
```

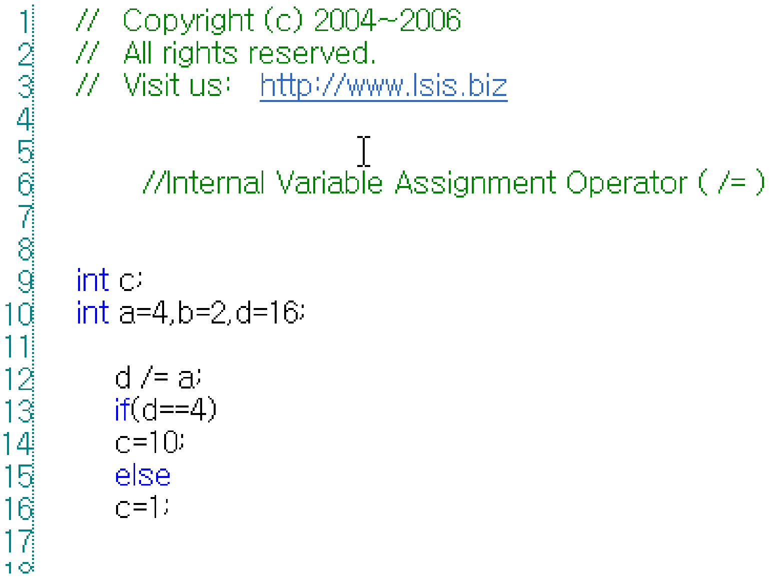
5) /= Operator

Form) <Device> /= <term>

Function) Divides <Device> by <term> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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       //Internal Variable Assignment Operator ( /= )


int c;
int a=4,b=2,d=16;

    d /= a;
    if(d==4)
    c=10;
    else
    c=1;
```
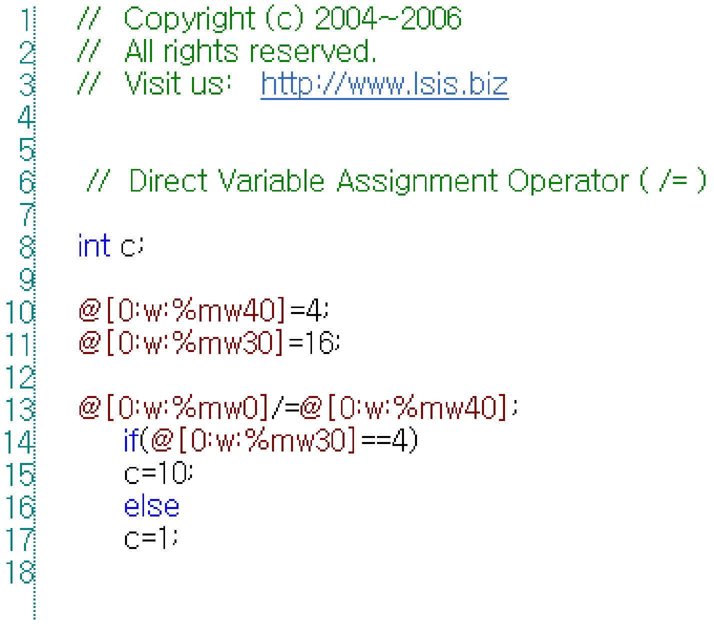

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Assignment Operator ( /= )

int c;

@[0:w:%mw40]=4;
@[0:w:%mw30]=16;

@[0:w:%mw0]/=@[0:w:%mw40];
     if(@[0:w:%mw30]==4)
     c=10;
     else
     c=1;
```
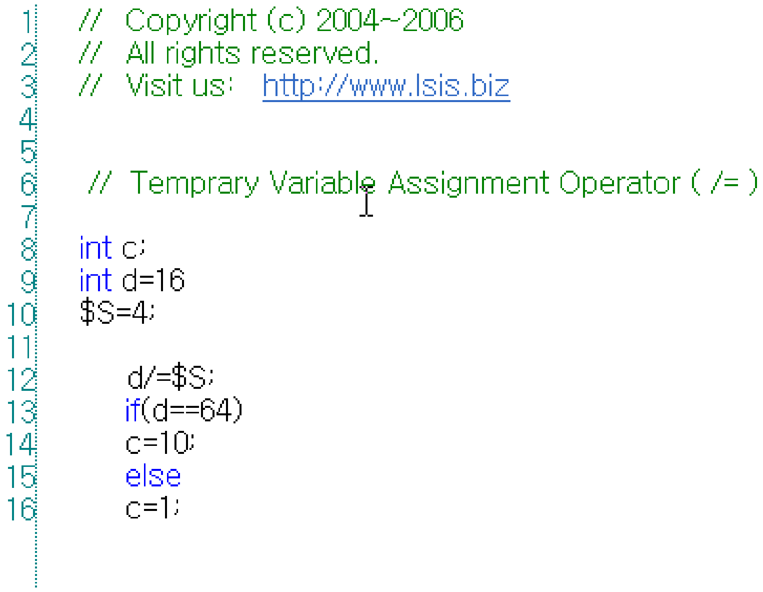

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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 //  Temprary Variable Assignment Operator ( /= )

int c;
int d=16
$S=4;

     d/=$S;
     if(d==64)
     c=10;
     else
     c=1;
```

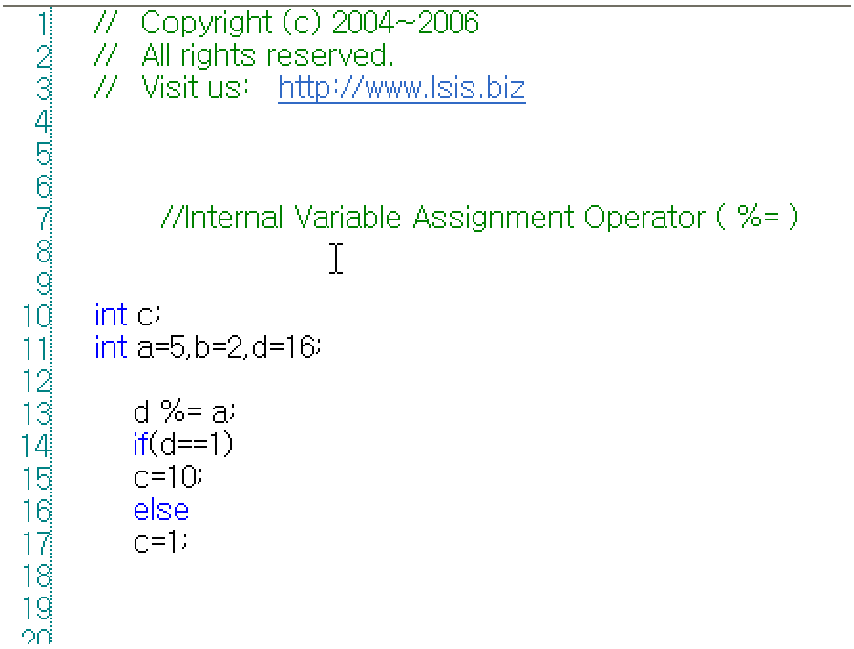
6) %= Operator

Form) <Device> %= <term>

Function) Divides <Device> by <term> and takes the residue and then assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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       //Internal Variable Assignment Operator ( %= )


int c;
int a=5,b=2,d=16;

    d %= a;
    if(d==1)
    c=10;
    else
    c=1;
```
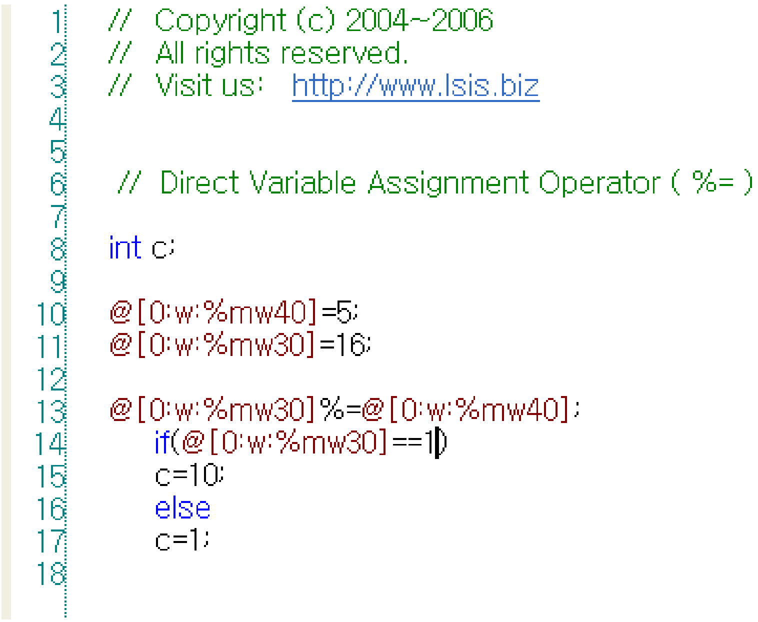

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Assignment Operator ( %= )

int c;

@[0:w:%mw40]=5;
@[0:w:%mw30]=16;

@[0:w:%mw30]%=@[0:w:%mw40];
    if(@[0:w:%mw30]==1)
    c=10;
    else
    c=1;

```
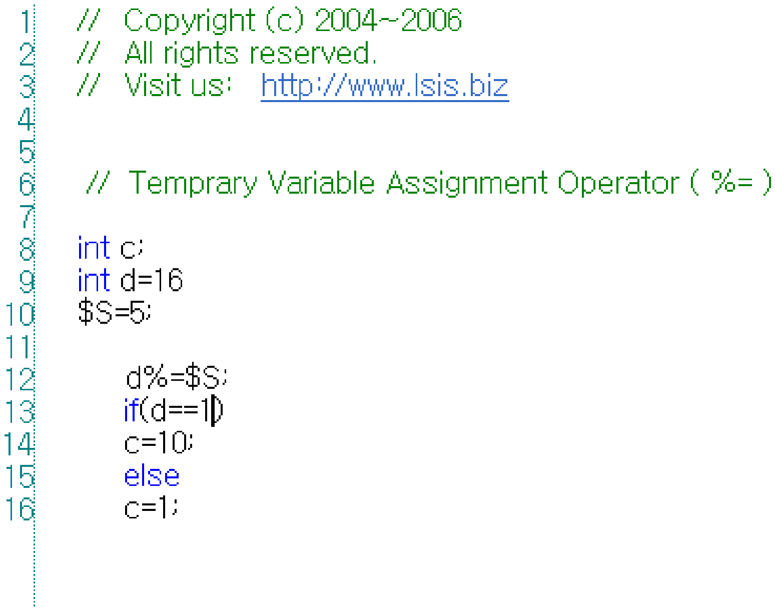

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Temprary Variable Assignment Operator ( %= )

int c;
int d=16
$S=5;

    d%=$S;
    if(d==1)
    c=10;
    else
    c=1;
```

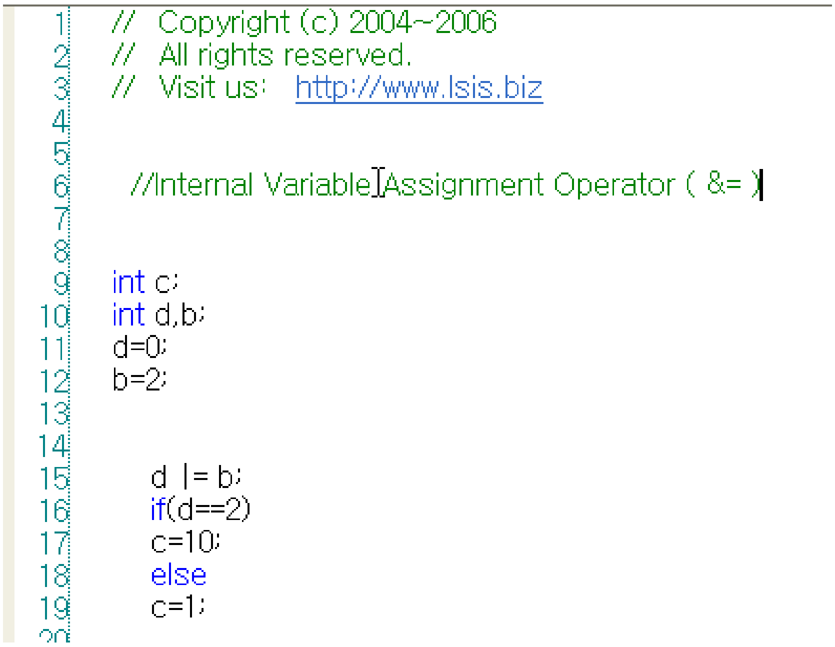
7) &= Operator

Form) <Device> &= <term>

Function) Performs the bit operation(AND) of <term> to <Device> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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  //Internal Variable Assignment Operator ( &= )


int c;
int d,b;
d=0;
b=2;


    d |= b;
    if(d==2)
    c=10;
    else
    c=1;
```
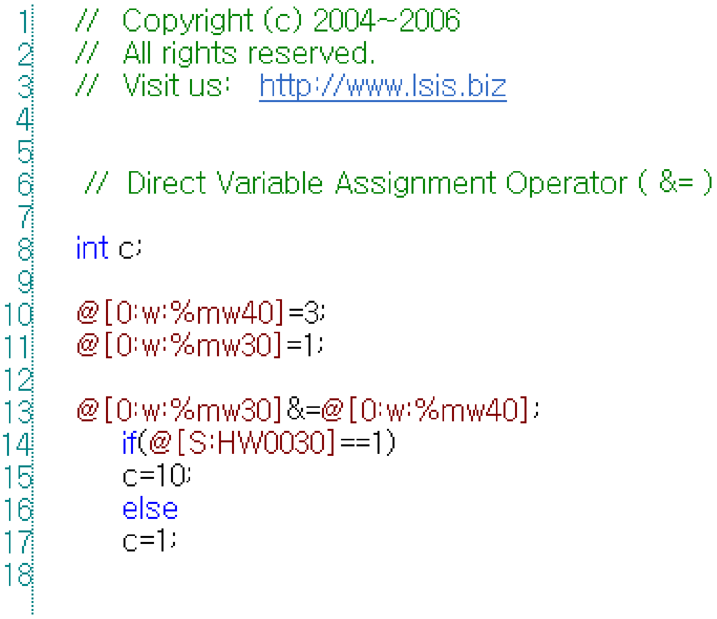

b) Direct Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 //  Direct Variable Assignment Operator ( &= )

int c;

@[0:w:%mw40]=3;
@[0:w:%mw30]=1;

@[0:w:%mw30]&=@[0:w:%mw40];
     if(@[S:HW0030]==1)
     c=10;
     else
     c=1;

```

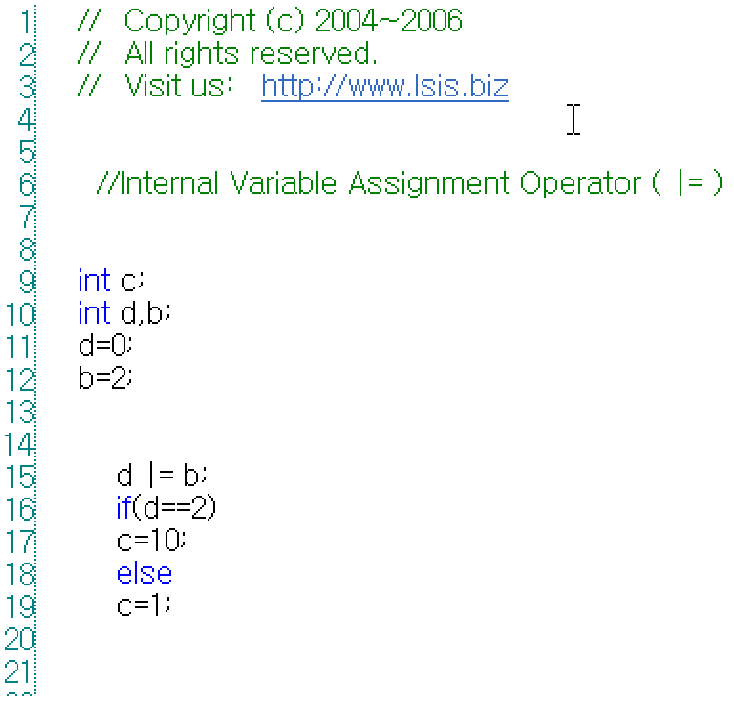
8) |= Operator

Form) <Device> |= <term>

Function) Performs the bit operation(OR) of <term> to <Device> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
//  Copyright (c) 2004~2006
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  //Internal Variable Assignment Operator ( |= )


int c;
int d,b;
d=0;
b=2;


    d |= b;
    if(d==2)
    c=10;
    else
    c=1;
```
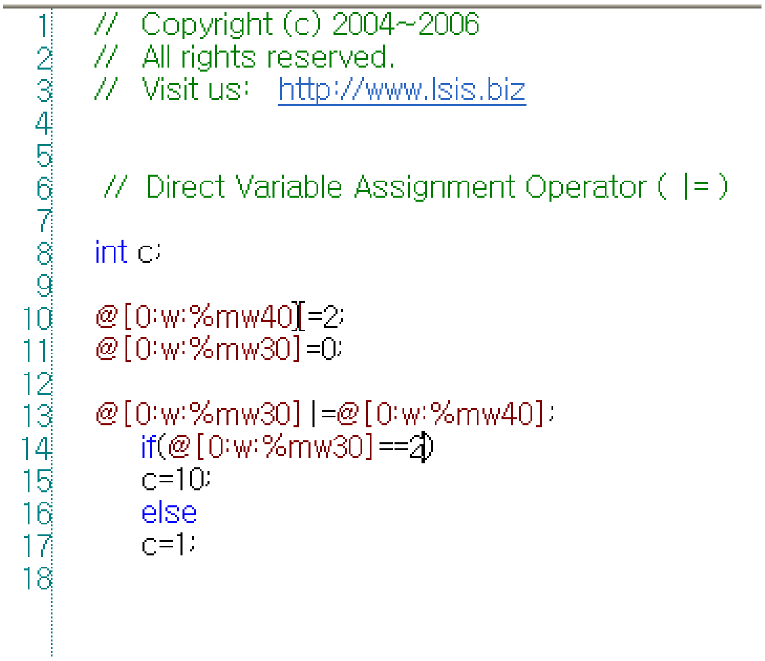

b) Direct Variable



```
//  Copyright (c) 2004~2006
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 //  Direct Variable Assignment Operator ( |= )

int c;

@[0:w:%mw40]=2;
@[0:w:%mw30]=0;

@[0:w:%mw30]|=@[0:w:%mw40];
    if(@[0:w:%mw30]==2)
    c=10;
    else
    c=1;
```
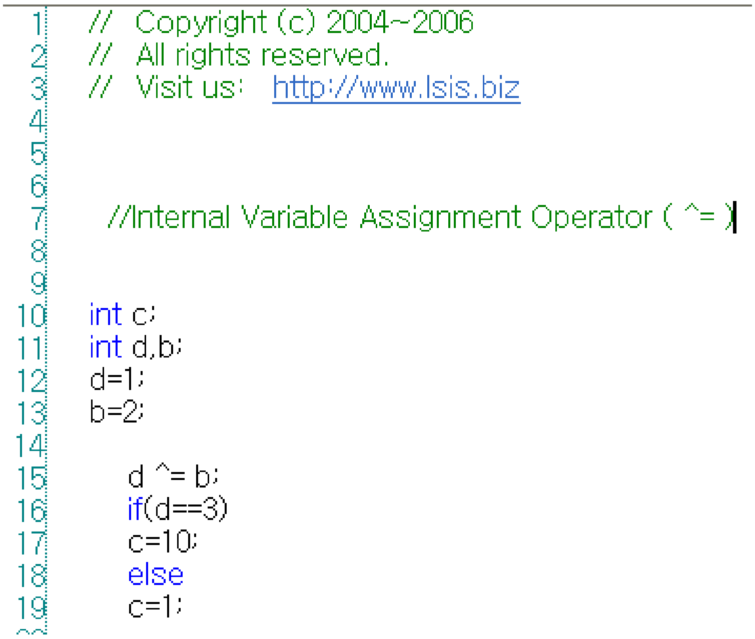

9) ^= Operator

Form) <Device> ^= <term>

Function) Performs the bit operation(EOR) of <term> to <Device> and assigns the value of the result of the operation to <Device>.

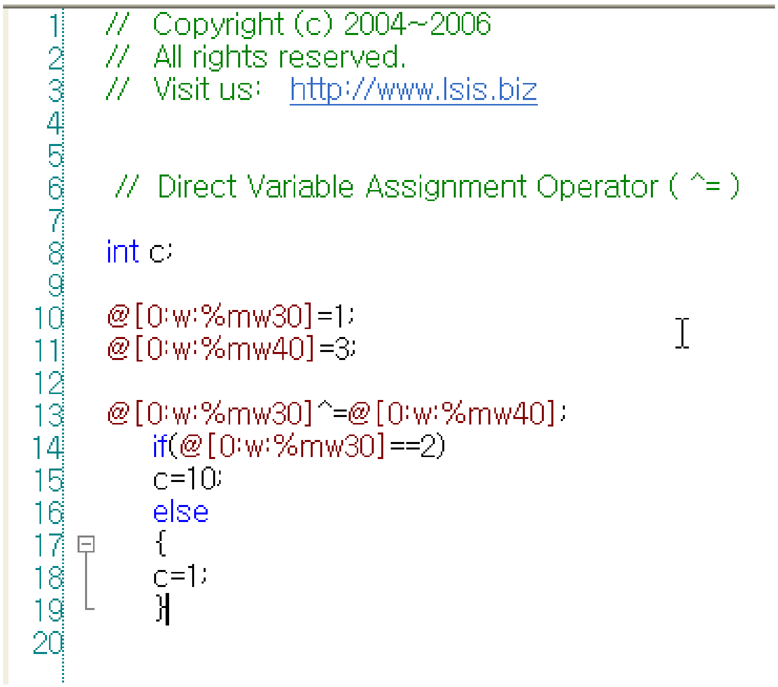
Example of use in the program)

a) Internal Variable



```
// Copyright (c) 2004~2006
// All rights reserved.
// Visit us: http://www.lsis.biz



  //Internal Variable Assignment Operator ( ^= )


int c;
int d,b;
d=1;
b=2;

    d ^= b;
    if(d==3)
    c=10;
    else
    c=1;
```

b) Direct Variable



```
// Copyright (c) 2004~2006
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// Visit us: http://www.lsis.biz


 // Direct Variable Assignment Operator ( ^= )

int c;

@[0:w:%mw30]=1;
@[0:w:%mw40]=3;

@[0:w:%mw30]^=@[0:w:%mw40];
    if(@[0:w:%mw30]==2)
    c=10;
    else
    {
    c=1;
    }
```
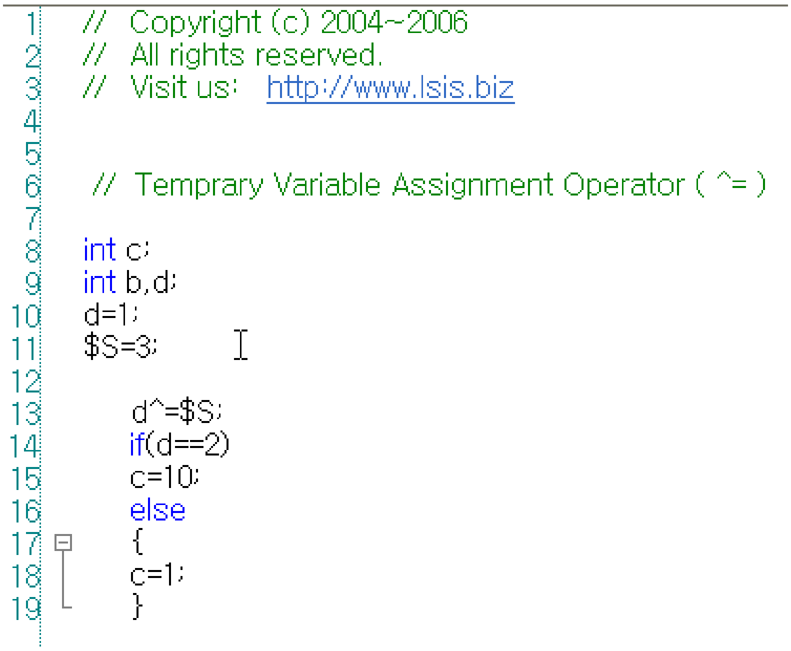

c) Temporary Variable



```
// Copyright (c) 2004~2006
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// Visit us: http://www.lsis.biz


 // Temprary Variable Assignment Operator ( ^= )

int c;
int b,d;
d=1;
$S=3;

    d^=$S;
    if(d==2)
    c=10;
    else
    {
    c=1;
    }
```
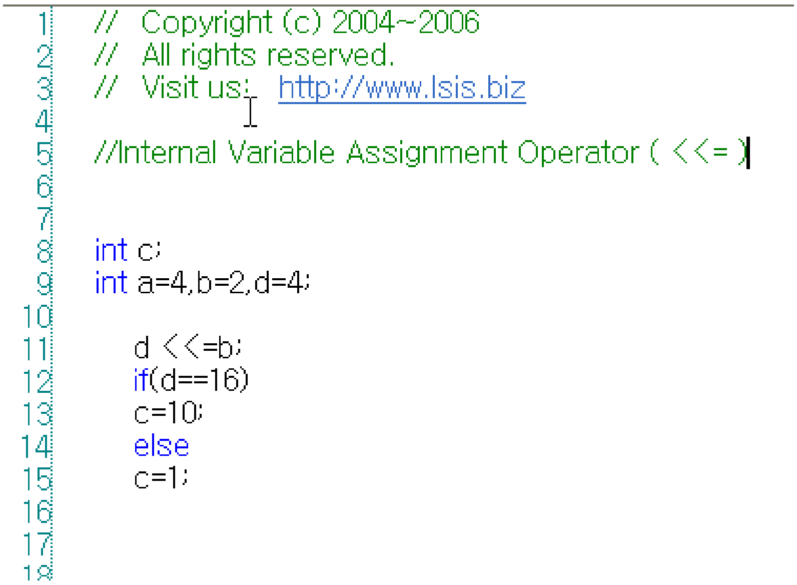

10) <<= Operator

Form) <Device> << <term>

Function) Shifts <Device> to the left by <term> and assigns the value of the result of the operation to <Device>.

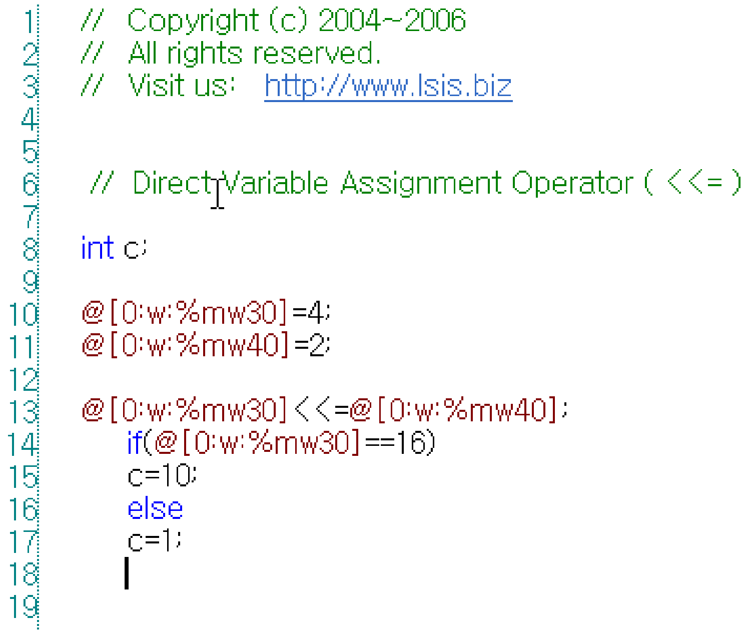
Example of use in the program)

a) Internal Variable



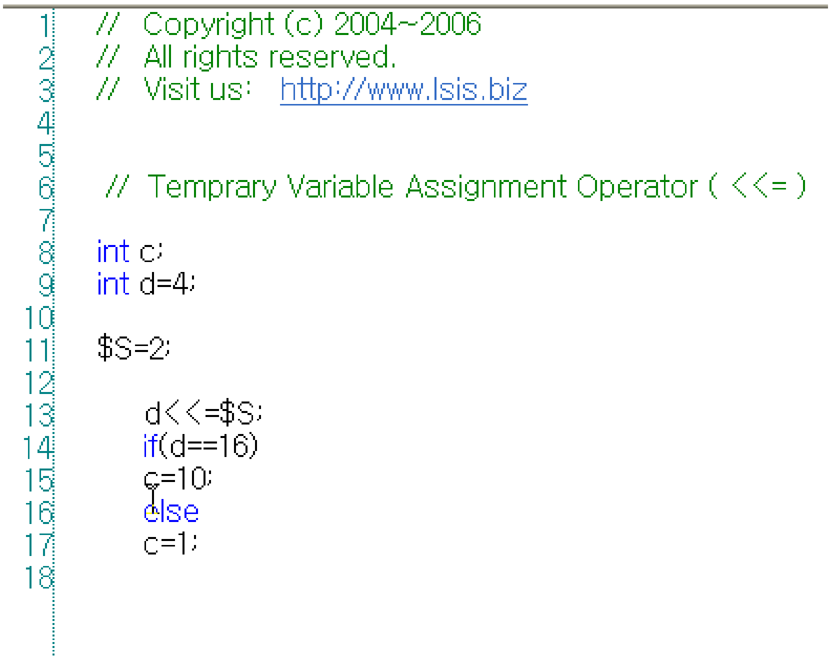
```
// Copyright (c) 2004~2006
// All rights reserved.
// Visit us: http://www.lsis.biz

//Internal Variable Assignment Operator ( <<= )


int c;
int a=4,b=2,d=4;

   d <<=b;
   if(d==16)
   c=10;
   else
   c=1;
```

b) Direct Variable



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:   http://www.lsis.biz


 //  Direct Variable Assignment Operator ( <<= )

int c;

@[0:w:%mw30]=4;
@[0:w:%mw40]=2;

@[0:w:%mw30]<<=@[0:w:%mw40];
    if(@[0:w:%mw30]==16)
    c=10;
    else
    c=1;
```

c) Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:   http://www.lsis.biz


 //  Temprary Variable Assignment Operator ( <<= )

int c;
int d=4;

$S=2;

    d<<=$S;
    if(d==16)
    c=10;
    else
    c=1;
```

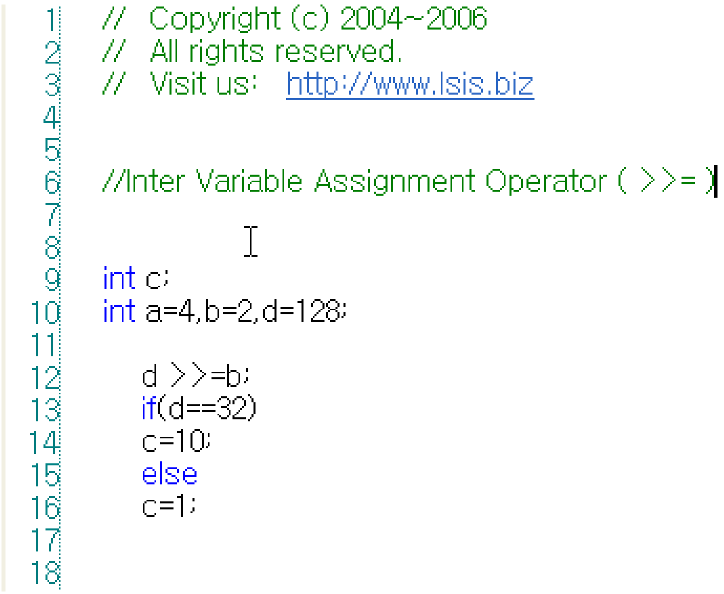
11) >>= Operator

Form) <Device> >> <term>

Function) Shifts <Device> to the right by <term> and assigns the value of the result of the operation to <Device>.

Example of use in the program)

a) Internal Variable



```
// Copyright (c) 2004~2006
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// Visit us: http://www.lsis.biz


//Inter Variable Assignment Operator ( >>= )


int c;
int a=4,b=2,d=128;

    d >>=b;
    if(d==32)
    c=10;
    else
    c=1;


```
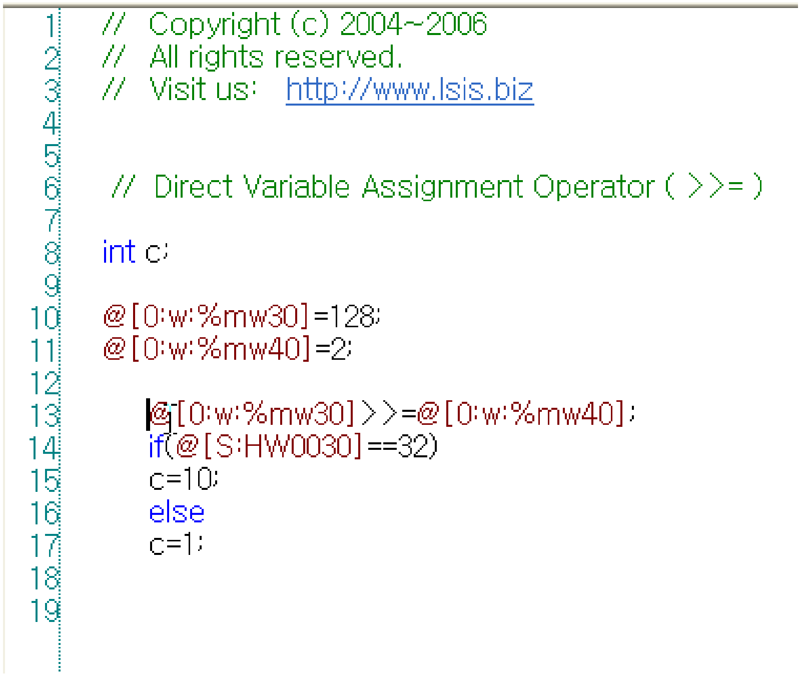

b) Direct Variable



```
// Copyright (c) 2004~2006
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// Visit us: http://www.lsis.biz


 // Direct Variable Assignment Operator ( >>= )

int c;

@[0:w:%mw30]=128;
@[0:w:%mw40]=2;

    @[0:w:%mw30]>>=@[0:w:%mw40];
    if(@[S:HW0030]==32)
    c=10;
    else
    c=1;


```
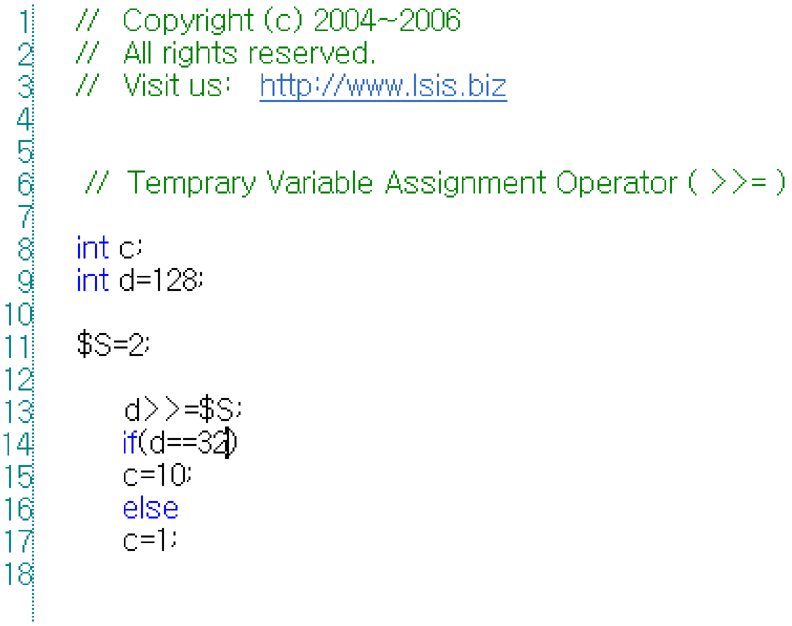

c） Temporary Variable



```
//  Copyright (c) 2004~2006
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//  Visit us:   http://www.lsis.biz


 //  Temprary Variable Assignment Operator ( >>= )

int c;
int d=128;

$S=2;

    d>>=$S;
    if(d==32)
    c=10;
    else
    c=1;

```
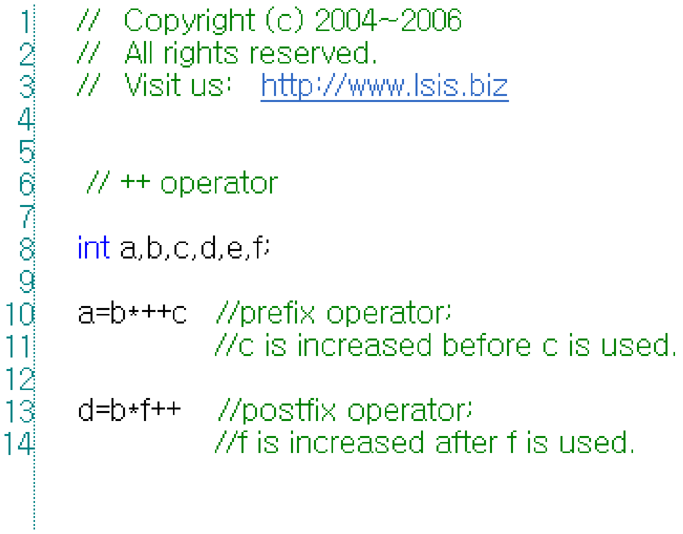

(g) Increment/Decrement Operator

1) + + Operator

Form) ++ <Device>   / <Device>   ++

Function) The first, which is used before the operand, is referred to as the prefix operator and the second, which is used after the operand, is referred to as the postfix operator. They have the same function but are different in the time when the increment occurs.

Example of use in the program)



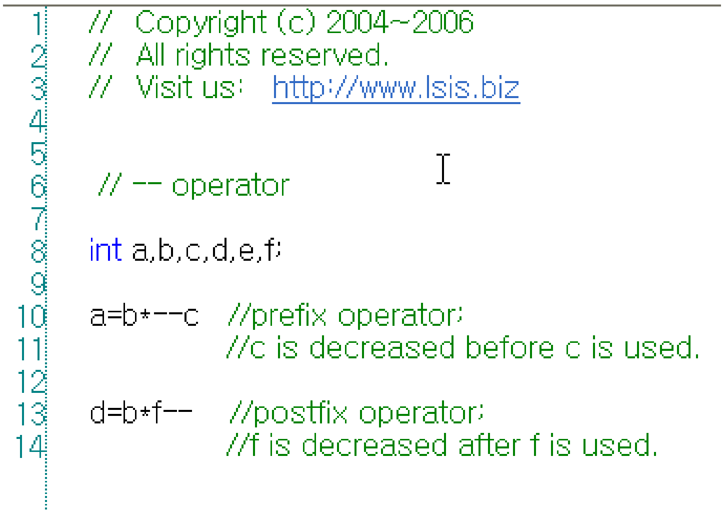
```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:   http://www.lsis.biz


 // ++ operator

int a,b,c,d,e,f;

a=b*++c   //prefix operator;
          //c is increased before c is used.

d=b*f++   //postfix operator;
          //f is increased after f is used.
```

2) - - Operator

Form) - - <Device> / <Device> - -

Function) The first, which is used before the operand, is referred to as the prefix operator and the second, which is used after the operand, is referred to as the postfix operator. They have the same function but are different in the time when the increment occurs.

Example of use in the program)



```
//  Copyright (c) 2004~2006
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 // -- operator

int a,b,c,d,e,f;

a=b*--c   //prefix operator;
          //c is decreased before c is used.

d=b*f--    //postfix operator;
          //f is decreased after f is used.
```

18.3 Application Data and Expressions

(1) Four different constants are provided.

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

(2) 7 types are provided.

Type	Data range	Example
bool (1 bit)	0 ~ 1	Bool bState = true;
char (8 bit)	0 ~ 255	Char cChar = 'a' ;
short(16 bit)	-32768 ~ 32767 or 0 ~ 7FFF	Short wValue = -10 ;
int (32 bit)	-2147483648 ~ 2147483647 or 0 ~ 7FFFFFFF	int nValue = -100 ;
unsigned short(16 bit)	0 ~ 65535 or 0 ~ FFFF	unsigned short wValue = 10 ;
unsigned int(32 bit)	0 ~ 4294967295 or 0 ~ FFFFFFFF	unsigned int nValue = 100 ;
Float (32 bit)	-3.402823466e+38 ~ -1.175494351e-38, 0.0, or 1.175494351e-38 ~ 3.402823466e+38	float fValue = 10.01 ;

Note

1) Bit: is the smallest unit of memory. A bit can have only either 0 or 1. (It can also be said that the bit is On or Off.

(a) Bool Type

The data type which can express only either True or False.

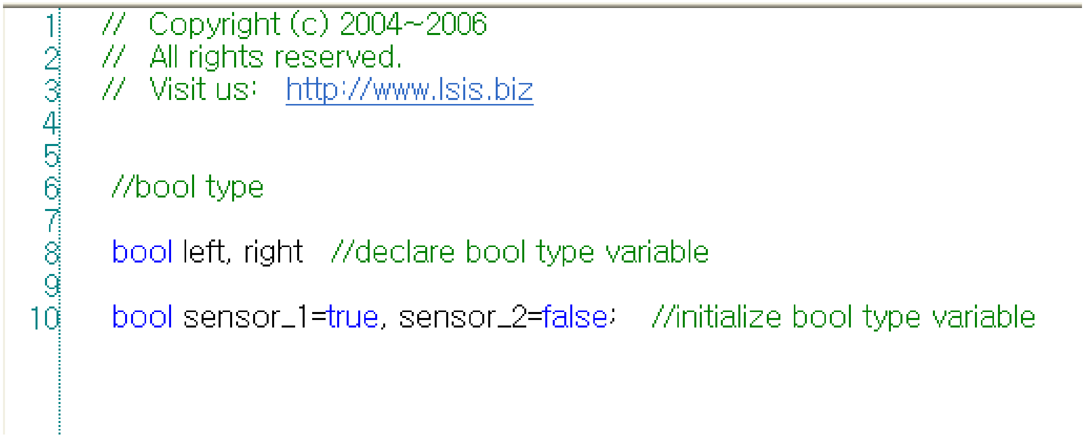
1) Variable Declaration

"bool" comes first and then the variable name comes.

2) Variable Initialization

Initializes as "true" or "false".

3) Example



```
//  Copyright (c) 2004~2006
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 //bool type

 bool left, right   //declare bool type variable

 bool sensor_1=true, sensor_2=false;   //initialize bool type variable
```

(b) Short Type

Short can use a smaller memory than int.

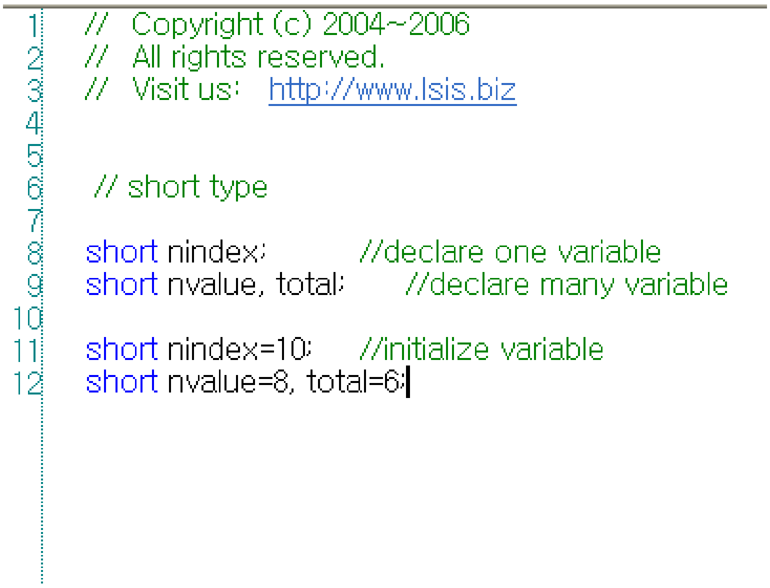
1) Variable Declaration

A short type variable is declared in the same way as other variables.

2) Variable Initialization

Place the assignment operator "=" after the variable name and specify the value you want to assign. The range is "-32768 ~ 32767" or "0 ~ 7FFF".

3) Example



```
//  Copyright (c) 2004~2006
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 // short type

short nindex;          //declare one variable
short nvalue, total;      //declare many variable

short nindex=10;     //initialize variable
short nvalue=8, total=6;
```

(c) int Type

The int type is a signed integer. This means that the int type must be an integer and can be a positive or negative number or 0.

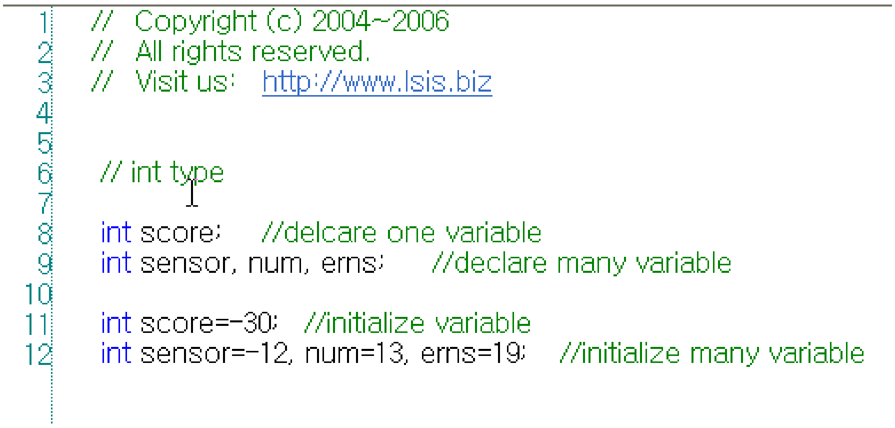
1) Variable Declaration

The “int” keyword is used to declare basic integer variables. “int” comes first, then the variable name and lastly “ ; “(semicolon) come. To declare more than one variable, “int” shall comes first and the variables shall be separated by commas. You can declare each separate variable or declare them all in a line. Both have the same effect.

2) Variable Initialization

Initialization of a variable is assign the initial value or start to the variable. Place the assignment operator “=” after the variable name and specify the desired value.

3) Example



```
//  Copyright (c) 2004~2006
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 // int type

 int score;    //delcare one variable
 int sensor, num, erns;     //declare many variable

 int score=-30;  //initialize variable
 int sensor=-12, num=13, erns=19;    //initialize many variable
```

(d) unsigned int

This is used to the variables with only positive values. This type changes the range of the numbers that can be saved. For example, the int type ranges between -32768 ~ 32767 in the 2 byte system while the unsigned int type ranges between 0 and 65535. This is possible because the bit used as a sign in int is used as a digit of the binary number.

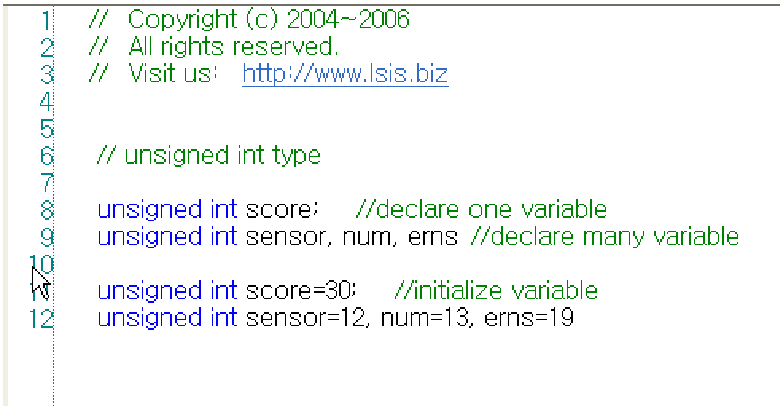
1) Variable Declaration

A unsigned int variable is declared in the same way as other variables.

2) Variable Initialization

Place the assignment operator “=” after the variable name and specify the value you want to assign. The data range is 0 ~ 65535 or ”0 ~ FFFF”.

3) Example



```
//  Copyright (c) 2004~2006
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//  Visit us:  http://www.lsis.biz


 // unsigned int type

 unsigned int score;    //declare one variable
 unsigned int sensor, num, erns //declare many variable

 unsigned int score=30;    //initialize variable
 unsigned int sensor=12, num=13, erns=19
```

(e) unsigned short

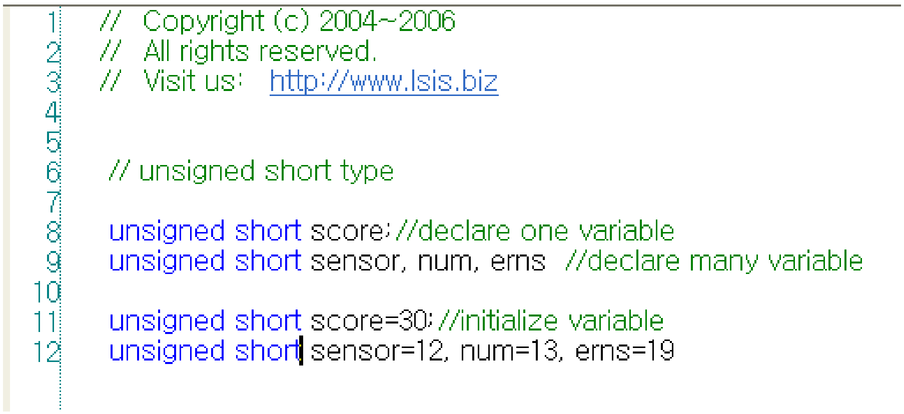
1) Variable Declaration

A unsigned short variable is declared in the same way as other variables.

2) Variable Initialization

Place the assignment operator “=” after the variable name and specify the value you want to assign. The data range is 0 ~ 4294967295 or 0 ~ FFFFFFFF.

3) Example



```
//  Copyright (c) 2004~2006
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 // unsigned short type

 unsigned short score; //declare one variable
 unsigned short sensor, num, erns  //declare many variable

 unsigned short score=30; //initialize variable
 unsigned short sensor=12, num=13, erns=19
```

(f) Float

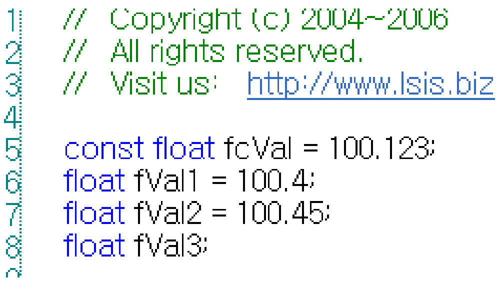
1) Variable Declaration

Float type variable can be declared with the same way like other variables.

2) Initializing variable

Insert “=” at the back of variable name and indicate the value to be substituted. The range of data is -3.402823466e+38 ~ -1.175494351e-38, 0.0, or 1.175494351e-38 ~ 3.402823466e+38

3) Example



```
//  Copyright (c) 2004~2006
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const float fcVal = 100.123;
float fVal1 = 100.4;
float fVal2 = 100.45;
float fVal3;
```

(3) Applicable Devices and Expressions

Device	Statement Example	Example
BIT device	@[No:X:*1]	@[0:X:P001]
SHORT(16 bit) device	@[No:S:*1]	@[0:S:P000]
INT (32 bit) device	@[No:L:*1]	@[0:L:P000]
UNSIGNED SHORT(16 bit) device	@[No:W:*1]	@[0:W:P000]
UNSIGNED INT(32 bit) device	@[No:D:*1]	@[0:D:P000]
FLOAT(32 비트) device	@[No:F:*1]	@[0:F:P000]

(a) BIT Device

Form) @[No:X:*1]

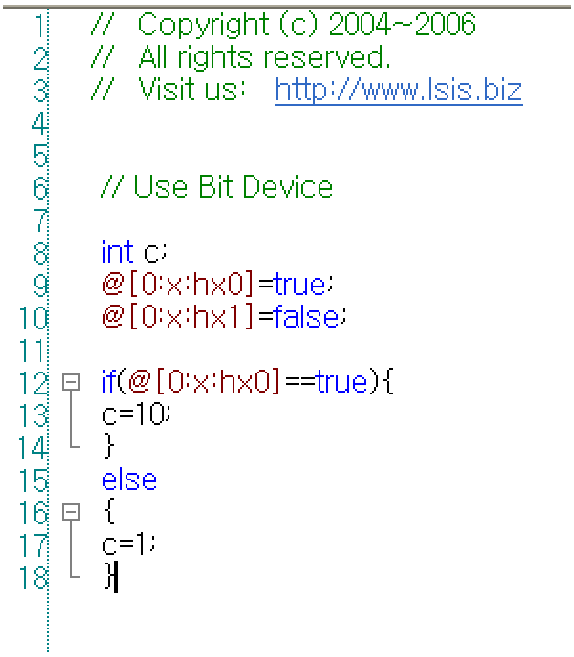
Function)

No is the network number and ranges between 0 and 3.

X is the bool type variable and ranges between 0 and 1.

*1 is the address value and the devices and the range of the address values differ according to the PLC type.

Example)



```
//  Copyright (c) 2004~2006
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 // Use Bit Device

 int c;
 @[0:x:hx0]=true;
 @[0:x:hx1]=false;

 if(@[0:x:hx0]==true){
 c=10;
 }
 else
 {
 c=1;
 }
```

(b) SHORT (16 bit) Device

Form) @[No:S:*1]

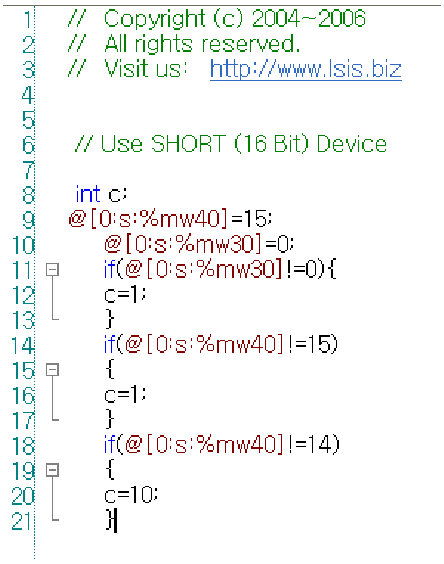
Function)

No is the network number and ranges between 0 and 3.

S is the bool type variable and ranges between -32768 ~ 32767 or 0 ~ 7FFF.

*1 is the address value and the devices and the range of the address values differ according to the PLC type.

Example)



```
//  Copyright (c) 2004~2006
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 // Use SHORT (16 Bit) Device

 int c;
@[0:s:%mw40]=15;
    @[0:s:%mw30]=0;
    if(@[0:s:%mw30]!=0){
    c=1;
    }
    if(@[0:s:%mw40]!=15)
    {
    c=1;
    }
    if(@[0:s:%mw40]!=14)
    {
    c=10;
    }
```

(c) INT (32 bit) Device

Form) @[No:L:*1]

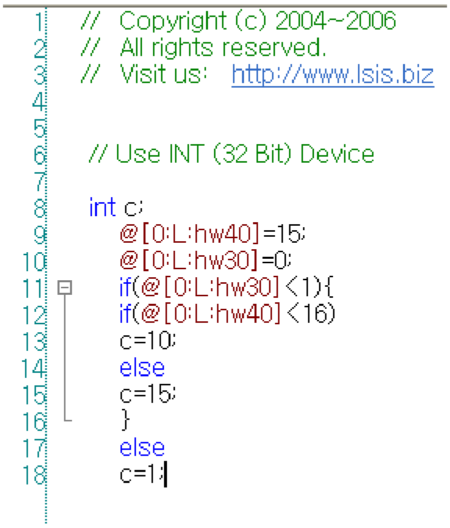
Function)

No is the network number and ranges between 0 and 3.

L is the bool type variable and ranges between -2147483648 ~ 2147483647 or 0 ~ 7FFFFFFF.

*1 is the address value and the devices and the range of the address values differ according to the PLC type.

Example)



```
//  Copyright (c) 2004~2006
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 // Use INT (32 Bit) Device

 int c;
    @[0:L:hw40]=15;
    @[0:L:hw30]=0;
    if(@[0:L:hw30]<1){
    if(@[0:L:hw40]<16)
    c=10;
    else
    c=15;
    }
    else
    c=1;
```

(d) UNSIGNED SHORT(16 bit) Device

Form) @[No:W:*1]

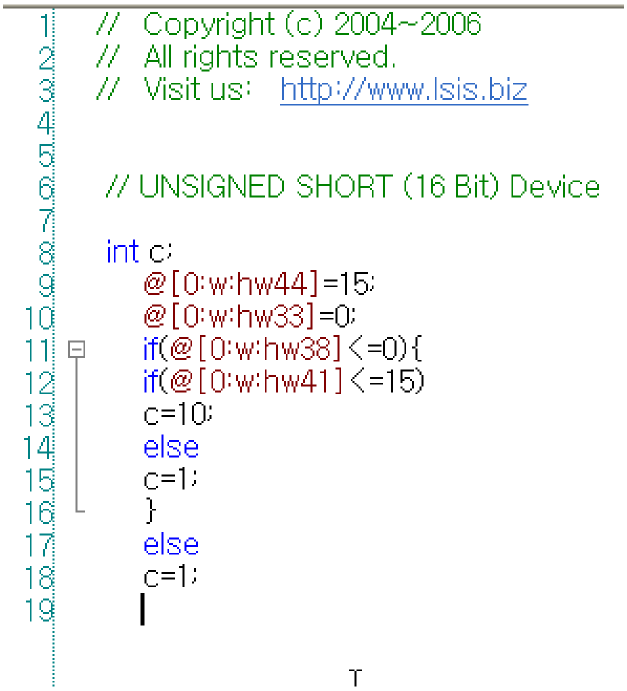
Function)

No is the network number and ranges between 0 and 3.

W is the bool type variable and ranges between 0 ~ 65535 or 0 ~ FFFF.

*1 is the address value and the devices and the range of the address values differ according to the PLC type.

Example)



```
//  Copyright (c) 2004~2006
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 // UNSIGNED SHORT (16 Bit) Device

 int c;
     @[0:w:hw44]=15;
     @[0:w:hw33]=0;
     if(@[0:w:hw38]<=0){
     if(@[0:w:hw41]<=15)
     c=10;
     else
     c=1;
     }
     else
     c=1;
```

(e) UNSIGNED INT(32 bit) Device

Form) @[No:D:*1]

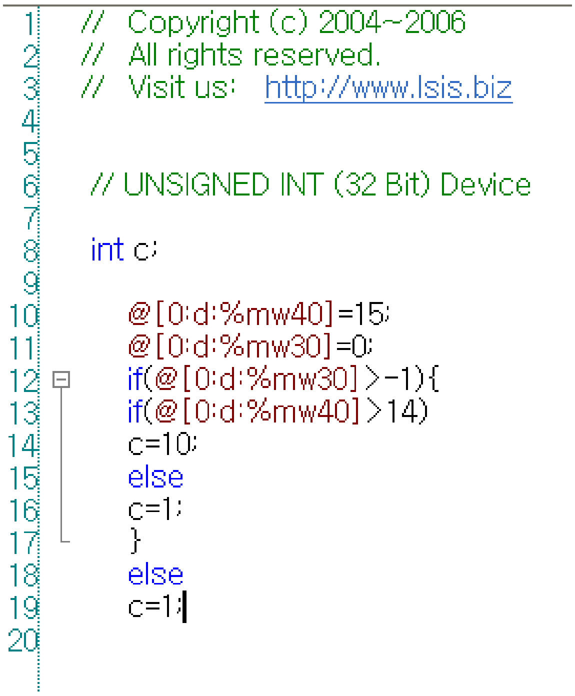
Function)

No is the network number and ranges between 0 and 3.

D the bool type variable and ranges between 0 ~ 4294967295 or 0 ~ FFFFFFFF.

*1 is the address value and the devices and the range of the address values differ according to the PLC type.

Example)



```
//  Copyright (c) 2004~2006
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//  Visit us:   http://www.lsis.biz


 // UNSIGNED INT (32 Bit) Device

 int c;

    @[0:d:%mw40]=15;
    @[0:d:%mw30]=0;
    if(@[0:d:%mw30]>-1){
    if(@[0:d:%mw40]>14)
    c=10;
    else
    c=1;
    }
    else
    c=1;
```

(f) FLOAT (32 bit) Device

Format) @[No:F:*1]

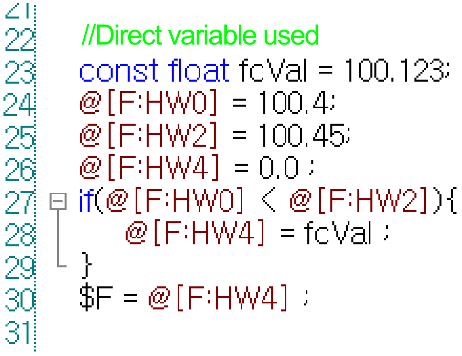
Contents)

No that means network number ranges 0~3.

F that is a float type variable ranges -3.402823466e+38 ~ -1.175494351e-38, 0.0 or 1.175494351e-38 ~ 3.402823466e+38.

* 1 indicates address value. The device and address value range may be different depending on PLC type.

Example)



```
//Direct variable used
const float fcVal = 100.123;
@[F:HW0] = 100.4;
@[F:HW2] = 100.45;
@[F:HW4] = 0.0 ;
if(@[F:HW0] < @[F:HW2]){
    @[F:HW4] = fcVal ;
}
$F = @[F:HW4] ;
```

(4) Temporary Variables

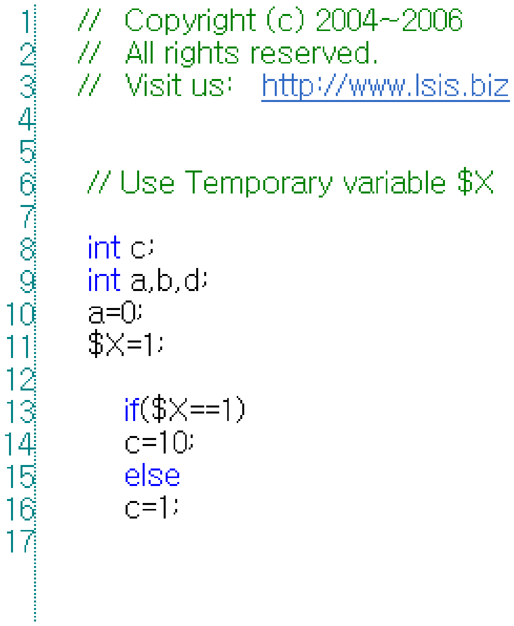
Temporary Variable	Data Range	Example
$X	0 ~ 1	$X = true;
$S	-32768 ~ 32767or 0 ~ 7FFF	$S = -10 ;
$L	-2147483648 ~ 2147483647 or 0 ~ 7FFFFFFF	$L =- 1;
$W	0 ~ 65535 or 0 ~ FFFF	$W = 10 ;
$D	0 ~ 4294967295 or 0 ~ FFFFFFFF	$D = 100 ;
$F	-3.402823466e+38 ~ -1.175494351e-38, 0.0, or 1.175494351e-38 ~ 3.402823466e+38	$F= 10.01;

(a) $X Variable

Function)

This is a bool type temporary variable and the data range is between 0 and 1.

Example)



```
// Copyright (c) 2004~2006
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// Use Temporary variable $X

int c;
int a,b,d;
a=0;
$X=1;

    if($X==1)
    c=10;
    else
    c=1;
```

(b) $S Variable

Function)

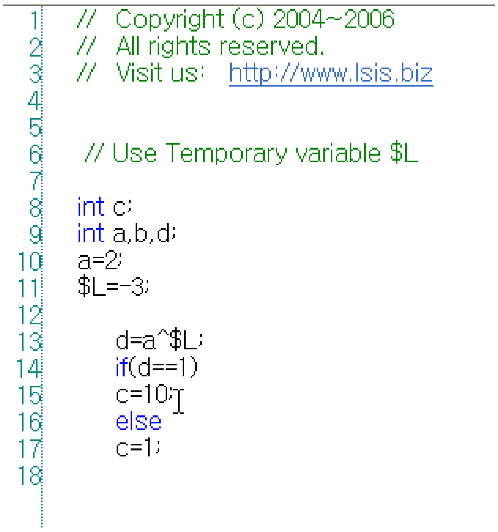
This is a short type temporary variable and the data range is -32768 ~ 32767 or 0 ~ 7FFF

(c) $L Variable

Function)

This is a int type temporary variable and the data range is -2147483648 ~ 2147483647 or 0 ~ 7FFFFFFF

Example)



```
//  Copyright (c) 2004~2006
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 // Use Temporary variable $L

int c;
int a,b,d;
a=2;
$L=-3;

    d=a^$L;
    if(d==1)
    c=10;
    else
    c=1;

```
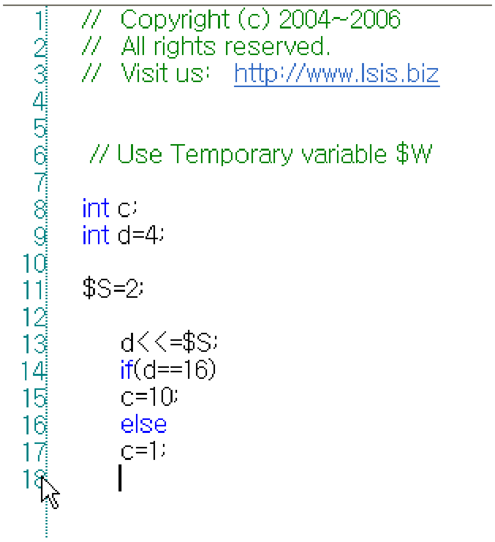

(d) $W Variable

Function)

This is a unsigned int type temporary variable and the data range is 0 ~ 65535 or 0 ~ FFFF.

Example)



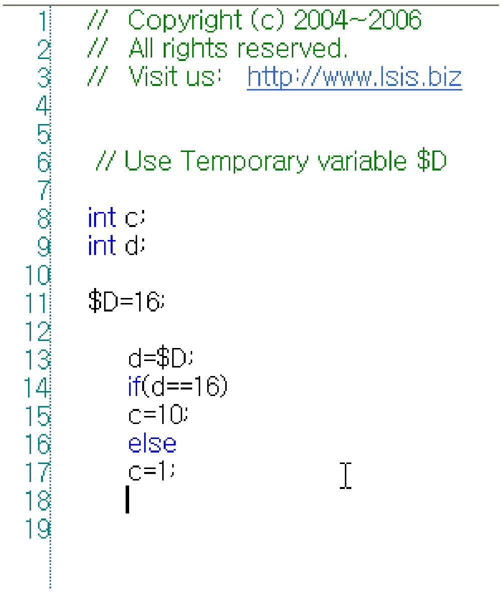
```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:   http://www.lsis.biz


 // Use Temporary variable $W

int c;
int d=4;

$S=2;

    d<<=$S;
    if(d==16)
    c=10;
    else
    c=1;

```

(e) $D Variable

Function)

This is a unsigned short type temporary variable and the data range is between 0 ~ 4294967295 or 0 ~ FFFFFFFF.

Example)



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:  http://www.lsis.biz


 // Use Temporary variable $D

int c;
int d;

$D=16;

    d=$D;
    if(d==16)
    c=10;
    else
    c=1;

```

(f) $F Variable

Contents)

It is a temporary variable and float type. The range of data is 0 -3.402823466e+38 ~ -1.175494351e-38, 0.0 or 1.175494351e-38 ~ 3.402823466e+38.

```
////////////////////////////////////////////
//if ~ else statement
 //Use internal variable
const float fcVal = 100.123;
float fVal1 = 100.4;
float fVal2 = 100.45;
float fVal3;
//Use internal variable

if(fVal1 < fcVal)
    fVal3 = fVal1 ;
else
    fVal3 = fVal2 ;

$F = fVal3 ;      //Use temporary variable
```

Note

(1) The device expression differs according to the PLC type.

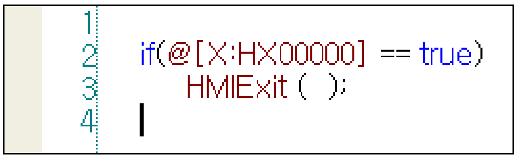
18.4 XGT Panel Control Function

18.4.1 System function

Category	Function Name	Description
System function	HMIExit	End the monitor and move to standby screen.
	InitHistoricalAlarm	Initialize the alarm area of NVRAM. Existing alarm contents are all deleted.
	InitLogging	Initialize the logging area of NVRAM. Logged contents are deleted.
	SetTime	Change the clock of XGT Panel.

(1) HMIExit

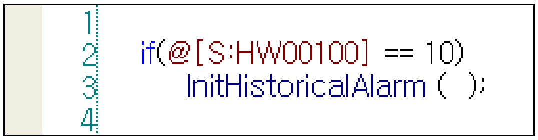
XGT Panel ends the monitor and moves to standby screen. This function can be used when the user wants to end the monitor by the Script.

	Description
Function	HMIExit()
Return value	None
Example	

```
if(@[X:HX00000] == true)
    HMIExit ( );
```

(2) InitHistoricalAlarm

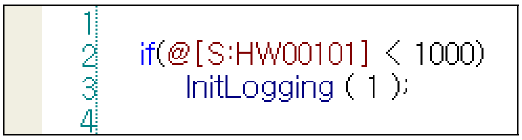
Initialize the alarm area of NVRAM. Existing alarm contents are all deleted.

	Description
Function	InitHistoricalAlarm()
Return value	None
Example	

```
if(@[S:HW00100] == 10)
    InitHistoricalAlarm ( );
```

(3) InitLogging

Initialize the logging area of NVRAM. Logged contents are deleted.

	Description
Function	InitLogging(int nLogNum)
Return value	None
Parameter 1	int nLogNum: The logging number to be initialized,
Example	

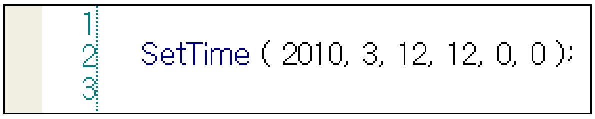
```
if(@[S:HW00101] < 1000)
    InitLogging ( 1 );
```

Nptice

(1) If any history alarm number is not valid, this function will not work.

(4) SetTime

Change the clock of XGT Panel.

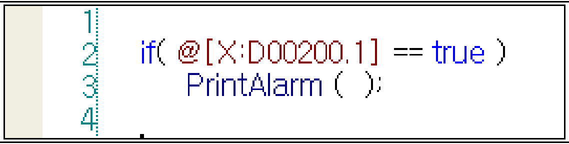
	Description
Function	SetTime(int nYear, int nMonth, int nDay, int nTime, int nMin, int nSec)
Return value	None
Parameter 1	int nYear: Year
Parameter 2	int nMonth: Month(1~12)
Parameter 3	int nDay: Day(1~31)
Parameter 4	int nTime: Hour(0~23)
Parameter 5	int nMin: Minute(0~59)
Parameter 6	Int nSec: Second(0~59)
Example	 `SetTime ( 2010, 3, 12, 12, 0, 0 );`

18.4.2 Print Function

Category	Function Name	Description
Print Function	PrintAlarm	Print the alarm list.
	PrintScreen	Print the current screen.

(1) PrintAlarm

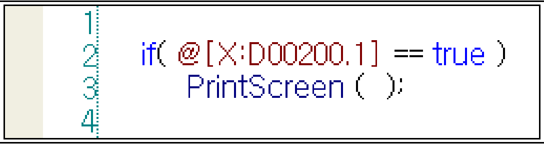
Print the alarm stored in NVRAM according to the print option of the project settings.

	Description
Function	PrintAlarm()
Return value	None
Example	

```
if( @[X:D00200.1] == true )
    PrintAlarm ( );
```

(2) PrintScreen

Print the current screen of XGT Panel. A storage location for the printed data is decided according to the “Screen Capture” option of XP-Builder Project Properties Information. Those data will be either stored or printed out according to the “Screen Capture” option of [Auxiliary Settings] Tap.

	Description
Function	void PrintScreen()
Return value	None
Example	

Example:

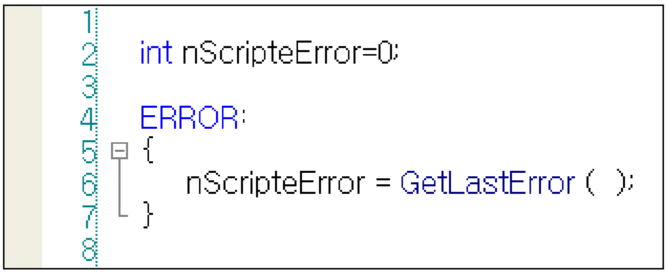
```
if( @[X:D00200.1] == true )
    PrintScreen( );
```

18.4.3 Script Function

Category	Function Name	Description
Script Function	GetLastError	Any error that takes place during Script will be returned.

(1) GetLastError

The last error(the latest) that takes place during Script will be returned.

	Description
Function	GetLastError()
Return value	int: The last error(the latest) that takes place during Script
Example	

Example:

```
int nScripteError=0;

ERROR:
{
    nScripteError = GetLastError( );
}
```

GetLastError Returned Values implies the following error circumstances:

No.	Content	Description
0	Steady State	Set a steady state.
1	Shut down	It takes place when the program is normally shut down.
2	Memory error	It takes place when any stack address value is not properly read or written.
3	Direct Variable Memory error	It takes place when any direct variable address is not properly read or written.
4	Temporary Variable Memory error	It takes place when any temporary variable address is not properly read or written.
5	Internal Function Processing	It takes place when any internal function declared to XP-Builder Builder is not properly performed.
6	Data error	It takes place when any data read from variable data value is invalid (for debug).
7	Invalid Data	It takes place when any data value is invalid when writing data values for variables (for debug).
8	Divide by 0 Error	It takes place when dividing by zero is performed.
9	Opcode Error	It takes place when opcode is invalid.

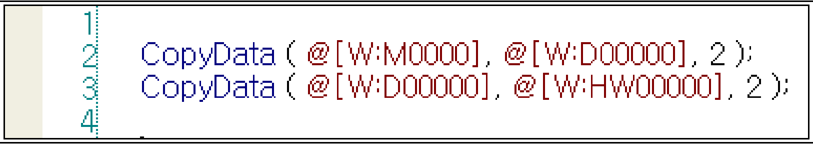
No.	Content	Description
10	Arrangement Subscript Excess	It takes place when arrangement subscript exceeds the max size.
11	Range Excess	Not used
12	Function Error	Not used
13	Semi Error	Not used
14	Watchdog Time Error	It takes place when exceeding the set watchdog time.
15	Duplication Function Number Error(10)	It takes place when calling more than 10 scripts when calling Script in the script.
16	Dead lock State	Not used
17	Memory error	It takes place when referring to something that is outside of global variable(g_DataBuffer) area
18	Memory error	It takes place when the pointer's memory exceeds the existing range of the assigned variable.
19	Memory error	It takes place when the pointer's class is wrongly entered (Available only for global variables or stack variables)
20	Memory error	In case any wrong type is entered (in case the value other than the declared variable are entered)

18.4.4 Device function

Category	Function Name	Description
Device function	CopyData	Read the data from the source device and input them to the target device.
	CopyDataEx	Read the data from the device as far as source offset from the source device and input them to the device as far as offset from the target device.
	SetData	Input values to the device.
	GetData	Get values from the device.

(1) CopyData

Read the data from the source device and input them to the target device.

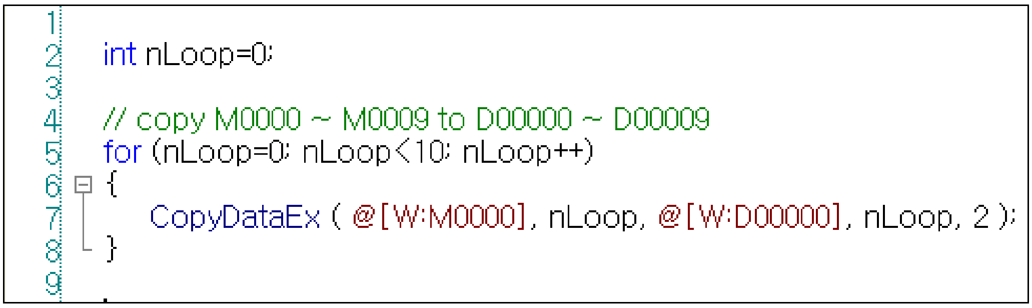
	Description
Function	CopyData(DEVICE src, DEVICE dst, int nCount)
Return value	None
Parameter 1	DEVICE src: The original device for copy
Parameter 2	DEVICE dst: The target device
Parameter 3	int nCount: The number of devices
Example	 `CopyData ( @[W:M0000], @[W:D00000], 2 );` `CopyData ( @[W:D00000], @[W:HW00000], 2 );`

Notice

(1) If there is any different in the device type between the original device for copy and the target device, any copy error may take place.
(2) In case of using PLC device, any unsmooth communication may lead to failure of copying.
(3) If the device address exceeds the maximum, any data will not be copied.

(2) CopyDataEx

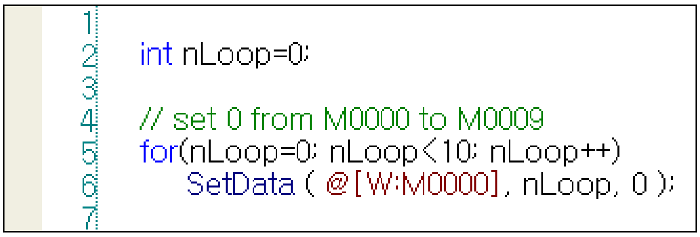
Read the data from the device as far as source offset from the source device and input them to the target device source device.

	Description
Function	CopyDataEx(DEVICE SrcDev, int nSrcOffset, DEVICE DstDev, int nDstOffset, int nCopyCount)
Return value	BOOL: If the device address exceeds, FALSE will be returned.
Parameter 1	DEVICE src: The original device for copy
Parameter 2	int nSrcOffset: Offset of the original device for copy
Parameter 3	DEVICE dst: The target device
Parameter 4	int nDstOffset: Offset of the target device
Parameter 5	int nCopyCount: The number of devices
Example	

```

int nLoop=0;

// copy M0000 ~ M0009 to D00000 ~ D00009
for (nLoop=0; nLoop<10; nLoop++)
{
    CopyDataEx ( @[W:M0000], nLoop, @[W:D00000], nLoop, 2 );
}

```

(3) SetData

Input the value to the device as far as offset from the target device.

	Description
Function	SetData(DEVICE src, int nSrcOffset, int nValue)
Return value	BOOL: If the device address exceeds, FALSE will be returned.
Parameter 1	DEVICE src: The original device
Parameter 2	int nSrcOffset: Offset of the original device
Parameter 3	int nValue: Value
Example	

```

int nLoop=0;

// set 0 from M0000 to M0009
for(nLoop=0; nLoop<10; nLoop++)
    SetData ( @[W:M0000], nLoop, 0 );

```

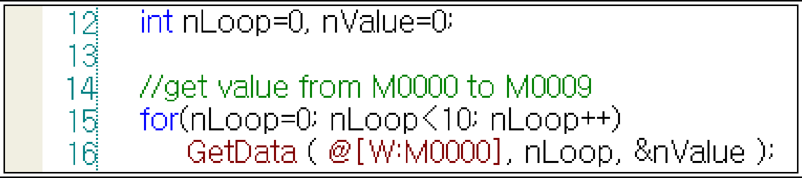
Notice

(1) In case of using PLC device, any unsmooth communication may lead to failure of copying.

(2) If the device address exceeds the maximum, any data will not be copied.

(4) GetData

Obtain the value from the device as far as offset from the target device.

	Description
Function	GetData(DEVICE src, int nSrcOffset, int* pRetValue)
Return value	BOOL: If the device address exceeds, FALSE will be returned.
Parameter 1	DEVICE src: The original device
Parameter 2	int nSrcOffset: Offset of the original device
Parameter 3	int* pRetValue: Return the value of the device.
Example	

```
int nLoop=0, nValue=0;

//get value from M0000 to M0009
for(nLoop=0; nLoop<10; nLoop++)
    GetData ( @[W:M0000], nLoop, &nValue );
```

Notice

(1) In case of using PLC device, any unsmooth communication may lead to failure of copying.

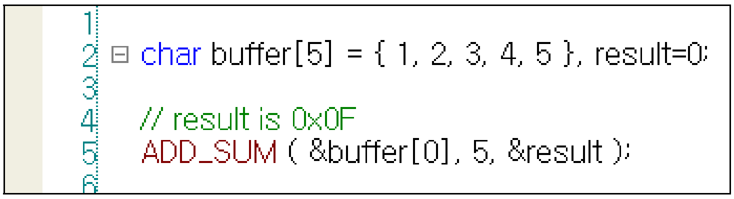
(2) If the device address exceeds the maximum, any data will not be copied.

18.4.5 Communication function

Category	Function Name	Description
Communication function	ADD_SUM	Calculate the sum of entered data to return.
	ADD_SUM_1S	Calculate the sum of entered data and obtain 1's complement and return.
	ADD_SUM_2S	Calculate the sum of entered data and obtain 2's complement and return.
	CRC16	Calculate the 16 bit CRC value of entered data and return.
	XOR_SUM	Calculate the XOR sum of entered data and return.
	ReadFromIO	Read data from I/O of a designated controller.
	WriteToIO	Transmit data to I/O of a designated controller.

(1) ADD_SUM

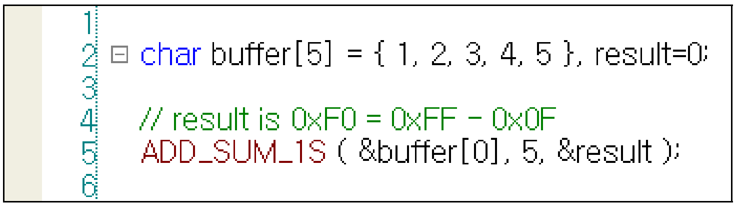
Calculate the sum of entered data to return.

	Description
Function	ADD_SUM(char* pBuffer, int nCount, int* nResult)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pBuffer: The buffer for calculation
Parameter 2	int nCount: The byte number to be calculated
Parameter 3	int* nResult: The calculated value
Example	

```

char buffer[5] = { 1, 2, 3, 4, 5 }, result=0;

// result is 0x0F
ADD_SUM ( &buffer[0], 5, &result );

```

(2) ADD_SUM_1S

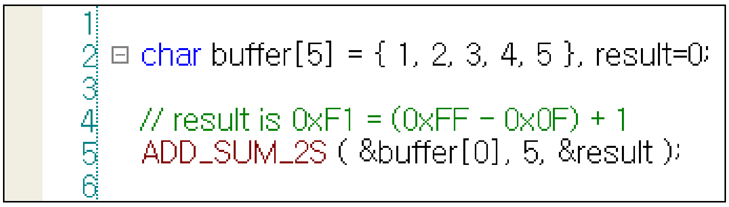
Calculate the sum of entered data and obtain 1's complement and return.

	Description
Function	ADD_SUM_1S(char* pBuffer, int nCount, int* nResult)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pBuffer: The buffer for calculation
Parameter 2	int nCount: The byte number to be calculated
Parameter 3	int* nResult: The calculated value
Example	

```
char buffer[5] = { 1, 2, 3, 4, 5 }, result=0;

// result is 0xF0 = 0xFF - 0x0F
ADD_SUM_1S ( &buffer[0], 5, &result );
```

(3) ADD_SUM_2S

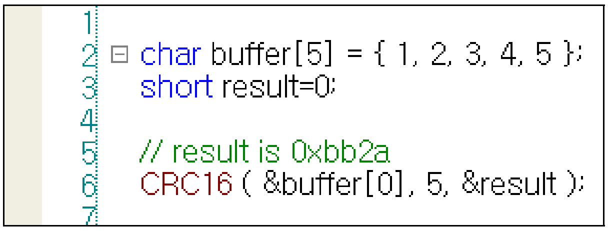
Calculate the sum of entered data and obtain 2's complement and return.

	Description
Function	ADD_SUM_2S(char* pBuffer, int nCount, int* nResult)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pBuffer: The buffer for calculation
Parameter 2	int nCount: The byte number to be calculated
Parameter 3	int* nResult: The calculated value
Example	

```
char buffer[5] = { 1, 2, 3, 4, 5 }, result=0;

// result is 0xF1 = (0xFF - 0x0F) + 1
ADD_SUM_2S ( &buffer[0], 5, &result );
```

(4) CRC16

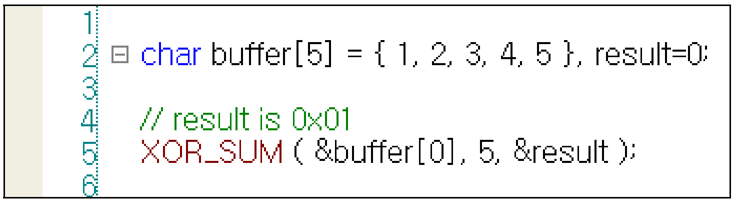
Calculate the 16 bit CRC value of entered data and return.

	Description
Function	CRC16(char* pBuffer, int nCount)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pBuffer: The buffer for calculation
Parameter 2	int nCount: The byte number to be calculated
Parameter 3	int* nResult: The calculated value
Example	

```
char buffer[5] = { 1, 2, 3, 4, 5 };
short result=0;

// result is 0xbb2a
CRC16 ( &buffer[0], 5, &result );
```

(5) XOR_SUM

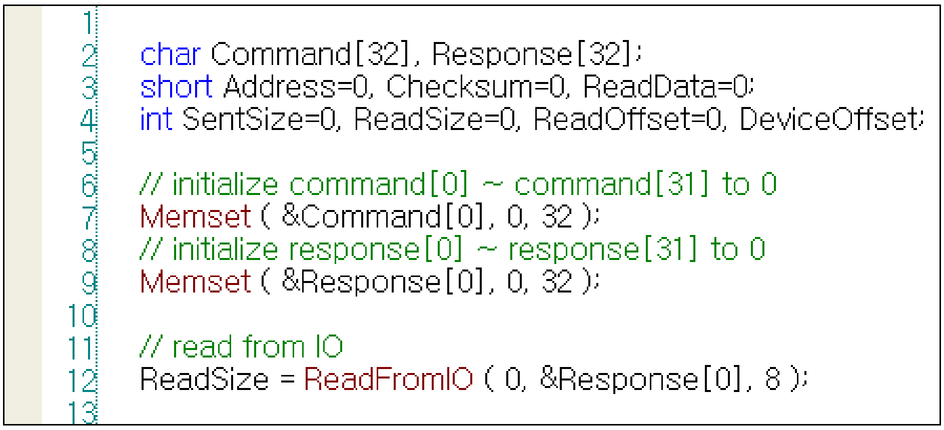
Calculate the XOR sum of entered data and return.

	Description
Function	XOR_SUM(char* pBuffer, int nCount, int* nResult)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pBuffer: The buffer for calculation
Parameter 2	int nCount: The byte number to be calculated
Parameter 3	int* nResult: The calculated value
Example	

```
char buffer[5] = { 1, 2, 3, 4, 5 }, result=0;

// result is 0x01
XOR_SUM ( &buffer[0], 5, &result );
```

(5) ReadFromIO

A function to read the received data from the port of the designated controller

	Description
Function	ReadFromIO(int nCtlr, char* pBuffer, int nToRead)
Return value	int: The byte number of the read data
Parameter 1	int nCtlr: The controller No.(0~3)
Parameter 2	char* pBuffer: The buffer that will store the read data
Parameter 3	int nToRead: The size of the data to be read
Example	

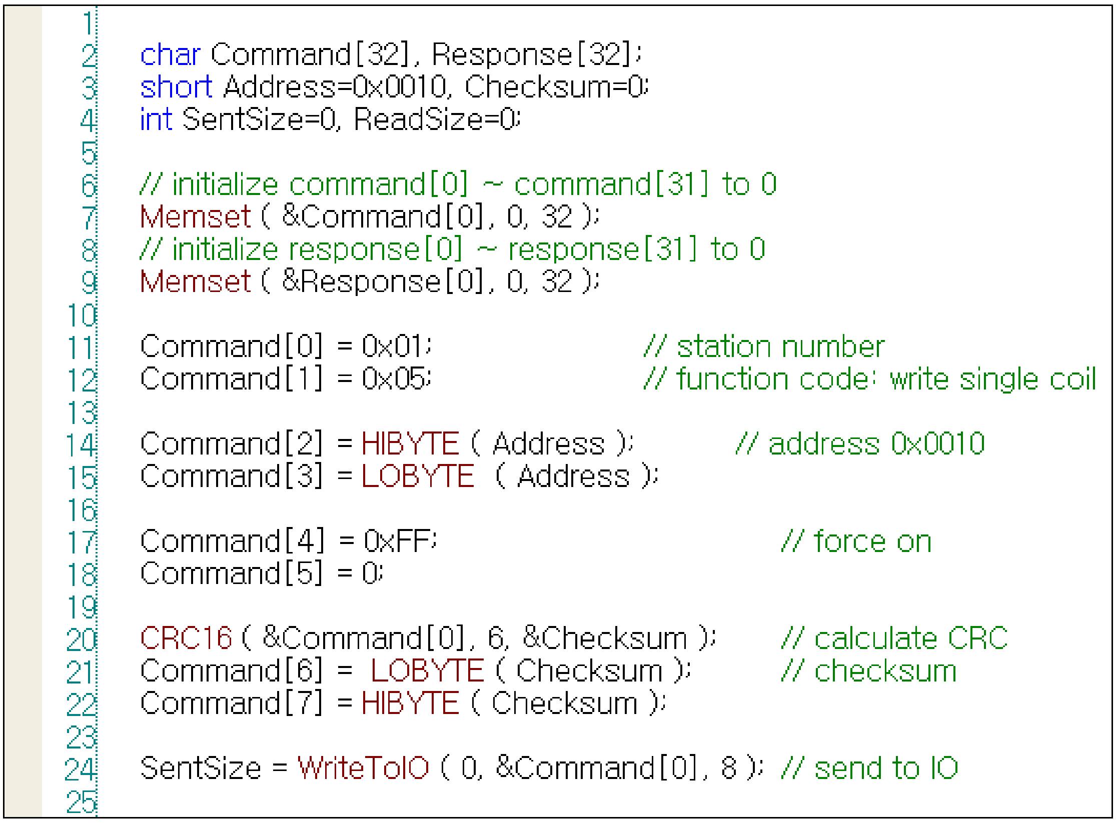
```
char Command[32], Response[32];
short Address=0, Checksum=0, ReadData=0;
int SentSize=0, ReadSize=0, ReadOffset=0, DeviceOffset;

// initialize command[0] ~ command[31] to 0
Memset ( &Command[0], 0, 32 );
// initialize response[0] ~ response[31] to 0
Memset ( &Response[0], 0, 32 );

// read from IO
ReadSize = ReadFromIO ( 0, &Response[0], 8 );
```

Notice

(1) If the value of nToRead is 0, reading is performed during the time-out of communication setting. If it is other than 0, reading as many as the number of nToRead is performed or reading is carried out during the time-out.

(6) WriteToIO

A function to transmit data to the port of the designated controller

	Description
Function	WriteToIO(int nCtlr, char* pBuffer, int nSize)
Return value	int: The number of byte of the transmitted data
Parameter 1	int nCtlr: The controller No.(0~3)
Parameter 2	char* pBuffer: The data buffer to be transmitted.
Parameter 3	int nSize: The buffer size
Example	

Example

```

char Command[32], Response[32];
short Address=0x0010, Checksum=0;
int SentSize=0, ReadSize=0;

// initialize command[0] ~ command[31] to 0
Memset ( &Command[0], 0, 32 );
// initialize response[0] ~ response[31] to 0
Memset ( &Response[0], 0, 32 );

Command[0] = 0x01;                    // station number
Command[1] = 0x05;                    // function code: write single coil

Command[2] = HIBYTE ( Address );           // address 0x0010
Command[3] = LOBYTE  ( Address );

Command[4] = 0xFF;                         // force on
Command[5] = 0;

CRC16 ( &Command[0], 6, &Checksum );       // calculate CRC
Command[6] =  LOBYTE ( Checksum );         // checksum
Command[7] = HIBYTE ( Checksum );

SentSize = WriteToIO ( 0, &Command[0], 8 );  // send to IO

```

Caution

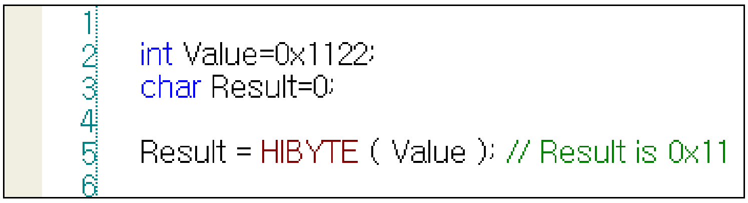
- ► ReadFromIO function and WriteToIO function work only when the controller is a“LSIS: User Defined Protocol” driver. They will not work with other drivers.

18.4.6 Memory function

Category	Function Name	Description
Memory function	ASCII2HEX	Convert ASCII data to hexa data.
	HEX2ASCII	Convert hexa data to ASCII data.
	HIBYTE	Obtain the upper byte of the entered word values.
	LOBYTE	Obtain the lower byte of the entered word values.
	MAKEWORD	Obtain word values with two entered byte values.
	Memcpy	Copy the data of the original buffer to the target buffer.
	Memset	Initialize the buffer with a designated value.
	Memcmp	Compare two buffers each other.
	SwapWord	Swap upper and lower word data values of WORD data.
	SwapDWord	Swap upper and lower word data values of fDWORD data.

(1) HIBYTE

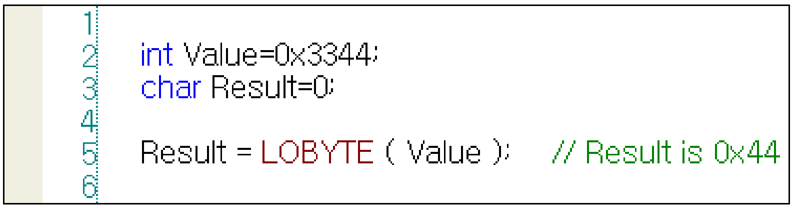
Obtain the upper byte of the entered word values.

	Description
Function	HIBYTE(int nValue)
Return value	char: Upper byte
Parameter 1	int nValue: The entered data
Example	

```

int Value=0x1122;
char Result=0;

Result = HIBYTE ( Value ); // Result is 0x11

```

(2) LOBYTE

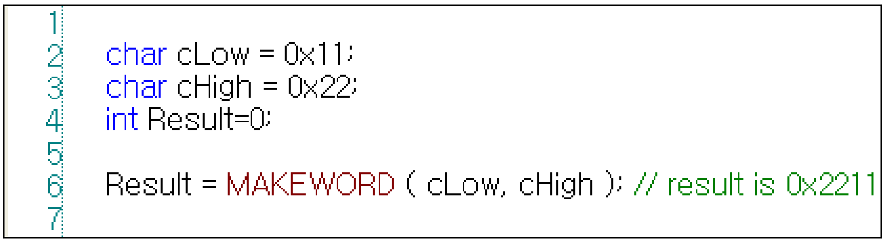
Obtain the lower byte of the entered word values.

	Description
Function	LOBYTE(int nValue)
Return value	char: Lower byte
Parameter 1	int nValue: The entered data
Example	

```

int Value=0x3344;
char Result=0;

Result = LOBYTE ( Value );    // Result is 0x44

```

(3) MAKEWORD

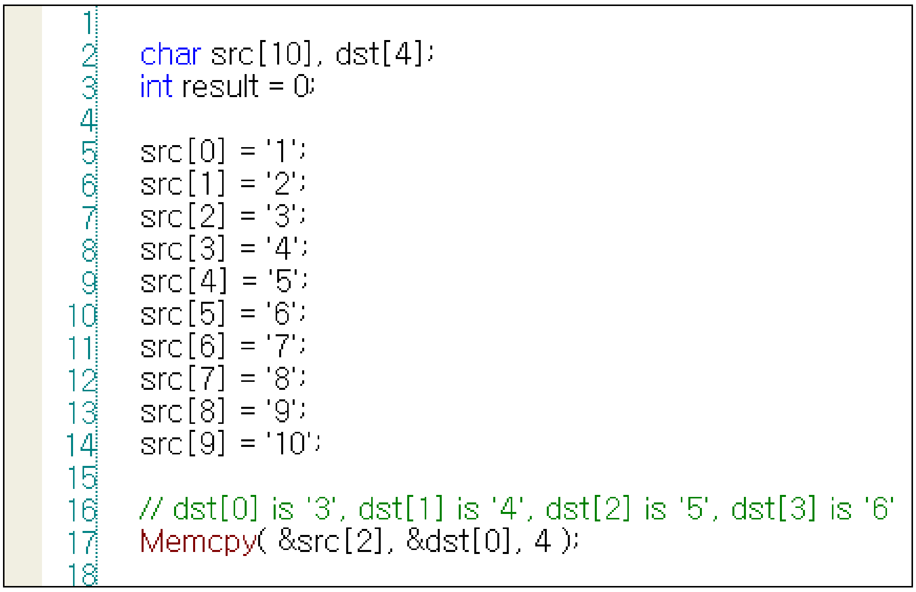
Obtain word values with two entered byte values.

	Description
Function	MAKEWORD(char cLow, char cHigh)
Return value	int: Word Value
Parameter 1	char cLow: Lower byte
Parameter 2	char cHigh: Upper byte
Example	

```

char cLow = 0x11;
char cHigh = 0x22;
int Result=0;

Result = MAKEWORD ( cLow, cHigh ); // result is 0x2211

```

(4) Memcpy

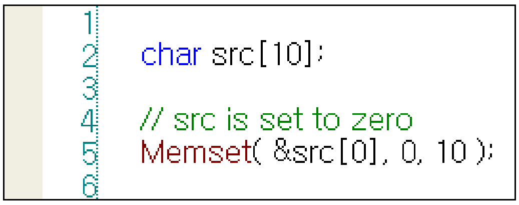
Copy the data of the original buffer to the target buffer.

	Description
Function	Memcpy(char * pDstData, char * pSrcData, int nDataSize)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char * pDstData: The target buffer
Parameter 2	char * pSrcData: The original buffer to be copied
Parameter 3	int nDataSize: The number of data to be copied(char number)
Example	

```

char src[10], dst[4];
int result = 0;

src[0] = '1';
src[1] = '2';
src[2] = '3';
src[3] = '4';
src[4] = '5';
src[5] = '6';
src[6] = '7';
src[7] = '8';
src[8] = '9';
src[9] = '10';

// dst[0] is '3', dst[1] is '4', dst[2] is '5', dst[3] is '6'
Memcpy( &src[2], &dst[0], 4 );

```

(5) Memset

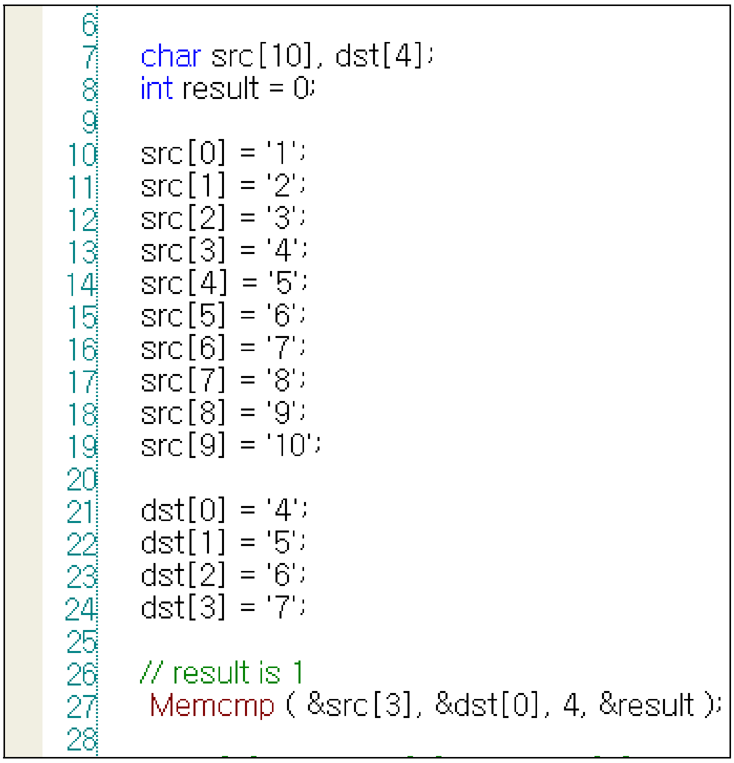
Initialize the data of the original buffer with the entered value.

	Description
Function	Memset(char * pSrcData, char byData, int nDataSize)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char * pSrcData: The original buffer to be copied
Parameter 2	char byData: Value to be initialized
Parameter 3	int nDataSize: The number of data to be initialized (char number)
Example	

```
char src[10];

// src is set to zero
Memset( &src[0], 0, 10 );
```

(6) Memcmp

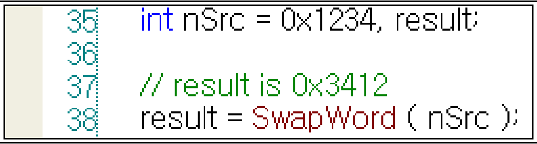
Compare two buffers each other.

	Description
Function	Memcmp (char * pBuffer1, char * pBuffer2, int nDataSize int* nResult)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pBuffer1: buffer 1
Parameter 2	char* pBuffer2: buffer 2
Parameter 3	int nDataSize: The number of data to be compared(char number)
Parameter 4	int* nResult: If two buffers are same, return 1. If different, return 0.
Example	

```

char src[10], dst[4];
int result = 0;

src[0] = '1';
src[1] = '2';
src[2] = '3';
src[3] = '4';
src[4] = '5';
src[5] = '6';
src[6] = '7';
src[7] = '8';
src[8] = '9';
src[9] = '10';

dst[0] = '4';
dst[1] = '5';
dst[2] = '6';
dst[3] = '7';

// result is 1
 Memcmp ( &src[3], &dst[0], 4, &result );
```

(7) SwapWord

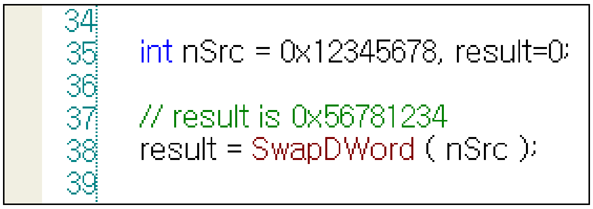
Swap upper and lower byte data values of WORD data.

	Description
Function	int SwapWord(int nSrcData)
Return value	int: The swapped data value
Parameter 1	int nSrcData: The data value to be swaped
Example	

```
int nSrc = 0x1234, result;

// result is 0x3412
result = SwapWord ( nSrc );
```

(8) SwapDWord

Swap upper and lower word data values of fDWORD data.

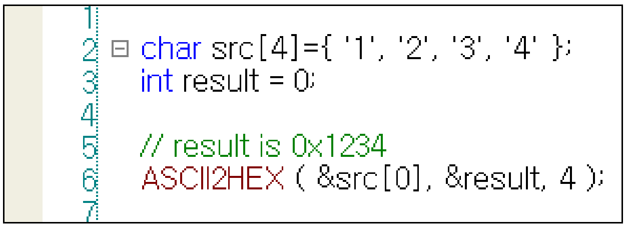
	Description
Function	int SwapDWord(int nSrcData)
Return value	int: The swapped data value
Parameter 1	int nSrcData: The data value to be swaped
Example	

```

int nSrc = 0x12345678, result=0;

// result is 0x56781234
result = SwapDWord ( nSrc );

```

18.4.7 Data Convert

(1) ASCII2HEX

Convert ASCII data to hexadecimal data.

	Description
Function	ASCII2HEX(char * pSrcData, int* pRetValue, int nCount)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pSrcBuffer: The original buffer to be converted
Parameter 2	int* pRetValue: The variable that will store the data to be converted
Parameter 3	int nCount: The number of bytes to be converted(1 ~ 8)
Example	

```

char src[4]={ '1', '2', '3', '4' };
int result = 0;

// result is 0x1234
ASCII2HEX ( &src[0], &result, 4 );

```

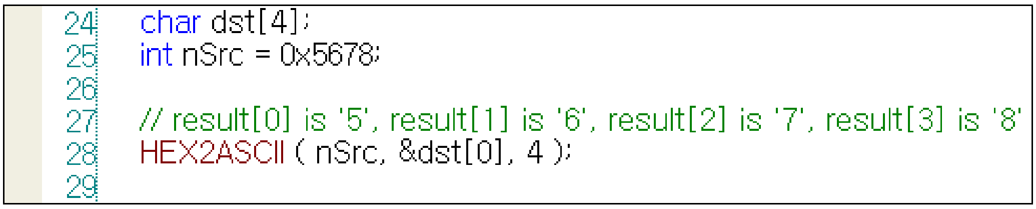
Notice

(2) If any data that can not be converted to hexadecimal is included in the data of the entered buffer, conversion will stop.

Ex) When converting seven of char src[7] = {‘1’,’A,’B’,’3’,’K’,’2’,‘8’,}, the result value equals to 0x1AB3.

(2) HEX2ASCII

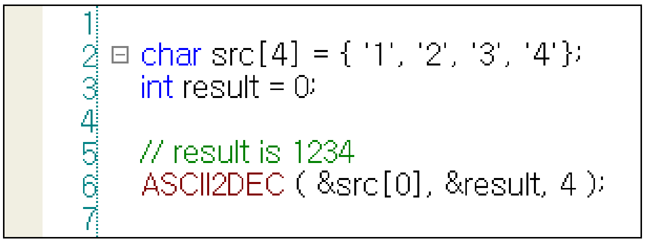
Convert hexadecimal data to ASCII data.

	Description
Function	HEX2ASCII(int nValue, char* pDstBuffer, int nCount)
Return value	BOOL: If the number of data to be converted is not between 1 and 8 or the size of pDstBuffer is lower than that number, return FALSE.
Parameter 1	int nValue: The value to be converted
Parameter 2	char* pDstBuffer: The target buffer that will store the data to be converted
Parameter 3	int nCount: Number of bytes to be converted(1 ~ 8)
Example	

```
char dst[4];
int nSrc = 0x5678;

// result[0] is '5', result[1] is '6', result[2] is '7', result[3] is '8'
HEX2ASCII ( nSrc, &dst[0], 4 );
```

(3) ASCII2DEC

Convert ASCII data to decimal data.

	Description
Function	ASCII2DEC (char * pSrcData, int* pRetValue, int nCount)
Return value	BOOL: If the number is beyond the range of the buffer, return FALSE.
Parameter 1	char* pSrcBuffer: The original buffer to be converted
Parameter 2	int* pRetValue: The variable that will store the data to be converted
Parameter 3	int nCount: The number of bytes to be converted(1 ~ 10)
Example	

```
char src[4] = { '1', '2', '3', '4'};
int result = 0;

// result is 1234
ASCII2DEC ( &src[0], &result, 4 );
```

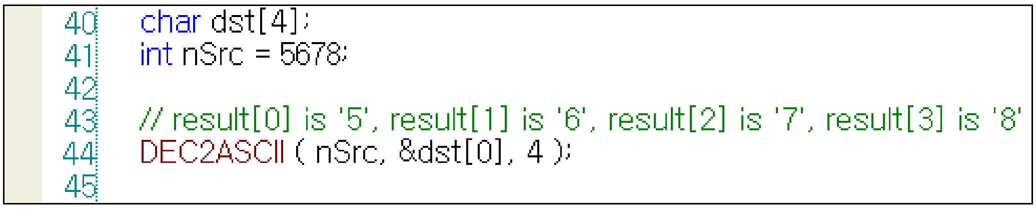
Notice

(1) If any data that can not be converted to decimal is included in the data of the entered buffer, conversion will stop.

Ex) When converting six of char src[6] = {‘1’,’7,’4,’A’,’5’,’3’}, the result value equals to 174.

(4) DEC2ASCII

Convert decimal data to ASCII data.

	Description
Function	HEX2ASCII(int nValue, char* pDstBuffer, int nCount)
Return value	BOOL: If the number of data to be converted is not between 1 and 8 or the size of pDstBuffer is lower than that number, return FALSE.
Parameter 1	int nValue: The value to be converted
Parameter 2	char* pDstBuffer: The target buffer that will store the converted data
Parameter 3	int nCount: The number of bytes to be converted(1 ~ 10)
Example	

Example:

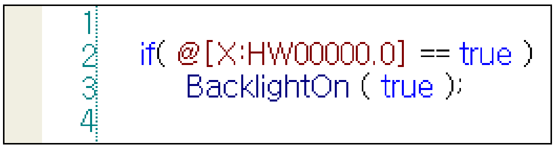
```
char dst[4];
int nSrc = 5678;

// result[0] is '5', result[1] is '6', result[2] is '7', result[3] is '8'
DEC2ASCII ( nSrc, &dst[0], 4 );
```

18.4.8 Other

Category	Function Name	Description
Other	BacklightOn	Turn the backlight On or Off.
	Buzzer	Generate the buzzer sound.
	SetBuzzerEnable	Enable or disable the buzzer
	ShowStatusbar	Show the status bar on the bottom of XGT Panel screen.
	Sleep	Temporally stop script for a certain amount of time.

(1) BacklightOn

Turn XGT Panel LCD On/Off.

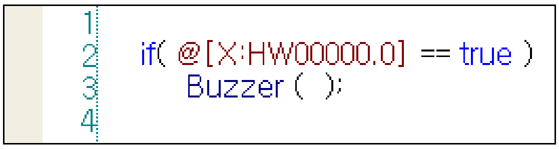
	Description
Function	BacklightOn(bool bOn)
Return value	None
Parameter 1	Bool bOn: Backlight is turned on/off
Example	

Example:

```

if( @[X:HW00000.0] == true )
    BacklightOn ( true );

```

(2) Buzzer

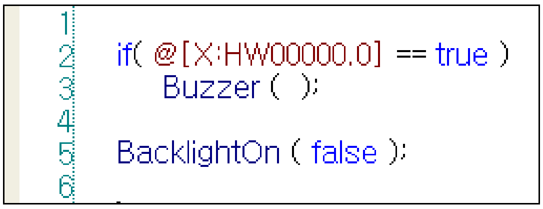
The buzzer rings for a certain amount of time (50ms).

	Description
Function	Buzzer()
Return value	None
Example	

```

if( @[X:HW00000.0] == true )
    Buzzer ( );

```

(3) SetBuzzerEnable

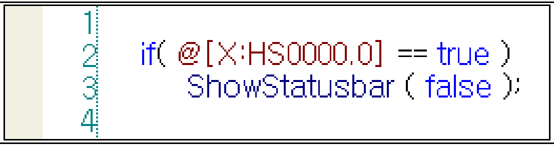
Turn the buzzer On/Off. Set the buzzer's behaviors.

	Description
Function	SetBuzzerEnable(bool bEnable)
Return value	None
Parameter 1	Bool bEnable: buzzer is turned On/Off.
Example	

```

if( @[X:HW00000.0] == true )
    Buzzer ( );

BacklightOn ( false );

```

(4) ShowStatusbar

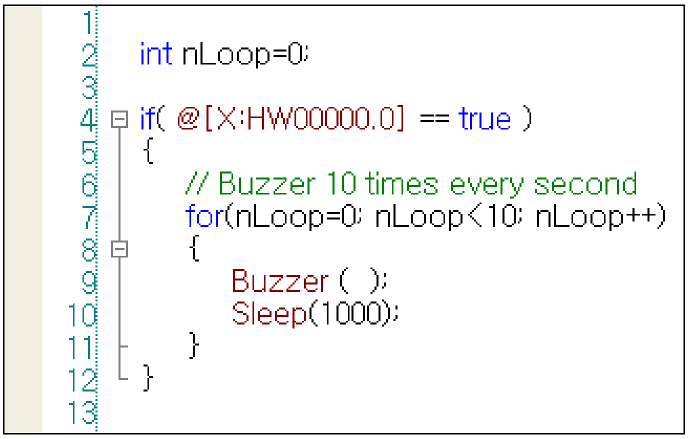
Show/Hide the Status Bar. A function to show or hide the status bar on the bottom of XGT Panel The status bar appears and then disappears automatically after a certain amount of time.

	Description
Function	ShowStatusbar(bool bShow)
Return value	None
Parameter 1	Bool bShow: Show the status bar.
Example	

```

if( @[X:HS0000.0] == true )
    ShowStatusbar ( false );

```

(5) Sleep

This system stops to turn into the stand-by mode for a certain amount of time during the scripting.

	Description
Function	Sleep(int nSleepTime)
Return value	None
Parameter 1	int nSleepTime: Time to be stopped temporally (ms)
Example	

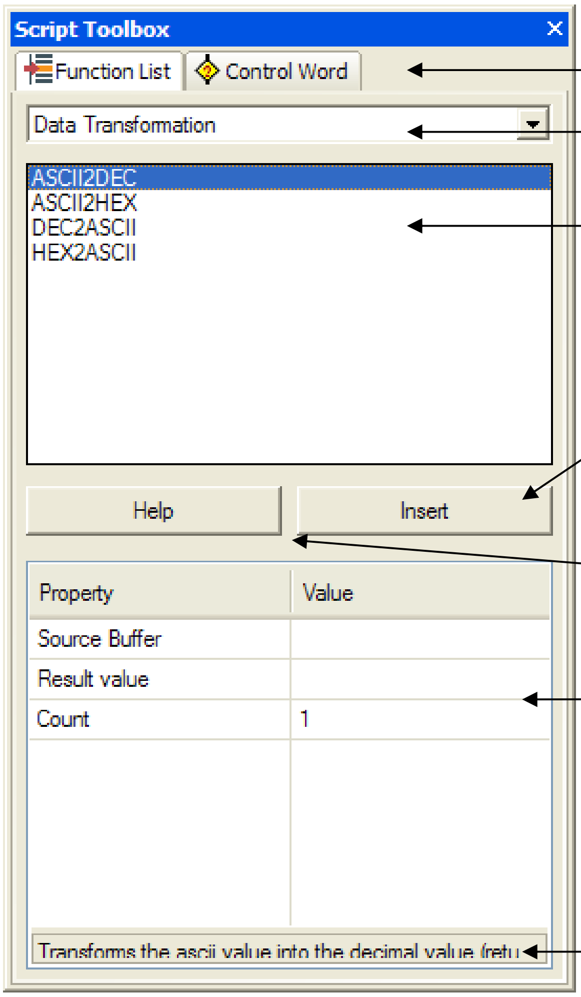
```

int nLoop=0;

if( @[X:HW00000.0] == true )
{
    // Buzzer 10 times every second
    for(nLoop=0; nLoop<10; nLoop++)
    {
        Buzzer ( );
        Sleep(1000);
    }
}

```

18.5 Using Script Tool Bar

(1) Viewing/Hiding Script Tool Bar

This is for displaying or hiding the tool bar for editing scripts.

Select [View]-[Script Tool Window] or click on in the tool bar.



Data Transformation

ASCII2DEC
ASCII2HEX
DEC2ASCII
HEX2ASCII

Property	Value
Source Buffer	
Result value	
Count	1

Transforms the ascii value into the decimal value (retu

Select the Function List or Control Word

Select the script function group

Select the script function to be added to script

Adds the function to the script

You can see the script help file

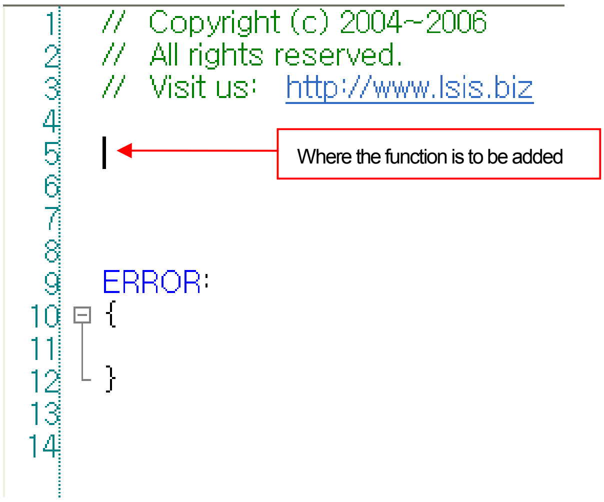
If the function needs the input values, it displays the properties of input value.
Input the setting value to each ‘Value’ column

Displays the description of the function or parameter

(2) Entering Function in Script

Add a script item.

Place the pointer where you want to add a function for script editing.

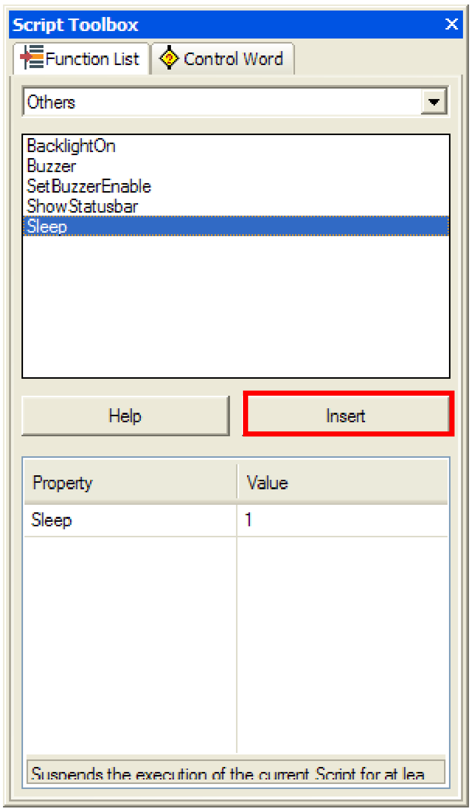


```
// Copyright (c) 2004~2006
// All rights reserved.
// Visit us: http://www.lsis.biz

|



ERROR:
{

}
```

Where the function is to be added

Set the function to input and the input value of the corresponding function in the function list of the script tool bar.

When you finish setting, click on the [Insert] button at the bottom.


Script Toolbox
Function List
Control Word
Others
BacklightOn
Buzzer
SetBuzzerEnable
ShowStatusbar
Sleep
Help
Insert

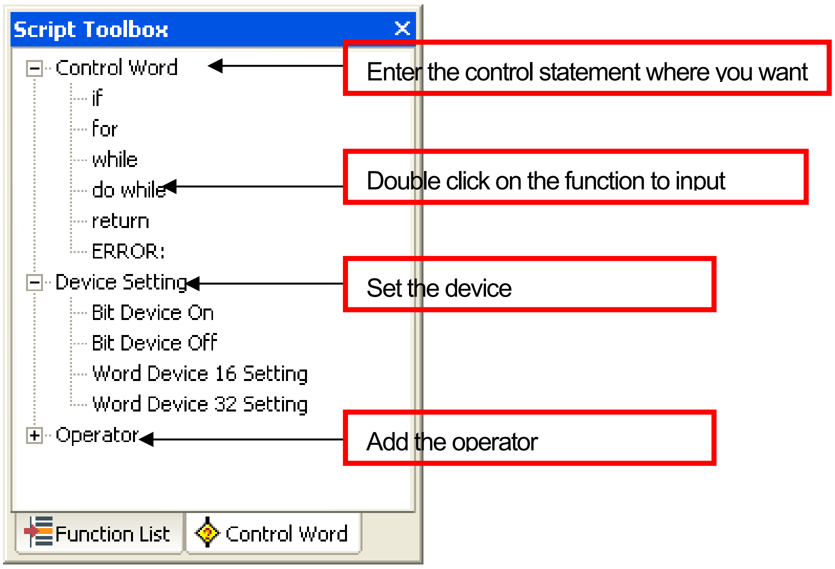
Property	Value
Sleep	1

Suspends the execution of the current Script for at lea

The function you have set is input where the pointer is in the script display.

(3) Entering Control Statement in Script

Select [Control Statement] in the tab at the bottom of the script tool box.


Script Toolbox
Control Word
if
for
while
do while
return
ERROR:
Device Setting
Bit Device On
Bit Device Off
Word Device 16 Setting
Word Device 32 Setting
Operator
Function List
Control Word

Enter the control statement where you want

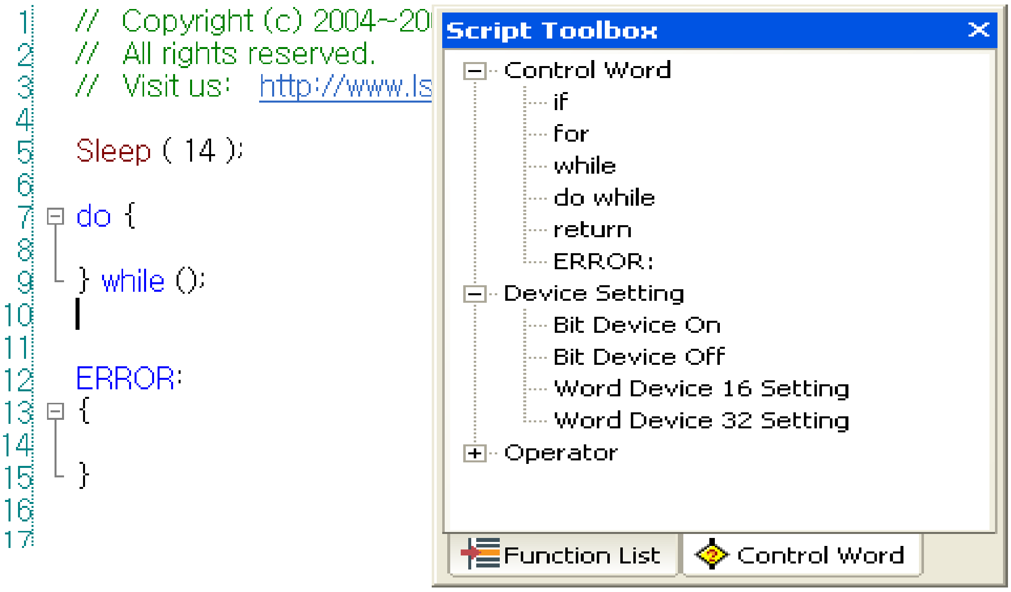
Double click on the function to input

Set the device

Add the operator

Place the pointer where you want to enter the control statement in the script entry display.
Double click on the control statement to add.

The control statement you have selected is added where the pointer is in the script display.



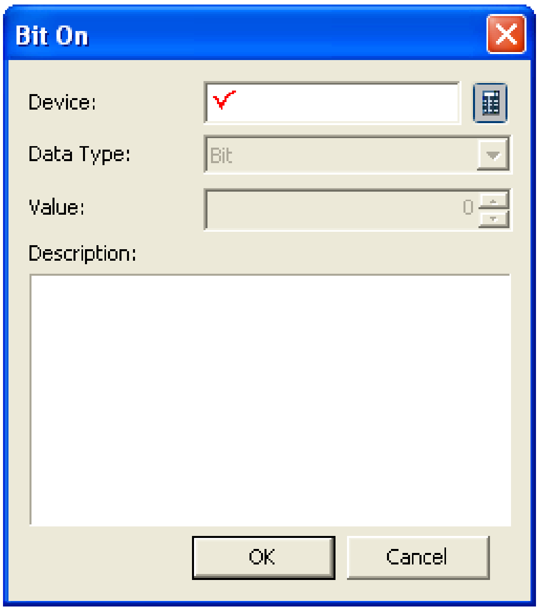
```
// Copyright (c) 2004~20
// All rights reserved.
// Visit us: http://www.ls

Sleep ( 14 );

do {

} while ();


ERROR:
{

}
```

Script Toolbox
Control Word
if
for
while
do while
return
ERROR:
Device Setting
Bit Device On
Bit Device Off
Word Device 16 Setting
Word Device 32 Setting
Operator
Function List
Control Word

(4) Setting Device in Script

If you double click on the item at the bottom of 'Device Setting' in the script tool box to set the device value in the script, the dialog box is invoked where you can enter the device value.

The following shows the device setting windows for each item.



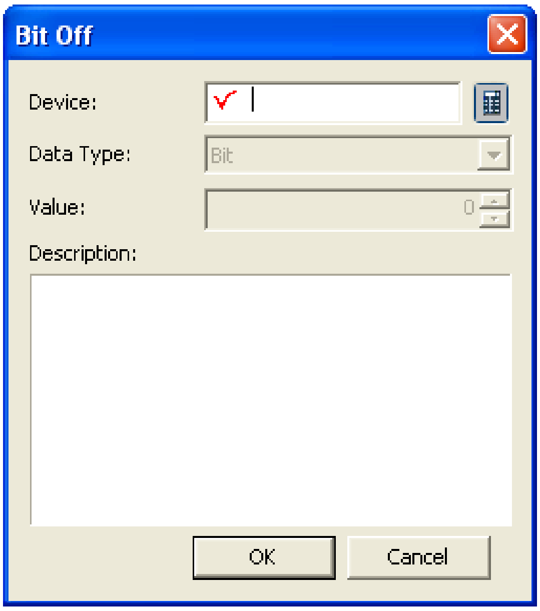
Bit On

Device:

Data Type: Bit

Value: 0

Description:



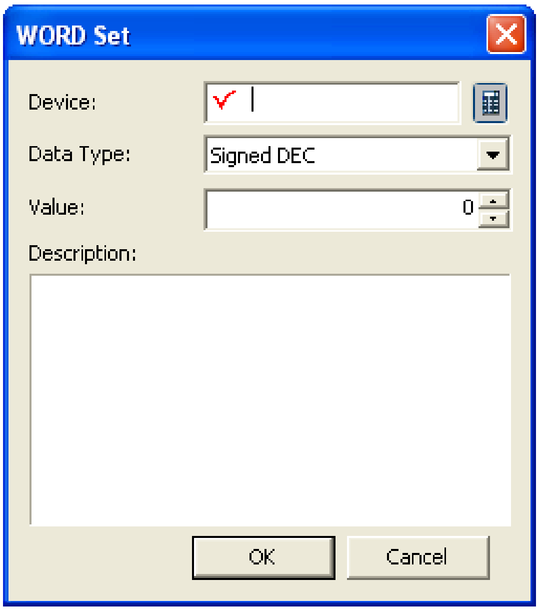
Bit Off

Device:

Data Type: Bit

Value: 0

Description:



WORD Set

Device:

Data Type: Signed DEC

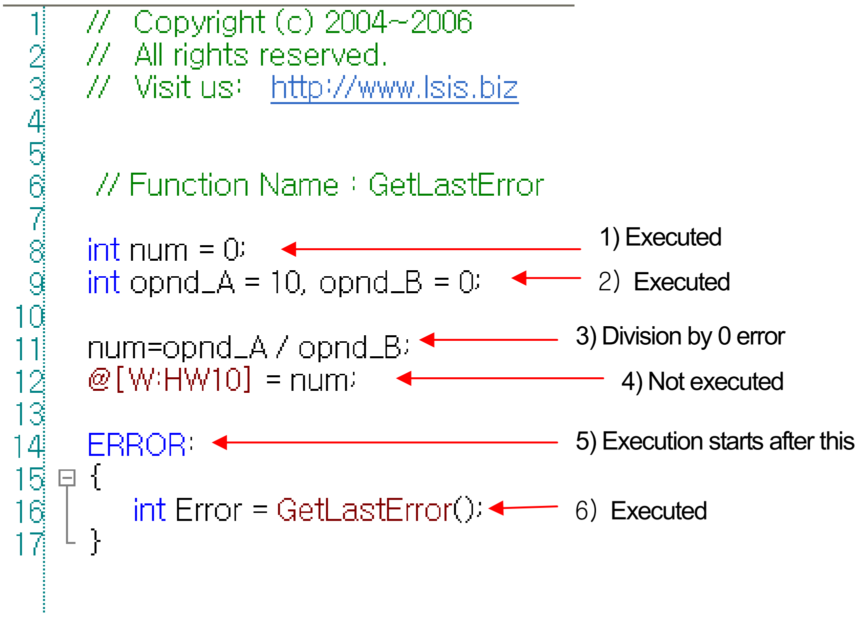
Value: 0

Description:

18.6 Error during Script Execution

If an error occurs during script execution, the statements after the point where the error occurred are skipped.
Then if the ERROR: control statement is in the script contents, the statements after it are performed.

The following is the procedure of a script being executed if there is an error in it.



```
//  Copyright (c) 2004~2006
//  All rights reserved.
//  Visit us:  http://www.lsis.biz


 // Function Name : GetLastError

int num = 0;
int opnd_A = 10, opnd_B = 0;

num=opnd_A / opnd_B;
@[W:HW10] = num;

ERROR:
{
    int Error = GetLastError();
}
```

1) Executed

2) Executed

3) Division by 0 error

4) Not executed

5) Execution starts after this

6) Executed

Caution

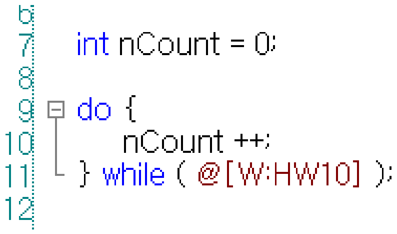
- ► If there are no errors, the statements after ERROR: are not executed. They are executed only if an error occurs.

18.7 Script Watchdog and Sleep

(1) Watchdog

If a script is executed beyond a certain period of time, watchdog is issued and the script is stopped.
This might happen if all the contents of the script cannot be executed because there are too many contents in a script or the function cannot be ended by the infinite loop.

The following shows a script where an infinite loop might occur.



```
int nCount = 0;

do {
    nCount ++;
} while ( @[W:HW10] );
```

In the script shown above, there are no compile errors. However, the value of device @[W:HW10] might fall into the infinite loop during execution or the run time might take too long. In such a case, the entire program might be affected.

To prevent such error, the script is forced to end unless the script is not end for a particular period of time(5 seconds).

Script execution takes longer than any other action. You need to pay attention when you are using a control statement of which the run time is hard to predict such as for, while, do ~ while.

Caution

► If script execution time is more than 5, script watchdog appears and stops the script execution

(2) Sleep

A Sleep function has the function of stopping the script execution for a certain period of time. If this function starts, the script does not operate for the specified time and another program is executed.

18.8 Error Message

The errors are displayed in messages.

Error /warning number	Description
0	Syntax Error : There is no end of file('\0').
1	Syntax Error : Undeclared identifier.
2	Syntax Error : A number is expected.
3	Syntax Error: A float type is expected.
4	Syntax Error : A hexadecimal is expected.
5	Syntax Error : A string is expected.
6	Syntax Error : A character is expected.
7	Syntax Error : "void" is expected.
8	Syntax Error : A direct variable is expected.
9	Syntax Error : There is no "(".
10	Syntax Error : There is no ")".
11	Syntax Error : There is no "{".
12	Syntax Error : There is no "}".
13	Syntax Error : There is no "const".
14	Syntax Error : There is no "=".
15	Syntax Error : There is no "true".
16	Syntax Error : There is no "false".
17	Syntax Error : There is no ";".
18	Syntax Error : There is no "float".
19	Syntax Error : There is no "int".
20	Syntax Error : There is no "short".
21	Syntax Error : There is no "unsigned".
22	Syntax Error : There is no "char".
23	Syntax Error : There is no "bool".
24	Syntax Error : There is no ",".
25	Syntax Error : There is no "[".
26	Syntax Error : There is no "]".
27	Syntax Error : There is no "stackdump".
28	Syntax Error : There is no "++".
29	Syntax Error : There is no "–".
30	Syntax Error : There is no "if".
31	Syntax Error : There is no "else".
32	Syntax Error : There is no "while".
33	Syntax Error : There is no "do".
34	Syntax Error : There is no "for".
35	Syntax Error : There is no "switch".
36	Syntax Error : There is no "case".
37	Syntax Error : There is no ":".

Error /warning number	Description
38	Syntax Error : There is no "default".
39	Syntax Error : There is no "cin".
40	Syntax Error : There is no "cout".
41	Syntax Error : There is no "break".
42	Syntax Error : There is no "continue".
43	Syntax Error : There is no "return".
44	Syntax Error : There is no "<<".
45	Syntax Error : There is no ">>".
46	Syntax Error :There is no "+".
47	Syntax Error : There is no "-".
48	Syntax Error : There is no "||".
49	Syntax Error : There is no "&&".
50	Syntax Error : There is no "|".
51	Syntax Error : There is no ^.
52	Syntax Error :There is no "&".
53	Syntax Error : There is no "!".
54	Syntax Error : There is no "~".
55	Syntax Error : There is no "*".
56	Syntax Error : There is no "/".
57	Syntax Error : There is no "%".
58	Syntax Error : There is no "==".
59	Syntax Error : There is no "!=".
60	Syntax Error : There is no "<".
61	Syntax Error : There is no "<=".
62	Syntax Error : There is no ">".
63	Syntax Error : There is no ">=".
64	Syntax Error : There is no "+=".
65	Syntax Error : There is no "-=".
66	Syntax Error : There is no "*=".
67	Syntax Error : There is no "/=".
68	Syntax Error : There is no "%=".
69	Syntax Error : There is no "|=".
70	Syntax Error : There is no "&=".
71	Syntax Error : There is no "^=".
72	Syntax Error : There is no "<<=".
73	Syntax Error : There is no ">>=".
74	Syntax Error : A indirect variable($W, $D, $S, $L, $F) is expected.
75	Syntax Error: "ERROR" is skipped.
76	Syntax Error : An invalid string has been entered.
77	Syntax Error : The debug setting is incorrect.
78	Syntax Error : An error has occurred during compilation.
79	Syntax Error : An error has occurred during compilation.
80	Syntax Error : The condition state is incorrect.

Error /warning number	Description
81	Syntax Error : The constant is incorrect.
82	Syntax Error : The variable is incorrect.
83	Syntax Error : The assignment state is incorrect.
84	Syntax Error : The direct variable assignmet is incorrect.
85	Syntax Error : The IF statement is incorrect.
86	Syntax Error : The FOR statement is incorrect.
87	Syntax Error : The variable is incorrect.
88	Syntax Error : cout is incorrect.
89	Syntax Error : The case, default statement is incorrect.
90	Syntax Error : The type conversion is incorrect.
91	Syntax Error : The preprocessing is incorrect.
92	Syntax Error : The postprocessing is incorrect.
93	Syntax Error : The preprocessing operator is incorrect.
94	Syntax Error : The expression is incorrect.
95	Syntax Error : The assignment operator is incorrect.
96	Syntax Error : The comparison operator is incorrect.
97	Syntax Error : The relation operator is incorrect.
98	Syntax Error : The shift operator is incorrect.
99	Syntax Error : The arithmetic(+, -) operator is incorrect.
100	Syntax Error : The arithmetic(*, /, %) operator is incorrect.
101	Syntax Error : The postprocessing operator is incorrect.
102	Syntax Error : The preprocessing operator is incorrect.
103	Syntax Error : An internal variable($S, $W, $D, $L, $F) only.
104	Syntax Error : The debug setting is incorrect.
105	Syntax Error : There is an invalid character in the hexadecimal format.
106	Syntax Error : A string constant is not supported.
107	Syntax Error : A character constant is not supported.
108	Syntax Error : A direct variable is incorrect.
109	Syntax Error : A float const type is wrong
110-199	Syntax Error : An error has occurred during compilation.
200	Out of the range of the constant
201	The variable is already declared.
202	The variable is not declared..
203	The parameters are incorrect.
204	The array index is incorrect.
205	The array index is required.
206	The indentifier kind is invalid.
207	A variable is expected.
208	The paramters are excessively set.
209	The number of parameters is incorrect.
210	The assignment is incorrect.
211	The variable type is incorrectly set.
212	The program size is too big.

Error /warning number	Description
213	The maximum number(10) of black nesting is exceeded.
214	The array parameter is incorrect.
215	An error has occurred during compilation.
216	The number of concurrent processes is exceeded.
217	The value of the constant is too big.
218	The type does not match.
219	The expression is incorrect.
220	There is no expression.
221	A bool expression is expected.
222	The expression is invalid.
223	The index is out of the range.
224	Cannot divide by 0.
225	The conditional variable running the iteration statement is invalid.
226	The conditional variable running the iteration statement is inappropriate.
227	The type of the array index is invalid.
228	The array declaration is invalid.
229	Cannot change the variable.
230	The direct variable is inappropriate.
231	The standard function type is invalid.
232	The index of the array is out of the range.
233	Cannot find the script name.
234	The position of break is incorrect.
235	The position of continue is incorrect.
236	The indirect variable is inappropriate.
237	A case expression is not a constant.
238	The switch statement is invalid.
239	The label statement is invalid.
240	The indirect variable is invalid.
241	The kind of the variable does not match.
242	error: The code is duplicated.
243	error: Cannot use a code in a block.
244	There is no first parameter of the function.
245	The type of the first parameter of the function does not match.
246	"–" : Cannot use with a "bool" type.
247	direct variable expected
248	Mismatched the type of direct variables
249	An error has occurred during compilation.
250	"~" : float is not correct as operand
251	"%=" : float can't be used as operand
252	"&=" : float can't be used as operand
253	"|=" : float can't be used as operand
254	"^=" : float can't be used as operand
255	"<<=" : float can't be used as operand

Error /warning number	Description
256	">>=" : float can't be used as operand
257	"%" : float can't be used as operand
258	"&" : float can't be used as operand
259	"|" : float can't be used as operand
260	"^" : float can't be used as operand
261	"<<" : float can't be used as operand
262	">>" : float can't be used as operand
263-299	An error has occurred during compilation.
300	The type does not match.
301	The constant value is cut because it is greater than the type.
302	When the "const int" type is assigned to the "bool" type, the value is cut.
303	When the "const unsigned int" type is assigned to the "bool" type, the value is cut.
304	When the "const short" type is assigned to the "bool" type, the value is cut.
305	When the "const unsigned short" type is assigned to the "bool" type, the value is cut.
306	The value of bool should be true or false only. The value is cut when the "const int" type is assigned to it.
307	The value of the "unsigned short" type is converted into the bool type value "true" or "false".
308	The value of the "short" type is converted into the bool type value "true" or "false".
309	The value of the "unsigned int" type is converted into the bool type value "true" or "false".
310	The value of the "int" type is converted into the bool type value "true" or "false".
311	When the const "int" type is assigned to the "short" type, the value is cut.
312	When the "const unsigned int" type is assigned to the "short" type, the value is cut.
313	When the "const int" type is assigned to the "unsigned short" type, the value is cut.
314	When the "const unsigned int" type is assigned to the "unsigned short" type, the value is cut.
315	In "+=" operation, using the bool type is unsafe.
316	In "-=" : operation , the "bool" type is unsafely used.
317	In "*=" : operation , the "bool" type is unsafely used.
318	In "/=" : operation , the "bool" type is unsafely used.
319	In "%=" : operation , the "bool" type is unsafely used.
320	In "<<=" : operation , the "bool" type is unsafely used.
321	In ">>=" : operation , the "bool" type is unsafely used.
322	In "|=" : operation , the "bool" type is unsafely used.
323	In "&=" : operation , the "bool" type is unsafely used.
324	In "^=" : operation , the "bool" type is unsafely used.
325	In "+" : operation , the "bool" type is unsafely used.
326	In "-" : operation , the "bool" type is unsafely used.
327	In "*" : operation , the "bool" type is unsafely used.
328	In "/" : operation , the "bool" type is unsafely used.
329	In "%" : operation , the "bool" type is unsafely used.
330	In "<<" : operation , the "bool" type is unsafely used.
331	In ">>" : operation , the "bool" type is unsafely used.
332	In "|" : operation , the "bool" type is unsafely used.
333	In "&" : operation , the "bool" type is unsafely used.

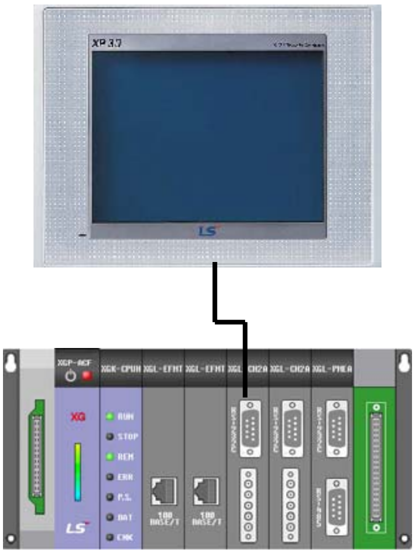
Error /warning number	Description
334	In "^" : operation , the "bool" type is unsafely used.
335	"==" : The signs do not match.
336	"!=" : The signs do not match.
337	In "==" : operation, "bool" type and "unsigned short" type are mixed.
338	In "==" : operation, "bool" type and "short" type are mixed.
339	In "==" : operation, "bool" type and "unsigned int" type are mixed.
340	In "==" : operation, "bool" type and "int" type are mixed.
341	In "!=" : operation, "bool" type and "unsigned short" type are mixed.
342	In "!=" : operation, "bool" type and "short" type are mixed.
343	In "!=" : operation, "bool" type and "unsigned int" type are mixed.
344	In "!=" : operation, "bool" type and "int" type are mixed.
345	In "<" : operation , the "bool" type is unsafely used.
346	In ">" : operation , the "bool" type is unsafely used.
347	In "<=" : operation , the "bool" type is unsafely used.
348	In ">=" : operation , the "bool" type is unsafely used.
349	In "-" : operation , the "bool" type is unsafely used.
350	In "~" : opearation , the "bool" type is unsafely used.
351	"==" : bool and float mixed operation is possible to result in unpredictable value.
352	"!=" : bool and float mixed operation is possible to result in unpredictable value.
353	conversion from "const float" to "unsigned short", possible loss of data
354	conversion from "const float" to "bool", possible loss of data
355	conversion from "float" to "bool", possible loss of data
356	conversion from "const float" to "short", possible loss of data
357	conversion from"float" to "short", possible loss of data
358	conversion from "float" to "unsigned short", possible loss of data
359	conversion from "const float" to "unsigned int", possible loss of data
360	conversion from "float" to "unsigned int", possible loss of data
361	conversion from "const float" to "int", possible loss of data
362	conversion from "float" to "int", possible loss of data
363	conversion from "unsigned int" to "float", possible loss of data
364	conversion from "int" to "float", possible loss of data
365-400	A warning has occurred during compilation.

Chapter 19 N:1 Communication

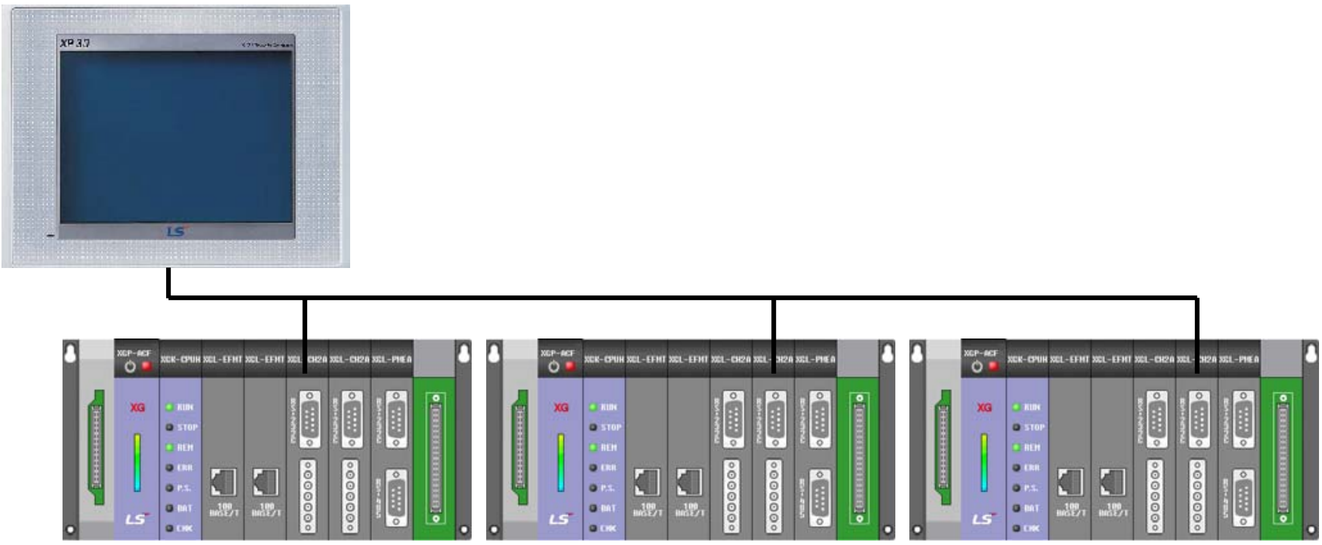
This is a useful way to make several XGT Panels communicate with one PLC or several PLCs. N:1 communication is available by using RS-485 communication.

19.1 N:1 Communication

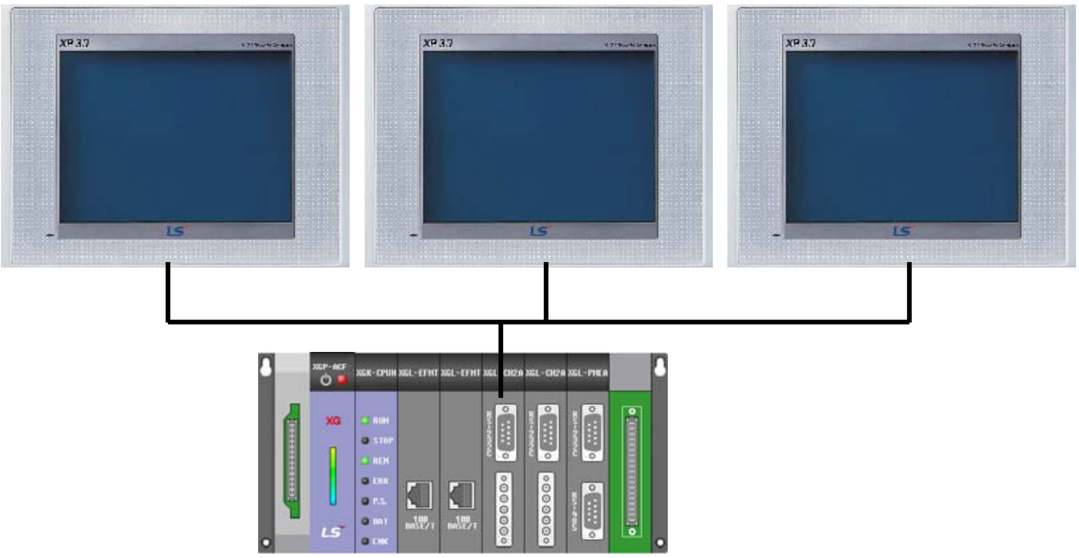
Generally, at the serial communication, one XGT Panel communicates with one PLC or several PLCs. Namely, 1:1 or 1:N is available. If you use N:1 communication, several XGT Panels can communication with one PLC or several PLCs. Namely, N:1 or N:M communication is available.


XP 30
LS
XGP-ACF
XGK-CPUH
XGL-EFMT
XGL-EFMT
XGL-CH2A
XGL-CH2A
XGL-PMEA
XG
RUN
STOP
REM
ERR
P.S.
BAT
CHK
100 BASE/T
100 BASE/T
LS

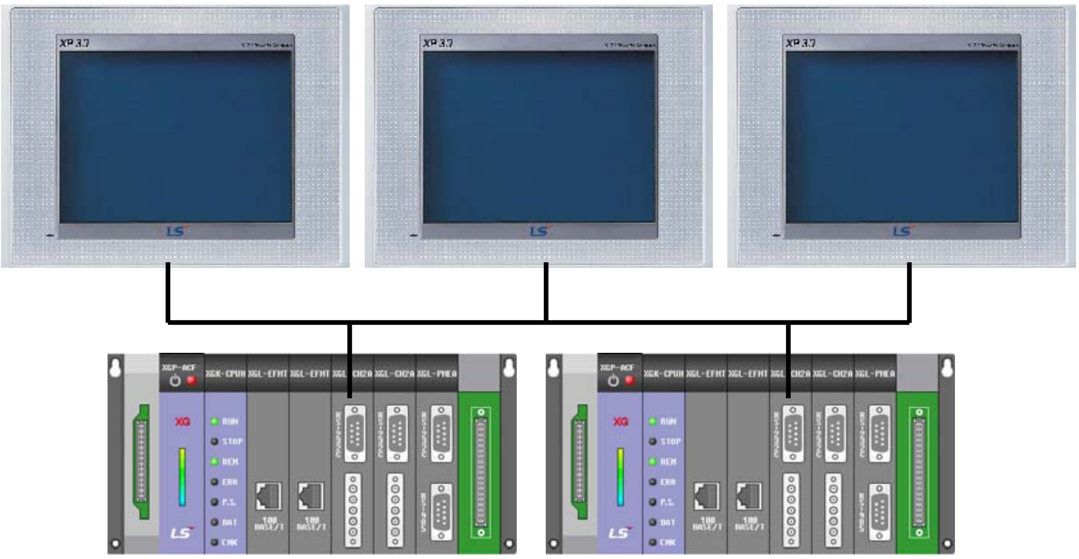
[1:1 communication]


XP 30
LS
XGP-ACF
XGK-CPUH
XGL-EFMT
XGL-EFMT
XGL-CH2A
XGL-CH2A
XGL-PMEA
XG
RUN
STOP
REM
ERR
P.S.
BAT
CHK
100 BASE/T
100 BASE/T
LS

[1:N communication]



[N:1 communication]

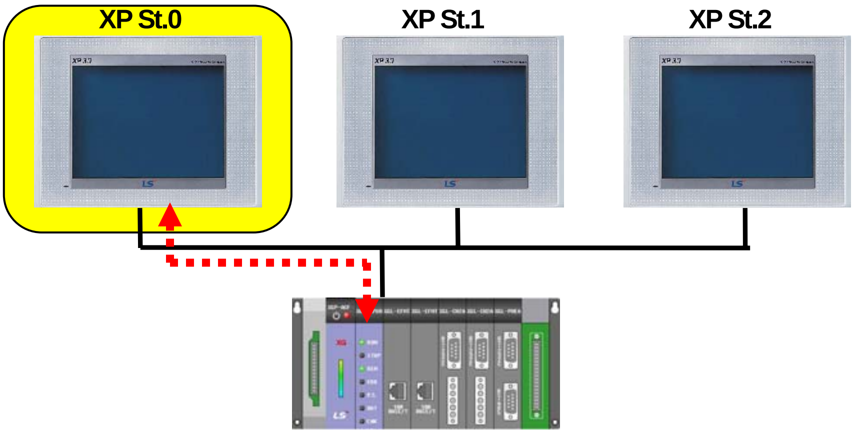


[N:M communication]

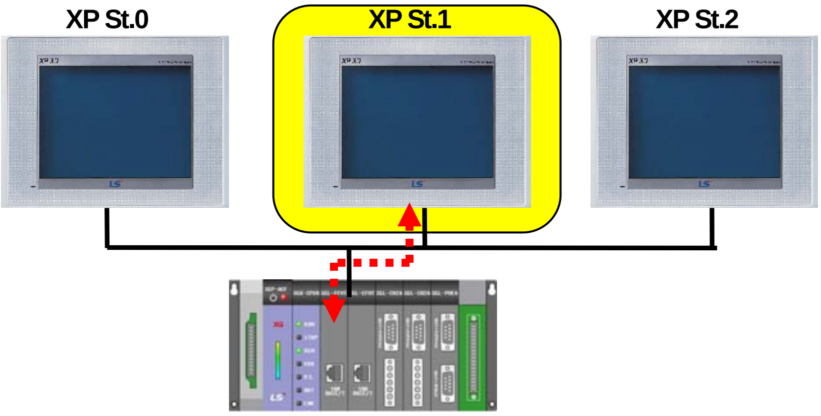
19.2 N:1 Communication Principal

19.2.1 Principal

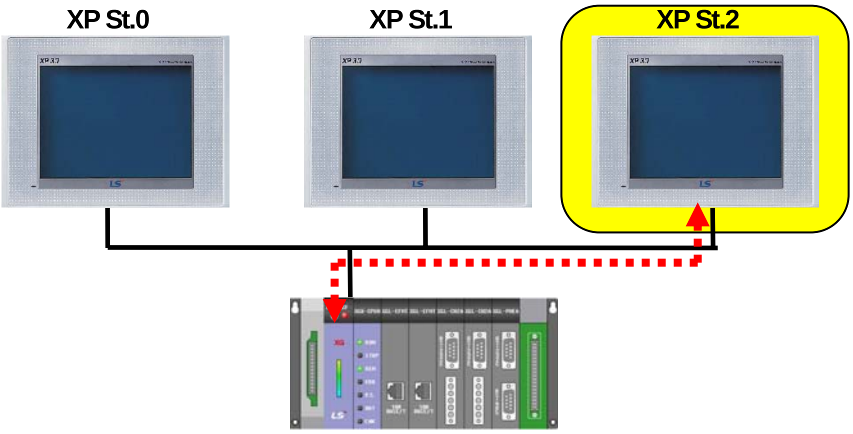
N:1 communication uses the Token Ring Bus. Always, only one XGT Panel is having a token. Station 0's XGT Panel starts N:1 communication. Then next station start N:1 communication in order of the station number.


XP St.0
XP St.1
XP St.2

[Start, when station 0 is communicating]


XP St.0
XP St.1
XP St.2

[When station 1 is communicating]


XP St.0
XP St.1
XP St.2

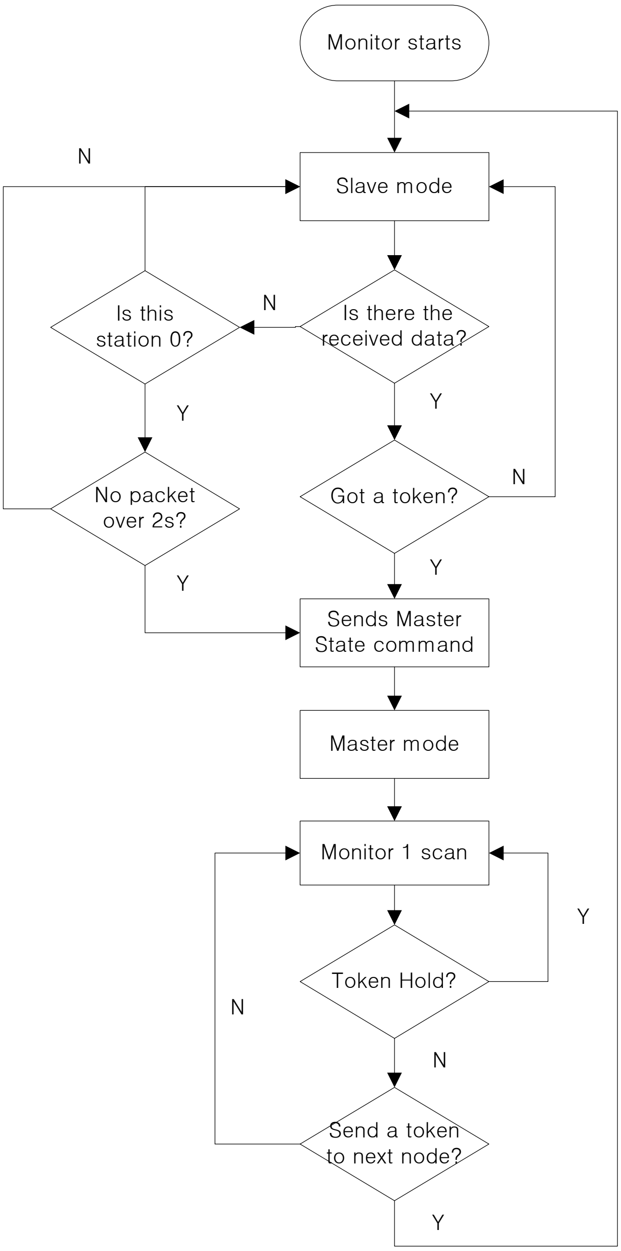
[When station 2 is communicating]

Caution

- If there is no XGT Panel whose station number is 0, N:1 communication can't start
- While station 0 is communicating with token after start of N:1 communication, if communication stops because of power cut or some reason, entire N:1 communication stop.

19.2.2 Operating flow diagram

In case of N:1 communication mode, XGT Panel executes N:1 communication as followings. The following diagram is a tough description to help understanding.

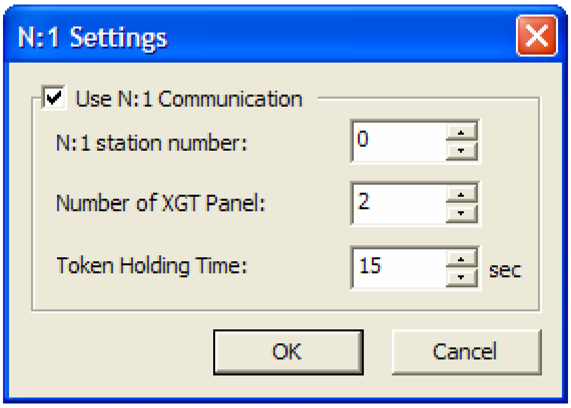

Monitor starts
N
Slave mode
Is this station 0?
N
Is there the received data?
Y
Y
N
No packet over 2s?
Got a token?
Y
Y
Sends Master State command
Master mode
Monitor 1 scan
Y
Token Hold?
N
N
Send a token to next node?
Y

19.3 Setup

For N:1 communication, you have to set up the parameter.

[Sequence]

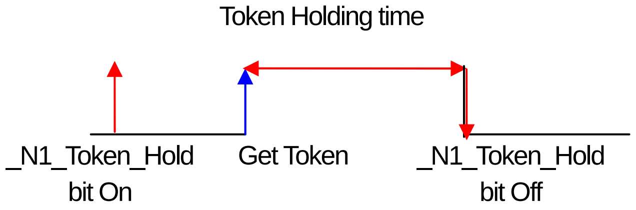
(1) Select the controller supporting N:1 communication and create a project.
(2) Select [Common] – [Project Property Setting] on the menu.
(3) Select [XGT Panel Settings]
(4) Set [Protocol] as RS485.
(5) Click [N:1 Settings] button.
(6) Check [Use N:1 Communication] and input the parameter.



☑ Use N:1 Communication
N:1 station number: 0
Number of XGT Panel: 2
Token Holding Time: 15 sec

[N:1 settings dialog box]

[Description of the dialog box]

Item	Description
Use N:1 communication	Select whether or not using N:1 communication
N:1 station number	Input N:1 station number. Up to 15 is available.
Number of XGT Panel	Input the number of XGT Panel participating in N:1 communication. Up to 16 is available.
Token Holding time	Input the time to take from when _N1_Token_ Hold special device is on to off. Up to 69s is available. _Hold becomes off automatically Token Holding Time after on  Token Holding time _N1_Token_Hold bit On Get Token _N1_Token_Hold bit Off

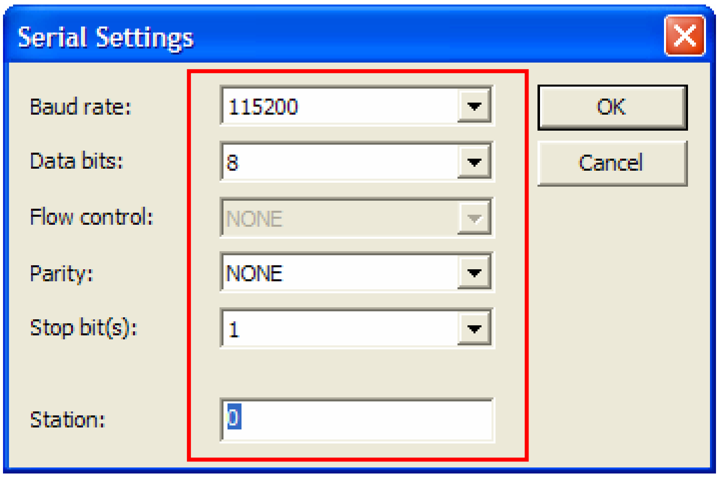
Note

(1) [N:1 Settings] button shows when you select the controller supporting N:1 communication.
(2) The number of XGT Panel has to be larger than N:1 station number
(3) The larger the number of XGT Panel, the poor communication performance

19.4 Regulation and Restriction

For N:1 communication, there are many regulation. You have to comply with the regulation for normal N:1 communication.

- XGT Panel whose station number is 0 should exist.
  ➔ If there is no station number 0, N:1 communication can't start.
- All XGT Panel participating in N:1 communication has to have continuous station numbers starting from 0.
  ➔ If there is discontinuity in the station number, there will be delay in communication speed.
  Ex) When Total number of XGT Panel is 3 and station numbers are 0, 1, and 3 respectively.
- Duplicated station number is not allowed.
  ➔ In case of this, time out or communication error occurs and data refresh speed goes down noticeably
- All XGT Panel participating in N:1 communication should have same controller settings.
- All XGT Panel participating in N:1 communication should have same communication parameter setting except station number, if possible.
  ➔ Detail communication settings such as Protocol, Time out, Wait to send should be same.



Serial Settings

Baud rate: 115200

Data bits: 8

Flow control: NONE

Parity: NONE

Stop bit(s): 1

Station: 0

- N:1 communication only supports RS485 communication.
- If communication line is disconnected while station number 0 XGT Panel is having the token, N:1 communication may stop. So restore the communication line quickly.
- If _N1_Token_Hold special device is on for long, other stations can't communicate at this time. So smooth communication, Set _N1_Token_Holding time as short
- When using N:1 communication, [Program Monitor] function is not supported.
- If you use N:1 communication, PLC's monitor protocol can't be used so communication speed may go down.
- When simulator operates, N:1 communication doesn't operate

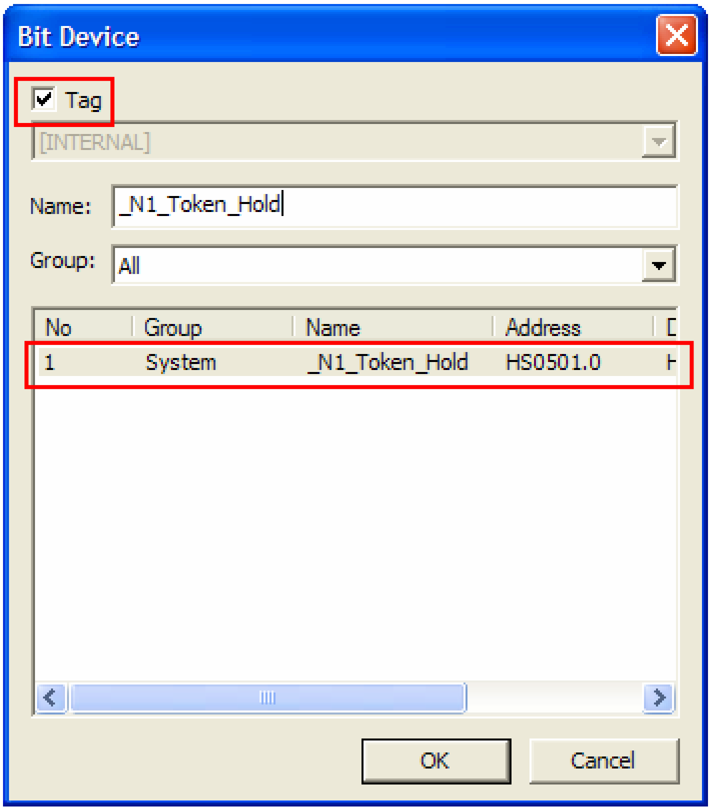
19.5 Token Hold Function and System Device

N:1 communication is slower than 1:1 communication. It can hold the token instead of sending it to next XGT Panel to increase communication performance temporarily. This function is called “Token Hold Function”.

19.5.1 How to use Token Hold Function

[Procedure]

(1) Select the controller supporting N:1 communication and create the project.
(2) Set up the parameter for N:1 communication
(3) Add the switch in the basic screen.
(4) Use the _N1_Token_Hold with switch device.



☑ Tag

[INTERNAL]

Name: _N1_Token_Hold

Group: All

No	Group	Name	Address
1	System	_N1_Token_Hold	HS0501.0

(5) Download the project to XGT Panel
(6) If you press the above switch, it holds the token and communication performance goes up.

Note

(1) Instead of switch, you can use Token Hold Function by using script and etc.
(2) Token Hold function take effect after XGT Panel has N:1 token
(3) Token Hold Function is available temporarily

19.5.2 N:1 System Device

System devices related with N:1 communication are as follows. When making the project, use the following system device for convenience.

Tag name	Device	Type	Description
_N1_Token	HS0070.0	BIT	If XGT Panel is having the N:1 token, this device will be on. Otherwise it is off. Read only device
_N1_Token_Hold	HS0501.0	BIT	Device for N:1 Token Hold Function. Read/Write available
_N1_Token_Station	HS0071	WORD	Station number of XGT Panel having the N:1 token. Read only device.

19.6 N:1 Communication supported PLC driver

Drivers supporting N:1 communication is as follows.

Producer	Driver
LS Industrial Systems	LSIS:XGK(LINK)
	LSIS:XGI/XGR/XEC(LINK)
	LSIS:XGB(LINK)
	LSIS:GM(LINK)
	LSIS:MASTER-K(80,120,200,300,1000)S(LINK)
LS Mecapion	LS Mecapion:VS/VP Servo Drive
Mitsubishi Electric Corporation	MITSUBISHI:MELSEC-A(LINK)
	MITSUBISHI:MELSEC-QnA, Q(LINK)

Note

(1) Drivers supporting N:1 communication will be continuously added. For information on drivers, contact our custom service center.

Appendix 1 Device Setting

1.1 Connectable PLC Types

Maker	Name
LSIS	XGK series(XGK-CPUA, XGK-CPUS, XGK-CPUE, XGK-CPUH)
LSIS	GLOFA-GM series
LSIS	MASTER-K series
Mitsubishi	MELSEC-QnA, Q series

1.2 Device List for PLC Type

1.2.1 XGK Series

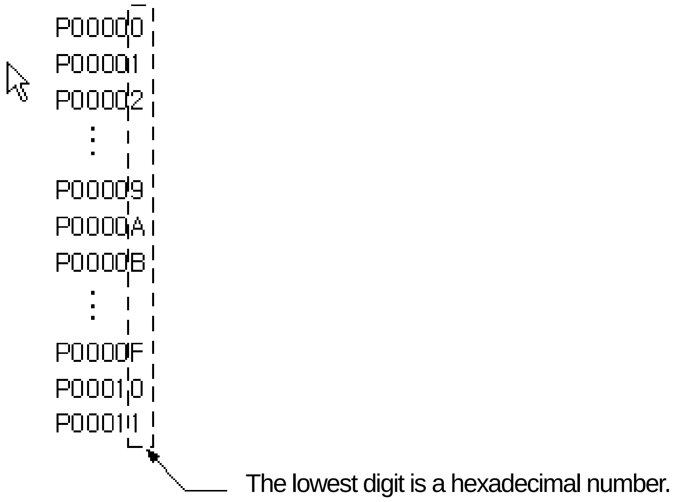
The input ranges by device and device type are as follows.

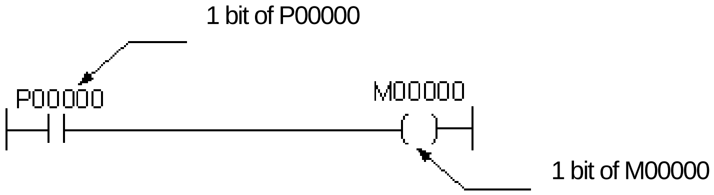
Area	Size	Bit contact point	Word data
P	32768 points	P00000 ~ P2047F	P0000 ~ P2047
M	32768 points	M00000 ~ M2047F	M0000 ~ M2047
K	32768 points	K00000 ~ K2047F	K0000 ~ K2047
F	32768 points	F00000 ~ F2047F	F0000 ~ F2047
T	2048 points	T0000 ~ T2047	T0000 ~ T2047
C	2048 points	C0000 ~ C2047	C0000 ~ C2047
U	3072 WORD	U00.00.0 ~ U7F.31.F	U00.00 ~ U7F.31
S	128 WORD	S00.00 ~ S127.99	WORD not available
L	180224 points	L000000 ~ L11263F	L00000 ~ L11263
N	21K WORD	Bit not available	N00000 ~ N21503
D	32K WORD	D00000.0 ~ D32767.F	D00000 ~ D32767
ZR	32K WORD	Bit not available	ZR00000 ~ ZR65535

The input ranges of the table above are based on XGK-CPUH. If you use a PLC type other than XGK-CPUH, normal operation is possible only if you enter the device input range shown in the PLC manual.

(1) Bit Device

Bit devices are the devices that can be saved or read in a point unit and are P, M, L, K, F, T, C and so on. (For details, see XG5000 Help for Commands) They are specified and used in a point(bit) unit to access the bit data. The lowest digit is a hexadecimal number. This method of display facilitates expression of the word data by the bit device.


P00000
P00001
P00002
P00009
P0000A
P0000B
P0000F
P00010
P00011
The lowest digit is a hexadecimal number.

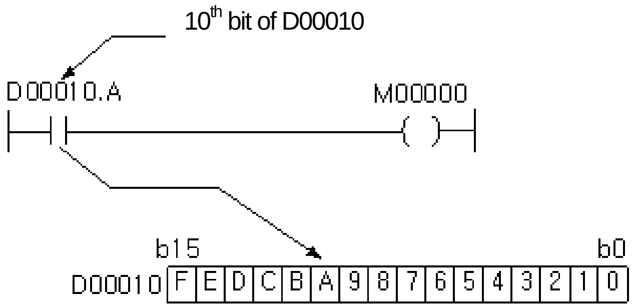

1 bit of P00000
P00000
M00000
1 bit of M00000

(2) How to Set a Bit of Word Device

You can use the bit data by specifying the bit number for a word device.
The following is how the number is expressed.

Word Device No. . Bit No.

The word device number is a decimal number and the bit No. is a hexadecimal number. For example, to express the second bit(b1) of D10, it shall be expressed as D10.1. The b10 bit of D11 is specified as D11A.


10th bit of D00010
D00010.A
M00000
b15
b0
D00010
F
E
D
C
B
A
9
8
7
6
5
4
3
2
1
0

Note

Like a word device, bit device data can be processed in the word unit. However, for it, an expression such as P10.1 cannot be used unlike a word device.

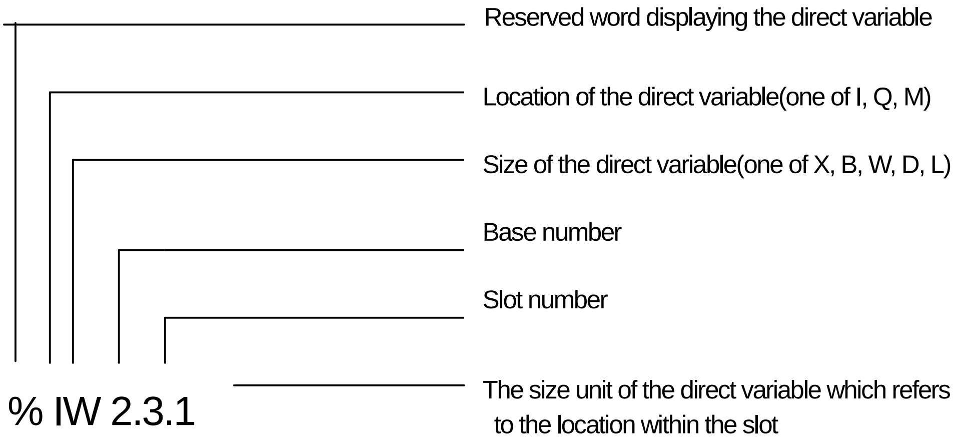
1.2.2 GLOFA-GM Series

The input ranges by device and device type are as follows.

Area	Size	Bit contact point	Word data
%IX	32768 points	%IX0.0.0 ~ %IX63.7.63	WORD not available
%QX	32768 points	%QX0.0.0 ~ %QX63.7.63	WORD not available
%MX	959984 points	MX00000 ~ MX95983	WORD not available
%IW	2047 WORD	Bit contact point not available	IW0.0.0 ~ IW63.7.3
%QW	2047 WORD	Bit contact point not available	QW0.0.0 ~ QW63.7.3
%MW	59999 WORD	MW00000.0 ~ MX59999.15	MW0000 ~ MW59999

The input ranges of the table above are based on the Glofa-1000 extension slot. If you use a different PLC type, normal operation is possible only if you enter the device input range shown in the PLC manual.

The I, Q and M areas of a device are displayed as followed.


Reserved word displaying the direct variable
Location of the direct variable(one of I, Q, M)
Size of the direct variable(one of X, B, W, D, L)
Base number
Slot number
The size unit of the direct variable which refers to the location within the slot
% IW 2.3.1

Prefix	Meaning
I	Input
Q	Output
M	Inner Memory
X, none	1 Bit
B	1 Byte (8 bit)
W	1 Word (16 Bit)
D	2 Word (32 Bit)
L	4 Word (64 Bit)

Example:

%QX3.1.4 or %Q3.1.4: the 4th bit of slot 1 of base 3
%IW2.4.2: the second word of slot 4 of base 2
%MD48: double word 49 of the internal memory (beginning with 0)
%MW10.3: bit 3 of word 10 of the internal memory (There are no bases or slots in the internal memory)

There are 64 contact points per slot.

1.2.3 MASTER-K Series

The input ranges by device and device type are as follows.

Area	Size	Bit contact point	Word data
P	1024 points	P0000 ~ P063F	P000 ~ P063
M	3072 points	M0000 ~ M191F	M000 ~ M191
L	1024 points	L0000 ~ L063F	L000 ~ L063
K	512 points	K0000 ~ K031F	K000 ~ K031
F	512 points	F0000 ~ F031F	F000 ~ F031
T	256 points	T000 ~ T255	T000 ~ T255
C	256 points	T000 ~ T255	T000 ~ T255
S	100*100	S00.00 ~ S99.99	WORD not available
D	10000 WORD	Bit contact point not available	D0000 ~ D9999

The input ranges of the table above are based on K1000H. If you use a different PLC type, normal operation is possible only if you enter the device input range shown in the PLC manual.

1.2.4 MELSEC-QnA/Q Series

The input ranges by device and device type are as follows.

Area	Size	Bit contact point	Word data	Remark
X	8192 points	X0000 ~ X1FFF	X0000 ~ X1FF0	Hex.
Y	8192 points	Y0000 ~ Y1FFF	Y0000 ~ Y1FF0	Hex.
M	32768 points	M00000 ~ M32767	M00000 ~ M32752	Decimal
L	32768 points	L00000 ~ L32767	L00000 ~ L32752	Decimal
F	32768 points	F00000 ~ F32767	F00000 ~ F32752	Decimal
B	32768 points	B0000 ~ B7FFF	B0000 ~ B7FF0	Hex.
TS(TT)	32768 points	TS00000 ~ TS32767	WORD not available	Decimal
TC	32768 points	TC00000 ~ TC32767	WORD not available	Decimal
CT	32768 points	CT00000 ~ CT32767	WORD not available	Decimal
CC	32768 points	CC00000 ~ CC32767	WORD not available	Decimal
SM	2048 points	SM0000 ~ SM2047	SM0000 ~ SM2032	Decimal
SS	32768 points	SS00000 ~ SS32767	WORD not available	Decimal
SC	32768 points	SC00000 ~ SC32767	WORD not available	Decimal
SD	2047 WORD	SD0000.0 ~ SD2047.F	SD0000 ~ SD2047	Decimal

Area	Size	Bit contact point	Word data	Remark
SB	2048 points	SB000 ~ SB7FF	SB000 ~ SB7F0	Hex.
V	2048 points	V0000 ~ V2047	V0000 ~ V2032	Decimal
D	32768 WORD	D00000.0 ~ D32767.F	D00000 ~ D32767	Decimal
SN	32768 WORD	SN00000.0 ~ SN32767.F	SN00000 ~ SN32767	Decimal
W	32768 WORD	W0000.0 ~ W7FFF.F	W0000 ~ W7FFF	Hex.
TN	32768 WORD	TN00000.0 ~ TN32767.F	TN00000 ~ TN32767	Decimal
CN	2048 WORD	CN00000.0 ~ CN32767.F	CN00000 ~ CN32767	Decimal
SW	2048 WORD	SW000.0 ~ SW7FF.F	SW000 ~ SW7FF	Hex.
S	32768 points	S00000 ~ S32767	S00000 ~ S32752	Decimal
R	32768 WORD	D00000.0 ~ D32767.F	D00000 ~ D32767	Decimal
ZR	1042432 WORD	-	-	-

1.3 How to Express Device Address

The expression of the device addresses of XP-Builder consist of the connection number, data size, area number and connecting device address.
Each property is recognized by ':', which is the separator.

Connection number: The XP series is able to connect up to 4 devices at a time using different protocols. Then the protocols are assigned to each PLC for connection with their order specified between 0 and 3. When you set the device, the numbers corresponding to this order are used as the connection number and display the connected PLC.

Data size: The data size is used for inputting a device in the script. The input device separates bit devices from word devices. When a device is entered not in the script but in the display, the data size is not entered because the bit or word properties of all the devices are predetermined.

Area number setting: The HMI device connecting protocols are RS-232C, RS-422 and RS-485 and these protocols are supposed to be assigned area numbers to be connected. Area numbers are used for separating the PLC connected in this way. '#' comes before each area number to indicate that it is an area number.

Connecting device address: The connecting device address indicates the device address in the PLC. Companies have different methods of expressing devices. XP-Builder follows each company's standard device expression methods.

Example of address expression

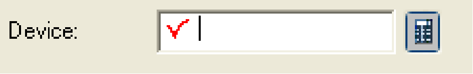
Normal:	D04334, #2:M2300, 1:#1:P0012
Script:	@[W:D23], @[B:#1:M0034]

A device address of which the connection number is not displayed has the default connection number of 0 and indicates the first set device.
The area number is not displayed in the PLC device address connected to the protocol which does not require an area number. Moreover, if you use an area number of which the connection area number is specified as the default PLC properties value, the area number is not displayed. The device size shall always be specified in device expressions in the script.

1.3.1 Address Input Control

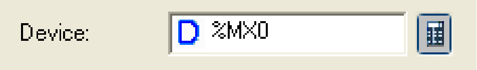
The address text box consists of the entry control for direct entry and a button for entry by a dialog box.

When no address has been entered



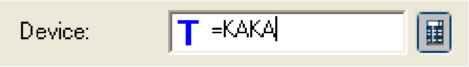
Device: ✓

When an address has been entered



Device: D %MX0

When a tag has been selected

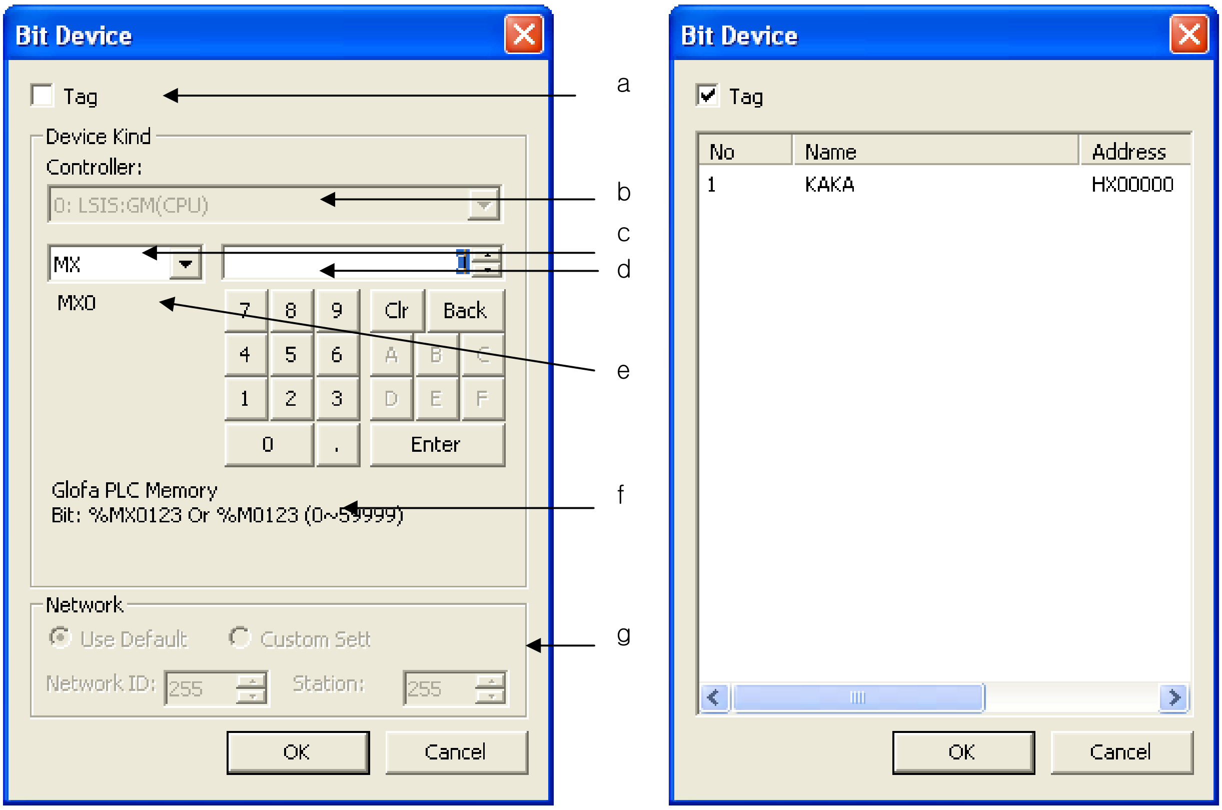


Device: T =KAKA

You can enter the address by using the key board. If the address expression is correct, ‘D’ is shown as below and a full expression of the address is displayed.
If you select an address in the tag, ‘T’ is displayed.

1.3.2 Address Setting Dialog Box

To invoke the dialog box for setting the device, click on the ‘DEV’ button beside the address text box.


Bit Device
☐ Tag
Device Kind
Controller:
7
8
9
Clr
Back
4
5
6
A
B
C
1
2
3
D
E
F
0
.
Enter
Network
● Use Default
○ Custom Sett
Network ID:
Station:
OK
Cancel
a
b
c
d
e
f
g
Bit Device
☑ Tag
OK
Cancel

Controller: 0: LSIS:GM(CPU)

MX

MX0

Glofa PLC Memory
Bit: %MX0123 Or %M0123 (0~59999)

Network ID: 255 Station: 255

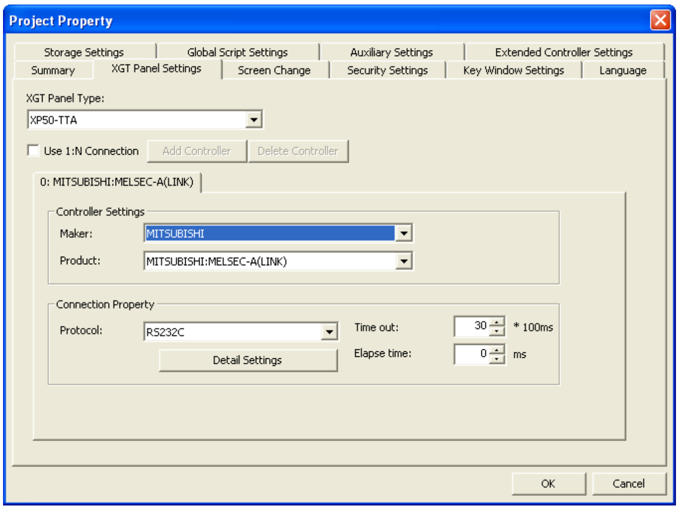
No	Name	Address
1	KAKA	HX00000

Function	Description
Tag combo box(a)	Decides whether to use the tag for selection. If you check this box, the tag list is selected.
Connecting device selection(b)	Selects the PLC to import the data among the devices connected to XGT Panel.
Device selection(c)	Displays the list of devices available among the PLC devices.
Device address text box(d)	Indicates the device offset.
Preview device(e)	You can preview the character string of the entered device.
Example of device(f)	Shows the description of the device selected in (b).
Network Settings(g)	This is used when the Network Settings should be specified with the PLC connected to RS422/485.

Appendix 2 Problems That Might Occur in XP-Builder Operation

2.1 Types of Problems

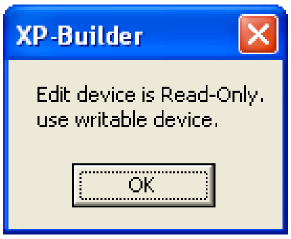
The types of problems that might occur with respect to XP-Builder operation, displayed figures or objects and download in XP Builder are divided as follows. Refer to the following for troubleshooting.

Problem Type	Description
Device setting	A problem with common data editing such as the tag, alarm and logging and device setting in an object ☞ **2. See Problems with Device Setting**
Common data editing	A problem with common data editing such as the text table, logging, recipe, flow alarm and history alarm ☞ **4. See Problems with Common Data Editing**
Communication	Failure of communication with PLC or XP Builder ☞ **5. See Problems with Communication**
Download	1. Problem with download of a project to XGT Panel 2. Problem with download of XGT Panel data to the PC 3. Problem with download of the XGT Panel engine ☞ **5. See Problems with Download**
Project properties setting	A problem with project properties setting such as device setting and security setting ☞ **6. See Problems with Project Property Setting**  Project Property Storage Settings Global Script Settings Auxiliary Settings Extended Controller Settings Summary XGT Panel Settings Screen Change Security Settings Key Window Settings Language Add Controller Delete Controller 0: MITSUBISHI:MELSEC-A(LINK) Detail Settings OK Cancel XGT Panel Type: XP50-TTA ☐ Use 1:N Connection Controller Settings Maker: MITSUBISHI Product: MITSUBISHI:MELSEC-A(LINK) Connection Property Protocol: RS232C Time out: 30 * 100ms Elapse time: 0 ms
Others Problems	When an error message appears as a dialog box during editing of the window, common data and object in XP Builder ☞ **7. See Other Problems**

2.2 Problems with Device Setting

2.2.1 When device input does not work

Situation. The following message appears in the entry window of the standard device or common setting device of the object and the device is not entered.



Edit device is Read-Only.
use writable device.

<Cause>

1) Some objects such as the switch/number input unit support reading and writing of device values. However, the lamp, character output unit, etc. can only read. Some of the devices of the controller has a device displaying an error while writing in the reading mode. For example, in case of LS advertisement XGK PLC, reading of F device area is possible but writing of all the area is not provided. That is, it can write only part of the area. The switch of the object can write in the connected device and releases a warning by displaying a message shown above when a read-only device is registered because an error might occur during execution.

<Troubleshooting>

1) Be sure not to register a read-only device in the device address of the object such as a switch, number input unit or character input unit which supports the writing function.

2.2.2 Can not input tag to device input window

When inputting tag to a device screen from project properties setting menu, the error message will be shown and inputting tag is not available.

<Cause>

1) In XP-Builder, for controller device address, it is required to input the address directly or register it to tag table and connect tag name. However, it is impossible to set up tag for some items when project properties data can not use tag. In this case, you are kindly requested to input the address directly for all devices input from project properties data.

< Troubleshooting >

1) Inputting direct address type is available only for project properties data so apply the solution.

22.3 The HS internal device is not displayed in some device selection dialog boxes.

Situation. The HS internal device is not displayed in the combo box displaying the device items of the device entry dialog box.

<Cause>

1) Of internal devices, the HS device is a special device displaying the information on the internal situation of XGT Panel. This device is for reading only, so check whether the device you are going to set supports writing. A read-only device cannot be set for the object switch or status storage device, which basically support writing.

<Troubleshooting>

1) HS is a read-only device, so choose another device that can write.

2.3 Problems with Common Data Editing

2.3.1 Korean is not entered after text editing.

Situation. I want to do text editing in the window after editing the text, but the Korea/English shift key is not working and I cannot enter Korean language.

<Cause>

1) The text supports multi-languages. You can edit foreign languages such as English, Japanese or Chinese other than Korean for text editing. For a foreign language to be entered, the entire keyboard is arranged again and becomes different from Korean keyboard system so that that language can be entered. That is why you cannot shift from Korean to English when you press Korean/English shift key.

<Troubleshooting>

1) There is a combo box displaying the editing language in the toolbar. If you want to use Korean, specify the editing language as [Korean] and you can enter Korean. The Korean/English shift key works after you specify Korean as the editing language. The editing language change in the toolbar applying to all entries during operation of XP Builder, if there seems to be any problem with the keyboard, check the present editing language.

2.3.2 Cannot enter Japanese and Chinese.

Situation. Japanese and Chinese are included in the editing languages, but I cannot enter them in the text.

<Cause>

1) Double-check whether Japanese and Chinese are included in the editing language list. If such languages are not working despite them being included in the editing languages and being specified as the editing language in the toolbar, it is because the windows you are using has not been set to support such languages.

<Troubleshooting>

1) Set the language and keyboard so that your window supports the language you want. Choose [Country and Language Option] in the control panel. Press [Details] in “Text Service Entry Language” in the language tap. Press [Add] in the service items to add Chinese or Japanese. If you start XP Builder again, you can use Chinese or Japanese.

2.3.3 cannot invoke a text.

Situation. I cannot invoke a text.

<Cause>

1) It might be because the file is being used in another program and therefore is cannot be opened.
2) Or it can be because the file storage structure to execute Invoke does not match the storage structure of the text.
3) OR it can be because the editing language list set in the project when you conduct Transfer is different from the editing language list set in the project when you conduct Invoke.

<Troubleshooting>

1) Invocation might not work if the file to execute invocation is opened in the same application as the document editor. Check whether the file to execute invocation is being used.
2) Open the file to execute invocation with the document editing program (e.g. Microsoft Excel) and check whether the file structure matches the storage file structure of the text. If they are different, modify them in the document editor and try again.
3) Invoke the editing language list in the file when you execute text invocation and compare it with the editing language list set in the present project. Now, only the items registered as the present editing language are read and added to the project. If the editing language lists of the two projects are different, change the editing language in [Language] tap in the project property window and try again.

2.3.4 The name of a history alarm is changed when I create, copy and paste the history alarm.

Situation. The name of an history alarm is changed when I create, copy and paste the history alarm.

<Cause>

1) Each history alarms in a project should have different names. If the names are redundant when you copy/paste the history alarm, XP Builder automatically creates a default value of a name which is not redundant. That is why the name is changed.

<Troubleshooting>

1) Before you copy/paste between XP Builders, give a dedicated name to the original alarm. If you want to copy/paste in a single XP Builder, change the name after pasting.

2.3.5 Can I edit the system alarm?

Situation. I cannot edit the system alarm.

<Cause>

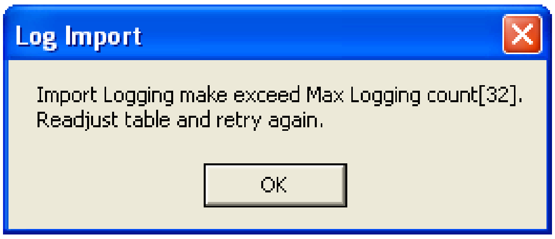
1) Being the alarm information used in XGT Panel, the system alarm cannot be edited by the user.

<Troubleshooting>

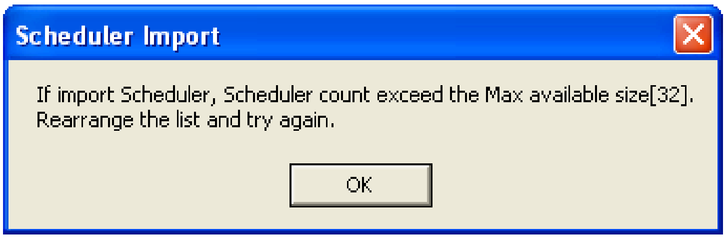
1) The system alarm cannot be edited by the user.

2.3.6 I cannot import logging/scheduler.

Situation. When I attempt to execute logging/scheduler, the following message boxes are invoked and I cannot execute them.



Import Logging make exceed Max Logging count[32].
Readjust table and retry again.



If import Scheduler, Scheduler count exceed the Max available size[32].
Rearrange the list and try again.

<Cause>

1) You can set up to 32 loggings. If you import one, the data read from the file is added to the present logging. If the number of loggings exceed 32 because a lot of data are read, a message shown above appears.

<Troubleshooting>

1) This is a message when the number of the currently set loggings and read loggings exceeds 32. Delete the current setting and try again.

2.3.7 I cannot invoke a tag.

Situation. I imported tag table, but it is not working.

<Cause>

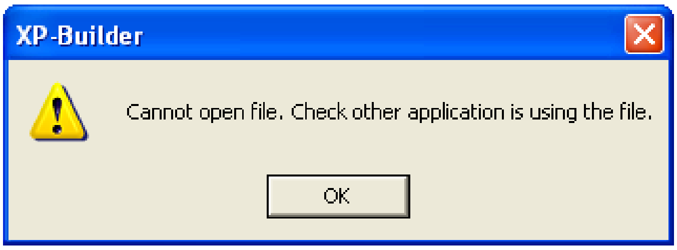
1) Check whether the file you want to read is being used by another program. If it is opened in a program such as Microsoft Excel, the file won't open and you might not be able to invoke it.
2) The file in which the tag information is stored is specified for a certain rule. If you open a file which does not meet the rule, its invocation might not work.
3) The device information recorded in the tag information storage file is transformed into texts and saved regardless of the controller information. If you execute tag information invocation, the device information stored in the file is read and transformed into the controller device form set in the current project. If an error occurs during device address analysis because of the controller type being different, you might not be able to invoke it.

<Troubleshooting>

1) Check whether the file you want to read is being used by another program. If it is being used by another program, close the program and try again.
2) Open the file you want to read in a document editor (Excel, Notepad, etc.) and check whether it meets the tag information file rule. Modify the part that does not meet the rule and try again.
3) This problem has occurred because the project that executed transfer and the controller information set in the project that executed invocation are not matched. Keep them equal.

2.3.8 I cannot import the common data setting items.

Situation. I executed import of common setting items from the file, but it is nor working with the following message displayed.



XP-Builder

Cannot open file. Check other application is using the file.

<Cause>

1) Check whether the file you want to read is being used by another program. If it is opened in a program such as Microsoft Excel, the file won't open and you might not be able to import it.

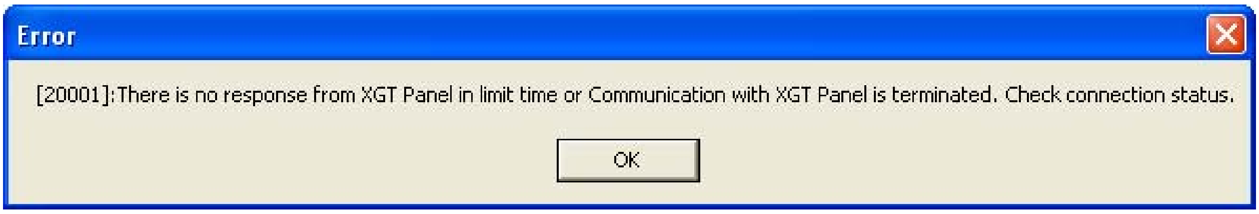
<Troubleshooting>

1) Check whether the file you want to read is being used by another program. If it is being used by another program, close the program and try again.

2.4 Problems with Communication

2.4.1 Problem with program download using RS-232 (serial)

Situation. I want to download the project file through RS-232 (serial), but the following message is displayed and I cannot download it.



[20001]:There is no response from XGT Panel in limit time or Communication with XGT Panel is terminated. Check connection status.

<Cause>

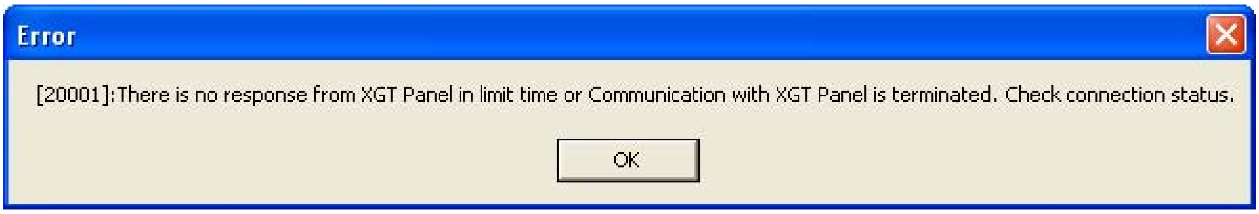
1) This might occur when the RS-232 cable connection is not correct.
2) Unless you use the 6-pin RS-232 cable, which is included in the product package, there are many kinds of RS-232 cables and XGT Panel includes a 6 pin connector. Check whether the round connecting terminal is correctly plugged in the part on the back of XGT Panel which reads Tool.
3) This might also occur when RS-232 transfer speed is not correctly set.

<Troubleshooting>

1) Check the cable connection and the contact of XGT Panel and PC terminals.
2) Normal operation is not guaranteed if you do not use the standard cable which is included in the product package. Check whether the round connecting terminal is correctly plugged in the part on the back of XGT Panel which reads Tool.
3) Check whether the value set in [Settings] -> [PC Conn Setting] in the menu window of XGT Panel is equal to the set value of the transfer speed displayed in the connection information of XP Builder.

2.4.2 Failure of project download using Ethernet

Situation. I want to download the project file through Ethernet, but the following message is displayed and I cannot download it.



[20001]:There is no response from XGT Panel in limit time or Communication with XGT Panel is terminated. Check connection status.

<Cause>

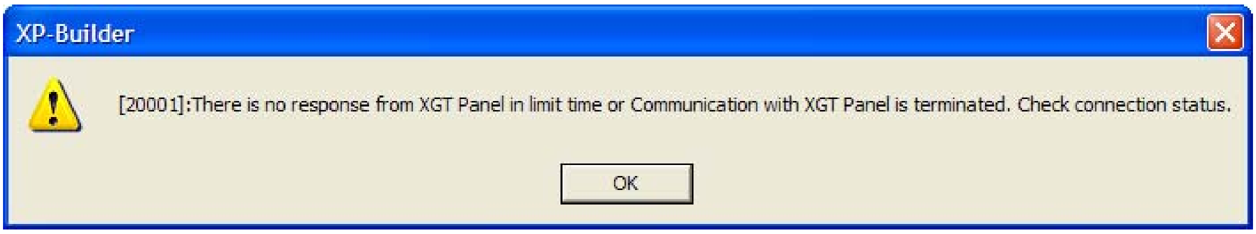
1) Problem with cable connection to XGT Panel
2) 1:1 connection to the PC by a cross cable
3) Wrong setting of IP/Port of XGT Panel

<Troubleshooting>

1) Check whether the cable is correctly plugged into the Ethernet port of XGT Panel.
2) If the PC is connected 1:1 by the cross cable, check whether you checked OK button of [1:1 Connection], which is in the middle of [Communication] -> [Communication Settings] of XP Builder. If download still does not work despite [1:1 Connection] OK button being normally set and cable being correctly plugged, check whether IP/Port set in [Settings] -> [Ethernet Setting] is correct. Check whether the IP/Port of XGT Panel can be read in the connection setting window of XP Builder.
3) XP Builder saves the setting environment in which you last conducted downloaded and set it as the default value for the next download. If XGT Panel has been changed, it might not fit for the XGT Panel to which IP/Port settings are connected. Check whether the IP/Port of the connected XGT Panel is in the list in the XP Builder connection setting window and whether the IP/Port is set for the [Selected XGT Panel].

2.4.3 When Program download through RS-232C (Serial) is intermittently not available (In case of using USB/Serial Converter)

Situation. When you try to download project file through UBS/Serial Converter, the below message may intermittently appear.



[20001]:There is no response from XGT Panel in limit time or Communication with XGT Panel is terminated. Check connection status.

<Cause>

1) In the case of USB/Serial Converter, communication may be not available temporarily depending on the item’s performance.
2) If USB Driver is improperly installed, communication is not available at all.

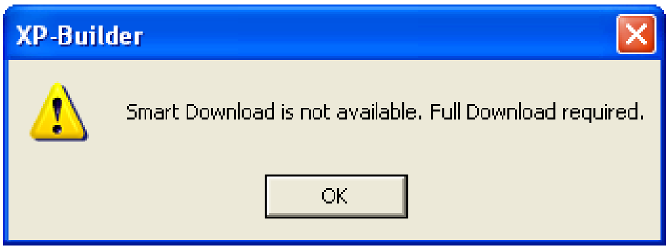
<Solutions>

1) Re-install USB Driver.
2) The performance of USB/Serial can not be guaranteed, try to connect communication again when you have got the above message.

2.5 Problems with Download

2.5.1 I want to download a project, but [Download Modified] is not working.

Situation. I creating a project and selected [Download Modified], but the following message is displayed and download is not working.



Smart Download is not available. Full Download required.

<Cause>

1) In some cases, if part of a project is changed, it has an effect on the overall project, so the entire project must be downloaded, for example, when the controller information has been changed. If you select [Download Modified] in such a case, the message shown above is displayed.

<Troubleshooting>

1) Download the entire project.

2.5.2 Download item settings of the [Download Project] window seems abnormal.

Situation. The image and additional information items of [Download Project] are automatically checked though I didn't do so.

<Cause>

1) The image items of download items are the items that must be downloaded if the display information is included. Therefore, if the user chooses one of the displays, it is automatically selected. If the image is not downloaded, a picture cannot be built where the object is in the screen.

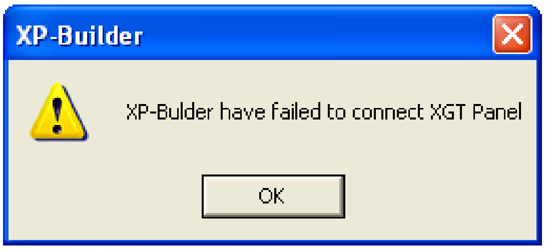
   The items of additional information are downloaded to enhance the project performance. If one of the download items is selected, they must be downloaded as well.

<Troubleshooting>

1) The download of image and additional information items are determined by selecting other items. The user cannot decide whether to download them or not.

2.5.3 I can't download the engine program.

Situation. I pressed [Send] button to upgrade the XGT Panel engine, but the following message is displayed and I cannot download the engine program.



XP-Bulder have failed to connect XGT Panel

<Cause>

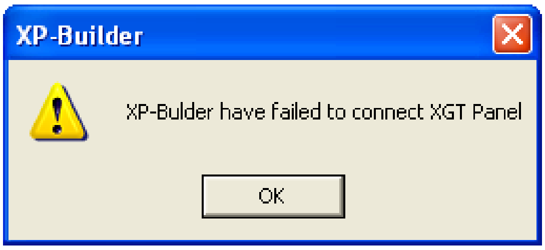
1) The status of XGT Panel is not the status for updating the engine.

<Troubleshooting>

1) To update the engine, the XGT Panel program should shift to the engine update mode. Press [Update HMI Engine] in the menu window of the device and shift to the engine download mode.

2.5.4 Shift to [Connected XGT Panel] is not working after [Communication]-[Comm. Setting].

Situation. I shifted to [Connected XGT Panel] after executing [Communication]-[Comm. Setting] in the XP Builder menu, but there is no response and the following message box appears. I encounter the same thing when I shift to another tap and then go back to [Connected XGT Panel] tap.


XP-Builder

XP-Bulder have failed to connect XGT Panel

<Cause>

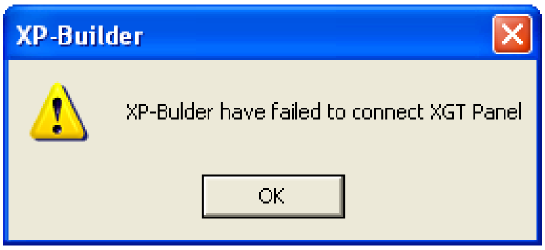
1) [Connected XGT Panel] tap is the window where the information on the HMI device connected to the computer is displayed. If the user shifts from [Communication Settings], [Download Project] or [Upload Items] to [Connected XGT Panel] tap, XP Builder attempts connection to the device by using the current connection setting information. If the connection information does not match the current device, connection might fail. In this case, the message shown above is displayed.
2) This might occur when the connection between the HMI device and computer cable is different from the setting information.

<Troubleshooting>

1) Check whether the connection information at the right bottom of the screen matches the connection method set in the HMI device.
2) Check whether the HMI device is correctly connected to the computer according to the settings in the connection information.

2.5.5 Project file upload is not working during execution of [Communication]-[Receive].

Situation. I pressed [Read] button to download the project file in [Upload Items] window of XP Builder, but the following message appears and I cannot start download.



XP-Bulder have failed to connect XGT Panel

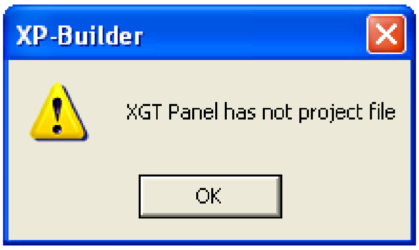
<Cause>

1) If the connection information is discordant with the current XGT Panel, connection may fail and the message above appears.
2) This might occur when the cable connection between XGT Panel and computer is different from the setting information.

<Troubleshooting>

1) Check whether the connection information at the right bottom of the screen matches the connection method set in XGT Panel.
2) Check whether the XGT Panel is correctly connected to the computer according to the settings in the connection information.

Situation. I pressed [Read] button to download the project file in [Upload Items] window of XP Builder, but the following message appears and I cannot start download.



XGT Panel has not project file

<Cause>

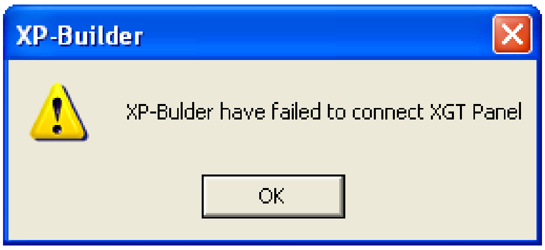
1) Such a message appears when you download a project to a device connected to the computer without selecting the setting button of [Include Project File].

<Troubleshooting>

1) Reading from XGT Panel is not working because there is no project file information in the connected XGT Panel. Check the job file.

2.5.6 Backup data download is not working during [Communication]-[Receive].

Situation. I pressed the backup data check button to download the backup data in [Receive] window of XP Builder, but there is no response and the following message box appears.



XP-Bulder have failed to connect XGT Panel

<Cause>

1) Of [Receive] operations, [Backup Data] is invoking the backup data file stored in the device to the computer. If the user selects [Backup Data], XP Builder attempts to get the backup data file information from XGT Panel by the communication method in the current connection information. If the connection information does not match the present XGT Panel, connection might fail. The message above appears in such a case.
2) This might occur when the cable connection between XGT Panel and computer is different from the setting information.

<Troubleshooting>

1) Check whether the connection information at the right bottom of the screen matches the connection method set in XGT Panel.
2) Check whether the XGT Panel is correctly connected to the computer according to the settings in the connection information.

2.5.7 The folder path is not displayed when I select download to a removable storage unit.

Situation. I select [Download to Removable Storage] in [Communication]-[Send], but the list that can be set in the folder path combo box is not invoked.

<Cause>

1) In the folder path combo box, only the removable storage units such as the diskette, USB or CF card are displayed. If a removable storage unit is not connected to the computer, it is not shown in the combo box list.
2) If a removable storage unit is connected to the computer but not recognized as a removable disk, it might not be shown in the combo box list.

<Troubleshooting>

1) Plug the removable storage unit to the computer. Check whether the removable storage unit is recognized as a removable disk in the search panel.
2) Remove and plug the removable storage unit. If the device driver is correctly installed, a drive corresponding to the search panel is displayed. You can download if the driver is normally displayed.

2.5.8 I cannot download to a removable storage unit.

Situation. I saved a file in a removable storage unit in [Download Project] and tried to download it, but it is not working.

<Cause>

1) Check whether the remaining memory of the removable storage unit is more than 10MByte. If the remaining space is below 10MByte, download might not be working.
2) Check whether the write protection is set in the removable storage unit. If so, you cannot move a file to the removable storage unit.

<Troubleshooting>

1) Remove unnecessary files in the removable storage unit to secure enough memory more than 10MByte and try again.
2) Release the write protection of the removable storage unit and try again.

Situation. I downloaded by using a removable storage unit, but it is not normally recognized by XGT Panel.

<Cause>

1) Although you have correctly downloaded in the project download window of XP Builder, if you have separated the storage unit without executing [Remove Hardware Safely] in the tray window for separation of the removable storage unit, the file may not have been normally moved.

<Troubleshooting>

1) Be sure to execute [Remove Hardware Safely] after download and separate the storage unit from the computer.

2.5.9 An error message appears in the [Output] window when I download.

Situation. Various error messages appear in the [Output] window when I download or execute [Data Check].

<Cause>

1) When an error occurs in the edited XPD file, which might cause a serious problem with download to XGT Panel, XP Builder lets you know the cause.

<Troubleshooting>

1) When you transfer what has been edited in XP Builder to the XGT Panel series, XP Builder checks errors in the data. If any errors are found, they are classified into [Warning] and [Error] and the result is displayed in the [Result] window. The differences between [Warning] and [Error] are as follows.

Type	Description
Warning	When an edited file operates in the XGT Panel series, if it is likely to be expressed differently from what the user has edited, although it does not seriously harm the device, it is displayed as a [Warning]. E.g.) If the set font file does not exist
Error	When an edited file operates in the XGT Panel series, if it is likely to affect the device so seriously as to cause XGT Panel to stop operating or abnormally terminate, it is expressed as an [Error]. E.g.)If the object device is not set or wrongly set.

The message displayed in the [Result] window is as follows.

[Error XXXX] Window name, object type and ID: Error Message

E.g.)[Error 2001] B-1 window shift switch 0001: Basic display 2 is incorrect.

The warning codes and messages are as follows.

Warning Code	Warning Message	Cause and Troubleshooting	
2007	The XX font you selected cannot express all the headings set as XP BUILDER. (XX : font name, XP BUILDER : heading contents)	Cause	. When the font set in the object such as View history alarm, View data list and View loggings cannot express headings . If the set font does not exist in the system or has been deleted
		Trouble-shooting	. Change the heading . Change the font
2009	The XX font you selected has not been installed in the system. (XX : font name)	Cause	If the set font does not exist in the system or has been deleted
		Trouble-shooting	Change the font
2012	The standard device exists in the specified XP BUILDER. An unexpected result might occur. (XP BUILDER: script name)	Cause	When writing has been carried out by using the standard device of the object you used as the direct variable in the script**(☞ See Chapter 7 Script Setting of Object Setting)**

Warning Code	Warning Message	Cause and Troubleshooting	
		Trouble-shooting	Change the variable type into a temporary variable when you only display the result without writing in the standard device.
2013	There is no history alarm of which the printing has been set	Cause	The history alarm list of which the printing has been set in the special or multi switches has been deleted.
		Trouble-shooting	Change the set history alarm list or printing function.
2014	If the number of rows is X and number of lines is XX, the maximum device range is exceeded. (X : number of rows, XX : number of lines)	Cause	The number of rows and number of lines set in data list view object exceed the maximum device range.
		Trouble-shooting	Set the numbers of rows and lines within the maximum range of the device according to the standard device.
5003	The alarm message setting of [Flow Alarm X] is not correct. (X: alarm number)	Cause	The alarm message has not been selected.
		Trouble-shooting	Select an alarm message.
7005	There is no text displaying the alarm group X. (X: alarm group name)	Cause	The alarm group display text has not been selected.
		Trouble-shooting	Shift to the alarm group properties window and select the group display text.
7006	The text setting of alarm list X is not correct. (X: alarm list name)	Cause	The text in the alarm list has not been selected.
		Trouble-shooting	Shift to the alarm list and select the text table to use. If there is no text table, add and specify a new text table.
7010	The alarm message setting of alarm list X is not correct. (X: alarm list name)	Cause	The alarm message has not been set.
		Trouble-shooting	Select the text number to use as the alarm message in the text table of the alarm list.
11001	Characters that cannot be output as font X are included. Check whether you used any character which does not fit for the selected font in the text table or window contents. (X: font name)	Cause	
		Trouble-shooting	Some characters can be expressed using special fonts. The character entered by the user is not in the selected font file, so select another font that can display the entered characters.

The error codes and messages are as follows.

Error Code	Error Message	Cause and Troubleshooting	
1000	There is no background image.	Cause	The user image selected as the background by the user has been deleted.
		Trouble-shooting	2.5.8.1.1.1.1 Choose another image as the background. 2.5.8.1.1.1.2 Add the deleted image to the user graphic library and specify a new image.
1001	There is an object or picture outside the screen area.	Cause	The user image selected as the background by the user has been deleted.

Error Code	Error Message	Cause and Troubleshooting	
		Trouble-shooting	1. Choose another image as the background. 2. Add the deleted image to the user graphic library and specify a new image.
1003	You have selected script X which has not been set. X: script name	Cause	The script which was set at the time of screen start or disappearance has been deleted.
		Trouble-shooting	1. Replace the script with a new registered script. 2. Add the deleted script and register it in the screen properties.
1004	You cannot insert more than 8 window objects in a window.	Cause	More than 8 window objects have been registered.
		Trouble-shooting	Delete the window objects registered after the 8th object.
1005	The window size has exceeded the maximum size of the HMI window.	Cause	If the window is the maximum size of the basic window, it is prevented in advance because it is not displayed in the device.
		Trouble-shooting	Reduce the window size so that it is smaller than the basic window.
2000	The set image information is incorrect.	Cause	The specified image has been deleted. The image form (BMP, JPEG, etc.) are incorrect.
		Trouble-shooting	Check whether the image exists. Change the image into another image or delete it.
2001	Number X of Display XX is incorrect. (XX : display type, X : display number)	Cause	The display set in the display shift switch, bit window, bit part and word part does not exist.
		Trouble-shooting	Change the display type and number of the object. Create the display type and number that have been set.
2002	The device address is incorrect.	Cause	The device type if incorrect. The device address has not been set.
		Trouble-shooting	Set or change the device address correctly.
2004	You have used a deleted or wrong text table.	Cause	The set text table has been deleted.
		Trouble-shooting	Change the setting with another text table.
2005	You have selected a script that has not been set.	Cause	The script that has been set has been deleted.
		Trouble-shooting	Change the setting with another script.
2008	There is an object or picture outside the screen area.	Cause	The edited object is out of the screen.
		Trouble-shooting	Move the object. Adjust the object size.

Error Code	Error Message	Cause and Troubleshooting	
2011	The image you specified is not available.	Cause	The color image has been set in the BTA device type. A moving GIF has been set as the color GIF in the BTA device type. In case of an image form that is not supported
		Trouble-shooting	Delete the image or change it into another
2015	Device XP BUILDER is read-only.	Cause	A read-only device has been set as the standard device in an object for writing such as a switch, number input unit or character input unit.
		Trouble-shooting	Change the standard device into a writable device.
3000	Initial screen setting X is incorrect. (X: screen number)	Cause	A screen that has not been created has been specified as the initial screen.
		Trouble-shooting	Select one of the screens that have been built as the initial screen using [Browse] button.
3002	Key window X is not correct.	Cause	A key window which has not been created has been specified.
		Trouble-shooting	Select a screen to use as the key window among the screens that have been built using [Browse] button.
3003	The base screen change device is not correct. (X: screen number)	Cause	The device has not been set.
		Trouble-shooting	Shift to [Screen Change] tap of the project properties window and set the device.
3004	Window 1 change device is not correct.	Cause	The device has not been set.
		Trouble-shooting	Shift to [Screen Change] tap of the project properties window and set the device.
3005	Window 2 change device is not correct.	Cause	The device has not been set.
		Trouble-shooting	Shift to [Screen Change] tap of the project properties window and set the device.
4000	The logging start device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4001	The logging device of logging X is not correctly set. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4002	The logging display device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4003	The logging stop device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.

Error Code	Error Message	Cause and Troubleshooting	
4004	The logging area pool device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4005	The logging area deleting device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4006	The logging backup device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4007	The logging backup completing device of logging X is not correct. (X: logging number)	Cause	The device has not been set.
		Trouble-shooting	Open the properties window of the logging and set the device.
4008	Logging area setting is not correct.	Cause	There is an error in the logging area setting.
		Trouble-shooting	If the logging is set, the area in which the logged data is to be stored must be selected. Check whether you have checked the storage area of the logging in the logging properties window using [Logging Area Settings] button.
4009	The maximum size of the logging area has been exceeded(X KB). (X : maximum size of the logging area)	Cause	There is an error in the logging area size.
		Trouble-shooting	The logging area of the HMI device has a fixed size. The sum of the storage areas of each logging exceeds the maximum size. Adjust the size so that the sum does not exceed the maximum size.
4010	The logging area has not been set.	Cause	
		Trouble-shooting	If the logging is set, the area in which the logged data is to be stored must be selected. Check whether you have checked the storage area of the logging in the logging properties window using [Logging Area Settings] button.
4014	The path of the object to backup the logging has not been specified.	Cause	The logging backup path has not been set.
		Trouble-shooting	If you specify the backup function as the logging property, you must specify the backup path for data storage. In this case the backup path has not been specified, so select the location to store the data in the [Backup Data Storage] in the logging properties window and press [Apply] button.
4015	The setting of the device to log is not correct. The maximum device size that can be set by the number of the devices has been exceeded.	Cause	There is an error in the setting of the device to log.
		Trouble-shooting	The list of devices to log has exceeded the maximum high area number of the devices that can be set. Check the device area of each controller and specify them again.

Error Code	Error Message	Cause and Troubleshooting	
4016	Redundant setting has been found in the control device of logging X. Redundancy of control devices is not permitted. (X: logging number)	Cause	There is another same device in the control device of logging.
		Trouble-shooting	If the same device is used for the logging control device, an error occurs and the data might be wrong. Change the redundant device.
5000	Setting of the alarm number storage device is not correct.	Cause	The device has not been set.
		Trouble-shooting	Set the device in the common properties window of alarms.
5001	The flow alarm supervisory device setting is incorrect or setting has not been done for all the registered alarms.	Cause	There is an error in the setting of the flow alarm device.
		Trouble-shooting	Move to the flow alarm setting window to check whether the device has been set correctly for all the alarms.
5002	The flow alarm supervisory devices have been redundantly set.	Cause	The same device has been selected as the flow alarm device.
		Trouble-shooting	Flow alarm devices cannot be selected redundantly. Change the redundant device.
7000	The setting of No of alarms occurred device is incorrect.	Cause	The device has not been set.
		Trouble-shooting	Mote to the history alarm properties window and set the device.
7001	The setting of the alarm history deleting device is incorrect.	Cause	The device has not been set.
		Trouble-shooting	Mote to the history alarm properties window and set the device.
7002	The setting of the alarm printing starting device is incorrect.	Cause	The device has not been set.
		Trouble-shooting	Mote to the history alarm properties window and set the device.
7003	The setting of the alarm printing finishing device is incorrect.	Cause	The device has not been set.
		Trouble-shooting	Mote to the history alarm properties window and set the device.
7004	The setting of the history alarm data acquisition cycle is incorrect.	Cause	There is an error in the setting of the history alarm acquisition cycle.
		Trouble-shooting	Mote to the history alarm properties window and change the cycle.
7007	The setting of the device to be monitored in alarm list X is incorrect. (X: name of the alarm list)	Cause	The device has not been set.
		Trouble-shooting	A device must be set in all the alarm lists registered in the alarm list. Move to the alarm list setting window and check the device setting.
7008	The alarm range setting of alarm list X is incorrect. (X: name of the alarm list)	Cause	There is an error in the alarm conditional expression of the alarm list.
		Trouble-shooting	Go to the alarm list setting window and check the conditional expression.
7009	The detailed display number setting of alarm list X is incorrect.	Cause	There is an error in the detailed display setting of the alarm list.

Error Code	Error Message	Cause and Troubleshooting	
	(X: name of the alarm list)	Trouble-shooting	Check whether the detailed display number has been selected and the window exists.
7011	Alarm list X and XX are set to supervise the same device. (X, XX: name of the alarm lists)	Cause	There is redundancy between bit devices among the devices of history alarm.
		Trouble-shooting	Check the alarm list and change the redundant devices.
7009	All the alarm devices of alarm list X must be set. (X: name of the alarm list)	Cause	There are items of which the device has not been set in the alarm list.
		Trouble-shooting	Go to the alarm list and set the device.
7011	Alarm lists X and XX are set to supervise the same device. (X, XX: names of the alarm lists)	Cause	There is redundancy between bit devices among the devices of history alarm.
		Trouble-shooting	Check the alarm list and change the redundant bit devices.
7012	All the alarm devices of alarm list X must be set. (X: name of the alarm list)	Cause	There are items of which the device has not been set in the alarm list.
		Trouble-shooting	Go to the alarm list and set the device.
7013	The lists to supervise of alarm list X have been redundantly set. (X: name of the alarm list)	Cause	There is redundancy between bit devices among the devices of history alarm.
		Trouble-shooting	Check the alarm list and change the redundant bit devices.
7014	The supervision device word condition information setting of alarm list X is not correct. (X: name of the alarm list)	Cause	Go to the alarm list setting window and check the conditional expression.
		Trouble-shooting	Go to the alarm list setting window and check the conditional expression.
8000	Writing start device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the device.
8001	Reading start device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the device.
8002	Backup device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the device.
8003	The recipe numbering device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the device.
8004	The recipe block numbering device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the device.
8005	The recipe data transfer completion signal device	Cause	The device has not been set.

Error Code	Error Message	Cause and Troubleshooting	
	setting is not correct.	Trouble-shooting	Go to the recipe properties window and set the device.
8006	Recipe data transfer error display device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the device.
8007	Recipe device setting is not correct.	Cause	The device has not been set.
		Trouble-shooting	Go to the recipe properties window and set the recipe launching device.
8008	The maximum recipe setting size(63KByte) has been exceeded.	Cause	Too many recipe setting data are set.
		Trouble-shooting	The recipe data is saved in the memory during HMI device operation. The maximum size of the stored memory cannot exceed 63KByte. The size of data stored in all the recipes is over 63KByte. Adjust the number of blocks of each recipe and monitor data so that they do not exceed the maximum size.
8009	The recipe backup path has not been specified.	Cause	The recipe backup path has not been set.
		Trouble-shooting	If you specify the recipe properties as the backup function, you should specify the backup path to store the data. Now the backup path is not specified, so select the place to save the data in the [Backup Data Storage] in the recipe properties window and press [Apply].
8010	Recipe device setting is not correct. Check whether the number of the recipe devices exceeds the maximum device setting size.	Cause	The device is not set or even if it is set, the terminal of the consecutive device is set over the maximum settable device address.
		Trouble-shooting	Check the device setting. Check whether a normal device has been assigned to the last line of the recipe entry window.
9000	The download data size(X Byte) exceeds the maximum size(XX Byte). (X: sum of all the selected components, XX: maximum transferable size)	Cause	The memory that can be used for download in the HMI device is 10 MByte. The data size of all the items selected as the present download items is larger than the size provided by the HMI device.
		Trouble-shooting	Remove unnecessary image data or attached project files to reduce the data size and try again.
9001	The font(X) used in the project is not the font installed in the system. Change it into the font installed in the system. If you do not change it, the text might not be displayed. (X: name of the font)	Cause	A font which is not installed in the current window system is being used. Such a case mostly occurs when a project has been read from another computer. If it has been downloaded with the warning ignored, characters might not be normally displayed.
		Trouble-shooting	Select the font again in the font list installed in the present computer.
11000	Font X file is not detected. (X : name of the font file)	Cause	A font which is not in the system has been used.
		Trouble-	This might occur when the font file installed in the

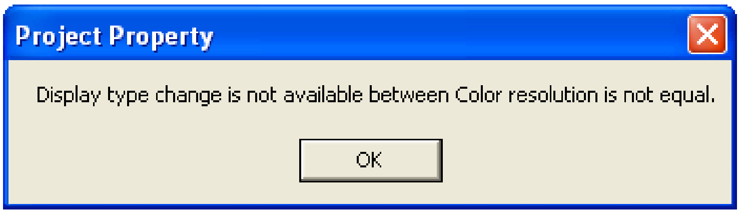
Error Code	Error Message	Cause and Troubleshooting	
		shooting	system cannot be referred to. Restart XP Builder.
13001	The script selected as the operation does not exist.	Cause	Script selection error
		Trouble-shooting	The script you selected does not exist in the list. Check whether it has been deleted by the user.
16001	The writing protection device in the script has been used for writing.	Cause	There is a sentence entering a value in the device in the script contents. If the set device is read-only, the message above is displayed.
		Trouble-shooting	Do not change it into a readable/writable device or do not use the writing function.
15000	Backup file transformation: The backup file cannot be opened.	Cause	When the uploaded backup file is transformed, you cannot open the original backup file.
		Trouble-shooting	Check the original file is being used elsewhere and close it.
15001	Backup file transformation: The output file cannot be made.	Cause	When the uploaded backup file is transformed, the output CSV file cannot be opened.
		Trouble-shooting	Check the output CSV file is being used elsewhere and close it.
15002	Backup file transformation: The backup file is not accessible.	Cause	When the uploaded backup file is transformed, the data of the original backup file cannot be read.
		Trouble-shooting	Check the output CSV file is being used elsewhere and close it.
15003	Backup file transformation: The backup file cannot be read.	Cause	When the uploaded backup file is transformed, you cannot open the original backup file.
		Trouble-shooting	Check the original file is being used elsewhere and close it. Try again.
15004	Backup file transformation: The output file is not writable.	Cause	When the uploaded backup file is transformed, data cannot be written on the output CSV file.
		Trouble-shooting	Check the output CSV file is being used elsewhere and close it.
15006	Backup file transformation: The alarm header is not 0x5a4b.	Cause	A wrong character is included in the alarm header.
		Trouble-shooting	Ask the Custom Service Center.
15007	Backup file transformation: The front offset is larger than the file size.	Cause	The offset of the alarm/logging/recipe backup file is larger than the file.
		Trouble-shooting	Ask the Custom Service Center.
15008	Backup file transformation: The name of the group is longer than the maximum.	Cause	The name of the group in the alarm backup file is longer than 200, which is the maximum length.
		Trouble-shooting	Ask the Custom Service Center.
15009	Backup file transformation: The alarm is longer than the maximum.	Cause	The alarm size is over 200, which is the maximum size, in the alarm backup file.
		Trouble-shooting	Ask the Custom Service Center.
15010	Backup file transformation: The size recorded in the file is different from the actual file size.	Cause	The logging length information recorded in the file is different from the file length in logging.

Error Code	Error Message	Cause and Troubleshooting	
		Trouble-shooting	Ask the Custom Service Center.
15011	Backup file transformation: The record is smaller than the minimum size.	Cause	The record in logging is smaller than 16, which is the minimum size.
		Trouble-shooting	Ask the Custom Service Center.
15012	Backup file transformation: The maximum number of loggings at a time is exceeded.	Cause	The maximum number of loggings at a time, 32, is exceeded.
		Trouble-shooting	Ask the Custom Service Center.
15013	Backup file transformation: The number of recipes exceeds the maximum.	Cause	The total number of recipes exceeds 32.
		Trouble-shooting	Ask the Custom Service Center.
15014	Backup file transformation: The entry number exceeds the maximum.	Cause	There are more than 100 devices in each recipe block.
		Trouble-shooting	Ask the Custom Service Center.
15015	Backup file transformation: The number of blocks exceeds the maximum.	Cause	The maximum number of recipe blocks, 16, is exceeded.
		Trouble-shooting	Ask the Custom Service Center.
15016	Backup file transformation: wrong data type.	Cause	The recipe data type is not a defined type.
		Trouble-shooting	Ask the Custom Service Center.

2.6 Problems with Project Properties Setting

2.6.1 When the XGT Panel type is changed in the project properties information, the following message is displayed and it wouldn't change.

Situation. I want to change the XGT Panel type, but the following message is displayed and it wouldn't change.



Display type change is not available between Color resolution is not equal.

<Cause>

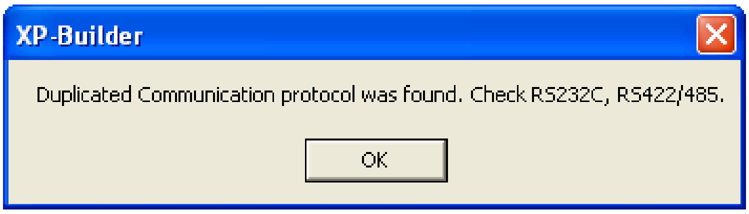
1) Change of the XGT Panel type is possible only between similar properties. Switch from color to black/white or black/white to color is not supported.

<Troubleshooting>

1) In XP Builder, Switch between projects of which the project color properties are different is not supported. However, it is possible to bring a project set in black and white from a color project by using the function of 'export/import'. Use these functions.

2.6.2 I cannot select the connection controller in the project properties.

Situation. When I select the connection controller in the project properties and press [OK], the following message appears and the setting is not saved.



XP-Builder

Duplicated Communication protocol was found. Check RS232C, RS422/485.

<Cause>

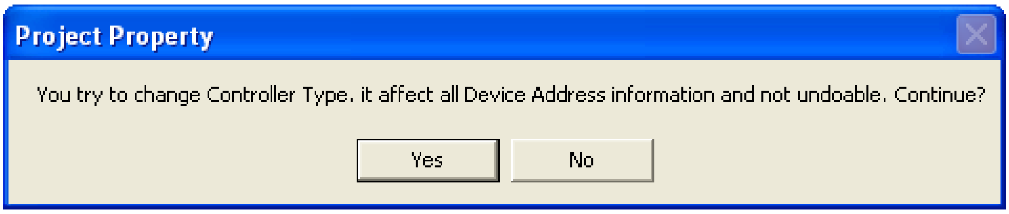
1) There are redundant settings in communication setting of the controller to be connected by XGT Panel.

<Troubleshooting>

1) Only one of the RS-232 communication and RS-422/485 communication can be set at a time when multiple controllers are simultaneously set by XGT Panel. Modify the controller connection properties for the communication properties not to be redundant.

2.6.3 When I edit the project properties and press [OK], the following message appears.

Situation. When I edit the project properties and press [OK], the following message appears.



Project Property

You try to change Controller Type. it affect all Device Address information and not undoable. Continue?

<Cause>

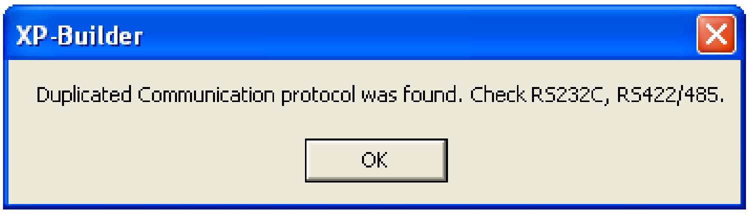
1) The properties of the connection controller are changed in the project properties information. When only the communication method has been changed, it is not displayed.

<Troubleshooting>

1) When you change the properties of the connection controller in the project properties, all the device information previously set is changed. Modify the changed device information by using the project mutual reference or data check function of the tool.

2.6.4 After I edit the project properties, I cannot save them.

Situation. When I modify the information of the extended device or controller in the project properties window and press OK button, the following message is displayed and it is not saved.



Duplicated Communication protocol was found. Check RS232C, RS422/485.

<Cause>

1) There is an extended device which is connected to the RS-232 port of XGT Panel to acquire data. For example, the Barcode Reader can be connected to the device by the RS-232 port. If the communication setting of the basic controller connected to XGT Panel uses the RS-232 port, ports are redundant with each other and that is why setting is not possible.

<Troubleshooting>

1) Modify the controller and extended device that use the RS-232 port so that they use different protocols. For example, you can change the connection information of the controller into 422/485.

2.7 Other Problems

A dialog box of an error message can appear in the middle of editing of the display, common data and object in XP Builder. The error messages of each type and the troubleshooting are as follows.

2.7.1 Display

Error Message	Troubleshooting
Save the project file.	Be sure to save the project file because you cannot make a device executing file without the project file name.
This project has an error. Check the tool-data.	The user is informed before project download that there is an error so that the user does not download a file with an error. Be sure to remove the error.
More than 10M cannot be downloaded.	You cannot transfer more than 10M due to XGT memory insufficiency. Make the executing file below 10M.
XGT model types are not the same.	This message is displayed when you download project files of which the XGT models are different. Change the XGT model type in the project properties or transfer files with the same model.
Connection passwords are different.	If there is a connection password for connection to XGT Panel and the user has entered a wrong password, this message appears and be sure the correct password.
XGT Panel is not ready to receive.	XGT Panel is still carrying out another operation, so wait for a moment and try again.
There is no executable file in the device. Send the entire XGT file first.	Partial download or modified file download has been executed with an executable file in the device. Execute entire download first.
The executable file in the device and the executable file to send are not the same.	You should execute entire download because the files in the device do not match the project you want to transfer now or the data do not logically fit when you execute modified download or partial download.
XGT INI file open error	This message appears when there is a problem with opening the initializing file when you transfer the XGT Panel engine. Check whether the file exists or is opened.
The upload file is the same as the opened project file and cannot be saved. Do you want to specify another directory?	This message appears when you copy an uploaded file in the same location as the opened file. You can specify another directory by selecting YES and if you choose CANCLE, the file cannot be saved or opened.
The file already exists. Would you overwrite?	This message appears if a file with the same name exists when you copy a file in the specified directory.
Password setting has been failed.	Check whether there is any problem with communication.
Communication connection has been failed.	Check whether there is any problem with communication connection.
The password is incorrect.	The project password is incorrect, so enter a correct one.
A temporary directory is a place to store a temporary XGT file, so	Save a project file and so on in another place because

Error Message	Troubleshooting
you cannot save or open a file here.	you cannot save or open it in the Temp directory of XP Builder.
The color is a user library larger than the number of colors that an XGT model can have now.	This message appears in case of import of the color user library in black and white. Import is possible only in a project compatible with a HMI model.
The simulator cannot be executed.	The simulator file has been deleted. Set it up again.
The print template file does not exist.	The excel template file for excel printing does not exist. Set it up again.
The project header information is wrong.	If project header information is wrong, the project file cannot be opened.
Graphic library load has been failed.	There is an error during category file load. There is a problem with the graphic library and set it up again.
Object library load has been failed.	There is an error during category file load. There is a problem with the object library and set it up again.
Wrong display number.	A display with the same number exists or the range of the display number is exceeded. Check whether there are display number limits or same number and enter it.

2.7.2 Object

Error Message	Troubleshooting
The selectable display numbers are from 1 to 4095. Check the number and enter again.	Set the number of the display to shift to or the display of the invoked component between 1 and 4095.
The number of the X axis displays that can be selected is between 3 and 120. Check and enter again.	Set the number of axis X displays in the trend graph [Display] item between 3 and 120.
Caption XP BUILDERX cannot be all displayed with the currently set font XX. Choose the font meeting the entered contents. (XX: name of the set font, XP BUILDERX: type of captions such On, Off, conditional sentence number, etc.)	Change the font or caption. (The Arial font cannot express captions written in Korean. Change the Arial font or translate Korean captions into English)
The maximum value must be larger than the minimum value.	Set the maximum value to be larger than the minimum value.
XX is not a 16 BCD data type. Enter a value between 0~9999. (XX : entered value)	If the size and form of the device is 16 bit BCD, the range of the conditional sentence, maximum or minimum values should be set between 0 and 9999.
XX is not a 16 bit unsigned data type. Enter a value between 0~65535. (XX : entered value)	If the device size and type are decimal without 16 bit signs, the range of the conditional sentence, maximum or minimum values should be set between 0 and 65535.
XX is not a 16 bit signed data type. Enter a value between -32768~32767(XX : entered value).	If the device size and type are decimal with 16 bit signs, the range of the conditional sentence, maximum or minimum values should be set between 32768 and 32767.
This is not a 32 bit unsigned data type. Enter a value between 0~4294967295.	If the device size and type are decimal without 32 bit signs, the range of the conditional sentence, maximum or minimum values should be set between 0 and 4294967295.

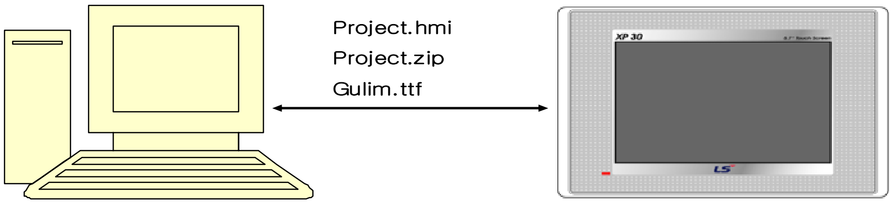
Error Message	Troubleshooting
XX is not a 32 bit signed data type. Enter a value between -2147483648 and 2147483647(XX: entered value).	If the device size and type are decimal with 32 bit signs, the range of the conditional sentence, maximum or minimum values should be 2147483648 and 2147483647.
XX is not a 32 bit BCD data type. Enter a value between 0~99999999(XX: entered value).	If the device size and type are 32 bit BCD, the range of the conditional sentence, maximum or minimum values should be 0 and 99999999.
The total number of figures should be larger than the number of figures below the decimal point.	Set the number of figures larger than the number of figures below the decimal point in the object to set the number and decimal point.
The X set lines exceed the maximum display range(X: number of lines).	The number of lines set in the object exceeds the horizontal length of the entire screen. Modify the number of lines.
The X set rows exceed the maximum display range(X: number of rows).	The number of rows set in the object exceeds the vertical length of the entire screen. Modify the number of rows.
The number of characters that can be displayed should be an even number.	The number of characters in the character indicator and character input/output units should be an even number. Set the number at an even number.
You can select only mobile GIF images.	You can select or add only mobile GIF files in a mobile GIF object. Set the image type as mobile GIF.
A mobile GIF cannot be used as an image of an object/figure.	A mobile GIF image cannot be used or added in objects other than a figure or mobile GIF. Change the image.
Changed into an indirect method. All the expressions of the built conditional sentences are deleted.	The method of selecting the message or display of the word message, word component or word window has been changed from [Status] to [Condition].
XX cannot be specified as an interval. The scale interval is between 0 and 10. (XX: space of the graph and scale)	The space of the scale and graph of the graph object are set between 0 and 10.
XX cannot be specified as the number of scale. The scale number is between 0 and 255. (XX: space of the graph and scale)	The number of scale in the graph object is set between 0 and 255.

Appendix 3. XP-Util

XP-Util is the utility program to update XGT-Panel application program or a driver. Its main functions are XGT Panel program update, driver download, driver deletion.

3.1 Connection Composition

3.1.1 Connecting Serial Communication (RS232) :



6-pin cable included to the product is used for a serial cable. The cable should be connected to RS232 port of a computer and 6-Pin round cable is installed to the position of tool in the right middle of XGT Panel backside.

Download through serial communication is basically based on 1:1 mode.

Note Bad Cable Connection

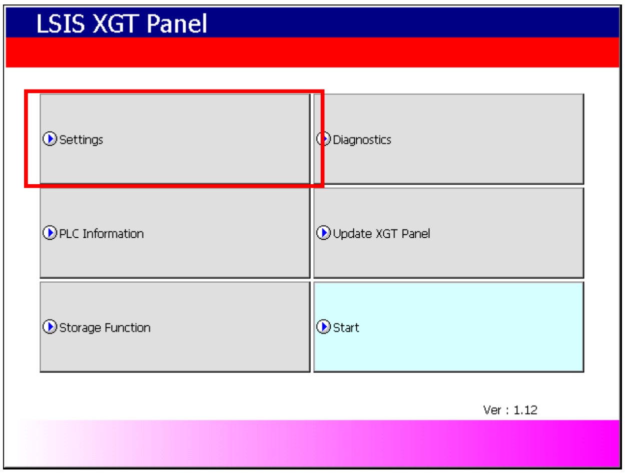
In the case of download through a serial cable, transmission errors are frequent due to bad connection. The most frequent error is connection failure of TOOL port located in the backside of XGT Panel due to loose serial cable. Check 6-pin port of a serial cable is correctly connected to XGT Panel.

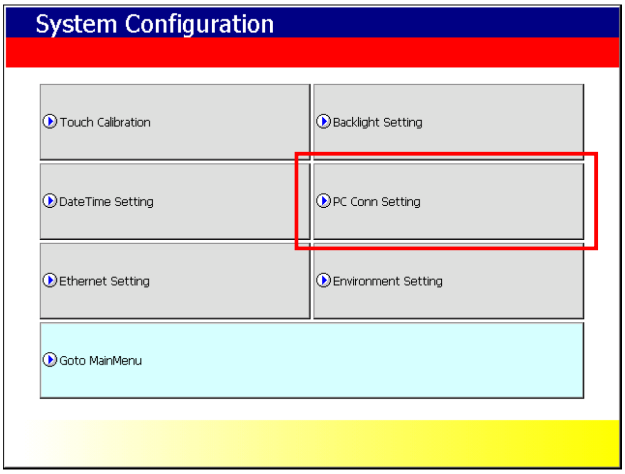
In the meanwhile, the error can be also faced due to serious noise of serial transmission cable. For example, there may be bad communication around high voltage breaker or motor due to severe noise that affect transmission.

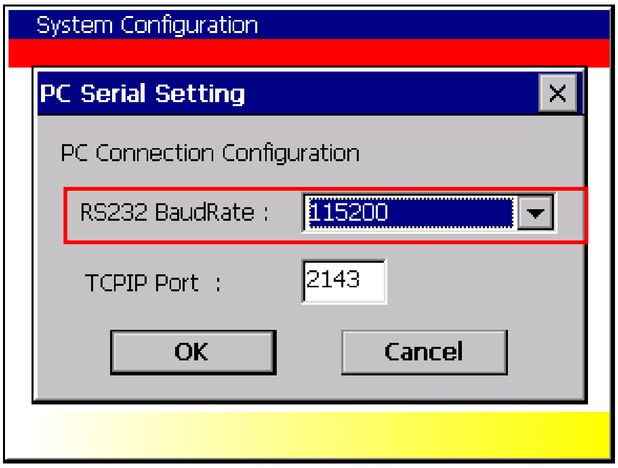
1) Setting XGT Panel connection

Set computer connection options through serial communication at XGT Panel.
End the monitored program and move to home screen of XGT Panel.

Press the button [Setting]->[PC Conn Setting] of the screen.


LSIS XGT Panel
Settings
Diagnostics
PLC Information
Update XGT Panel
Storage Function
Start
Ver : 1.12


System Configuration
Touch Calibration
Backlight Setting
DateTime Setting
PC Conn Setting
Ethernet Setting
Environment Setting
Goto MainMenu


System Configuration
PC Serial Setting
PC Connection Configuration

RS232 BaudRate : 115200

TCPIP Port : 2143

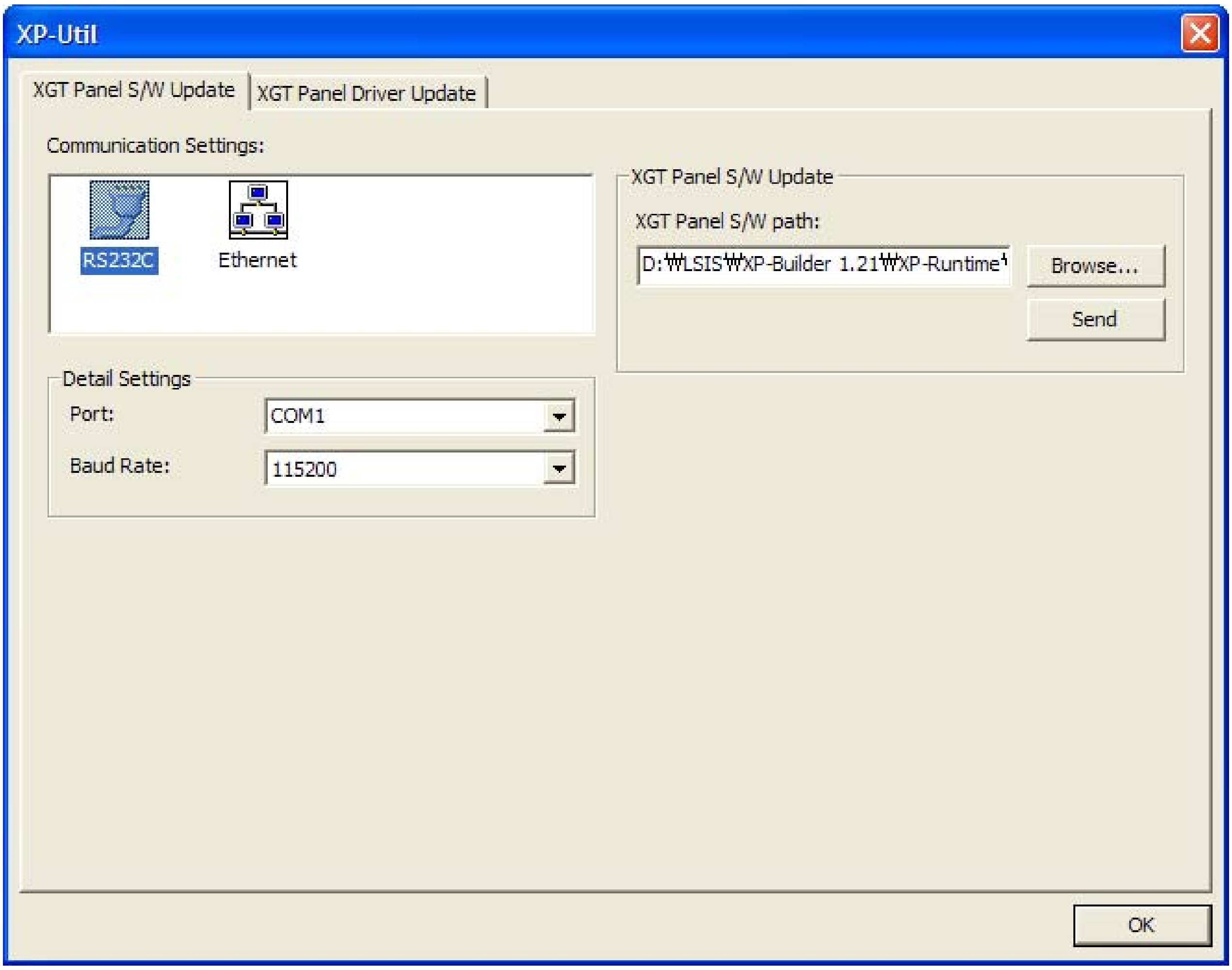
OK
Cancel

If Communication Set-up screen is shown, fix serial transmission speed used to connect with a computer at RS232 BaudRate. The speed is used for connecting XGT Panel in XP-Util.

2) Setting XP-Util connection

After the cable is properly connected and XGT Panel setting completed, activate XP-Util.
Create the project to be downloaded and save it.

Activate project download screen and press the button [Communication]->[Transmission Setting]


XP-Util
XGT Panel S/W Update
XGT Panel Driver Update
Communication Settings:
RS232C
Ethernet
XGT Panel S/W Update
Browse...
Send
Detail Settings
OK

XGT Panel S/W path: D:₩LSIS₩XP-Builder 1.21₩XP-Runtime₩

Port: COM1

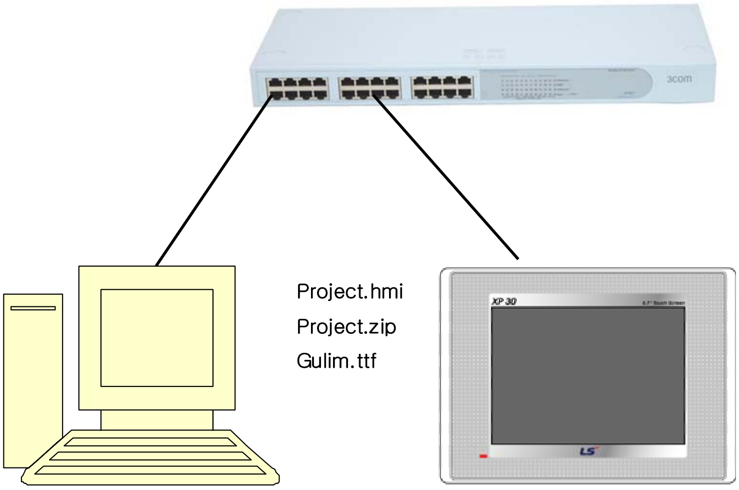
Baud Rate: 115200

The combo box to set communication port and transmission speed will be shown. The value set from XGT Panel should be selected for transmission speed. If you have different transmission speed setting, communication is not available.

Select the port that serial cable is connected to a computer.

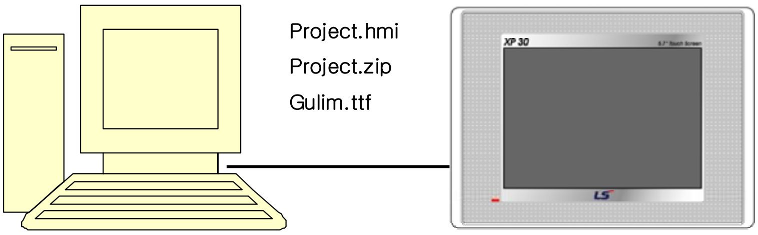
3.1.2 Ethernet Connection

1) Network connection


3com
Project.hmi
Project.zip
Gulim.ttf
XP 30
LS

It is available when a computer and XGT panel are connected to the network. Ethernet is recommended for download since it can be easily connected to long-distance XGT Panel with fast transmission speed.

2) 1:1 Connection through a Cross Cable

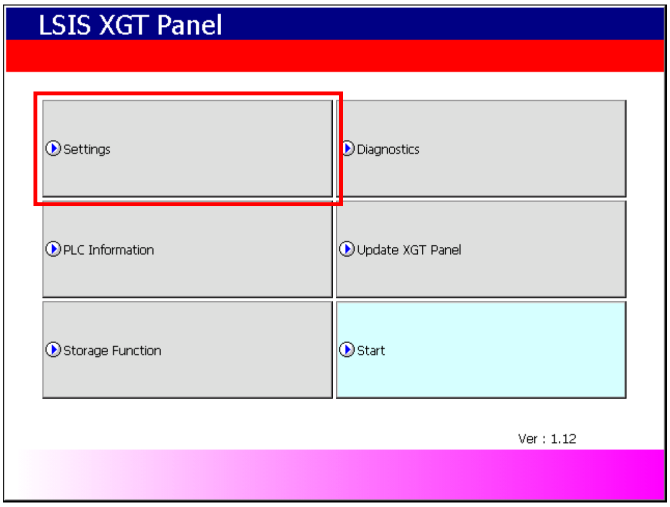

Project.hmi
Project.zip
Gulim.ttf
XP 30
LS

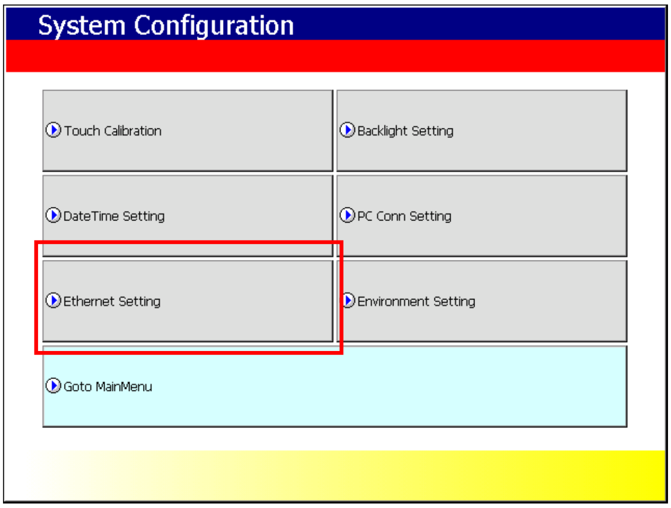
When a computer and XGT Panel are not connected to the network and download is tried trough Ethernet, cross cable connection is applied. Setting procedures for cross cable connection is same as normal Ethernet. The different this is that cross cable is used for Ether connection between XGT Panel and a computer. When applying cross cable connection, the IP of XGT Panel and connected computer should be in the same Subnet mask.

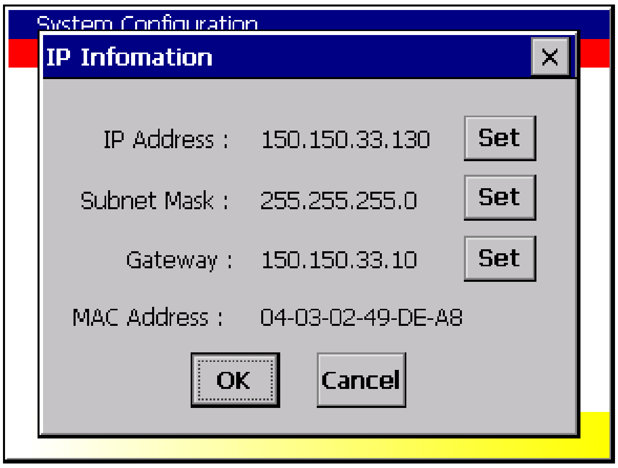
3) Setting XGT Panel Connection

Setting Ethernet for XGT Panel is as follows.

End the monitored program and move to home screen of XGT Panel.
Press the button [Settings]->[Ethernet Setting] of home screen one after another and set Ethernet IP, GateWay, Subnet mask.


LSIS XGT Panel
Settings
Diagnostics
PLC Information
Update XGT Panel
Storage Function
Start
Ver : 1.12


System Configuration
Touch Calibration
Backlight Setting
DateTime Setting
PC Conn Setting
Ethernet Setting
Environment Setting
Goto MainMenu

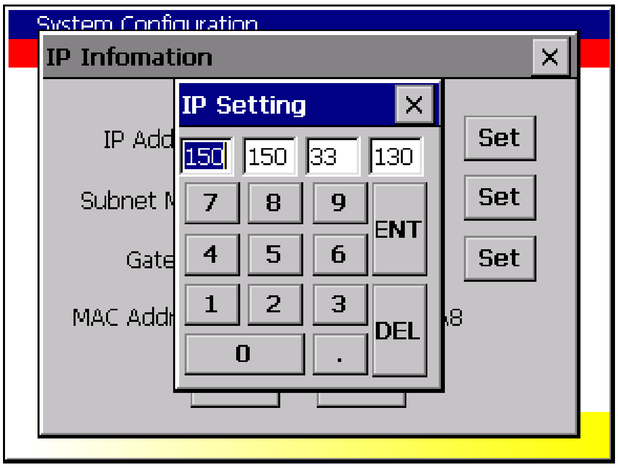

System Configuration
IP Infomation
Set
Set
Set
OK
Cancel

IP Address : 150.150.33.130

Subnet Mask : 255.255.255.0

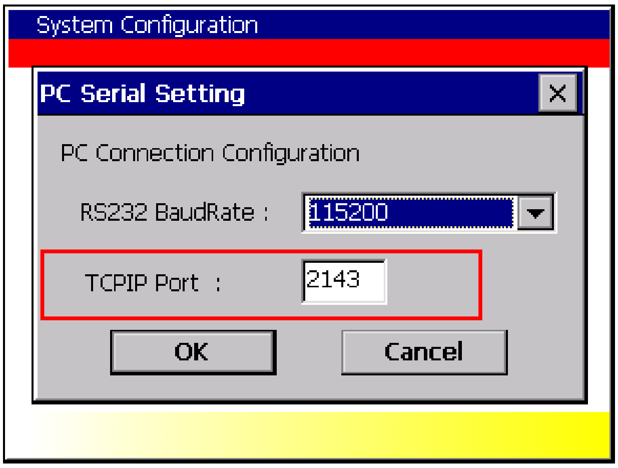
Gateway : 150.150.33.10

MAC Address : 04-03-02-49-DE-A8


System Configuration
IP Infomation
IP Setting
7
8
9
ENT
4
5
6
1
2
3
DEL
0
.
Set
Set
Set

150 150 33 130

Ethernet TCP/IP connection that is composed of IP and Port No. indicates its destination.
To fix the Port No. to be used for computer connection, press the buttons [Settings]->[PC Conn Setting] of home screen one after another. If the connection setting screen is shown as below, designate the Port No. for computer connection. The initial value is 2143.


System Configuration
PC Serial Setting
PC Connection Configuration
OK
Cancel

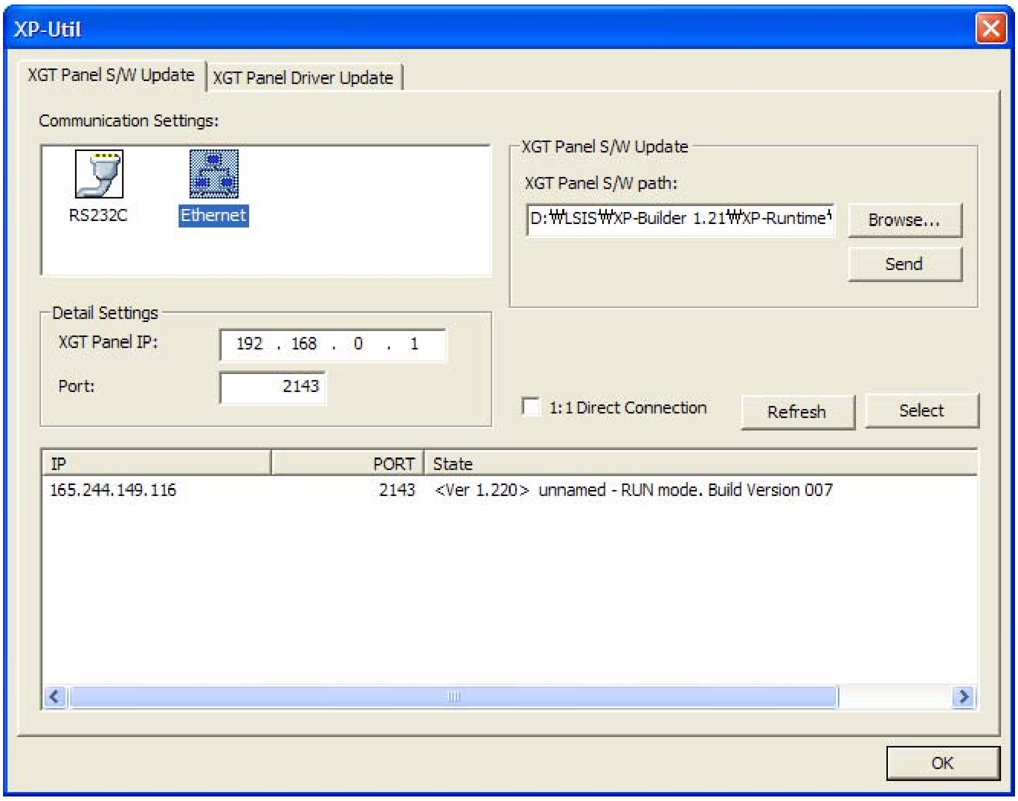
RS232 BaudRate : 115200

TCPIP Port : 2143

4) Setting XP-Util Connection

After cable is properly connected and XGT Panel setting is completed, activate XP- Util.
Create the project to be downloaded and save it.

Activate project download screen and press the buttons [Communication]->[Transmission Setting]


XP-Util
XGT Panel S/W Update
XGT Panel Driver Update
Communication Settings:
RS232C
Ethernet
XGT Panel S/W Update
Browse...
Send
Detail Settings
☐ 1:1 Direct Connection
Refresh
Select
OK

XGT Panel S/W path: D:₩LSIS₩XP-Builder 1.21₩XP-Runtime₩

XGT Panel IP: 192 . 168 . 0 . 1

Port: 2143

IP	PORT	State
165.244.149.116	2143	<Ver 1.220> unnamed - RUN mode. Build Version 007

Then, [Connection Setting] dialog box will be shown as the figure.
Select [Ethernet] image from [Communication composition and detailed setting] list.
The data to designate XGT Panel to be connected will be shown as below.

The bottomest items indicate XGT Panel list connected to the network that is currently referred by XP-Util.
After selecting the connected XGT Panel from referred list and press [Select] button, the IP of XGT Panel and Port data are input. Otherwise, if you also double-click one of the referred list, it will be reflected to the list.

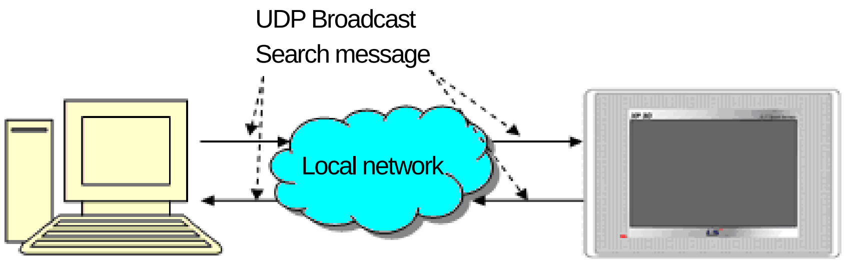
When XGT Panel is connected 1:1 to a computer by a cross cable, check the button ☐ 1:1 Direct Connection (Using 1:1 Connection) and try to download.

Although the equipment is not registered at the XGT Panel List referred by XP- Util, it is possible to connect by inputting the network address directly to [Currently Selected XGT Panel]. In this case, you have to be correctly aware of the network information of XGT Panel to be connected.

The data of [Currently Selected XGT Panel] has the last address to be downloaded or uploaded by a user. The figure indicates that the last download was tried to the XGT Panel of [150.150.33.130] by a user.

Note Automatic Searching for XGT Panel connected to network

XP-Util provides automatic searching function for the XGT Panel connected to network.
UDP is used for the protocol to search for XGT Panel.



Searching range)

- XP-Util adopts UDP Broadcast message to search for the connected XGT Panel. The Broadcast message transmitted from XP-Util is sent to the address; 255.255.255.255. The message is used in local network only so the searching area is limited to local network.
- Although it is connected within local network, if there is a gateway between XGT Panel and the computer where XP-Util is activated and the Broadcast message is interrupted by a gateway, it may not be searched. In this case, for details, please apply to the network manager.

Caution In case that XGT Panel search is not available, take the below measures.

1) Check a network is properly connected.
2) Check if the monitor program is normally operated at XGT Panel.
3). Check if the network address of XGT Panel is correctly set. Please be noted that XP- Util should be same subnet mask same as the activated computer for smooth communication.
4) In Window XP, personal firewall can interrupt UDP packet data so check if it turns on at a control board. To open Windows Firewall, click **Start, Control Board** one after another and then, double-click **Windows Firewall**. Add XP-Util at [Exception] that is tab of [Windows Firewall] dialog box.

If communication problem remains after the above process, please contact the Service Center.

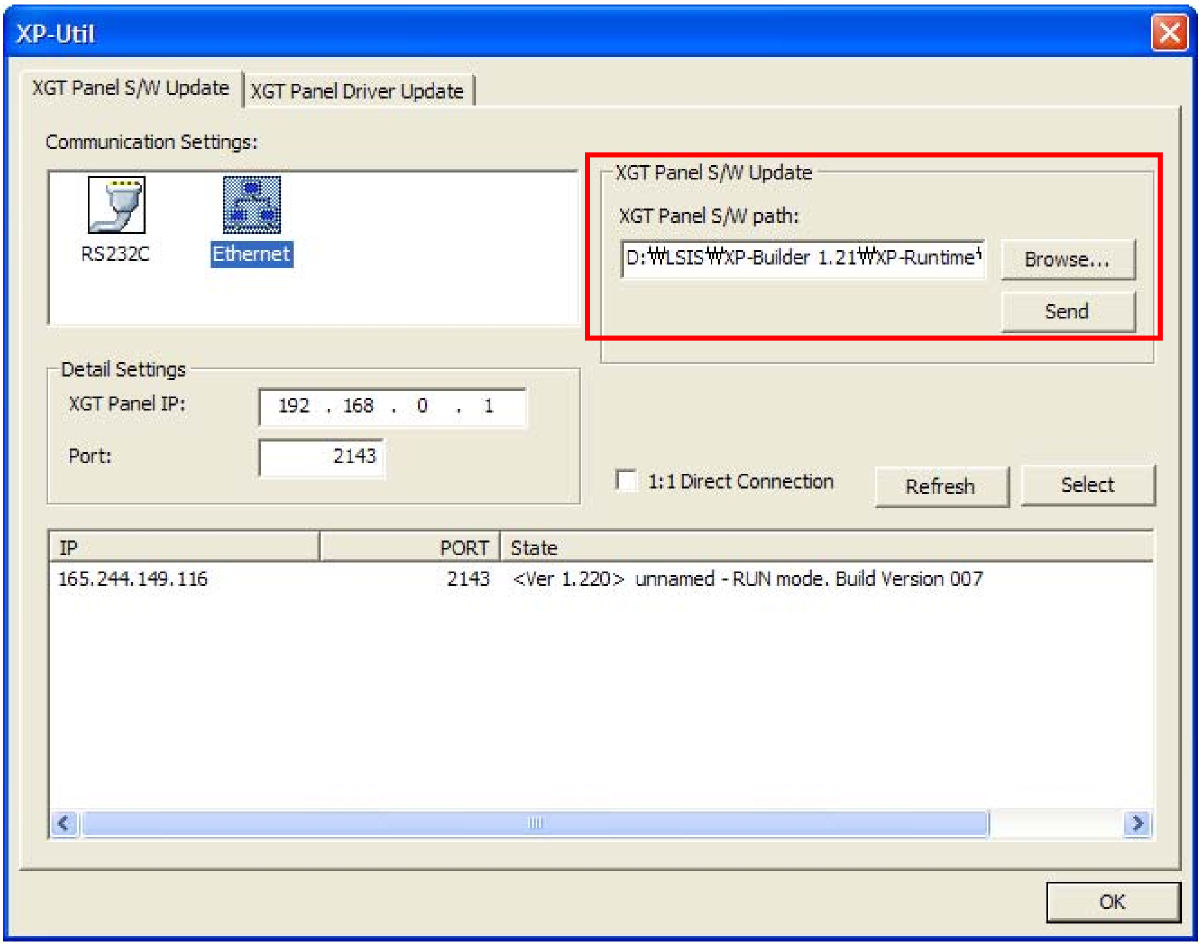
Caution 1:1 Connection through a Cross Cable

When a computer is connected 1:1 to XGT Panel by a cross cable, if download through Ethernet is not available, check the button ☐ 1:1 Direct Connection (using 1:1 Connection). ☐ 1:1 Direct Connection makes connection easier by allocating simulated IP of subnet mask to Windows as XGP Panel.

3.2 XGT Panel Program Update

It is the function to update XGT Panel S/W activated at XGP Panel.

[Procedures]


XP-Util
XGT Panel S/W Update
XGT Panel Driver Update
Communication Settings:
RS232C
Ethernet
XGT Panel S/W Update
Browse...
Send
Detail Settings
1:1 Direct Connection
Refresh
Select
OK

XGT Panel S/W path: D:₩LSIS₩XP-Builder 1.21₩XP-Runtime₩

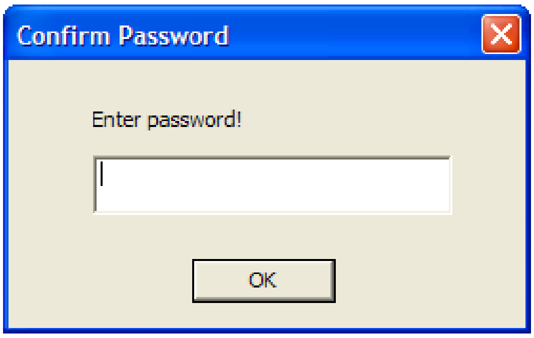
XGT Panel IP: 192 . 168 . 0 . 1

Port: 2143

☐ 1:1 Direct Connection

IP	PORT	State
165.244.149.116	2143	<Ver 1.220> unnamed - RUN mode. Build Version 007

1. Check XGT Panel and communication settings.
2. Designate the position of folder that includes the XGT Panel program to be transmitted.
3. Press [Send] button.
   In case that communication password is set, a dialog box to check the password will be shown.


Confirm Password
OK

Enter password!

4. The dialog box to indicate progress status will be shown.

Caution Suggestions to send an executed program

The executed program provides an important function to operate XGT Panel so its running is not available, follow-up service is needed.

Mind that you avoid the blow for program sending.

1) Terminating forcefully XP-Builder during Send.
2) Deleting or moving program execution folder during Send
3) Transmitting a file through internet connection.

3.3 XGT Panel Driver Update

It is the function to update the driver activated at XGT Panel

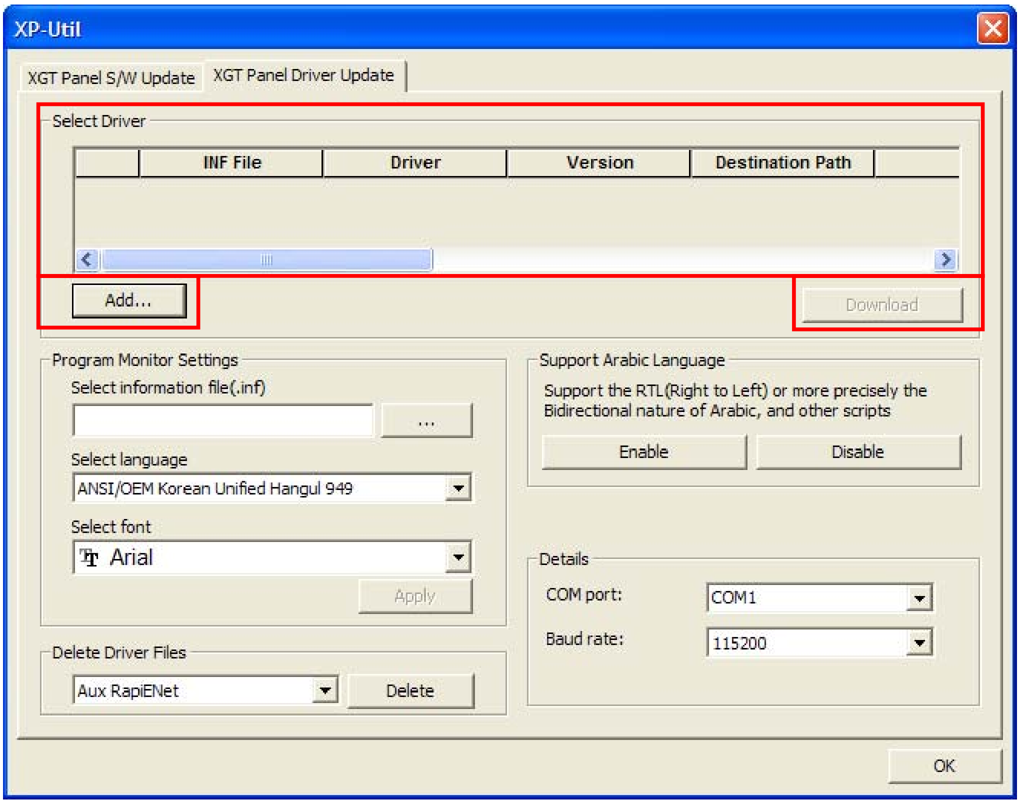
3.3.1 Updating the driver for XGT Panel

The driver for XGT Panel is provided as a folder and there are INF Files, driver files in the folder. INF Files that saves the data on a driver are essential factors.

The position of a driver folder is basically in low-level directory [Driver] of the folder where XP-Util is installed.

[The procedures for a driver update]

1. Execute the XP-Util program.
2. After checking connection settings, move to [XGT Panel driver update tab].
3. Select the driver to be downloaded from [Selecting XGT Panel Driver] list.
4. If you check the box located in front of each driver setting file, download is completed.
5. Press [Add] button to select/update the driver that is not shown at the lost.
6. [If you press [Add] button, Open dialog box will be shown. When opening a driver folder, INF file will be shown and select this.
7. The data on INF file will be shown at the list.
8. After selecting a driver, press [Send] button to update a driver.
9. If security is set for XGT Panel, the dialog box to check the password will be shown.


XP-Util
XGT Panel S/W Update
XGT Panel Driver Update
Select Driver
INF File
Driver
Version
Destination Path
Add...
Download
Program Monitor Settings
Select information file(.inf)
...
Select language
ANSI/OEM Korean Unified Hangul 949
Select font
Arial
Apply
Support Arabic Language
Support the RTL(Right to Left) or more precisely the Bidirectional nature of Arabic, and other scripts
Enable
Disable
Details
COM port:
COM1
Baud rate:
115200
Delete Driver Files
Aux RapiENet
Delete
OK

3.3.2 Changing the property of XGT Panel Program Monitor Driver

Through XP-Util, you can change the property of XGT Panel program monitor driver’s character shape.
It is also possible to set up the language and font used for program monitoring.

Press [Browse…] button to select program monitor driver setting file(INF) to be changed and set up Encoding/Font.

Press [Apply] button to apply changed character shape to driver setting file(INF).

The changed driver setting file will be applied after driver download.

3.3.3 Driver Deletion

It is the function to delete the driver saved at XGT Panel. Deletion is allowable only when the driver is not available any more.

Appendix 4. Program Monitor

You can easily diagnose the status and error of PLC program by monitoring PLC program connected to HMI device.

4.1 Available PLC Type

The programs that adopt LD language of XGK and XGB series can be monitored. For your reference, the program with IL language is converted into LD language for display.

PLC series	PLC Type	Max. program capacity
XGK series	XGK-CPUA	32K Step
	XGK-CPUE	16K Step
	XGK-CPUH	64K Step
	XGK-CPUS	32K Step
	XGK-CPUU	128K Step
XGB series	XGB-DR16C3	10K Step
	XGB-XBCH	15K Step
	XGB-XBMS	10K Step

You can refer to the below table for communications that are available for program monitoring.

PLC Series	Connection Type
XGK Series	CPU Connection
	Link Connection
	Ethernet Connection
XGB Series	CPU Connection
	Link Connection
	Ethernet Connection

Note

Link and Ether connection are available for communication module only that has XGT Servo function.
For the details of communication module, refer to the manual of each module.

For the device that displays monitored data and change the current value, you can refer to the below table.
(●: Supporting the whole area, ◐: Supporting partial area, △: Supporting by kinds of equipment, X: Not Available)

Device	XGK		XGB	
	Data Display	Changing the current value	Data Display	Changing the current value
P	●	●	●	●
M	●	●	●	●
K	●	●	●	●
F	●	◐	●	◐
T	●	●	●	●
C	●	●	●	●
U	●	●	●	●
Z	●	●	●	●
S	●	●	●	●
L	●	●	●	●
N	●	●	●	X
D	●	●	●	●
R	●	●	△	△
ZR	●	●	△	△

Notice

For the size and property of device, you can refer to the PLC manual.

4.2 The property of HMI type

For the details of kinds of equipment with standard display line by each type, you can refer to the below table.

HMI Type	Resolution	Standard Display Line
XP30	320 x 240	7 Lines
XP50	640 x 480	14 Lines
XP70	640 x 480	14 Lines
XP80	800 x 600	18 Lines

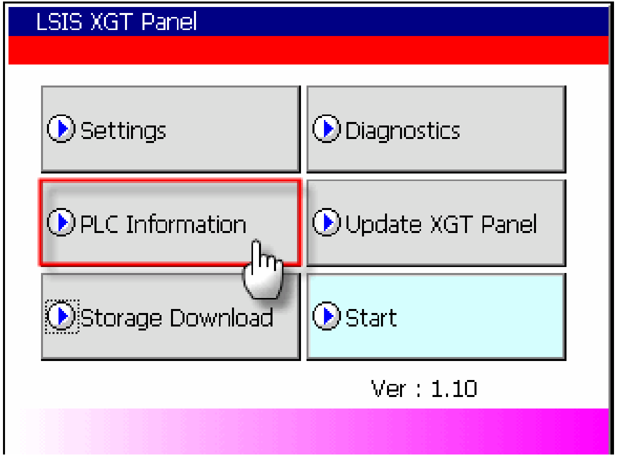
4.3 Starting

The description on how to start program monitor with each function will be provided in this chapter.

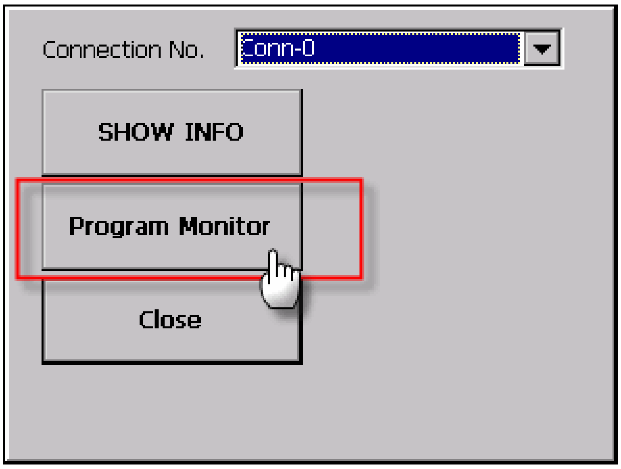
You can start Program Monitor with PLC Information View and special button of a user screen. If you start program monitor with a special function button, the objects of the screen do not communicate until program monitor is over.

4.3.1. Starting with PLC Information

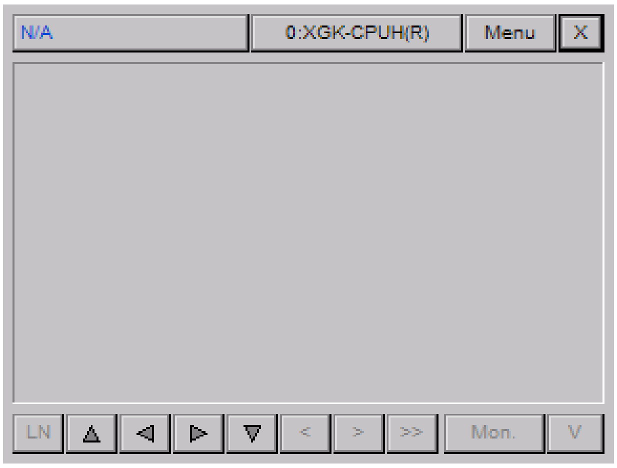
(1) Press [PLC Information] button at the initial screen of XGT Panel.


LSIS XGT Panel
Settings
Diagnostics
PLC Information
Update XGT Panel
Storage Download
Start
Ver : 1.10

(2) Select your intended connection No. and press [Program Monitor] button.


Connection No.
Conn-0
SHOW INFO
Program Monitor
Close

(3) Then, Program Monitor starts.


N/A
0:XGK-CPUH(R)
Menu
X
LN
<
>
>>
Mon.
V

(4)If you terminate program monitor, it will return to the previous screen.

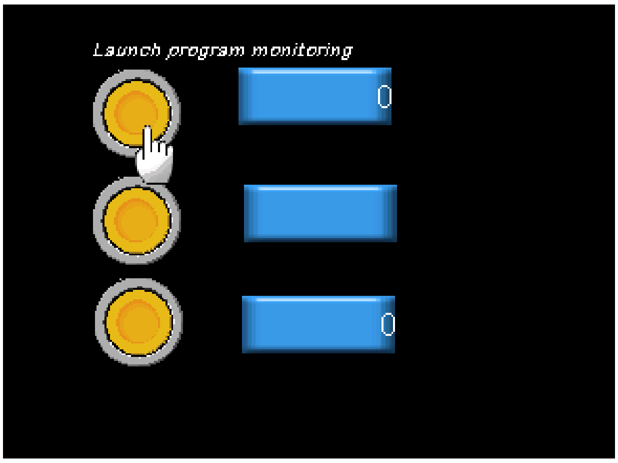
Notice

If you do not select whether using Program Monitor at XP-Builder, [Program Monitor] is not active.

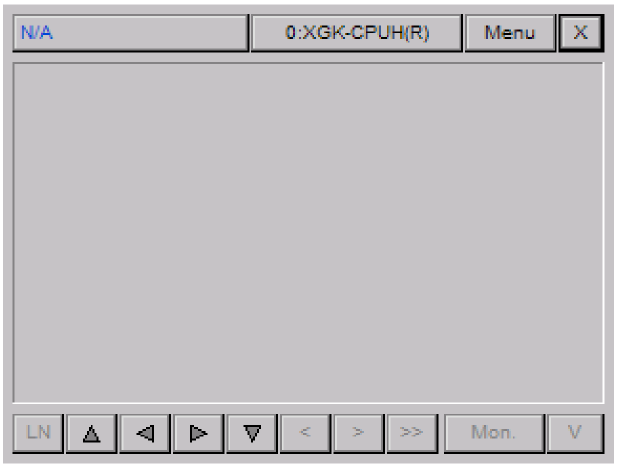
4.3.2 Starting with a special switch

(1) Prepare the special switch for Program Monitor and download the related project.
(2) Move to the monitoring screen that is adopting the related special switch.

(3) Press the special switch for Program Monitor.


Launch program monitoring
0
0

(4) Program monitor starts.



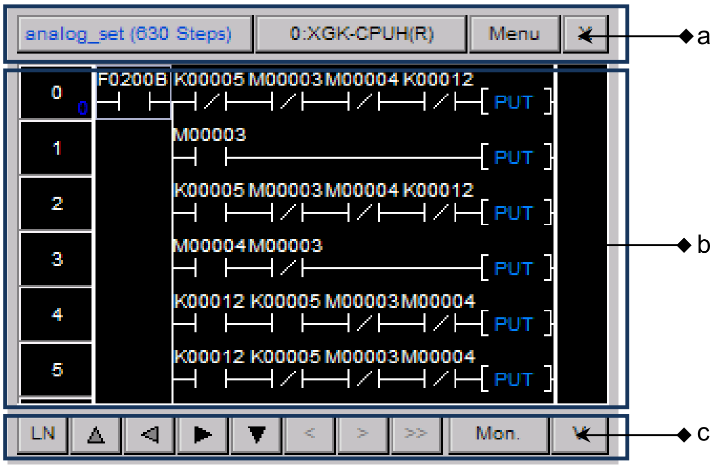
(5) If you terminate Program Monitor, it will return to the previous screen.

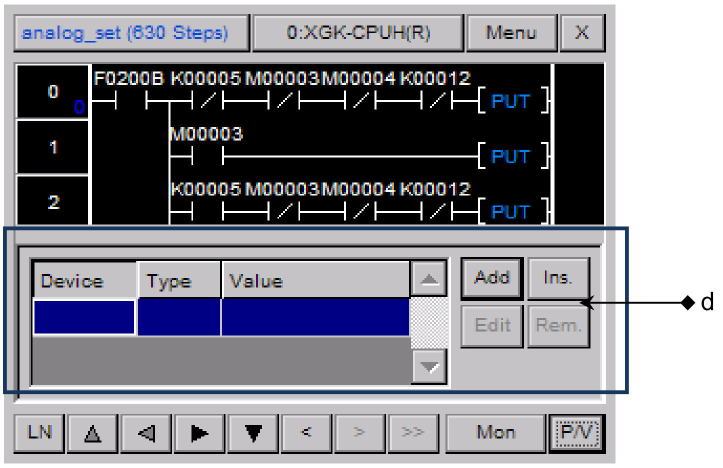
Notice

If Program Monitor is in progress, the objects displayed at a screen are not monitored.
However, the whole area script and logging function works normally.

4.4 The Composition of a Screen

Program Monitor screen is composed as below.


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
F0200B K00005 M00003 M00004 K00012
M00003
K00005 M00003 M00004 K00012
M00004 M00003
K00012 K00005 M00003 M00004
K00012 K00005 M00003 M00004
PUT
LN
Mon.
a
b
c


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
F0200B K00005 M00003 M00004 K00012
M00003
K00005 M00003 M00004 K00012
PUT
Device
Type
Value
Add
Ins.
Edit
Rem.
LN
Mon
P/V
d

[Description on a dialog box]

a. It displays the fundamental information on the program and connected PLC.
b. It displays LD program.
c. It displays scroll and the function buttons used for other reference.
d. It displays variable monitor screen.

For simple description on function buttons, refer to the below table.

Button	Function	Description
LN	Page Scroll Mode	Toggling line/page scroll mode
▲	Up Scroll	Moving one line(page) up
◀	Left Scroll	Moving one line(page) to the left
▶	Right Scroll	Moving one line(page) to the right
▼	Down Scroll	Moving one line(page) down
<	Previous Touch	Moving to the previous touch position
>	Next Touch	Moving to the next touch position
>>	Next Reference	Moving to the next reference result
Monitor	Monitor Start/End	Starting or terminating monitor
V	Screen Division Mode	Selecting program/device monitor division

4.5 Program Monitor

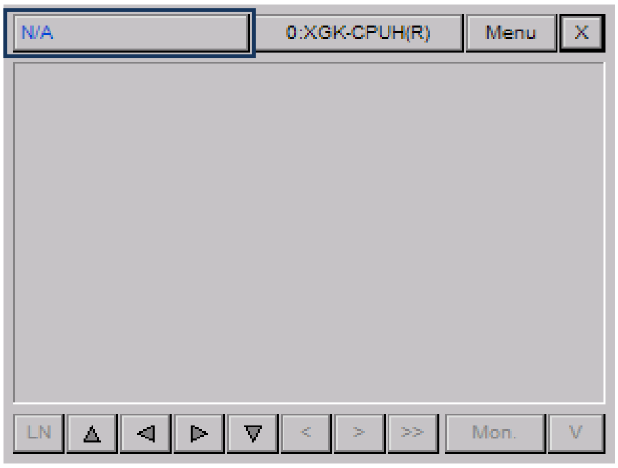
The description on how to monitor program is provided in this chapter.

4.5.1 Selecting Monitor Program

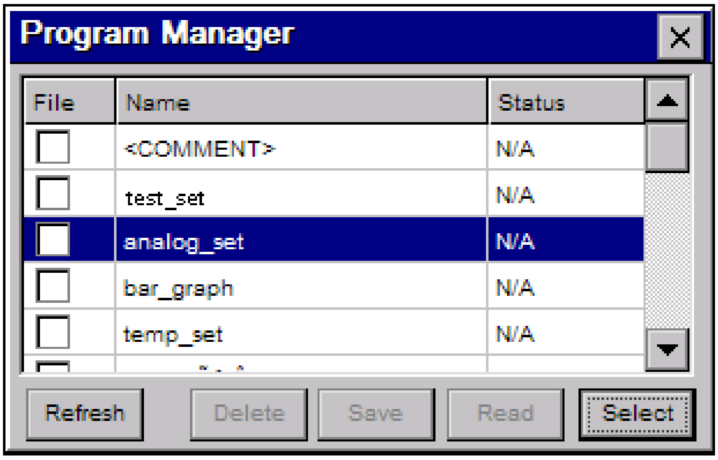
To monitor the program of connected PLC, you need to select the program to be monitored with the below methods.

(1) Select the program list button at Program Monitor.

If the program is not selected, 'N/A' will be displayed.

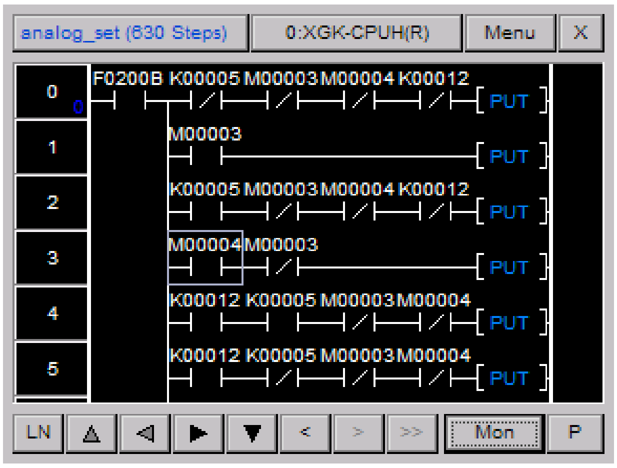

N/A
0:XGK-CPUH(R)
Menu
X
LN
△
◁
▷
▽
<
>
>>
Mon.
V

After selecting the program to be monitored at the list and press [Select] button. For the details on how to select program, refer to Section 2.4 'Program List Management.

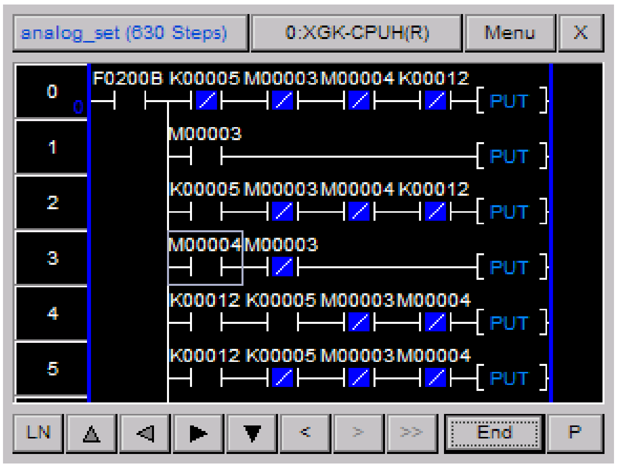

Program Manager
X
Refresh
Delete
Save
Read
Select

File	Name	Status
☐	<COMMENT>	N/A
☐	test_set	N/A
☐	analog_set	N/A
☐	bar_graph	N/A
☐	temp_set	N/A

Finally, the selected program will be displayed at a screen.

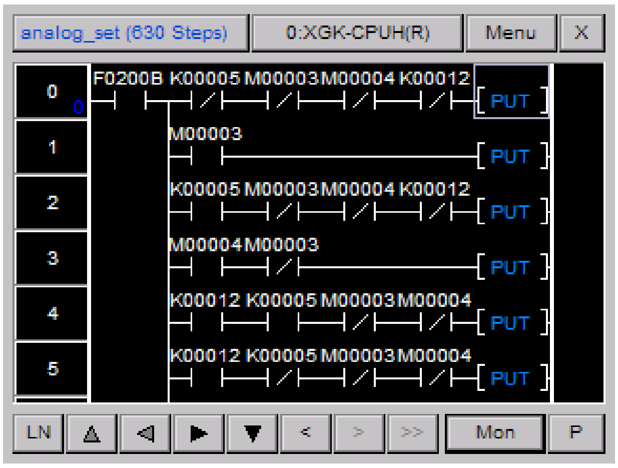

analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
F0200B K00005 M00003 M00004 K00012
PUT
M00003
PUT
K00005 M00003 M00004 K00012
PUT
M00004 M00003
PUT
K00012 K00005 M00003 M00004
PUT
K00012 K00005 M00003 M00004
PUT
LN
<
>
>>
Mon
P

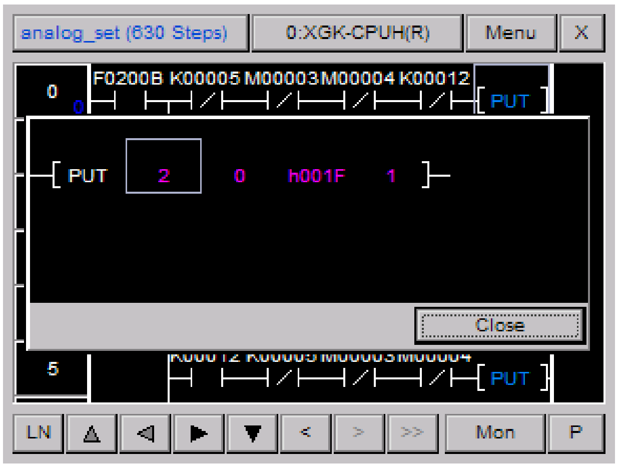
To display the device value of the selected program, press [Monitor] button.


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
F0200B K00005 M00003 M00004 K00012
PUT
M00003
PUT
K00005 M00003 M00004 K00012
PUT
M00004 M00003
PUT
K00012 K00005 M00003 M00004
PUT
K00012 K00005 M00003 M00004
PUT
LN
<
>
>>
End
P

Notice

In case that operand of command is larger than the min. screen column, program monitor provides shortened mode. At shortened mode, command is displayed as below and you can check the detailed operand through double touch.


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
F0200B K00005 M00003 M00004 K00012
PUT
M00003
PUT
K00005 M00003 M00004 K00012
PUT
M00004 M00003
PUT
K00012 K00005 M00003 M00004
PUT
K00012 K00005 M00003 M00004
PUT
LN
<
>
>>
Mon
P

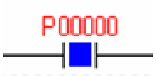
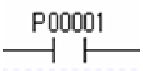
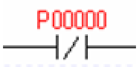
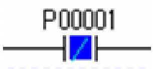
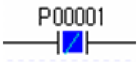
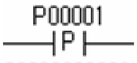
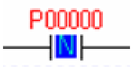
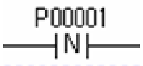

analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
0
F0200B K00005 M00003M00004 K00012
PUT
PUT
2
0
h001F
1
Close
5
PUT
LN
Mon
P

4.5.2 Displaying Monitor Data

Monitor data is different depending on contacts, coil, applicable command.

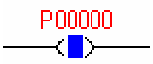
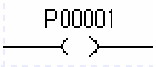
(1) Displaying monitor data of contacts.

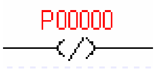
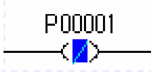
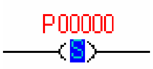
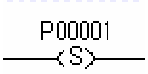
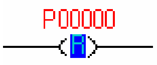
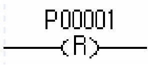
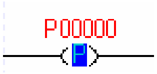
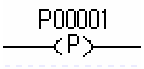
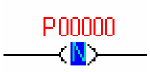
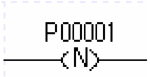
Contacts are displayed in different ways depending on the selected type and device value.

Kinds of Contacts	ON Status	OFF Status
Normally Open Contact		
Normally Closed Contact		
Positive transition sensing contact		
Negative transition sensing contact		

(2) Displaying monitor data of coil

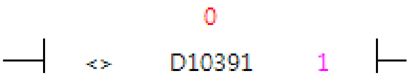
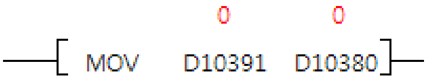
The selected coil is displayed in different ways depending on the coil type and device value.

Items	ON Status	OFF Status
Coil		

Items	ON Status	OFF Status
Negated Coil		
Set Coil		
Reset Coil		
Positive transition sensing coil		
Negative transition sensing coil		

(3) Displaying monitor data of applicable command

Applicable command displays the monitored value of the device is at the upper place of command. The monitored value is displayed in different ways depending on the data type used for command.

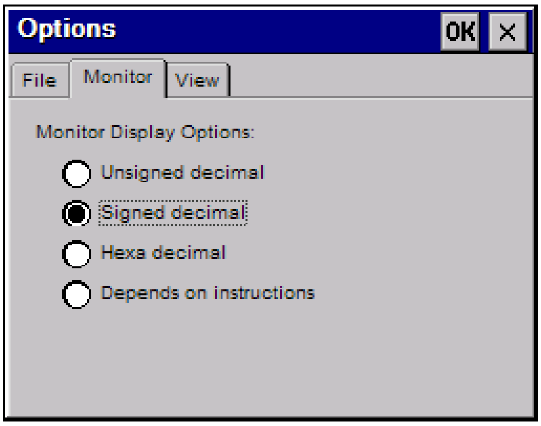
Kids of Applicable Command	Displaying Monitor Data
Relative Applicable Command	
Applicable Command	

4.5.3 The Display Format of Monitor Data

At Program Monitor, there are 4 formats to display monitor data including the option that includes data depending on the actual data type of applicable command.

Data Display Format	Description
Decimal number without a signal	Displaying the current device value as decimal number without a signal
Decimal number with a signal	Displaying the current device value as decimal number with a signal
Hexadecimal number	Displaying the current device value as hexadecimal number
Depending on command	Displaying the current value depending on command property

You can change the display type of monitored data at [Menu]-[Option]-[Monitor Option].


Options
OK
X
File
Monitor
View

Monitor Display Options:

- ○ Unsigned decimal
- ● Signed decimal
- ○ Hexa decimal
- ○ Depends on instructions

Notice

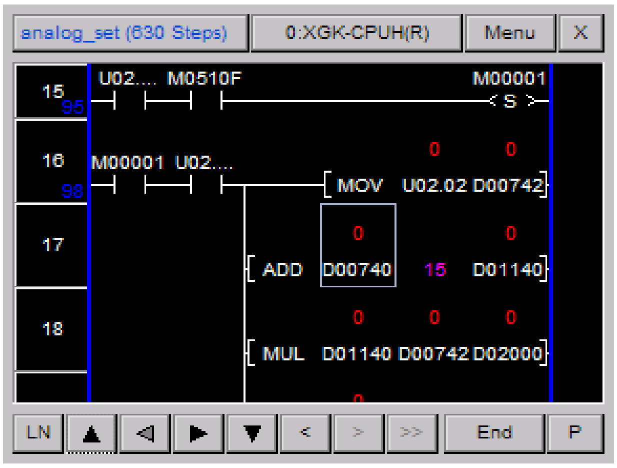
In the case of real number and string data type, they are respectively displayed as real number, string type regardless of display type of monitored data.
For the data type for each PLC command, refer to the PLC manual.

4.5.4 Changing the current device value

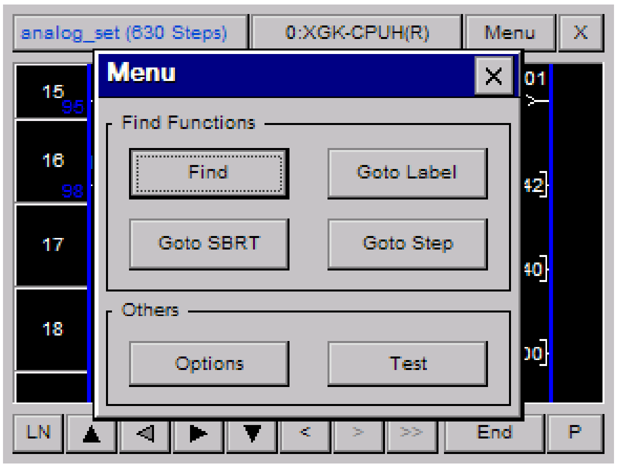
You can change the current device value with Program Monitor. To change the current value of PLC device, you can apply the below methods.

(1) Select the device to be changed.

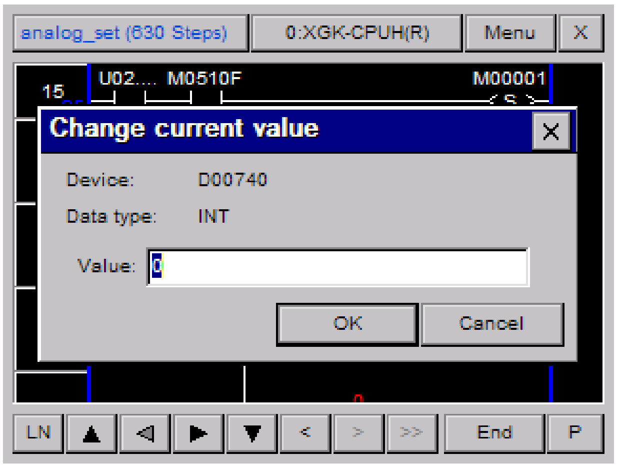
Ex.) Word device D00740 used as the operand of command ADD is selected at the below picture.


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
15
95
U02....
M0510F
M00001
S
16
98
M00001
U02....
MOV
U02.02
D00742
17
ADD
D00740
15
D01140
18
MUL
D01140
D00742
D02000
0
LN
<
>
>>
End
P

(2) To display a menu dialog box, press [Menu] button.


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
End
P

(3) To display a dialog box to change the current value, press [Test] button at a menu dialog box.


analog_set (630 Steps)
0:XGK-CPUH(R)
Menu
X
Change current value
OK
Cancel
LN
End
P

Device: D00740

Data type: INT

Value: 0

(4) After pressing Edition box and inputting your intended value at number input unit, press [OK] button.

Notice

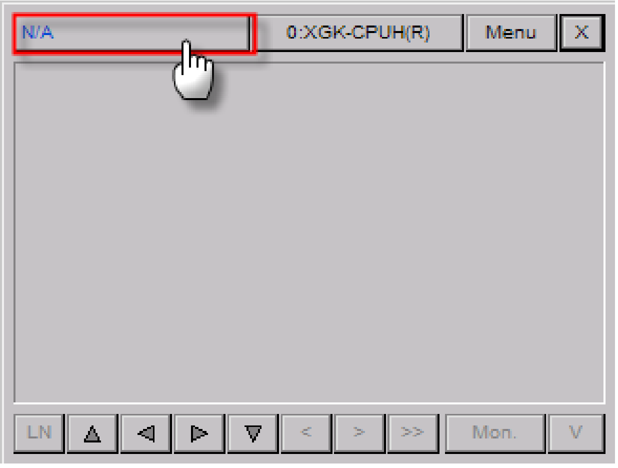
When selecting bit type device, the dialog box to select ON/OFF will be displayed.
Number input unit or string input unit will be displayed depending on the inputted data type.
After selecting the device to be changed, you can select the current device value.

4.6 Program List Management

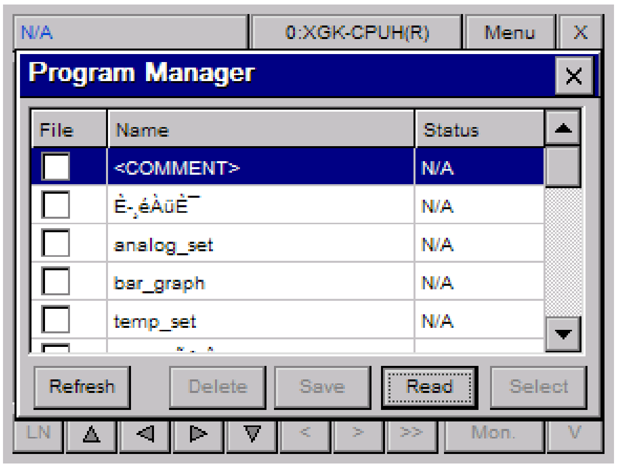
The description on Program List Management function will be provided in this chapter. You can save or delete the program to HMI device with the function.

4.6.1 Displaying Program List

(1) Select the program list button at Program Monitor.


N/A
0:XGK-CPUH(R)
Menu
X
LN
△
◁
▷
▽
<
>
>>
Mon.
V

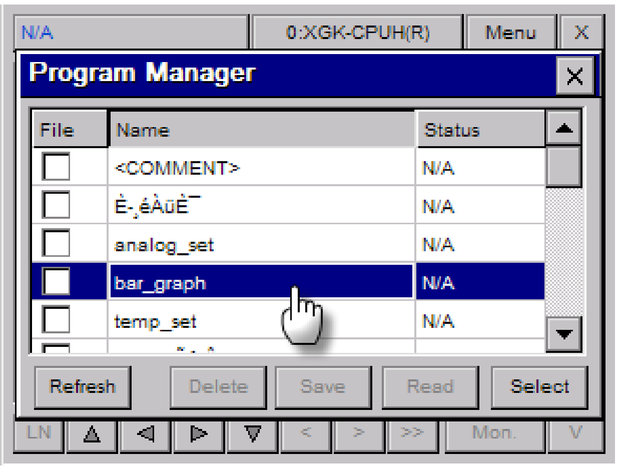
(2) The program list saved at PLC is displayed.


N/A
0:XGK-CPUH(R)
Menu
X
Program Manager
X
Refresh
Delete
Save
Read
Select
LN
△
◁
▷
▽
<
>
>>
Mon.
V

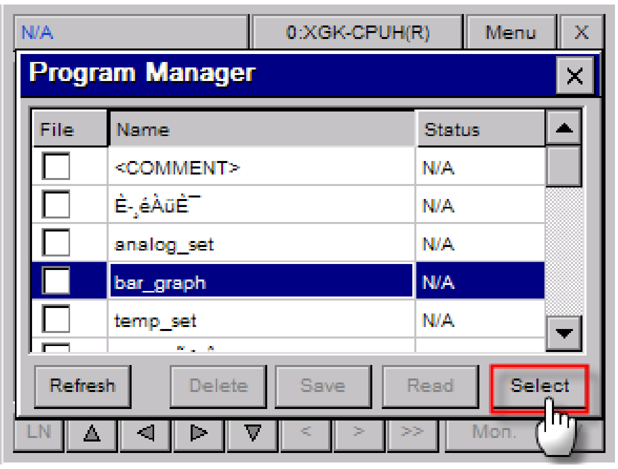
File	Name	Status
☐	<COMMENT>	N/A
☐	È-¸éÀüÈ¯	N/A
☐	analog_set	N/A
☐	bar_graph	N/A
☐	temp_set	N/A

(3) Selecting Program List

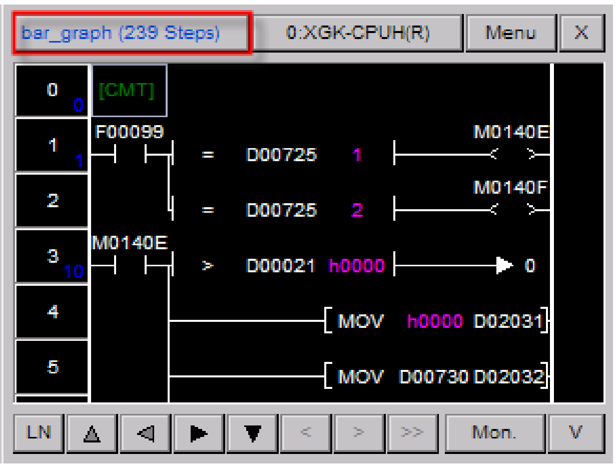
To select the program to be monitored, choose it and press [Select] button.


N/A
0:XGK-CPUH(R)
Menu
X
Program Manager
Refresh
Delete
Save
Read
Select
LN
Mon.
V

File	Name	Status
☐	<COMMENT>	N/A
☐	È-¸éÀüÈ¯	N/A
☐	analog_set	N/A
☐	bar_graph	N/A
☐	temp_set	N/A

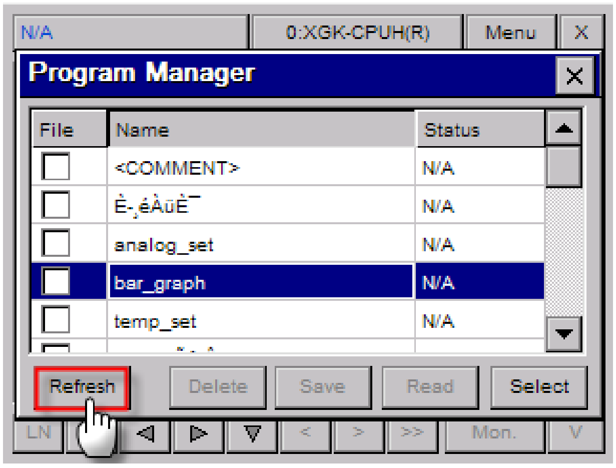

N/A
0:XGK-CPUH(R)
Menu
X
Program Manager
Refresh
Delete
Save
Read
Select
LN
Mon.
V

File	Name	Status
☐	<COMMENT>	N/A
☐	È-¸éÀüÈ¯	N/A
☐	analog_set	N/A
☐	bar_graph	N/A
☐	temp_set	N/A

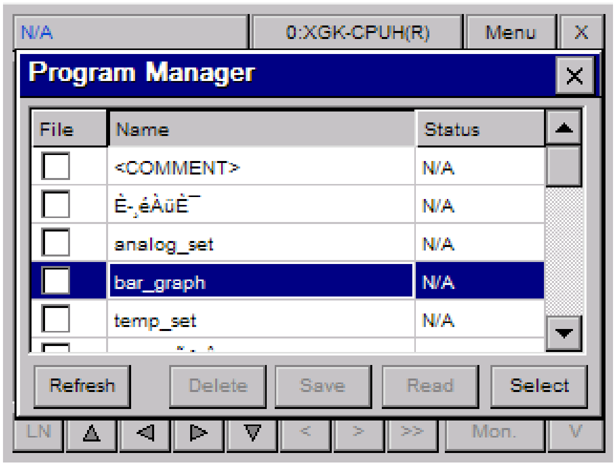

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
[CMT]
1
F00099
=
D00725
1
M0140E
2
=
D00725
2
M0140F
3
M0140E
>
D00021
h0000
0
4
MOV h0000 D02031
5
MOV D00730 D02032
LN
Mon.
V

(4) Updating Program List

To display the program list saved at PLC, press [Update] button.

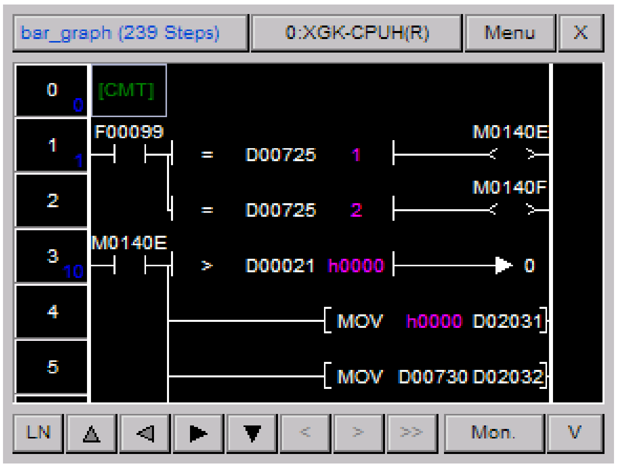

N/A
0:XGK-CPUH(R)
Menu
X
Program Manager
File
Name
Status
<COMMENT>
N/A
È-¸éÀüÈ¯
N/A
analog_set
N/A
bar_graph
N/A
temp_set
N/A
Refresh
Delete
Save
Read
Select
LN
Mon.
V

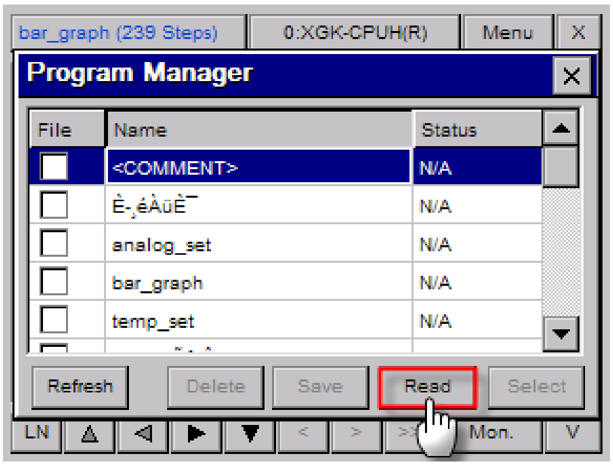
It reads the program list newly from PLC and displays it.


N/A
0:XGK-CPUH(R)
Menu
X
Program Manager
File
Name
Status
<COMMENT>
N/A
È-¸éÀüÈ¯
N/A
analog_set
N/A
bar_graph
N/A
temp_set
N/A
Refresh
Delete
Save
Read
Select
LN
Mon.
V

(5) Reading Comment.

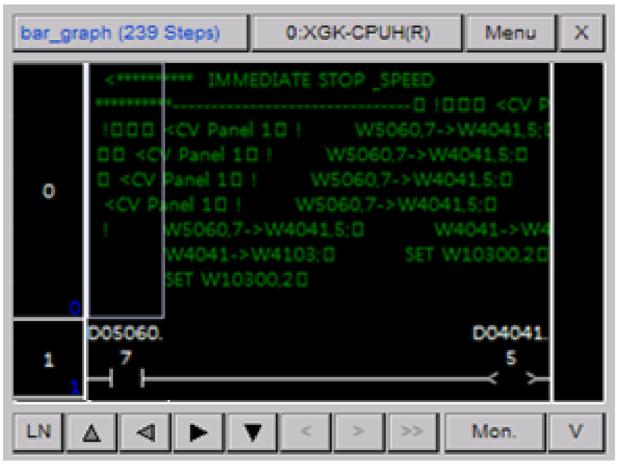
To display rung comment, output comment, variable comment, you need to select Reading Comment.
To display comment, after selecting <COMMENT>, press <READ> button.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
[CMT]
F00099
= D00725 1
M0140E
= D00725 2
M0140F
M0140E
> D00021 h0000
0
MOV h0000 D02031
MOV D00730 D02032
LN
Mon.
V


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Program Manager

File	Name	Status
☐	<COMMENT>	N/A
☐	È-¸éÀüÈ¯	N/A
☐	analog_set	N/A
☐	bar_graph	N/A
☐	temp_set	N/A

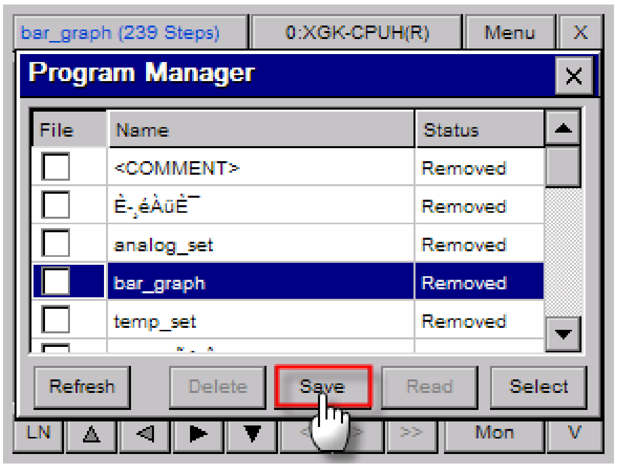
Refresh
Delete
Save
Read
Select
LN
Mon.
V


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
<********** IMMEDIATE STOP _SPEED
D05060.7
D04041.5
LN
Mon.
V

(6) Saving File

It saves the selected program as a file so it can display it faster than reading program with PLC.

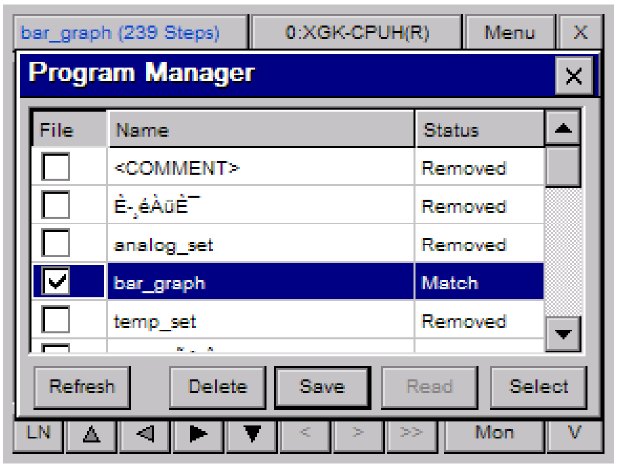
. After selecting the program to be saved, press [Save] button.



File	Name	Status
☐	<COMMENT>	Removed
☐	È-¸éÀüÈ¯	Removed
☐	analog_set	Removed
☐	bar_graph	Removed
☐	temp_set	Removed

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Program Manager
Refresh
Delete
Save
Read
Select
LN
Mon
V

If the program is saved properly, <Match> is displayed.

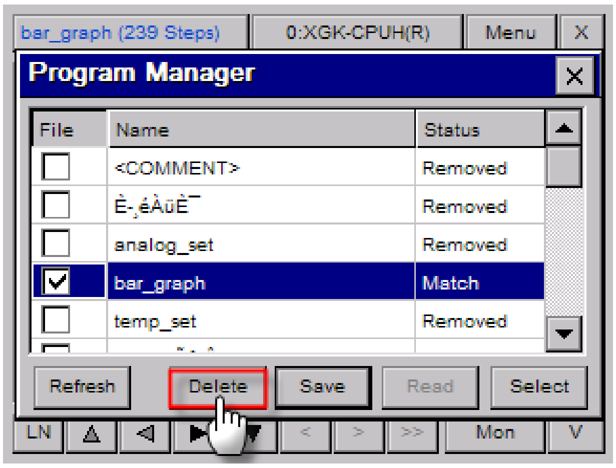


File	Name	Status
☐	<COMMENT>	Removed
☐	È-¸éÀüÈ¯	Removed
☐	analog_set	Removed
☑	bar_graph	Match
☐	temp_set	Removed

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Program Manager
Refresh
Delete
Save
Read
Select
LN
<
>
>>
Mon
V

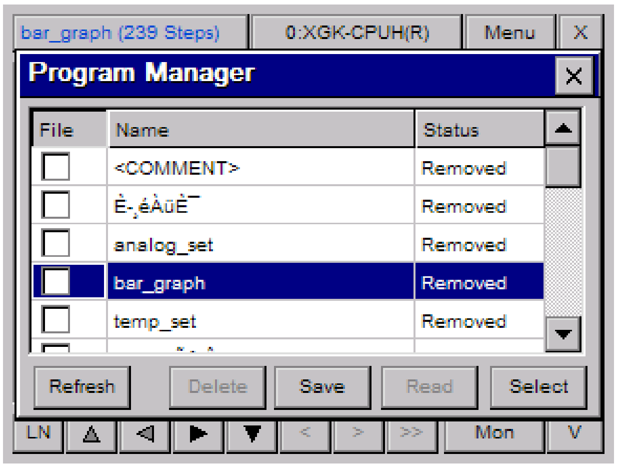
(7) Deleting file

After selecting the file to be deleted, press [Delete] button.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Program Manager
Refresh
Delete
Save
Read
Select
LN
Mon
V

File	Name	Status
☐	<COMMENT>	Removed
☐	È-¸éÀüÈ¯	Removed
☐	analog_set	Removed
☑	bar_graph	Match
☐	temp_set	Removed

If program is deleted properly, Saving File is undone and <Removed> is displayed at program status.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Program Manager
Refresh
Delete
Save
Read
Select
LN
Mon
V

File	Name	Status
☐	<COMMENT>	Removed
☐	È-¸éÀüÈ¯	Removed
☐	analog_set	Removed
☐	bar_graph	Removed
☐	temp_set	Removed

(8) Displaying Status

When you apply Saving File function, it displays congruence status of PLC program and saved program. Program Monitor provides three statuses as below.

Status	Description
Match	The program saved Program Monitor is congruent with PLC program.
Mismatch	The program saved Program Monitor is not congruent with PLC program.
Removed	There is no PLC program saved at Program Monitor.

Notice

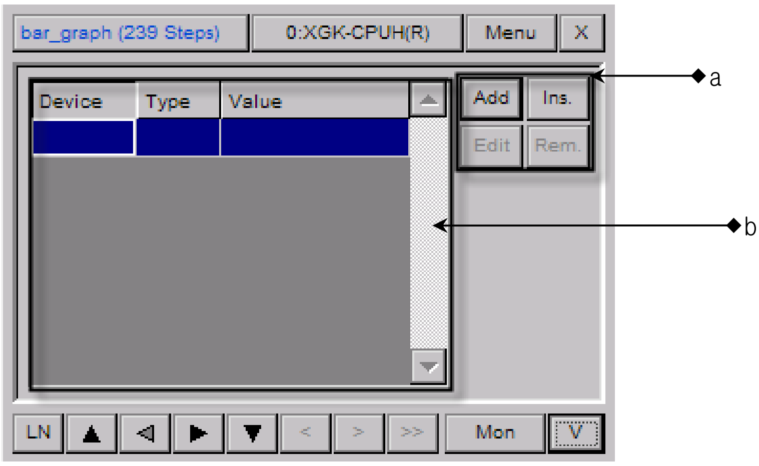
Only when saving file option is set, saving and deletion functions are available.
For the details on saving file option, refer to Program Monitor Option.

4.7 Device Monitor

The description on Device Monitor function that can monitor random device selectively is provided in this chapter. Through this function, you can check the status of PLC by monitoring unused device value of current program.

4.7.1 Composition of Device Monitor

Device Monitor is composed as below.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Edit
Rem.
a
b
LN
<
>
>>
Mon
V

[Description on a dialog box]

a. It registers·deletes·edits the device to be monitored. The max. allowable number of devices is 16.

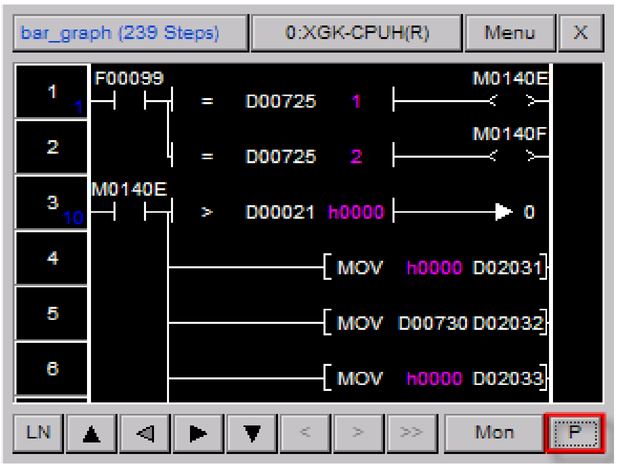
b. Monitoring device that is composed of device name, type, monitor value is displayed

4.7.2 Screen Display Option

You can change Screen Display Option of device monitor with screen division option button. To change screen option, you need to apply screen division option of Program Monitor.

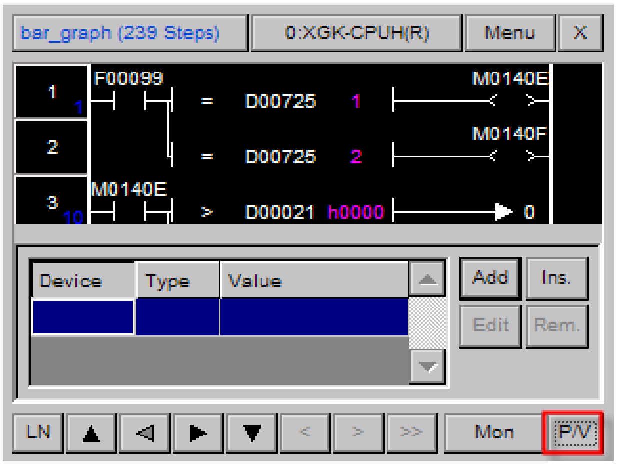
(1) Program Display Mode

Program monitor displays the program only. Display mode of current screen is displayed as “P”

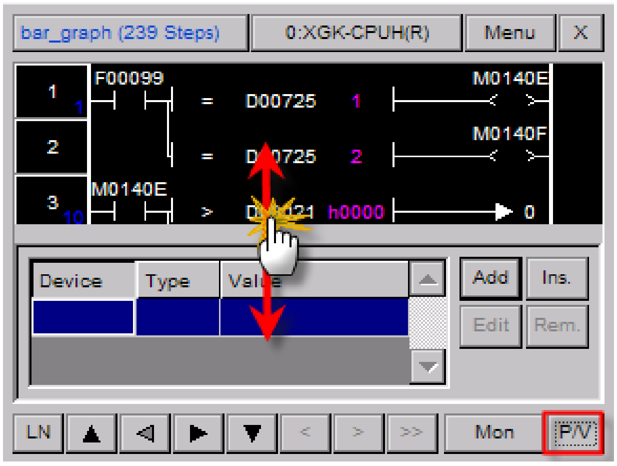

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
1
2
3
4
5
6
F00099
1
=
D00725
1
M0140E
=
D00725
2
M0140F
M0140E
10
>
D00021
h0000
0
MOV
h0000
D02031
MOV
D00730
D02032
MOV
h0000
D02033
LN
<
>
>>
Mon
P

(2) Division Display Mode

Program and device monitor screen is respectively displayed. Display mode of current screen is displayed as“P/V.

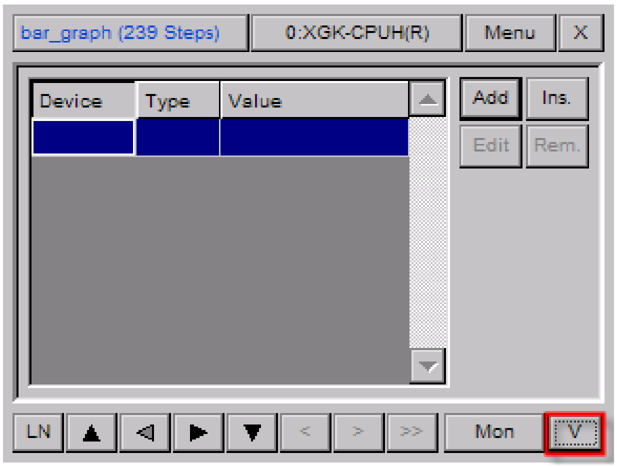

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
1
2
3
F00099
M0140E
D00725 1
D00725 2
D00021 h0000
M0140E
M0140F
0
Device
Type
Value
Add
Ins.
Edit
Rem.
LN
Mon
P/V

You can adjust the size of screen with tracking bar at division display mode. Although division screen display option is changed, the size of adjusted screen is saved


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Edit
Rem.
LN
Mon
P/V

(3) Device Monitor Display Mode

Only Device Monitor screen is displayed and display mode of the current screen is displayed as “V”.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Edit
Rem.
LN
Mon
V

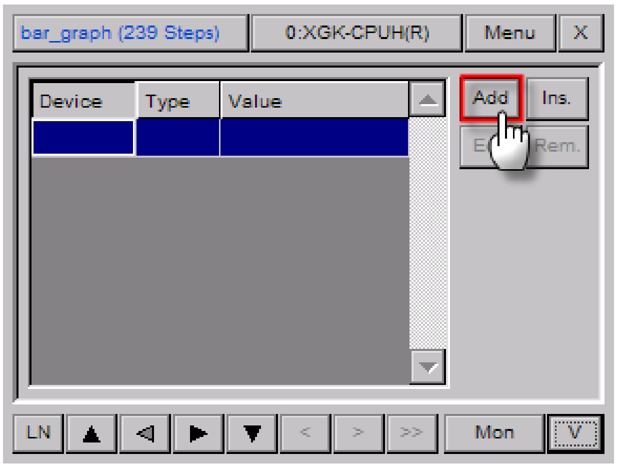
Notice

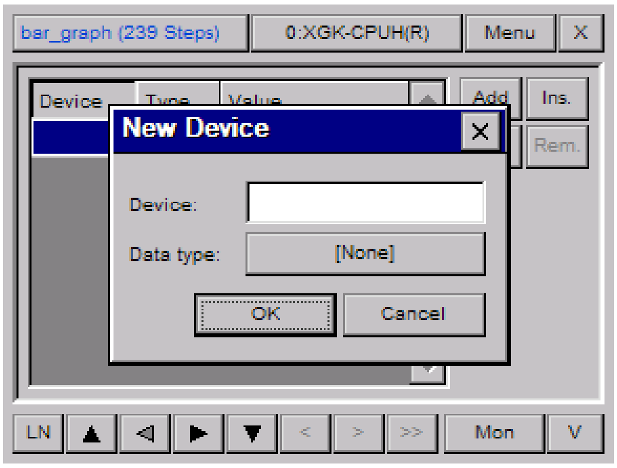
Screen Division Option button runs repeatedly as below procedure.
Program Display Mode → Division Display Mode →Device Screen Display Mode → Program Display Mode → Division Display Mode…

4.8 Device Edition

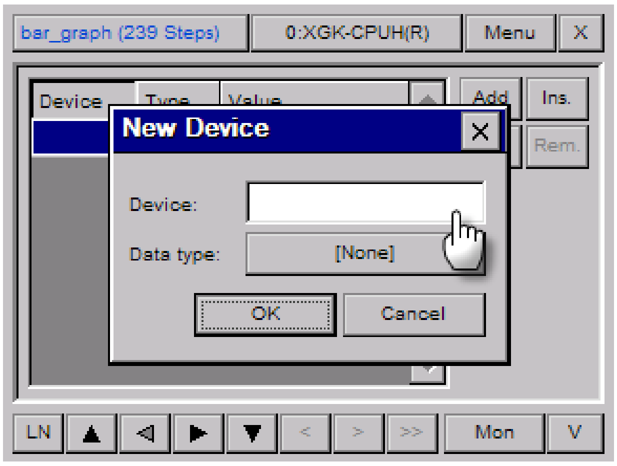
4.8.1 Adding Device

The description on procedures to add device to monitor screen is given.
Press [Add] button at Device Monitor Screen and display the dialog box to register device.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
E
Rem.
LN
▲
◁
▶
▼
<
>
>>
Mon
V

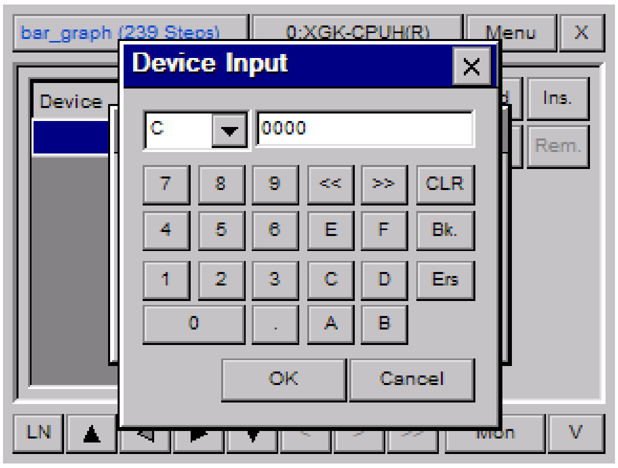

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Rem.
New Device
X
Device:
Data type:
[None]
OK
Cancel
LN
▲
◁
▶
▼
<
>
>>
Mon
V

Select device input box and pick up the device to be added.

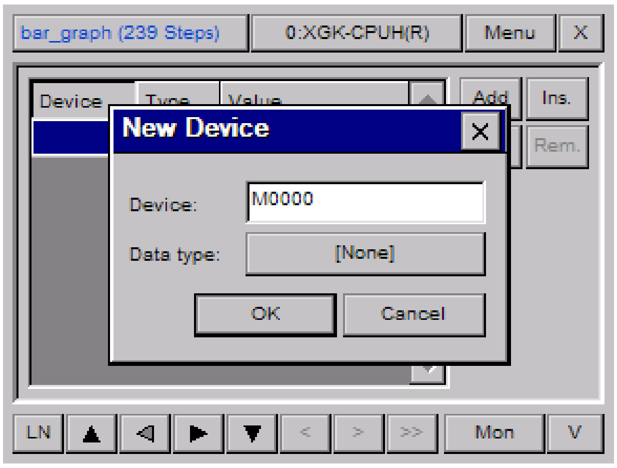

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Rem.
New Device
OK
Cancel
LN
<
>
>>
Mon
V

Device:

Data type: [None]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Ins.
Rem.
Device Input
7
8
9
<<
>>
CLR
4
5
6
E
F
Bk.
1
2
3
C
D
Ers
0
.
A
B
OK
Cancel
LN
Mon
V

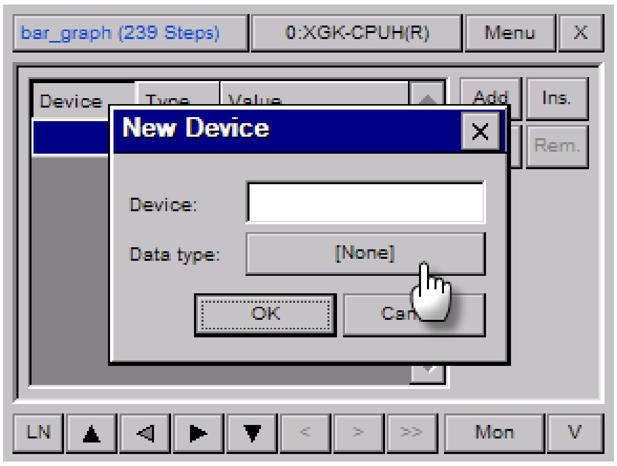
C 0000

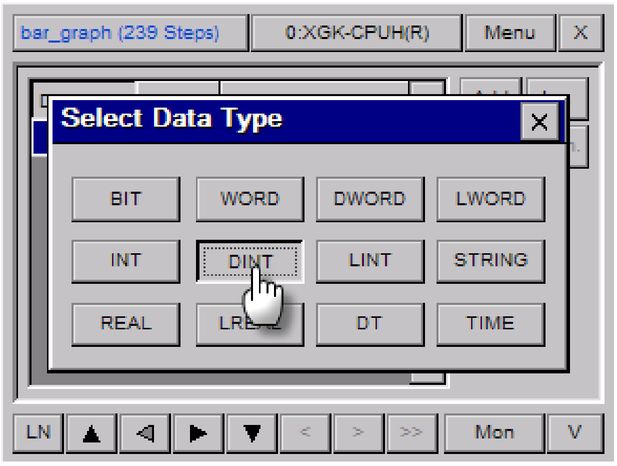

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Rem.
New Device
OK
Cancel
LN
<
>
>>
Mon
V

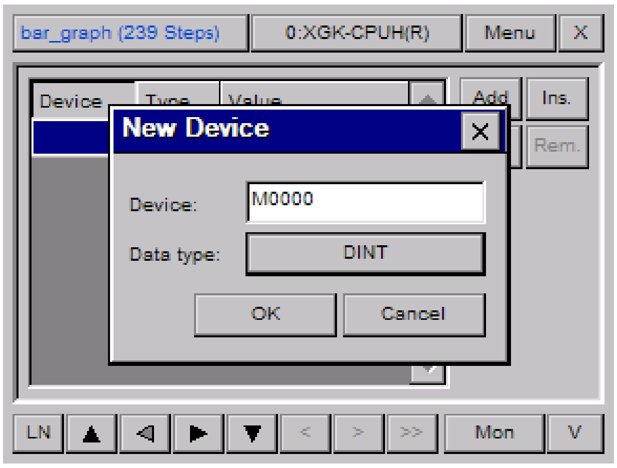
Device: M0000

Data type: [None]

Select [Type] button and pick up the data type of device.

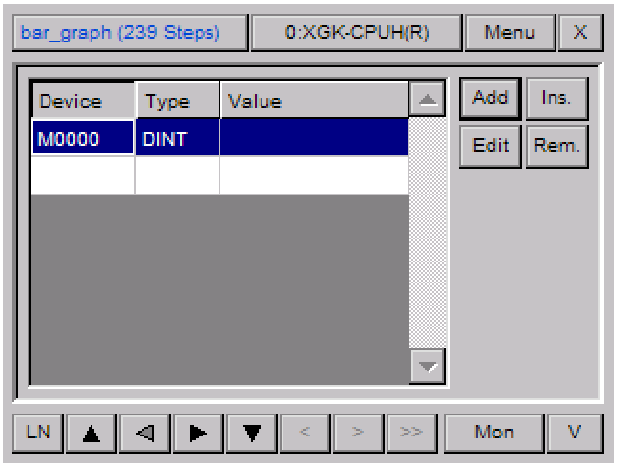

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Rem.
New Device
Device:
Data type:
[None]
OK
Cancel
LN
<
>
>>
Mon
V


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Select Data Type
BIT
WORD
DWORD
LWORD
INT
DINT
LINT
STRING
REAL
LREAL
DT
TIME
LN
<
>
>>
Mon
V


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Rem.
New Device
OK
Cancel
LN
<
>
>>
Mon
V

Device: M0000

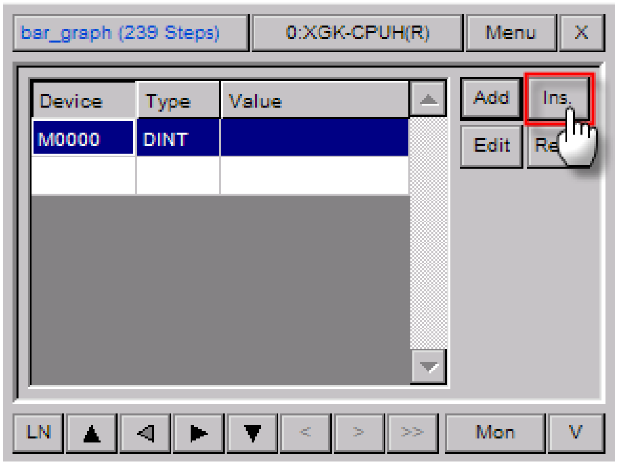
Data type: DINT


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
M0000
DINT
Add
Ins.
Edit
Rem.
LN
<
>
>>
Mon
V

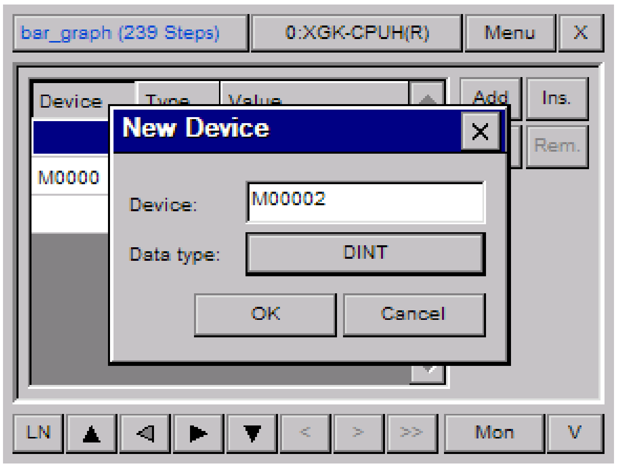
4.8.2 Inserting Device

Through this function, you can select the device to be monitored at your intended position. The procedure is same as the process to add device except the device to be monitored is displayed at your selected position.

the position for inserting device and press [Insert] button.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
M0000
DINT
Add
Ins.
Edit
Re
LN
<
>
>>
Mon
V

Input device and press [OK] button.

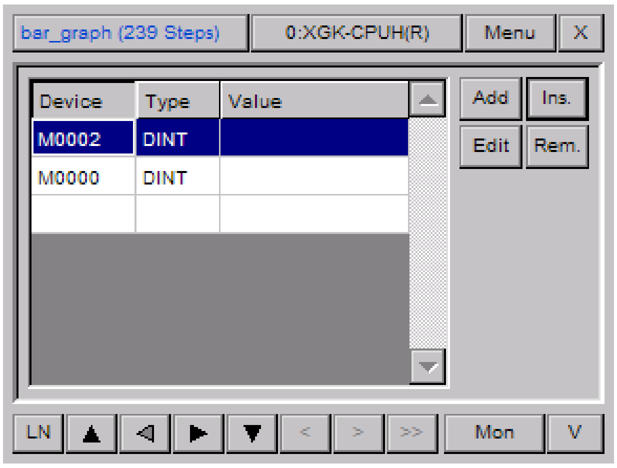

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Device
Type
Value
Add
Ins.
Rem.
M0000
LN
<
>
>>
Mon
V

New Device

Device: M00002

Data type: DINT

OK
Cancel

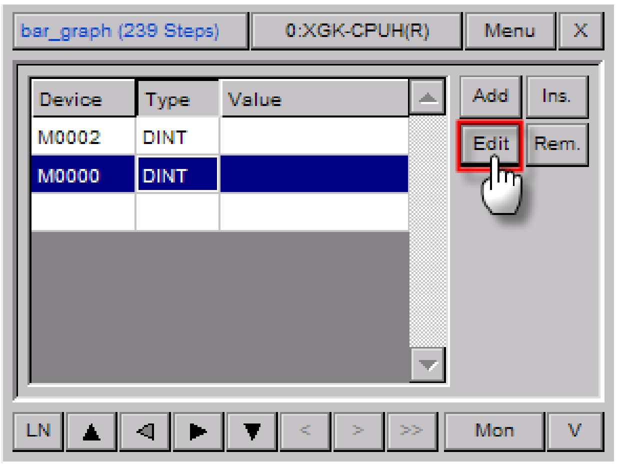

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Add
Ins.
Edit
Rem.
LN
<
>
>>
Mon
V

Device	Type	Value
M0002	DINT	
M0000	DINT	

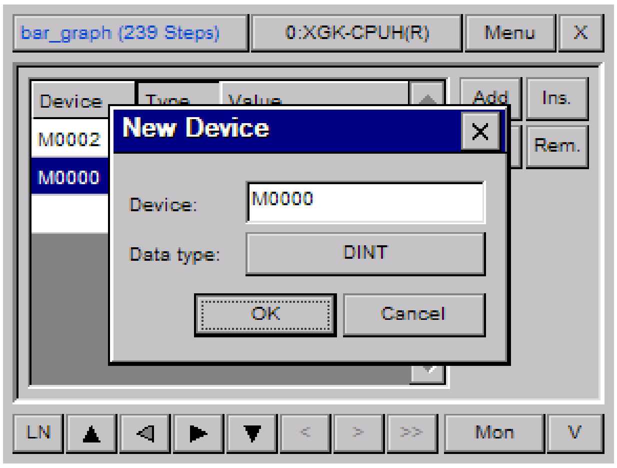
4.8.3 Editing Device

The description on the procedure to edit the device added to device monitor screen. Through this function, you can change device and data type.

(1) After selecting the device to be device, press [Edition] button.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Add
Ins.
Edit
Rem.
LN
<
>
>>
Mon
V

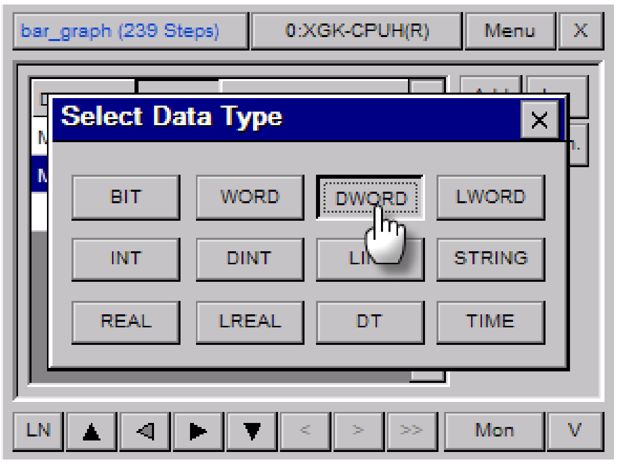
Device	Type	Value
M0002	DINT	
M0000	DINT	

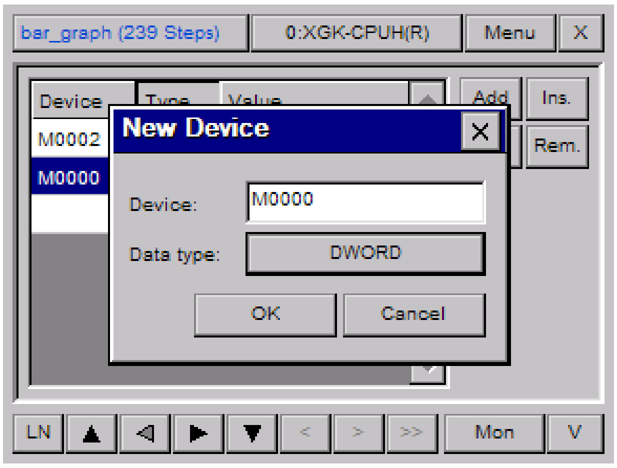

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Add
Ins.
Rem.
New Device
OK
Cancel
LN
<
>
>>
Mon
V

Device: M0000

Data type: DINT

(2) After changing device name or data type, press [OK] button.

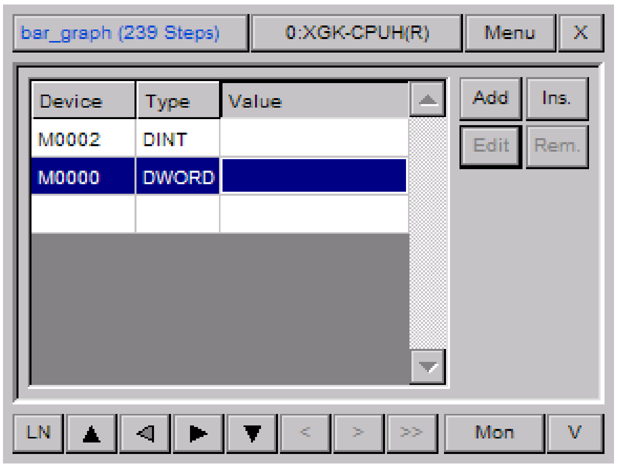

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Select Data Type
BIT
WORD
DWORD
LWORD
INT
DINT
STRING
REAL
LREAL
DT
TIME
LN
<
>
>>
Mon
V


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
New Device
Add
Ins.
Rem.
OK
Cancel
LN
<
>
>>
Mon
V

Device: M0000

Data type: DWORD

(3) The changed details on device will be reflected and displayed.

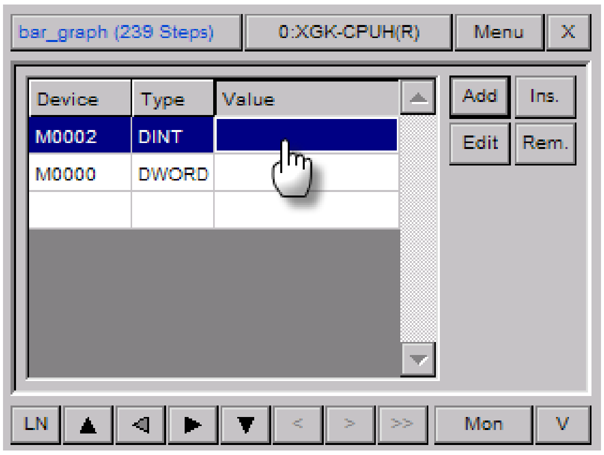

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Add
Ins.
Edit
Rem.
LN
<
>
>>
Mon
V

Device	Type	Value
M0002	DINT	
M0000	DWORD	

4.8.4 Deleting Device

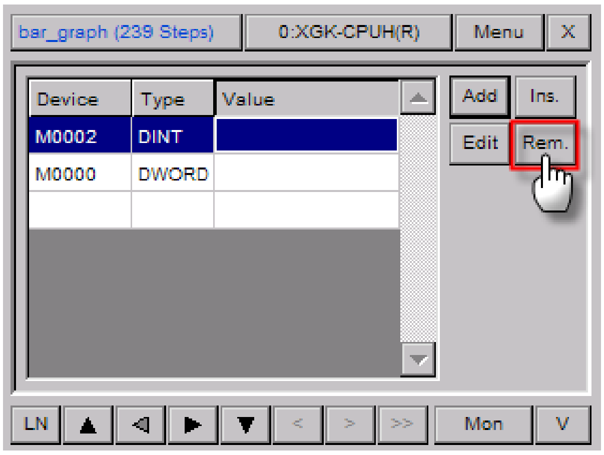
The description on the procedure to delete device at Device Monitor Screen is given.

(1) Select the device to be deleted.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Add
Ins.
Edit
Rem.
LN
Mon
V

Device	Type	Value
M0002	DINT	
M0000	DWORD	

(2) Press [Delete] button.

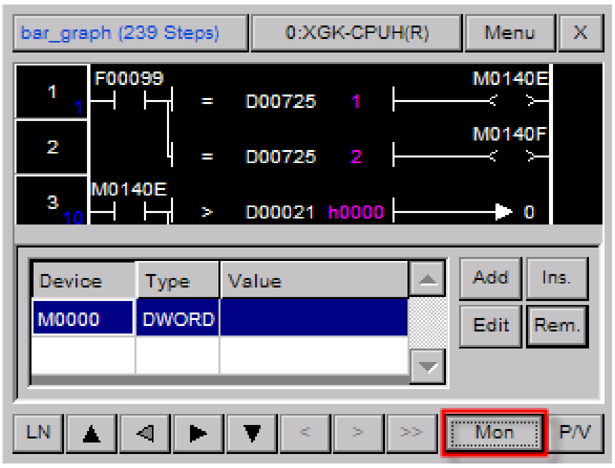

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Add
Ins.
Edit
Rem.
LN
Mon
V

Device	Type	Value
M0002	DINT	
M0000	DWORD	

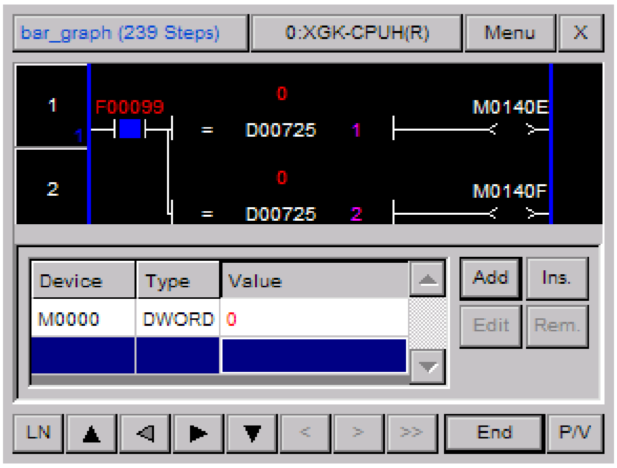
4.8.5 Changing the current device value

The description on the procedure to change the current device value is given. To change the current device value, Program Monitor should be on Monitor Status.

(1) To start Monitor, press [Monitor] button of Program Monitor.

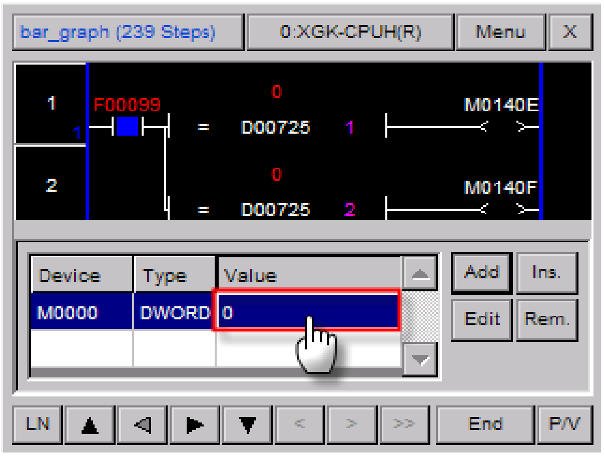

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
1
2
3
F00099
=
D00725
1
M0140E
=
D00725
2
M0140F
M0140E
>
D00021
h0000
0
Add
Ins.
Edit
Rem.
LN
<
>
>>
Mon
P/V

Device	Type	Value
M0000	DWORD	

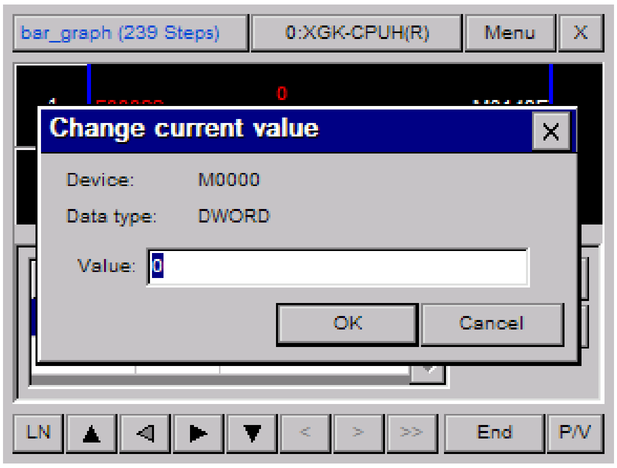

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
1
2
F00099
0
=
D00725
1
M0140E
0
=
D00725
2
M0140F
Add
Ins.
Edit
Rem.
LN
<
>
>>
End
P/V

Device	Type	Value
M0000	DWORD	0

(2) If you select [Value] row of the device to be changed, the dialog box to display the current value will be displayed.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
1
2
F00099
0
=
D00725
1
M0140E
0
=
D00725
2
M0140F
Add
Ins.
Edit
Rem.
LN
<
>
>>
End
P/V

Device	Type	Value
M0000	DWORD	0

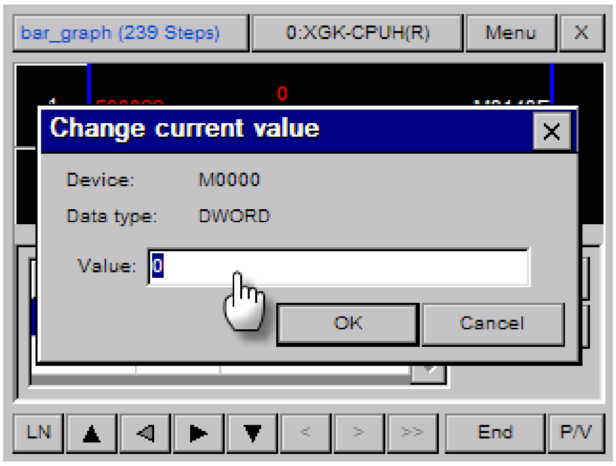

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Change current value
OK
Cancel
LN
End
P/V

Device: M0000

Data type: DWORD

Value: 0

(3) Select the box to input the current value.

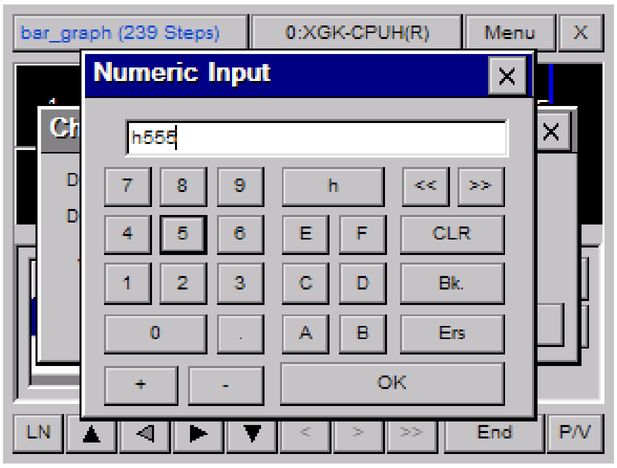

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Change current value
OK
Cancel
LN
End
P/V

Device: M0000

Data type: DWORD

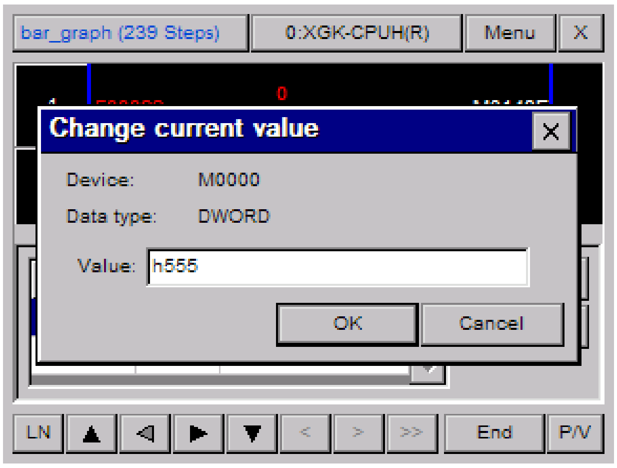
Value: 0

(4) After inputting your intended value, press [OK] button.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Numeric Input
7
8
9
h
<<
>>
4
5
6
E
F
CLR
1
2
3
C
D
Bk.
0
.
A
B
Ers
+
-
OK
LN
End
P/V

h555

(5) To apply the changed value to PLC, press [OK] button.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Change current value
LN
End
P/V

Device: M0000

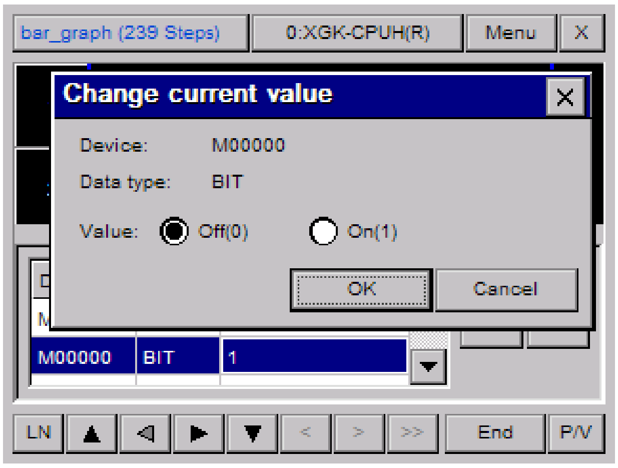
Data type: DWORD

Value: h555

OK Cancel

Notice

In the case of bit type device, you can select the current value with a radio button with OFF/ON values.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Change current value
M00000
BIT
1
LN
End
P/V

Device: M00000

Data type: BIT

Value: ● Off(0) ○ On(1)

OK Cancel

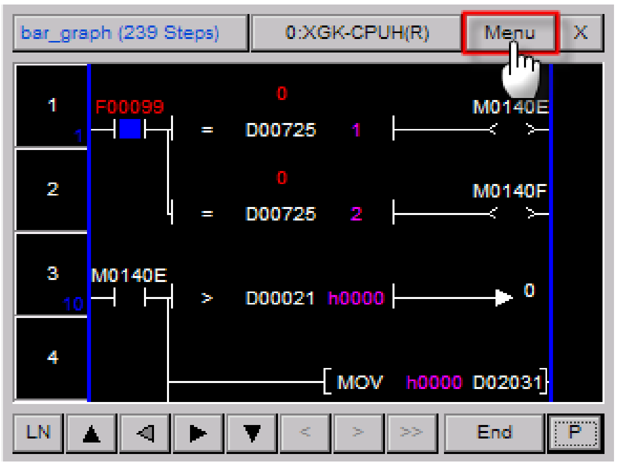
4.9 Reference

The description on Reference function of Program Monitor is provided in this chapter. Program Monitor provides various reference functions such as device reference, label reference, sub-routine reference, step movement, cross reference. Through reference function of Program Monitor, you can easily move to the position where some problem occurs.

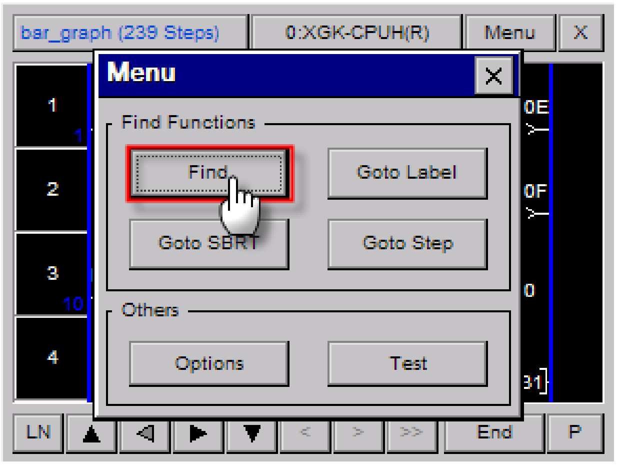
4.9.1 Device Reference

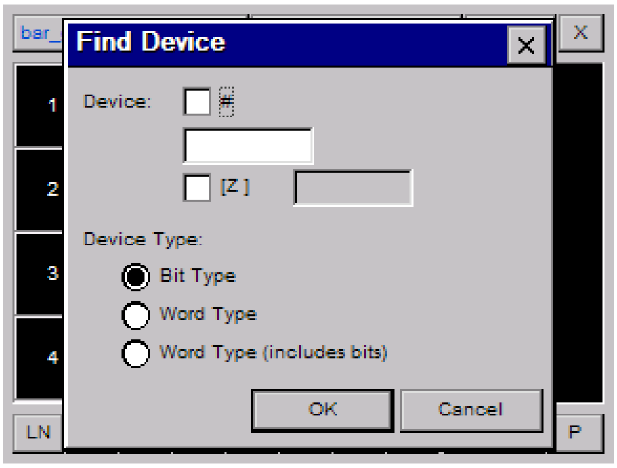
You can refer to your intended device with the function. Device Reference provides two methods; reference with identical data type, including range.

(1) Press [Menu] button to display a menu dialog box.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
1
F00099
0
=
D00725
1
M0140E
2
0
=
D00725
2
M0140F
3
M0140E
10
>
D00021
h0000
0
4
MOV
h0000
D02031
LN
End
P

(2) Press [Reference] button at menu dialog box to display device reference dialog box.

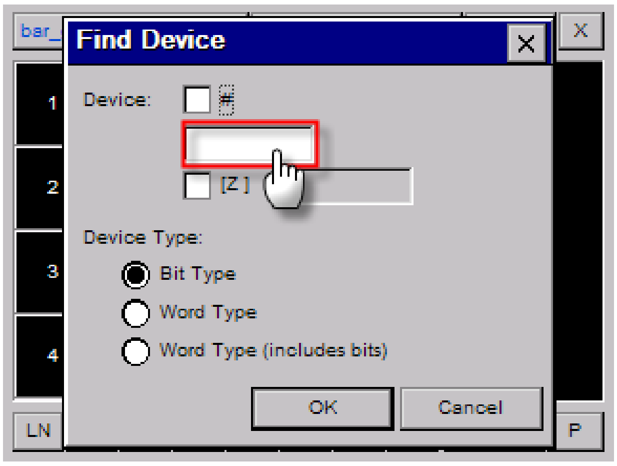

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
End
P


bar_
Find Device
Device:
☐ #
☐ [Z]
Device Type:
● Bit Type
○ Word Type
○ Word Type (includes bits)
OK
Cancel
1
2
3
4
LN
P

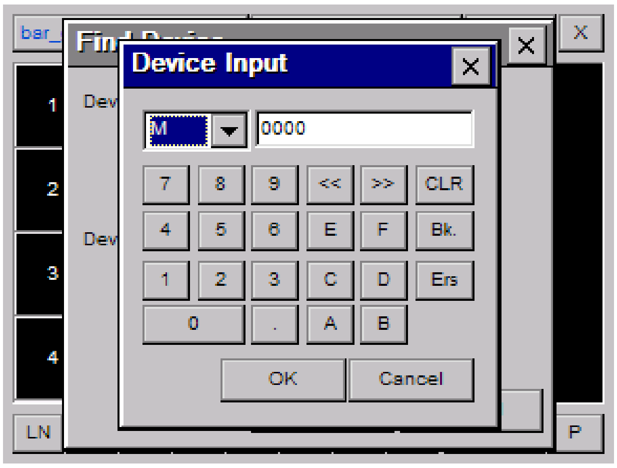
(3) Input the device to be referred as below.

1) Method to input normal device – Ex.) Inputting M0000 device

Select a device input box.

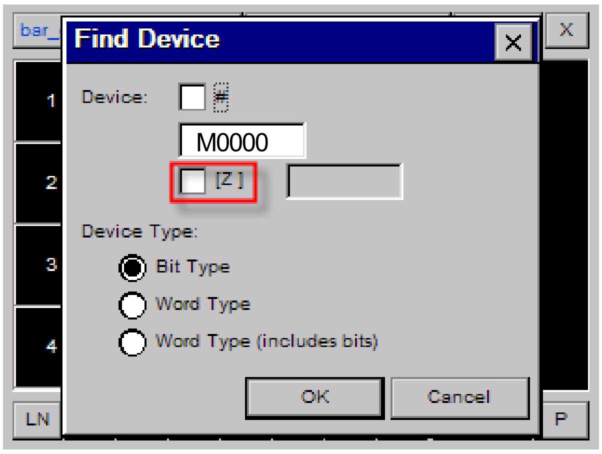

bar_
Find Device
Device:
☐ #
☐ [Z]
Device Type:
● Bit Type
○ Word Type
○ Word Type (includes bits)
OK
Cancel
1
2
3
4
LN
P

After selecting your intended device and input address, press [OK] button.


Device Input
7 8 9 << >> CLR
4 5 6 E F Bk.
1 2 3 C D Ers
0 . A B
OK
Cancel

M 0000

The device input at the dialog box is displayed.



Find Device

Device: ☐ #

M0000

☐ [Z]

Device Type:

● Bit Type

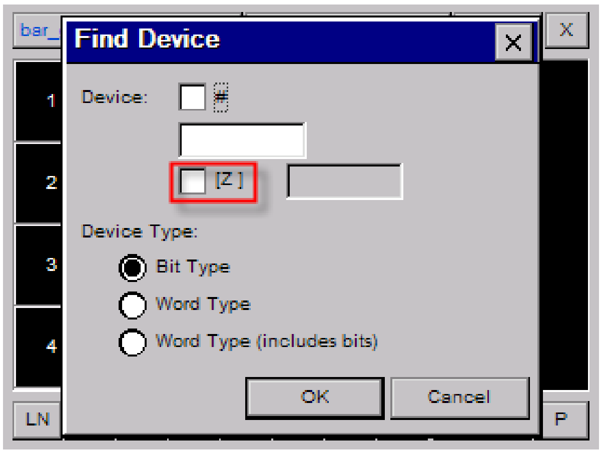
○ Word Type

○ Word Type (includes bits)

2) Method to input index device – Ex.) M0000[Z000]

You need to input two basic type devices [Index device].
The method to input basic device is the same as 1) Method to input normal device.

To input index device, select whether using index device or now.



Find Device

Device: ☐ #

☐ [Z]

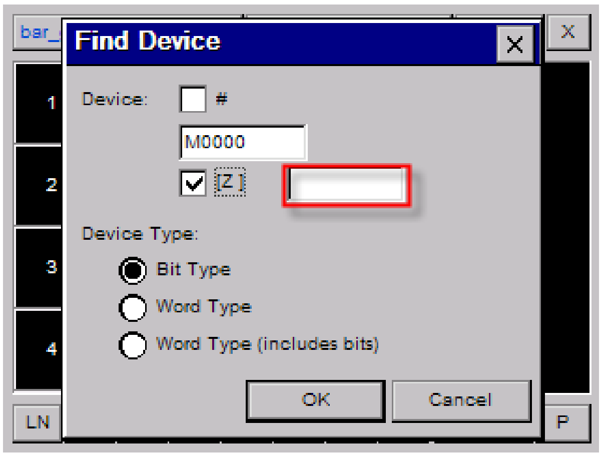
Device Type:

● Bit Type

○ Word Type

○ Word Type (includes bits)

[Z] If the check box is selected, device input box is active.



Find Device

Device: ☐ #

M0000

☑ [Z]

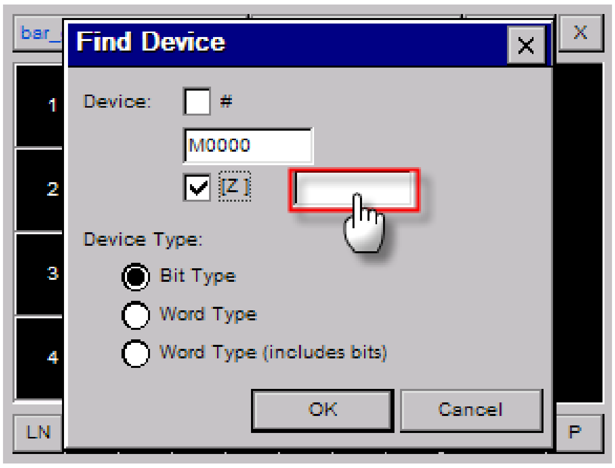
Device Type:

● Bit Type

○ Word Type

○ Word Type (includes bits)

Select index device and input index device.


bar_
Find Device
1
2
3
4
LN
X
P
OK
Cancel

Device: ☐ #

M0000

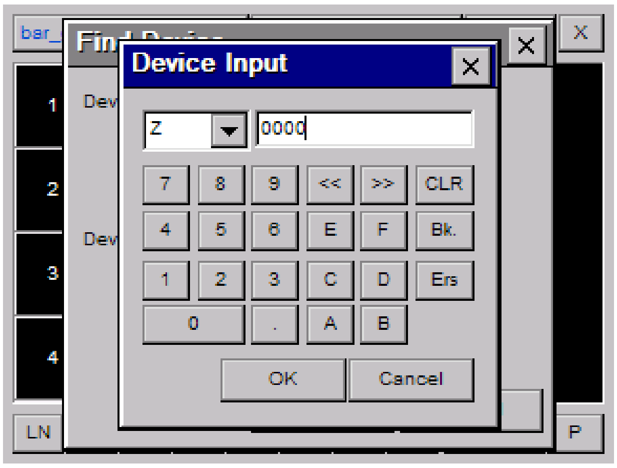
☑ [Z]

Device Type:

● Bit Type

○ Word Type

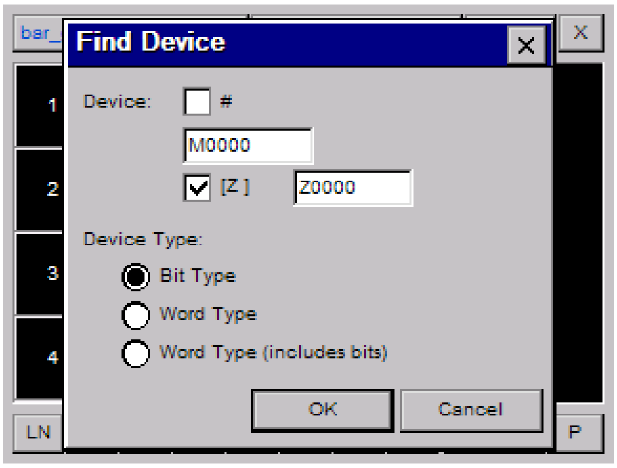
○ Word Type (includes bits)


bar_
Find Device
Device Input
Dev
Dev
1
2
3
4
LN
X
P
7
8
9
<<
>>
CLR
4
5
6
E
F
Bk.
1
2
3
C
D
Ers
0
.
A
B
OK
Cancel

Z

0000

The input index device is displayed.


bar_
Find Device
1
2
3
4
LN
X
P
OK
Cancel

Device: ☐ #

M0000

☑ [Z] Z0000

Device Type:

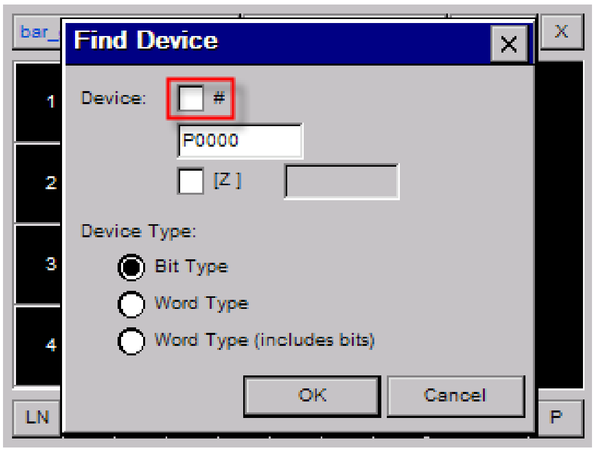
● Bit Type

○ Word Type

○ Word Type (includes bits)

3) Method to input indirect device– Ex.) #P0000

Indirect device is displayed as # + basic device.
Method to input indirect device is the same as 1) Method to input normal device.
Select # check box to input indirect device.



Find Device

Device: ☐ #

P0000

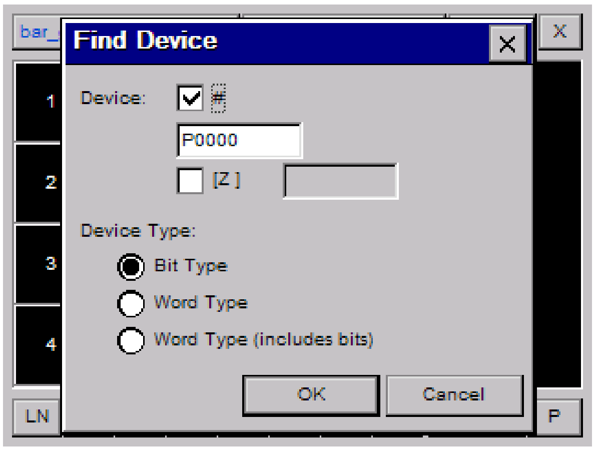
☐ [Z]

Device Type:

● Bit Type

○ Word Type

○ Word Type (includes bits)



Find Device

Device: ☑ #

P0000

☐ [Z]

Device Type:

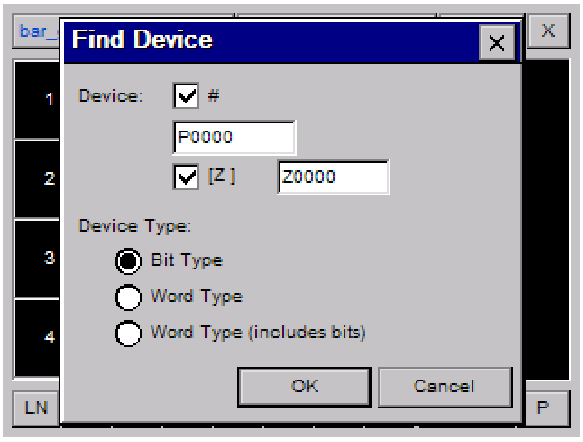
● Bit Type

○ Word Type

○ Word Type (includes bits)

4) Indirect Index Device Method – Ex.) #P0000[Z00]

Indirect index device is displayed as # + Basic index [Index device].
The method to input device is the combination of normal + indirect + index device based on the given description.



Find Device

Device: ☑ #

P0000

☑ [Z] Z0000

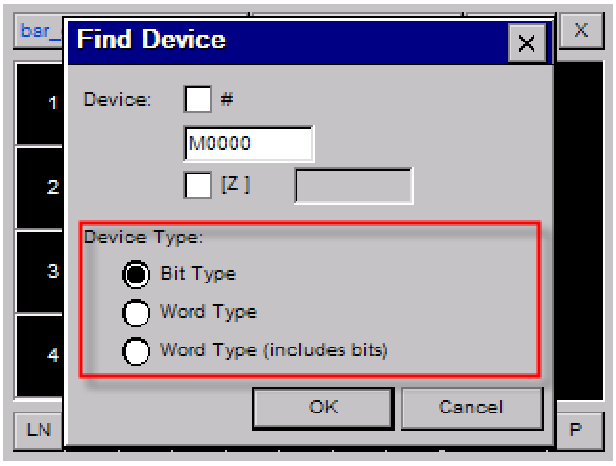
Device Type:

● Bit Type

○ Word Type

○ Word Type (includes bits)

(4) Select the device to be referred; bit type, word type, word type including bit.



Find Device

Device: ☐ #

M0000

☐ [Z]

Device Type:

● Bit Type

○ Word Type

○ Word Type (includes bits)

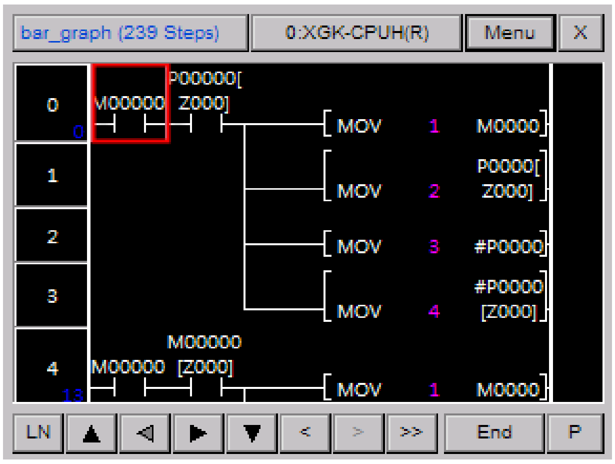
For the details on device type, refer to the below table.

Reference Type	Descriptions
Bit type	It refers to the congruent device among bit type devices.
Word type	It refers to the congruent device among word type devices.
Word type including bit	It refers to the congruent device and bit device included to input word device among word type devices. Ex.) When inputting M0000 and selecting word type including bit, the below devices are obtained. Word device: M0000 Bit device: M00000, M00001, M00002 ~ M0000F

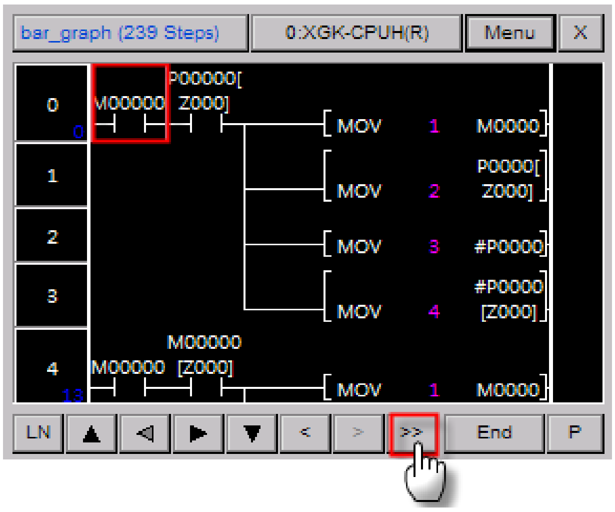
Notice

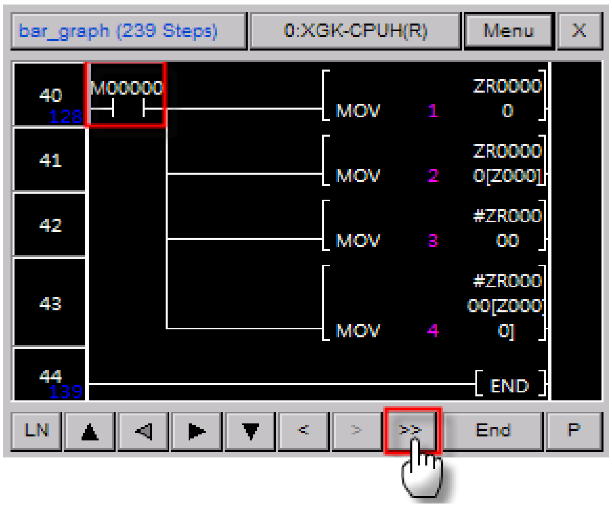
When referring to device, obtained device has the same type.
For example, in the case of inputting M0000, you can not obtain the device of M0000[Z000], #M0000, #M0000[Z000] type.

(5) If you press [OK] button for the device to be referred, it will move to the appropriate position and cursor is displayed at the device.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
0
M00000
P00000[
Z000]
MOV 1 M0000
1
MOV 2 P0000[Z000]
2
MOV 3 #P0000
3
MOV 4 #P0000 [Z000]
4
13
M00000
M00000 [Z000]
MOV 1 M0000
LN
▲
◁
▶
▼
<
>
>>
End
P

If you need to refer to the next device with the same conditions, press [>>] button to move to the next position.

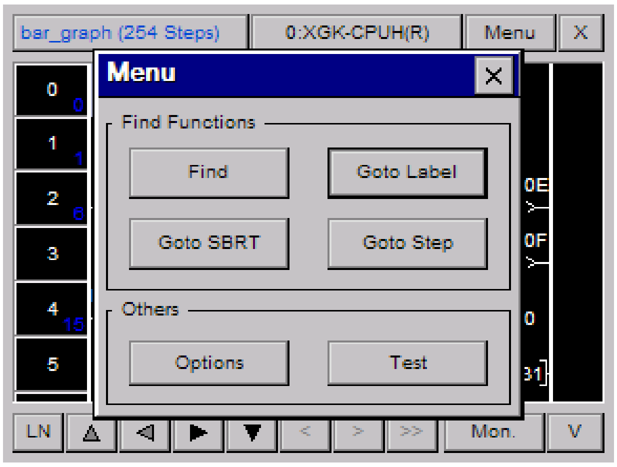

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
0
M00000
P00000[
Z000]
MOV 1 M0000
1
MOV 2 P0000[Z000]
2
MOV 3 #P0000
3
MOV 4 #P0000 [Z000]
4
13
M00000
M00000 [Z000]
MOV 1 M0000
LN
▲
◁
▶
▼
<
>
>>
End
P


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
40
128
M00000
MOV 1 ZR0000 0
41
MOV 2 ZR0000 0[Z000]
42
MOV 3 #ZR000 00
43
MOV 4 #ZR000 00[Z000 0]
44
139
END
LN
▲
◁
▶
▼
<
>
>>
End
P

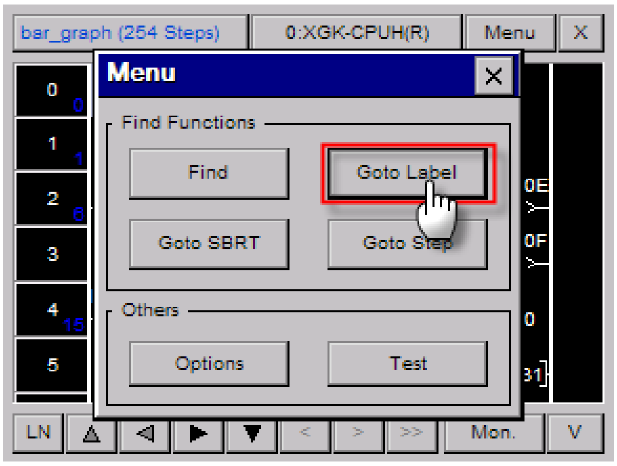
4.9.2 Label Reference

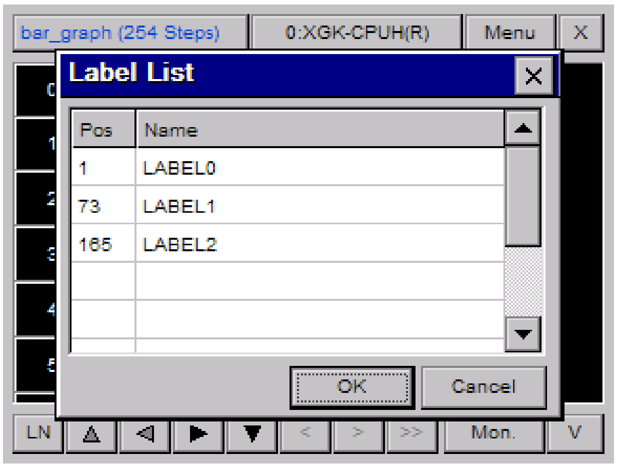
It can display the label list used for the program and move to intended position.

(1) Press [Menu] button at Program Monitor to display a menu.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V

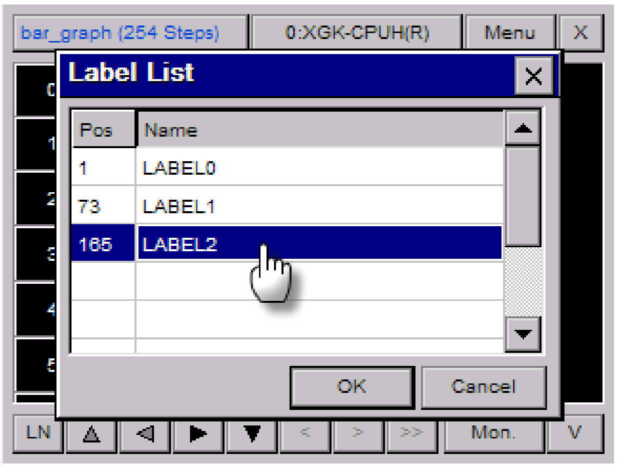
(2) Press [Label Reference] button to display the label list.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V

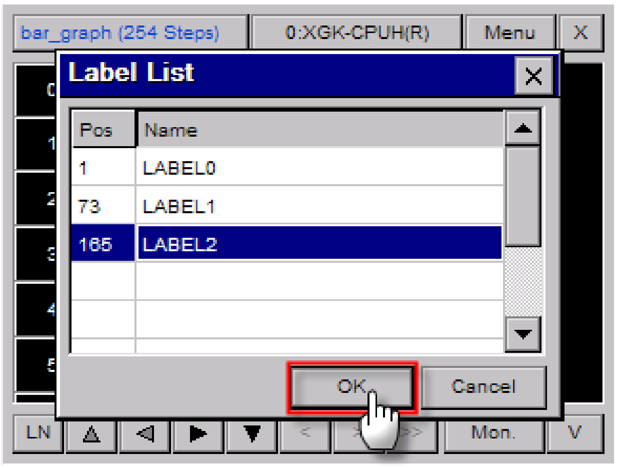

bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Label List
OK
Cancel
LN
Mon.
V

Pos	Name
1	LABEL0
73	LABEL1
165	LABEL2

(3) Select the label to be transferred and press [OK] button.

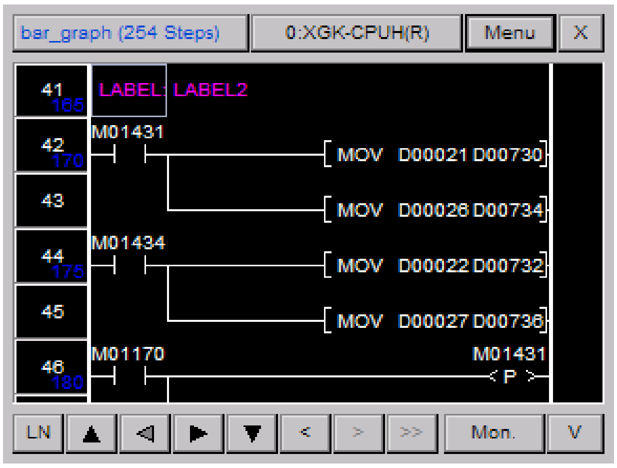

bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Label List
OK
Cancel
LN
<
>
>>
Mon.
V

Pos	Name
1	LABEL0
73	LABEL1
165	LABEL2


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Label List
OK
Cancel
LN
<
>>
Mon.
V

Pos	Name
1	LABEL0
73	LABEL1
165	LABEL2

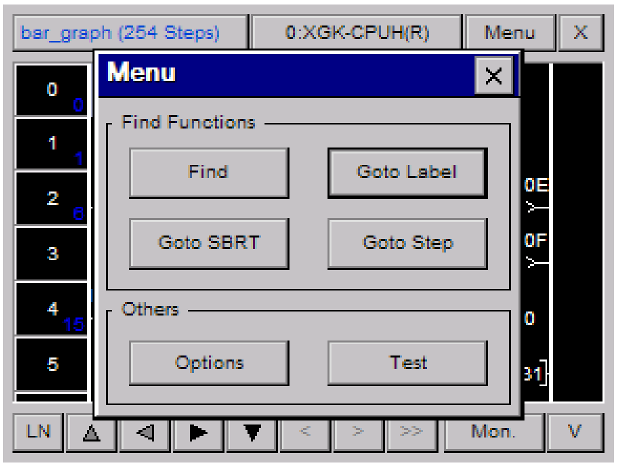
(4) It moves to the selected label position.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
41
165
LABEL: LABEL2
42
170
M01431
MOV D00021 D00730
43
MOV D00026 D00734
44
175
M01434
MOV D00022 D00732
45
MOV D00027 D00736
46
180
M01170
M01431
P
LN
<
>
>>
Mon.
V

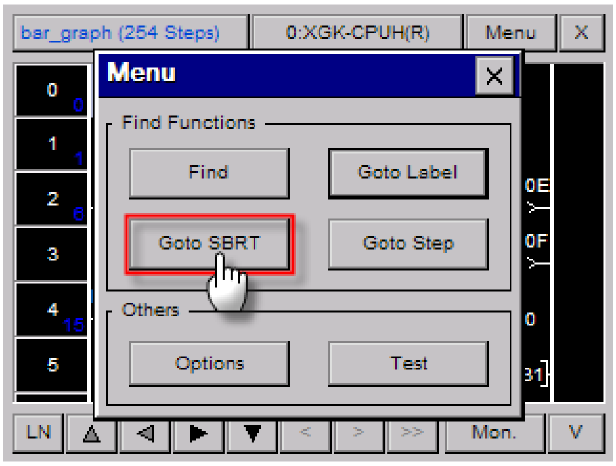
4.9.3 Sub-routine Reference

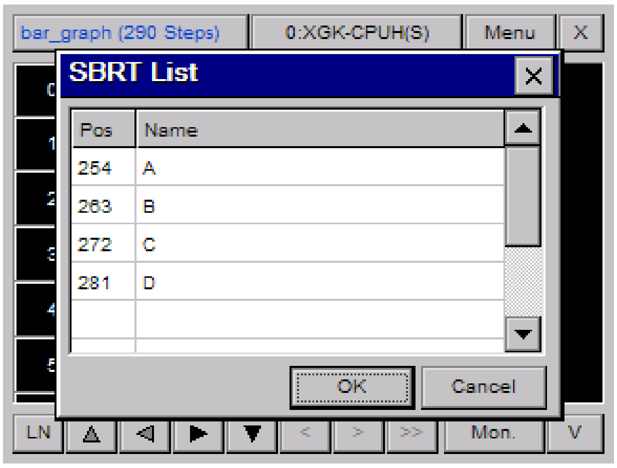
It can display sub-routine list used for the program and move it to intended position.

(1) Press [Menu] button at Program Monitor to display a menu.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V

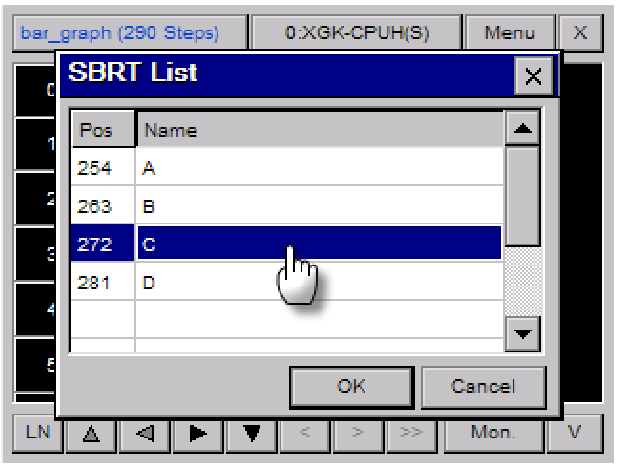
(2) Press [SBRT] button to display sub-routine list.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V

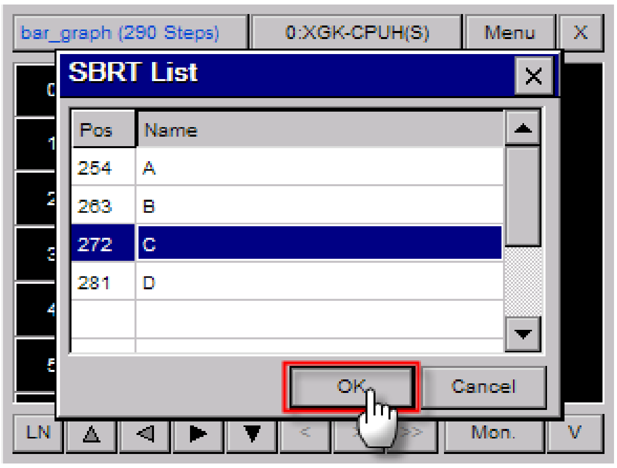

bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
SBRT List
OK
Cancel
LN
Mon.
V

Pos	Name
254	A
263	B
272	C
281	D

(3) Select the sub-routine to be transferred and press [OK] button.

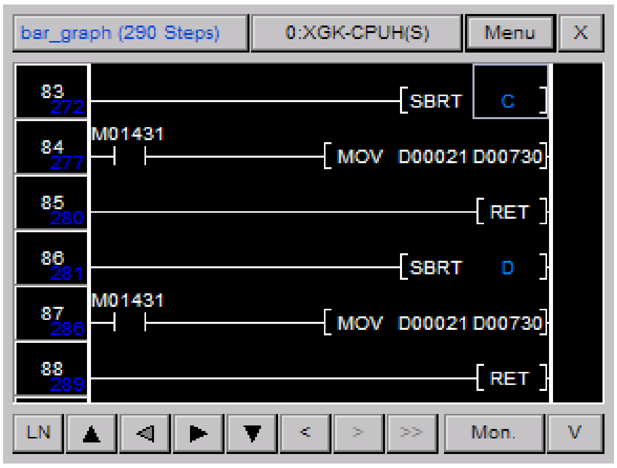

bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
SBRT List
OK
Cancel
LN
Mon.
V

Pos	Name
254	A
263	B
272	C
281	D


bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
SBRT List
OK
Cancel
LN
Mon.
V

Pos	Name
254	A
263	B
272	C
281	D

(4) It moves to the selected sub-routine position.

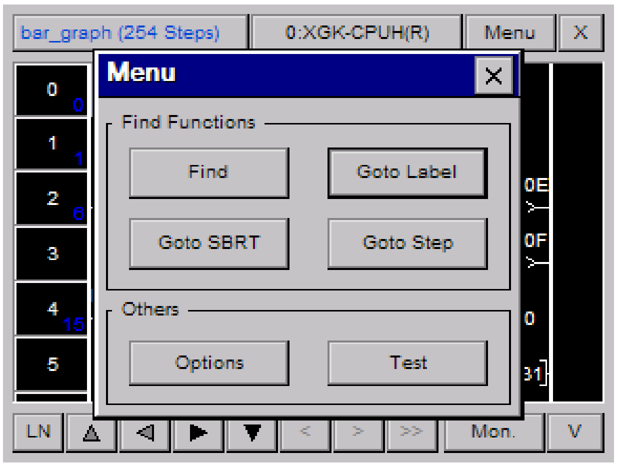

bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
LN
Mon.
V

```
83  272                         [SBRT   C ]
84  277  M01431  [MOV  D00021 D00730]
85  280                         [ RET ]
86  281                         [SBRT   D ]
87  286  M01431  [MOV  D00021 D00730]
88  289                         [ RET ]
```

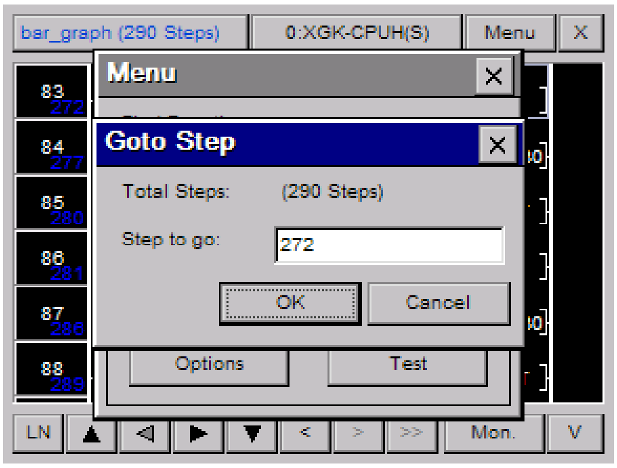
4.9.4 Step Reference

It moves to the appropriate position with the step. No. to be transferred.

(1) Press [Menu] button at Program Monitor to display a menu.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V

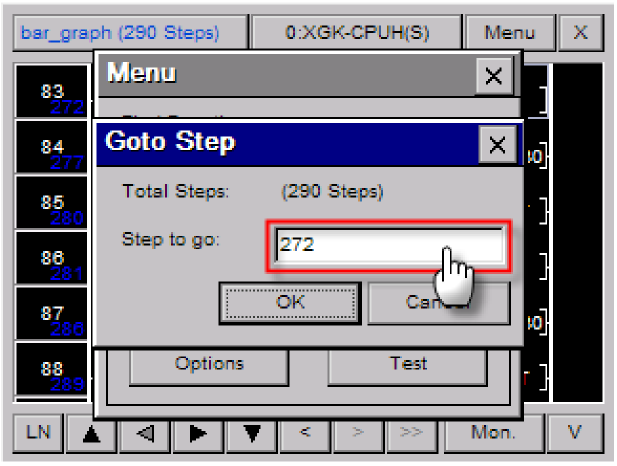
(2) Press [Step Movement] at menu dialog box to display step input dialog box.


bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
Menu
Goto Step
OK
Cancel
Options
Test
LN
Mon.
V

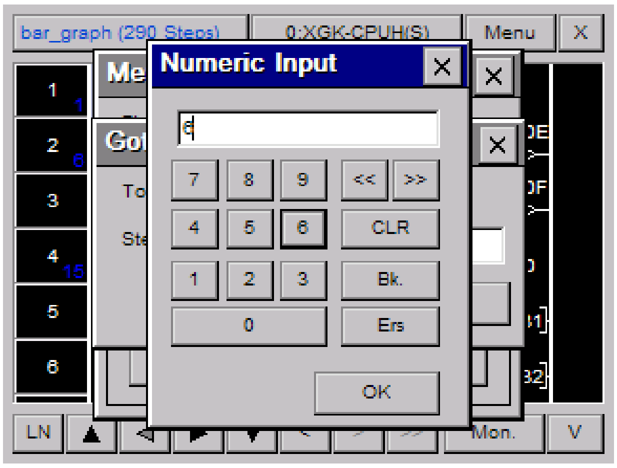
Total Steps: (290 Steps)

Step to go: 272

(3) After selecting your intended step edition box and input the step to be transferred, press [OK] button.

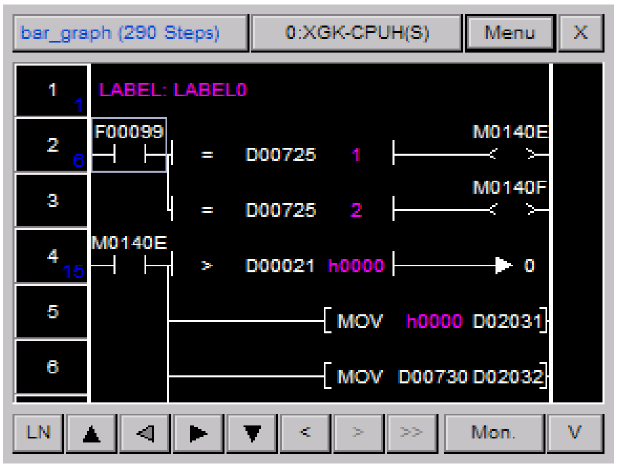

bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
Menu
Goto Step
OK
Cancel
Options
Test
LN
Mon.
V

Total Steps: (290 Steps)
Step to go: 272


bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
Numeric Input
7
8
9
<<
>>
4
5
6
CLR
1
2
3
Bk.
0
Ers
OK
LN
Mon.
V

6

(4) It moves to input step position.


bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
LABEL: LABEL0
F00099
=
D00725
1
M0140E
D00725
2
M0140F
M0140E
>
D00021
h0000
0
MOV
h0000
D02031
MOV
D00730
D02032
LN
Mon.
V

4.9.5 Touch Reference

You can easily move to the reference list of program with Touch Reference. Program Monitor provides three Touch References ; Label Touch Reference, Sub-routine Touch Reference, Device Touch Reference.

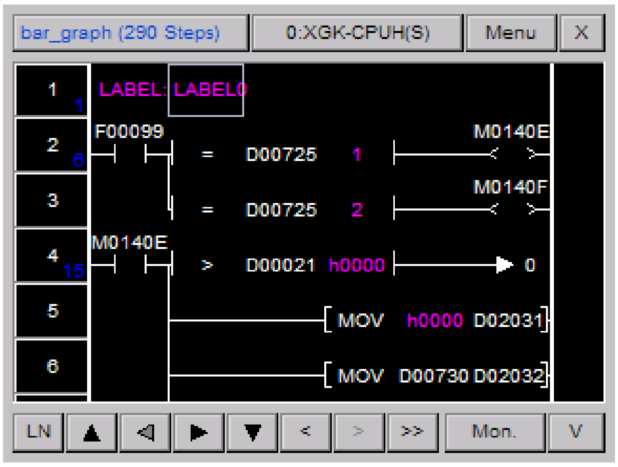
(1) Label Touch Reference

With used label, you can search for JMP command that refers to the label or move to the label referred by JMP command

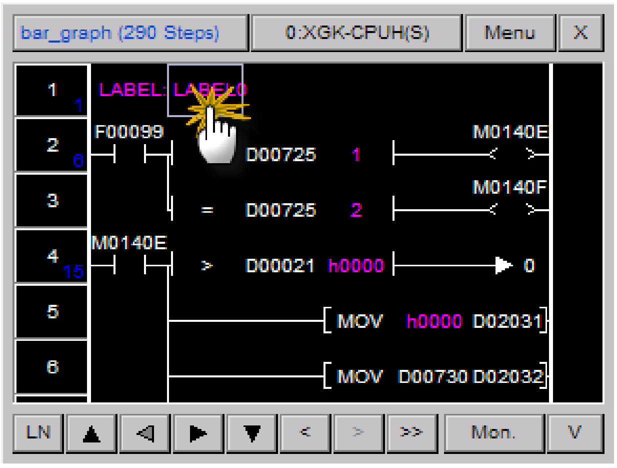
1) Searching for JMP command that refers to the label

It searches for JMP command that refers to the label. There may exist one JMP command or more for each label so the below reference functions are provided.

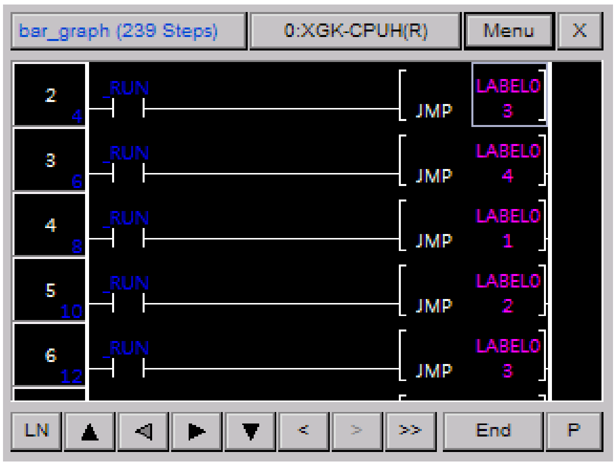
Select the label name to be referred.


bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
1
1
LABEL: LABEL0
2
6
F00099
=
D00725
1
M0140E
3
=
D00725
2
M0140F
4
15
M0140E
>
D00021
h0000
0
5
MOV
h0000
D02031
6
MOV
D00730
D02032
LN
▲
◁
▶
▼
<
>
>>
Mon.
V

Touch the label command for 1 second.


bar_graph (290 Steps)
0:XGK-CPUH(S)
Menu
X
1
1
LABEL: LABEL0
2
6
F00099
D00725
1
M0140E
3
=
D00725
2
M0140F
4
15
M0140E
>
D00021
h0000
0
5
MOV
h0000
D02031
6
MOV
D00730
D02032
LN
▲
◁
▶
▼
<
>
>>
Mon.
V

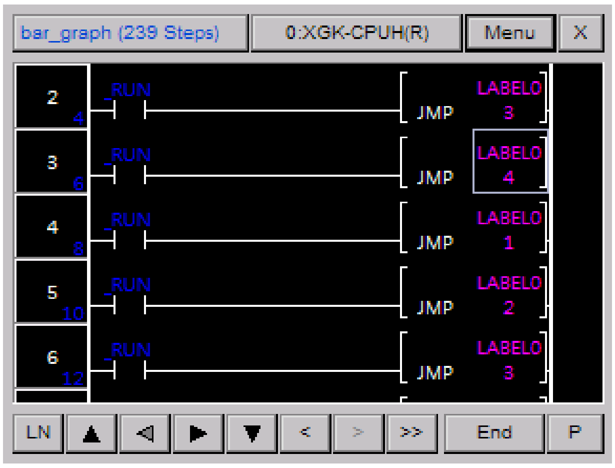
It moves to the related label.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
2
4
_RUN
JMP
LABEL0
3
3
6
_RUN
JMP
LABEL0
4
4
8
_RUN
JMP
LABEL0
1
5
10
_RUN
JMP
LABEL0
2
6
12
_RUN
JMP
LABEL0
3
LN
▲
◁
▶
▼
<
>
>>
End
P

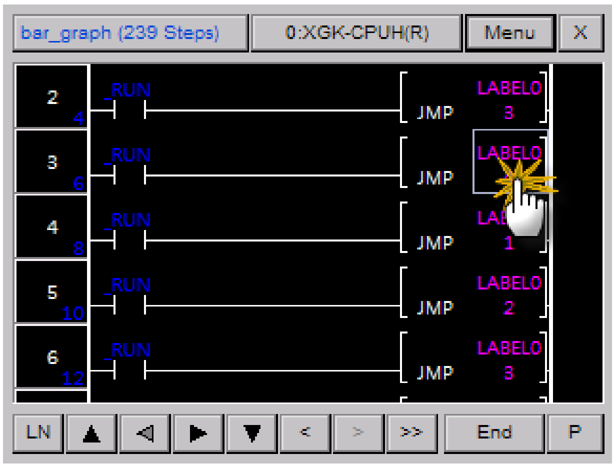
2) Searching the label referred by JMP command

It refers to the label used as JMP command's operand. There is the only one label in each program since the next reference does not run.

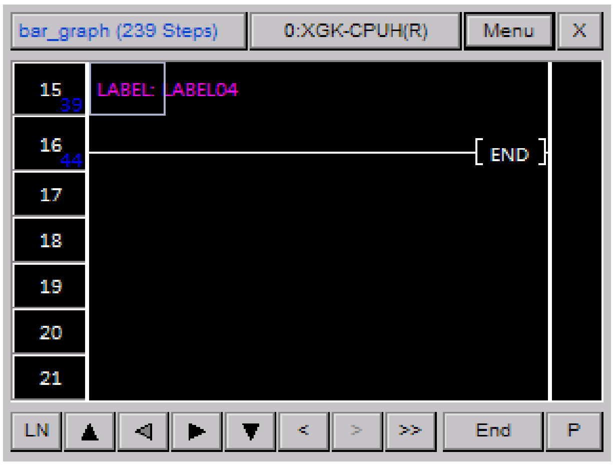
Select the JMP command to be referred.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
2
4
_RUN
JMP
LABEL0
3
3
6
_RUN
JMP
LABEL0
4
4
8
_RUN
JMP
LABEL0
1
5
10
_RUN
JMP
LABEL0
2
6
12
_RUN
JMP
LABEL0
3
LN
▲
◁
▶
▼
<
>
>>
End
P

Touch JMP command or operand for 1 second.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
2
4
_RUN
JMP
LABEL03
3
6
_RUN
JMP
LABEL0
4
8
_RUN
JMP
LA
1
5
10
_RUN
JMP
LABEL02
6
12
_RUN
JMP
LABEL03
LN
<
>
>>
End
P

It moves to the related label.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
15
39
LABEL: LABEL04
16
44
END
17
18
19
20
21
LN
<
>
>>
End
P

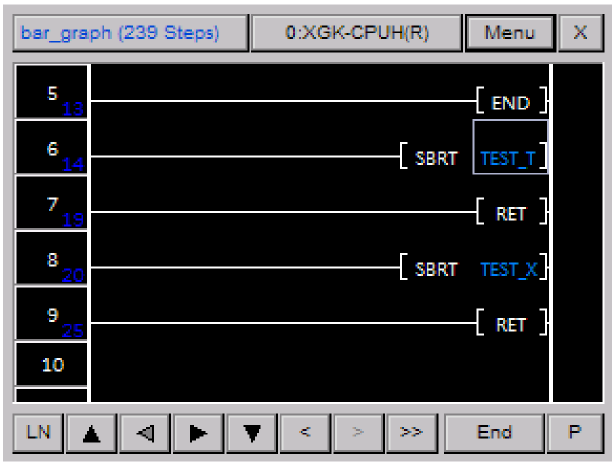
(2) Sun-routine Touch Reference

With used label, you can search for JMP command that refers to the label or move to the label referred by JMP command.

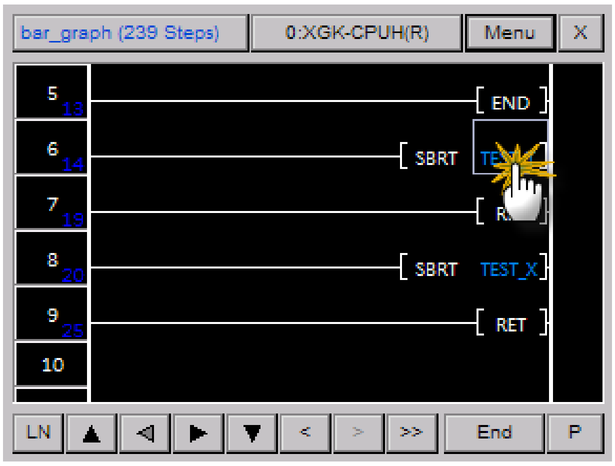
1) Searching for CALL or CALLP command that adopts sub-routine

From sub-routine, it searches for CALL or CALL command that refers to the related sub-routine. There may exist one CALL or CALL command or more for each sub-routine so the below reference functions are provided.

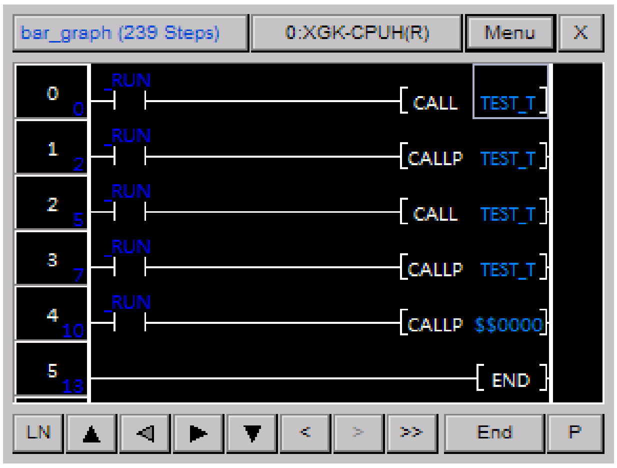
Select the sub-routine name to be referred.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
5 13
END
6 14
SBRT TEST_T
7 19
RET
8 20
SBRT TEST_X
9 25
RET
10
LN
End
P

Touch sub-routine or operand for 1 second.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
5 13
END
6 14
SBRT TE
7 19
R
8 20
SBRT TEST_X
9 25
RET
10
LN
End
P

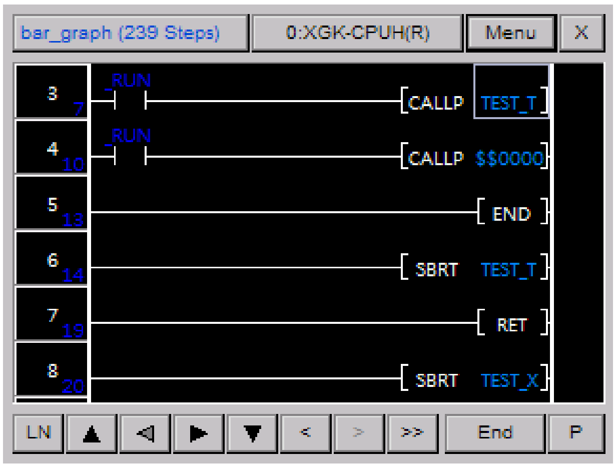
It moves to the related sub-routine.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0 0
_RUN
CALL TEST_T
1 2
_RUN
CALLP TEST_T
2 5
_RUN
CALL TEST_T
3 7
_RUN
CALLP TEST_T
4 10
_RUN
CALLP $$0000
5 13
END
LN
End
P

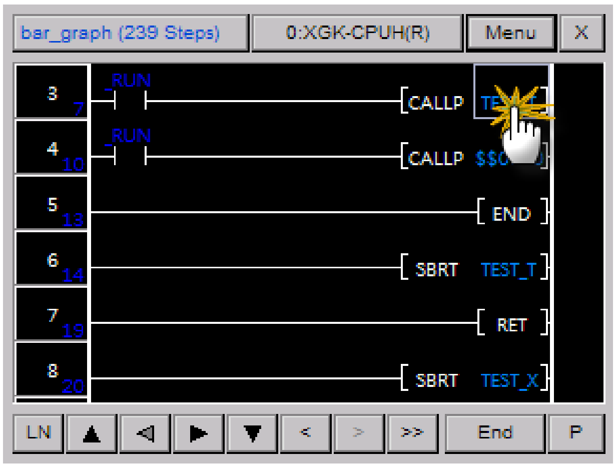
2) Searching for the sub-routine referred by CALL or CALLP command

It searches for the sub-routine used as the operand of CALL or CALL command. Contrary to label, sub-routine ranges within the whole PLC program so it may not be referred in the current program.

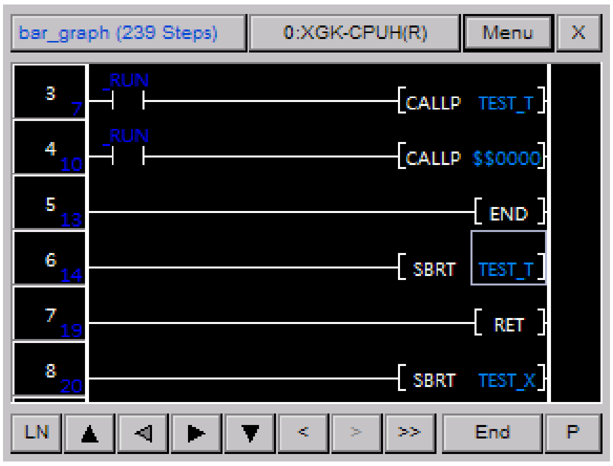
Select CALL or CALL command to be referred.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
3 7 _RUN CALLP TEST_T
4 10 _RUN CALLP $$0000
5 13 END
6 14 SBRT TEST_T
7 19 RET
8 20 SBRT TEST_X
LN
▲
◁
▶
▼
<
>
>>
End
P

Touch CALL or CALL command, operand for 1 second.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
3 7 _RUN CALLP TE
4 10 _RUN CALLP $$0
5 13 END
6 14 SBRT TEST_T
7 19 RET
8 20 SBRT TEST_X
LN
▲
◁
▶
▼
<
>
>>
End
P

It moves to the related sub-routine.

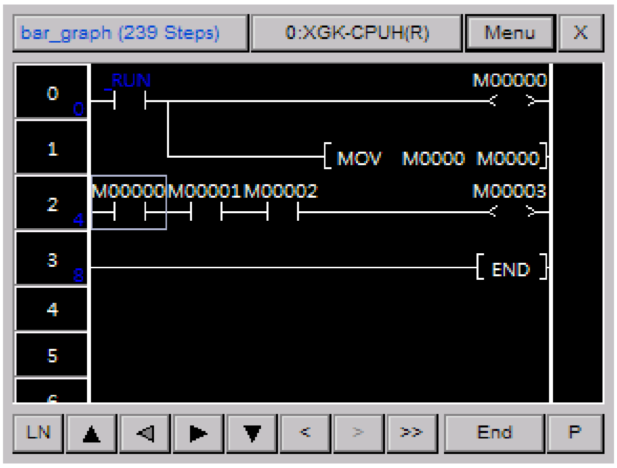

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
3 7 _RUN CALLP TEST_T
4 10 _RUN CALLP $$0000
5 13 END
6 14 SBRT TEST_T
7 19 RET
8 20 SBRT TEST_X
LN
<
>
>>
End
P

(3) Device Touch Reference

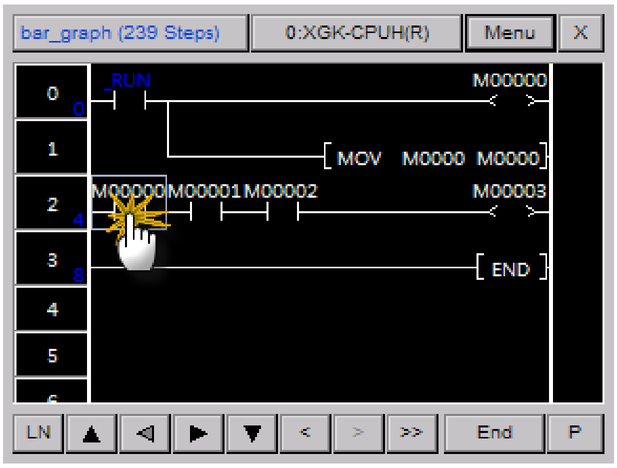
You can apply Device Touch Reference to check if the applied device is used for output or output device is used for input. With this function, you can easily check the cause of wrong device output or input.

1) With Input Device Reference-Input Device, you can search for the command that uses the related device for output.

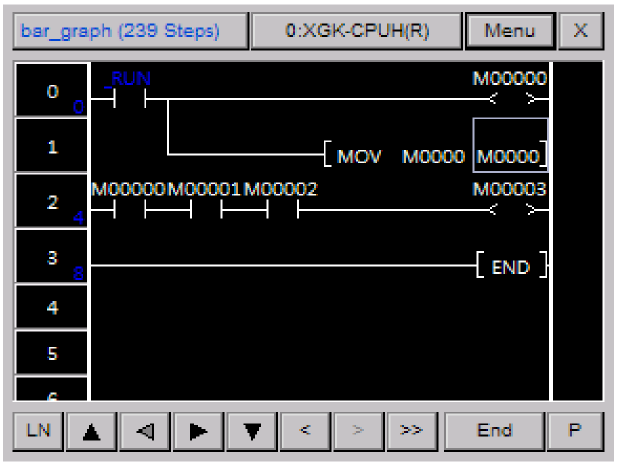
Select the input device to be checked.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0 0 _RUN M00000
1 MOV M0000 M0000
2 4 M00000 M00001 M00002 M00003
3 8 END
4
5
6
LN
<
>
>>
End
P

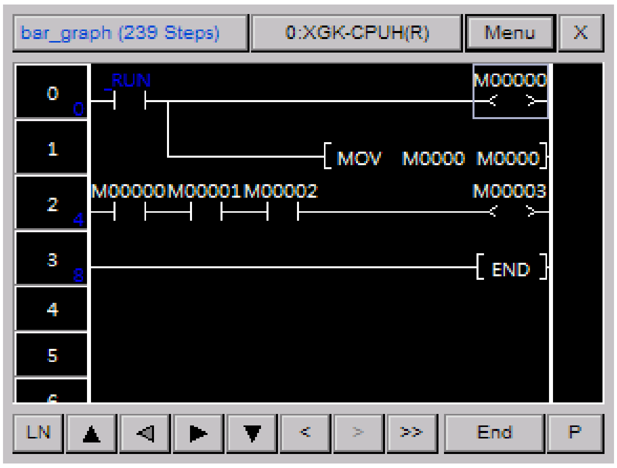
Touch the related device for 1 second.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0 0 _RUN M00000
1 MOV M0000 M0000
2 4 M00000 M00001 M00002 M00003
3 8 END
4
5
6
LN
<
>
>>
End
P

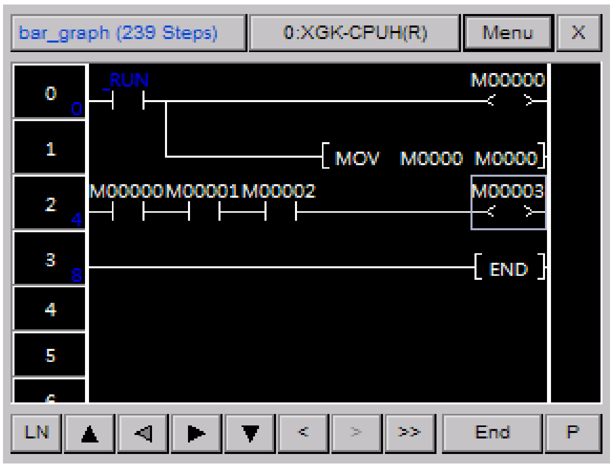
It moves to the closest output device to upper direction on the basis of the related device


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
<
>
>>
End
P

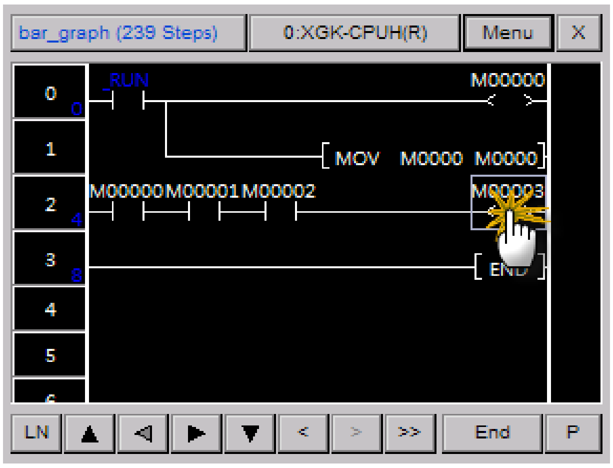
For next reference, if you press [>>] button, it will move to next output device.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
<
>
>>
End
P

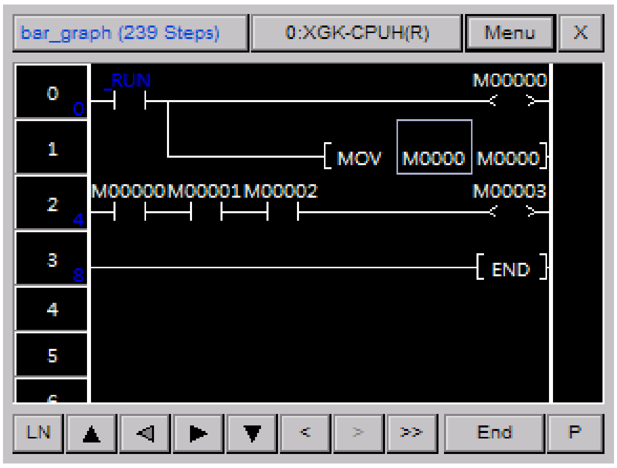
2). With Output Device Reference-Output Device, you can search for the command that uses the related device as input.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
<
>
>>
End
P

Touch the device for 1 second.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
<
>
>>
End
P

It moves to the closest input device to lower direction on the basis of the related device

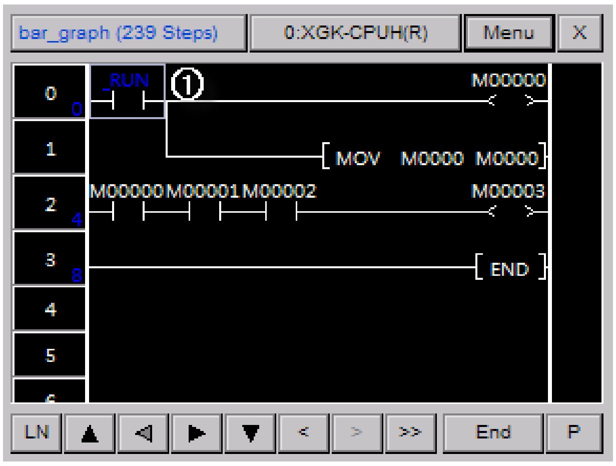

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
<
>
>>
End
P

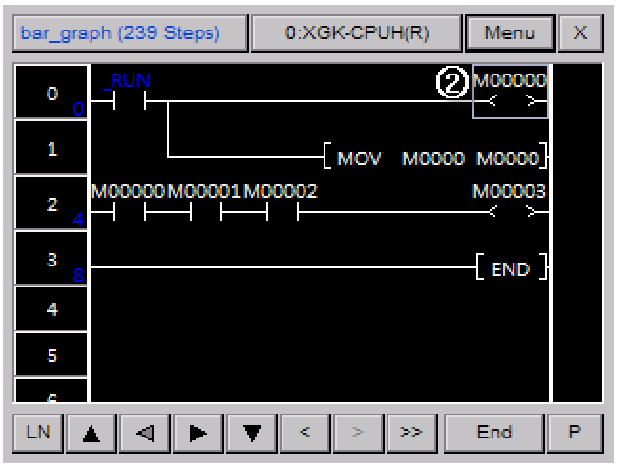
Notice

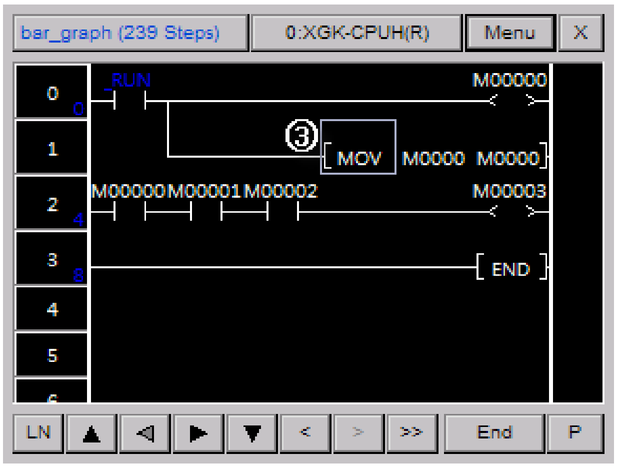
You can search for Device Touch Reference through inclusion reference with * data type.
For the data type of command, you can refer to PLC manual.

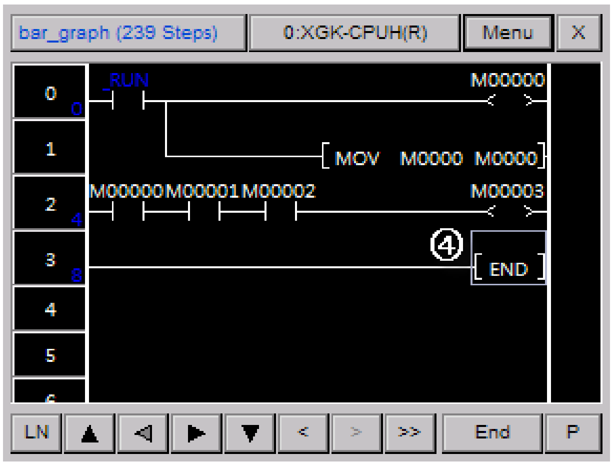
4.9.6 Checking Touch History

You can easily move to the previous touched position with the function Touch History
The below indicates the pictures touched by the order of ① → ② → ③ → ④ at Program Monitor.


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
0
4
8
_RUN
①
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
▲
◁
▶
▼
<
>
>>
End
P


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
0
4
8
_RUN
②
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
▲
◁
▶
▼
<
>
>>
End
P


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
0
4
8
_RUN
M00000
③
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
▲
◁
▶
▼
<
>
>>
End
P


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
④
END
LN
▲
◁
▶
▼
<
>
>>
End
P

(1) Checking the previous touch history

If you press [<] button at Program Monitor, cursor position changes into ④ → ③ → ② → ①.

(2) Checking the next touch history

If you press [>] button at Program Monitor, cursor position changes into ① → ② → ③ → ④.

Notice

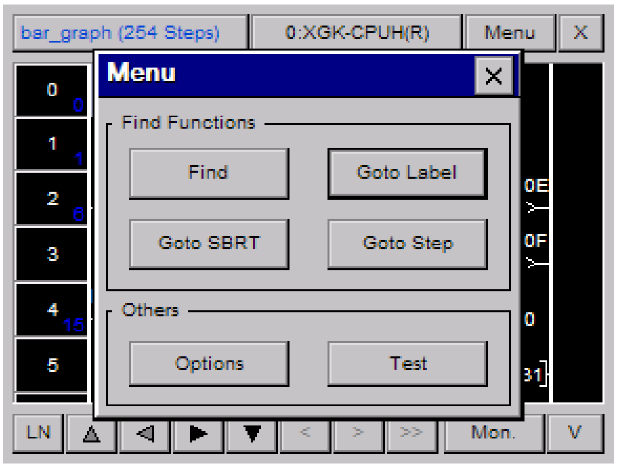
Among the previous touch histories, if you touch other place, the position after since changed one will be deleted. For example, under the status of being moved to ④ → ③ → ② with the previous touch history, if you touch other place, you can not move to ③, ④ positions.

4.10 Option Dialog Box

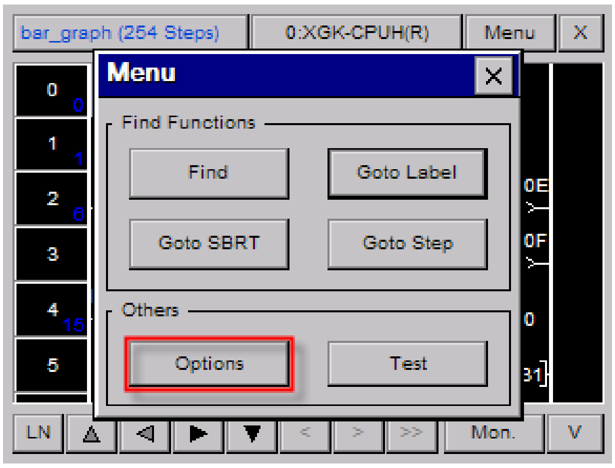
The description on option function of Program Monitor is provided in this chapter.

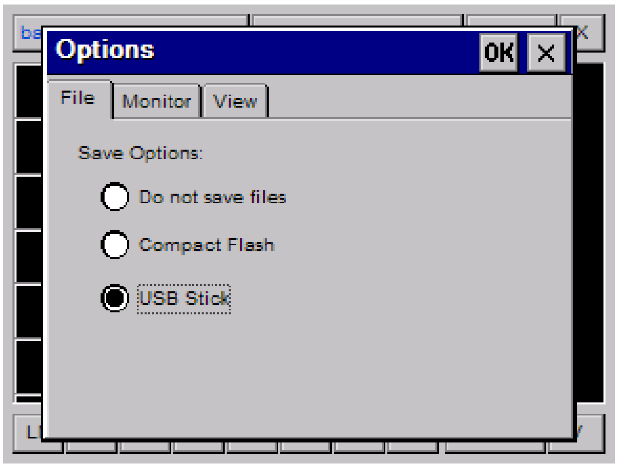
4.10.1 Displaying Option Dialog Box

Press [Menu] button of Program Monitor to display a menu dialog box.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V

Press [Option] button at menu dialog box to display option dialog box.


bar_graph (254 Steps)
0:XGK-CPUH(R)
Menu
X
Menu
Find Functions
Find
Goto Label
Goto SBRT
Goto Step
Others
Options
Test
LN
Mon.
V


Options
OK
File
Monitor
View

Save Options:

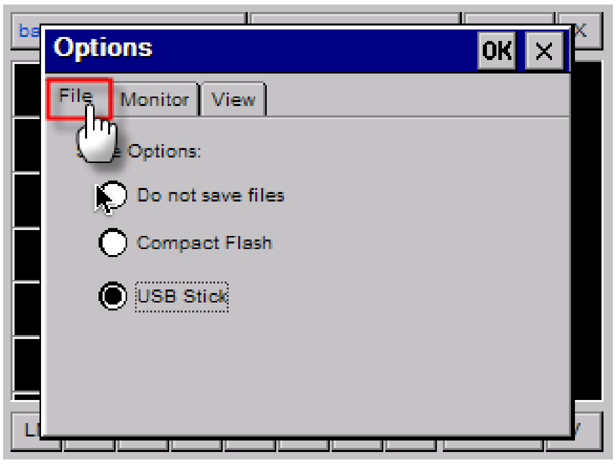
○ Do not save files

○ Compact Flash

● USB Stick

4.10.2 File Saving Option

You can open a program promptly by designating File Saving Option.
Select [File Saving] item at option dialog box.


Options
OK
File
Monitor
View

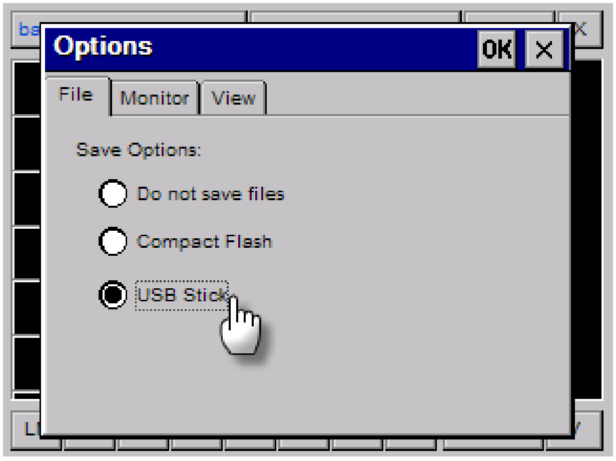
Options:

○ Do not save files

○ Compact Flash

● USB Stick

Select your intended position. If you do not want to save it as a file, select ‘Not saving file’ item.


Options
OK
File
Monitor
View

Save Options:

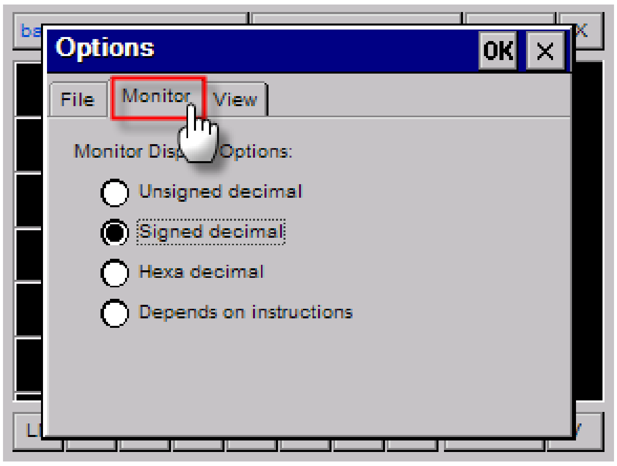
○ Do not save files

○ Compact Flash

● USB Stick

4.10.3 Monitor Display Option

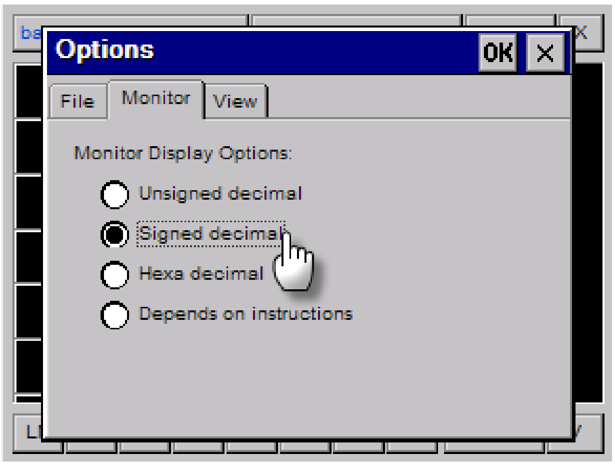
Through LD Program and Device Monitor screen, you can select the method on how to display monitor data. Select [Monitor]item at option dialog box.


Options
OK
File
Monitor
View

Monitor Display Options:

○ Unsigned decimal
● Signed decimal
○ Hexa decimal
○ Depends on instructions

Select item you want to display.

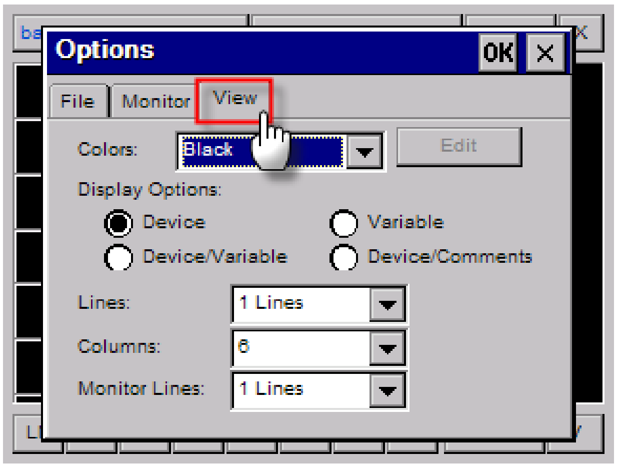

Options
OK
File
Monitor
View

Monitor Display Options:

○ Unsigned decimal
● Signed decimal
○ Hexa decimal
○ Depends on instructions

4.10.4 LD Option

You can change LD display option at Program Monitor. To change LD display option, select [View] item at option dialog box.


Options
OK
X
File
Monitor
View
Edit

Colors: Black

Display Options:

● Device ○ Variable

○ Device/Variable ○ Device/Comments

Lines: 1 Lines

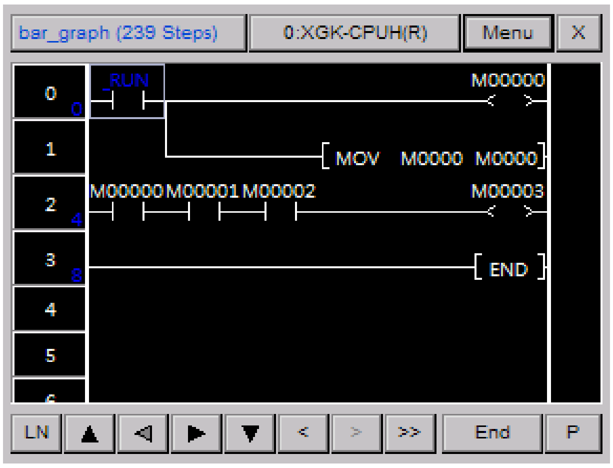
Columns: 6

Monitor Lines: 1 Lines

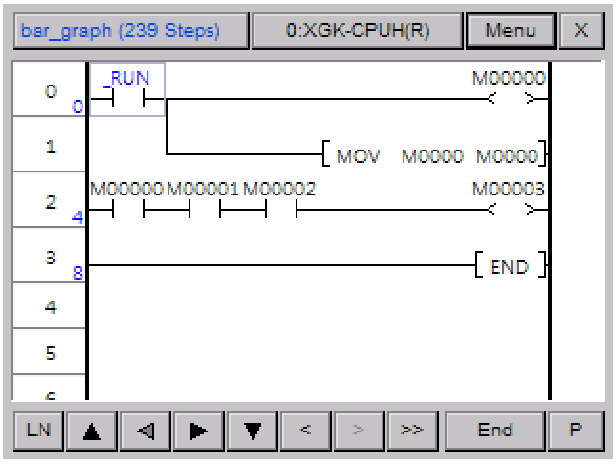
(1) LD Color Option

You can change the color of LD program at Program Monitor. Three colors are available now; black, Windows, User Defined

[Black]

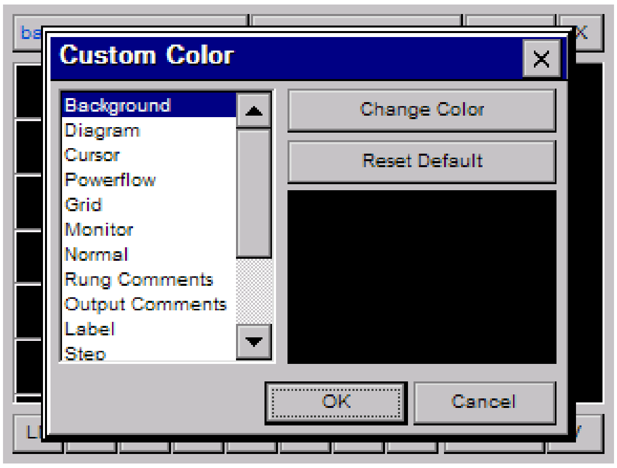

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
6
0
4
8
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
▲
◁
▶
▼
<
>
>>
End
P

[Windows]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
_RUN
M00000
MOV M0000 M0000
M00000 M00001 M00002
M00003
END
LN
<
>
>>
End
P

[User Defined]

The default color of User Defined is the same as black. To edit User Define color, you can press [Edition] button and define the color.


Custom Color
Background
Diagram
Cursor
Powerflow
Grid
Monitor
Normal
Rung Comments
Output Comments
Label
Step
Change Color
Reset Default
OK
Cancel

(2) Device Display Option

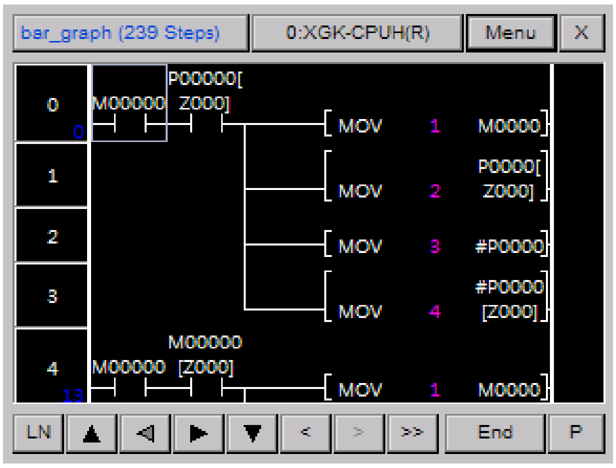
You can select the device display option.

Device Display Option	Description
Device	It displays device only.
Variable	It displays variable only. If there is no variable, device name is displayed.
Device/Variable	On the basis of contact, device is displayed at upper place and variable name at lower place.
Device /Description	On the basis of contact, device is displayed at upper place and comment at lower place.

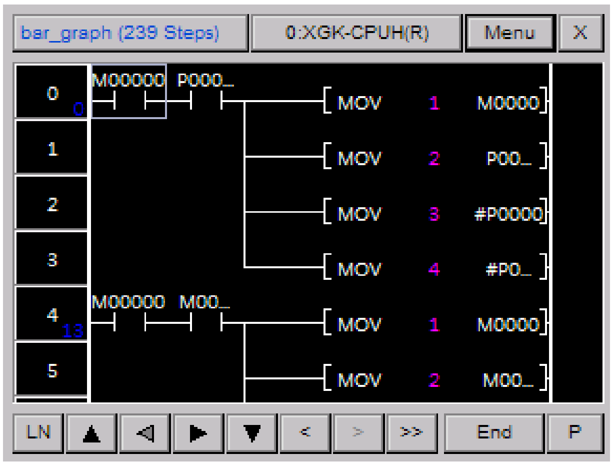
(3) Line Display Option

Through Line Display Option, you can fix the number of displayed lines device, variable, comment. If you apply Variable Line, all data is displayed but if you select Specific Line, the only appropriate line is displayed. If the actual number of lines is more than selected one, ellipsis(…) is displayed.

[Displaying Variable Line]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
0
M00000
P00000[
Z000]
MOV 1 M0000
1
MOV 2 P0000[
Z000]
2
MOV 3 #P0000
3
MOV 4 #P0000
[Z000]
4
13
M00000
M00000 [Z000]
MOV 1 M0000
LN
▲
◁
▶
▼
<
>
>>
End
P

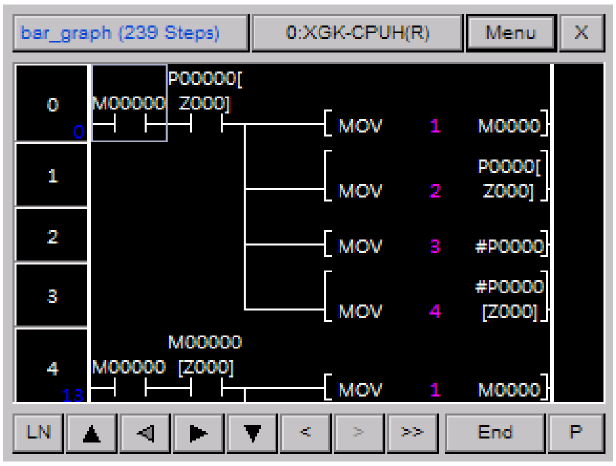
[Displaying 1 Line only]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
0
M00000 P000...
MOV 1 M0000
1
MOV 2 P00...
2
MOV 3 #P0000
3
MOV 4 #P0...
4
13
M00000 M00...
MOV 1 M0000
5
MOV 2 M00...
LN
▲
◁
▶
▼
<
>
>>
End
P

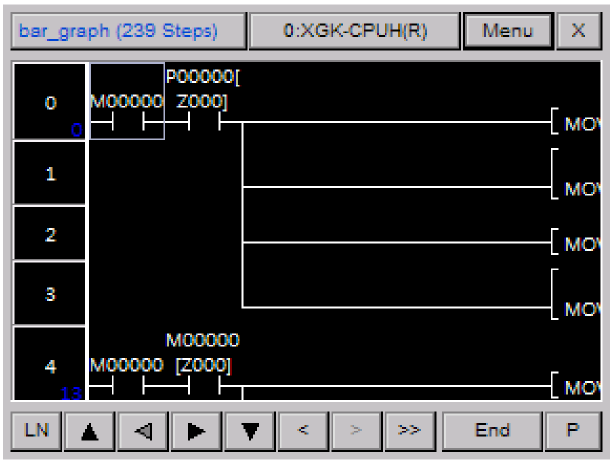
(4) Column Display Option

Through Column Display Option, you can adjust the number of contacts displayed at a screen. The min. number of columns. is the number of columns that can display all items except comment.

[Displaying the minimum column]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
M00000
P00000[
Z000]
MOV 1 M0000
MOV 2 P0000[Z000]
MOV 3 #P0000
MOV 4 #P0000 [Z000]
M00000
M00000 [Z000]
MOV 1 M0000
LN
▲
◁
▶
▼
<
>
>>
End
P

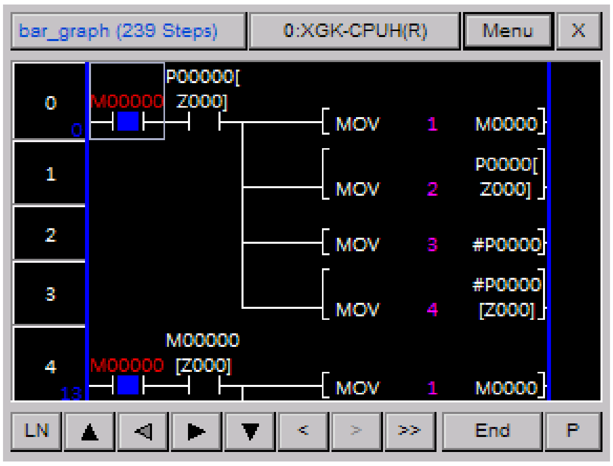
[Displaying 9 column]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
M00000
P00000[
Z000]
MO
MO
MO
MO
M00000
M00000 [Z000]
MO
LN
▲
◁
▶
▼
<
>
>>
End
P

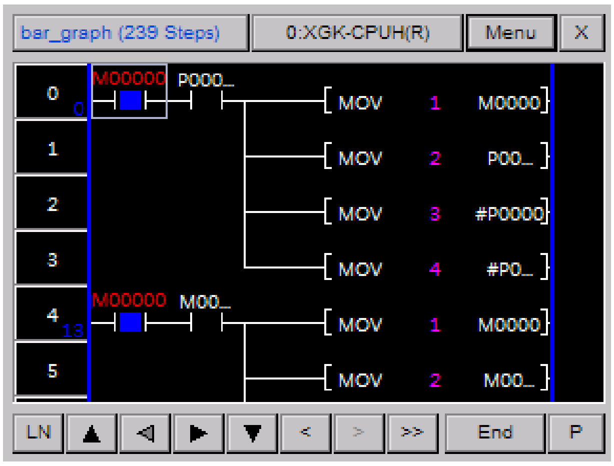
(5) Monitor Line Option

With this function, you can select the Monitor Display Line of applicable command. It works similar to (3)Line Display Option and if you select 0 line, the current monitored value of applicable command is not displayed. The function is useful to monitor ON/OFF of contacts only.

[Displaying Monitor 0 line]


bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
0
13
M00000
P00000[
Z000]
MOV 1 M0000
MOV 2 P0000[Z000]
MOV 3 #P0000
MOV 4 #P0000 [Z000]
M00000
M00000 [Z000]
MOV 1 M0000
LN
▲
◁
▶
▼
<
>
>>
End
P

[Displaying Monitor 1 line]

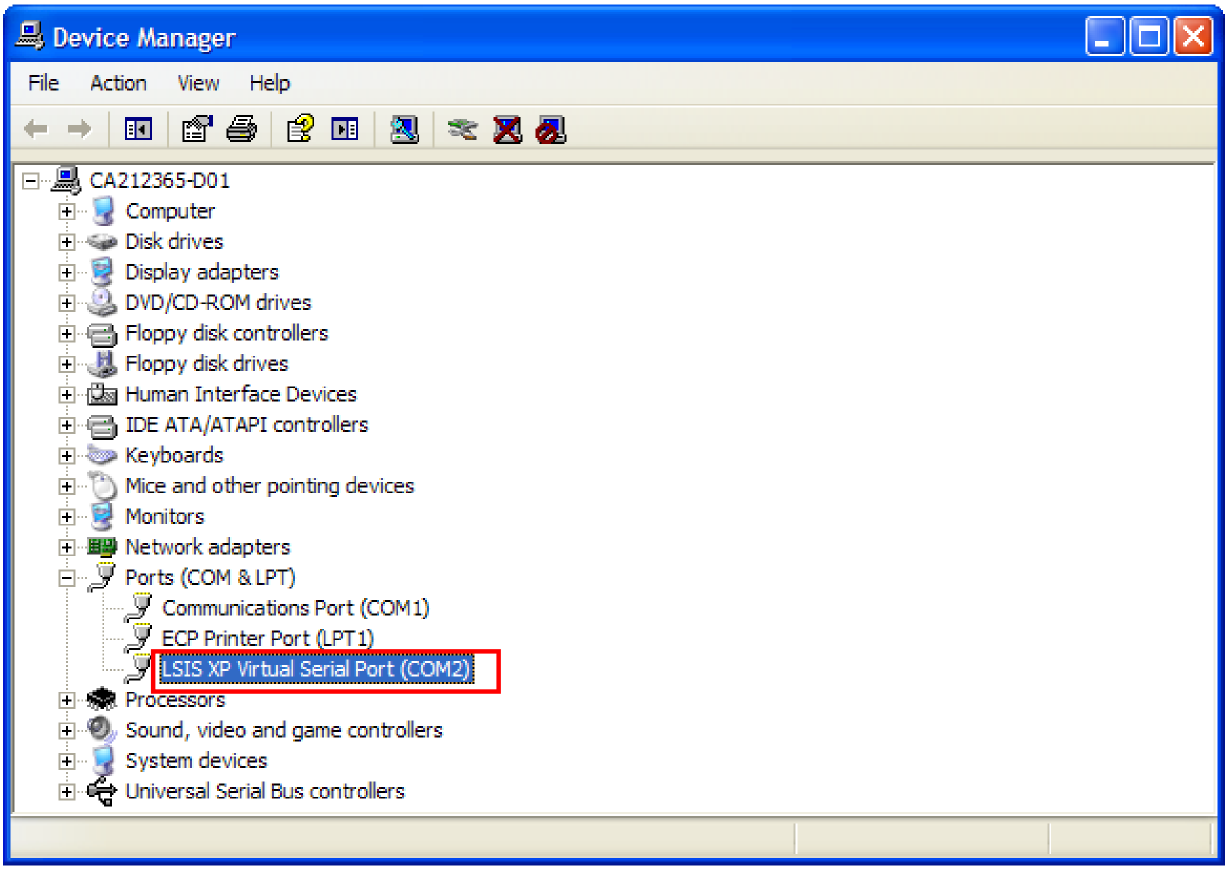

bar_graph (239 Steps)
0:XGK-CPUH(R)
Menu
X
0
1
2
3
4
5
0
13
M00000 P000...
MOV 1 M0000
MOV 2 P00...
MOV 3 #P0000
MOV 4 #P0...
M00000 M00...
MOV 1 M0000
MOV 2 M00...
LN
▲
◁
▶
▼
<
>
>>
End
P

Appendix 5. XP-VSP

5.1 Characteristics of XP-VSP

XP-VSP is the software that makes data communication possible between latter software of remote PC and PLC connected XGP Panel. It has the below characteristics and advantages.

1) You can use Virtual Serial Port.
(1) After registering Virtual Serial Port to PC Device Manager, you can use it.

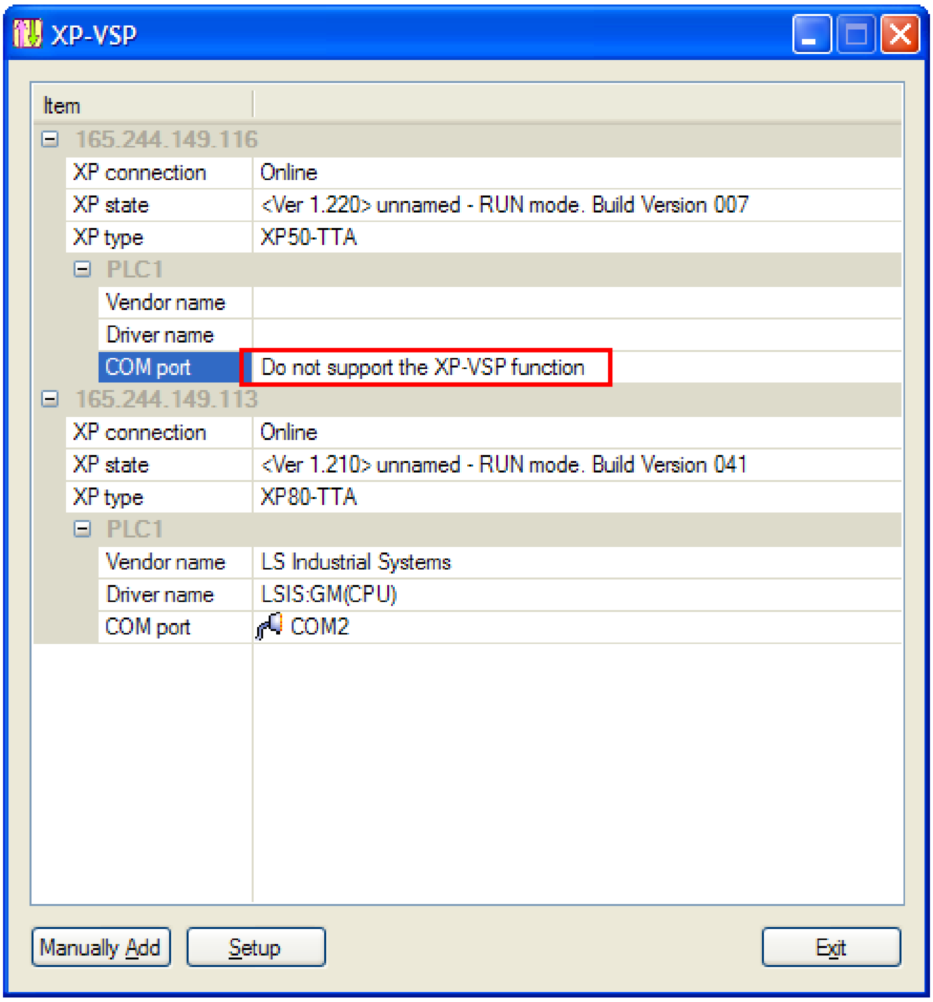

Device Manager
File
Action
View
Help
CA212365-D01
Computer
Disk drives
Display adapters
DVD/CD-ROM drives
Floppy disk controllers
Floppy disk drives
Human Interface Devices
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Ports (COM & LPT)
Communications Port (COM1)
ECP Printer Port (LPT1)
LSIS XP Virtual Serial Port (COM2)
Processors
Sound, video and game controllers
System devices
Universal Serial Bus controllers

2) You can realize remote communication with TCP/IP technology.
(1) XGT Panel and ladder software of PC communicate through TCP/IP.

3) You can use various COM Ports at the same time.
(1) You can use difference COM Ports at a time.

4) You can use the downloaded user drawing file without change.
(1) It does not need separate establishment of XGT Panel.

5) You can immediately check the available driver.
(1)XP-VSP does not support every PLC driver. You can directly check the available driver for XGT Panel in network.



Item	
⊟ 165.244.149.116	
XP connection	Online
XP state	<Ver 1.220> unnamed - RUN mode. Build Version 007
XP type	XP50-TTA
⊟ PLC1	
Vendor name	
Driver name	
COM port	Do not support the XP-VSP function
⊟ 165.244.149.113	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
⊟ PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:GM(CPU)
COM port	COM2

5.2 System Requirement to execute XP-VSP

1) Personal computer and memory
The computer that has Pentium 4 CPU or more with 512MB memory is required.

2) Communication Port
Ethernet port is required.

3) Hard disk
At least 1GB should be available.

4) Mouse
You need also a mouse to be connected to a computer.

5) Monitor
The resolution should be more than 1024 X 768.

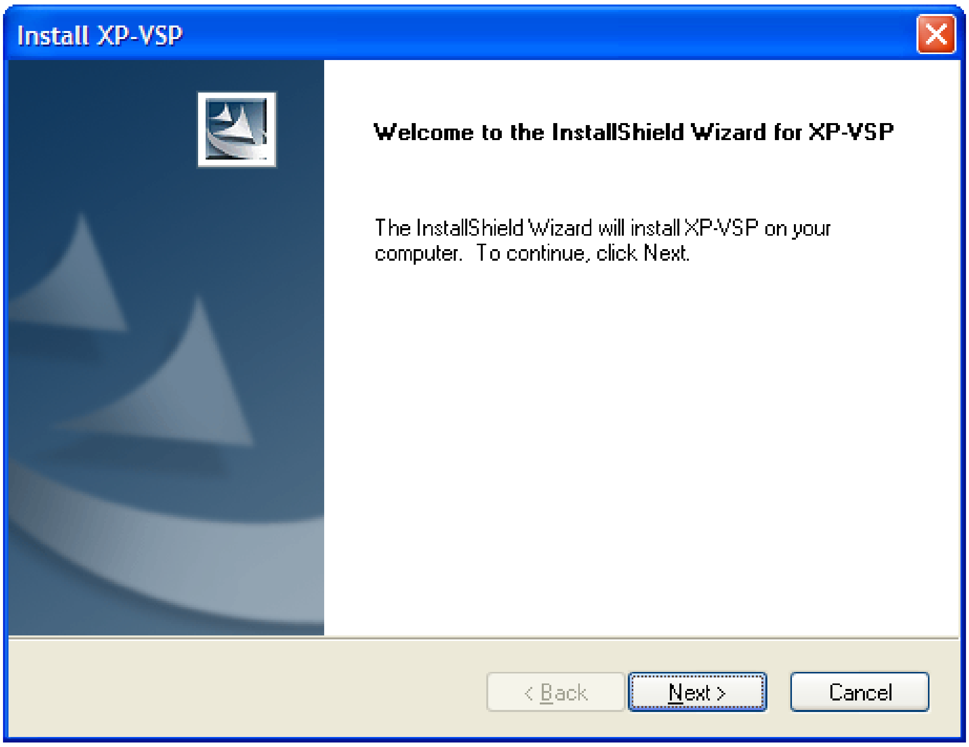
6) Computer Operating System
It can be executed in Windows 2000/XP.

5.3 XP-VSP Installation

[Installation Procedures]
1) Execute the installation file.

2) Installation processes are prepared by Installation Wizard.

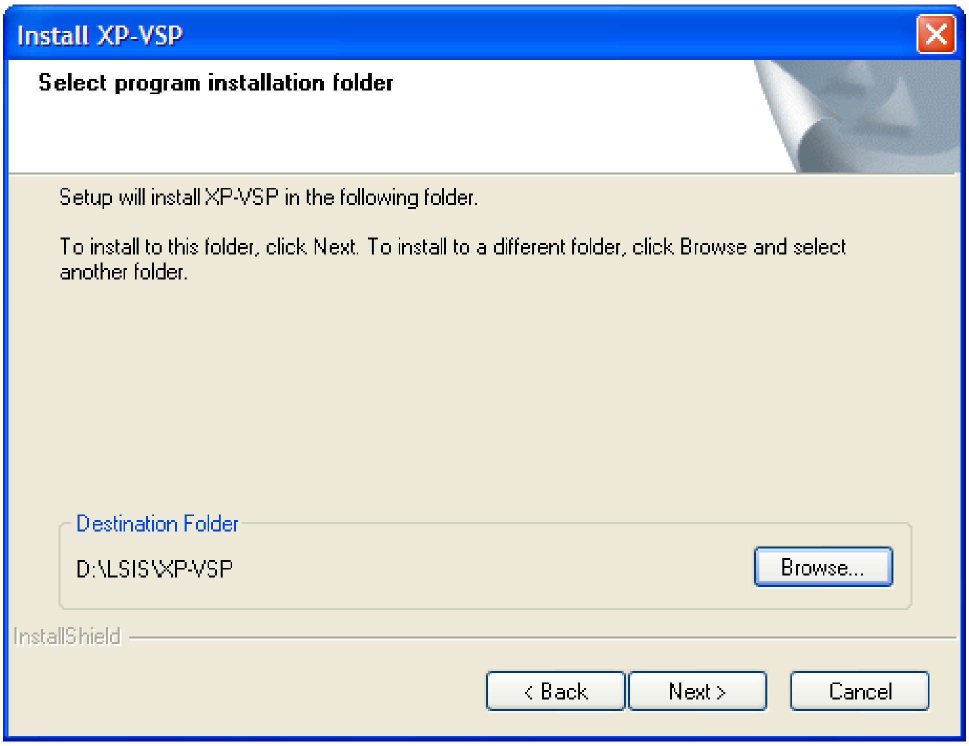
3) Then, Start XP-VSP installation is displayed as below. To continue installation, press [Next] button.



Welcome to the InstallShield Wizard for XP-VSP

The InstallShield Wizard will install XP-VSP on your computer. To continue, click Next.

4) You need to designate the position of the folder where XP-VSP will be installed. XP-VSP requires approximately 10MB for installation so make sure to check if there is enough space in the folder. In case that installation space is not enough, next procedure is not available with warning message. After selecting the folder, press [Next] button.


Install XP-VSP

Select program installation folder

Setup will install XP-VSP in the following folder.

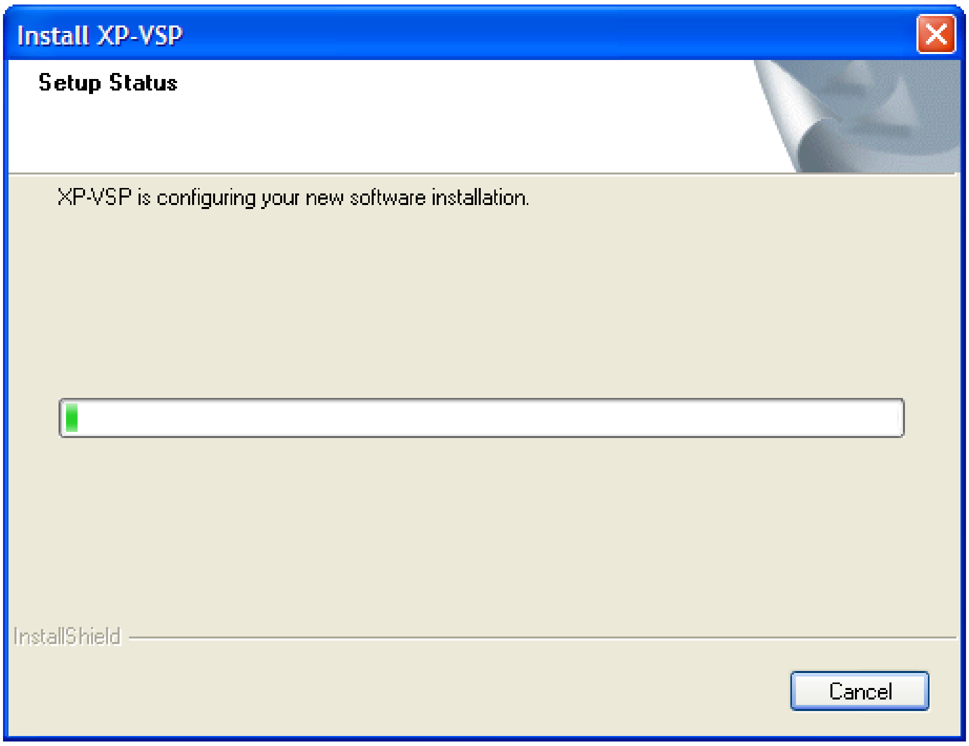
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.

Destination Folder

D:\LSIS\XP-VSP

Browse...
InstallShield
< Back
Next >
Cancel

5) It displays the progress of installation.

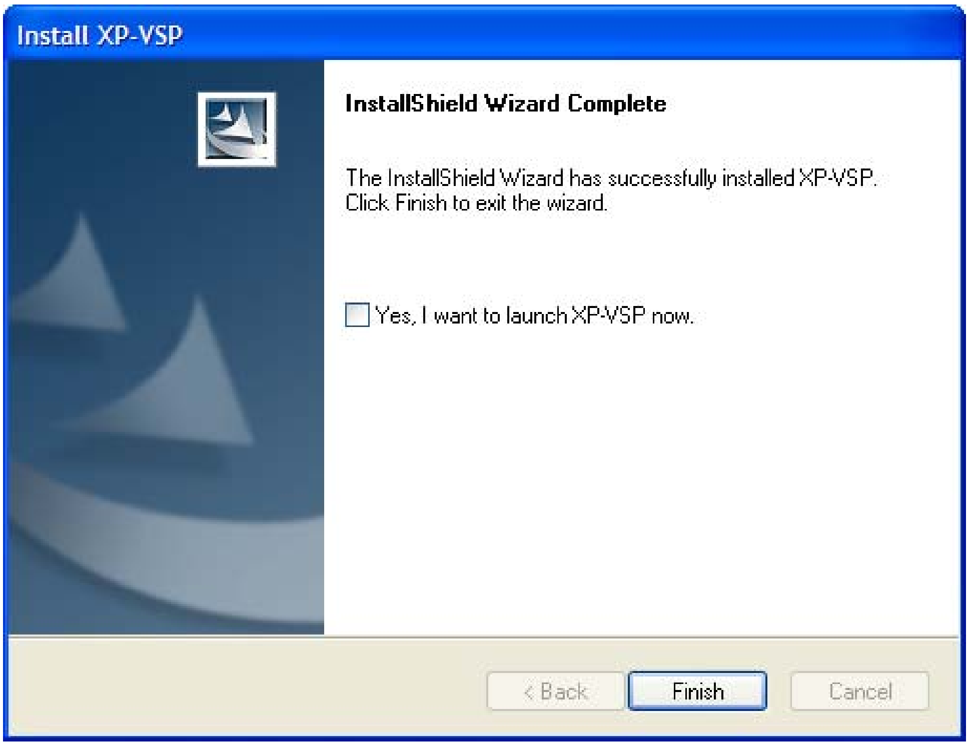

Install XP-VSP

Setup Status

XP-VSP is configuring your new software installation.

InstallShield
Cancel

6) The below screen indicated that installation is finished normally.



Install XP-VSP

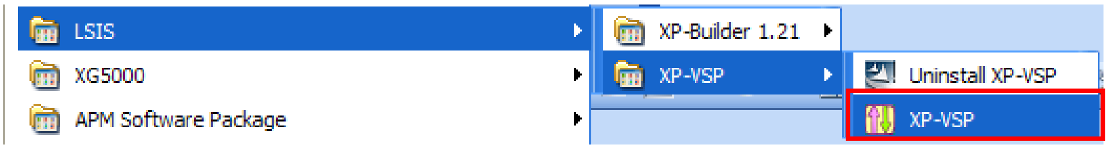
InstallShield Wizard Complete

The InstallShield Wizard has successfully installed XP-VSP. Click Finish to exit the wizard.

☐ Yes, I want to launch XP-VSP now.

< Back
Finish
Cancel

7) You can start XP-VSP directly or execute XP-VSP at [Start] menu or execute Shortcut of a home screen.

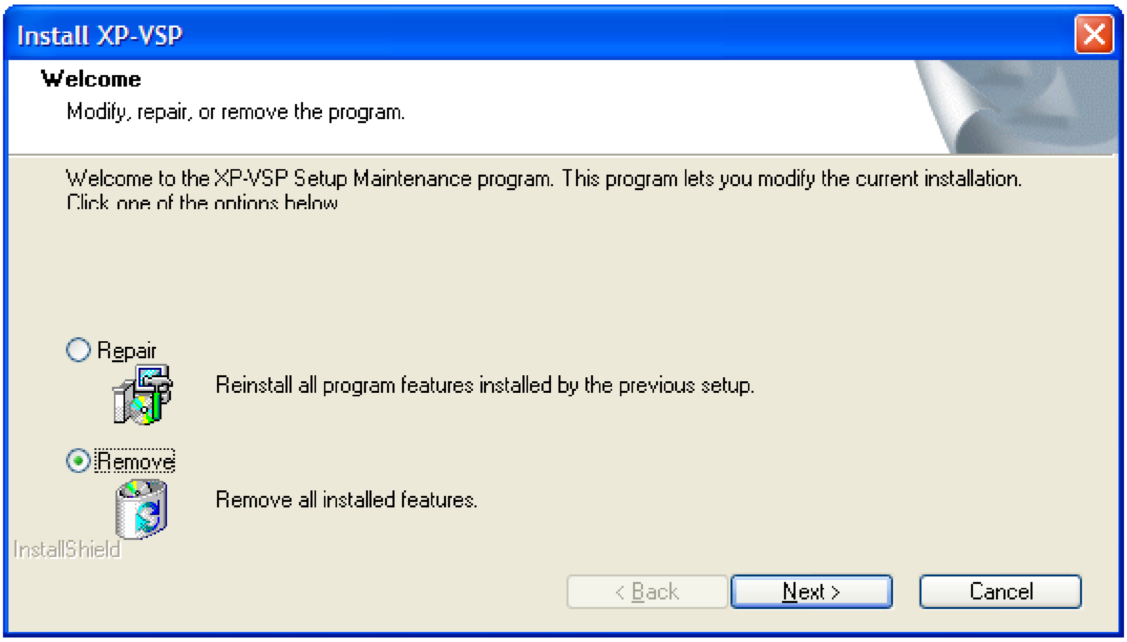


LSIS
XG5000
APM Software Package
XP-Builder 1.21
XP-VSP
Uninstall XP-VSP
XP-VSP

[Delete Procedures]

1) To delete XP-VSP, you can select [XP-VSP Delete] of [Start] menu or apply [Add and Remove Programs] of control board.

2) Select 'Delete'.



Welcome

Modify, repair, or remove the program.

Welcome to the XP-VSP Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.

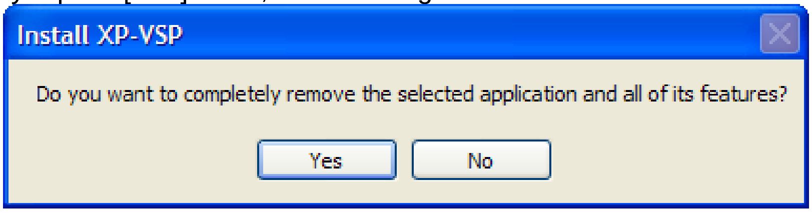
○ Repair

Reinstall all program features installed by the previous setup.

● Remove

Remove all installed features.

3) If you press [Next] button, check message is show as below.

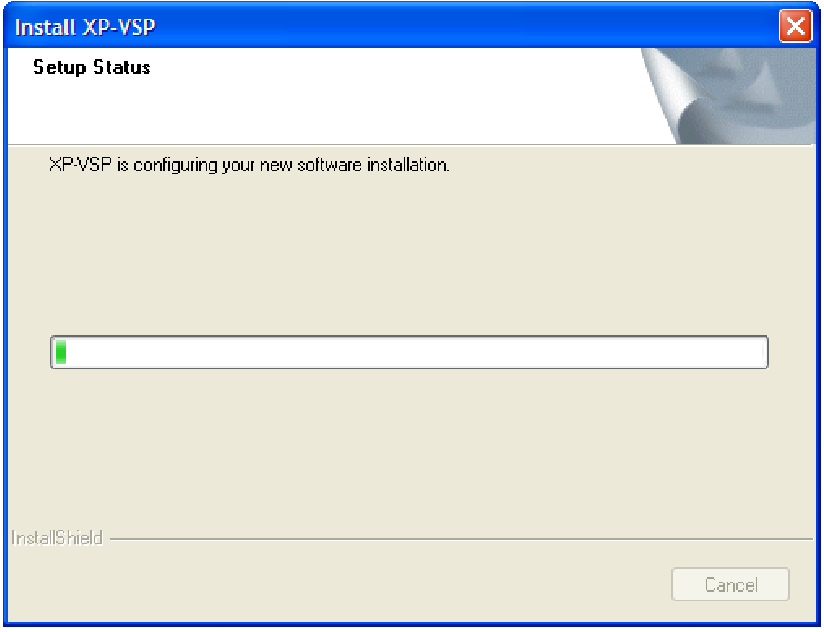


Install XP-VSP

Do you want to completely remove the selected application and all of its features?

Yes
No

4) If you select [Yes], deletion process will start.



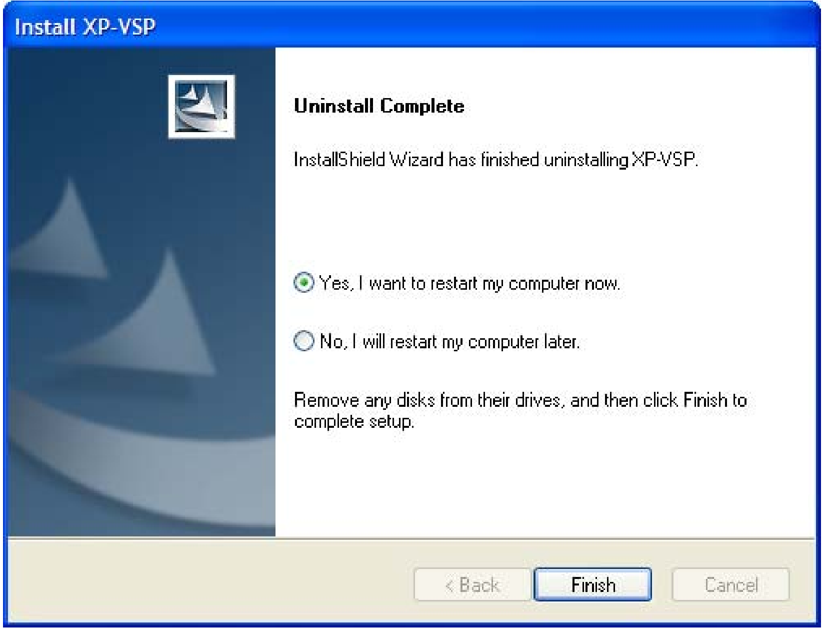
Install XP-VSP

Setup Status

XP-VSP is configuring your new software installation.

InstallShield
Cancel

5) If the program is deleted normally, the below dialog box is show.



Install XP-VSP

Uninstall Complete

InstallShield Wizard has finished uninstalling XP-VSP.

● Yes, I want to restart my computer now.

○ No, I will restart my computer later.

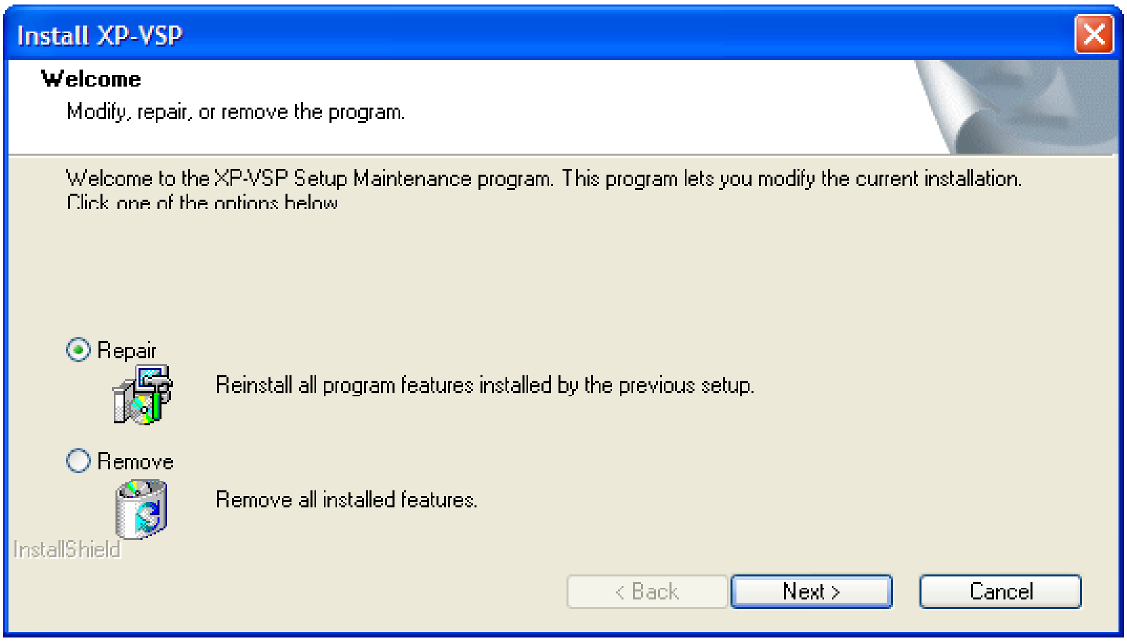
Remove any disks from their drives, and then click Finish to complete setup.

< Back
Finish
Cancel

6) Select “I want to reset my computer now”.   Rebutting a computer is recommended.

[Program Update Procedures]

1) When you execute XP-VSP installation file and XP-VSP has already been installed, you can see the below dialog box.



Install XP-VSP

Welcome

Modify, repair, or remove the program.

Welcome to the XP-VSP Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.

● Repair

Reinstall all program features installed by the previous setup.

○ Remove

Remove all installed features.

2) If you press [Next] button after selecting [Reinstallation], new version of XP-VSP will be updated. The further process is same as Program Installation.

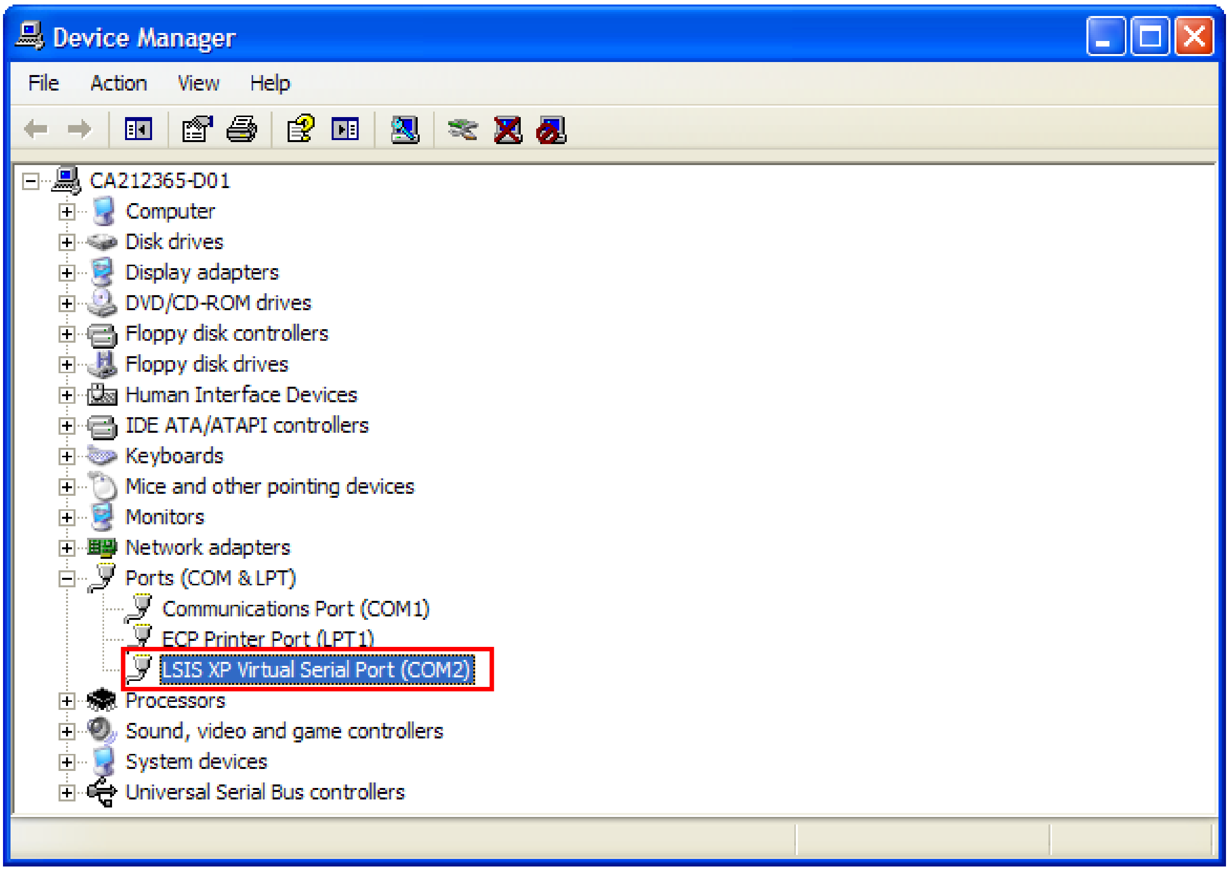
5.4 XP-VSP Outline

5.4.1 XP-VSP

Through TCP/IP and Virtual Serial Port technologies, the software can realize communication between PLC connected to XGT Panel and computer ladder software.

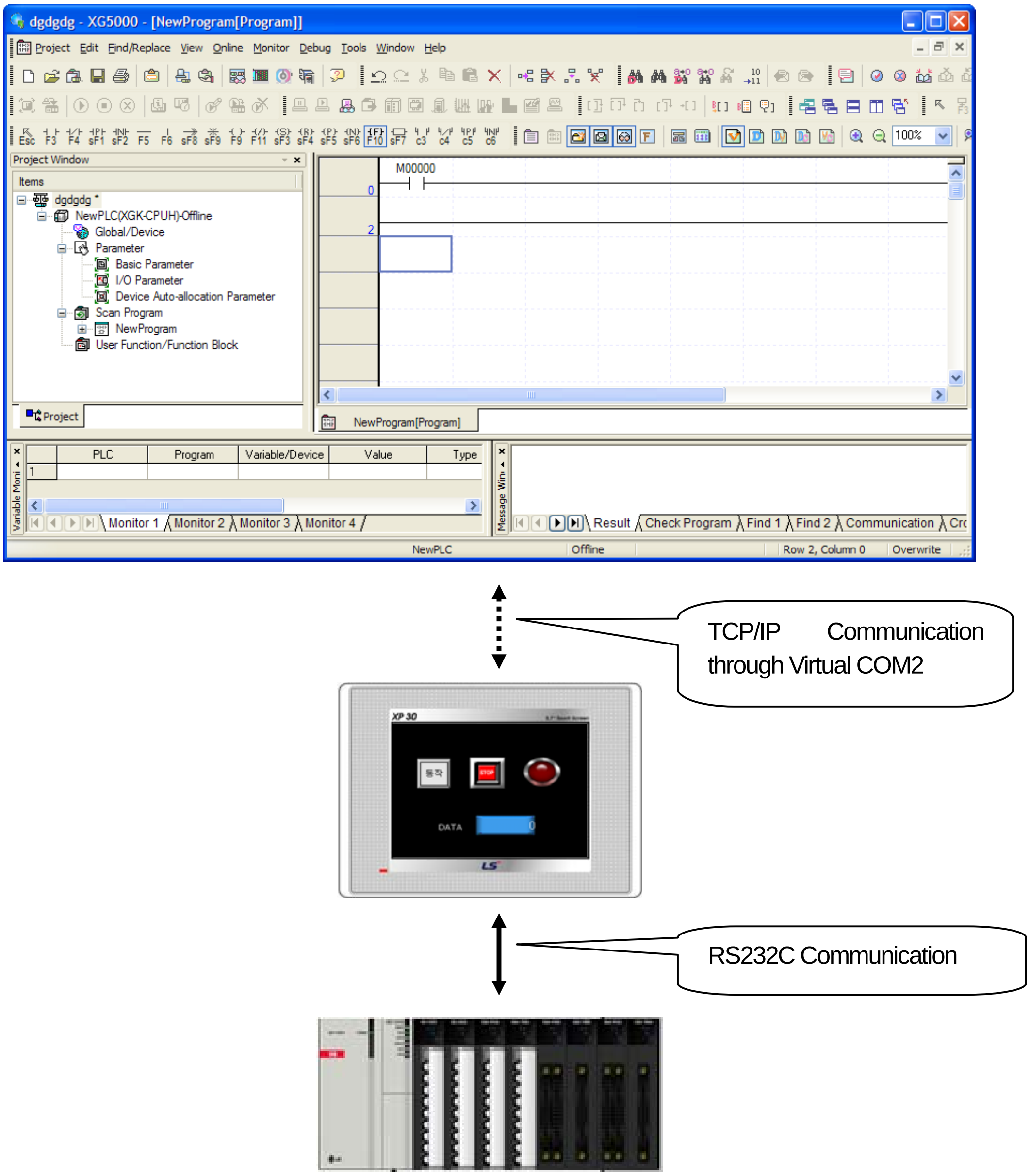
5.4.2 Virtual Serial Port

It creates virtually serial port that is not actually installed in a computer, realizing communication through virtual port in ladder software.


Device Manager
File
Action
View
Help
CA212365-D01
Computer
Disk drives
Display adapters
DVD/CD-ROM drives
Floppy disk controllers
Floppy disk drives
Human Interface Devices
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Ports (COM & LPT)
Communications Port (COM1)
ECP Printer Port (LPT1)
LSIS XP Virtual Serial Port (COM2)
Processors
Sound, video and game controllers
System devices
Universal Serial Bus controllers

5.4.3 Communication through XP-VSP

The below is communication diagram of ladder software and PLC through TCP/IP technology.


dgdgdg - XG5000 - [NewProgram[Program]]
Project Edit Find/Replace View Online Monitor Debug Tools Window Help
Project Window
dgdgdg
NewPLC(XGK-CPUH)-Offline
Global/Device
Parameter
Basic Parameter
I/O Parameter
Device Auto-allocation Parameter
Scan Program
NewProgram
User Function/Function Block
M00000
TCP/IP Communication through Virtual COM2
RS232C Communication

1) The Ladder software of a computer uses Virtual COM Port.
2) Virtual COM Port transmits data through TCP/IP.
3) XGT Panel receives data through TCP/IP server.
4) It sends data to PLC and receives data through connected RS232C.
5) TCP/IP server of XGT Panel transmits data to a computer.
6) It receives data from ladder software.

5.5 Simulation

A user can learn how to use XP-VSP generally through the below simulation.

5.5.1 Registering Virtual COM Port

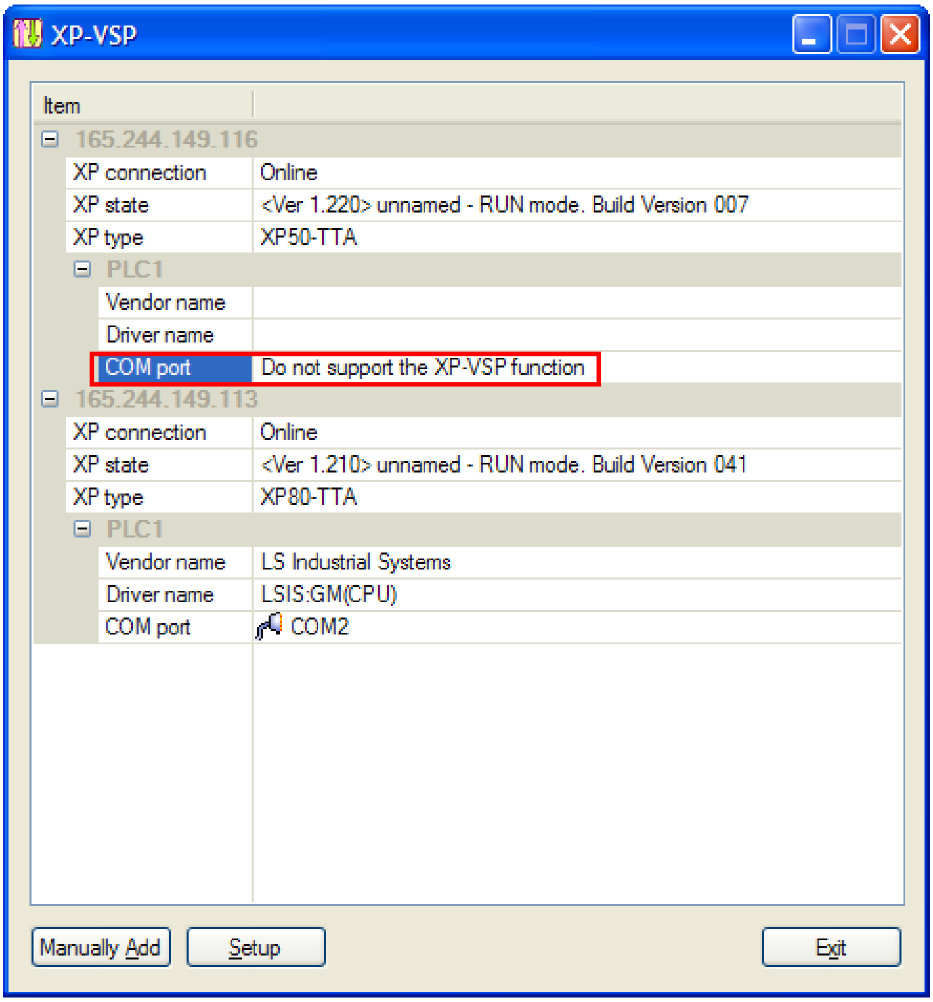
[Procedures]

1) Select [Start Menu]-[Program]-[LSIS]-[XP-VSP] to execute XP-VSP.

Notice

(1) You can perform XP-VSP by executing shortcut icon for XP-VSP in a home screen.

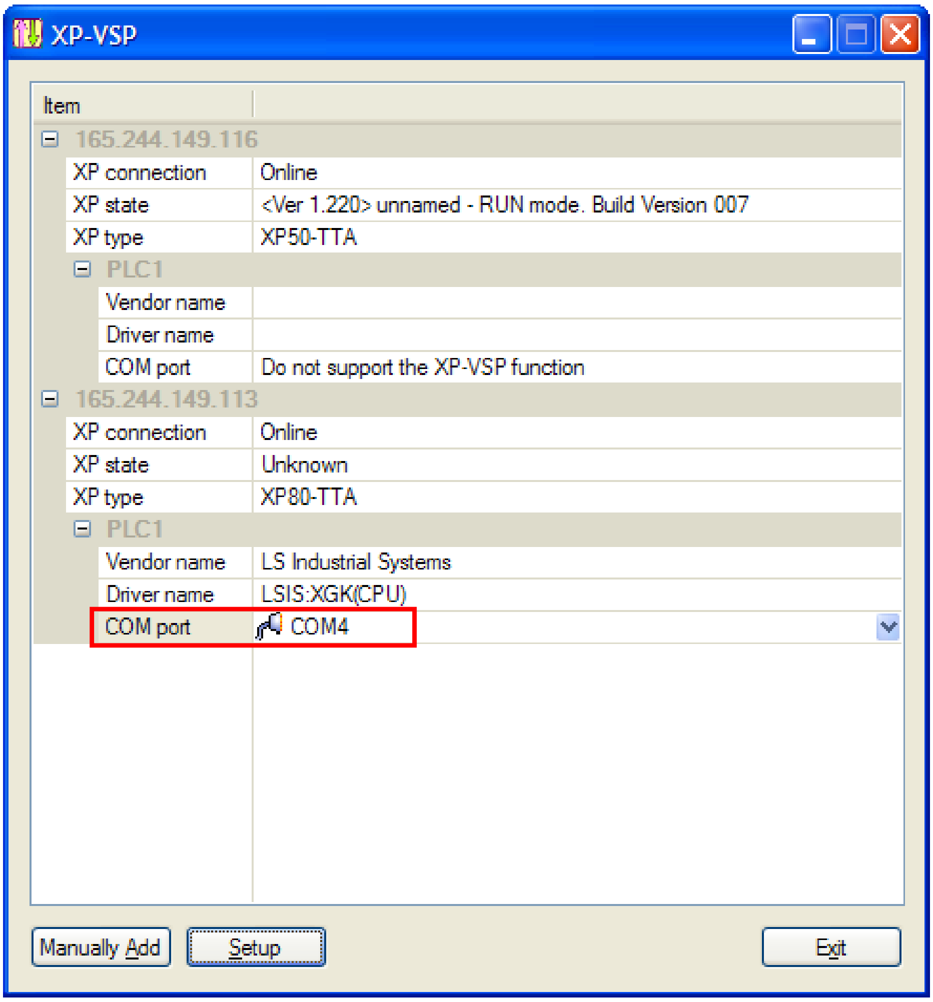
2) Turn on XGT Panel. In the case that the project embedded XGT Panel does not support XP-VSP, you can not select Virtual COM as attached picture.



Item	
⊟ 165.244.149.116	
XP connection	Online
XP state	<Ver 1.220> unnamed - RUN mode. Build Version 007
XP type	XP50-TTA
⊟ PLC1	
Vendor name	
Driver name	
COM port	Do not support the XP-VSP function
⊟ 165.244.149.113	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
⊟ PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:GM(CPU)
COM port	COM2

3) It downloads “LSIS:XGK(CPU)”project through XP-Builder.

4) It changes the communication port from “Not use”into other random port.



Item	
⊟ 165.244.149.116	
XP connection	Online
XP state	<Ver 1.220> unnamed - RUN mode. Build Version 007
XP type	XP50-TTA
⊟ PLC1	
Vendor name	
Driver name	
COM port	Do not support the XP-VSP function
⊟ 165.244.149.113	
XP connection	Online
XP state	Unknown
XP type	XP80-TTA
⊟ PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	COM4

5) Now, registering Virtual COM is finished.

5.5.2 Connecting PLC through ladder software

It connects PLC and ladder software through the existing registered Virtual COM Port however, XGT Panel and PLC should be connected through RS232C.

[Procedures]

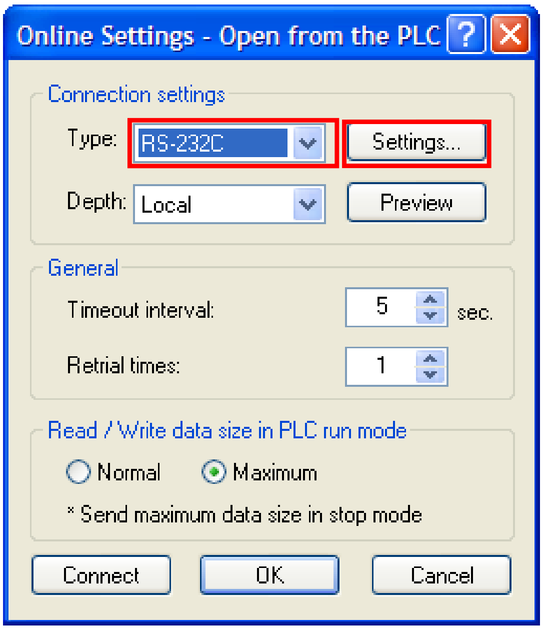
1) Press [Start] menu of XGT Panel to start monitoring.

2) Execute XG5000.

Notice

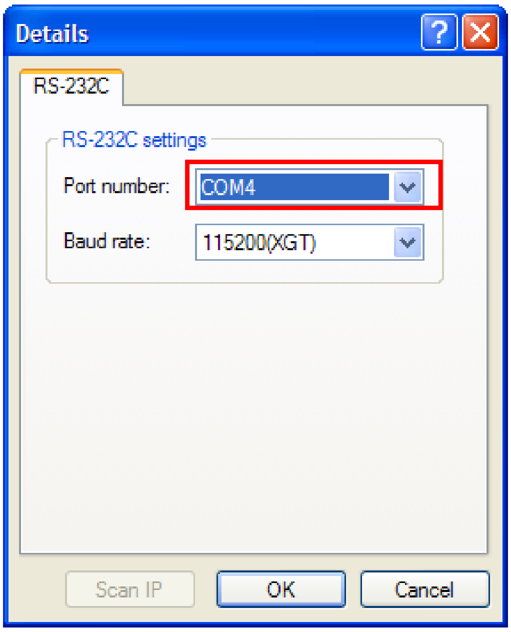
(1) XG5000 is LS Industrial System's ladder software to control PLC.
(2) XG5000 should be installed.

3) Execute [Online]-[Connection Setting] menu of XG5000.


Online Settings - Open from the PLC
Connection settings
Settings...
Preview
General
Read / Write data size in PLC run mode
Connect
OK
Cancel

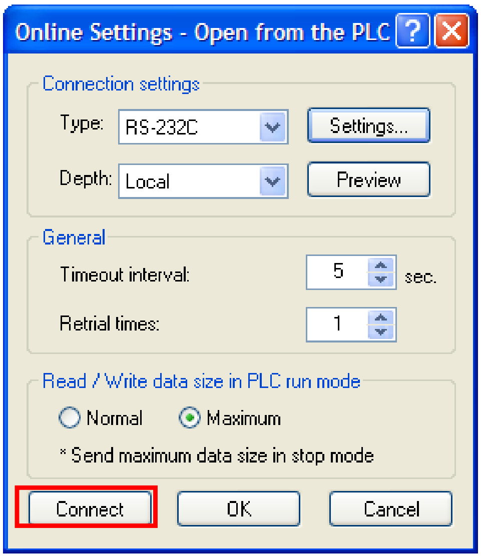
Type: RS-232C
Depth: Local
Timeout interval: 5 sec.
Retrial times: 1
○ Normal ● Maximum
* Send maximum data size in stop mode

4) Select connection type as"RS-232C"and press "setting" button to designate communication port as Virtual COM Port.


Details
RS-232C
RS-232C settings
Scan IP
OK
Cancel

Port number: COM4
Baud rate: 115200(XGT)

5) Press “connection” button to connect to “PLC”.


Online Settings - Open from the PLC

Connection settings

Type: RS-232C

Depth: Local

General

Timeout interval: 5 sec.

Retrial times: 1

Read / Write data size in PLC run mode

○ Normal ● Maximum

* Send maximum data size in stop mode

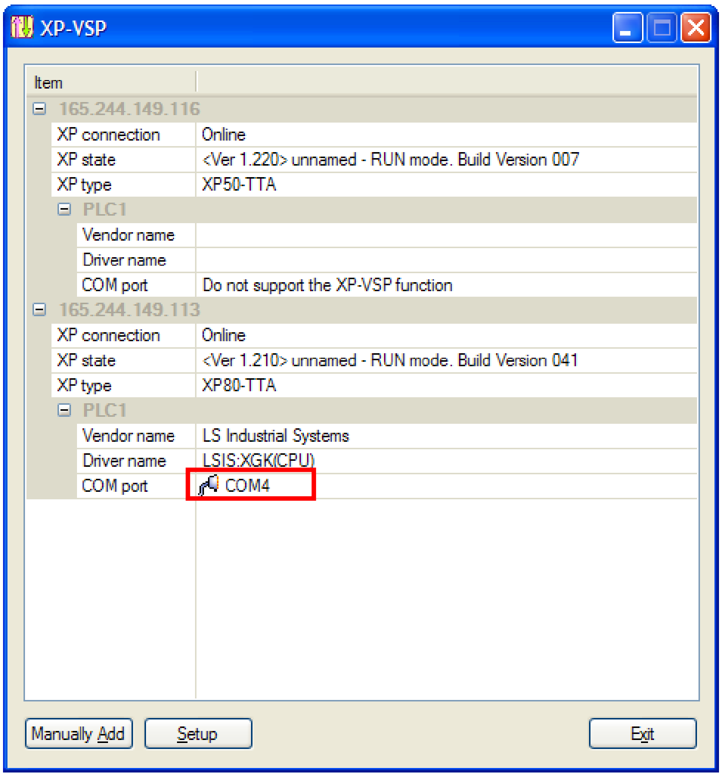
6) After that, you can execute various functions including PLC Writing/Reading, Monitoring.

5.5.3 Undoing Virtual COM

When you do not need to use Virtual COM Port, you can apply the function.

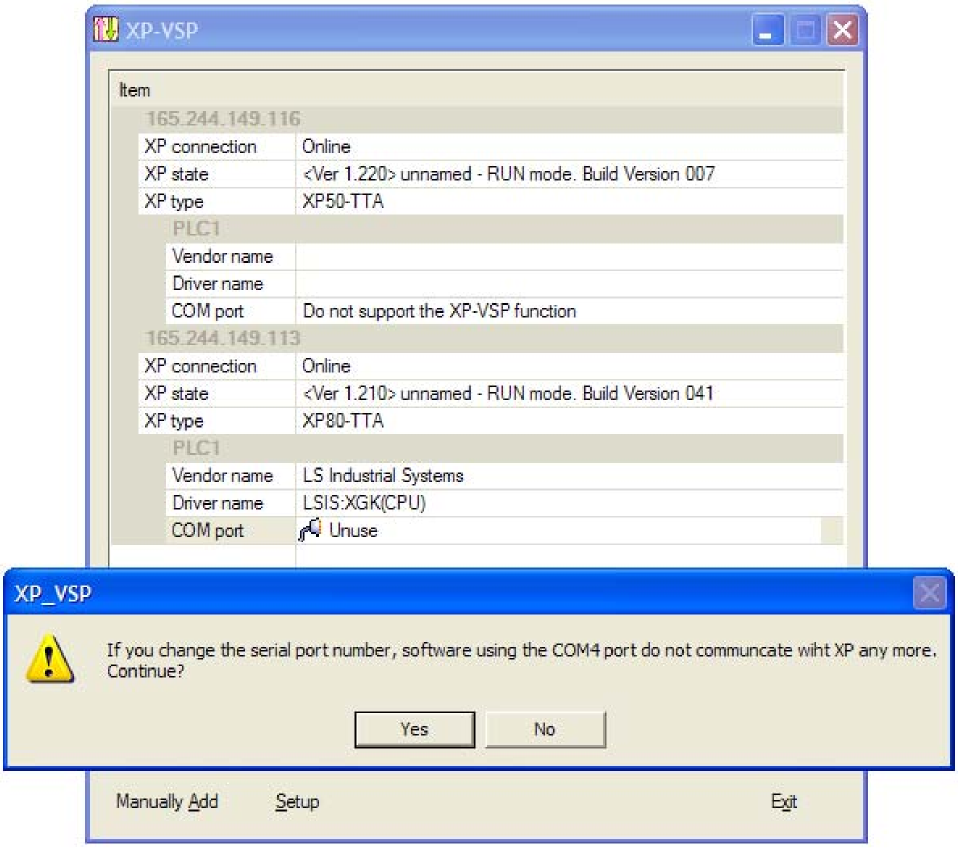
[Procedures]

1) Execute XP-VSP.


XP-VSP

Item	
⊟ 165.244.149.116	
XP connection	Online
XP state	<Ver 1.220> unnamed - RUN mode. Build Version 007
XP type	XP50-TTA
⊟ PLC1	
Vendor name	
Driver name	
COM port	Do not support the XP-VSP function
⊟ 165.244.149.113	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
⊟ PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	COM4

2) The ongoing COM Port into “No use” and if you get warning message, select “Yes” button.



165.244.149.116	
XP connection	Online
XP state	<Ver 1.220> unnamed - RUN mode. Build Version 007
XP type	XP50-TTA
PLC1	
Vendor name	
Driver name	
COM port	Do not support the XP-VSP function
165.244.149.113	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	Unuse

XP_VSP

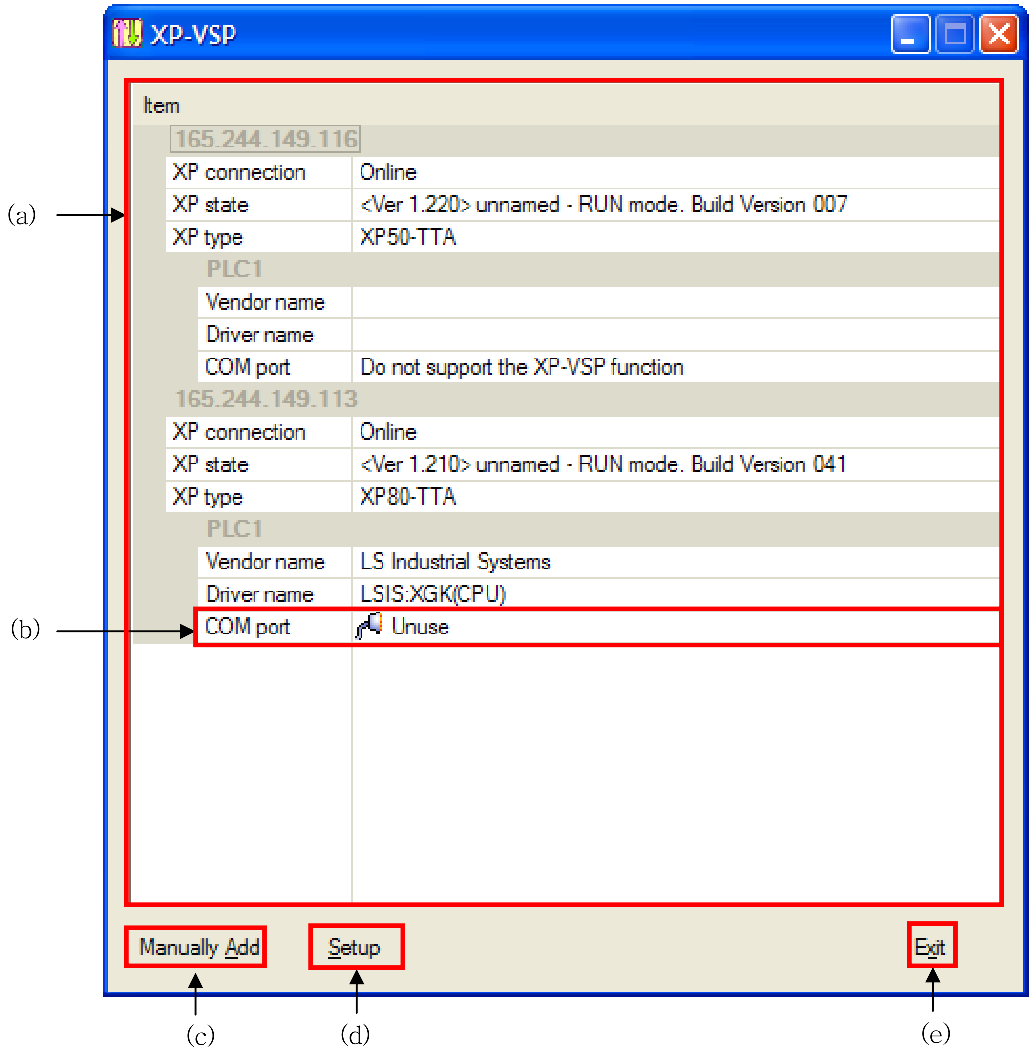
If you change the serial port number, software using the COM4 port do not communcate wiht XP any more. Continue?

3) The related COM Port is not available any more.

5.6 The composition of a screen

The screen of XP-VSP is composed as below.

[Dialog box]



165.244.149.116

XP connection	Online
XP state	<Ver 1.220> unnamed - RUN mode. Build Version 007
XP type	XP50-TTA

PLC1

Vendor name	
Driver name	
COM port	Do not support the XP-VSP function

165.244.149.113

XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA

PLC1

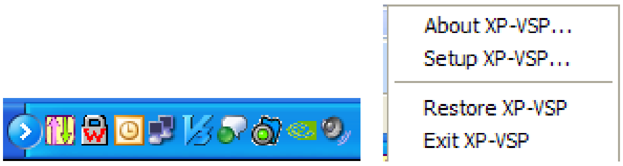
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	Unuse

[Description on a dialog box]

Items	Description
XP List Screen (a)	It displays the information of online or pre-registered XP. – XP connection status: Online/Offline – XP status: It shows the current mode and version of XP. – XP type: It shows the type of XP. – PLC1 ~ PLC4: It distinguishes PLC Driver embedded in XP. – Manufacturer: It displays the maker of PLC Driver – Driver name: It displays PLC Driver name
Communication Port b)	In the case of PLC Driver that does not support XP-VSP, it is displayed as “XP-VSP is not available”, otherwise, in the case of allowable PLC Driver, the designated port No. is shown. You can change the port.
Direct Add(c)	You can set Virtual COM of non-online XP.
Setting(d)	You can establish the option of XP-VSP
End(e)	Ending XP-VSP

5.7 The Composition of Menu

Only when XP-VSP exists in system tray, context menu can be generated.



Command	Description
XP-VSP Information	Checking the version information of XP-VSP
XP-VSP Setting	Changing the option of XP-VSP
Open	Executing XP-VSP
End	Ending XP-VSP

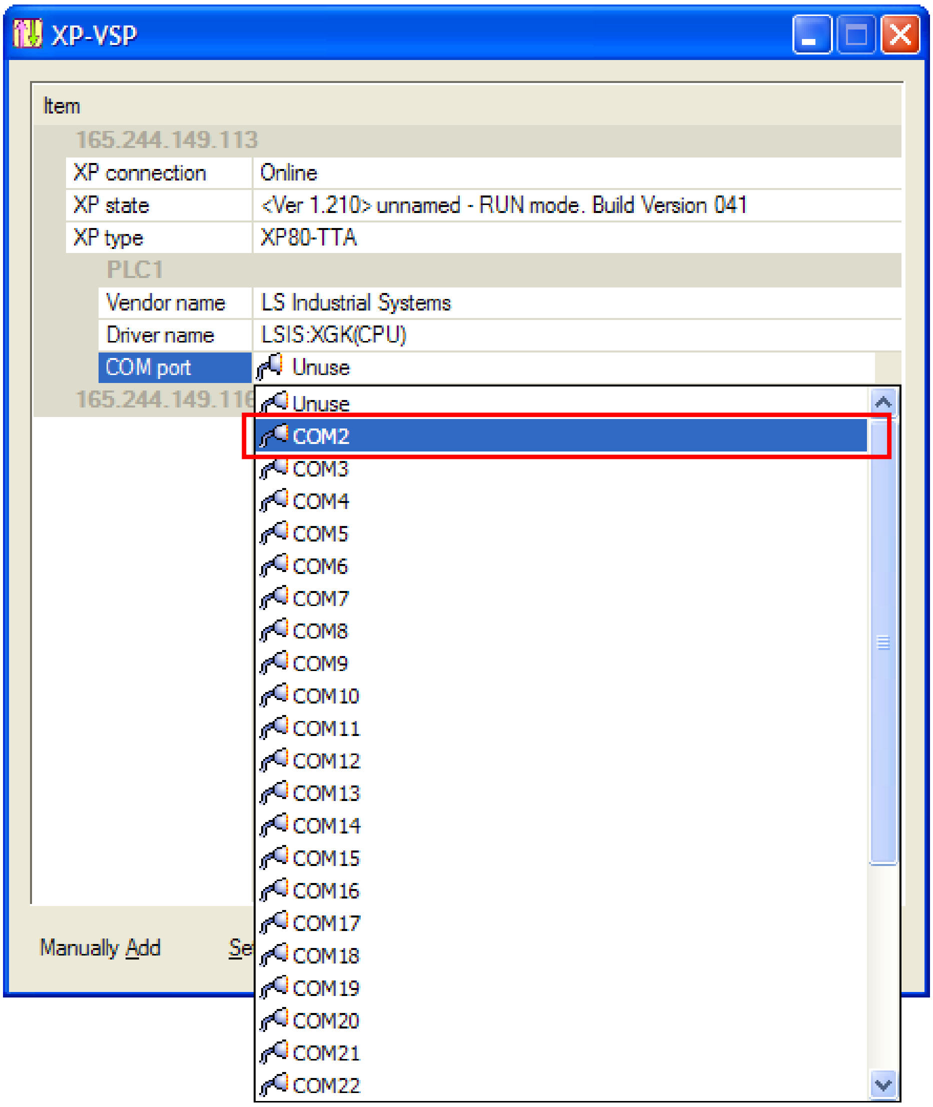
5.8 Virtual COM Control

5.8.1 Registering Virtual COM

You can designate XGT Panel of network and register Virtual COM.

[Procedure]

1) Select the XP to be registered from XP list screen.
2) Change COM Pot No.



XP-VSP
Item
165.244.149.113
165.244.149.116
PLC1
Manually Add
Se
Unuse
COM2
COM3
COM4
COM5
COM6
COM7
COM8
COM9
COM10
COM11
COM12
COM13
COM14
COM15
COM16
COM17
COM18
COM19
COM20
COM21
COM22

Item	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	Unuse

3) Virtual COM is registered.

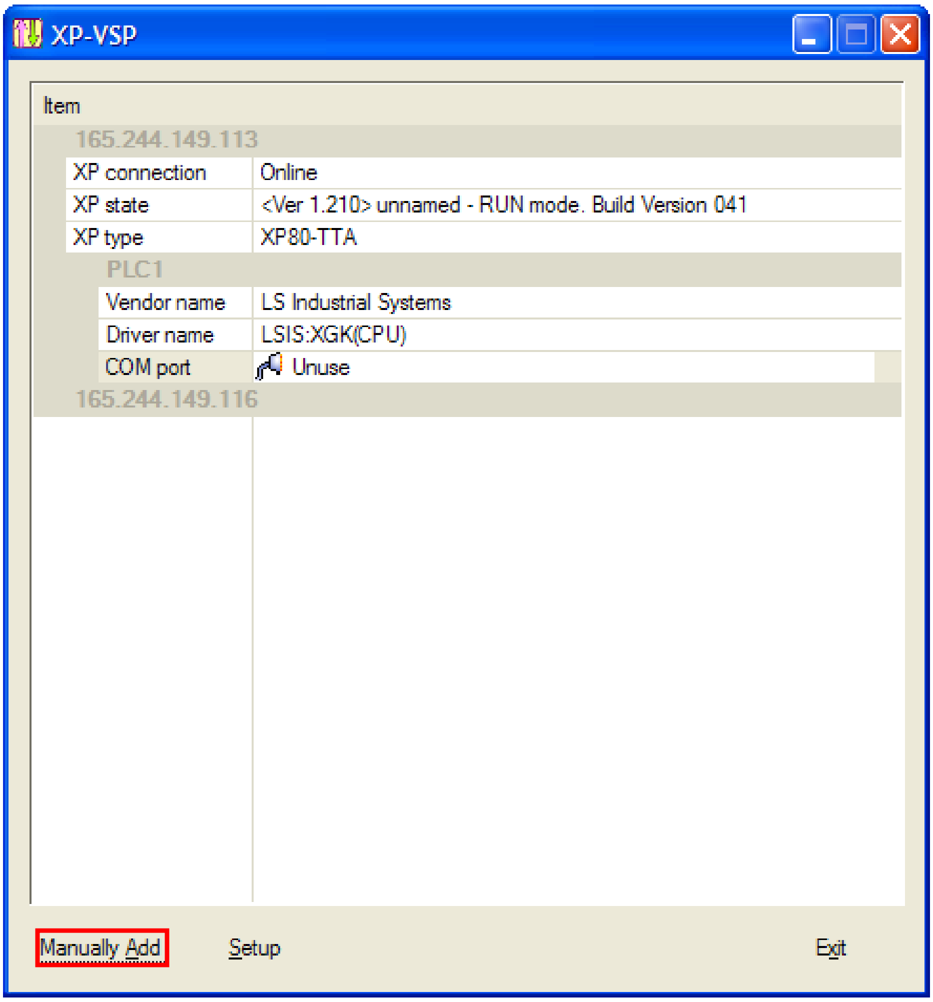
Notice

(1) Once Virtual COM port is registered at PC, you can use it without registration process every time.
(2) XP-VSP is supported from XGT-Panel V1.11/

5.8.2 Direct Add for Virtual COM

[Procedures]

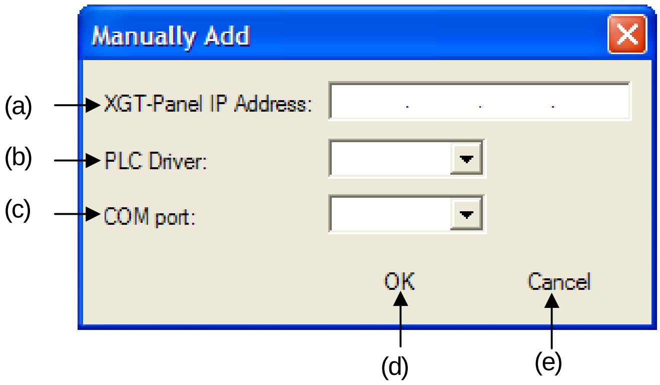
1) Press [Direct Add] button.



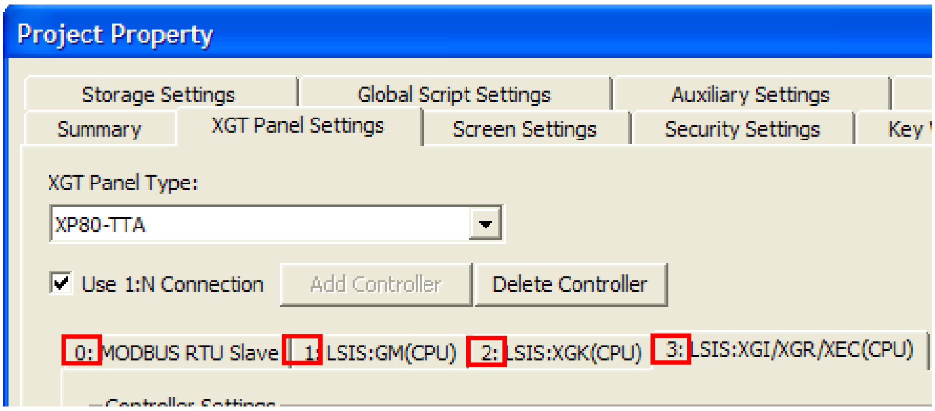
Item	
165.244.149.113	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	Unuse
165.244.149.116	

2) After XGT Panel IP/PLC Driver/Communication port all, press [OK] button.

[Description of a dialog box]

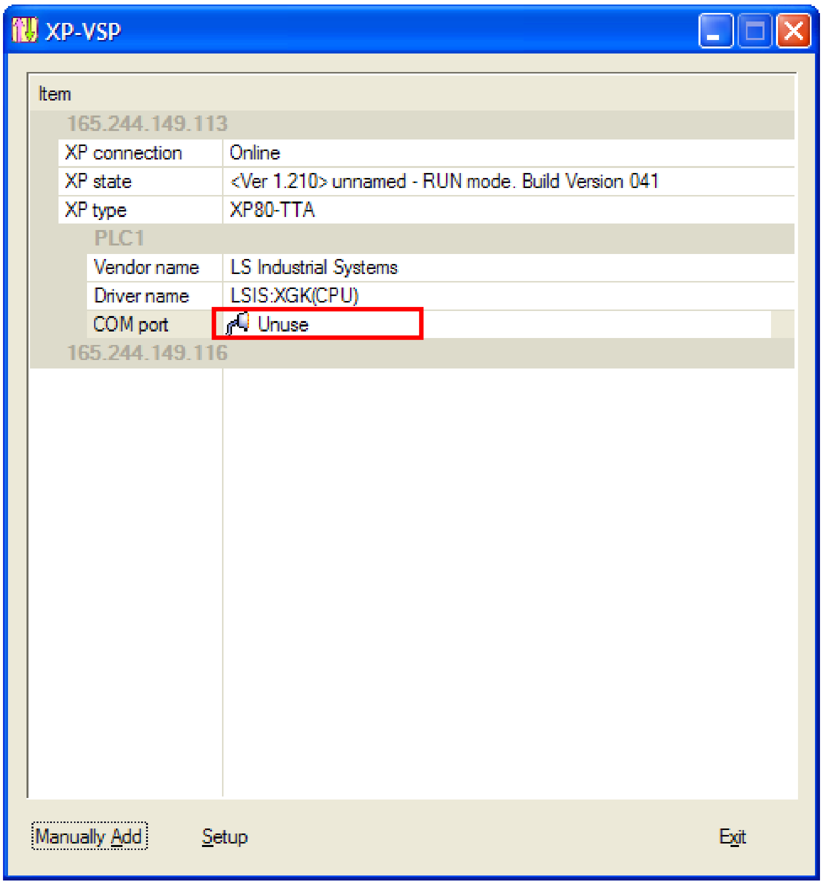

Manually Add
(a)
XGT-Panel IP Address:
(b)
PLC Driver:
(c)
COM port:
OK
Cancel
(d)
(e)

[Description of a dialog box]

Item	Description
XGT-Panel IP Address(a)	Input XGT Panel IP address where Virtual COM is registered.
PLC Driver (b)	XGT Panel can support 4 PLC Drives at the same time and you can select one among them.  Project Property Storage Settings Global Script Settings Auxiliary Settings Summary XGT Panel Settings Screen Settings Security Settings Key Add Controller Delete Controller Controller Settings XGT Panel Type: XP80-TTA ☑ Use 1:N Connection 0: MODBUS RTU Slave 1: LSIS:GM(CPU) 2: LSIS:XGK(CPU) 3: LSIS:XGI/XGR/XEC(CPU)
Communication Port(c)	Select Virtual COM Port No. to be registered.
OK(d)	It closes a dialog box after saving the contents of a dialog box.
Cancel (e)	It closes a dialog box without saving the contents of a dialog box.

5.8.3 Undoing Virtual COM

Select [Unuse] communication port.



Item	
165.244.149.113	
XP connection	Online
XP state	<Ver 1.210> unnamed - RUN mode. Build Version 041
XP type	XP80-TTA
PLC1	
Vendor name	LS Industrial Systems
Driver name	LSIS:XGK(CPU)
COM port	Unuse
165.244.149.116	

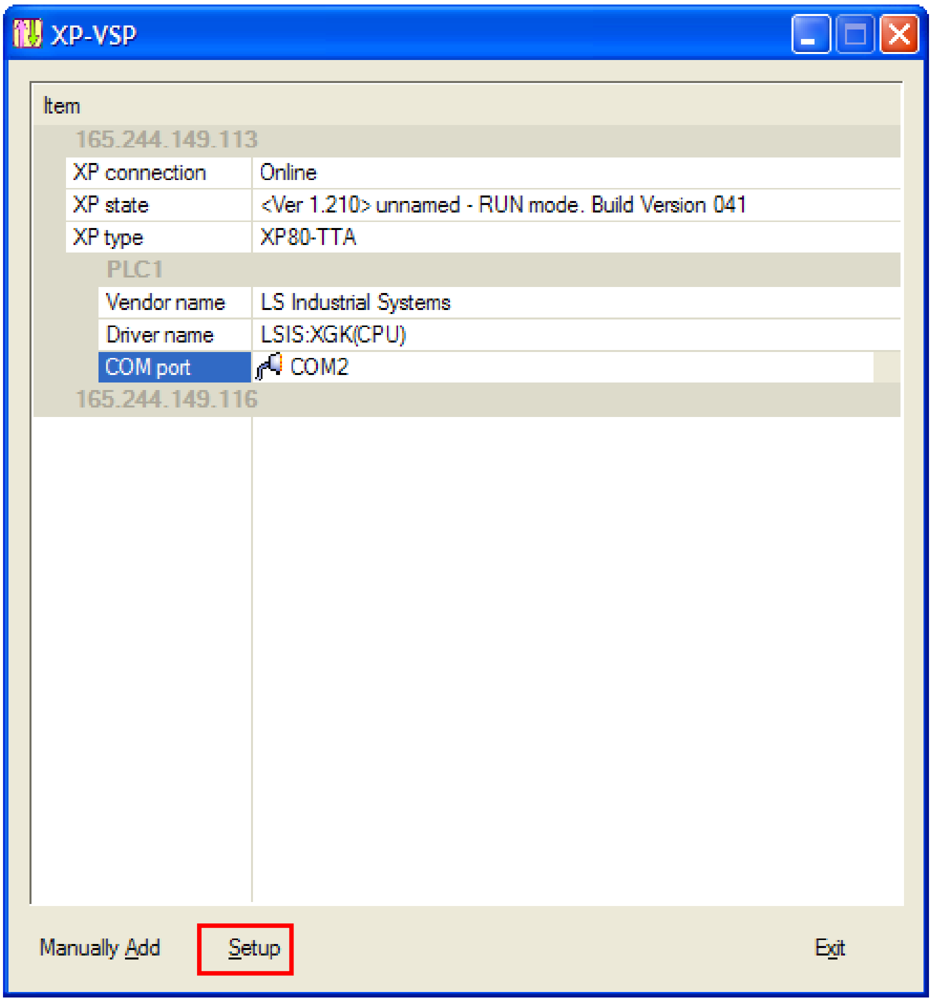
5.9 PLC Drivers that support XP-VSP

The drives that support XP-VSP usually adopt PLC Loader Protocol and they will be continuously updated. The available drive list is as below.

Manufacturer	Driver
LS Industrial Systems	GLOFA GM series CPU Direct
	Master-K series CPU Direct
	XGK series CPU Direct
	XGB series CPU Direct
	XGI series CPU Direct
	XGR series CPU Direct
Omron Corporation	CS/CJ Host Link serial
YASKAWA	MEMOBUS RTU Master

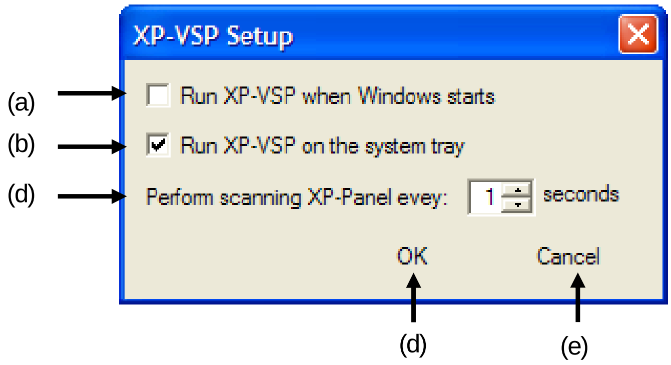
5.10 Setting

Press [Setting] button.


XP-VSP
Item
Manually Add
Setup
Exit

165.244.149.113
XP connection: Online
XP state: <Ver 1.210> unnamed - RUN mode. Build Version 041
XP type: XP80-TTA
PLC1
Vendor name: LS Industrial Systems
Driver name: LSIS:XGK(CPU)
COM port: COM2
165.244.149.116

[Dialog Box]


XP-VSP Setup
(a)
(b)
(d)
OK
Cancel
(d)
(e)

☐ Run XP-VSP when Windows starts
☑ Run XP-VSP on the system tray
Perform scanning XP-Panel evey: 1 seconds

[Description of a dialog box]

Item	Description
Executing XP-VSP automatically when Windows starts (a)	XP-VSP starts automatically when Windows starts.
Starting XP-VSP at System tray (b)	XP-VSP starts at system tray not being shown at a screen.
Setting automatic XP scan interval (c)	It establishes the cycle to search for XGT Panel in network with a second interval
OK(d)	It closes a dialog box after saving the contents of a dialog box.
Undo(e)	It closes a dialog box without saving the contents of a dialog box.

Warranty

1. Warranty Period
The product you purchased will be guaranteed for 18 months from the date of manufacturing.

2. Scope of Warranty
Any trouble or defect occurring for the above-mentioned period will be partially replaced or repaired. However, please note the following cases will be excluded from the scope of warranty.

Any trouble attributable to unreasonable condition, environment or handling otherwise specified in the manual,
Any trouble attributable to others' products,
If the product is modified or repaired in any other place not designated by the company,
Due to unintended purposes
Owing to the reasons unexpected at the level of the contemporary science and technology when delivered.
Not attributable to the company; for instance, natural disasters or fire

3. Since the above warranty is limited to HMI unit only, make sure to use the product considering the safety for system configuration or applications.

Environmental Policy

LS Industrial Systems Co.,Ltd supports and observes the environmental policy as below.

Environmental Management

LS Industrial Systems considers the environmental preservation as the preferential management subject and every staff of LS Industrial Systems use the reasonable endeavors for the pleasurably environmental preservation of the earth.

About Disposal

LS Industrial Systems' PLC unit is designed to protect the environment. For the disposal, separate aluminum, iron and synthetic resin (cover) from the product as they are reusable.

Distinguished Choice, Profound Satisfaction
LS

LS values every single customers.

Quality and service come first at LSIS.

Always at your service, standing for our customers.

http://eng.lsis.biz

LS Industrial Systems

10310000876

- **HEAD OFFICE**
  LS tower, Hogye-dong, Dongan-gu, Anyang-si, Gyeonggi-do 1026-6,
  Korea http://eng.lsis.biz
  Tel : (82-2)2034-4870/Fax : 82-2-2034-4648 e-mail : cshwang@lsis.biz
- **LS Industrial Systems Tokyo Office _ Tokyo, Japan**
  Address: 16FL. Higashi-Kan. Akasaka Twin Tower 17-22,
  Akasaka.Monato-ku Tokyo 107-8470. Japan
  Tel : 81-3-3582-9128/Fax : 81-3-3582-2667 e-mail : jschuna@lsis.biz
- **LS Industrial Systems(ME) FZE _ Dubai, U.A.E.**
  Address : Jafza View Tower Lob 19, Room 205 Along Sheikh Zayed
  Road Jebel Aali Free Zone Dubai, United Arab Emirates
  Tel : 971-4-886-5360/Fax : 971-4-886-5361 e-mail : jungyongl@lsis.biz
- **LS Industrial Systems Shanghai Office _ Shanghai, China**
  Address : Room E-G. 12FL Hiamin Empire Plaza. No.726. West.
  Yan'an Road Shanghai 200050. P.R. China e-mail : liyong@lsis.com.cn
  Tel : 86-21-5237-9977(609)/Fax : 89-21-5237-7189
- **LS Industrial Systems Beijing Office _ Beijing, China**
  Address : B-Tower 17FL. Beijing Global Trade Center B/D. No. 36.
  East BeisanHuan-Road. DongCheng-District. Beijing 100013. P.R. China
  Tel : 86-10-5825-6027(666)/Fax : 86-10-5825-6028 e-mail : xunmj@lsis.com.cn
- **LS Industrial Systems Guangzhou Office _ Guangzhou, China**
  Address : Room 1403.14FL. New Poly Tower.
  2 Zhongshan Liu Road.Guangzhou.P.R China
  Tel : 86-20-8328-6754/Fax : 86-20-8326-6287 e-mail : chenxs@lsis.com.cn
- **LS Industrial Systems Chengdu Office _ Chengdu, China**
  Address : 12FL. Guodong Buiding. No.52 Jindun
  Road Chengdu.610041. P.R. China
  Tel : 86-28-8612-9151(9226)/Fax : 86-28-8612-9236 e-mail : comysb@lsis.biz
- **LS Industrial Systems Qingdao Office _ Qingdao, China**
  Address : YinHe Bldg. 402 Room No. 2P Shandong Road,
  Qingdao-City,Shandong-province 266071, P.R. China
  Tel : 86-532-8501-6068/Fax : 86-532-8501-6057 e-mail : wangzy@lsis.com.cn
- **LS Industrial Systems Europe B.V. , Netherlands**
  Address : 1st. Floor, Tupolevlaan 48, 1119NZ, Schiphol-Rijk, The Netherlands
  Tel : +31 (0)20 654 1420/Fax : +31 (0)20 654 1429 e-mail : junshickp@lsis.biz
- **Wuxi LS Industrial Systems Co., Ltd _ Wuxi, China**
  Address : 102-A. National High & New Tech Industrial Development Area.
  Wuxi. Jiangsu. 214028. P.R. China
  Tel : 86-510-8534-6666/Fax : 86-510-8534-4078 e-mail : caidx@lsis.com.cn
- **Dalian LS Industrial Systems Co., Ltd. _ Dalian, China**
  Address : No. 15. Liaohexi 3-Road. Economic and Technical Development zone.
  Dalian 116600. China
  Tel : 86-411-273-7777/Fax : 86-411-8730-7560 e-mail : cuibx@lsis.com.cn

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