

EU Works 2 Operation Manual

EC200 Series



EU200 Series



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Proclamation

Thank you for purchasing Shihlin Electric's Human Machine Interface. Please follow the order of the chapters to read the instructions and operate the device.

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- A.** The genuine copy of "EU Program Editor 2.0" software includes programs and manuals, all belonging to the copyright of Shihlin Electric & Engineering Corporation. The company only grants authorized persons to use the software. Any person who contravenes any of the above copyrights will be prosecuted in accordance with the laws of Taiwan.
- B.** If users apply the HMI to a non-industrial controlled product, Shihlin Electric shall bear no responsibility on any damage whatsoever.
- C.** The software will be updated irregularly to add in new features. If users find the actual functions are somewhat different from the manual contents, please go to the Shihlin Electric's website to download the latest information.
- D.** Even if the information or the HMI implies intangible or intellectual property rights of Shihlin Electric or of a third party, Shihlin Electric does not guarantee or grant any user and/or the third party the use of the HMI.

E. Although this manual has been proofread many times, imperfection is inevitable. We look forward to your opinions. If you have any questions or suggestions, please contact us and we'll very appreciate it.



Attentions

To properly and safely operate “EU Program Editor 2.0”, please read this manual and relevant guide carefully to fully understand the features of the software and the correct way of using it.

- Touch panel switch should not be used under ON / OFF wire abnormalities that may result in personnel injury or equipment damage, even lead to serious incidents.
- Output signal may lead to serious incidents, thus must be equipped with monitoring circuits, such as a limiter; and the system must be designed to have reset mechanism, so that conduction can be controlled by means other than the HMI, to prevent incidents resulting from malfunctions or failure of the touch panel switch.
- The control switch of the HMI should not be used as an emergency stop switch. To the health and safety concerns, the labor requires all industrial machinery systems be equipped with a mechanical, manually operated emergency stop switch; and for other types of systems, similar mechanical switches must also be provided to ensure safe operations.
- "EU Program Editor 2.0" is installed through the CD-ROM. Do not play the installation CD on an audio CD device, for it can produce unexpected audio volume that may cause hearing problems or damage to speakers.

- Please do not shut down your computer, close the editor software or switch off the HMI, when a program is being edited or a HMI project is being transmitted. Doing so may crash the project program.
- Do not use a document editing software or any other types of editing software to modify the project structure of this product. Doing so may crash the project program and result in disabled execution.
- Do not remove the external memory module when the HMI is running. Doing so may corrupt the files inside the external memory device.

This manual is divided into three sections, allowing you to quickly learn the functions of the editing screens after reading the manual.



Chapter 1 Introduction to Editing Software

The Shihlin HMI product includes a software installation CD. The EC series follows the EU Editor software, added with new features of options of EC models. The functions and features of the EC series are shown in the following Table 1-1-1.

Table 1-1-1 List of Features

Feature	Description
Toolbar Shortcut	Provides graphical user interface for quick clicking of toolbars of standard, view, format, image, object, and edit.
Graph Drawing	Provides basic graph drawing objects and a variety of libraries for screen editing.
Data Elements	Provides various objects including switch, lamp, data entry, data display, message display, chart display, meter, level chart and time display.
Multiple Languages	Supports Traditional Chinese, Simplified Chinese and English.
Storage Device	Supports SD memory card to read and write the screen.
Data Transfer	Supports Ethernet and USB to transfer screen data, and provides the By-Pass function to transfer programs from the HMI's COM port to PLC.
Operation Monitoring	Allows direct editing and monitoring of the PLC programs via the HMI interface. Uses the operation resume to view the devices used.



Chapter 2 Software Installation and Screen Introduction

2.1. Installation

2.1.1. Recommended Computing Environment

The recommended computing environment for installing the EU Editor software is shown in Table 2-1-1.

Table 2-1-1 List of the Computing Environment

Component	Specification
Processor	1GHZ or above
Memory	1 GB or above
Disk Space	1.5 GB
Screen Resolution	1024*768 High Color(16-bit)
Network Card	10/100Mbps
Operating System	Windows 2000 Service Pack 3 / Windows XP Service Pack 2 / Windows XP Service Pack 3

2.1.2. Software Installation

Place the CD that comes with the package into the CD-ROM drive,



and then click the `setup.exe` icon to start the software installation. The screen displayed is as shown in Figure 2-1-2. Click the “Next” button.

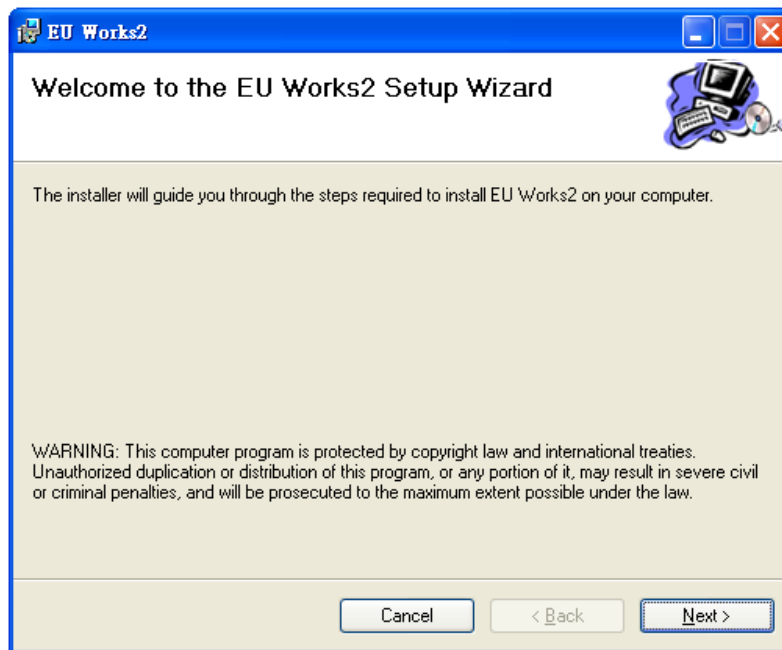


Fig. 2-1-2 Installation Screen

If an old version is installed, all the files under the old installed path will be removed. Please backup your project files first, if they were saved in the path. If no any old one is installed , go to the next step. See the figure2-1-3 below:

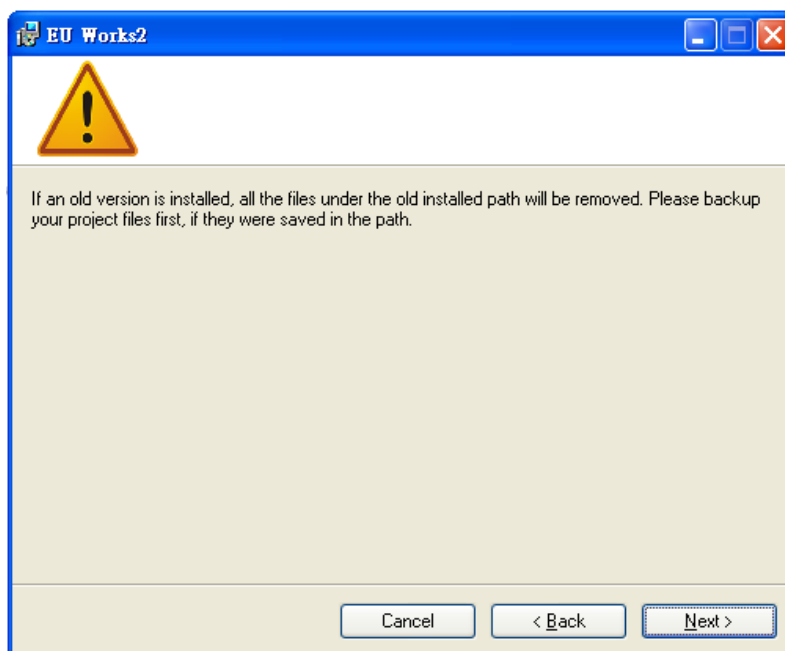


Fig. 2-1-3 Remove the old version

The system default installation path is C:\ShihlinElectric\EUEditor2.0\. This path is user-definable. The screen displayed is shown in Figure 2-1-4. After the path is confirmed, click the “Next” button to proceed.

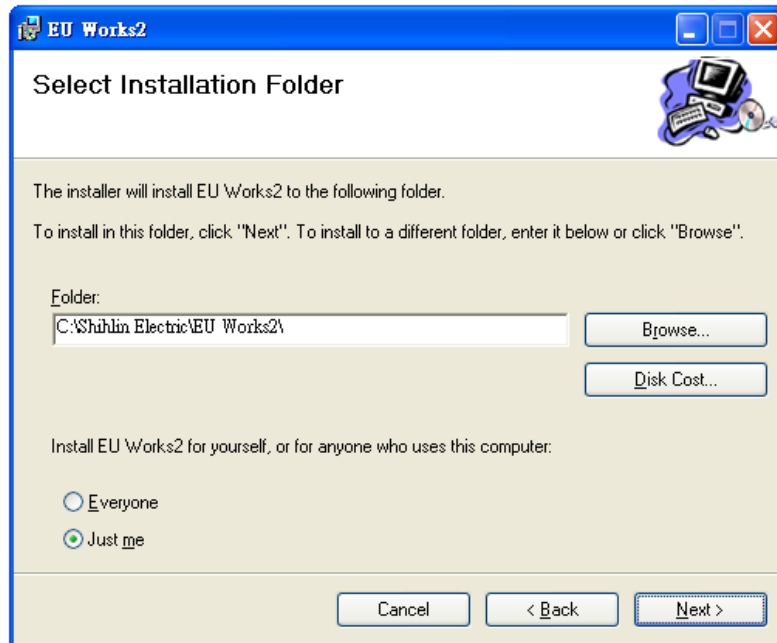


Fig. 2-1-4 Installation Path Setup

Then, enter the user name and the organization name. Confirm the settings and click the “Next” button to process. This is shown in Figure 2-1.5

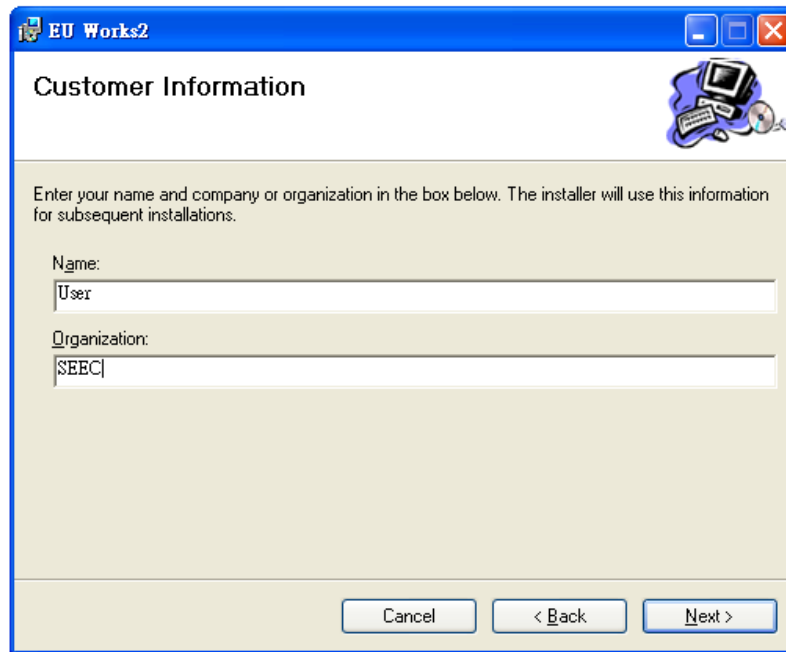


Fig. 2-1-5 User Information

Before installing the software, please read the license agreement. If you accept all the terms and conditions, click “I Agree”, then click “Next” to continue. Otherwise click Cancel to exit installer. See the figure 2-1-6 below:

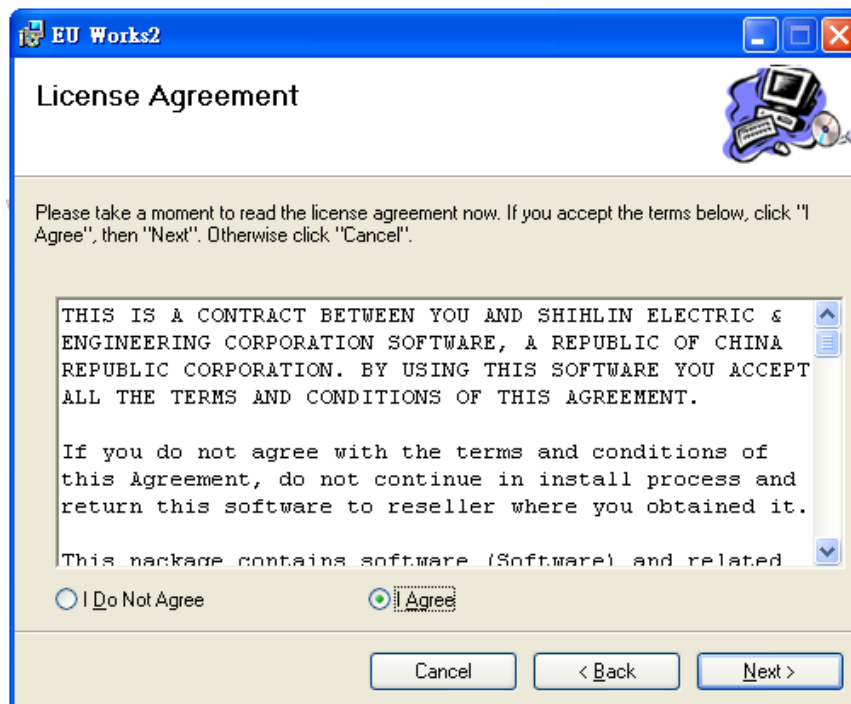
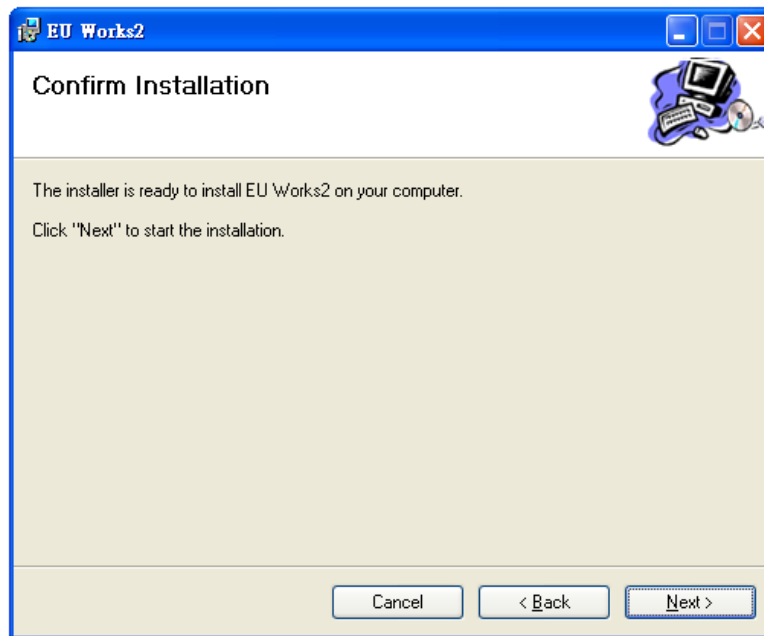
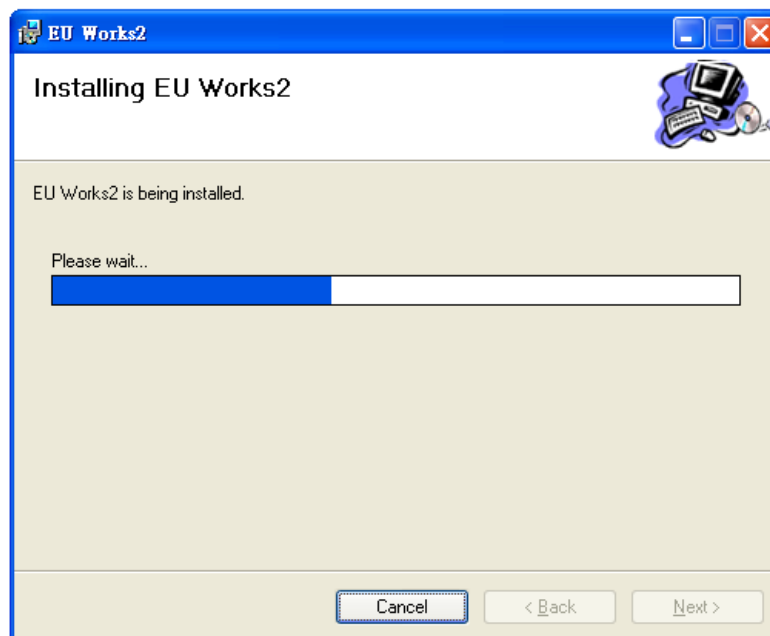


Fig. 2-1-6 License agreement

Then, click the “Next” button to start the installation. The installation software will install the EU Editor to your computer, as shown in Figure 2-1-7.



(a)



(b)

Fig. 2-1-7 Installation Confirmation (a) Start Installation (b) Installation in Progress

Finally, the installation completion screen will be shown. Click the “Close” button to finish the EU Editor installation. See Figure 2-1-8 below.

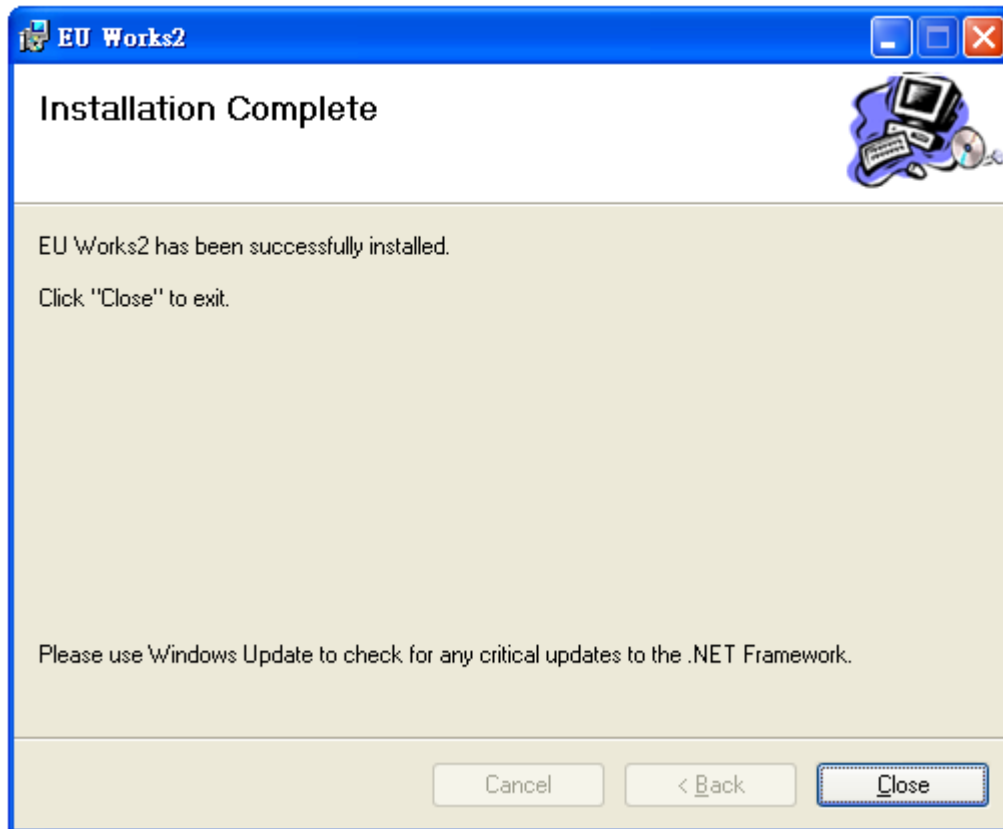


Fig. 2-1-8 Installation Completed



- To update the editor software, please remove the old version from your computer first, and then proceed to install the new version.

2.2. Repair and Removal

2.2.1. Software Repair

If you need to have the software repaired, click “start”→”all programs(P)”→”ShihlinElectric”→”EUEditor2.0”, and then click



the uninstall icon to start the repair. The screen displayed is shown in Figure 2-2-1. The repair process will first remove the software and then re-install it.

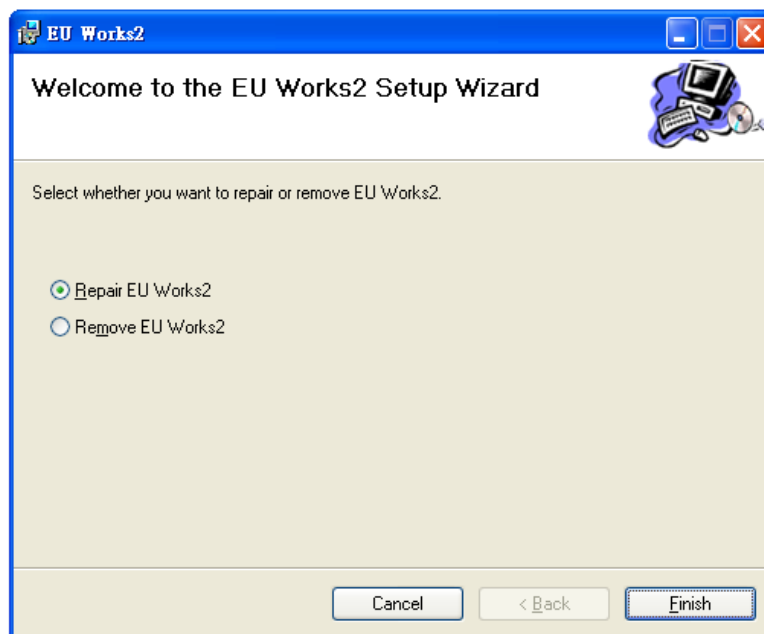

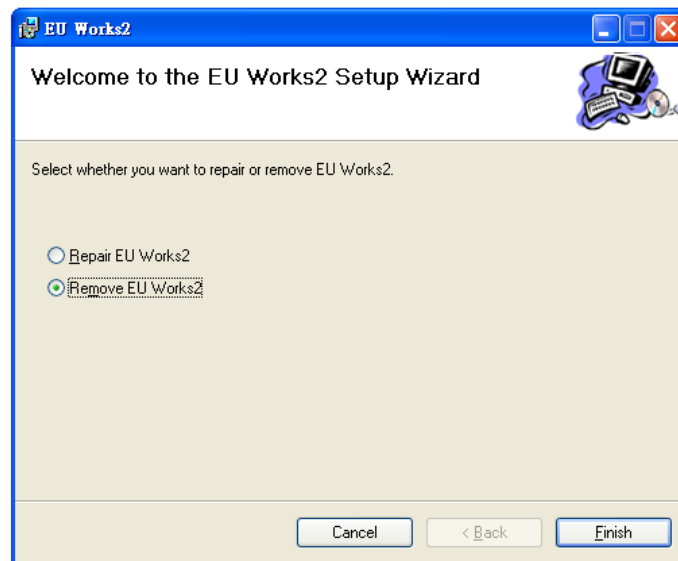


Fig. 2-2-1 Software Repair

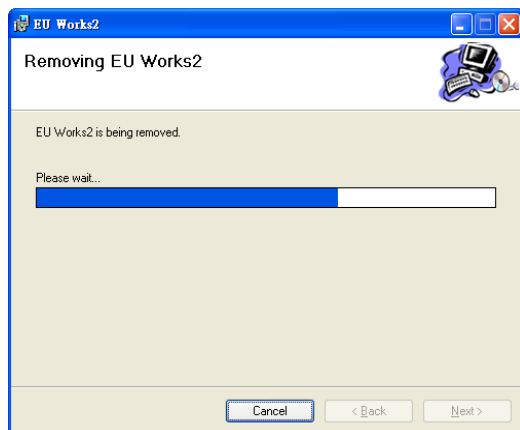
2.2.2. Software Removal

If you need to remove the software, click “start”→”all programs(P)”→”ShihlinElectric”→”EUEditor2.0”, and then click

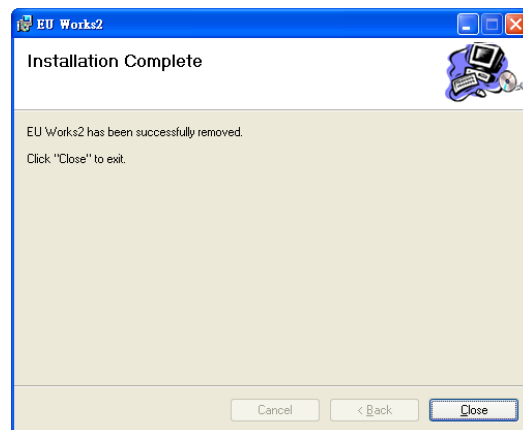
the  icon, the screen displayed is shown in Figure 2-2-2. The removal process will automatically delete the software.



(a)



(b)



(c)

Fig. 2-2-2 Software Removal (a) Select Removal (b) Removal in Progress (c)

Removal Completed

2.3. Software Environment

2.3.1. Introduction of the Operating Window

When the software is executed, it displays the operating window as shown in Figure 2-3-1. The window contains the title toolbar, menu toolbar, shortcut toolbar, screen list, property window, error list, status toolbar, and editing window.

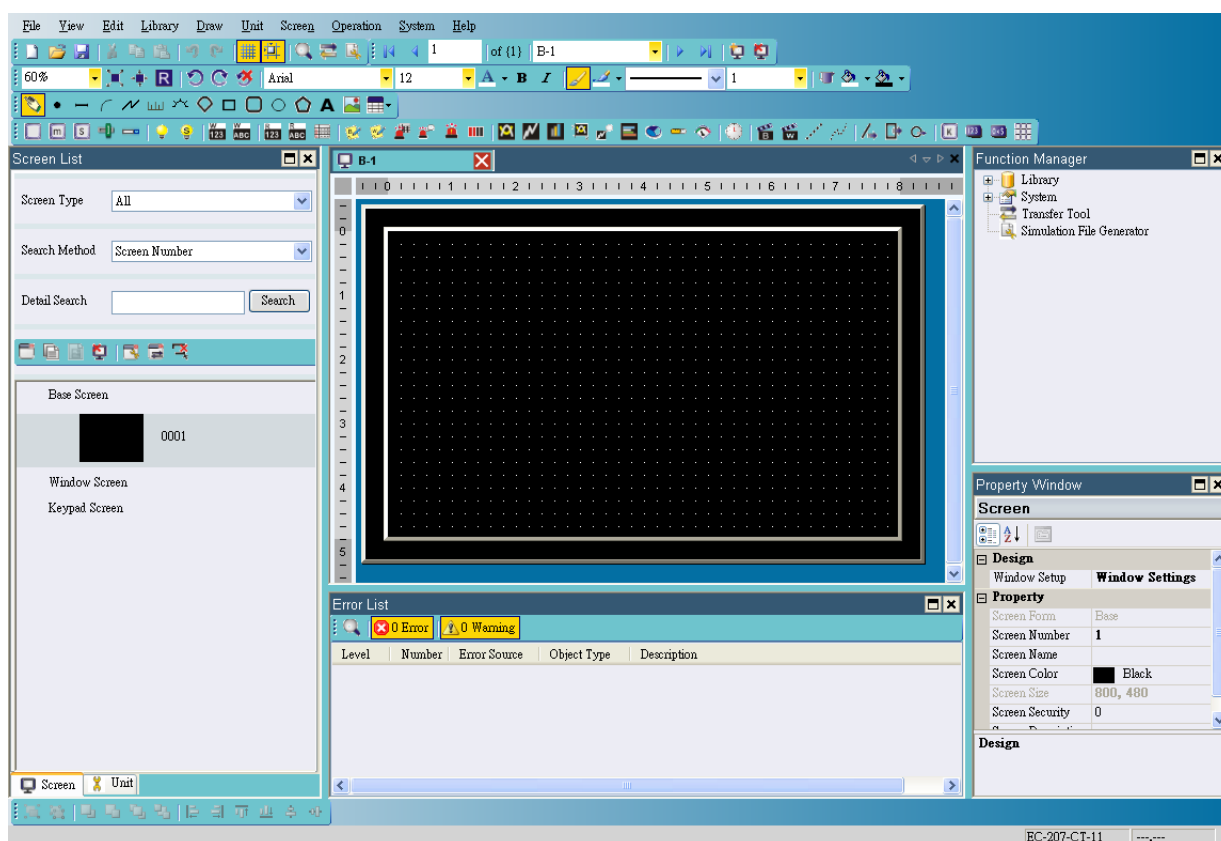


Fig. 2-3-1 Operating Interface

2.3.2. Introduction of Shortcut Toolbar

Figure 2-3-2 shows the shortcut toolbars included in the software. From top to bottom, the toolbars are Standard, View, Format, Image, Object, Status, Language, and Edit. The corresponding switches can also be selected from the menu bar options. For details, please refer to relevant descriptions in the following chapters.

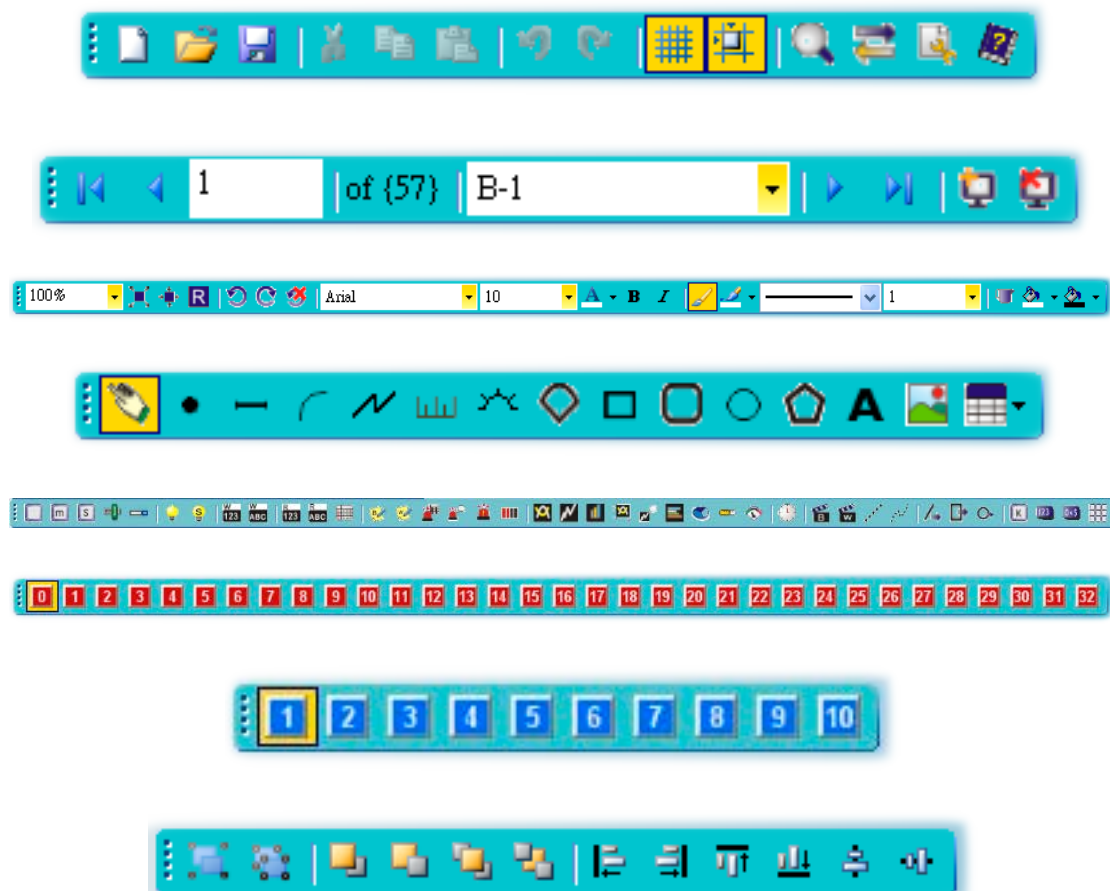


Fig. 2-3-2 List of Shortcut Toolbars

2.3.3. Introduction of Editing Window

The editing window is shown in Figure 2-3-3 below. The resolution of the EC series screen is 800×480 pixels. Use the window to view and draw images, and set up objects.

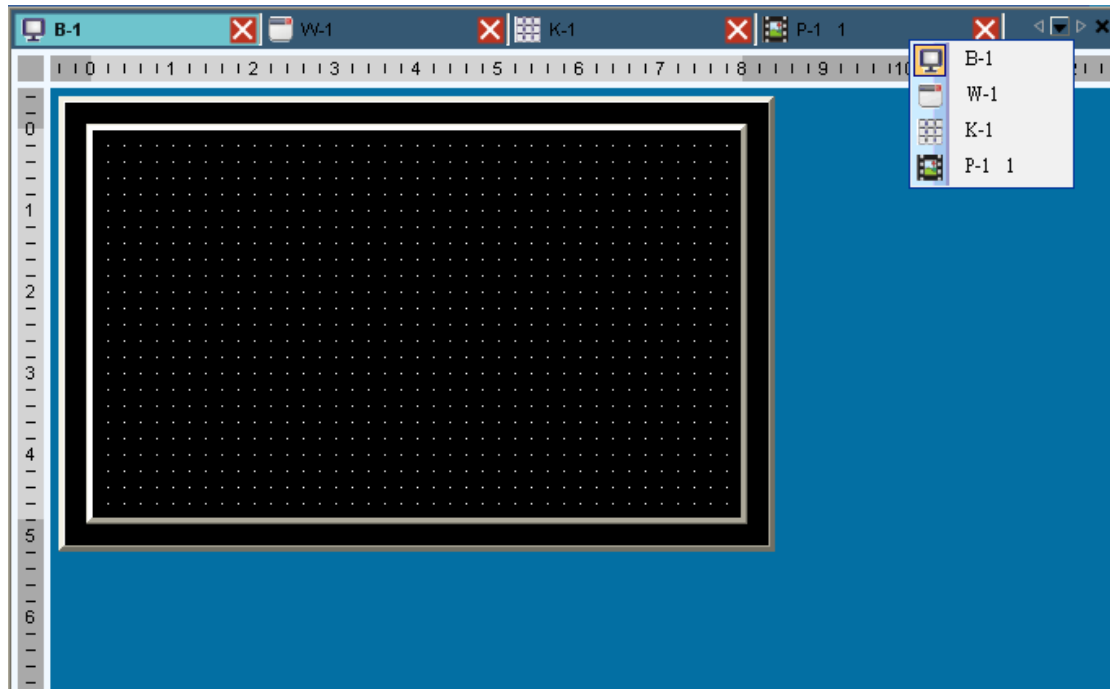


Fig. 2-3-3 Editing Window














Chapter 3 Menu of Tools

3.1. File Menu


3.1.1. File Functions

All the file functions of **File** are listed in Table 3-1-1 below.

Table 3-1-1 File Functions

Name		Function
 N ew		Start a new project.
 O pen...		Open an old project.
 C lose		Close a project.
 S ave		Save the project.
 Save A s...		Save the file as another project.
 E xport		Export to library.
 I mport		Import from library.
 P rint Setup...		Print the settings.
 P rint Preview...		Preview the settings.
 P rint...		Set the printing range and content.
 E xit		Close the EU editor.

3.1.2. New Project

Click **File** and then click **New**, or directly click the shortcut , or use the hotkey Ctrl+N, to establish a new project. If the window is having a project in edit, the system will pop up the dialogue box to ask about saving the project. Confirm to establish a new project. See Figure 3-1-2 below.

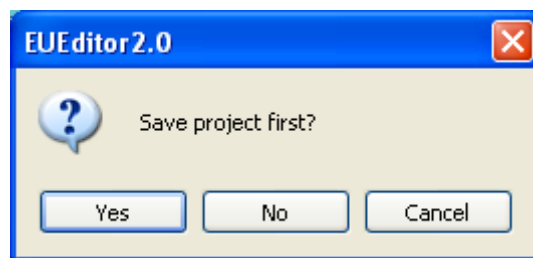


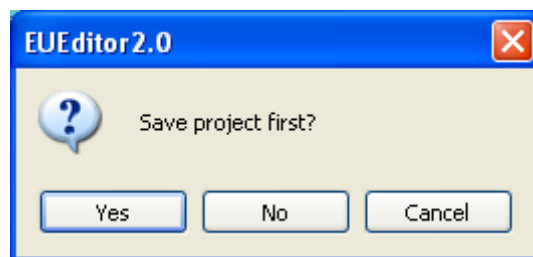


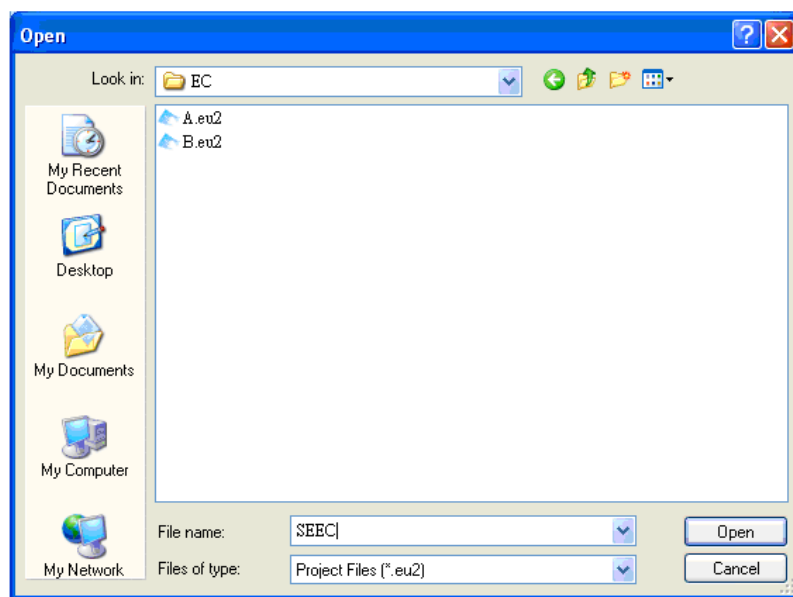
Fig. 3-1-2 Dialogue Box for Saving Project

3.1.3. Open Project

Click **File** and then click  **Open...** or directly click the shortcut , or use the hotkey Ctrl+O, to open an old project. If the window is having a project in edit, the system will pop up the dialogue box to ask about saving the project. Confirm and then select a project to be opened. The file's extension is *.eu2. Click the file to open it. See Figure 3-1-3 below.



(a)



(b)

Fig. 3-1-3 Opening Project (a) Saving Project in Edit (b) Selecting Old Project

3.1.4. Close Project

Click **File** and then click **Close** to close the edit window. If the window is having a project in edit, the system will pop up the dialogue box to ask about saving the project. Confirm to close the edit window. See Figure 3-1-4 below.

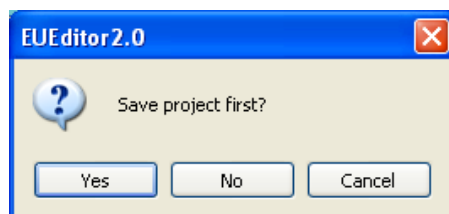



Fig. 3-1-4 Closing Edit Window

3.1.5. Save Project

Click **File** and then click **Save**, or directly click the shortcut , or use the hotkey Ctrl+S, to save the project. If this is a new project, the system will pop up the dialogue box to ask for a filename. Enter the filename and click the “Save” button to finish it. See Figure 3-1-5 below. If this is an old project, the system will directly save it without asking.

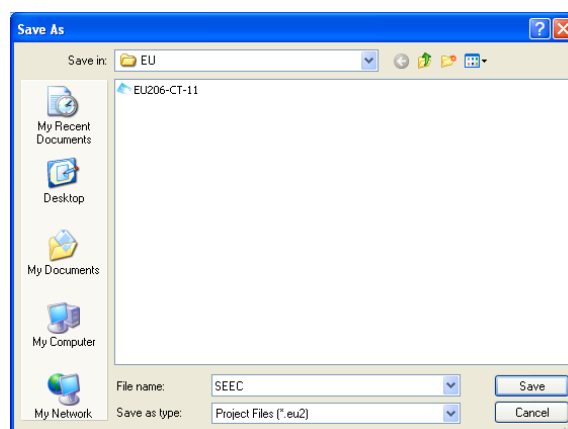


Fig. 3-1-5 Dialogue Box for Saving New Project

3.1.6. Save as Another File

Click **File** and then click **Save As...** to save the project as another file. The system will pop up the dialogue box. Enter the filename and click the “Save” button to finish it. See Figure 3-1-6 below.

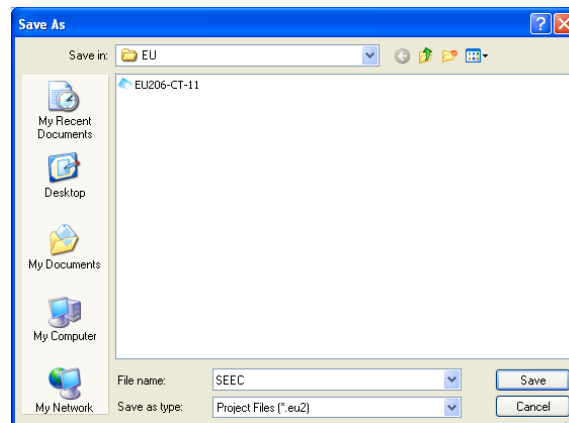


Fig. 3-1-6 Dialogue Box for Saving Project as Another File

3.1.7. Export






To export images, parts or comments of the editing software, click **File** and then click  **Export** to execute the export. The file extensions corresponding to the various libraries are listed in Table 3-1-7 below. Confirm to finish the export. See Figure 3-1-8 below.

Fig. 3-1-7 File Extensions in Libraries

Library Name		Extension
	Image Library...	*.gfc
	Parts Library	*.pdb
	Basic Comment...	*.bcm
	Comment Group...	*.gcm
	Sound Library...	*.sdb

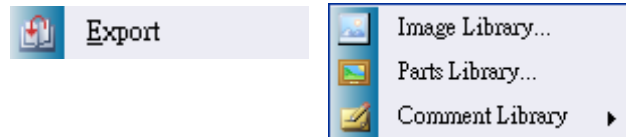



Fig. 3-1-8 Export Menu

3.1.8. Import

To import images, parts or comments of the editing software, click **File** and then click  **Import** to execute the import. See Figure 3-1-9 below.

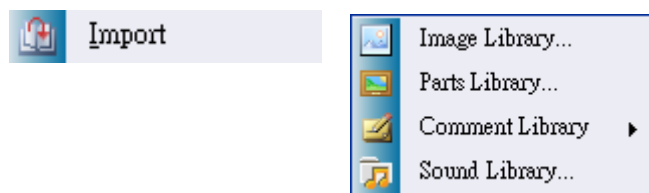


Fig. 3-1-9 Import Menu

3.1.9. Printing Setup

To print the edit contents, click **File** and then click **Print Setup...** to open the printing setup dialogue box and set the screen data, page size, and title to be printed. See Figure 3-1-10 below.

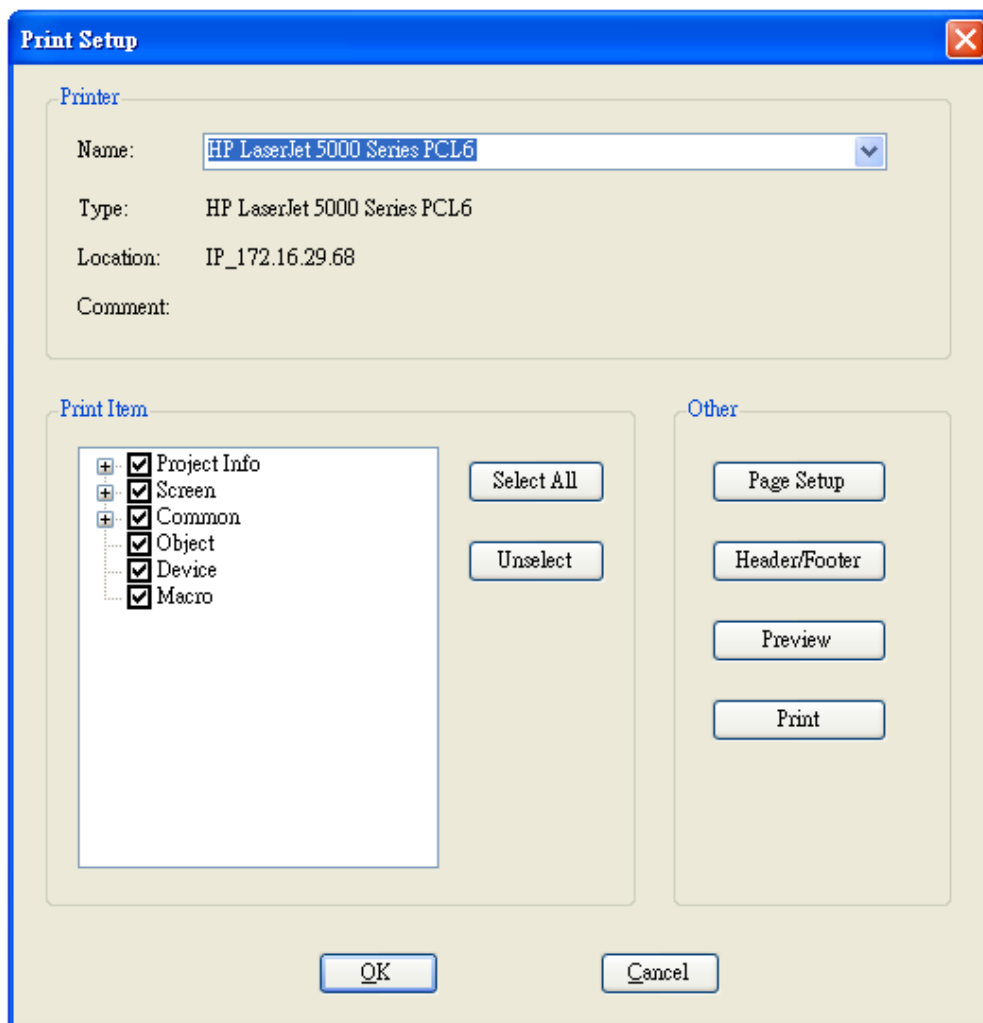


Fig. 3-1-10 Printing Setup

3.1.10. Printing Preview

To preview the contents to be printed, click **File** and then click **Print Preview...** to open the printing preview dialogue box and set the screen data, page size, and title to be printed. See Figure 3-1-11 below.

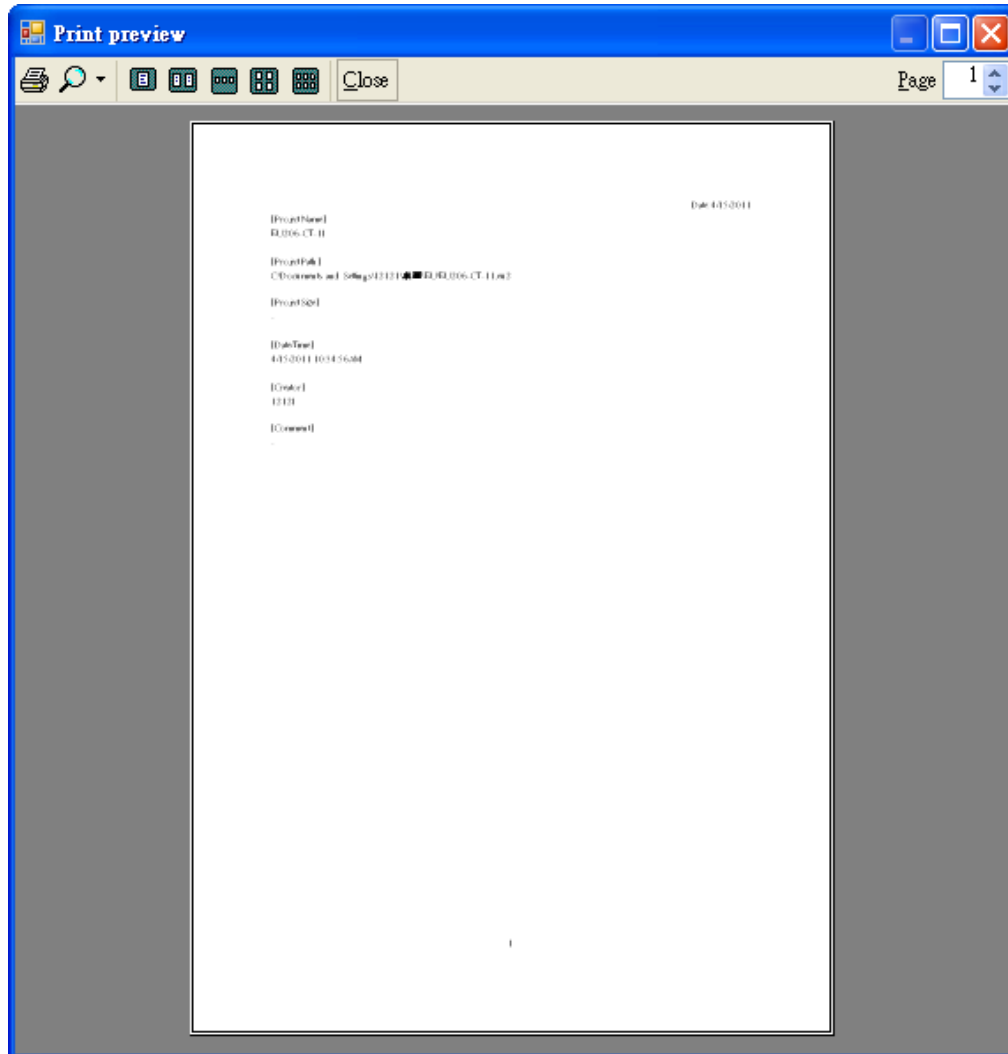


Fig. 3-1-11 Printing Preview

3.1.11. Printing

To print, click **File** and then click **Print...** to open the dialogue box, and select a printer and set the printing range and number of copies. See Figure 3-1-12 below.

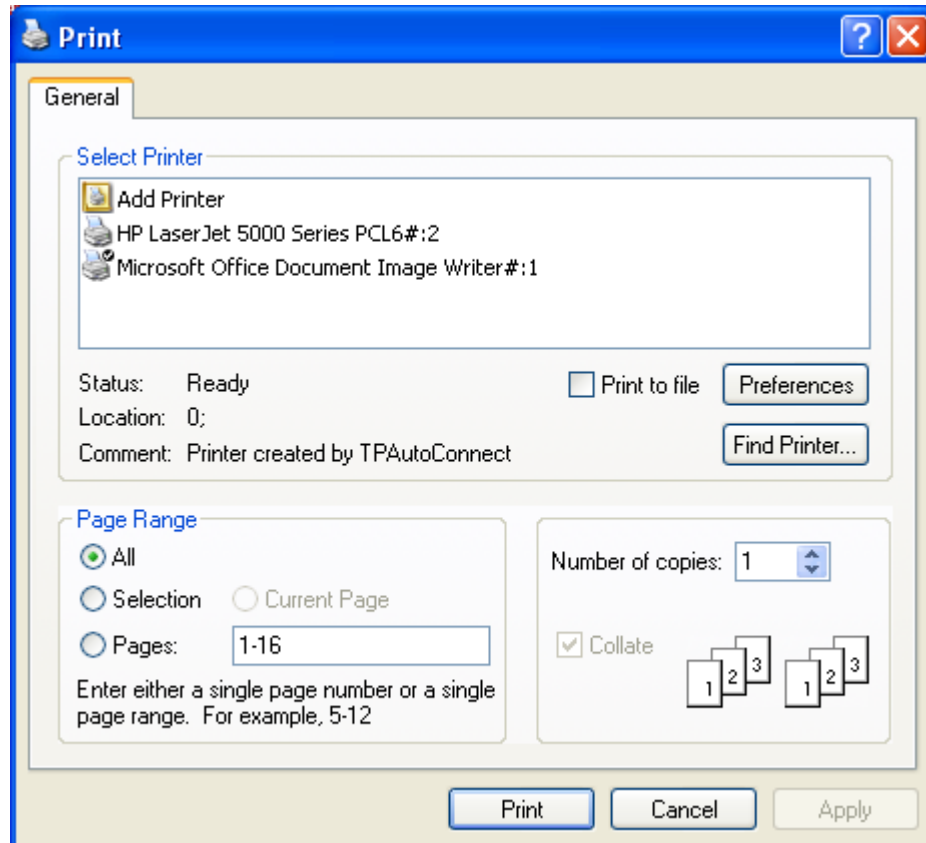


Fig. 3-1-12 Printing

3.1.12. Close Editing

Click **File** and then click **Exit** to close the editing. If there is any file in edit but not saved yet, the dialogue box will pop up to ask about saving it. Confirm to close the editing software.

3.2. Menu Views

3.2.1. Function View




















Click  to view all the functions in the menu, as shown in Table 3-2-1 below.

Table 3-2-1 Function List

Name	Function
 Tool Bar ▶	Open/close all toolbars
 Status Bar	Open/close status bar
 Property Window	Open/close property window
 Screen List	Open/close screen list
 Error List	Open/close error list
 Function Manager	Open/close function manager
 Package	Package user-defined graphs to library
 Zoom ▶	Change screen size ratio
 Unit State ▶	Change object status
 Unit Language ▶	Change language code
 Show Grid	Open/close grid display
 Snap to Grid	Open/close snap-to-grid
 Grid Setup	Set grid
 SnapLine Setup ▶	Set alignment pattern
 Unit View All...	View all objects in use
 Device View All...	View all devices in use
 Removable Drive Image Directory Setup	Set image library name
 Memory List...	View memory in use

3.2.2. Toolbars

Click **View** and then click **Tool Bar** to select the toolbars to be displayed, as shown in Figure 3-2-2 below.

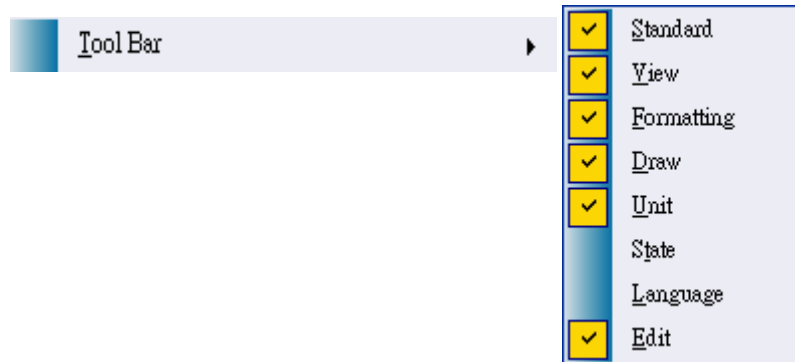


Fig. 3-2-2 Toolbar Menu

3.2.3. Status Bar

Click **View** and then click **Status Bar** to open/close the status bar. At the bottom of the editing software screen, the status bar shows the current operating status, as shown in Figure 3-2-3 below. The left column shows the HMI model, and the right column shows the coordinates of the mouse on the screen.

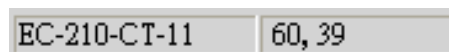


Fig. 3-2-3 Status Bar

3.2.4. Property Window

Click **View** and then click **Property Window**, or directly click the shortcut, to open/close the property window. Use the mouse to drag it to a desirable position. Its default position is on the right of the window. Different objects have different property windows. Figure 3-2-4 shows the property windows of 3 different objects.

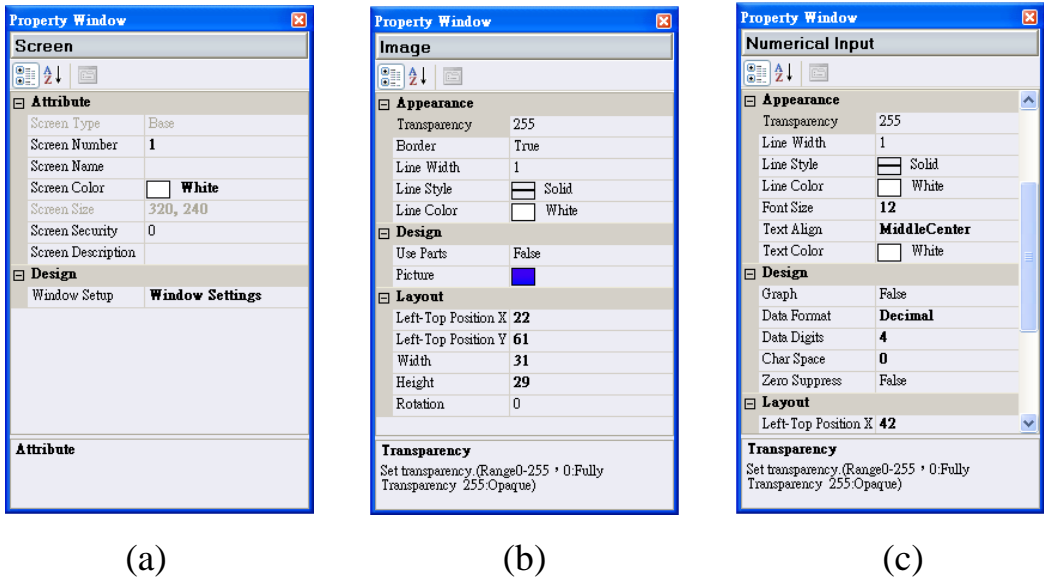






Fig. 3-2-4 Property Windows (a) Screen (b) Image (c) Value Input

3.2.5. Screen List

Click **View** and then click  **Screen List**, or directly click the shortcut , to open/close the screen list, and view the screen patterns and search for screens. Use the mouse to drag the screen list to a desirable position. Its default position is on the left of the window. Click the icons  in the toolbar to create/copy/paste/delete a screen; click the icons  to set the properties and display mode or undo the click. Right-click the thumbnails can also open the editing shortcut menu. See Figure 3-2-5 below.

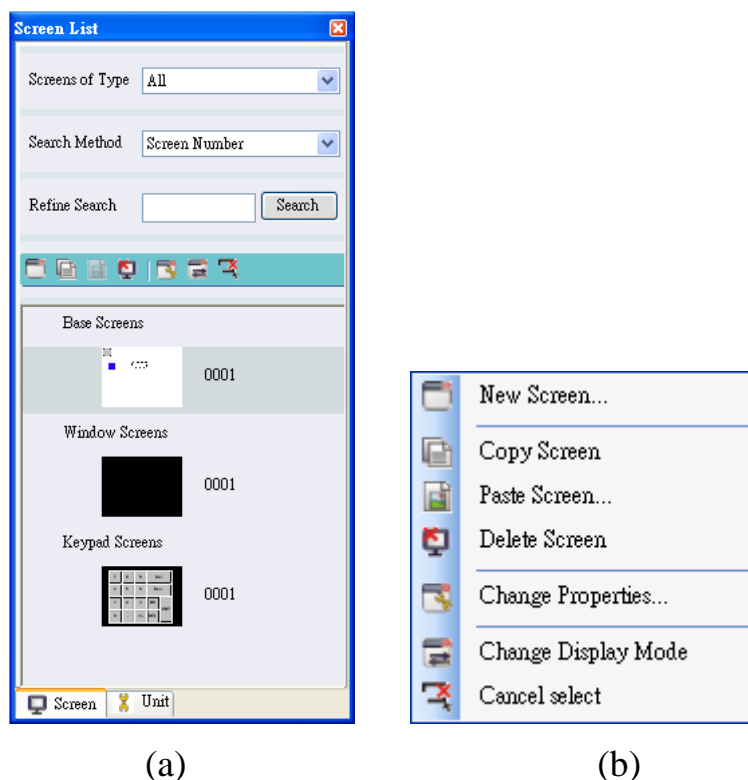


Fig. 3-2-5 Screen List (a) List Contents (b) Shortcut Menu

Change tab to view all objects of the current page, and set properties of the objects as desired. See Figure 3-2-6 below.

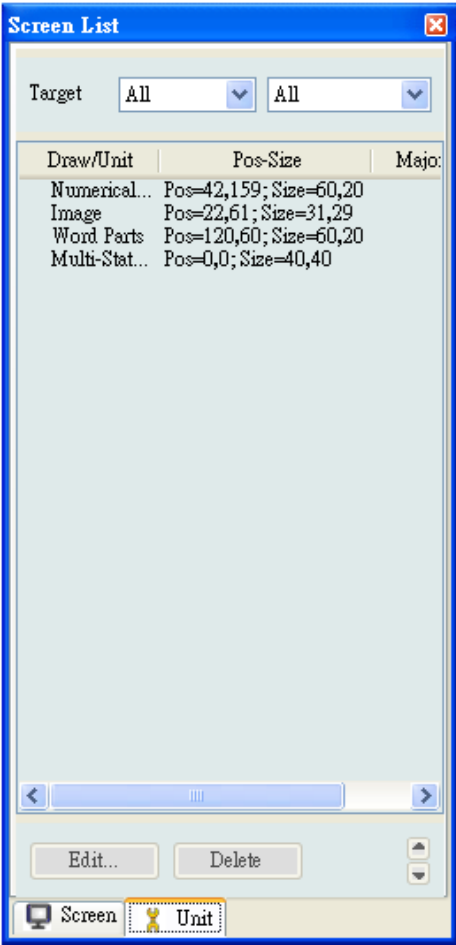


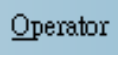




Fig. 3-2-6 Object List of Current Page

3.2.6. Error List

Click  and then click  Error List to open/close the error list. Use the mouse to drag the error list to a desirable position. Its default position is at the bottom of the window. Click  and then click  Error Check, or directly click the shortcut , to start debugging on the editing screen. See Figure 3-2-7 below.

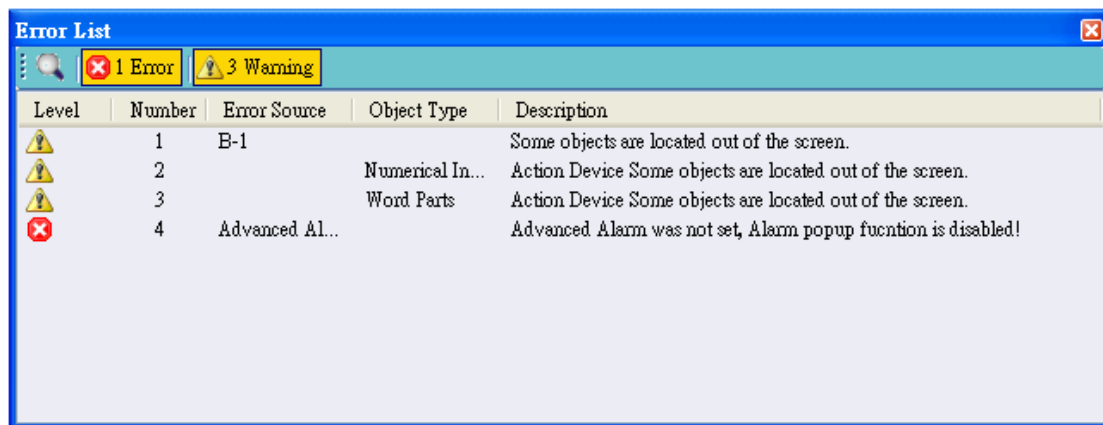


Fig. 3-2-7 Error List

3.2.7. Package

Click **View** and then click **Package** to open the package list window. The package list provides a built-in numeric/character keypad for the user to add/open/delete/rename the package. See Figure 3-2-8 below.

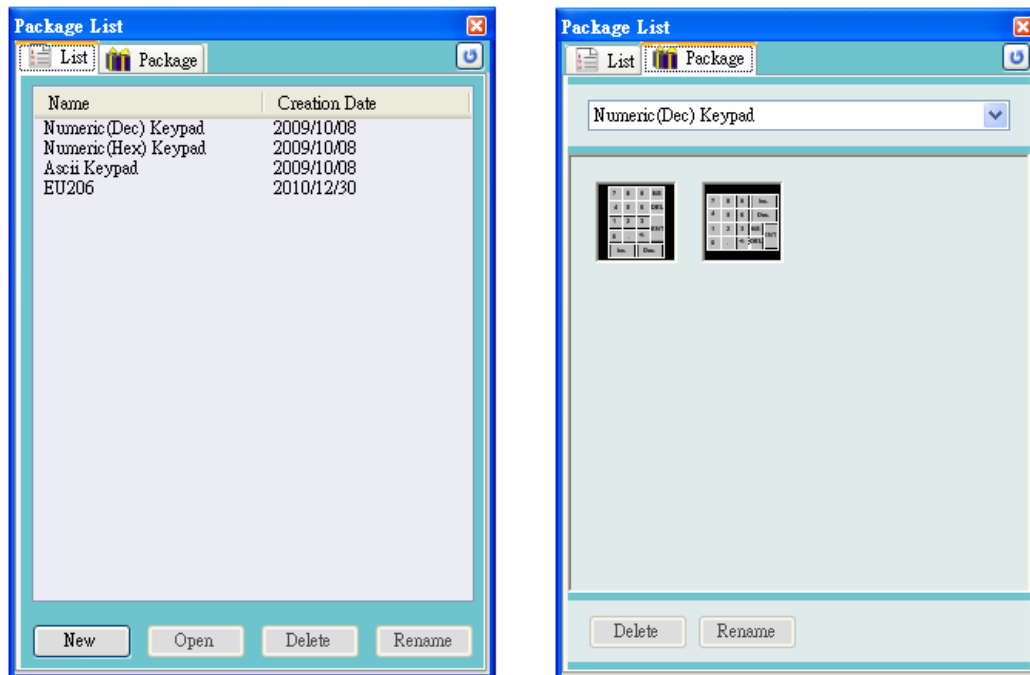
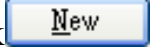


Fig. 3-2-8 Package List

To add user-defined images to the package list, click , and then enter the new package name. Pick up the images to be packaged by dragging them from the basic screen to the package list. To use the images already in the package list, just click the desired images and drag them to the screen. See Figure 3-2-9 below.

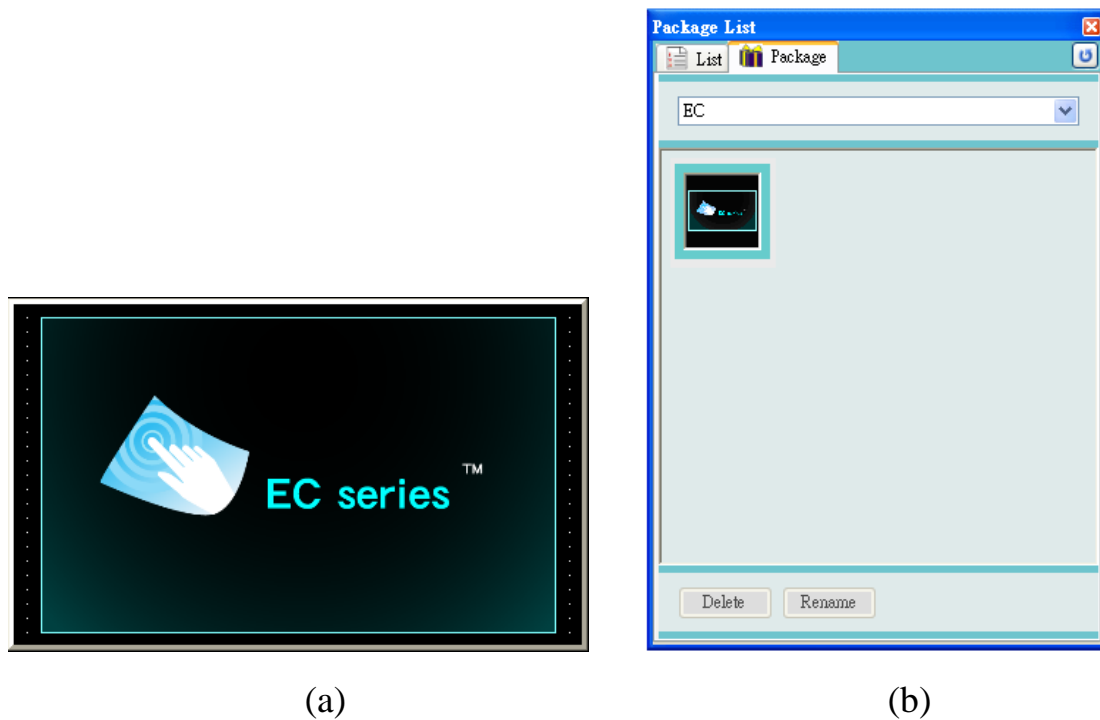


Fig. 3-2-9 Editing Package List (a) Basic Screen (b) Dragging to List

3.2.8. Zoom

Click **View** and then click **Zoom**, or directly click the shortcut **100%**, to zoom in and zoom out the editing screen. The zoom scope is 50%~400%, and the default zoom ratio is 100%. See Figure 3-2-10 below.

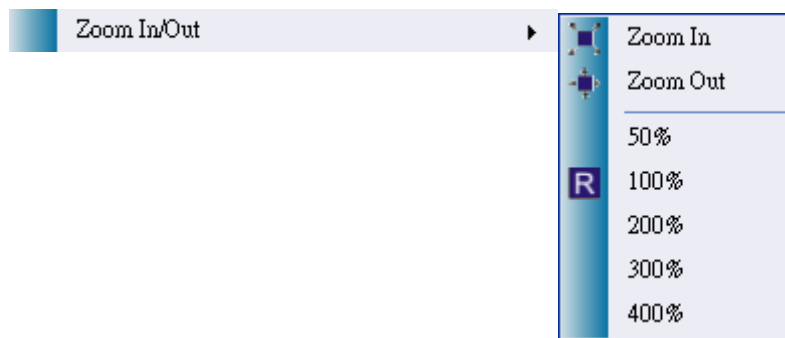


Fig. 3-2-10 Zoom Menu

3.2.9. Object Status

Click **View** and then click **Unit State** to select an object status you want. The number of displayed object statuses can be set to 0~32. See Figure 3-2-11 below.



Fig. 3-2-11 Object Status List



If the default status toolbar is not open, click **View** and click **Tool Bar** and then tick **State** to open it.

3.2.10. Unit language






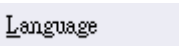
Click  and then click  to select a desired language. The number of languages can be set to 0~10. See Figure 3-2-12 below.






Fig. 3-2-12 Unit language



- If the default language toolbar is not open, click  and click  and then tick   to open it.




3.2.11. Show Grid

Click  and then click  Show Grid, or directly click the shortcut , to open/close the grid display.



- The user can also click the object and then right click the mouse to open the quick menu and select the grid display.

3.2.12. Snap-to-Grid

Click  and then click  Snap to Grid, or directly click the shortcut , to open/close the snap-to-grid feature.



- The user can also click the object and then right click the mouse to open the quick menu and set the snap-to-grid feature.

3.2.13. Grid Setup

Click **View** and then click **Grid Setup** to set the horizontal and vertical grid spacing and the grid color. The default spacing is 20 points horizontally and vertically, and the definable range is 4~120 points. See Figure 3-2-13 below.

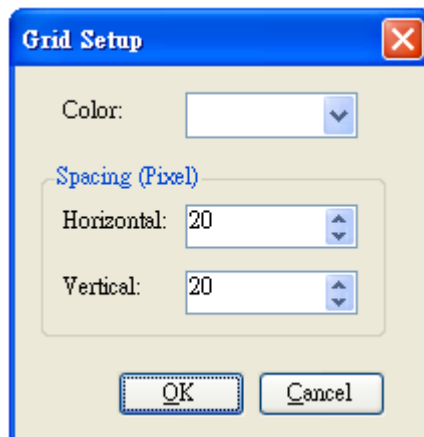


Fig. 3-2-13 Grid Setup



- The user can also click the object and then right click the mouse to open the quick menu and make the grid setting.

3.2.14. SnapLine Setup

Click **View** and then click **SnapLine Setup** to set the alignment pattern. The default alignment is to the left edge and top edge. See Figure 3-2-14 below.

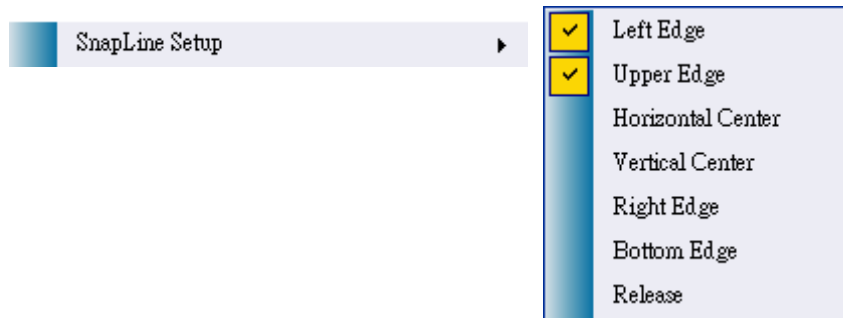


Fig. 3-2-14 SneapLine Setup



- The user can also click the object and right click the mouse to open the quick menu and make the alignment setting.

3.2.15. Unit view all

To view the statuses of objects in use, click **View** and then click **Unit View All...** to open the objects overview dialogue box and set the objects. See Figure 3-2-15 below.

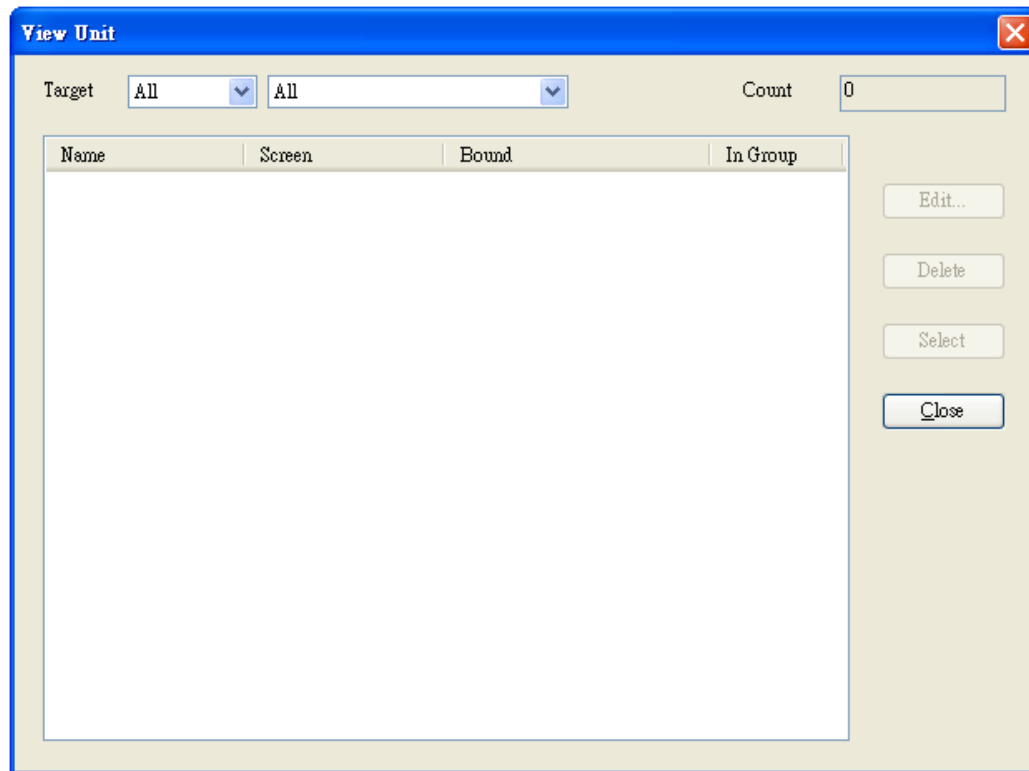


Fig. 3-2-15 Unit view all

3.2.16. Devices view all

To view the statuses of devices in use, click **View** and then click **Device View All...** to open the devices overview dialogue box. All the devices used will be displayed in the window for search and replacement. See Figure 3-2-16 below.

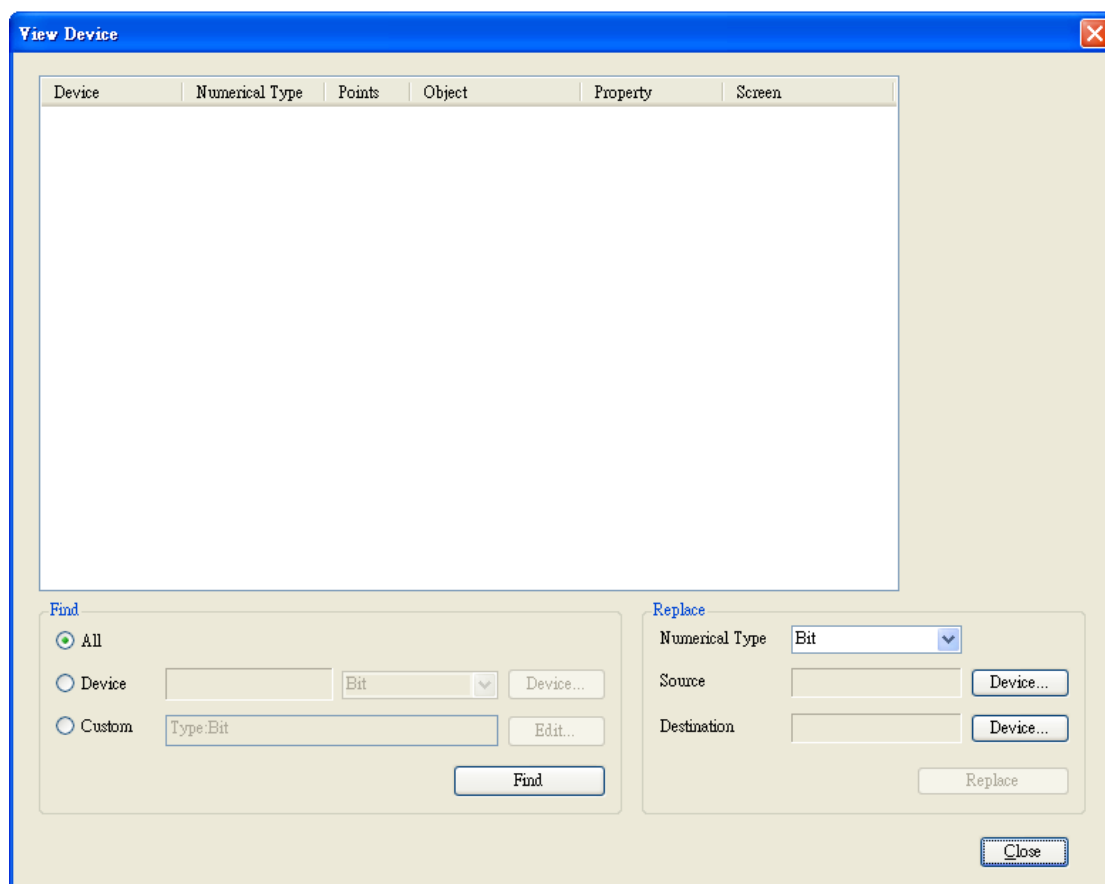


Fig. 3-2-16 Devices view all

3.2.17. Removable Drive Image Directory Setup

Click **View** and then click **Removable Drive Image Directory Setup** to open the dialogue box of removable storage device folder and set up the names of image folders on SD Card or USB. See Figure 3-2-17 below.

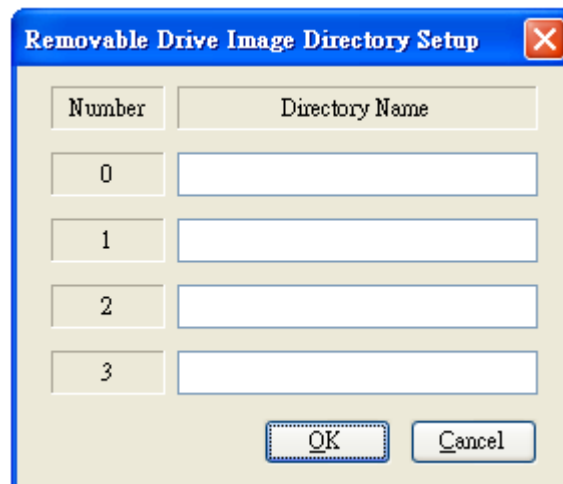
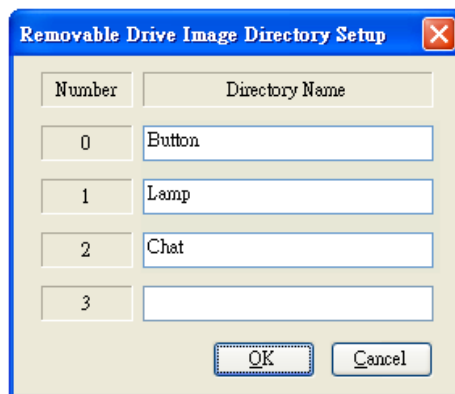


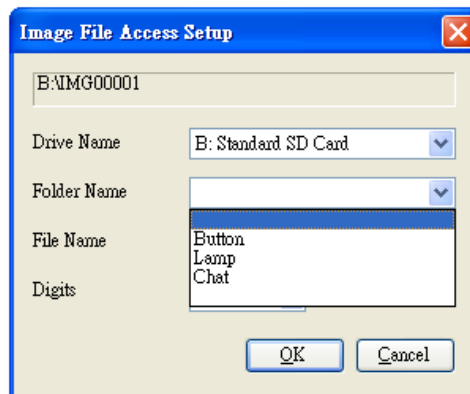
Fig. 3-2-17 Image Folder on Removable Storage Device Setup



If the image file path on the removable storage device is G:\Button, open the removable drive image directory setup dialogue box to set up the folder name. For parts objects stored in the removable drive, use corresponding folder name. See Figure 3-2-18 below.



(a)



(b)

Fig. 3-2-18 Folder Setup (a) Naming Folder (b) Selecting Folder

3.2.18. Memory List

To view the use of memory by the editing screen, click **View** and then click **Memory List** to open the dialogue box for the memory in use. See Figure 3-2-19 below.

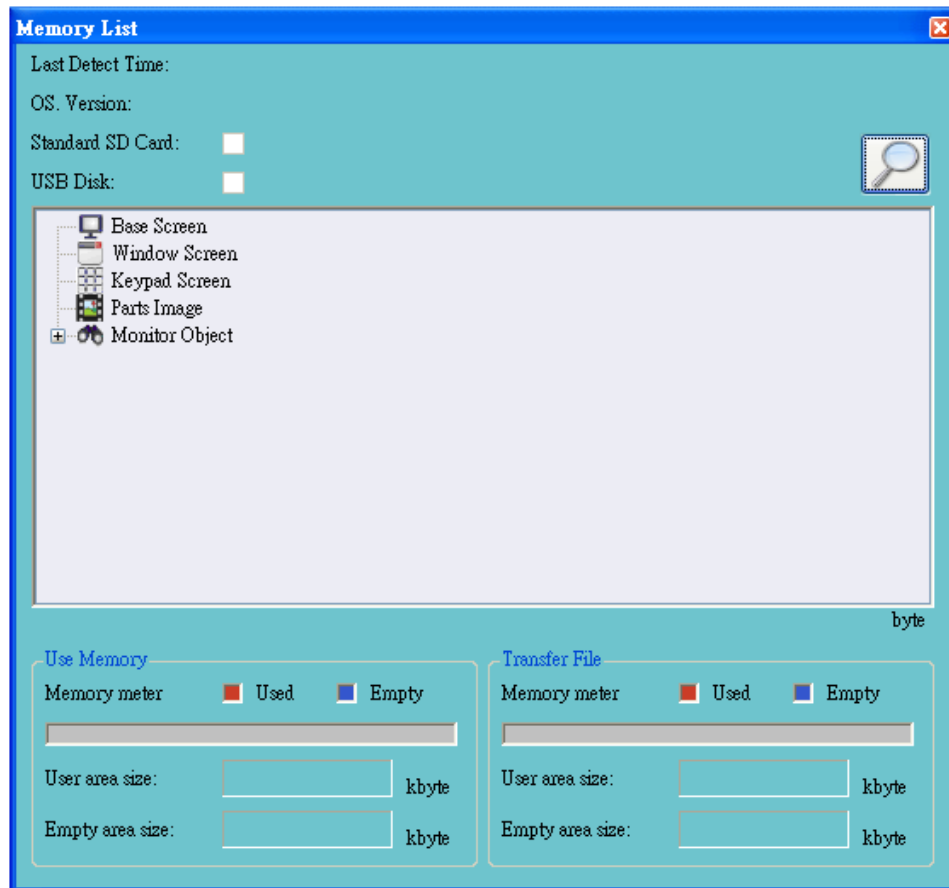



Fig. 3-2-19 Memory List

To use a removable storage device, click  to open the memory detection dialogue box, and enter the OS filename in the OS information box, and then tick ☒ Standard SD Card or ☒ USB Disk and confirm the setting. The system will start automatic detection. See Figure 3-2-20 below.

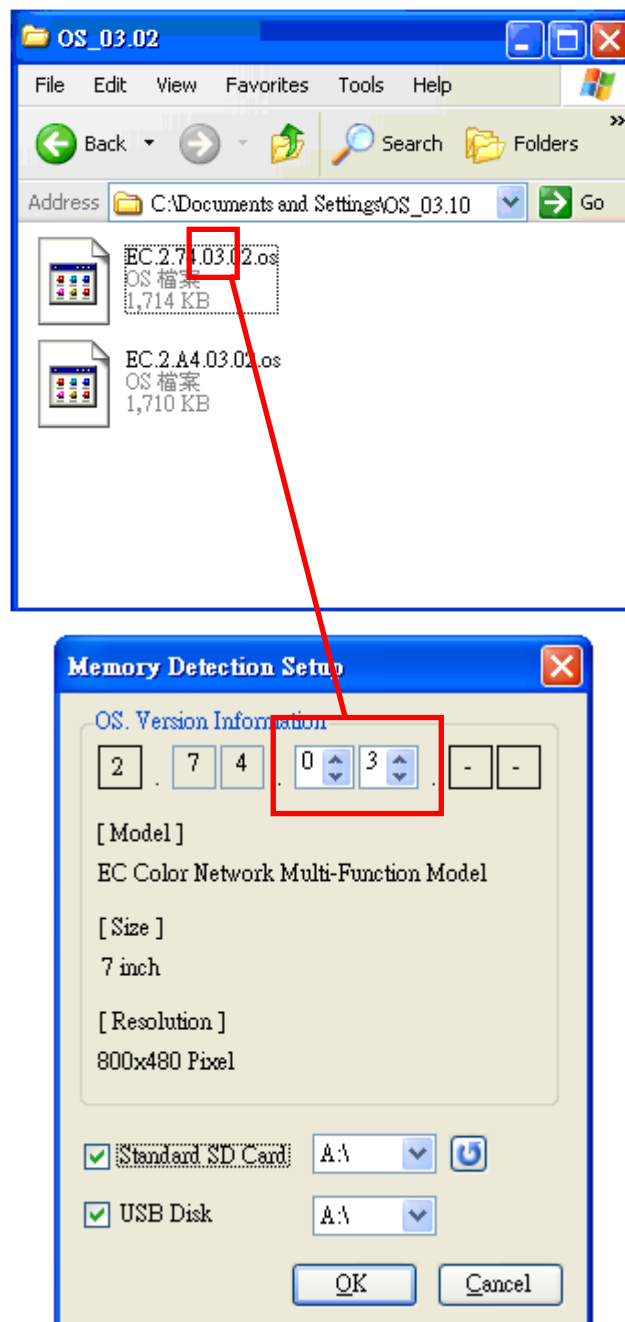


Fig. 3-2-20 Memory Detection

3.3. Edit Menu

3.3.1. Edit Functions




















Click  to display all the functions in the menu, as shown in Table 3-3-1 below.




Table 3-3-1 Edit Functions

Name				Function
	Undo	Ctrl+Z		Undo last action.
	Redo	Ctrl+Y		Redo last action.
	Cut	Ctrl+X		Cut selected objects.
	Copy	Ctrl+C		Copy selected objects.
	Paste	Ctrl+V		Paste objects cut (selected).
	Delete			Delete selected objects.
	Array Copy			Copy selected object array.
	Group Object		▶	Set object group functions.
	Order		▶	Set object display order.
	Align		▶	Set alignment pattern.
	Snap to Screen		▶	Set snap-to-screen feature.
	Unit Property...			Open object property window.
	Unit Rotate		▶	Set object rotation direction and angle.
	Select All	Ctrl+A		Select all objects in the edit window
	Delete All			Delete all objects in the edit window




3.3.2. Undo

If the user made an editing mistake and wants to undo the last action, click  and then click  Undo **Ctrl+Z**, or directly click the shortcut , or use the hotkey Ctrl+Z, to get back to the previous status.




3.3.3. Redo

If the user wants to cancel the undo action, click  and then click  Redo **Ctrl+Y**, or directly click the shortcut , to redo the previous editing action.




3.3.4. Cut

Select by clicking the objects to be cut, and then click  and click  Cut **Ctrl+X**, or directly click the shortcut , or use the hotkey Ctrl+X, to cut the selected objects.




3.3.5. Copy

Select by clicking the objects to be copied, and then click  and click  **Copy** **Ctrl+C**, or directly click the shortcut , or use the hotkey Ctrl+C, to copy the selected objects.

3.3.6. Paste

To paste the objects that have been cut or selected, click  and then click  **Paste** **Ctrl+V**, or directly click the shortcut , or use the hotkey Ctrl+V, to paste the objects.


3.3.7. Delete

Select by clicking the objects to be deleted, and then click  and click  **Delete**, or directly click the shortcut , to delete the objects.



- To cut, copy, paste or delete objects, you can select the objects and then right click the mouse to open the quick menu to execute the jobs.

3.3.8. Array Copy

Select the objects into an array, and then click **Edit** and click **Array Copy**, or directly click the shortcut , to open the array copy dialogue box. Set the copy direction, quantity, pixel interval and device increment, and then confirm to execute the copy. See Figure 3-3-2 below.

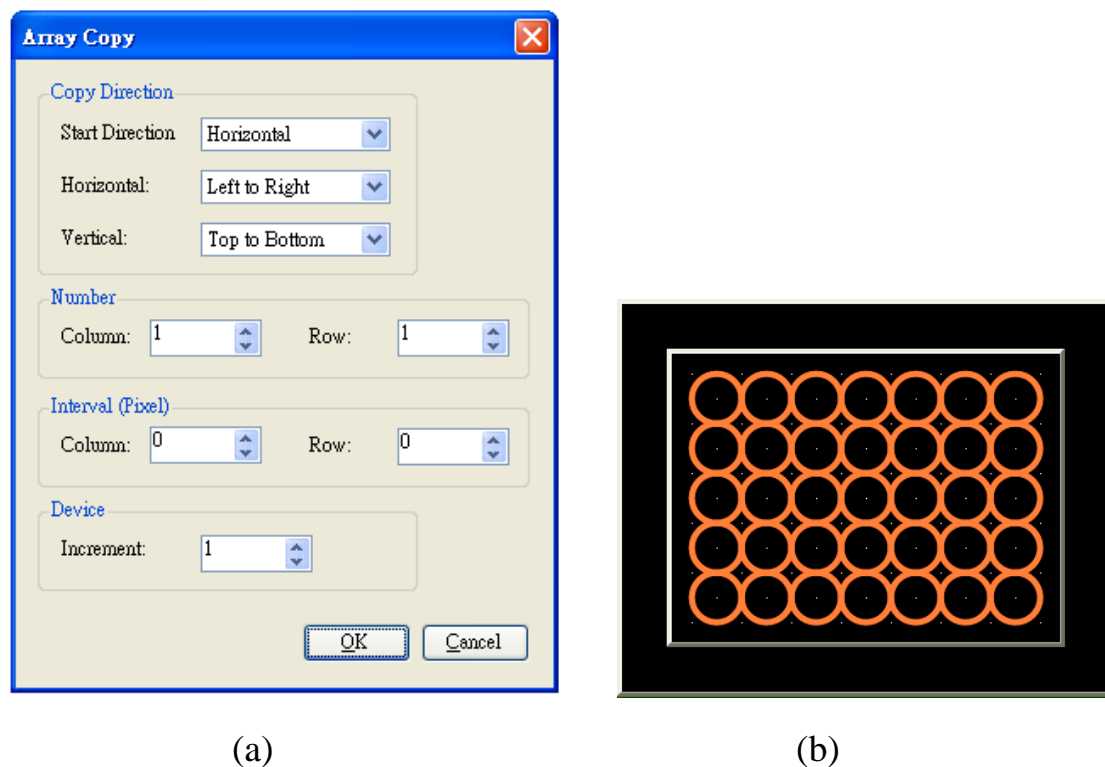



Fig. 3-3-2 Array Object (a) Copying Array (b) Array Copied



- The user can also select the objects and then right click the mouse to open the quick menu and execute the array copy.

3.3.9. Group Object

To set two or more objects into a group, click **Edit** and then click **Group Object**, or directly click the shortcut , to set up a group object. See Figure 3-3-3 below.

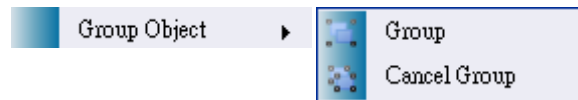
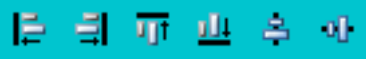


Fig. 3-3-3 Group Object Menu



- To set up a group object, select two or more objects in the editing window and then click the group/un-group icon to make the setting.
- The user can also select the objects and then right click the mouse to open the quick menu and make the setting.

3.3.10. Align

To align two or more objects, or to change the alignment pattern, select by clicking one of the objects, say object A, as the alignment basis, then click the rest objects, then click **Edit**, and click **Align** to select a pattern, or directly click one of the options of the shortcut , to set the alignment pattern. See Figure 3-3-4 below.

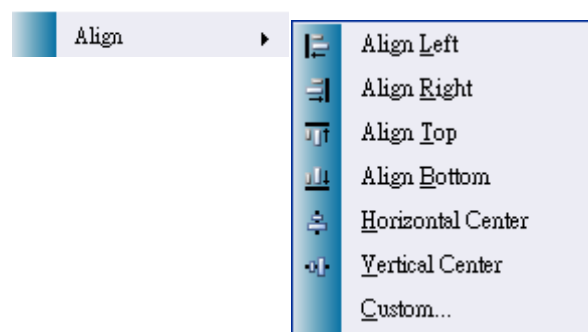


Fig. 3-3-4 Align



- To make alignment, select the objects to be aligned in the editing window, and then select the desired alignment pattern to finish the setting.
- The user can also select the objects and right click the mouse to open the quick menu and set the alignment.

3.3.11. Snap-to-Screen

Select the objects to be snapped to grid, and then click **Edit** then click **Snap to Screen**, and select a pattern to finish the setting. See Figure 3-3-5 below.

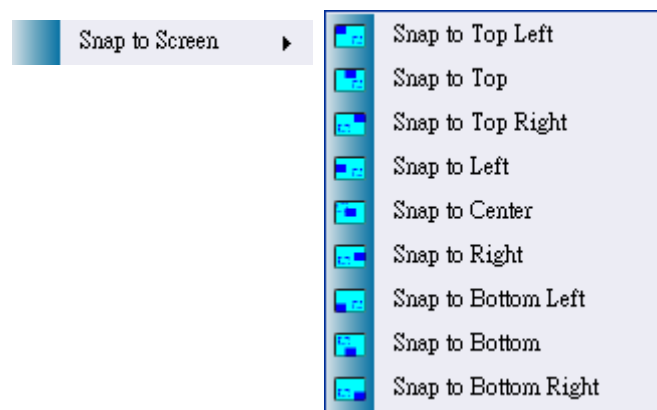



Fig. 3-3-5 Snap-to-Screen Menu



- The user can also select the object and then right click the mouse to open the quick menu and make the snap-to-screen setting.

3.3.12. Order

When two or more objects are overlapped, to change the top-down display order, select by clicking the overlapped objects and then click **Edit**, then click **Order** to select an option, or directly click one of the options from the shortcut , to change the display order. See Figure 3-3-5 below.

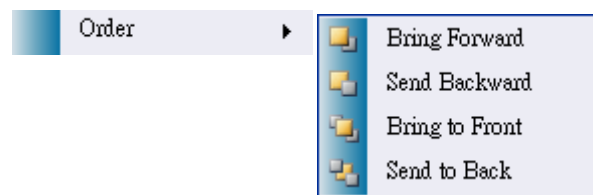

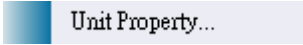


Fig. 3-3-6 Order Menu



- To change the top-down display order, select the overlapped objects in the editing window, and then select the desired display order pattern to finish the setting.
- The user can also select the overlapped objects and then right click the mouse to open the quick menu and make the setting.

3.3.13. Unit Property Setup

Select by clicking an object in the editing window, and then click  and click  to open the object's property setting window and set its properties.



- The user can also select the object and right click the mouse to open the quick menu and make the setting.

3.3.14. Unit Rotate


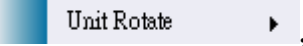

Select the object to be rotated, and then click  and click , or directly click one of the options from the shortcut , to rotate the object. The default rotation angle is 10 degrees each time. See Figure 3-3-6 below.





Fig. 3-3-7 Unit Rotate

3.3.15. Selecting All Objects

Click  and then click  **Select All** Ctrl+A, or use the hotkey Ctrl+A, to select all objects in the editing window.

3.3.16. Deleting All Objects

Click  and then click  **Delete All** to delete all objects in the editing window.



- The user can also select all the objects and then right click the mouse to open the quick menu and make the deletion.

3.4. Library Menu

3.4.1. Library Functions

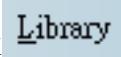





Click  to display all the library functions, as shown in Table 3-4-1 below.

Table 3-4-1 Library Functions

Name		Function
 Image Library...		Add/Edit Image Library.
 Parts Library		Add/Edit Animation Library.
 Comment Library...		Add/Edit Comment Library.
 Macro Library...		Add/Edit Macro Library.
 Sound Library...		Add/Edit Sound Library

3.4.2. Image Library

Click **Library** and then click **Image Library...** to open the dialogue box for the image library. Select an image file from the pull-down menu to open it. Click the **Close** button to close the window. See Figure 3-4-2 below.

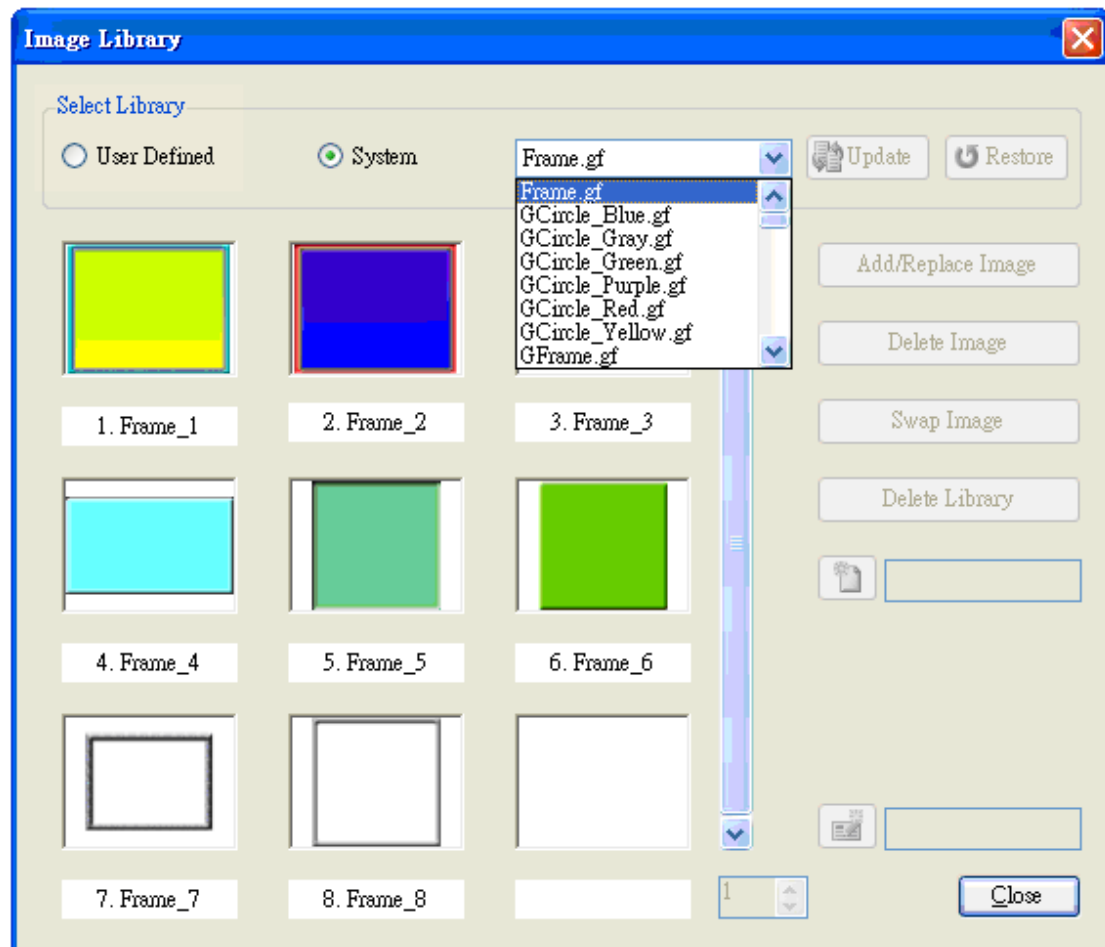

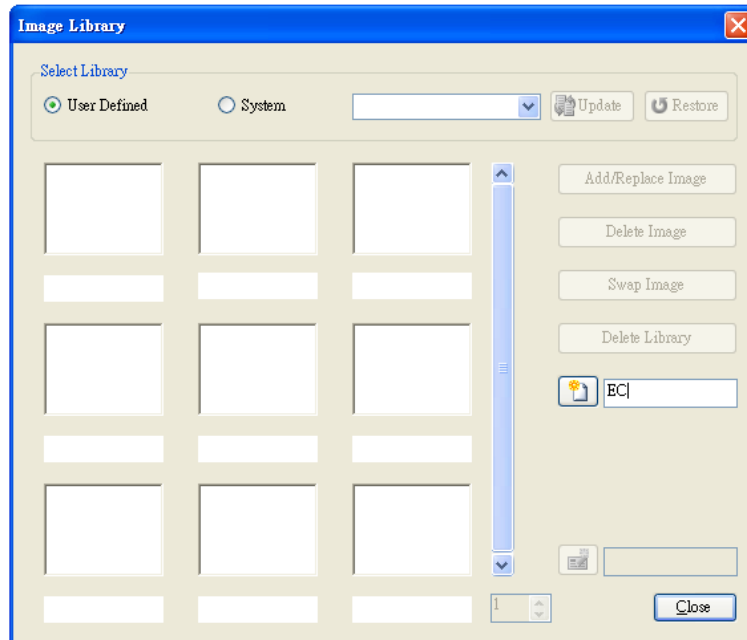
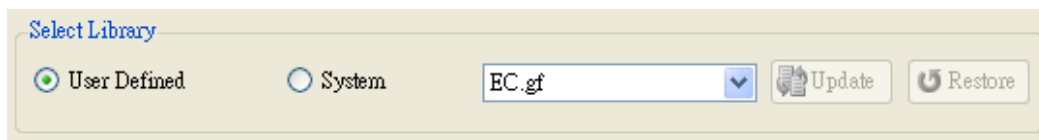


Fig. 3-4-2 Library of System Images

To make a user-defined library, enter the library name first, and then click , the library name will be shown in the pull-down menu on the top of the window. (The file extension is *.gf). See Figure 3-4-3 below.




(a)



(b)

Fig. 3-4-3 User-defined Image Library (a) User Library (b) Selecting Image Library

If no library name is given when the icon  is clicked, the system will pop up the following warning message, as shown in Figure 3-4-4 below.

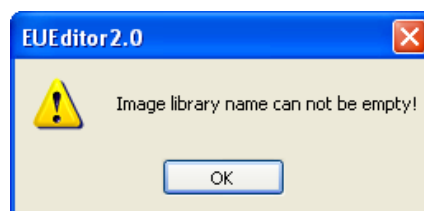
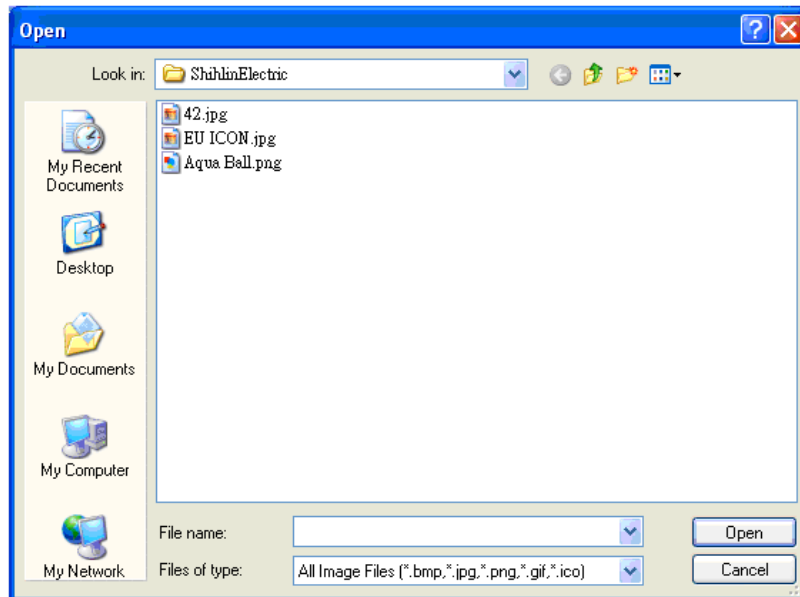
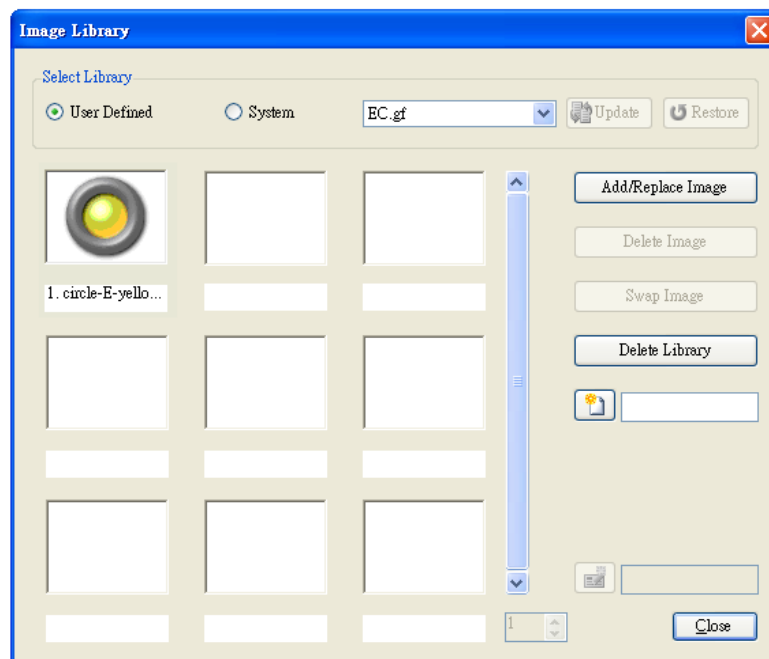


Fig. 3-4-4 Warning Message

To add image files to the library, click the **Add/Replace Image**, and then select the image files to be added. Confirm to finish the adding. See Figure 3-4-5 below.



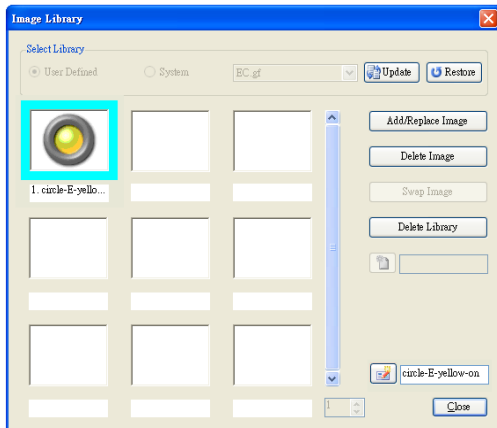
(a)



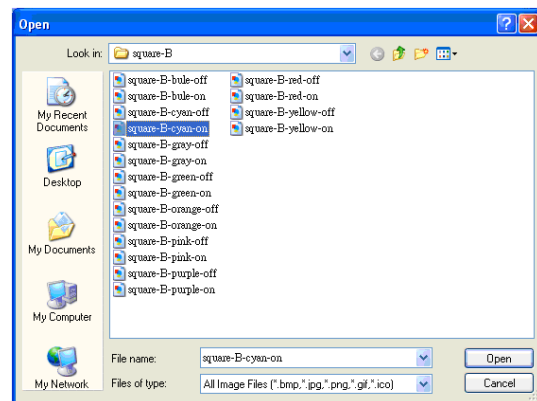
(b)

Fig. 3-4-5 User-defined Image Library (a) Opening Image File Folder (b) Adding Image Files

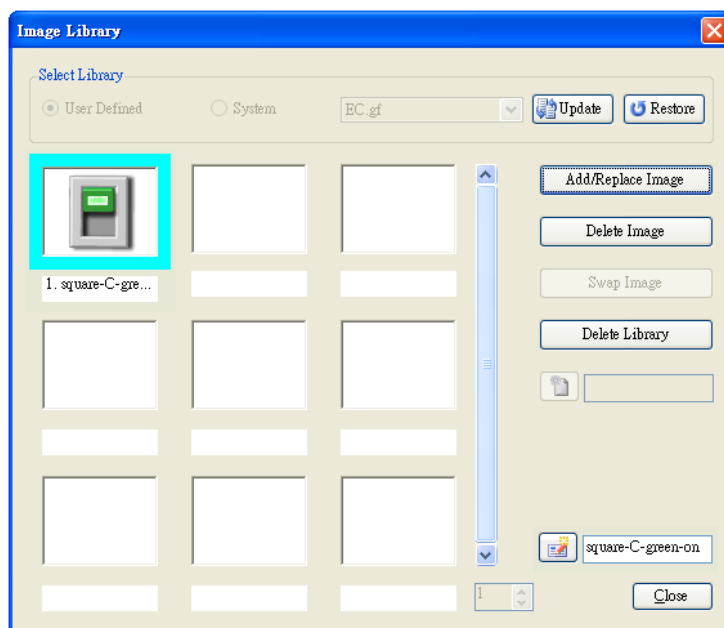
To replace an image file in the library, select the image file to be replaced and click the button **Add/Replace Image**, and then select an image file to replace. Confirm to finish the replacement. See Figure 3-4-6 below.



(a)




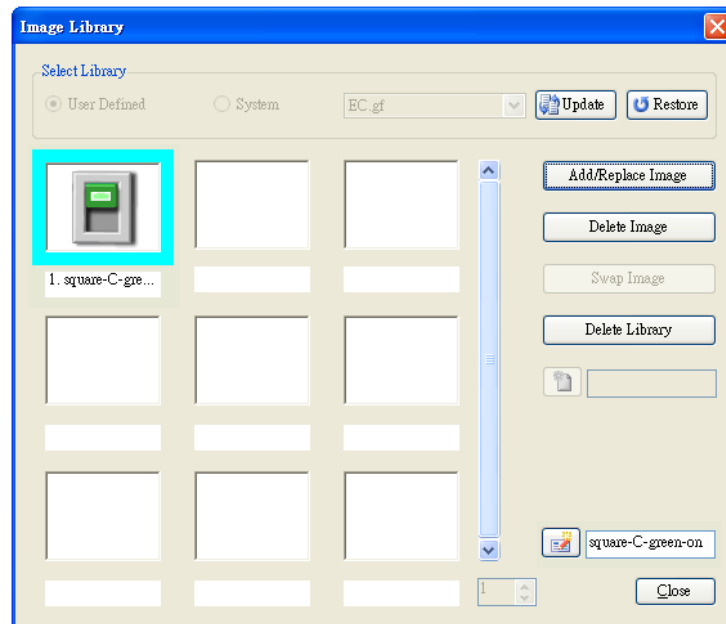
(b)



(c)

Fig. 3-4-6 Replacing Image File (a) Selecting an Image File (b) Opening Image File Folder (c) Replacement Completed

To rename an image file, click the file to be renamed, and then enter the new filename, then click  to execute the renaming. See Figure 3-4-7 below.



(a)

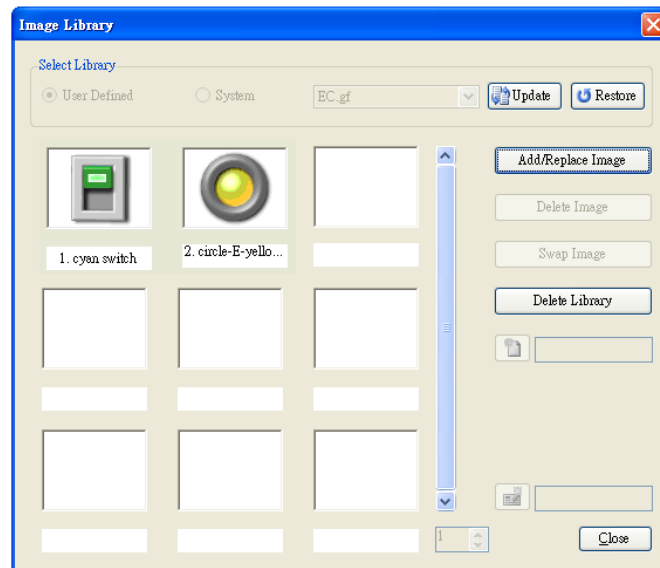


(b)

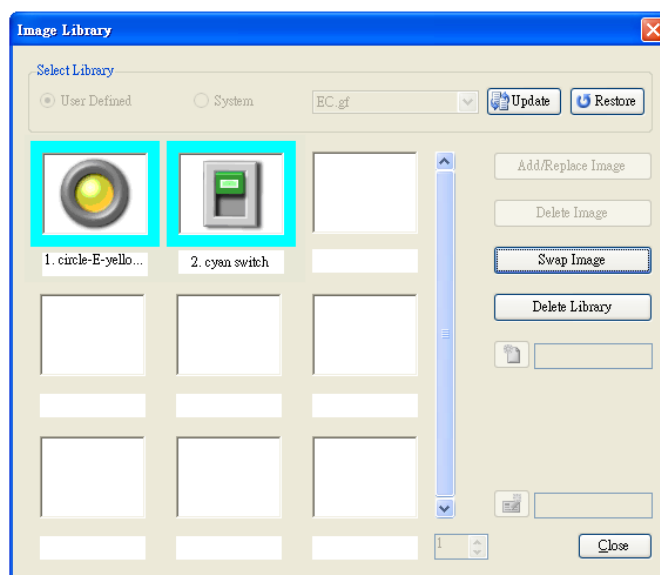
Fig. 3-4-7 Renaming Image File (a) Selecting Image File (b) Entering New Filename

To swap the order of two images, press and hold down the Ctrl key, and then select by clicking the two image files, and then click

Swap Image to make the swap. See Figure 3-4-8 below.




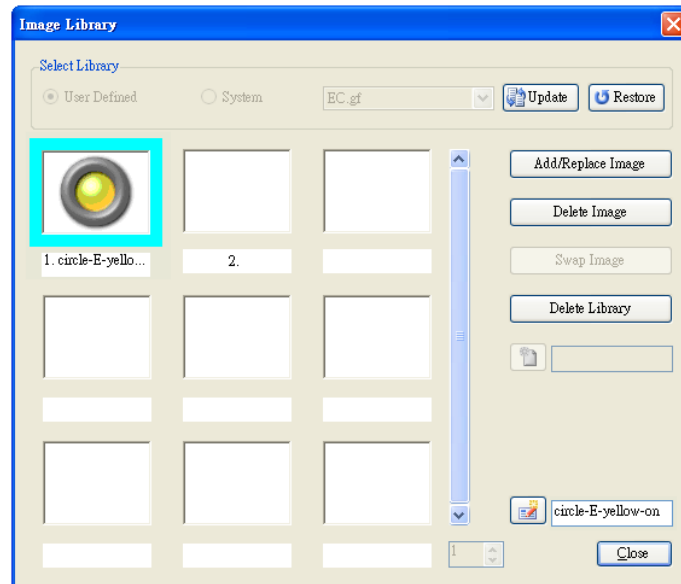
(a)



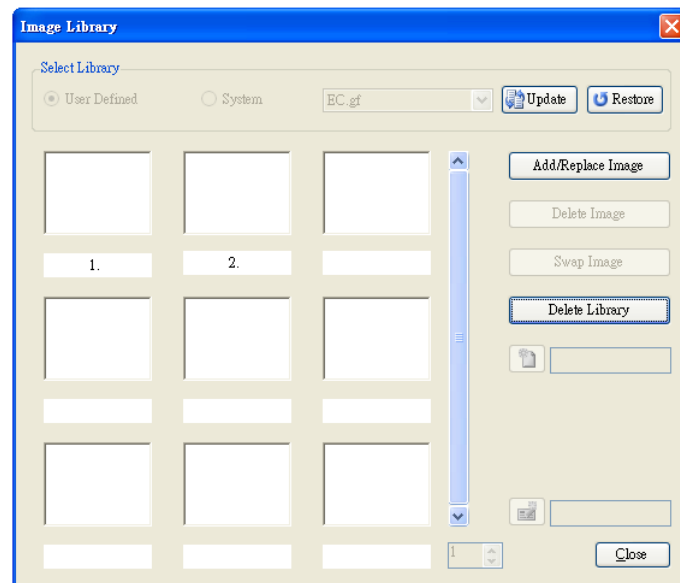
(b)

Fig. 3-4-8 Swapping Images (a) Opening Library (b) Swap Completed

To delete an image, select the image first and then click  to delete it. See Figure 3-4-9 below.



(a)



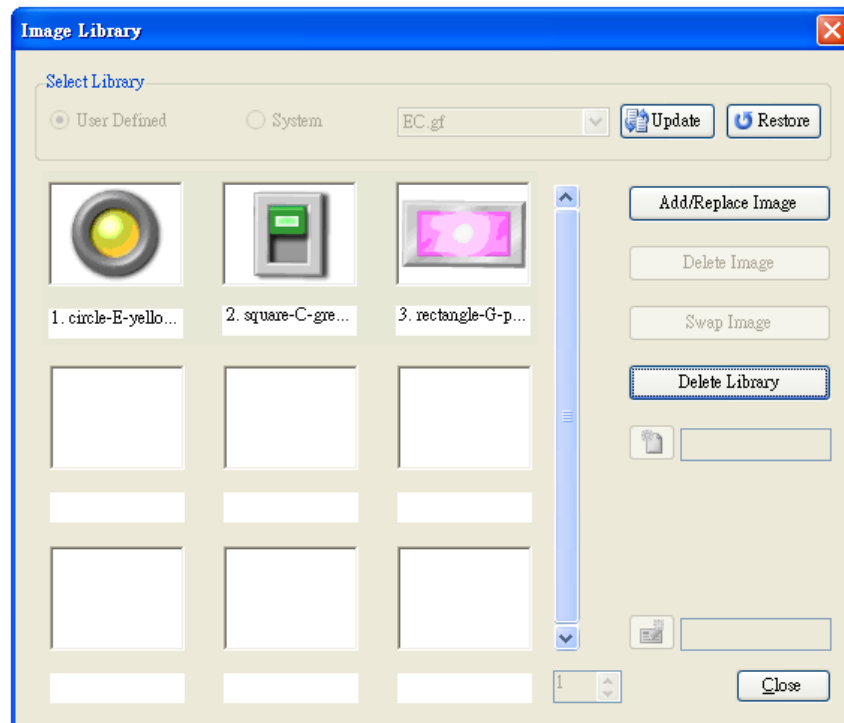
(b)

Fig. 3-4-9 Deleting Image (a) Selecting Image (b) Deletion Completed

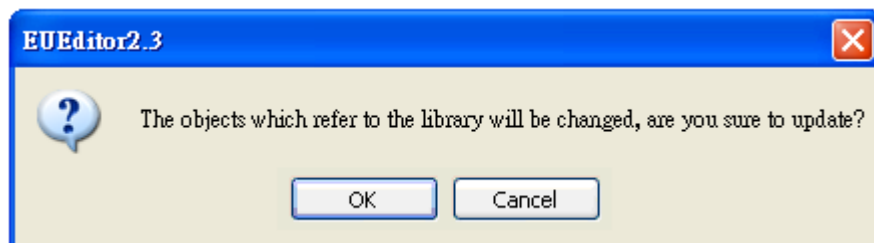
To Add/Replace/Delete/Swap image files in the library, click



to update the library. See Figure 3-4-10 below.



(a)

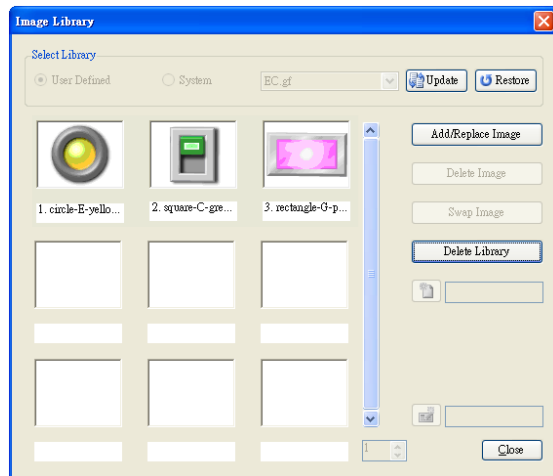


(b)

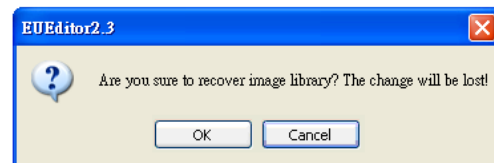
Fig. 3-4-10 Updating Image Library (a) Editing Library (b) Confirmation Dialogue

Box

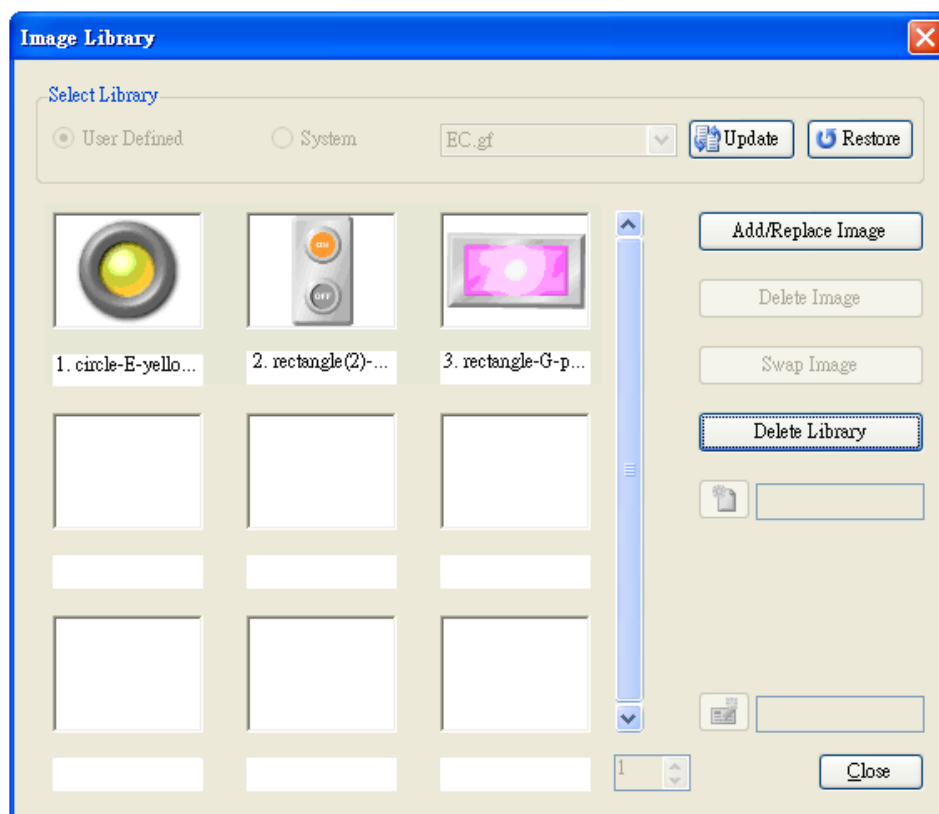
To undo the update, click  to restore the previous status of the library. See Figure 3-4-11 below.



(a)




(b)

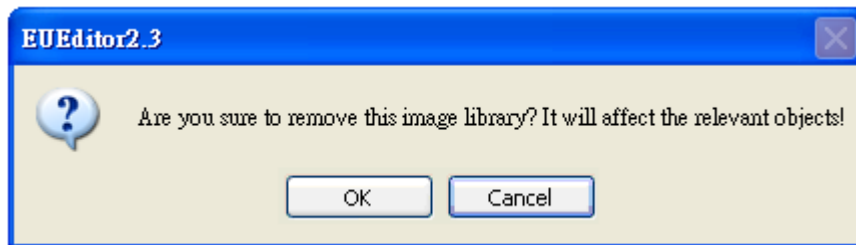


(c)

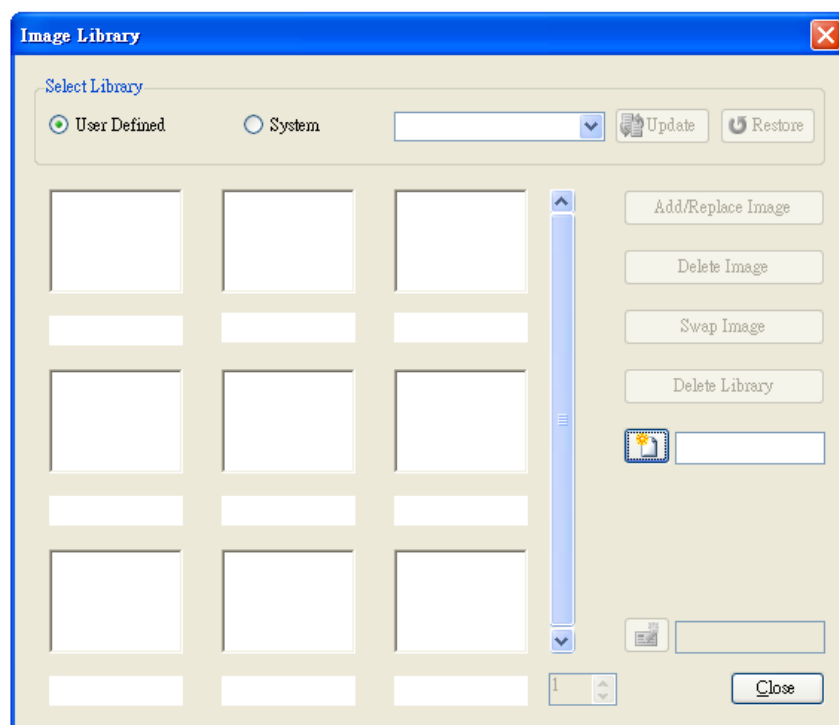
Fig. 3-4-11 Restoring Library (a) Opening Library (b) Confirmation Dialogue Box (c)

Restoration Completed

To delete the entire library, click  to delete it. See Figure 3-4-12 below.






(a)



(b)

Fig. 3-4-12 Deleting Library (a) Confirmation Dialogue Box (b) Deletion Completed

3.4.3. Parts Library

Click **Library** and then click **Parts Library** to open the dialogue box and view the parts library. Click one of the options from the toolbar  to create/copy/paste/delete a screen; select from the options  to change the property name and display mode, or undo the selection; click  to save the edited parts. The file formats are bmp, jpg, png, gif and emf. See Figure 3-4-13 below.

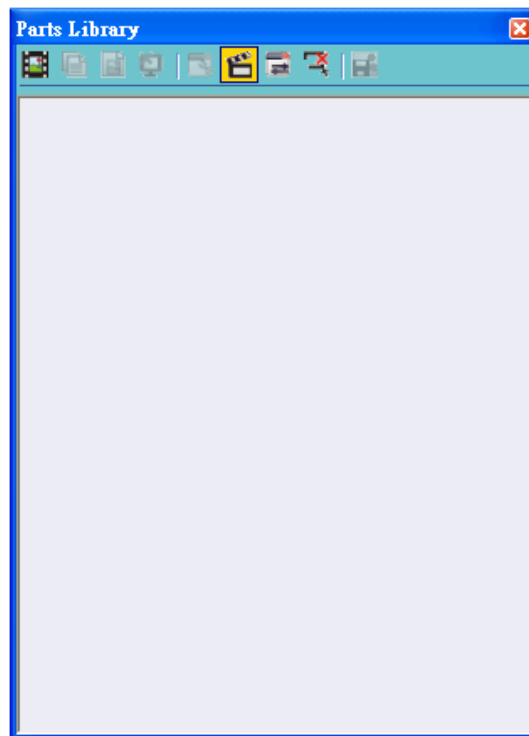



Fig. 3-4-13 Animation Library

To add new parts file, click  to open the dialogue box and set the screen number, name and background color. See Figure 3-4-14 below.

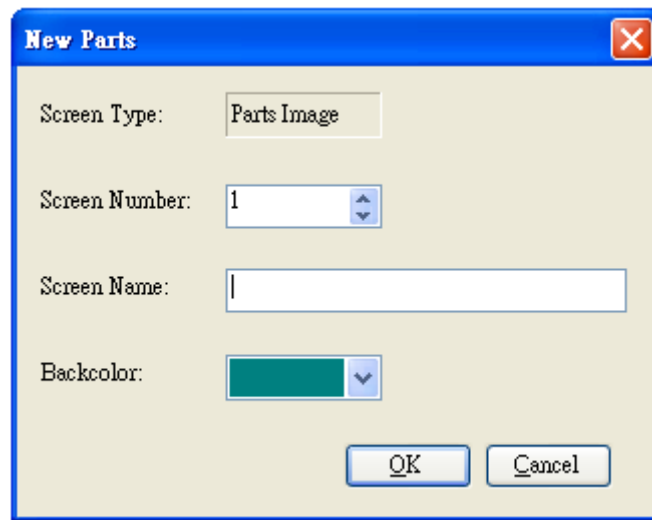


Fig. 3-4-14 Adding New Animation Image

When the parts is set up, the user can draw any images in the editing window. The size of the parts is decided by the maximum size of the parts drawn by the user. See Figure 3-4-15 below.

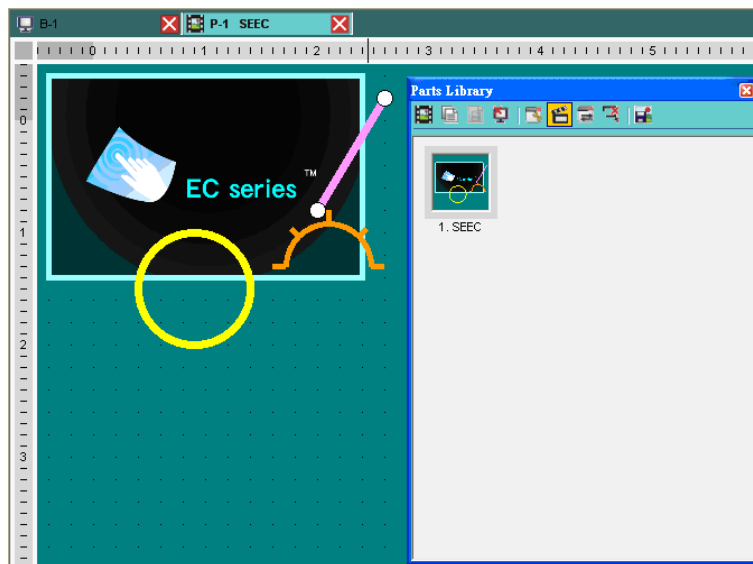
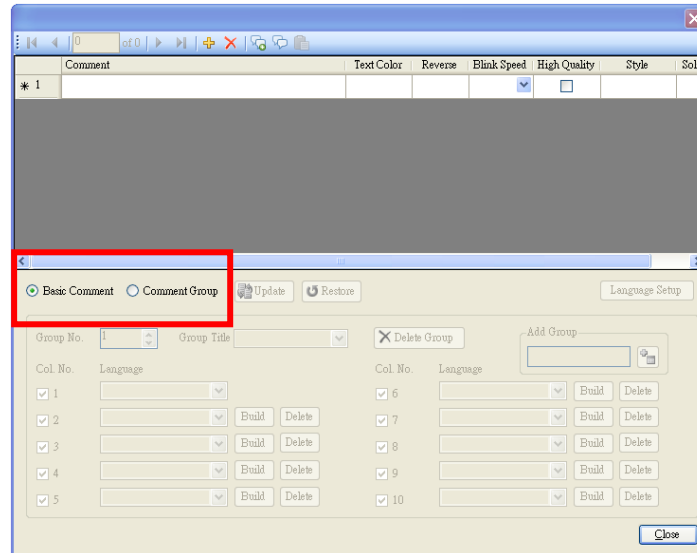


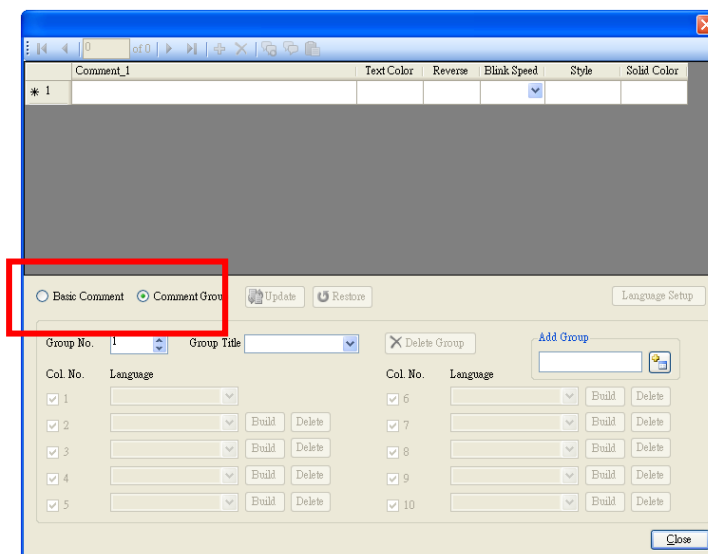
Fig. 3-4-15 Creating Animation Image

3.4.4. Comment Library

Click **Library** and then click **Comment Library...** to open the comment library dialogue box. Then, select the basic comment or comment group. See Figure 3-4-16 below.





(a)



(b)

Fig. 3-4-16 Comment Library (a) Basic Comment (b) comment group

When the comment library is changed to the basic comment mode, the user can edit the text and change its settings of color, blinking, quality and pattern; the maximum length of an comment text is 512 characters,

and the library can have as many as 1024 transactions. To undo the settings, click  to restore the previous status. Click  to execute the comment update. See Figure 3-4-17 below.

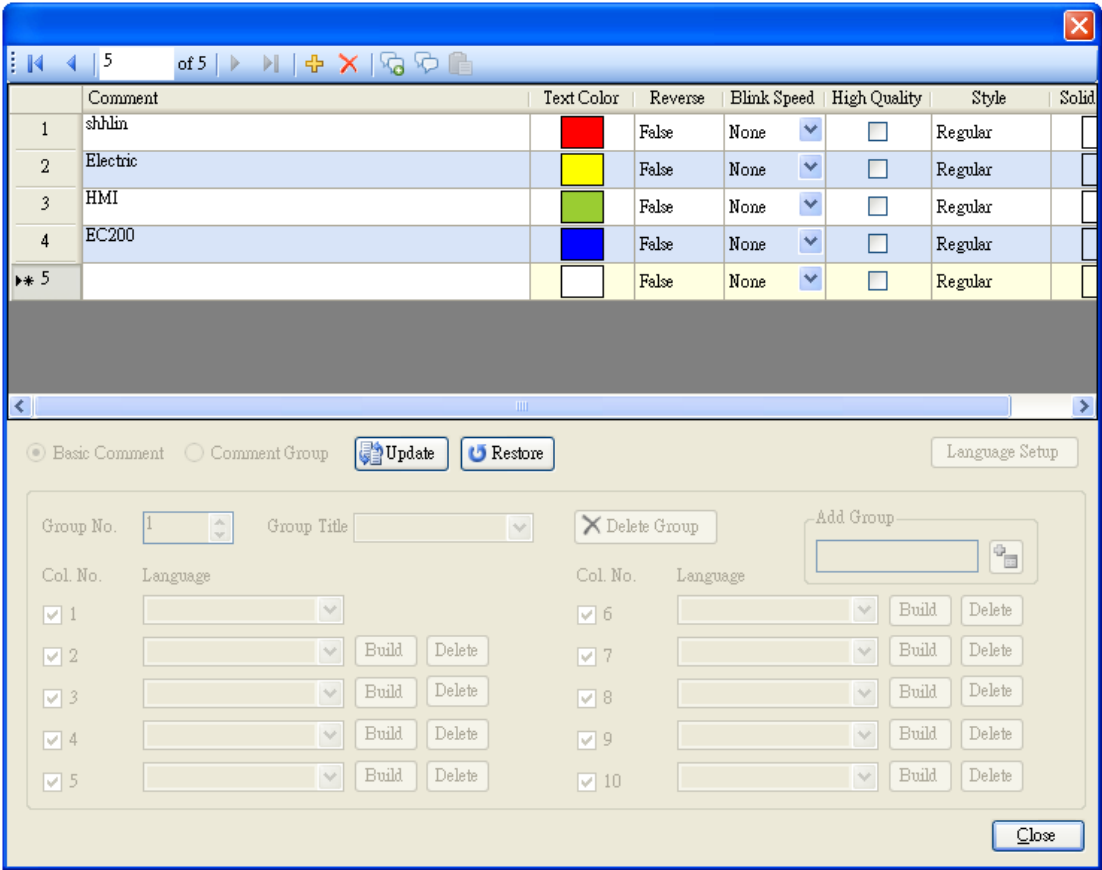

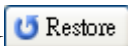



Fig. 3-4-17 Editing Basic Comment

To change the comment library to the comment group mode,

click  to add a new group. There can be as many as 16 groups. Comments in a group can be edited for the text and its settings of color and blinking properties; each comment can have up to 512 characters. The maximum number of transactions is 1024. To undo the setting, click  to restore the previous status. Click  to execute the setting. See Figure 3-4-18 below.

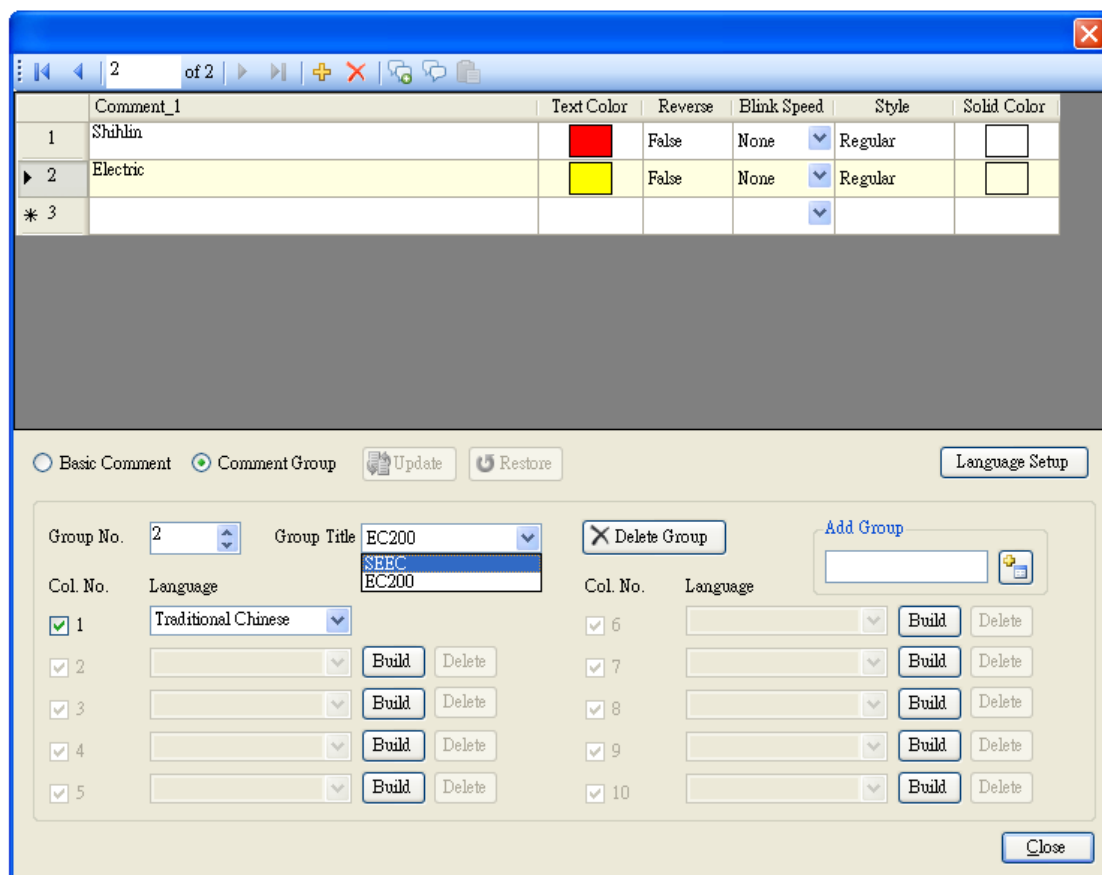


Fig. 3-4-18 Editing comment group

To establish multi-language comment, click **Build** to open the options for multiple languages. System default languages are Traditional Chinese, Simplified Chinese, English and Japanese. The user can also click **Language Setup** to set user-defined languages. See Figure 3-4-19 below. There can be up to 100 languages. The user can edit the comment text and its settings of color and blinking properties; to undo the editing, click **Restore** to restore the previous status. Click **Update** to execute the update. See Figure 3-4-20 below.

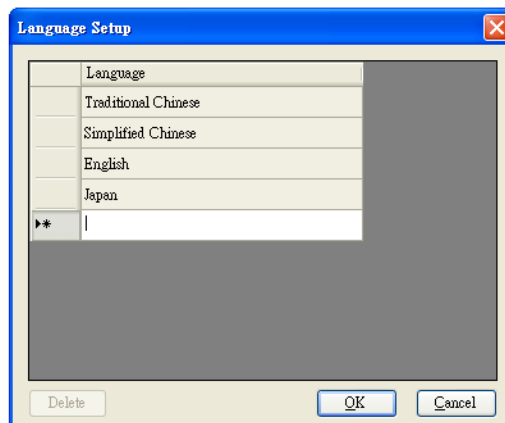


Fig. 3-4-19 Language Setup

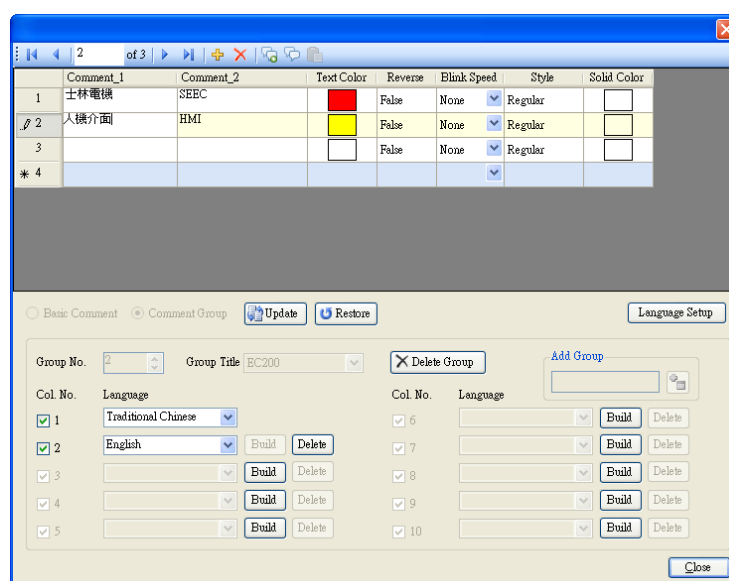


Fig. 3-4-20 Editing Multi-language comment group

3.4.5. Macro Library

Click **Library** and then click **Macro Library...** to open the macro library window. The user can create (up to 64 units), edit, copy and delete a macro library, change ID, and import from and export to it. See Figure 3-4-20 below.

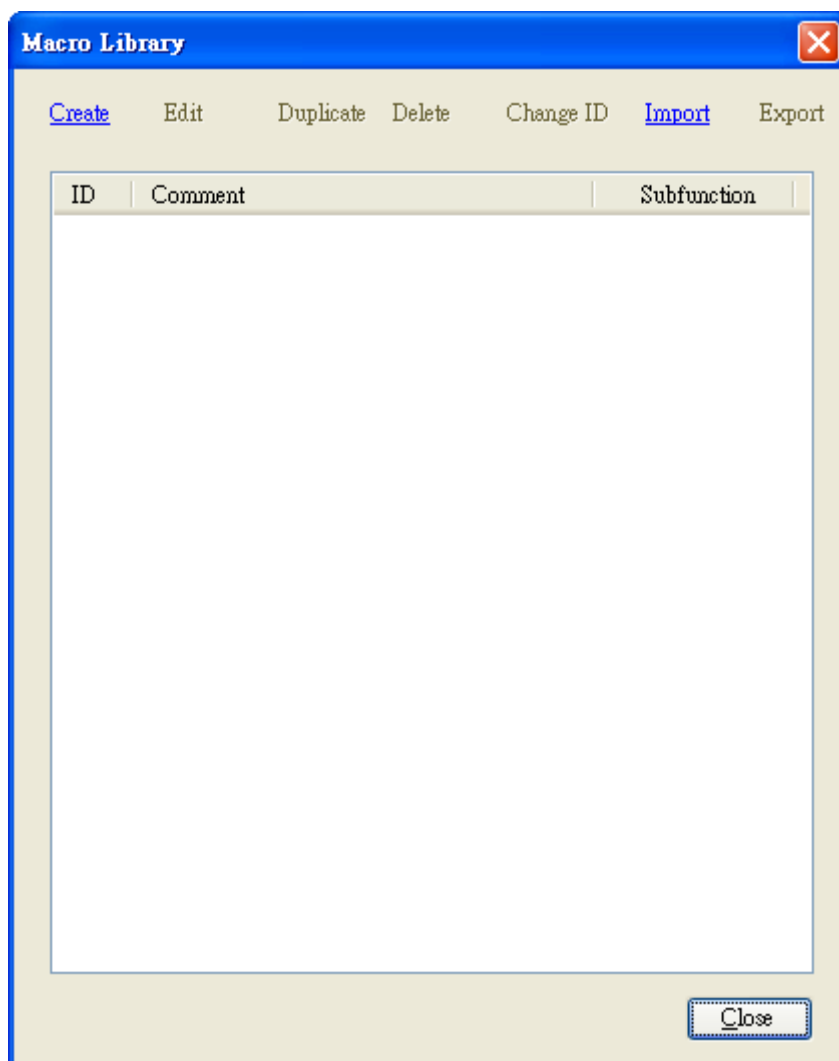
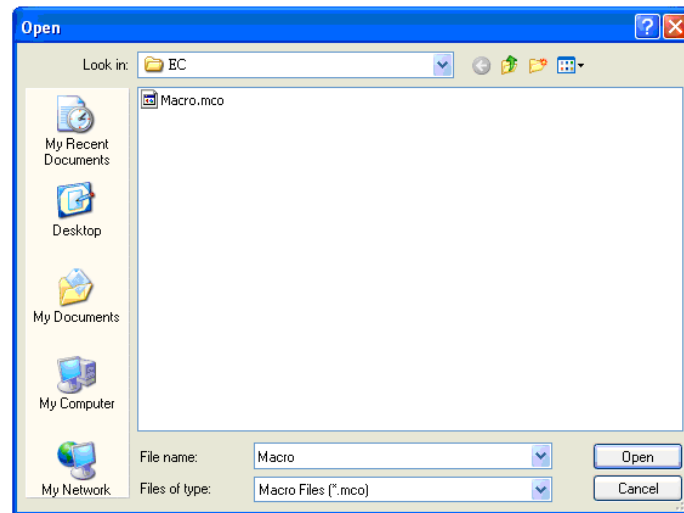
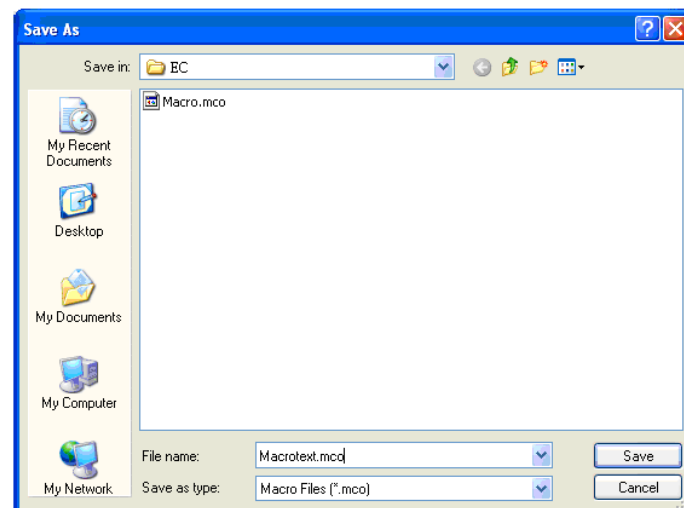


Fig. 3-4-20 Macro Library

To import from a macro, click the import menu to open the import window, and then select the macro (*.mco) to be imported, then confirm and execute the import; to export a macro, click the export menu to open the export window, then export the macro (*.mco) to the specified location. See Figure 3-4-21 below.







(a)



(b)

Fig. 3-4-21 Macro Edit (a) Macro Import (b) Macro Export

To create a macro, click the Create menu to open the macro editing window. Click the options from the toolbar  to erase/read/save a script. The macro script is saved in text format (*.txt). Click  to cut/copy/paste/search a macro; click  to do line number display, syntax analysis and auto syntax analysis; click  to open the macro help file. See Figure 3-4-22 below.

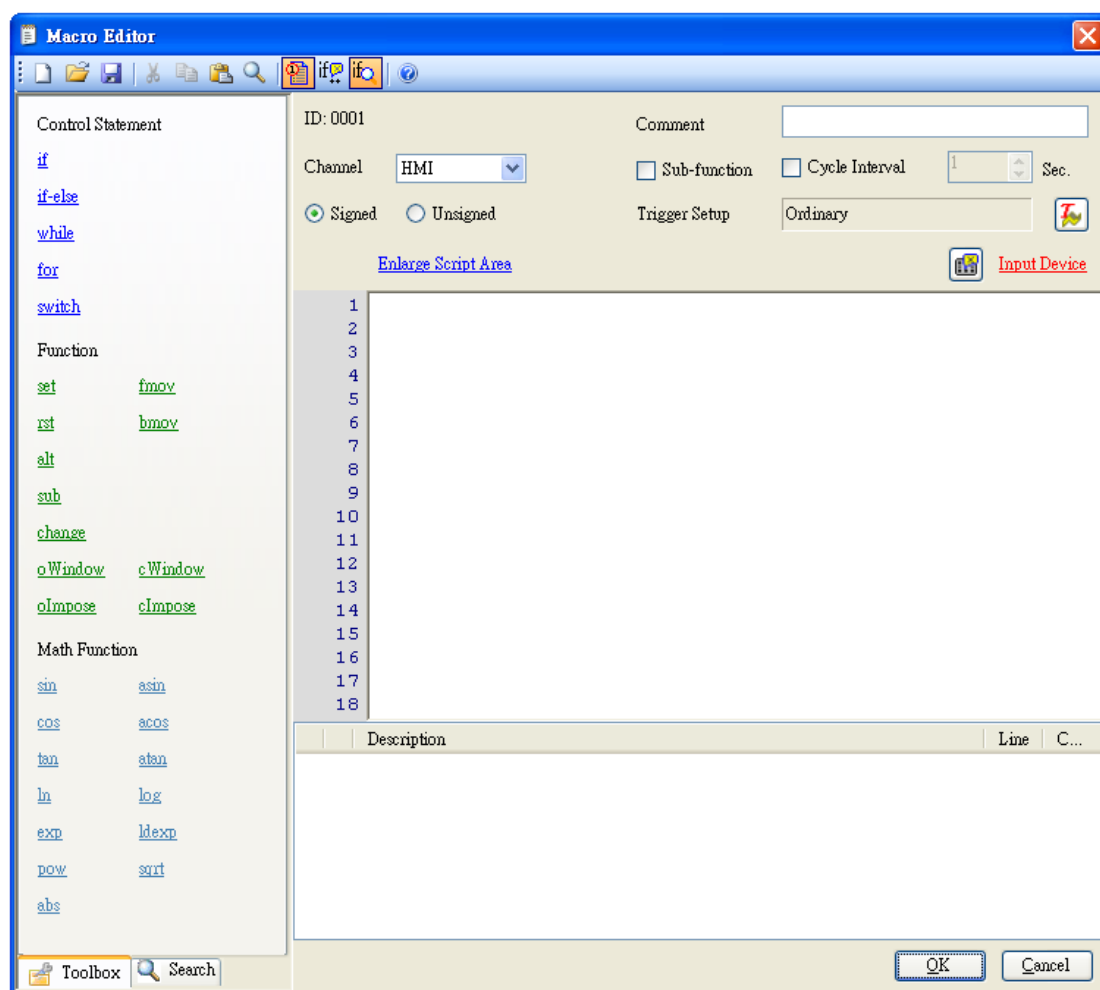


Fig. 3-4-22 Macro Editor

The macro script uses standard C language syntax, and each script can have as many as 1024 characters. In Figure 3-4-23 below, the program code and devices are indicated in corresponding colors.

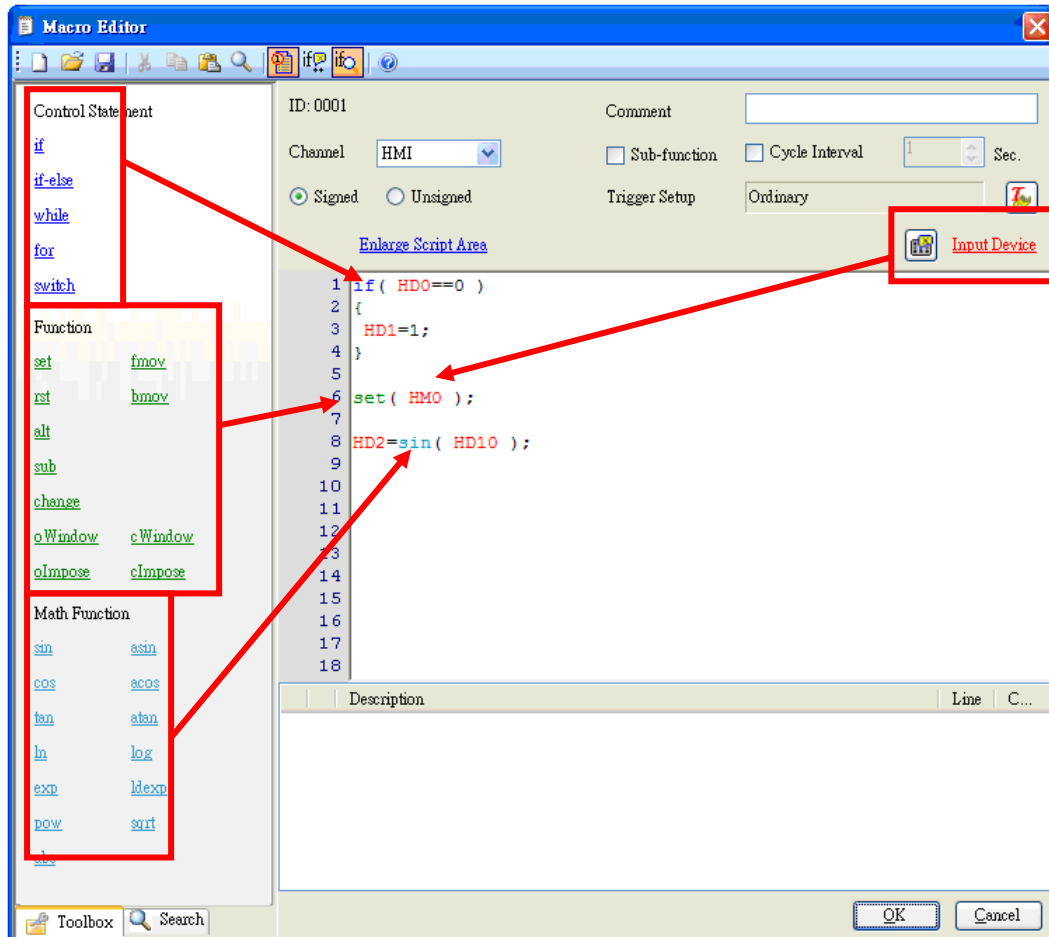


Fig. 3-4-23 Macro Edit Illustration

The macro script takes a general C programming language plus its propriety syntax rules. The user can change devices, operative symbols and condition types. See Table 3-4-24 below for details.

Table 3-4-24 Syntax, Operative Symbols and Condition Types

Device Syntax : station number . 32 bits(W) . floating(F) . Word device. Bit device

Device	Syntax	Description
Bit	M0	General use as Bit
	D.M0	Bit used as Word
	W.D.M0	Bit used as a 32-bit Word
	1.M0	General use as Bit to specify a PLC station number
	1.D.M0	Bit used as Word to specify a PLC station number
	1.W.D.M0	Bit used as a 32-bit Word to specify a PLC station number
Word	D0	General use as Word
	W.D0	Used as a 32-bit Word
	D0.01	Word used as Bit
	1.D0	General use as Word to specify a PLC station number
	1.W.D0	32-bit Word to specify a PLC station number
	1.D0.01	Word used as Bit to specify a PLC station number
	F.D0	Real floating point
Operative Symbols	+ , - , * , / , % , & , , << , >>	
Condition Types	== , != , < , > , <= , >= , && ,	

Detailed descriptions of flow control instructions are listed in Table 3-4-25 below.

Table 3-4-25 Flow Control Instructions

Flow Control	Function	Example	Action
if	Execute the statement if the condition is met; otherwise not execute.	<pre>if (HD0==0) { HD1=1; }</pre>	If HD0=0, set HD1=1
if-else	When the condition is met, execute the statement in the true block; otherwise execute the statement in the false block	<pre>if (HD0==0) { HD1=1; } else { HD1=0; }</pre>	If HD0=0, set HD1=1 If HD0≠0, set HD1=0
while	When the condition is met, execute the statement in the loop; otherwise exit the loop.	<pre>while (HD0==0) { HD1=HD1+1; }</pre>	When HD0=0, set HD1=HD1+1 When HD0≠0, exit the execution loop.
for	If the initial condition is met, start executing the statement in the loop, and incrementing the conditional variable, till the condition expires.	<pre>for (HD0=0; HD0<3; HD0++) { HD1=HD0; }</pre>	HD0 is initialized to 0, and when HD0<3, set HD1=HD0 and increment HD0 by 1. Do the loop till HD0 reaches 3.
switch	Execute statements in the case block whose case value meets the variable HD0.	<pre>switch (HD0) { case 1: HD1=1; break; case 2: HD1=2; break; }</pre>	If HD0=1, set HD1=1 If HD0=2, set HD1=2

Detailed descriptions of functional instructions are listed in Table 3-4-26 below.

Table 3-4-26 Functional Instructions

Instruction	Function	Example	Action
set(B)	Bit device is normally open	set (HM0) ;	HM0=ON
rst(B)	Bit device is normally closed	rst (HM0) ;	HM0=OFF
alt(B)	Bit device is alternately open/closed	alt (HM0) ;	HM0 continuously alternates.
sub(W/Z)	Call a subroutine	HD0=3; sub (HD0) ;	Call the subroutine with ID 3
		sub (3) ;	
fmov(Z,W,Z)	Multi-cast value	fmov (123,HD0,2) ;	Send the value123 to HD0 and HD1.
bmov(W,W,Z)	Transfer value in batch	HD0=123; HD1=456; bmov (HD0,HD10,2) ;	Set HD0=123 and send it to HD10. Set HD1=456 and send it to HD11.
Change(W/Z)	Change basic screen	HD0=3; change (HD0) ;	Jump to basic careen 3.
		change (3) ;	
oWindow(N,W/Z)	Open the overlapped Nth window screen numbered Z.	HD0=3; oWindow (1,HD0) ;	Open the overlapped 1 st window screen numbered 3.
		oWindow (1,3) ;	
cWindow(N,W/Z)	Close the overlapped Nth window screen numbered Z.	HD0=4; cWindow (2,HD0) ;	Close the overlapped 2 nd window screen numbered 4.
		cWindow (2,4) ;	
oImpose(N,W/Z)	Open the additional overlapped Nth window screen numbered Z.	HD0=3; oImpose (1,HD0) ;	Open the additional overlapped 1 st window screen numbered 3.
		oImpose (1,3) ;	
cImpose(N,W/Z)	Close the overlapped Nth window screen numbered Z.	HD0=4; cImpose (2,HD0) ;	Close the additional overlapped 2 nd window screen numbered 4.
		cImpose (2,4) ;	
Remark	B : Bit device , W : Word device , N : value of 1 or 2 , Z : positive integer		


Detailed descriptions of math functions are listed in Table 3-4-27 and Table 3-4-28 below.

Table 3-4-27 Math Functions

Math Function	Description	Example	Remark
sin(W/R)	To obtain the sine of X	HD0=10; HD1=sin(HD0) ; HD1=sin(10) ;	Calculated in radian $1^{\circ} = \frac{\pi}{180} rad$
cos(W/R)	To obtain the cosine of X	HD0=10; HD1=cos(HD0) ; HD1=cos(10) ;	
tan(W/R)	To obtain the tangent of X	HD0=10; HD1=tan(HD0) ; HD1=tan(10) ;	
asin(W/R)	To obtain the arcsine of X	HD0=10; HD1=asin(HD0) ; HD1=asin(10) ;	
acos(W/R)	To obtain the arccosine of X	HD0=10; HD1=acos(HD0) ; HD1=acos(10) ;	
atan(W/R)	To obtain the arctangent of X	HD0=10; HD1=atan(HD0) ; HD1=atan(10) ;	
Remark	W : Word device , R : radian		

Table 3-4-28 Math Functions (continued)

Function	Description	Example	Action
ln(W/X)	To obtain the natural logarithm of X.	HD0=5; HD1=ln(HD0) ;	HD1=ln5
		HD1=ln(5) ;	
log(W/X)	To obtain the base-10 logarithm of X	HD0=5; HD1=log(HD0) ;	HD1= log ₁₀ 5
		HD1=log(5) ;	
exp(W/X)	To obtain the exponent value of X	HD0=5; HD1=exp(HD0) ;	HD1=e ⁵
		HD1=exp(5) ;	
ldexp(W/X,W/Y)	To obtain the value of X multiplied by 2 to the power of Y	HD0=5 HD1=10; HD2=ldexp(HD0,HD1) ;	HD2=5*2 ¹⁰
		HD2=ldexp(5,10) ;	
pow(W/X,W/Y)	To obtain the value of X to the power of Y.	HD0=5 HD1=10; HD2=pow(HD0,HD1) ;	HD2=5 ¹⁰
		HD2=pow(5,10) ;	
Sqrt(W/X)	To obtain the positive square root of X.	HD0=5; HD1=sqrt(HD0) ;	HD1=√5
		HD1=sqrt(5) ;	
abs(W/X)	To obtain the absolute value of X.	HD0=-5; HD1=abs(HD0) ;	HD1= -5 =5
		HD1=abs(-5) ;	
Remark	W : Word device , X、 Y : Integers		

To set the macro trigger condition, click  to open the trigger setup window and change the conditions. See Figure 3-4-29 and Table 3-4-30 below.

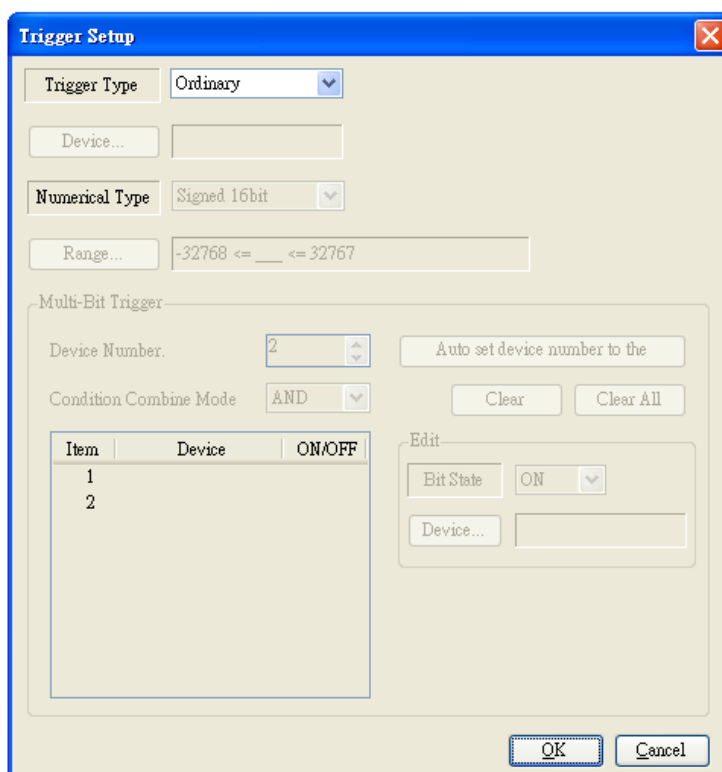



Fig. 3-4-29 Trigger Setup

Table 3-4-30 Trigger Properties

Property	Description
Ordinary	No triggering
ON	Set device to act when it is ON.
OFF	Set device to act when it is OFF.
Range	Device takes action only when its value falls in this range.
Multiple Bit Trigger	Set two or more devices, and action will be taken only when all the devices reach the condition.

To set up a device, open the device setup window. Select a device format and click  to open the dialogue box to make the settings. Confirm to complete the setup. See Figure 3-4-31 below.

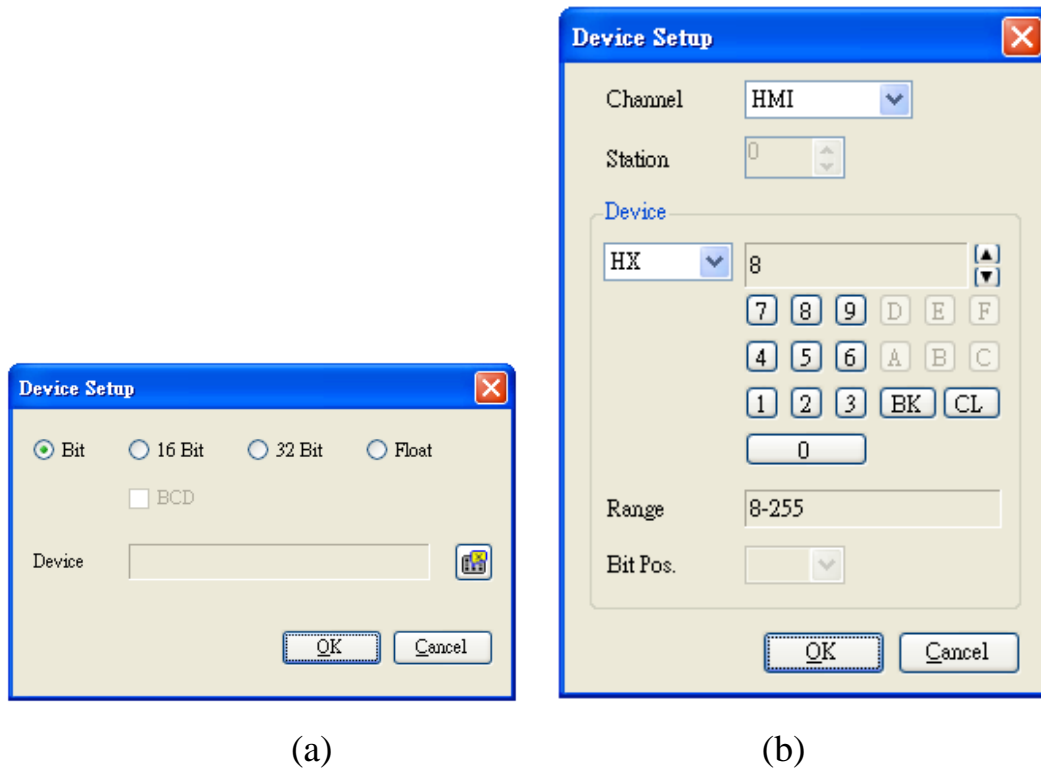






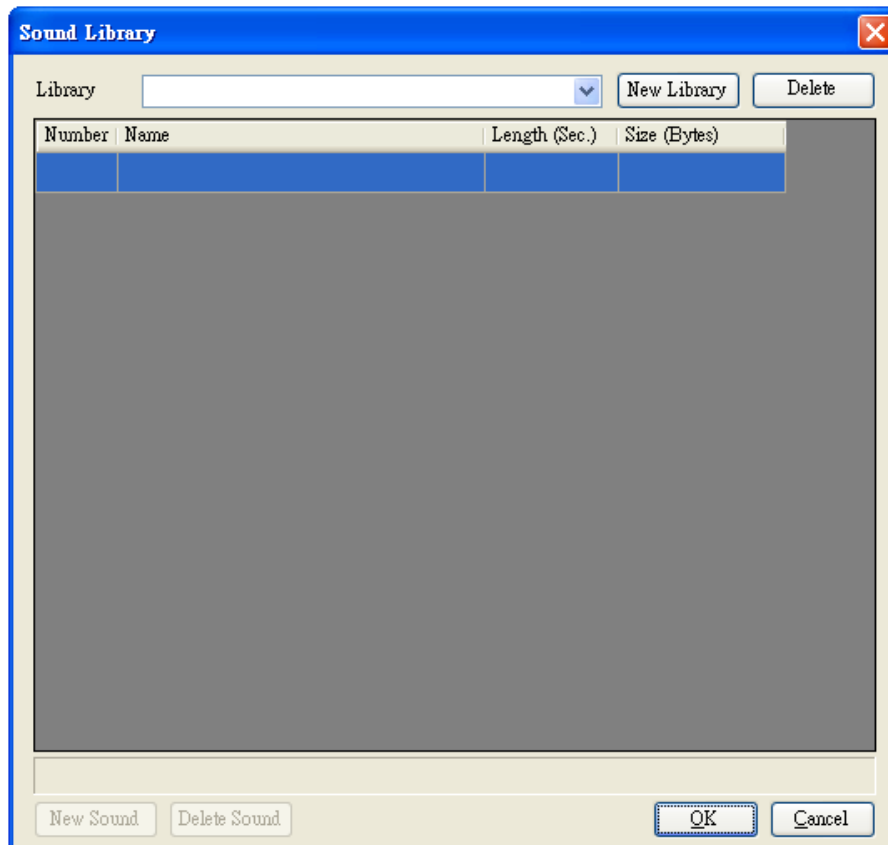
Fig. 3-4-31 Device Setup (a) Device Format (b) Device Setting



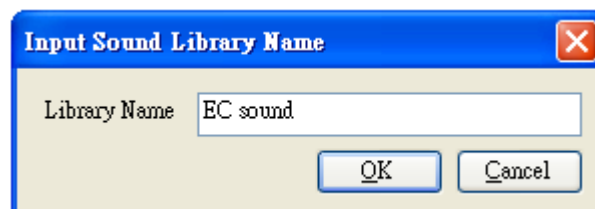
- One set of Macro edit can only work on the HMI and one device.
- The macro editor is case-sensitive. Use upper case for the device address.

3.4.6. Sound Library

Click  and then click  Sound Library... to open the dialogue box, and click  to add a new sound library. See Figure 3-4-6-1 below. After the library is established, click  to add the sound files. See Figure 3-4-6-2 below.

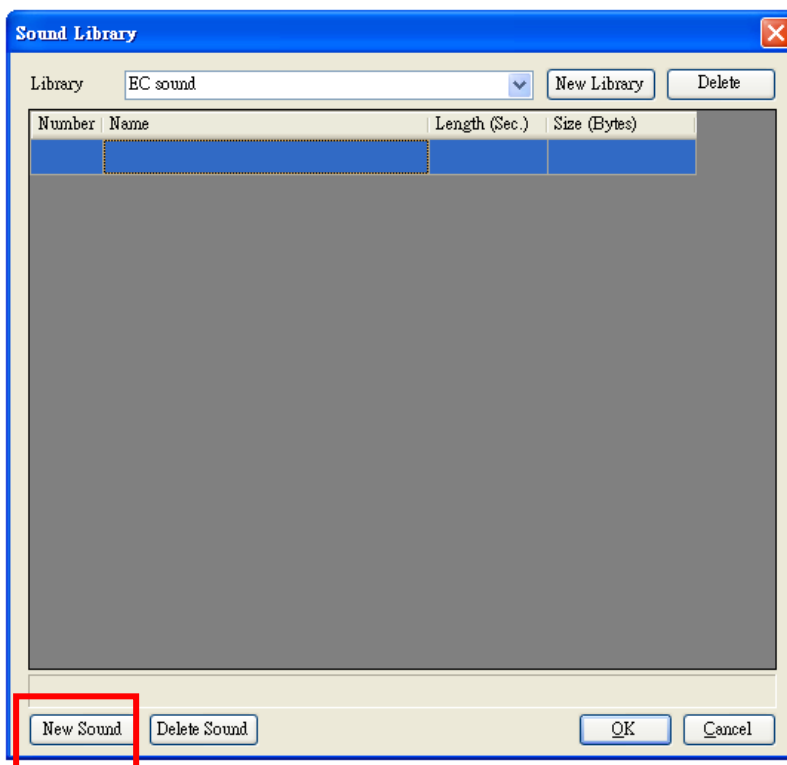


(a)

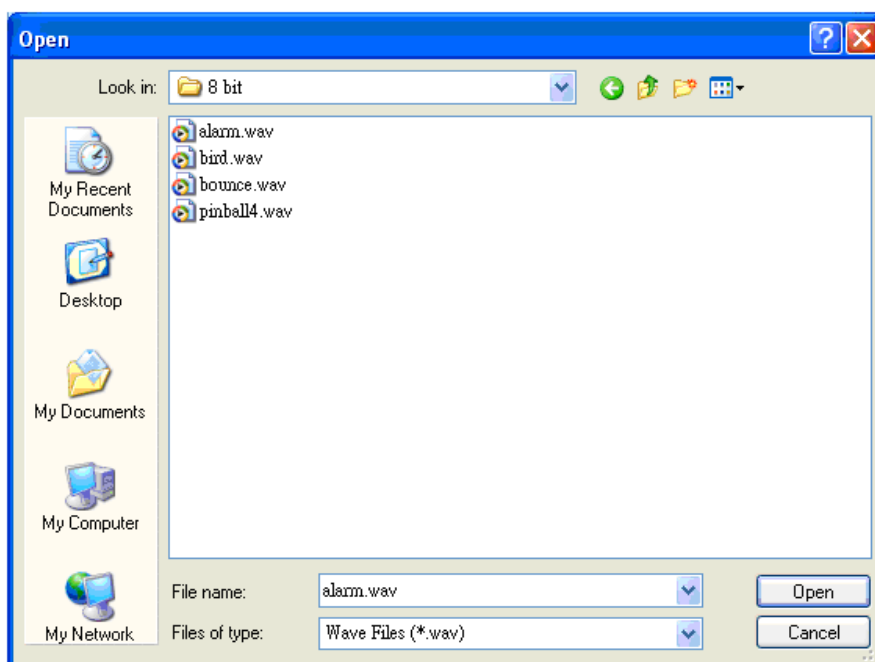


(b)

Fig. 3-4-6-1 Add New Sound Library (a) Add Library (b) Enter Library Name



(a)



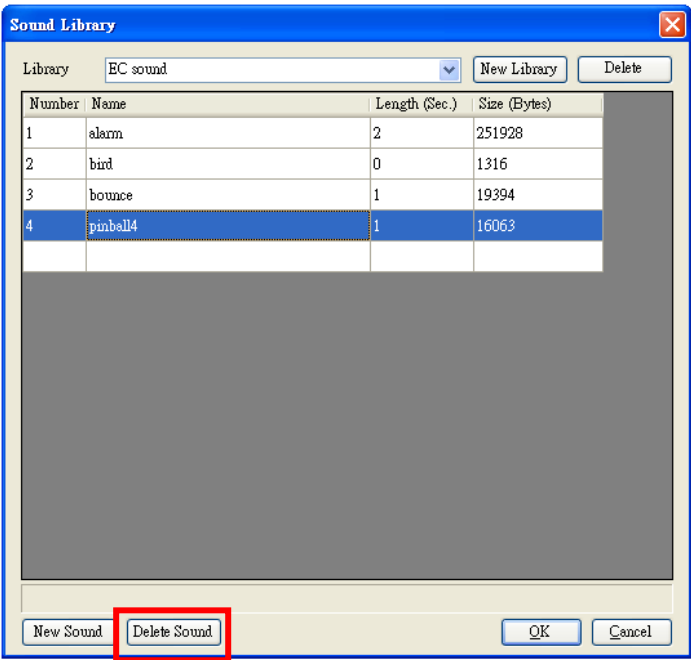
(b)

Fig. 3-4-6-2 Add Sound Files (a) Click the Add Sound Switch (b) Select Sound Files

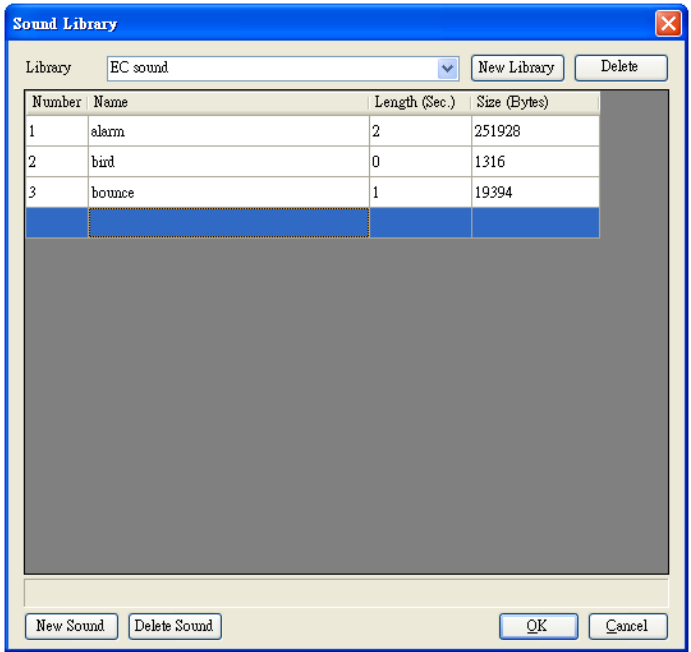
To delete a sound file, select the sound file and then click the button

Delete Sound

to delete it. See Figure 3-4-6-3 below.

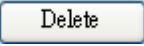


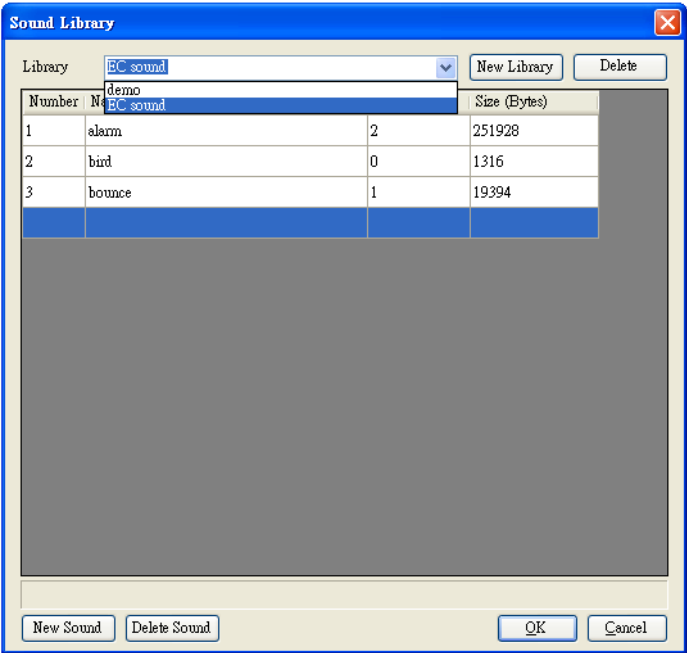
(a)



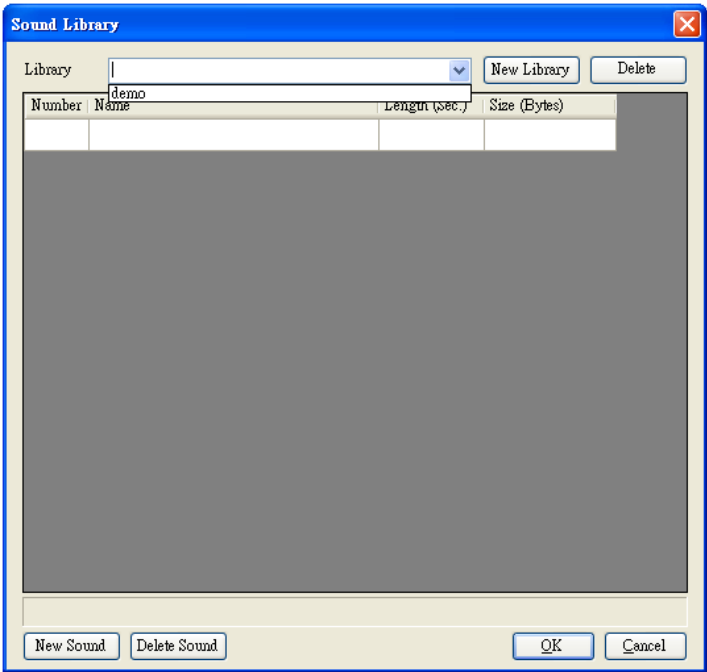
(b)

Fig. 3-4-6-3 Delete Sound File (a) Select File (b) File Deleted

To delete a sound library, use the pull-down menu to select a sound library, and click the button  to delete it. See Figure 3-4-6-4 below.



(a)



(b)

Fig. 3-4-6-4 Delete Sound Library (a) Select Library (b) Library Deleted

3.5. Image Menu

3.5.1. Image Functions

















Click  to display the all image functions, as shown in Table 3-5-1 below.



Table3 3-5-1 Image Functions

Name		Function
 Select		Select drawing tool
 Dot		Draw a dot
 Line		Draw a line
 Arc		Draw an arc
 Polyline		Draw a polyline
 Scale		Create an one-dimensional scale
 Arc scale		Create an arc scale
 Pie		Draw a pie shape
 Rectangle		Draw a rectangle
 Round Rectangle		Draw a rounded rectangle
 Round/Ellipse		Draw a round/ellipse shape
 Polygon		Draw a polygon
 Text		Create a text
 Image		Create a system/ user-defined graph
 Table	▶	Create a table

3.5.2. Select Drawing Tool

Click **Draw** and then click  **Select**, or directly click the shortcut , to select a drawing tool.

3.5.3. Dot

Click **Draw** and then click  **Dot**, or directly click the shortcut , and left click the mouse in the editing window to draw a dot. After the dot is drawn, double left click the mouse to open the property window of the dot and set preferred dot properties. See Figure 3-5-2 below.

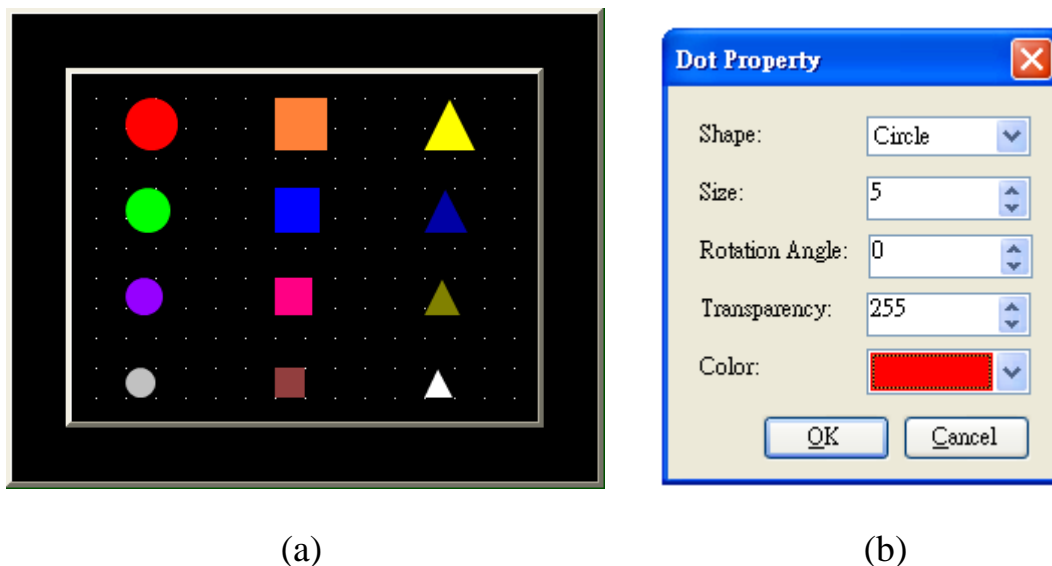





Fig. 3-5-2 Draw a dot and set its properties (a) Draw a dot (b) Set up the properties



- To set the properties, you can also click **Edit** and then click **Unit Property...**, or directly use the property window on the right of the screen, to make the setting.

3.5.4. Line

Click  and then click  **Line**, or directly click the shortcut , and in the editing window left click the mouse and hold it on the initial position, and then drag the line to the length and position you want, and then release the mouse to finish the line drawing. Double left click the mouse on the line to open its property window and change the settings. See Figure 3-5-3 below.

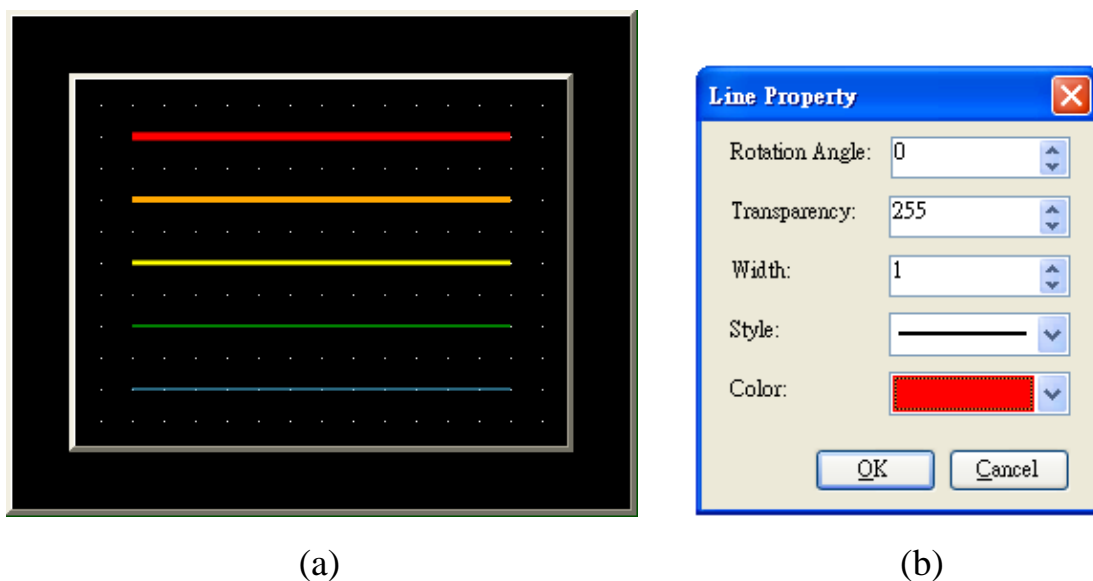





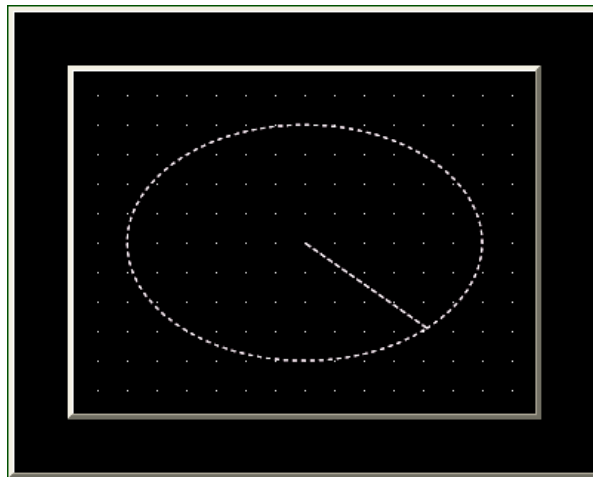
Fig. 3-5-3 Draw a line and set its properties (a) Draw a line (b) Set its properties



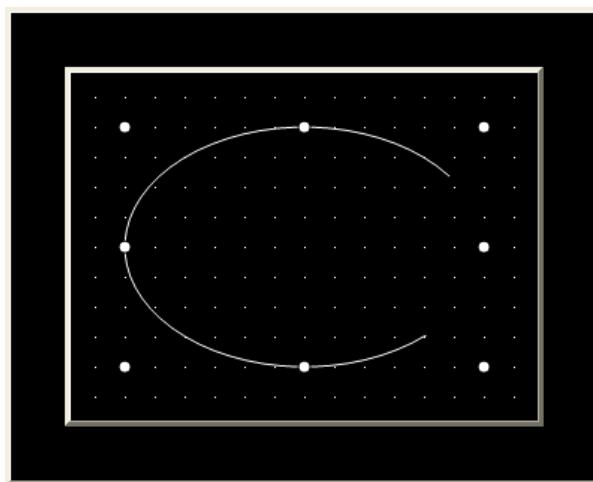
- To set the properties, you can also click  and then click , or directly use the property window on the right of the screen, to make the setting.

3.5.5. Arc

Click **Draw** and then click **Arc**, or directly click the shortcut , and in the editing window left click the mouse and hold it on the initial point, and drag it to the size you want. At this point the software has created a dotted circle. Left click the mouse again to make the starting point of the arc, and then arbitrarily move the mouse depending on the arc length you want, and then release the mouse to complete the drawing. See Figure 3-5-4 below.



(a)



(b)

Fig. 3-5-4 Draw an arc (a) Decide the arc radius (b) Decide the arc length

Click the arc and double left click the mouse to open the property window of the arc, and change the settings as desired. See Figure 3-5-5 below

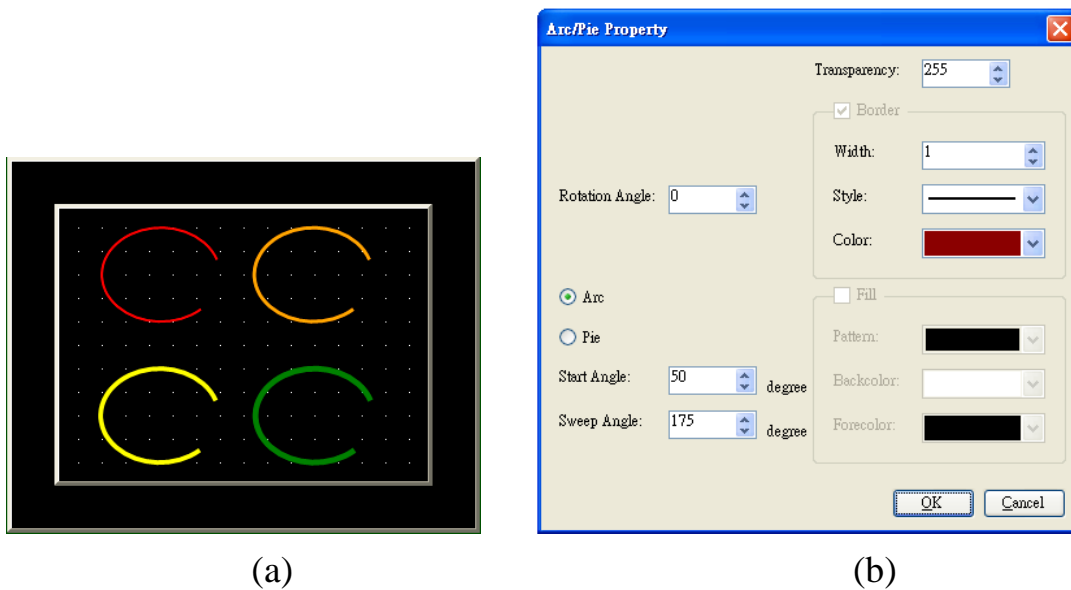





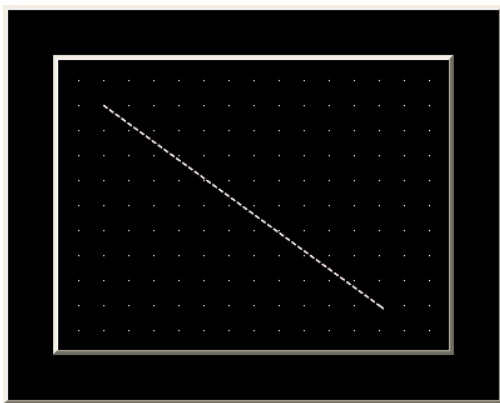
Fig. 3-5-5 Draw an arc and change its properties (a) Draw an arc (b) Change its properties



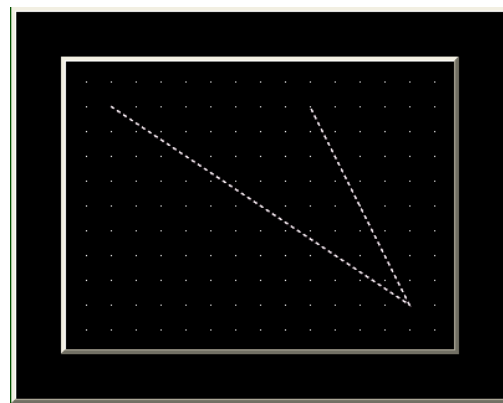
- To set the properties, you can also click **Edit** and then click **Unit Property...**, or directly use the property window on the right of the screen, to make the setting.

3.5.6. Polyline

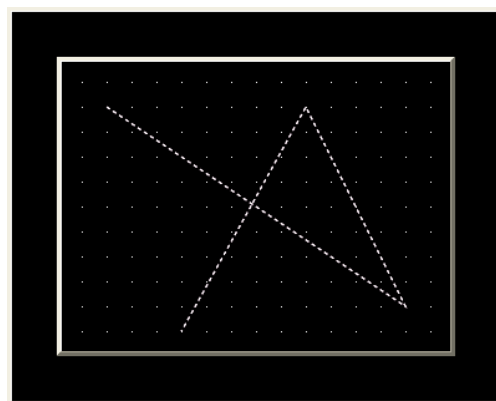
Click  and then click  Polyline, or directly click the shortcut , and in the editing window left click the mouse to set the first point of the polygon. Then, release the mouse and drag the line to the position you want, and then left click the mouse again to decide the 2nd point of the polygon, then release the mouse again and drag the line to the 3rd point. When the final polyline is decided, right click the mouse to complete the drawing. See Figure 3-5-6 below.



(a)



(b)



(c)

Fig. 3-5-6 Draw a polyline (a) Decide 2nd point (b) Decide 3rd point (c) Drawing completed

Click the polyline and double left click the mouse to open the property window of the polyline, and you can change the property settings as desired. See Figure 3-5-7 below.

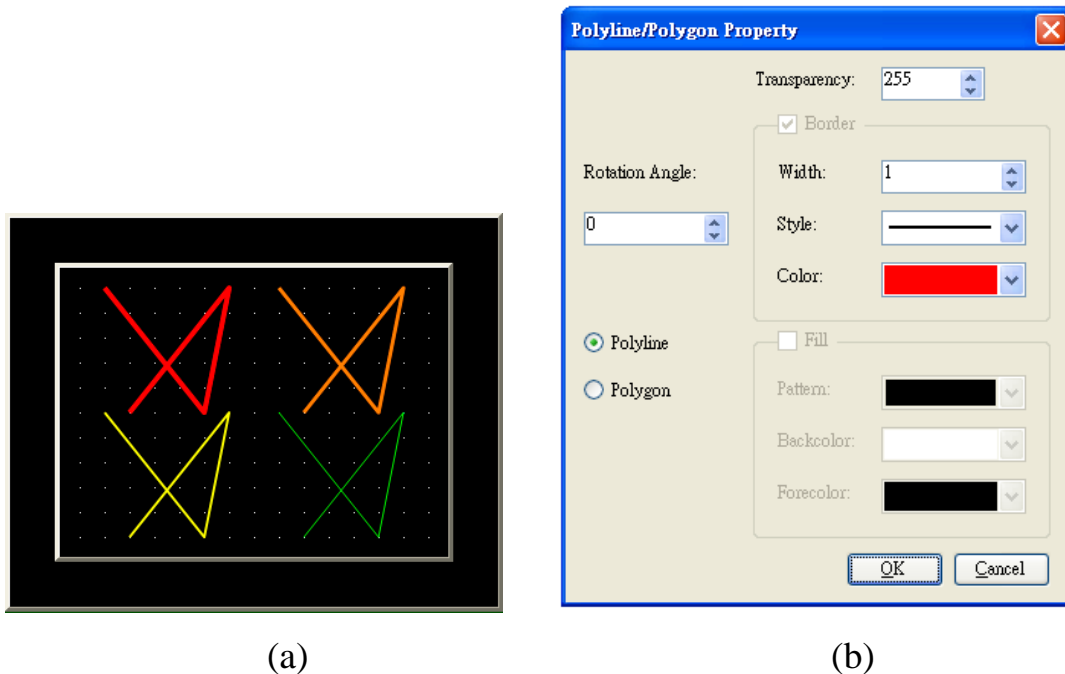



Fig. 3-5-7 Draw Polyline and Change Properties (a) Draw Polyline (b) Set Properties



- To set the properties, you can also click **Edit** and then click **Unit Property...**, or directly use the property window on the right of the screen, to make the setting.

3.5.7. Scale

Click **Draw** and then click **Scale**, or directly click the shortcut , and in the editing window left click the mouse and drag it to a proper size, then release the mouse to create a scale. Click the scale and double left click the mouse to open the property window of the object, as shown in Figure 3-5-8 below. Change the property settings as desired. Confirm to complete the setting.

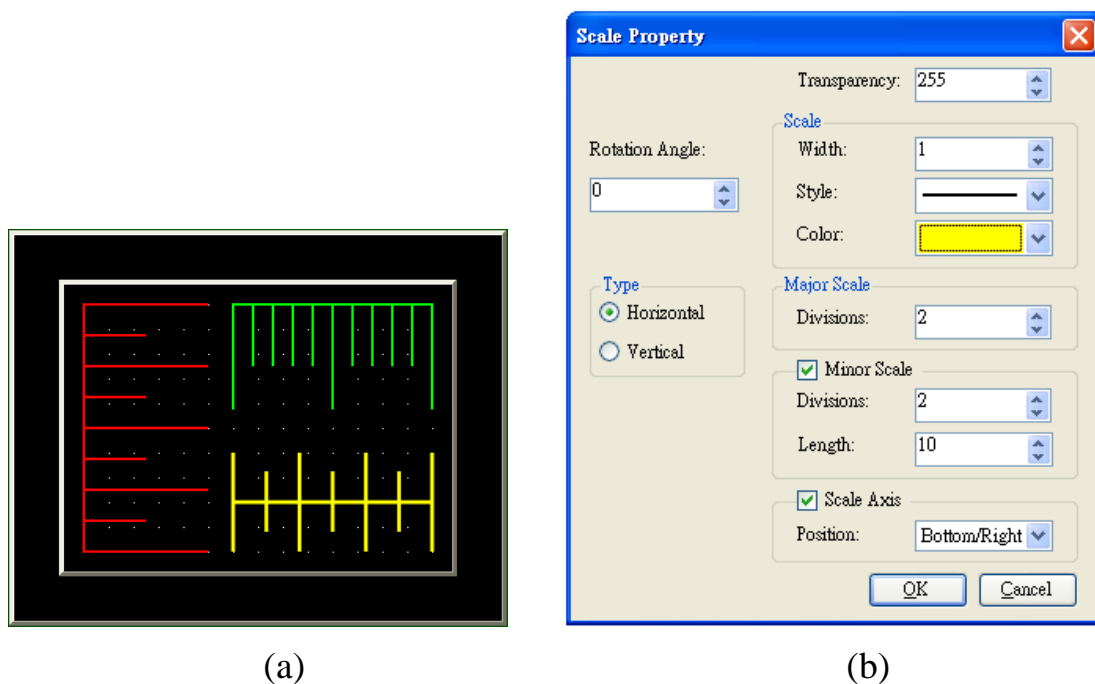



Fig. 3-5-8 scale (a) Draw a scale (b) Set its properties



- To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.8. Arc Scale

Click **Draw** and then click **Arc scale**, or directly click the shortcut , and in the editing window left click the mouse and drag it to a proper size, then release it to create an arc scale. Click the arc scale and then double left click the mouse to open the property window of the arc scale, as shown in Figure 3-5-9 below. Change the property settings as desired. Confirm to complete the setting.

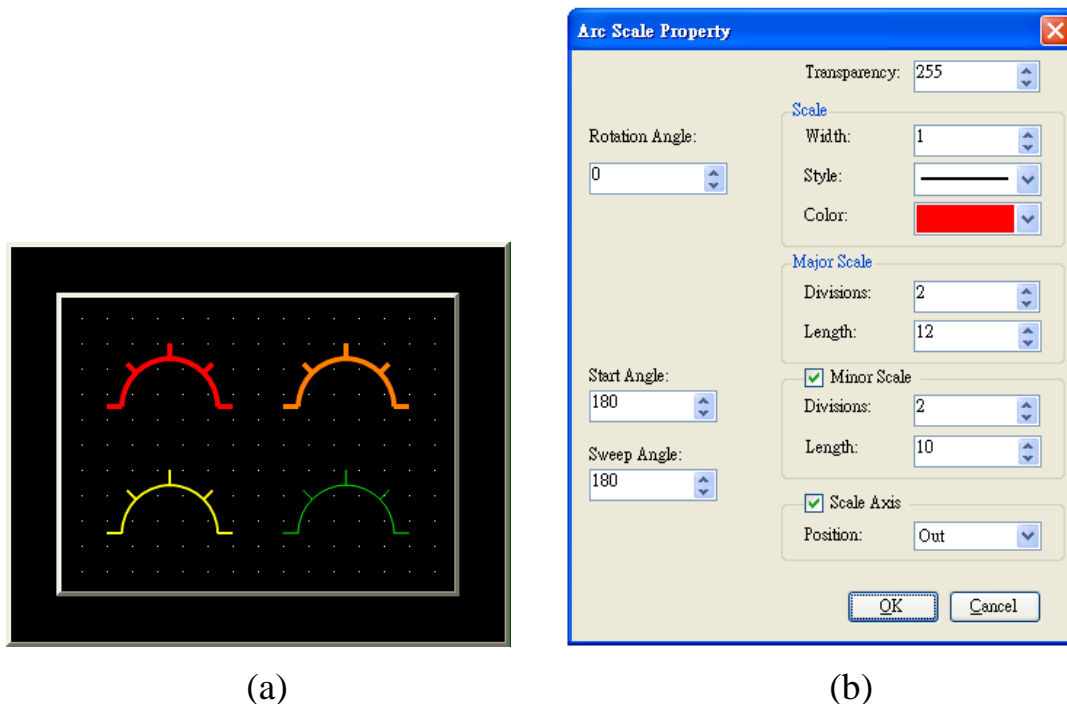



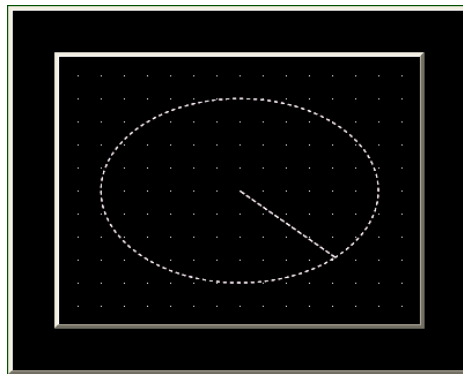
Fig. 3-5-9 Create an arc scale (a) Draw an arc scale (b) Set its properties



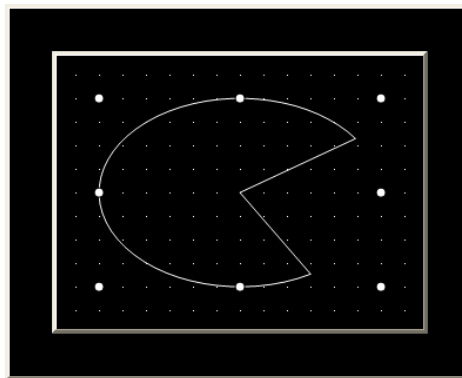
To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.9. Pie

Click **Draw** and then click **Pie**, or directly click the shortcut , and in the editing window left click the mouse and hold it to decide the 1st point, and then drag the mouse to the size you want. At this point the software will have created a dotted circle. Left click the mouse again to decide the starting point of the pie, and then arbitrarily move the mouse to the arc length you want, and then release the mouse to complete the drawing. See Figure 3-5-10 below.



(a)



(b)

Fig. 3-5-10 Create a pie shape (a) Decide the arc radian (b) Decide the arc length

Click the pie and then double left click the mouse to open the property window of the object. Change the properties as desired. See Figure 3-5-11 below.

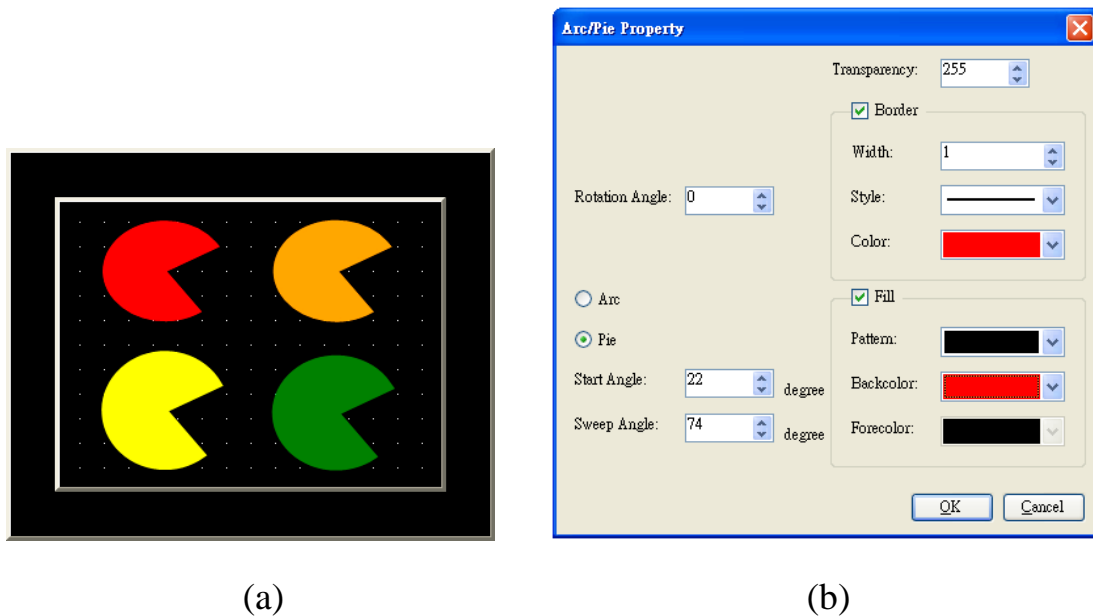



Fig. 3-5-11 Create a pie shape and change its properties (a) draw a pie shape (b) change pie properties



- To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.10. Rectangle

Click **Draw** and then click **Rectangle**, or directly click the shortcut , and in the editing window left click the mouse and hold it to decide the 1st point of the rectangle, and then drag the line to the size you want and release the mouse to finish drawing the rectangle. Click the rectangle and then double left click to open the property window the object. Change the settings as desired. See Figure 3-5-12 below.

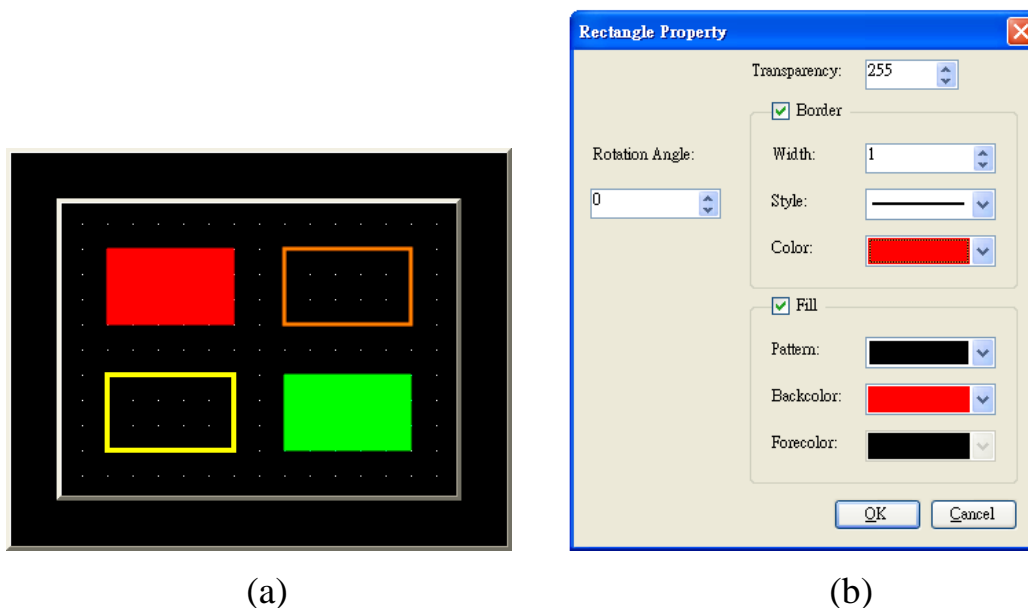



Fig. 3-5-12 Create a rectangle and change its properties (a) Draw a rectangle (b) Set the properties



To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.11. Rounded Rectangle

Click **Draw** and then click **Round Rectangle**, or directly click the shortcut , and in the editing window left click the mouse and hold it to decide the 1st point of the rounded rectangle. Then, drag the line to the size you want, and then release the mouse to finish the drawing. Click the object and then double left click it to open its property window to change the settings as desired. See Figure 3-5-13 below.

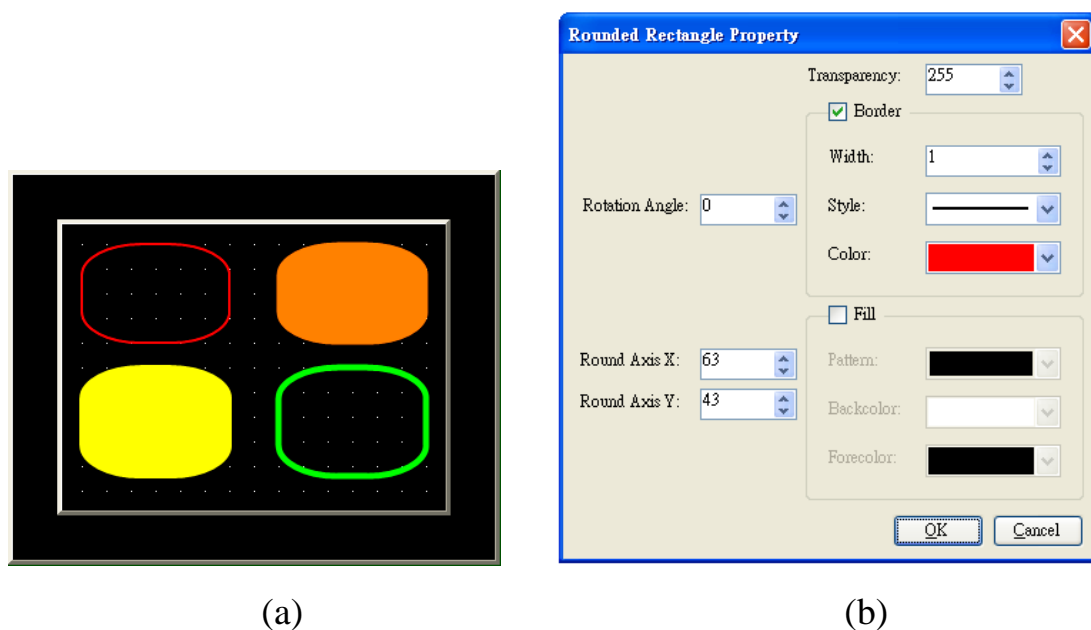



Fig. 3-5-13 Create a rounded rectangle and change its properties (a) Draw a rounded rectangle (b) Set its properties



- To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.12. Round/Ellipse

Click **Draw** and then click **Round/Ellipse**, or directly click the shortcut , and in the editing window left click the mouse and hold it to decide the 1st point of the object, and then drag the line to the size you want, and then release the mouse to finish the drawing. Click the object and then double left click the mouse to open the property window of the object and change the settings as desire. See Figure 3-5-14 below.

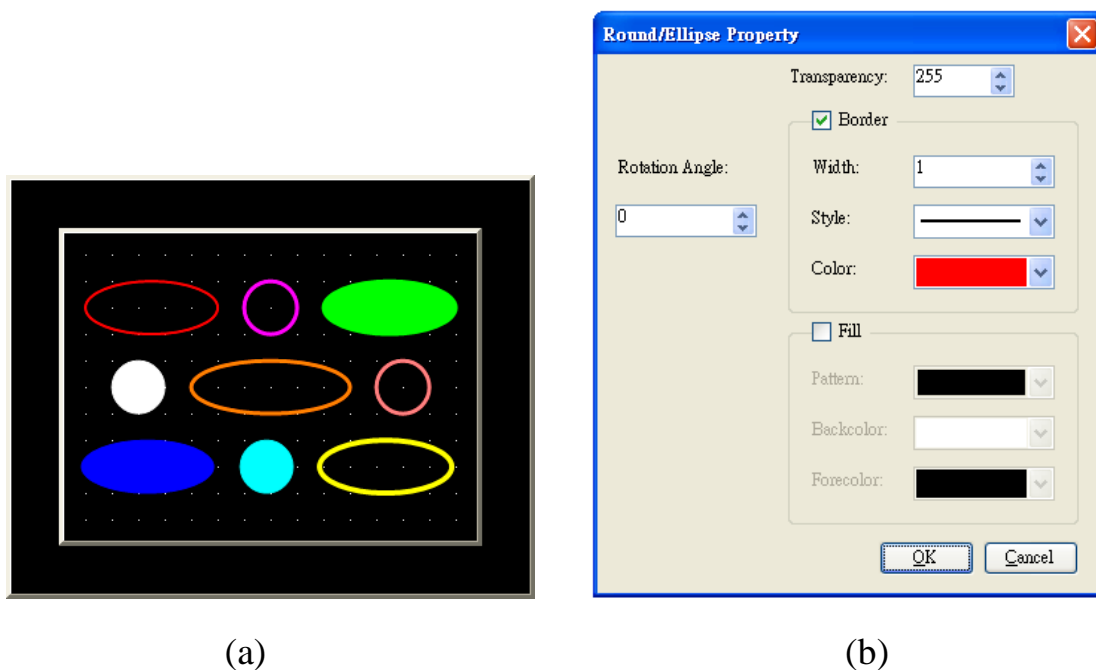





Fig. 3-5-14 Create a round/ellipse and change its properties (a) Draw a round/ellipse

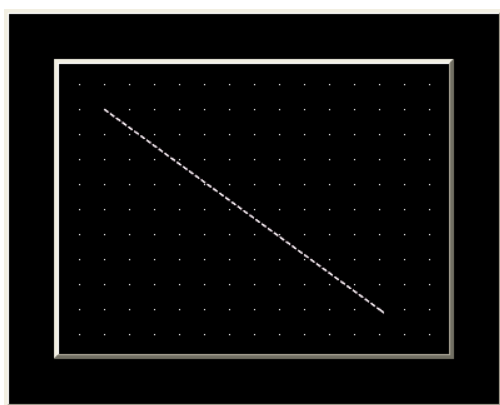
(b) Change its properties



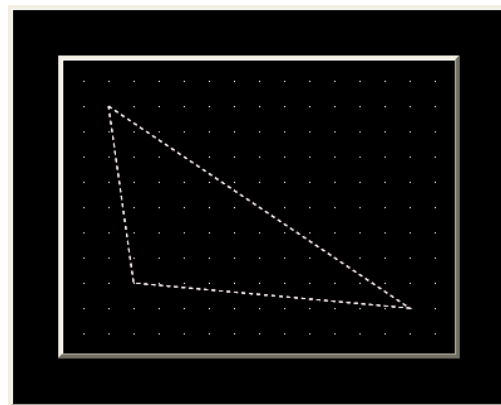
- To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.13. Polygon

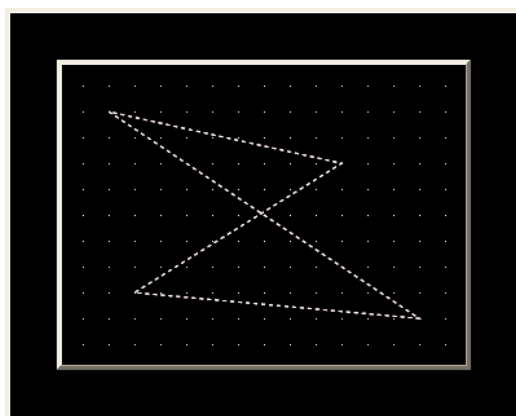
Click  and then click  Polygon, or directly click the shortcut , and in the editing window left click the mouse to decide the 1st point of the polygon. And then release the mouse, drag the line to the position you want, and then left-click the mouse again to decide the 2nd point of the polygon, and then again release the mouse and drag the line to the 3rd point. When the shape is finally decided, right-click the mouse to finish the drawing. See Figure 3-5-15 below.



(a)



(b)



(c)

Fig. 3-5-15 Create a polygon (a) Decide the 2nd point (b) Decide the 3rd point (c)

Polygon completed

Click the polygon and then double left click the mouse to open the the property window of the object and change the settings as desired. See Figure 3-5-16 below.

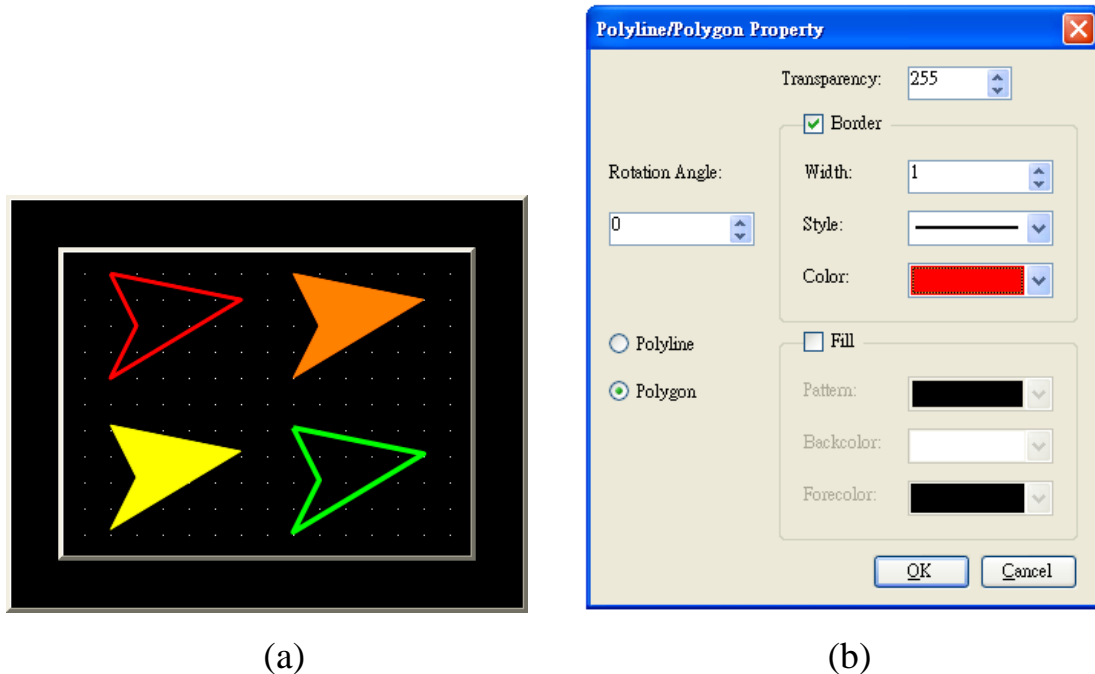





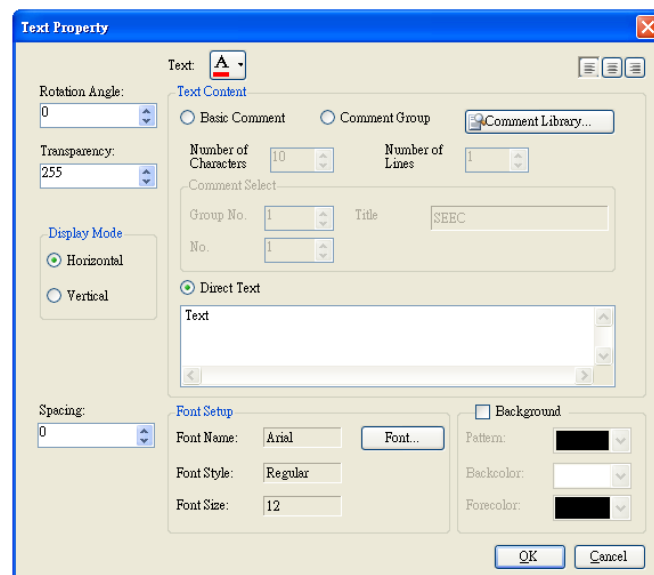
Fig. 3-5-16 Create a polygon and change its properties (a) Draw a polygon (b) Set its properties



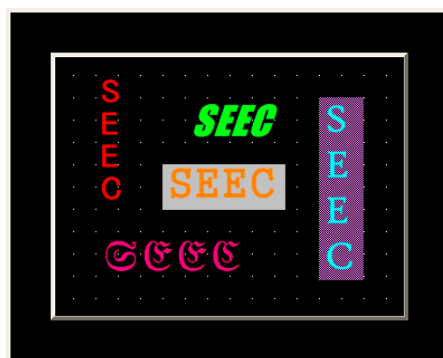
- To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.14. Text

Click  and then click , or directly click the shortcut , and in the editing window left click the mouse to establish a text box. Click the text and then double left click the mouse to open the property window of the text box and change the settings including the text, color, alignment, background, and display mode. See Figure 3-5-17 below.




(a)


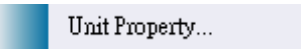


(b)


Fig. 3-5-17 Set up text (a) Set up text properties (b) Setup completed

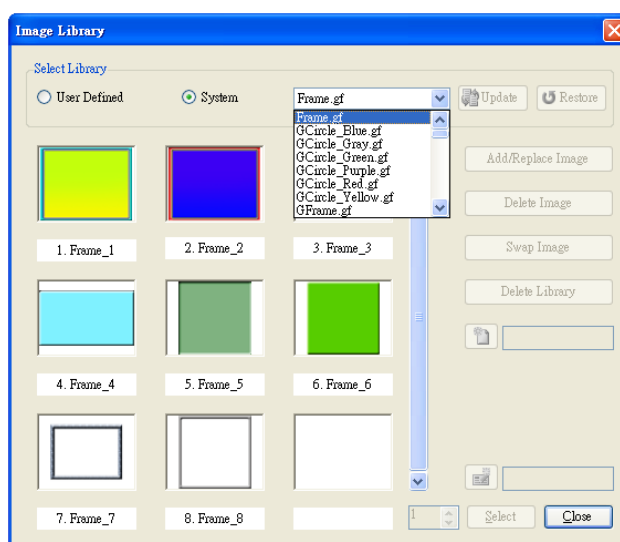
In the text editing, comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).



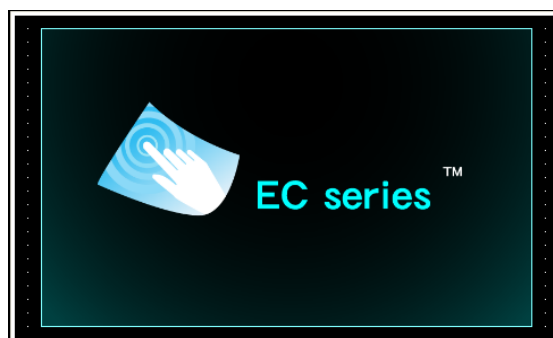
- To set the properties, you can also click  and then click , or use the property window on the right of the screen, to make the setting.

3.5.15. Image

Click **Draw** and then click **Image**, or directly click the shortcut , and in the editing window left click the mouse and hold it to decide the 1st point of the frame to accommodate the image. And then drag the frame to the size you want and then release the mouse. At this point the dialogue box of the image library will pop up. Select a image from the system image library or from a user-defined library. Confirm to finish the setting. See Figure 3-5-22 below.




(a)



(b)

Fig. 3-5-22 Set Image (a) Image Library (b) Image set

To change the image pattern, click the image and then double left click the mouse to open the property window of the image and change the settings. Click  to enter the image library setup. For more, please refer to [Section 3.4.2 Image Library](#).

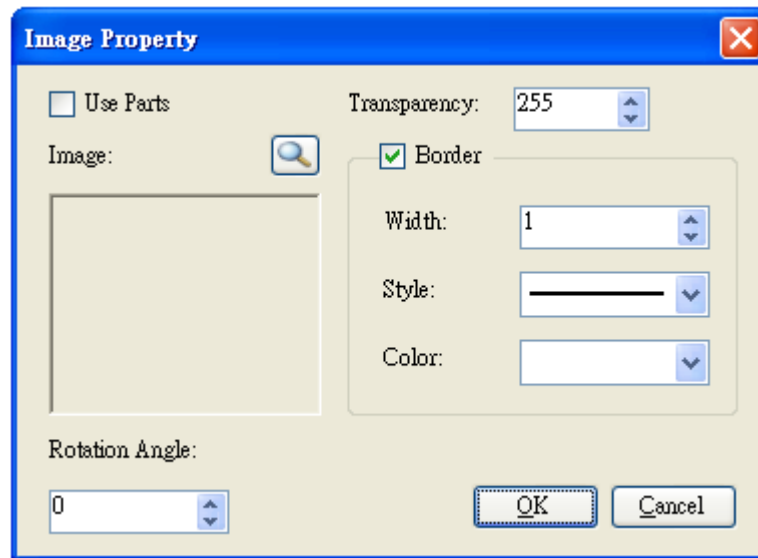



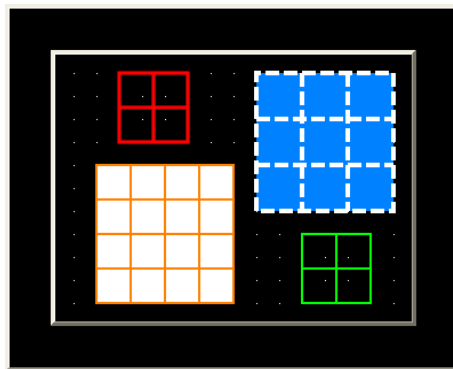
Fig. 3-5-23 Image Property Setup



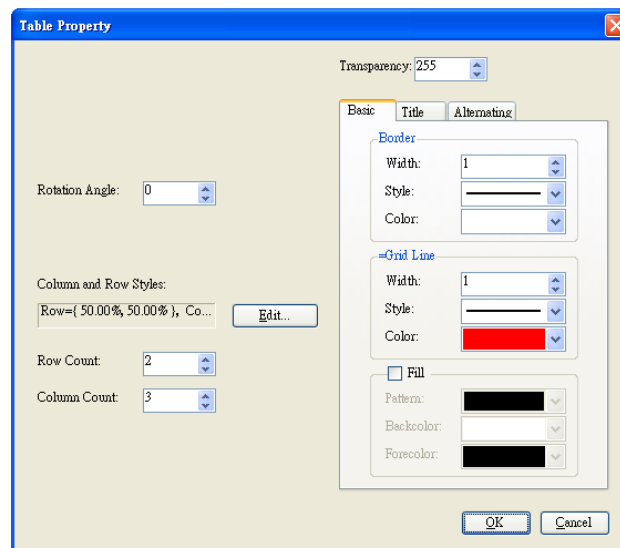
- To set the properties, you can also click **Edit** and then click **Unit Property...**, or use the property window on the right of the screen, to make the setting.

3.5.16. Table

Click **Draw** and then click **Table**, or directly click the shortcut , and in the editing window left click the mouse and hold it to decide the 1st point of the object, and then drag the frame to the size desired, and then release the mouse to finish drawing the form. The default columns and rows of the form is 4×4. Click the form and double left click the mouse to open the property window of the form and change the properties as desired. See Figure 3-5-24 below.



(a)



(b)

Fig. 3-5-24 Set Table (a) Create Form (b) Set Property

To change the pattern of the columns and rows of the form, click **Edit...** to open the dialogue box and set the properties as desired. Click **Auto Equalize** to have the system to automatically allocate the frame sizes of the form. See Figure 3-5-25 below.

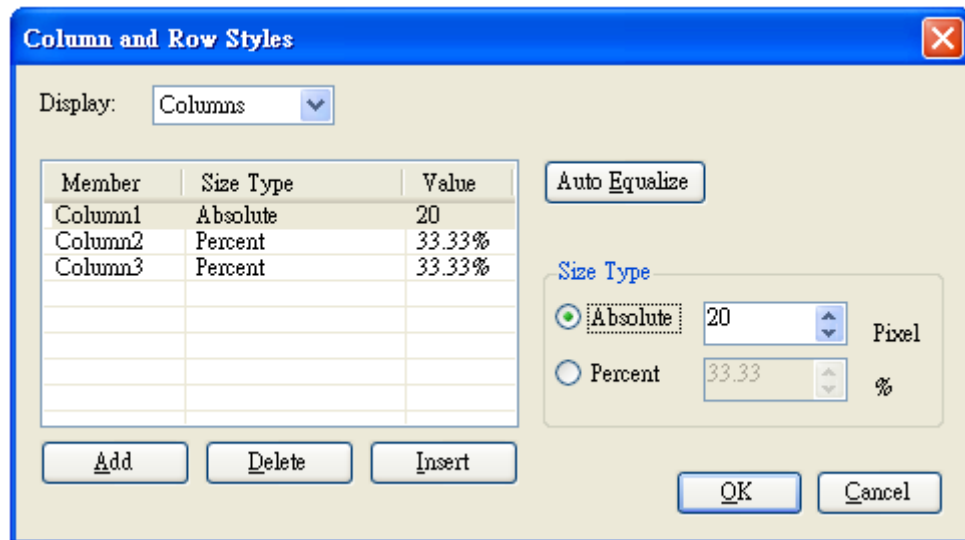


Fig. 3-5-25 Set the pattern of the columns and rows of the form

3.6. Unit Menu

3.6.1. Unit Functions












Click  to display all the object functions in the menu, as shown in Table 3-6-1 below.

Table 3-6-1 Objects and Functions

Name	Function
 Switch ▶	Set up switch and mutil-action switch.
 Lamp ▶	Set up lamp light.
 Data Input ▶	Enter numeric value or character
 Data Display ▶	Display numeric value, character or data list.
 Message Display ▶	Display Bit/Word comment and alarm.
 Chart Dispaly ▶	Display various images.
 Parts Display ▶	Display Bit/Word parts.
 Clock	Set up clock display.
 Dynamic Display ▶	Set up dynamic images.
 Keypad ▶	Set up custom keypad

3.6.2. Switch

Click **Unit** and the click **Switch**, or directly click the shortcut to select from the options, and left click the mouse in the editing window to set up a switch object. See Figure 3-6-2 below.

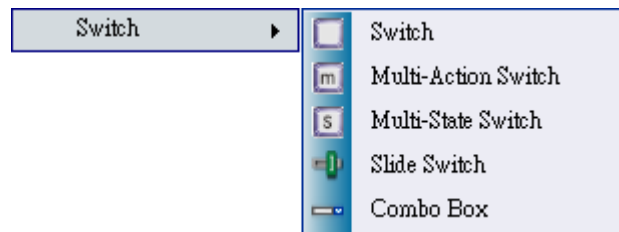






Fig. 3-6-2 Switch Menu

a. Switch

To set up a switch, click  and click  and then click  Switch, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and change the settings.

The General property setting allows the user to change the ON/OFF display, color, transparency, and line pattern. See Figure 3-6-2A-1 below.

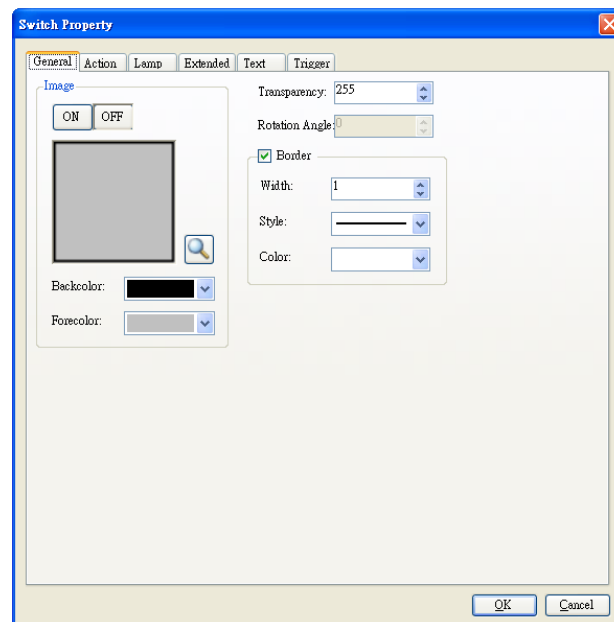



Fig. 3-6-2A-1 General Property Setup

To display other images, click  to open the image library. For more information on the image library operations, please refer to [Section 3.4.2 Image Library](#).

The Action property setting allows the user to set the device, Bit type and action, numeric type and value control.

Figure 3-6-2A-2 below demonstrates the setup of a device type and its action.

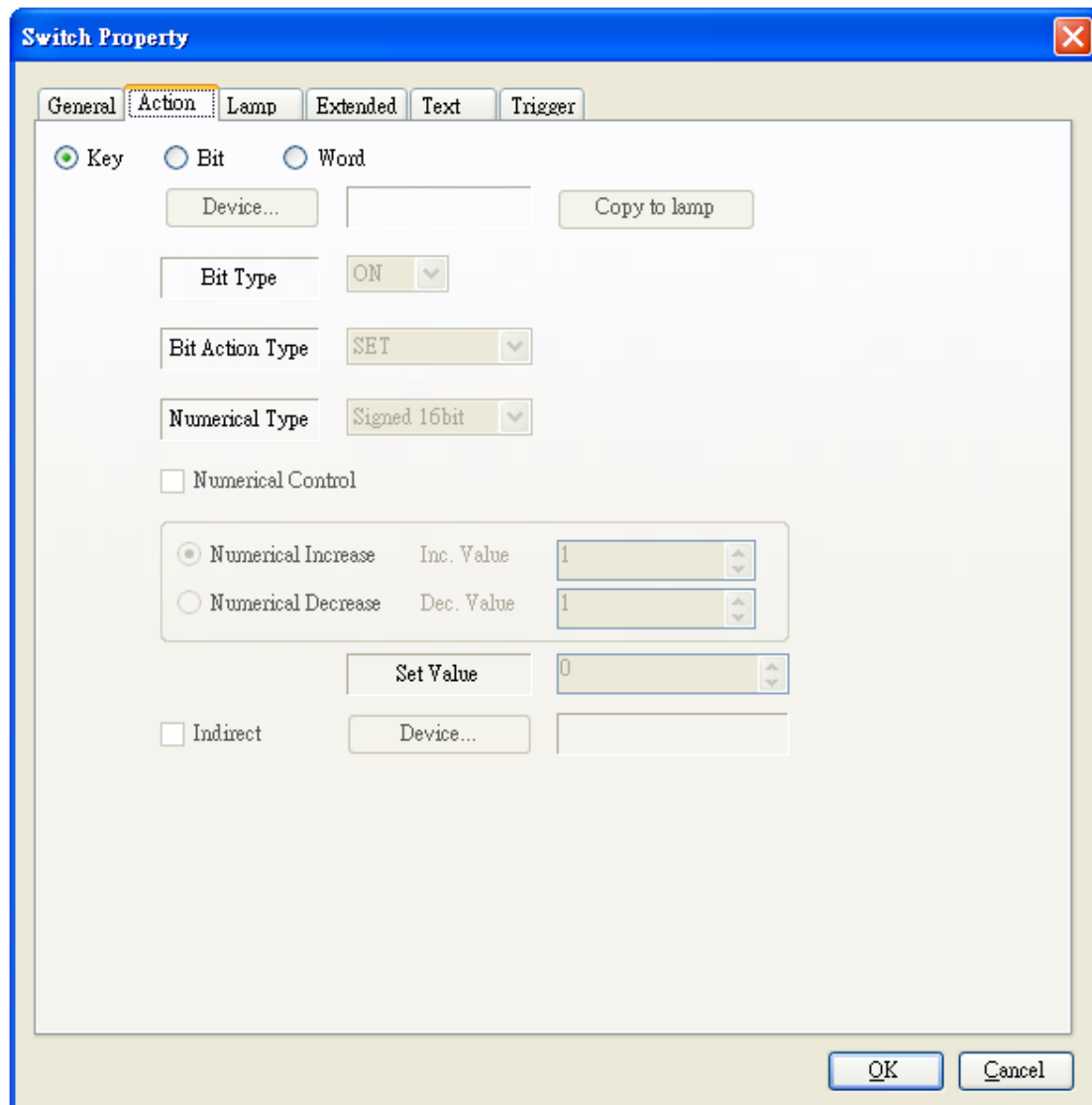


Fig. 3-6-2A-2 Device Action Setup

The options for Bit device action are SET, RST, **Momentary**, and **Alternate**. See Figure 3-6-2A-3 below.

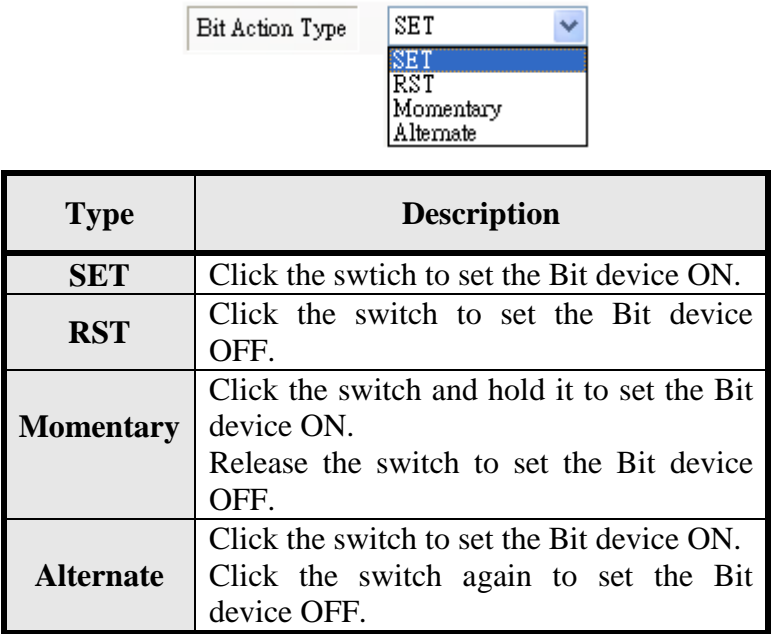


Fig. 3-6-2A-3 Bit Device Actions



To set the Bit device M0 to the ON/OFF alternating type, select the Bit option first, and then click

Device...

 to select device M0. Then, select the alternating type from the Bit action options to finish the setting. See Figure 3-6-2A-4 below.

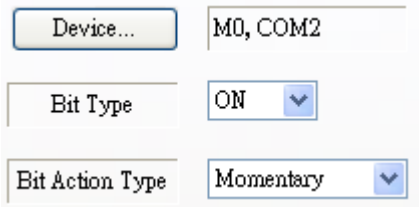


Fig. 3-6-2A-4 Setup of Device and Action

There are 7 numeric types available for the actions of the Word device. See Figure 3-6-2A-5 below.

Numerical Type

Signed 16bit

Signed 16bit

Unsigned 16bit

Signed 32bit

Unsigned 32bit

BCD 16bit

BCD 32bit

Real

Types	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-2A-5 Numeric Types for Word Device



To set the Word device D0 to 10, select the Word device and then click to select device D0, and then set its value to 10.

To indirectly set D0 to 10, select device D1 and tick the option ☒ Indirect. Then, add 10 to D1 and set D1 to D0; the computing equation is $D0=D1+10$. See Figure 3-6-2A-6 below.

☒ Indirect

Set Value

10

Device...

D1, COM2

Fig. 3-6-2A-6 Indirect Device Value Setup

The switch property setting allows the user to change the device, Bit type, numeric type, and value range

Figure 3-6-2A-7 below demonstrates the setup of the switch for a device. The user can select Bit or Word to monitor the switch.

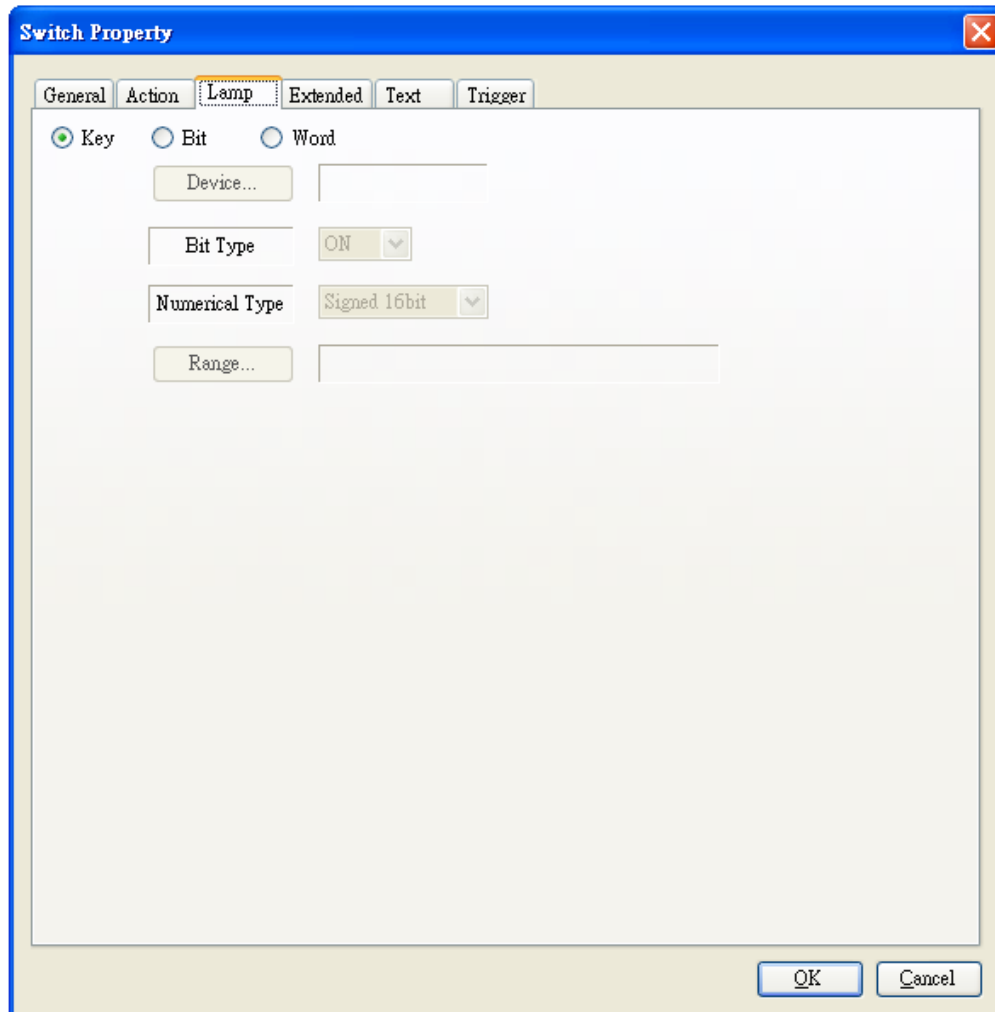


Fig. 3-6-2A-7 Switch Setup

The available action types of Bit device are ON/OFF. See Figure 3-6-2A-8 below.

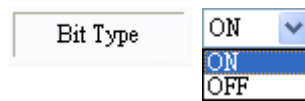


Fig. 3-6-2A-8 Bit Action Types



To set the Bit device M0 to the ON/OFF alternating type, select the Bit option first, and then click to select device M0 to finish the setting. See Figure 3-6-2A-9 below.

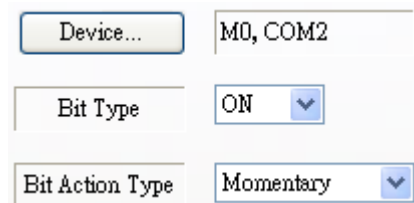
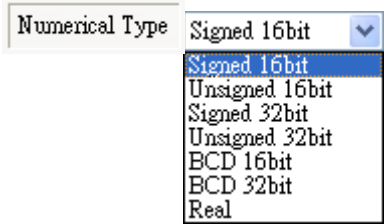


Fig. 3-6-2A-9 Bit Device Setup

There are 7 numeric types available for the actions of the Word device. See Figure 3-6-2A-10 below.



Types	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-2A-10 Numeric Types for Word Device



To set the lamp light on when the value of the Word device D0 is 10, select the Word option first, and then click **Device...** to select device D0, Then, click **Range...** and enter the statement 10=D0 to finish the setting. See Figure 3-6-2A-11 below.

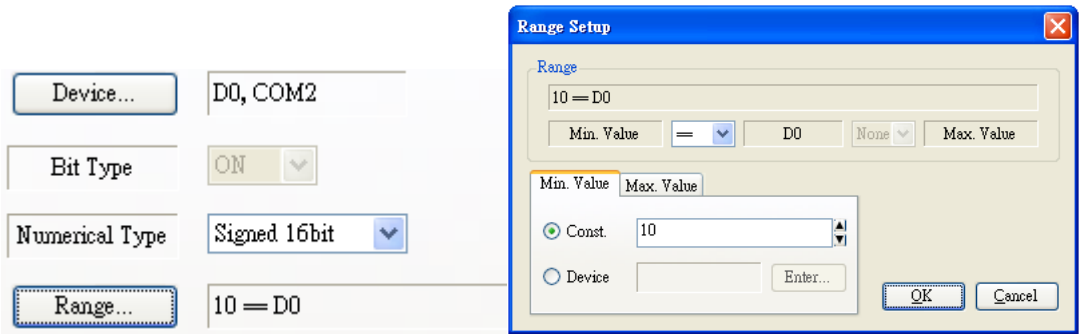


Fig. 3-6-2A-11 Word Device Setup for Lamp

The Extension property setting allows the user to set the security level, select functions, hide and blink the object, and enable confirm box. Figure 3-6-2A-12 below demonstrates the setting of the object's security level. Both the security level (display) and security level (input) are ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0s.

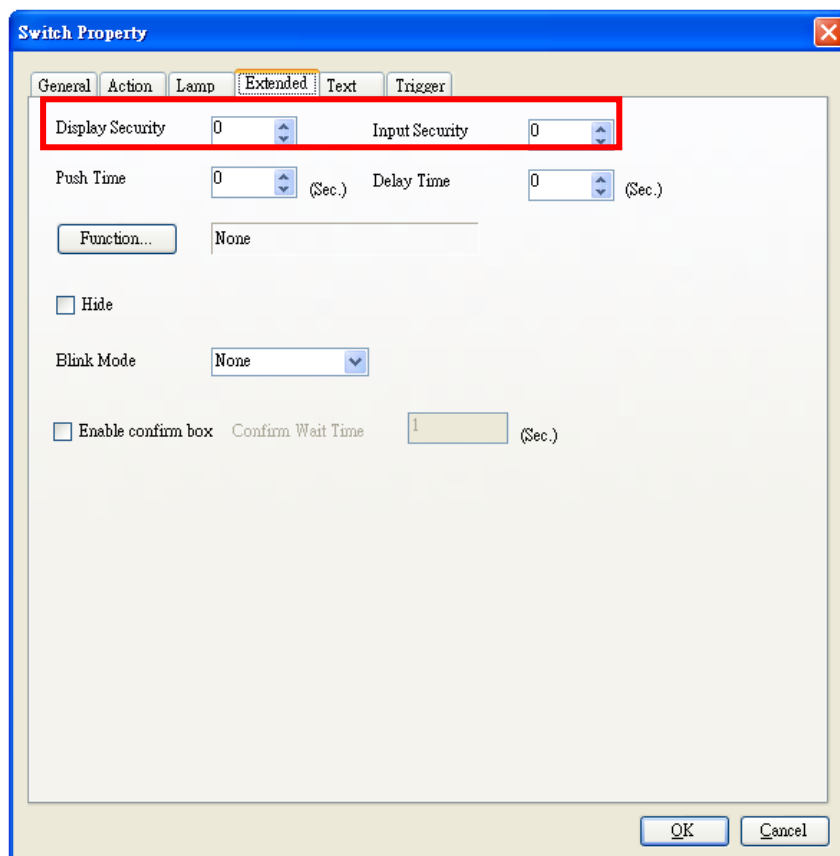


Fig. 3-6-2A-12 Setup of Security Level

Figure 3-6-2A-13 below shows the setup of the object's action times of press-and-hold and latency.

If the confirm box has been started, when the user triggers the switch, the confirmation window will pop up and stay till the user-defined time elapses. The maximum window time is 120 seconds. See Figure 3-6-2A-14 below.

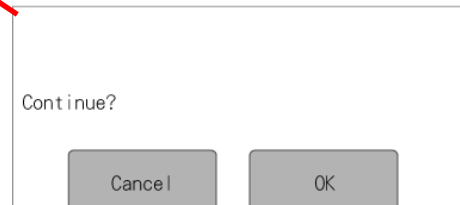
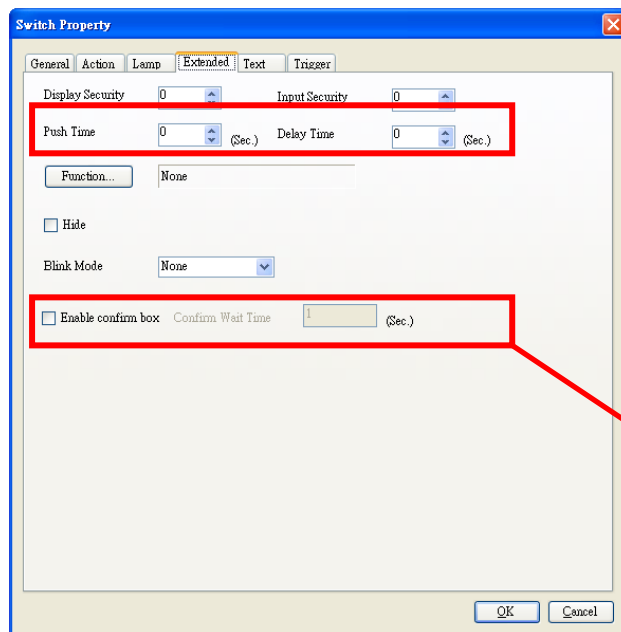


Fig. 3-6-2A-13 Setup of Action Times

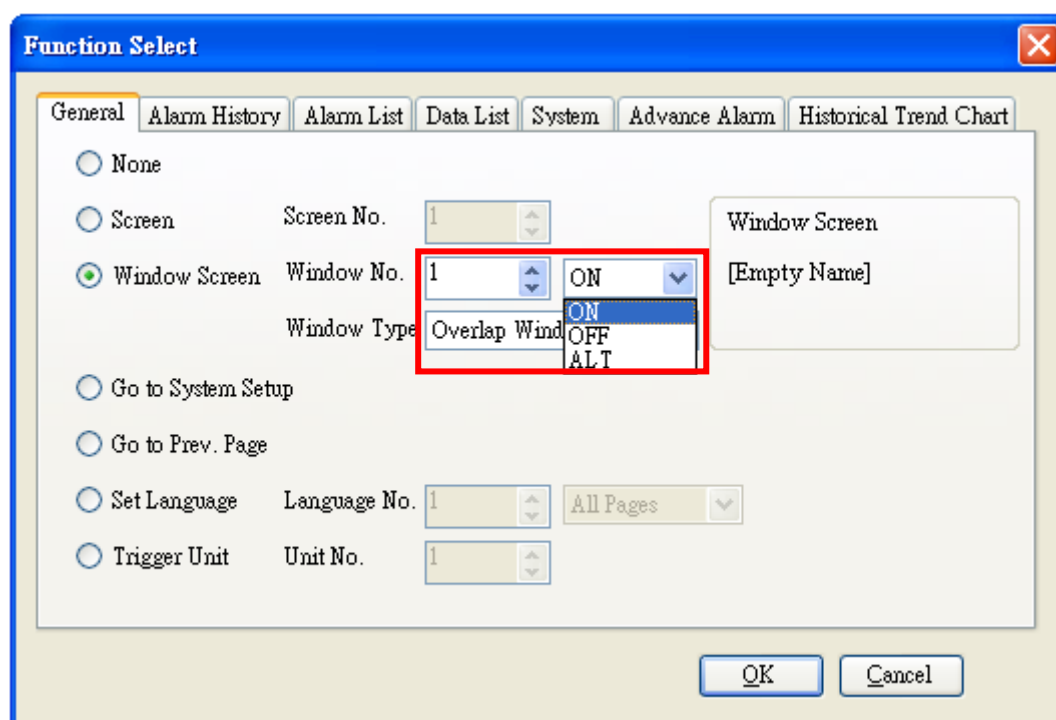
Fig. 3-6-2A-14 Confirm Box



Action Time	Description
Push Time	When the time is set to 5 seconds, press and hold down the switch for 5 seconds to start action.
Delay Time	When the time is set to 5 seconds, press the switch and wait for 5 seconds for action to start.

To set up the switch functions, click **Function...** to open the function window. The functions available are General, Alarm History, Alarm List, Data List, System, Advanced Alarm, and Historical Trend Chart.

Figure 3-6-2A-15 below shows the items of the General tab which provide options of base screen, window screen, system setting, previous page, language setting, and trigger unit; there are 3 screen formats available.



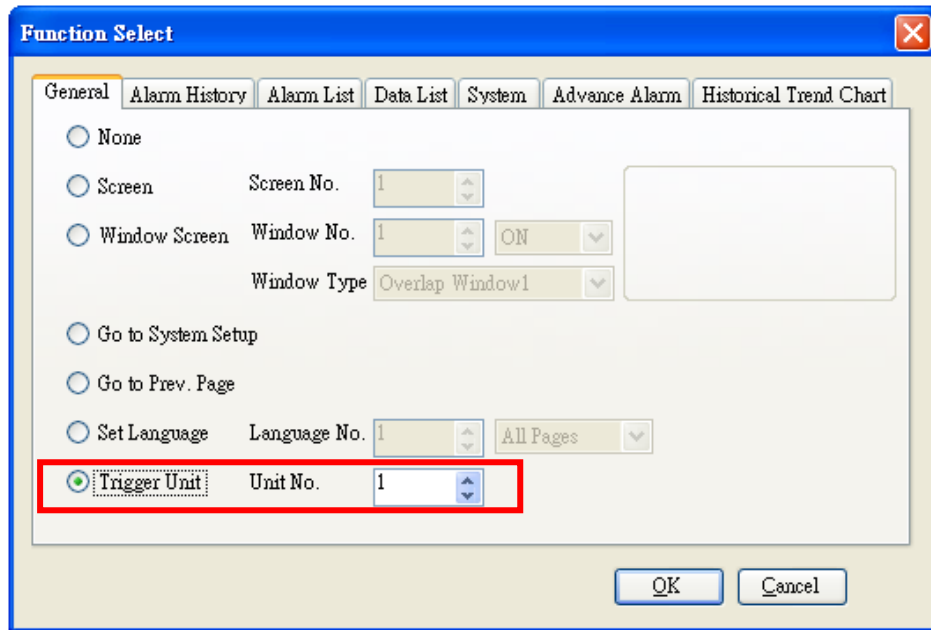
Display Type	Description
ON	Open window screen
OFF	Close window screen
ALT	Alternately open and close window screen

Fig. 3-6-2A-15 General Functions

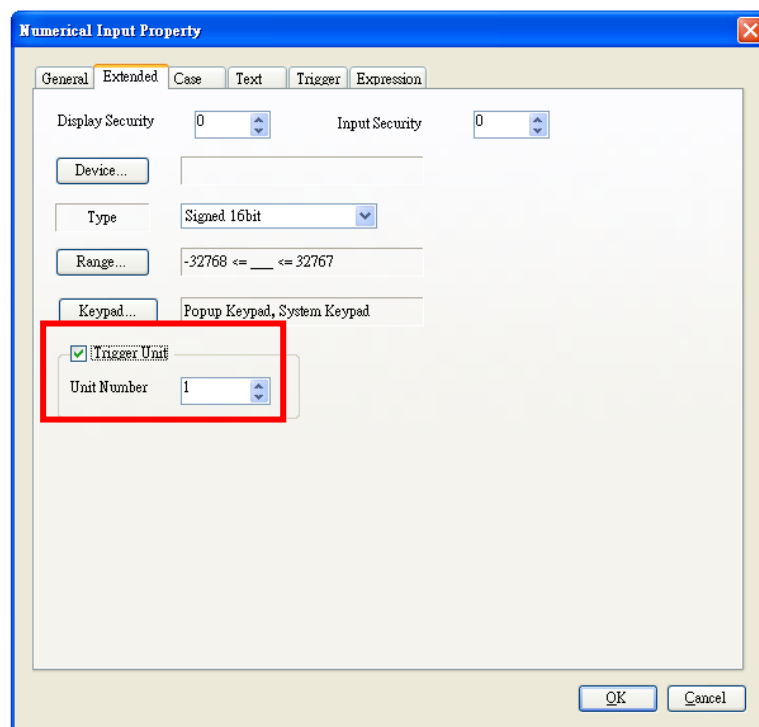
The functions of the triggering object correspond to numeric input and character input, with both inputs having the same object code number. When the object is clicked, the numeric or character input keypad will pop up.



To use a switch to operate the numeric or character keypad, in the editing window create a switch object, and then double left click the mouse to open its property window. Click the Extension tab and select its General tab, and then set the code number of the triggering object to 1. In addition, create in the editing window another numeric input object, and then double left click the mouse to open its property window, and then set its code number to 1 as well, and set its device to D0. Confirm the setting and send the file to HMI. When the switch is pressed, the keypad window will pop up, and when a numeric value is entered and confirmed, the value will appear in the numeric input object. See Figure 3-6-2A-16 below.



(a)



(b)

Fig. 3-6-2A-16 Triggering Object Setup (a) Switch Triggering Object (b) Code

Number of Numeric Input Object

Figure 3-6-2A-17 below shows the items of the Alarm Records tab. There must have an object of the Alarm Records in the editing window in order to view and delete the records.

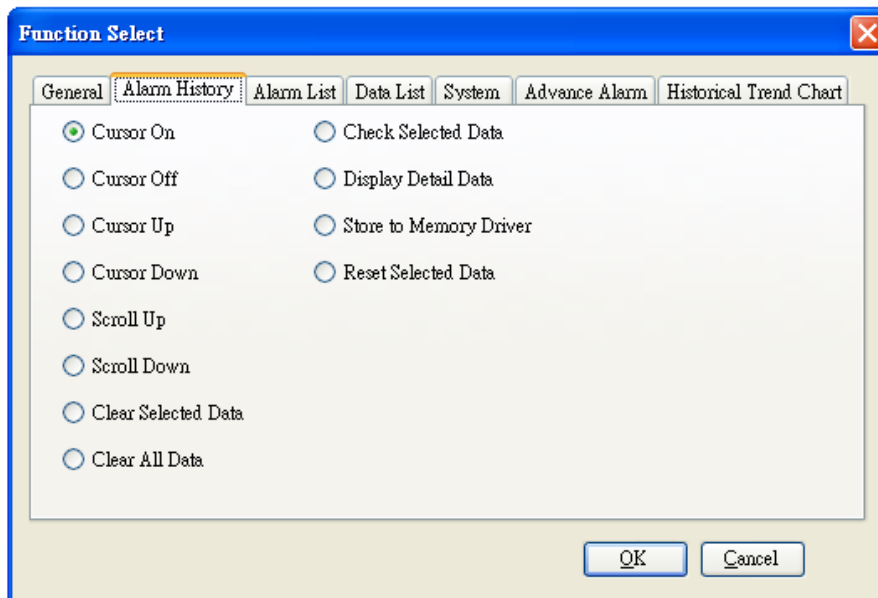


Fig. 3-6-2A-17 Options for Alarm Records

Fig. 3-6-2A-18 below shows the items of the Alarm List tab. There must have an object of the Alarm List in order to view the alarm data.

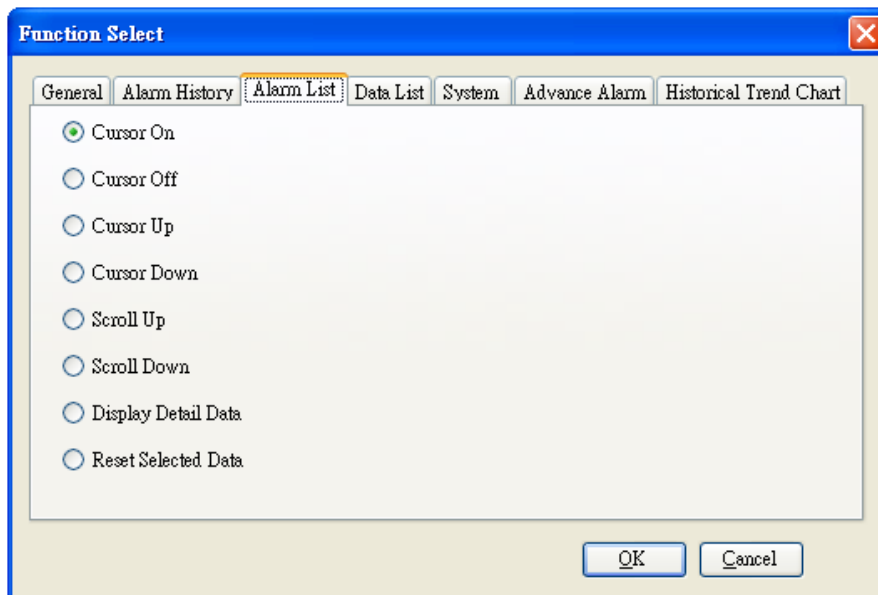


Fig. 3-6-2A-18 Options for Alarm List

Figure 3-6-2A-19 shows the items of the Data Sheet tab. There must have an object of the Data Sheet in order to view the data.

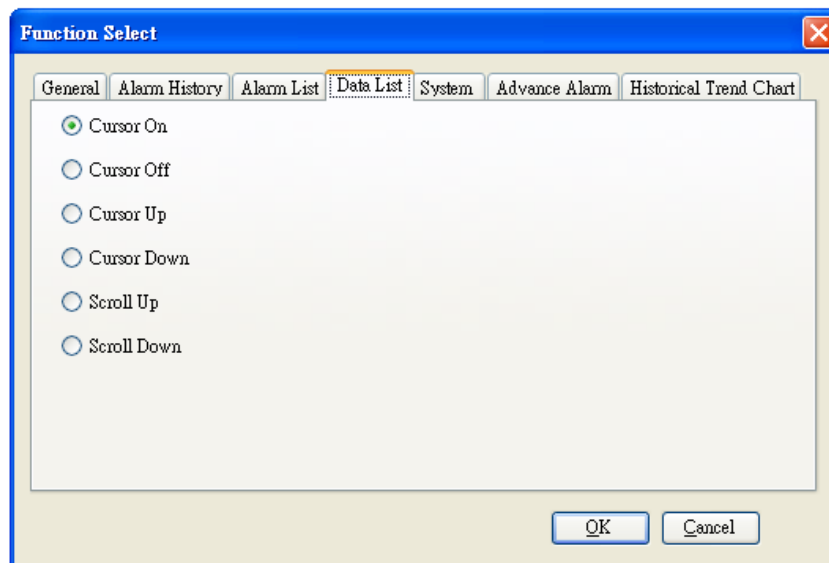


Fig. 3-6-2A-19 Options for Data Sheet

Figure 3-6-2A-20 below shows the items of the System tab. The user can set up the switch functions in the editing window by changing the system parameters directly in the HMI screen without the need of going back to the O.S. screen.

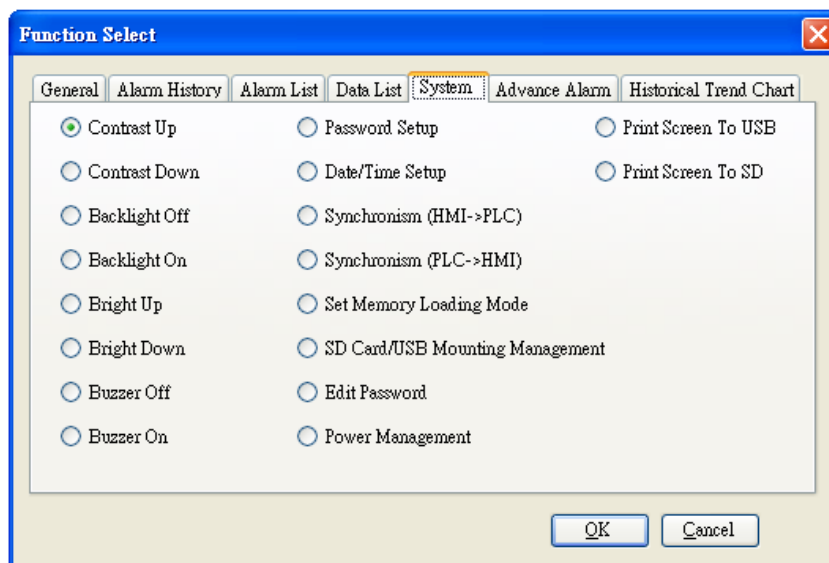


Fig. 3-6-2A-20 Options for System

For instant screen record, click one of the screen dump options to save the screen data in .png format to an external device. See Figure 3-6-2A-21 below.

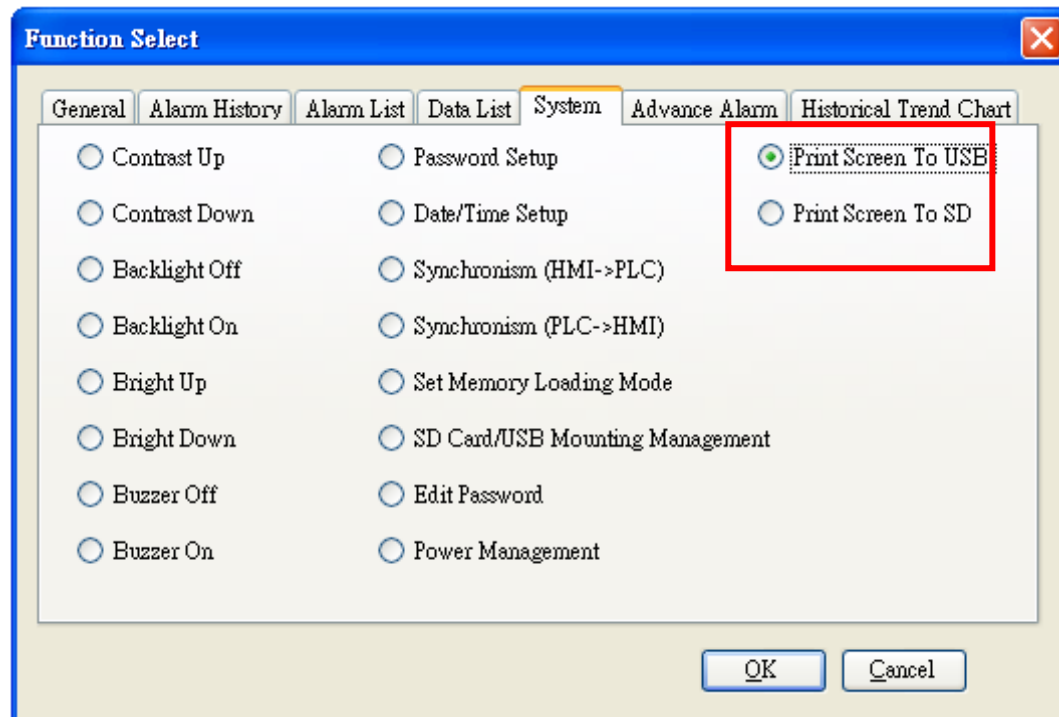


Fig. 3-6-2A-21 Screen Dump



- To save the screen dump, install an external device (SD/USB) first.

Figure 3-6-2A-22 below shows the items of the Advanced Alarm tab. There must have an object of the Advanced Alarm in the editing window in order to view and delete the data.

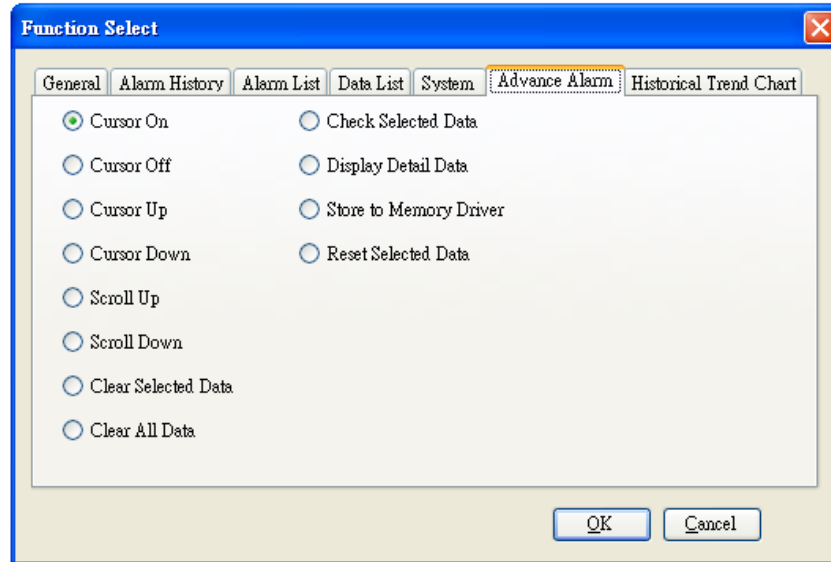


Fig. 3-6-A-22 Options for Advanced Alarm

Figure 3-6-2A-23 below shows the items of the Historical Trends tab. There must have an object of the Historical Trends in order to view and delete the data.

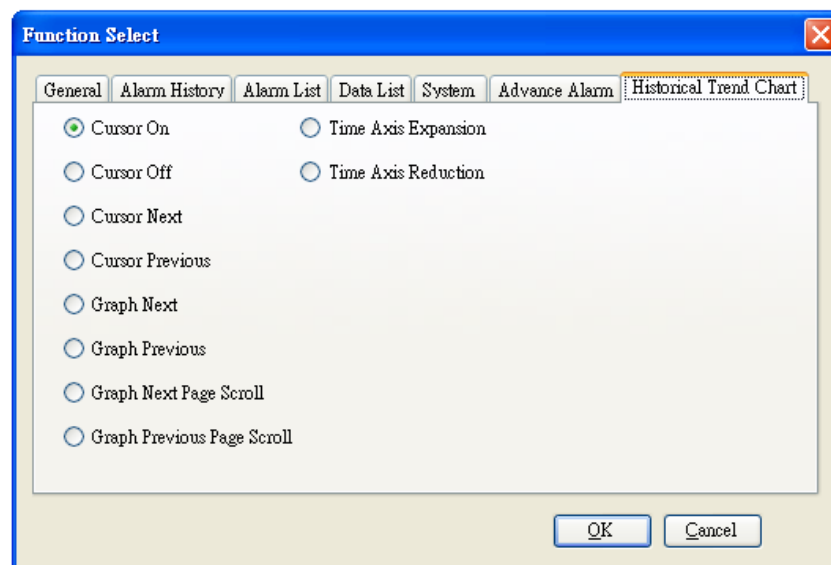
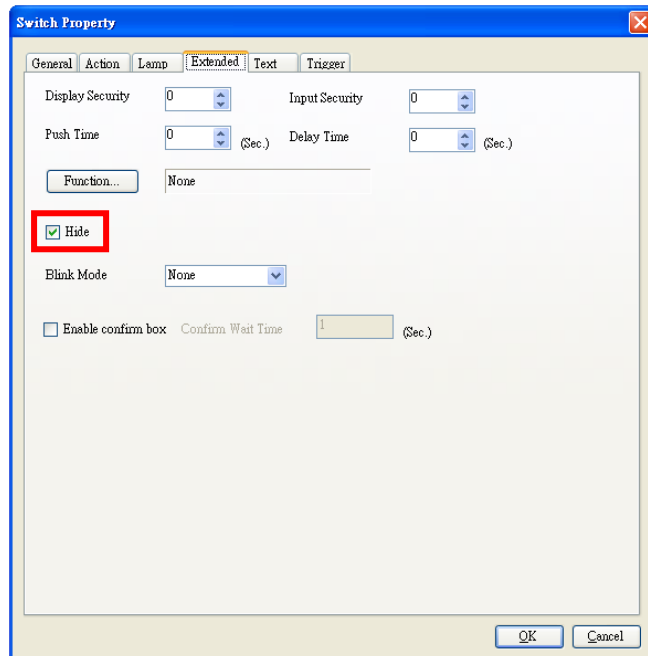
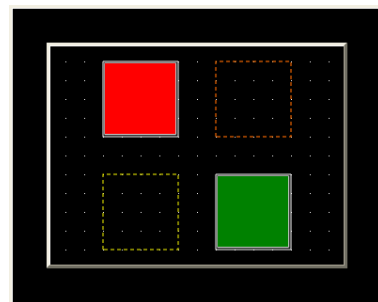


Fig. 3-6-2A-23 Options for Historical Trends

To hide the switch, tick the option ☒ Hide to make the display of the switch transparent. This will not affect the normal execution of HMI. See Figure 3-6-2A-24 below.



(a)



(b)

Fig. 3-6-2A-24 Object Hiding (a) Hiding Setup (b) Hiding Completed

To set the blinking feature, use the pull-down menu to select one of the three blinking speeds. See Figure 3-6-2A-25 below.



Fig. 3-6-2A-25 Blinking Mode

The Text property setting allows the user to set the ON/OFF text display, text color, text font, text location, alignment, and the text content. See Figure 3-6-2A-26 below.

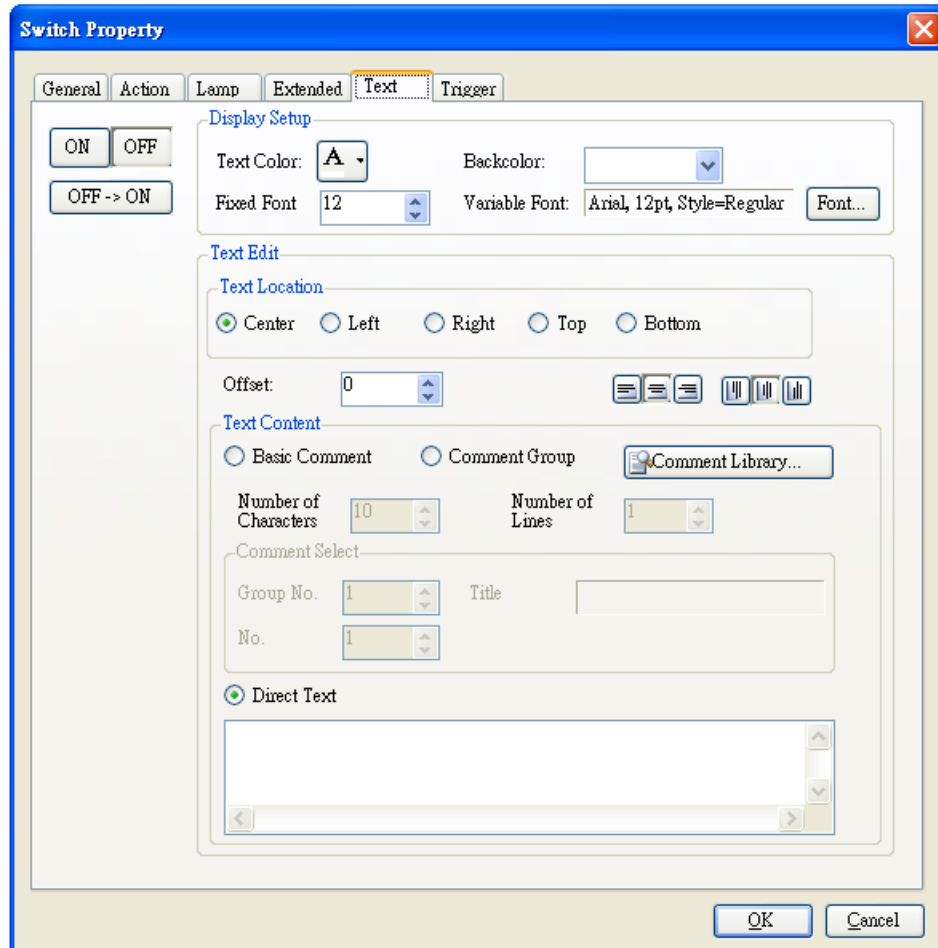

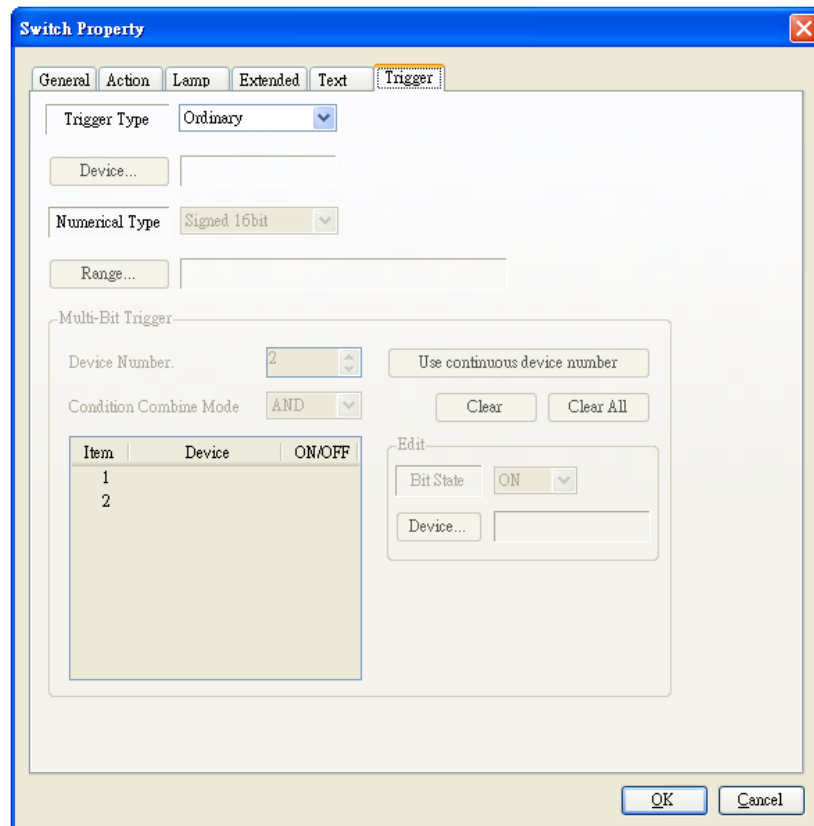


Fig. 3-6-2A-26 Text Property Setup

In the text editing, the comments in the comment library can be set as text to display. To do this, click  Comment Library... to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Trigger property setting allows the user to set the triggering conditions. See Figure 3-6-2A-27 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON.
OFF	Action is taken only when the device is OFF.
Range	Action is taken only when the device value is within the defined range.
Multiple Bit Trigger	Set two or more devices, and only when all the devices reach the condition will the action start.

Fig. 3-6-2A-27 Trigger Patterns



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setup window and set the trigger devices as M1, M2. Confirm the setting and send it to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-2A-28 below.

Multi-Bit Trigger

Device Number: 2

Condition Combine Mode: AND

Use continuous device number

Clear Clear All

Item	Device	ON/OFF
1	M1, COM1	ON
2	M2, COM1	ON

Edit

Bit State: ON

Device...: M1, COM1

(a)

Device Setup

Channel: COM1

Station: 0

Device

M 1

7 8 9 D E F

4 5 6 A B C

1 2 3 BK CL

0

Range: 0-1535,8000-8254

Bit Pos.

OK Cancel

(b)

Fig. 3-6-2A-28 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or directly use the property window on the right of the screen, to make the setting.
- In the Text properties, the text contents can be comments and direct text. The comment takes fixed font, while the direct text takes variable fonts. See Figure 3-6-2A-29 below.

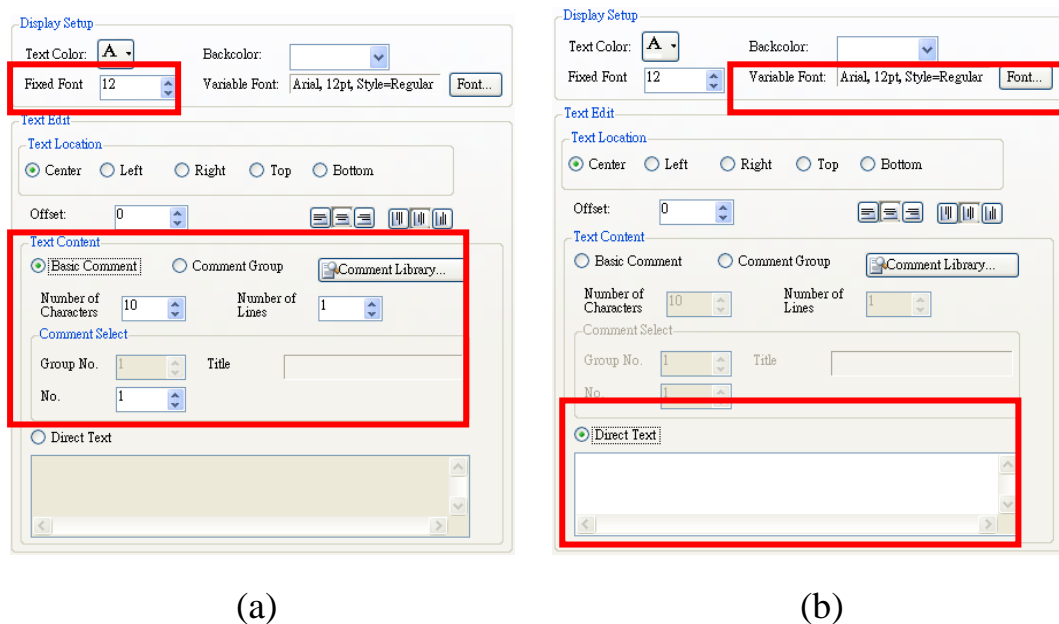






Fig. 3-6-2A-29 Text Display Setting (a) Comment Text (b) Direct Text

b. Multi-Action Switch

To set up a multi-action switch, click  and click  and then click  Multi-Action Switch, or directly click the shortcut , and then in the editing window left click the mouse to set up a multi-action switch. Then, click the object and then double left click the mouse to open the property window of the object and make the property setting.

The General property setting allows the user to set the ON/OFF display, color, transparency, and line pattern. See Figure 3-6-2B-1 below

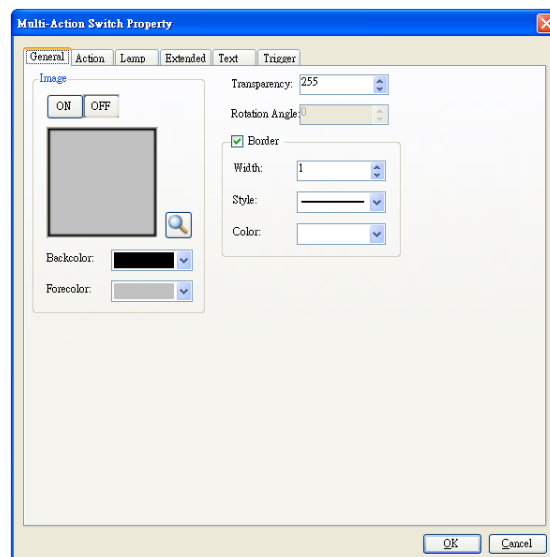



Fig. 3-6-2B-1 General Property Setup

To change the displayed image, click  to open the image library. For detailed operational guide, please refer to [Section 3.4.2 Image Library](#).

The Action property setting allows the user to set the devices, the base screen, window screens, tables, system functions, and other functions. There can be as many as 32 simultaneous actions. See Figure 3-6-2B-2 below.

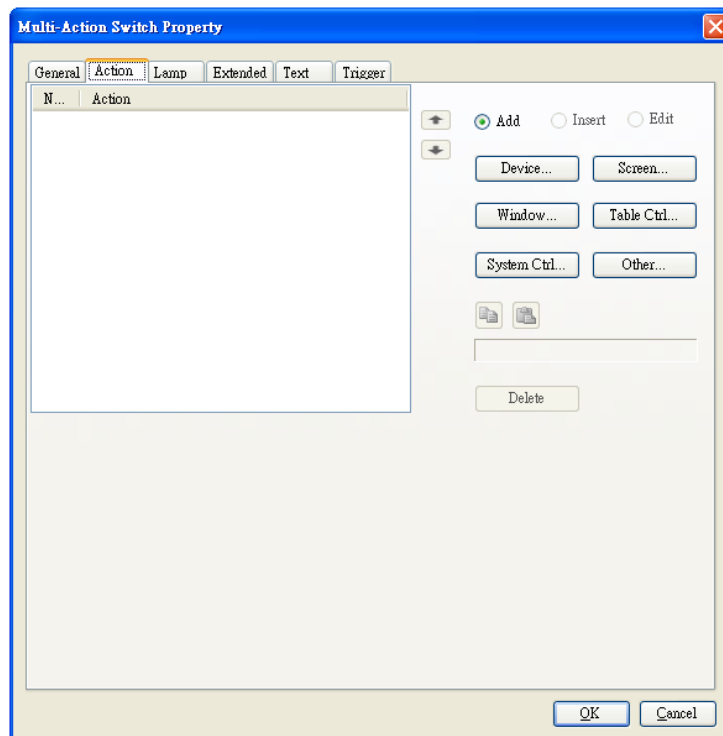




Fig. 3-6-2B-2 Action Property Setup

To copy devices, select a set of devices first, and then click . A message of the copy will be displayed in the text box as shown below.

Then, click  to finish the copy. See Figure 3-6-2B-3 below.

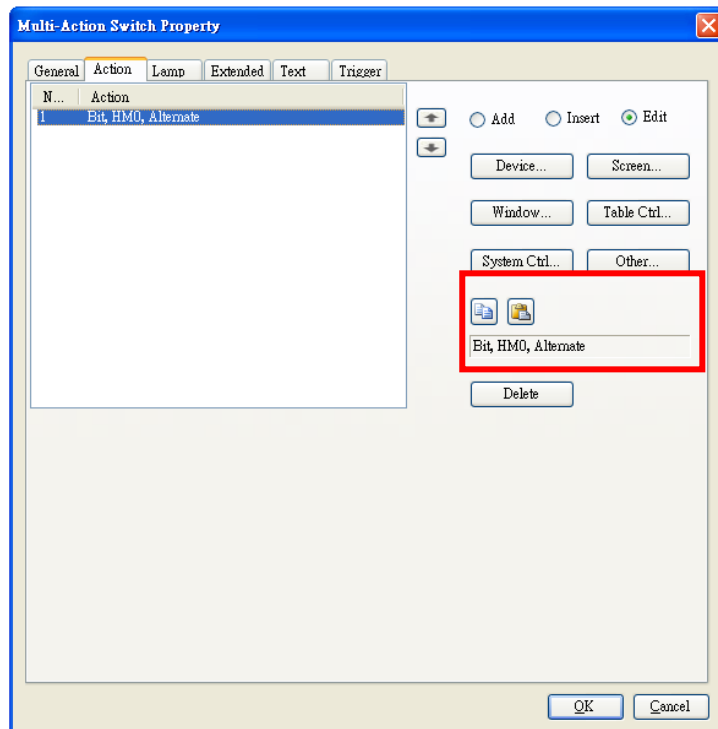


Fig. 3-6-2B-3 Copy Devices

The lamp property setting allows the user to change the device, Bit type, numeric type, and value range

Figure 3-6-2B-4 shows the setup of the lamp device for the object. The user can set Bit or Word to monitor the lamp.

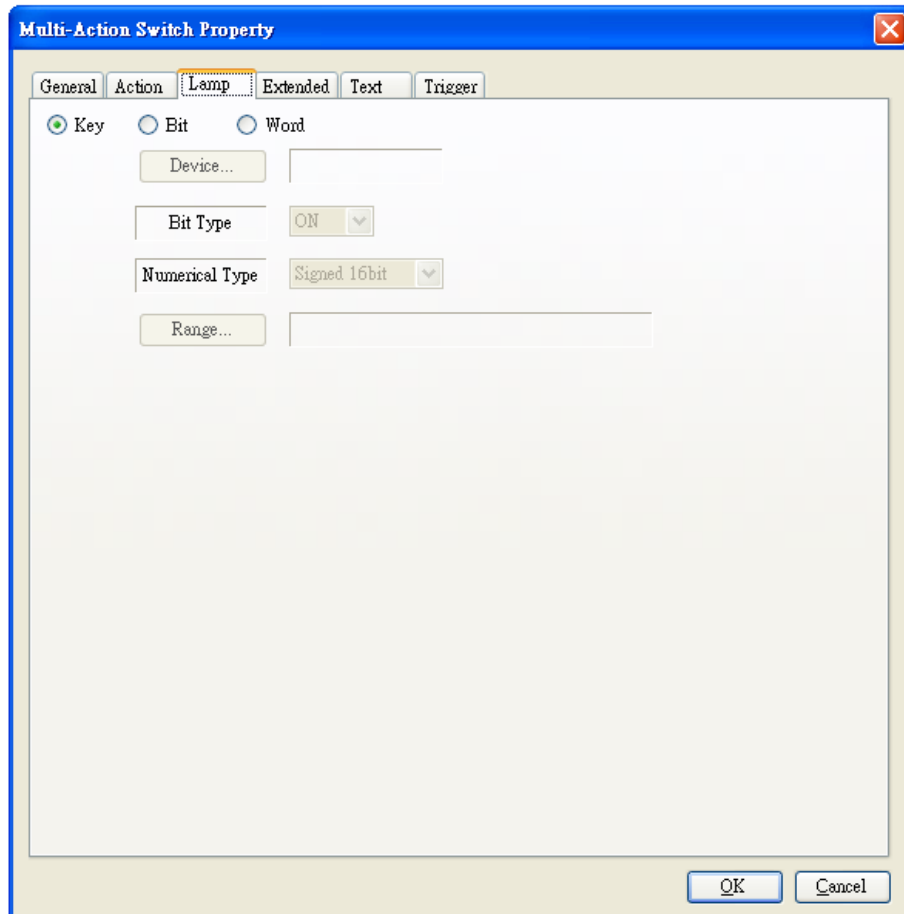


Fig. 3-6-2B-4 Lamp Property Setup

The available action types of Bit device are ON/OFF. See Figure 3-6-2B-5 below.

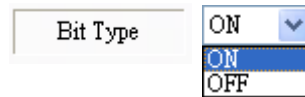


Fig. 3-6-2B-5 Bit Action Types



To set the Bit device M0 to the ON/OFF alternating type, select the Bit option first, and then click to select device M0 to finish the setting. See Figure 3-6-2B-6 below.

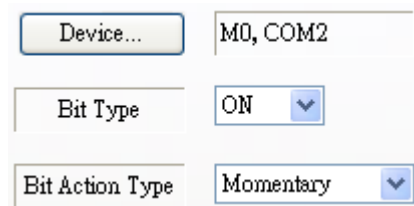


Fig. 3-6-2B-6 Bit Device Setup

There are 7 numeric types available for the actions of the Word device. See Figure 3-6-2B-7 below.

Numerical Type

Signed 16bit

Signed 16bit

Unsigned 16bit

Signed 32bit

Unsigned 32bit

BCD 16bit

BCD 32bit

Real

Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-2B-7 Numeric Types and Value Ranges



To set the lamp light on when the value of the Word device D0 is 10, select the Word option first, and then click Device... to select device D0. Then, click Range... and enter the statement 10=D0 to finish the setting. See Figure 3-6-2B-8 below.

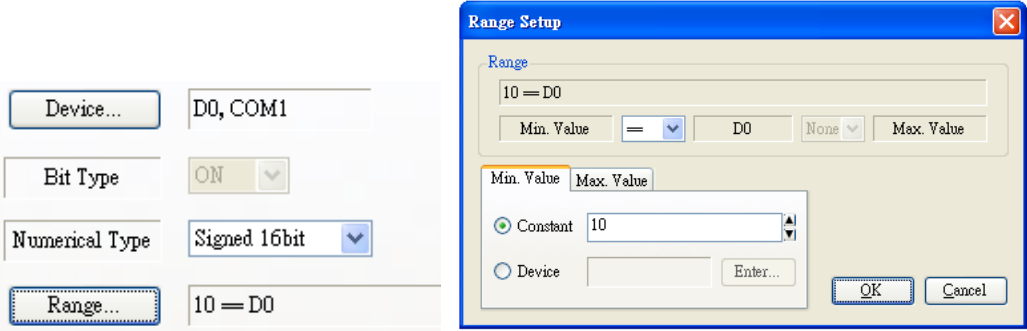


Fig. 3-6-2B-8 Word Device Setup

The Extension property setting allows the user to set the security level, hide and blink mode, and enable confirm box. See Figure 3-6-2B-9 below. Both the security level (display) and security level (input) are ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.



Fig. 3-6-2B-9 Setup of Security Level

Figure 3-6-2B-10 below shows the setup of the object's action times of Push Time and Delay Time.

If the confirm box has been started, when the user triggers the switch, the confirmation window will pop up and stay till the user-defined time elapses. The maximum window time is 120 seconds. See Figure 3-6-2B-11 below.

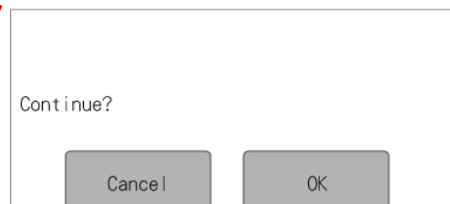
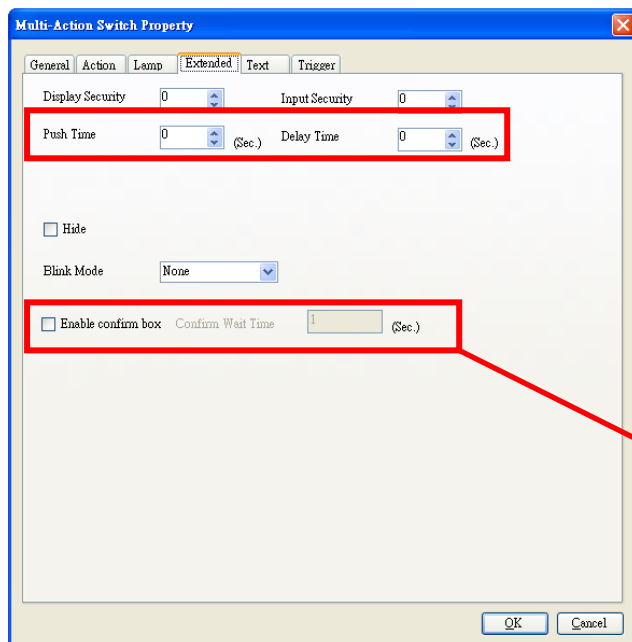


Fig. 3-6-2B-10 Setup of Action Times

Fig. 3-6-2B-11 Confirm Box

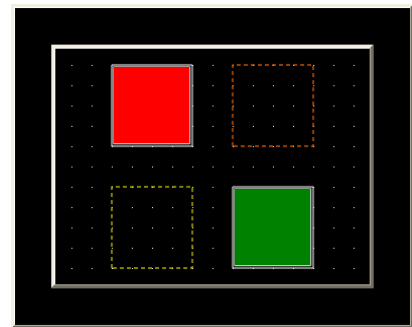


Action Time	Description
Push Time	When the time is set to 5 seconds, press and hold down the switch for 5 seconds to start action.
Delay Time	When the time is set to 5 seconds, press the switch and wait for 5 seconds for action to start.

To hide the multi-action switch, tick the option ☒ Hide to make the switch transparent. This will not affect the normal execution of HMI. See Figure 3-6-2B-12 below.



(a)



(b)

Fig. 3-6-2B-12 Hiding Object (a) Set Hiding (b) Setup Completion

To make the multi-action switch blink, use the pull-down menu to select the desired blinking speed. There are 3 blinking speed available. See Figure 3-6-2B-13 below.

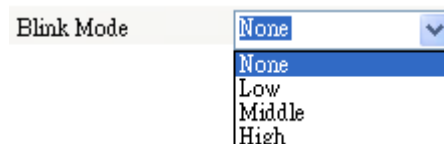


Fig. 3-6-2B-13 Blinking Modes

The Text property setting allows the user to set the text ON/FF display, text color, text font, text location, alignment, and the text content. See Figure 3-6-2B-14 below.

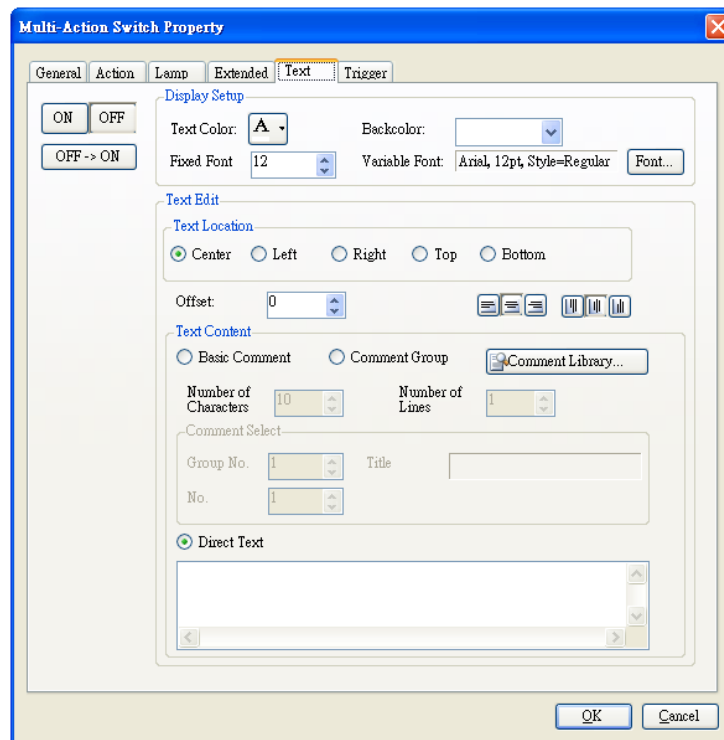

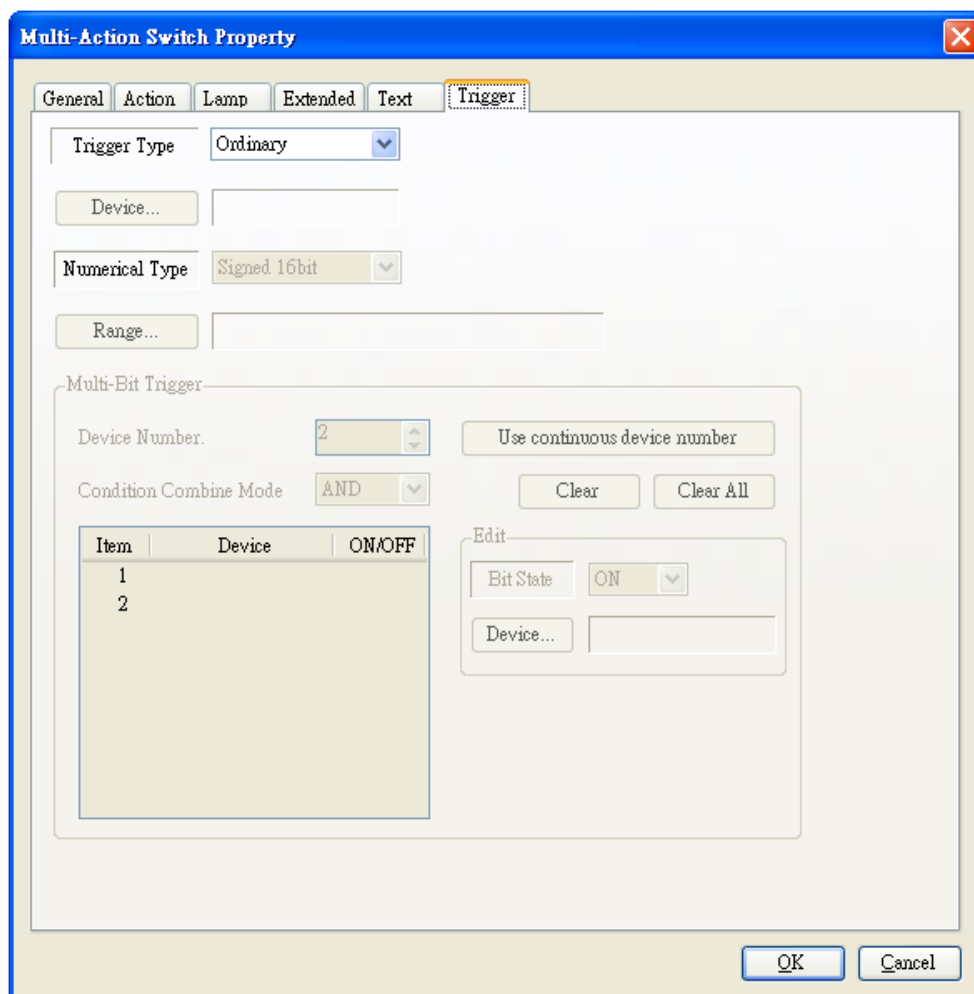


Fig. 3-6-2B-14 Text Property Setup

In the text editing, comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Trigger property setting allows the user to set the triggering conditions. See Figure 3-6-2B-15 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON.
OFF	Action is taken only when the device is OFF.
Range	Action is taken only when the device value is within the defined range.
Multiple Bit Trigger	Set two or more devices, and only when all the devices reach the condition will the action start.

Fig. 3-6-2B-15 Trigger Patterns



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setup window and set the trigger devices as M1, M2. Confirm the setting and send it to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-2B-16 below.

Multi-Bit Trigger

Device Number.

Condition Combine Mode

Item	Device	ON/OFF
1	M1, COM1	ON
2	M2, COM1	ON

Edit

Bit State

M1, COM1

(a)

Device Setup

Channel

Station

Device

Range

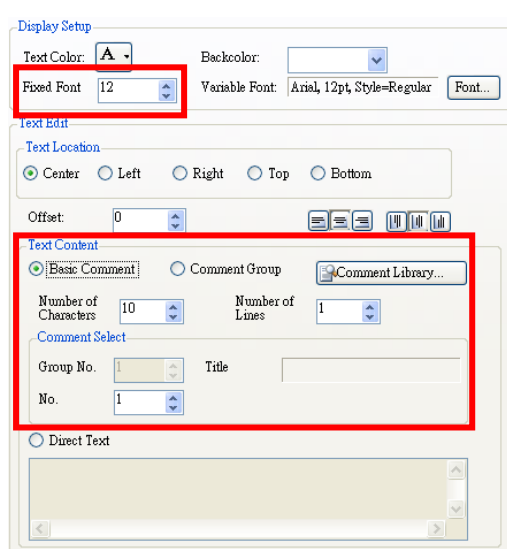
Bit Pos.

(b)

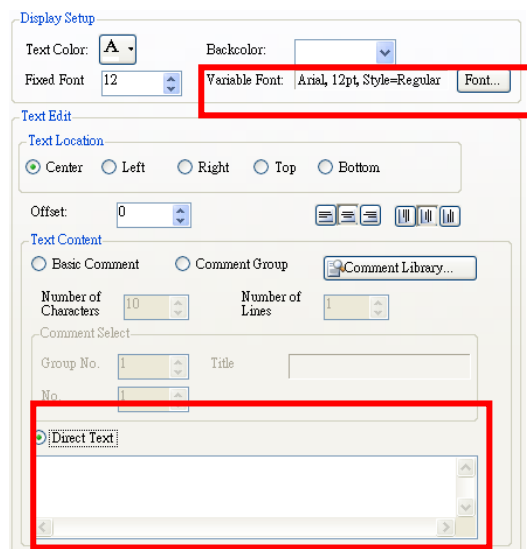
Fig. 3-6-2B-16 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- In the Text properties, the text contents can be comments and direct text. The comment takes fixed font, while the direct text takes variable fonts. See Figure 3-6-2B-17 below.



(a)



(b)

Fig. 3-6-2B-17 Text Display Setting (a) Comment Text (b) Direct Text

c. Multi-State Switch

To set up a multi-state switch, click **Unit** and click **Switch** and then click **Multi-State Switch**, or click the shortcut **S**, and then in the editing window left click the mouse to set up a multi-state switch. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the transparency and line pattern. See Figure 3-6-2C-1 below.

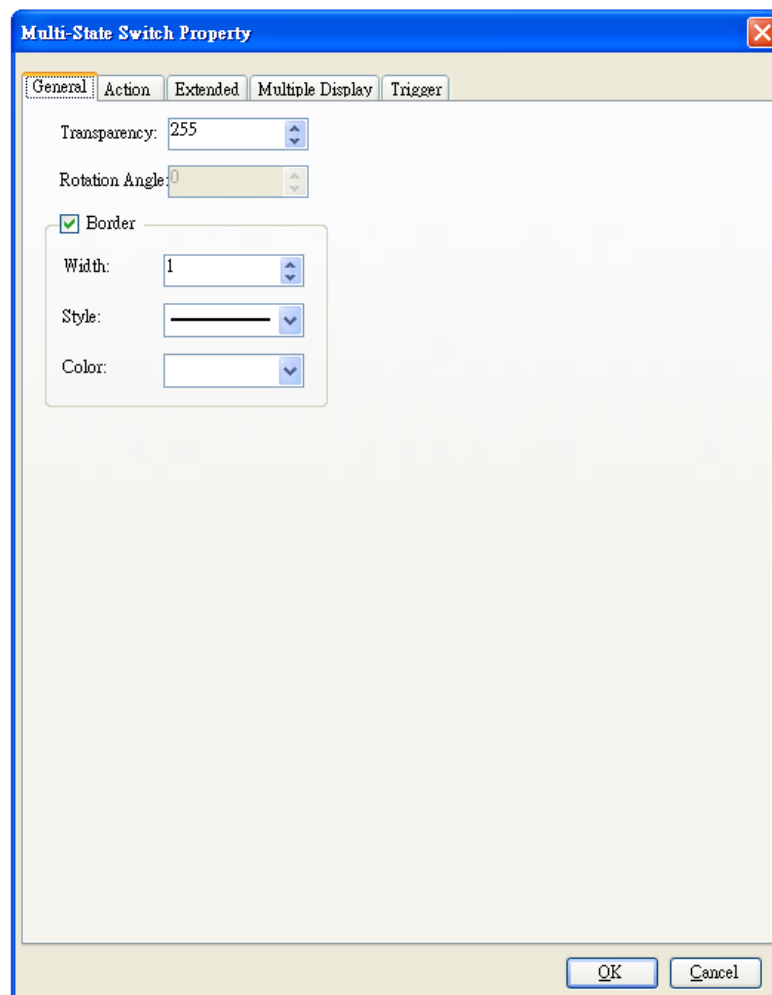


Fig. 3-6-2C-1 General Property Setup

The Action property setting allows the user to set the number of segments, select Bit/Word device and numeric types. The action is a circular switching. See Figure 3-6-2C-2 below.

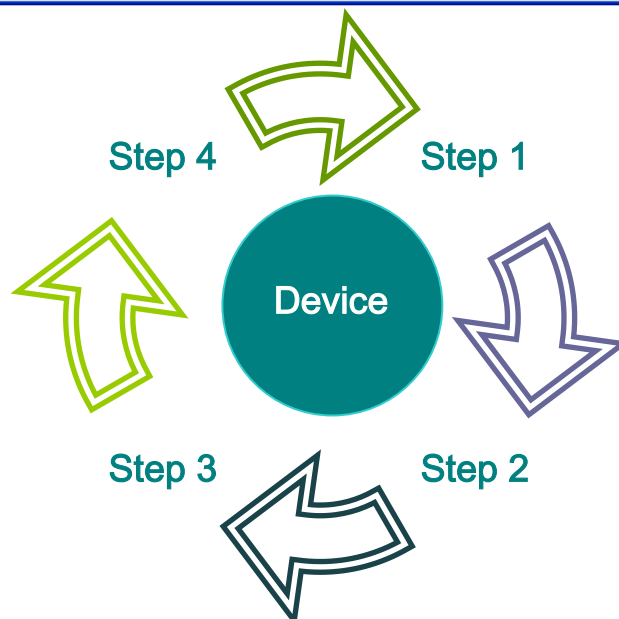
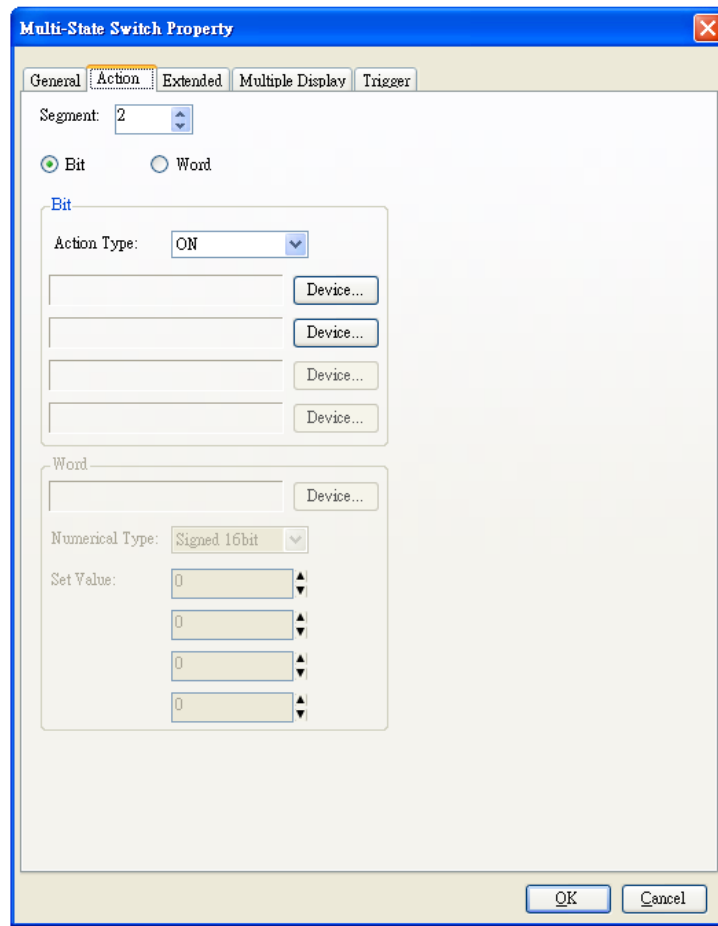


Fig. 3-6-2C-2 Action Property Setup

The options of Bit device action are ON/OFF. See Figure 3-6-2C-3 below.

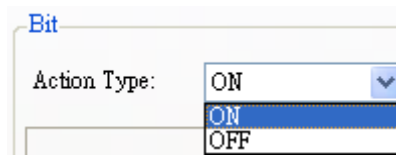



Fig. 3-6-2C-3 Bit Action Type



To set the Bit device M0 to the ON/OFF alternating type, select the Bit option first, and then click  to select device M0 to finish the setting. See Figure 3-6-2C-4 below.

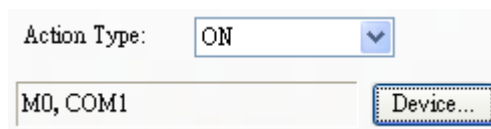


Fig. 3-6-2C-4 Bit Device Setup

There are 7 numeric types available for actions of the Word device.
See Figure 3-6-2C-5 below.



Types	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-2C-5 Numeric Types and Value Ranges



To set the Word device D0 to an open state when its value is 10 or 20, click and select device D0, and then enter 10 and 20 respectively in the value boxes. See Figure 3-6-2C-6 below.

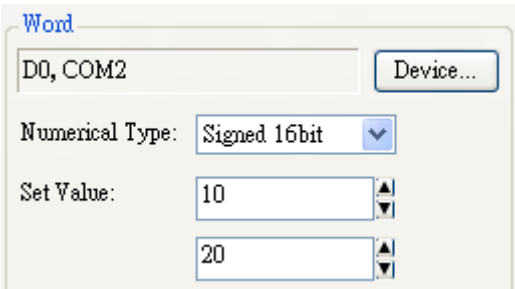


Fig. 3-6-2C-6 Word Device Setup

The Extension property setting allows the user to set the security level, select functions, hide and blink the object, and enable confirm box. Figure 3-6-2C-7 demonstrates the setting of the object's security level. Both the security level (display) and security level (input) are ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

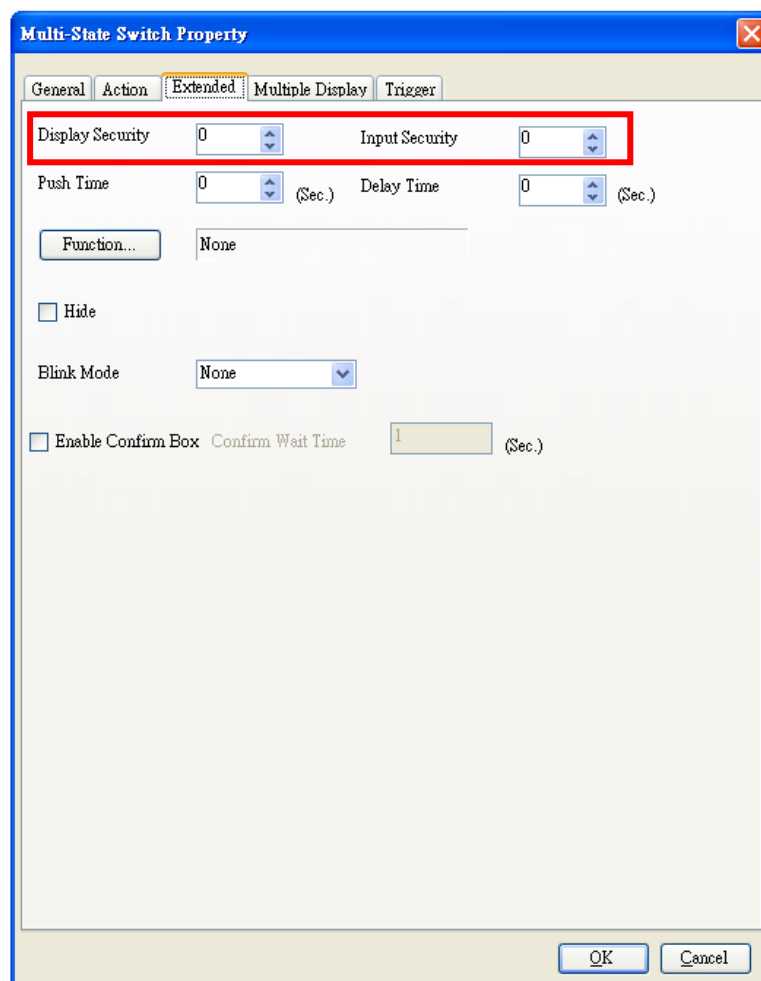


Fig. 3-6-2C-7 Set up of Security Levels

Figure 3-6-2C-8 below shows the setup of the object's action times of Push Time and Delay Time.

If the confirm box has been started, when the user triggers the switch, the confirmation window will pop up and stay till the user-defined time elapses. The maximum window time is 120 seconds. See Figure 3-6-2C-9 below.

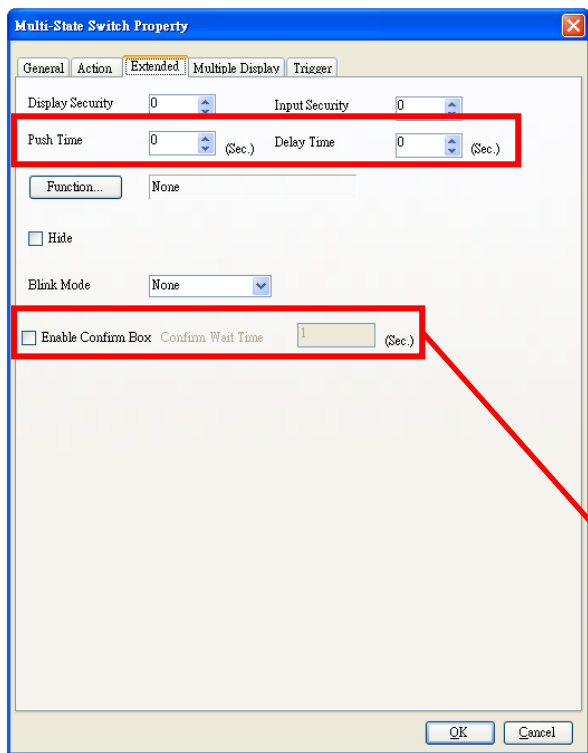


Fig. 3-6-2C-8 Setup of Action Times

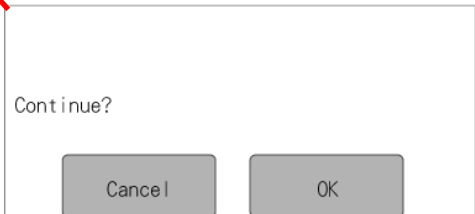


Fig. 3-6-2C-9 Confirm Box



Action Time	Description
Push Time	When the time is set to 5 seconds, press and hold down the switch for 5 seconds to start action.
Delay Time	When the time is set to 5 seconds, press the switch and wait for 5 seconds for action to start.


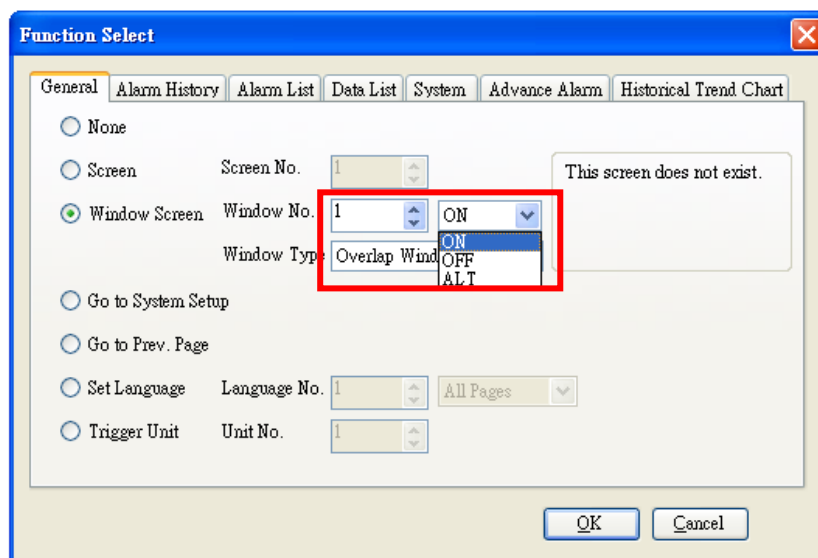
To set up the switch functions, click  to open the function window. The functions available are General, Alarm History, Alarm List, Data List, System, Advance Alarm, and Historical Trend Chart.

Figure 3-6-2C-10 below shows the items of the General tab which provide options of base screen, window screen, system setting, previous page, language setting, and triggering unit; there are 3 screen formats available.



Display Type	Description
ON	Open window screen
OFF	Close window screen
ALT	Alternately open and close window screen

Fig. 3-6-2C-10 General Functions

The functions of the triggering object correspond to numeric input and character input, with both inputs having the same object code number. When the object is clicked, the numeric or character input keypad will pop up.



To use a switch to operate the numeric or character keypad, in the editing window create a switch object, and then double left click the mouse to open its property window. Click the Extension tab and select its General tab, and then set the code number of the triggering object to 1. In addition, create another numeric input object in the editing window, and then double left click the mouse to open its property window, and then set its code number to 1 as well, and set its device to D0. Confirm the setting and send the file to HMI. So, when the switch is pressed, the keypad window will pop up, and when a numeric value is entered and confirmed, the value will appear in the numeric input object. See Figure 3-6-2C-11 below.

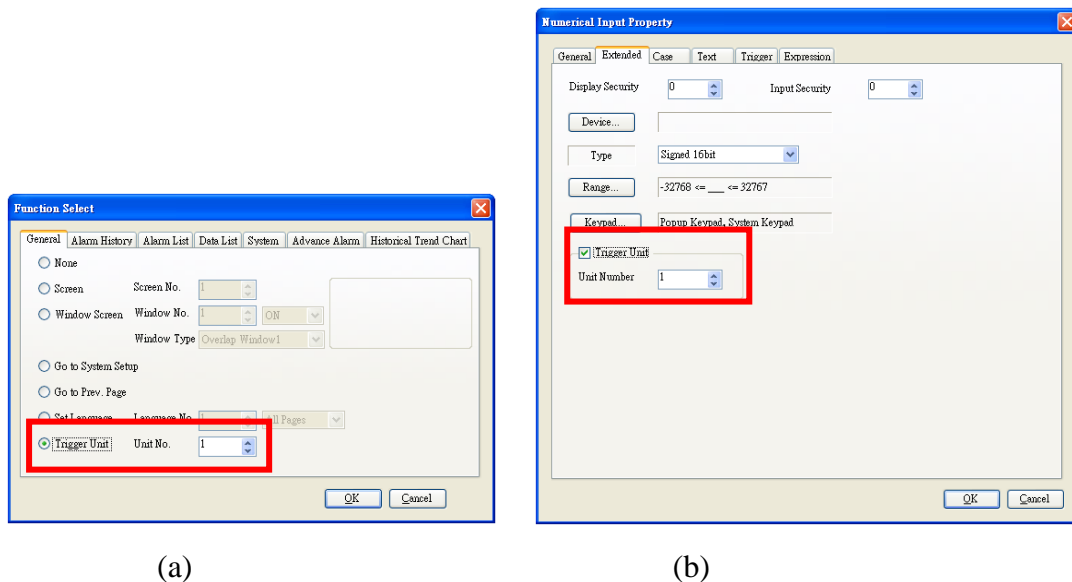


Fig. 3-6-2C-11 Triggering Object Setup (a) Switch Triggering Object (b) Code Number of Numeric Input Object

Figure 3-6-2C-12 below shows the items of the Alarm History tab. There must have an object of the Alarm Records in the editing window in order to view and delete the Alarm History tab.

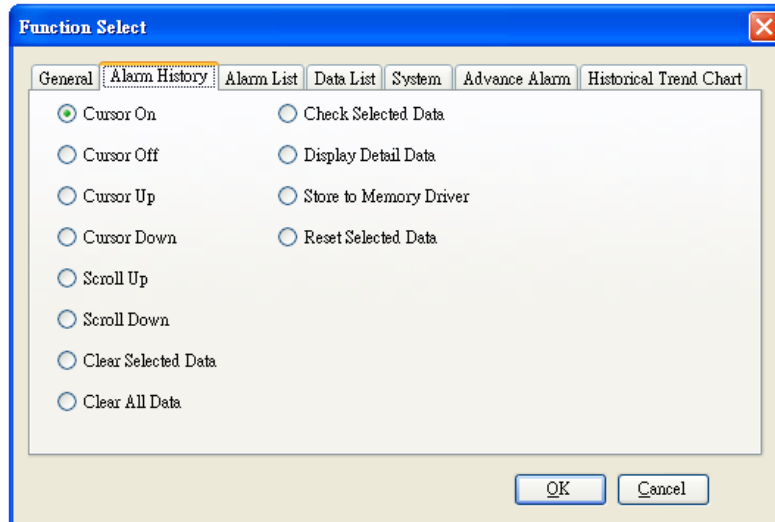


Fig. 3-6-2C-12 Options for Alarm Records

Figure 3-6-2C-13 below shows the items of the Alarm List tab. There must have an object of the Alarm List in order to view the alarm data.

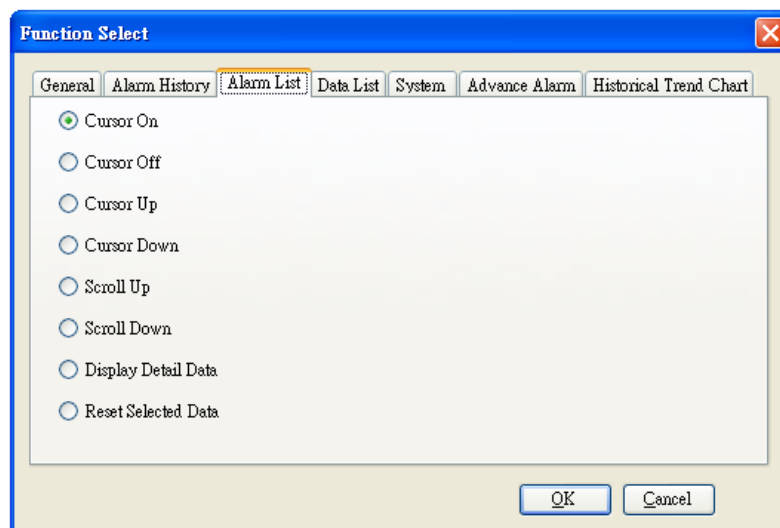


Fig. 3-6-2C-13 Options for Alarm List

Figure 3-6-2C-14 shows the items of the Data List tab. There must have an object of the Data Sheet in order to view the data.

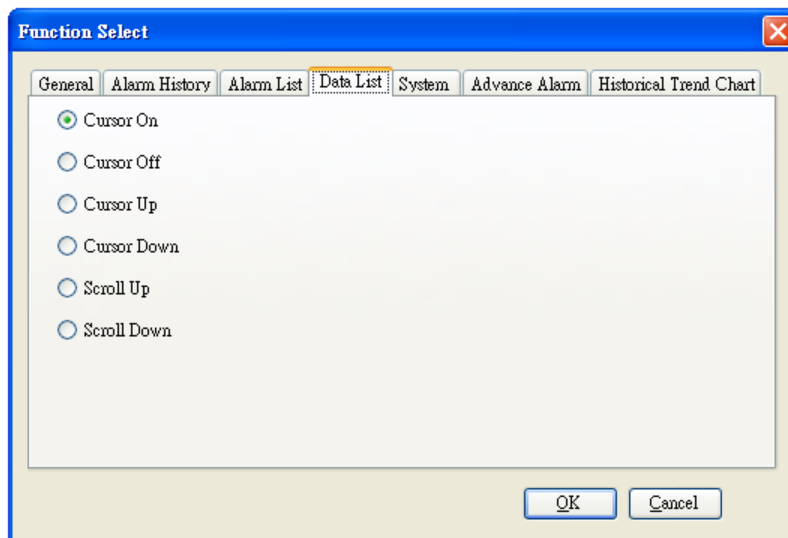


Fig. 3-6-2C-14 Options for Data Sheet

Figure 3-6-2C-15 below shows the items of the System tab. The user can set up the switch functions in the editing window by changing the system parameters directly in the HMI screen without the need of going back to the O.S. screen.

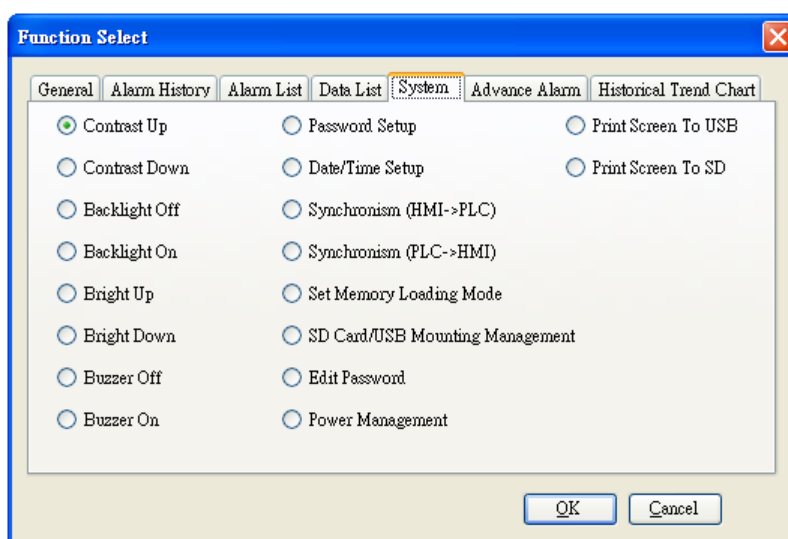


Fig. 3-6-2C-15 Options for System

For instant screen record, click one of the screen dump options to save the screen data in .png format to an external device. See Figure 3-6-2C-16 below.

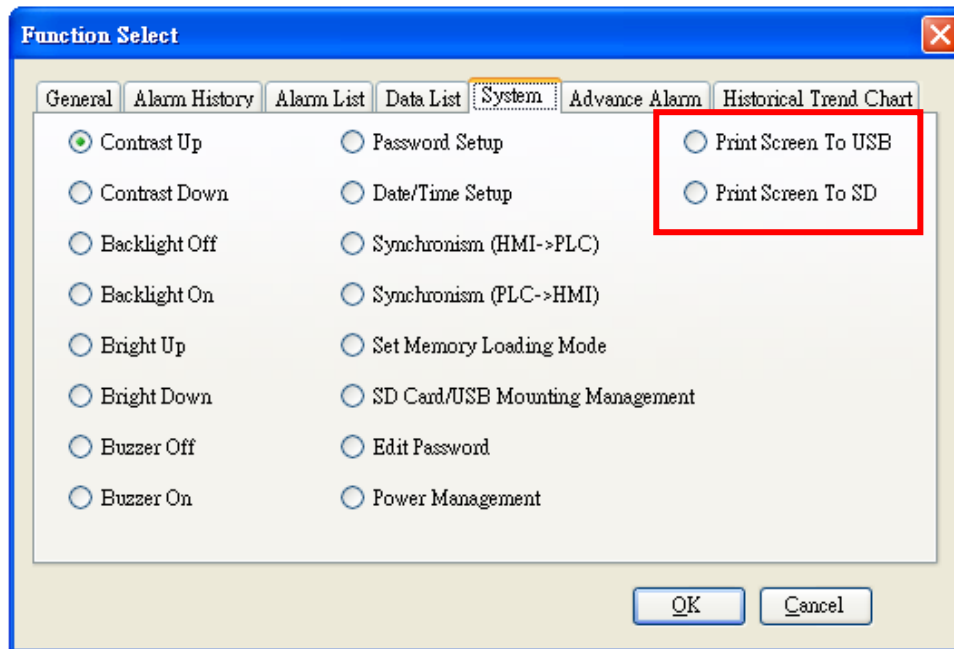


Fig. 3-6-2C-16 Screen Dump



- To save the screen dump, install an external device (SD/USB) first.

Figure 3-6-2C-17 below shows the items of the Advanced Alarm tab. There must have an object of the Advanced Alarm in the editing window in order to view and delete the data.

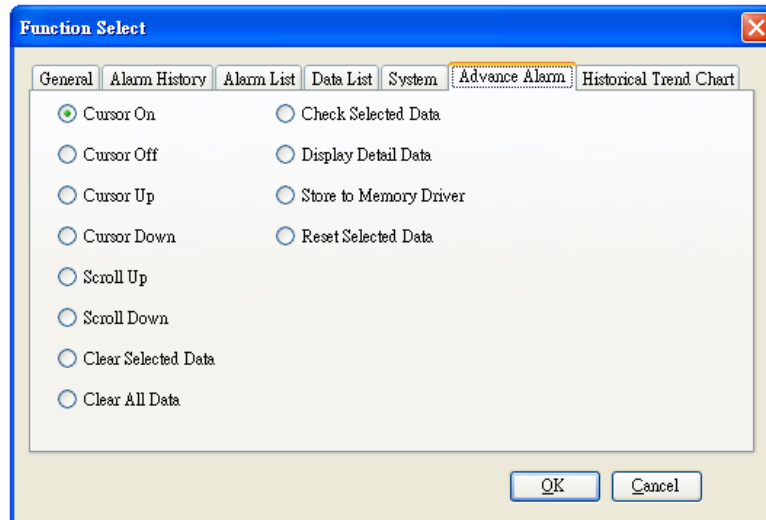


Fig. 3-6-2C-17 Options for Advanced Alarm

Figure 3-6-2C-18 below shows the items of the Historical Trends tab. There must have an object of the Historical Trends in order to view and delete the data.

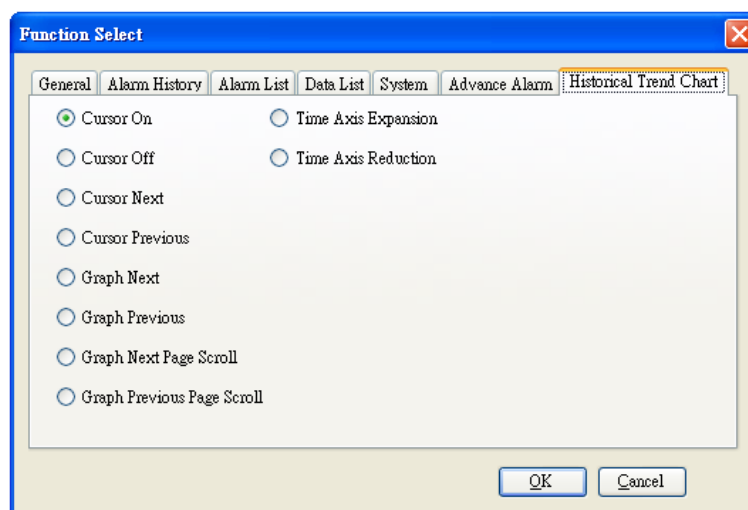
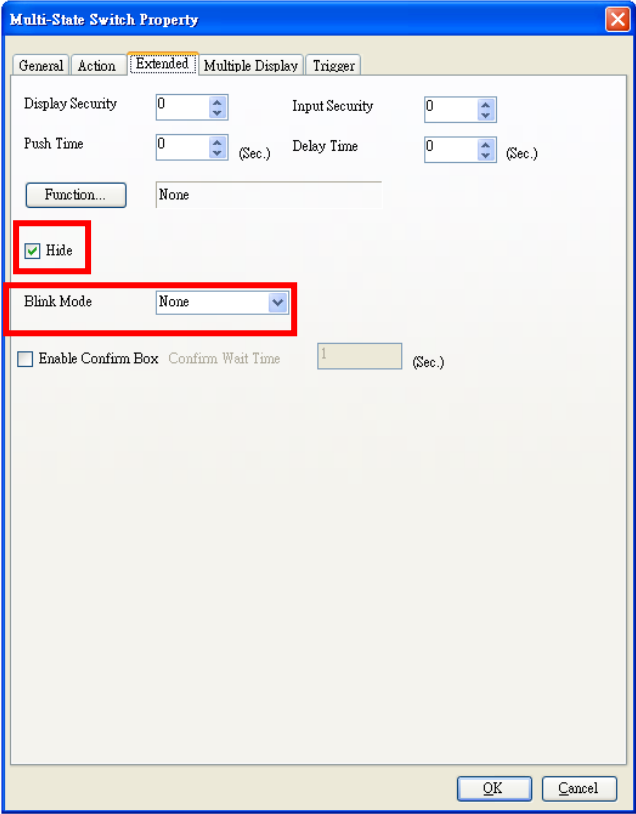
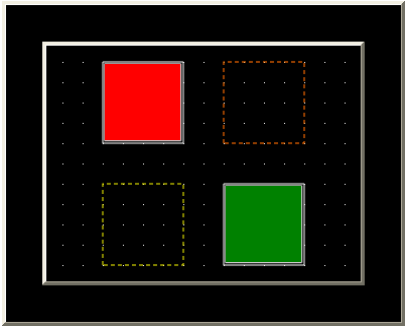


Fig. 3-6-2C-18 Options for Historical Trends

To hide the multi-state switch, tick the option ☒ Hide to make the display of the switch transparent. This will not affect the normal execution of HMI. See Figure 3-6-2C-19 below.



(a)



(b)

Fig. 3-6-2C-19 Object Hiding (a) Hiding Setup (b) Hiding Completed

To set the blinking feature, use the pull-down menu to select one of the three blinking speeds. See Figure 3-6-2C-20 below.

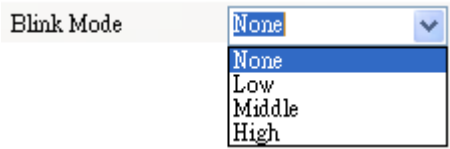




Fig. 3-6-2C-20 Blinking Modes

The multi-display property setting allows the user to set the Bit/Word device, pictures and text. The system default state is 0. Click **New State** to forward add states starting from 0; click **Delete State** to backward delete states. Click   to view the states. There can be as many as 16 states. See Figure 3-6-2C-21 below.

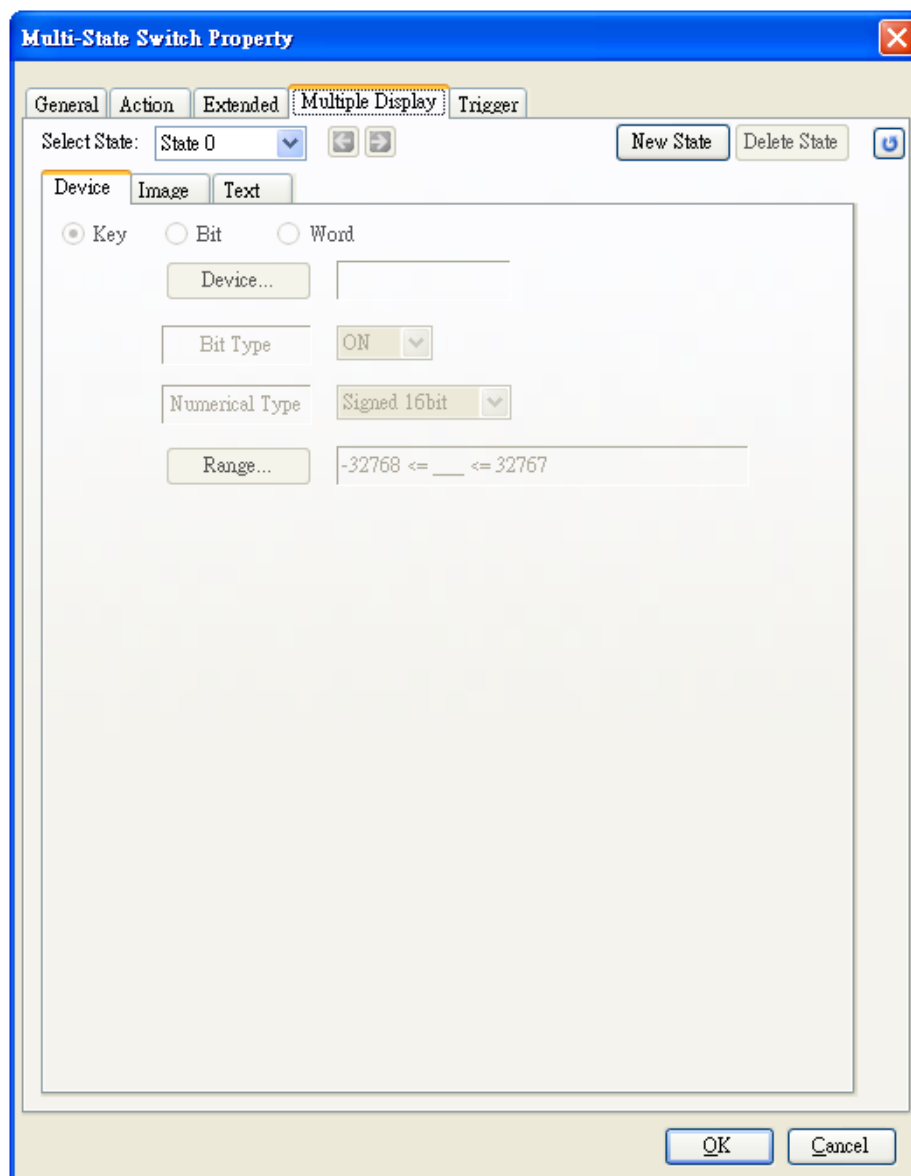


Fig. 3-6-2C-21 Multi-state Property Setup

The multiple display device properties allow the user to select Bit/Word for the device monitoring. See Figure 3-6-2C-22 below.

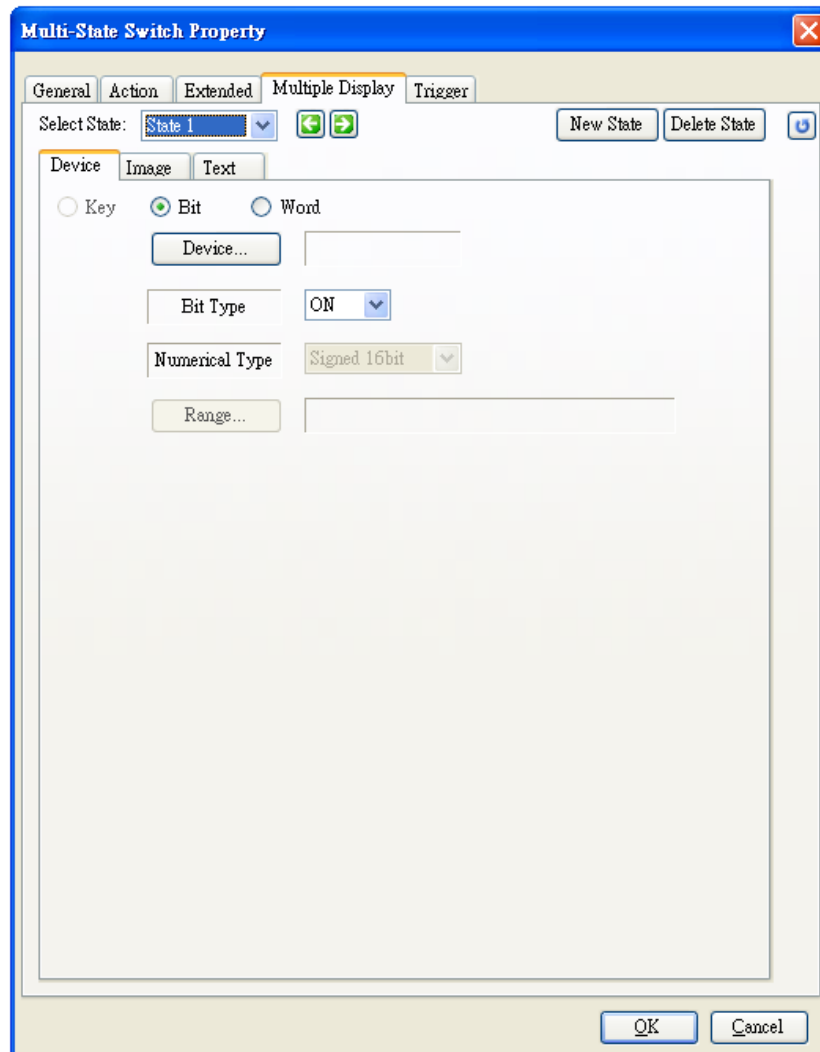


Fig. 3-6-2C-22 Set Propties of Multi-state Device

The available action types of Bit device are ON/OFF. See Figure 3-6-2C-23 below.

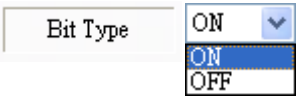


Fig. 3-6-2C-23 Bit Action Types



To set the Bit device M0 to the ON/OFF alternating type, select the Bit option first, and then click Device... to select device M0 to finish the setting. See Figure 3-6-2C-24 below.



Fig. 3-6-2C-24 Bit Device Setup

There are 7 numeric types available for the actions of the Word device. See Figure 3-6-2C-25 below.

Numerical Type

Signed 16bit

Signed 16bit

Unsigned 16bit

Signed 32bit

Unsigned 32bit

BCD 16bit

BCD 32bit

Real

Types	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-2C-25 Numeric Types and Value Ranges



To set the lamp light on when the value of the Word device D0 is 10, select the Word option first, and then click **Device...** to select device D0, Then, click **Range...** and enter the statement 10=D0 to finish the setting. See Figure 3-6-2C-26 below.

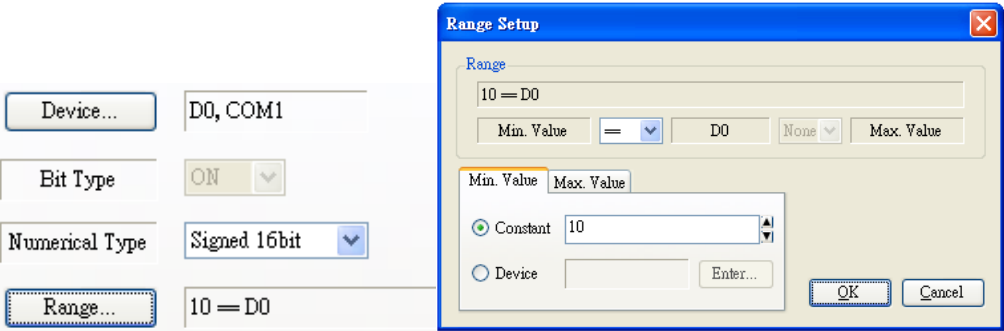


Fig. 3-6-2C-26 Word Device Setup

The user can change the pictures and the background and foreground colors. See Figure 3-6-2C-27 below.

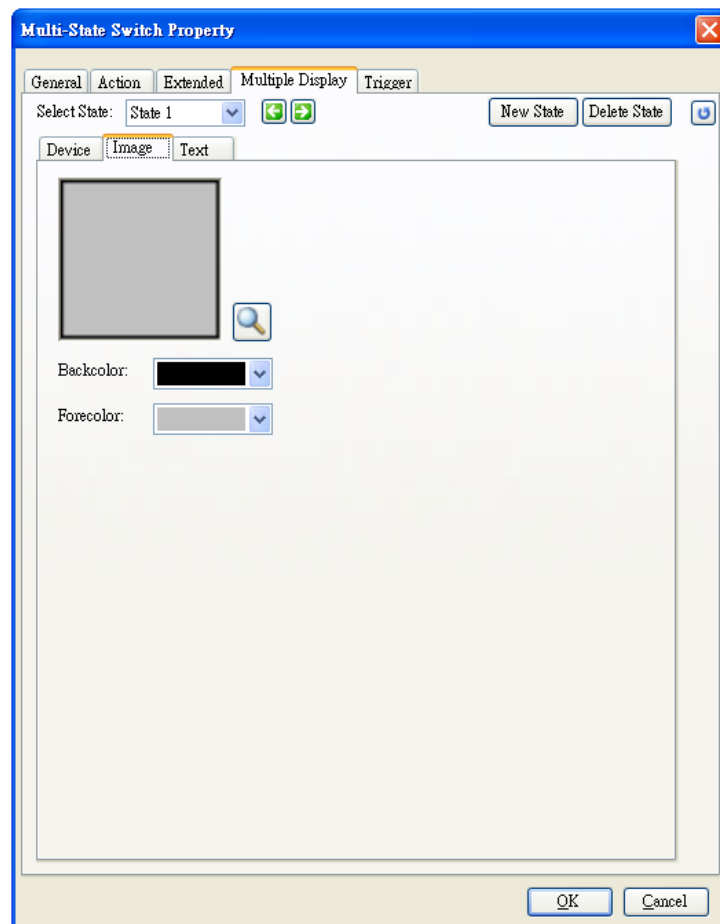


Fig. 3-6-2C-27 Property Setup of Multi-state Pictures

To change the picture, click  to open the image library. For detailed information, please refer to Section 3.42 Image Library.

The multi-state properties allow the user to set the display color, font, text location, alignment, and the text. See Figure 3-6-2C-28 below.

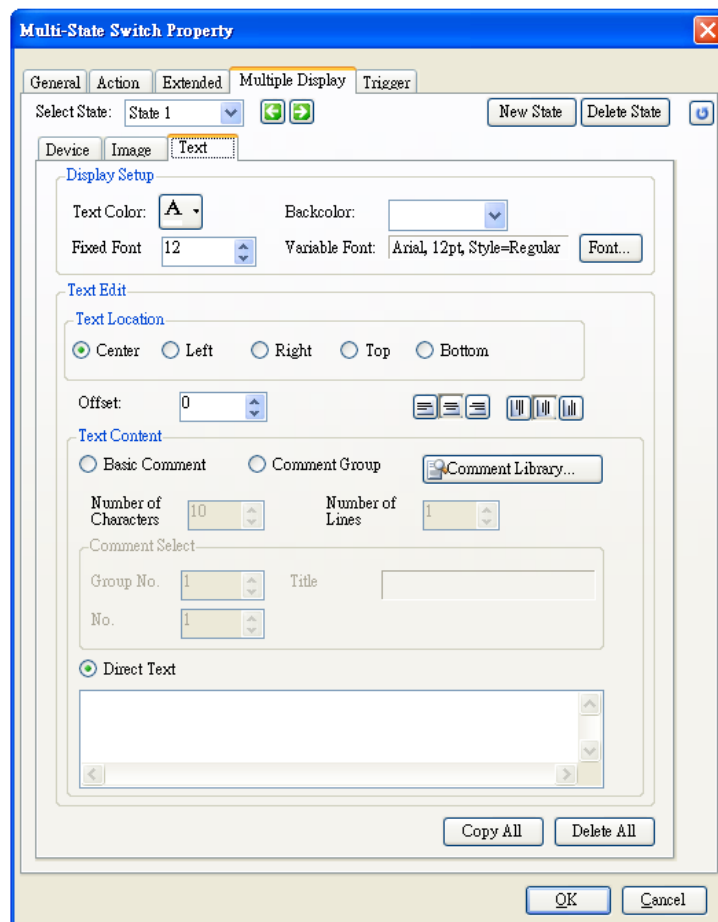

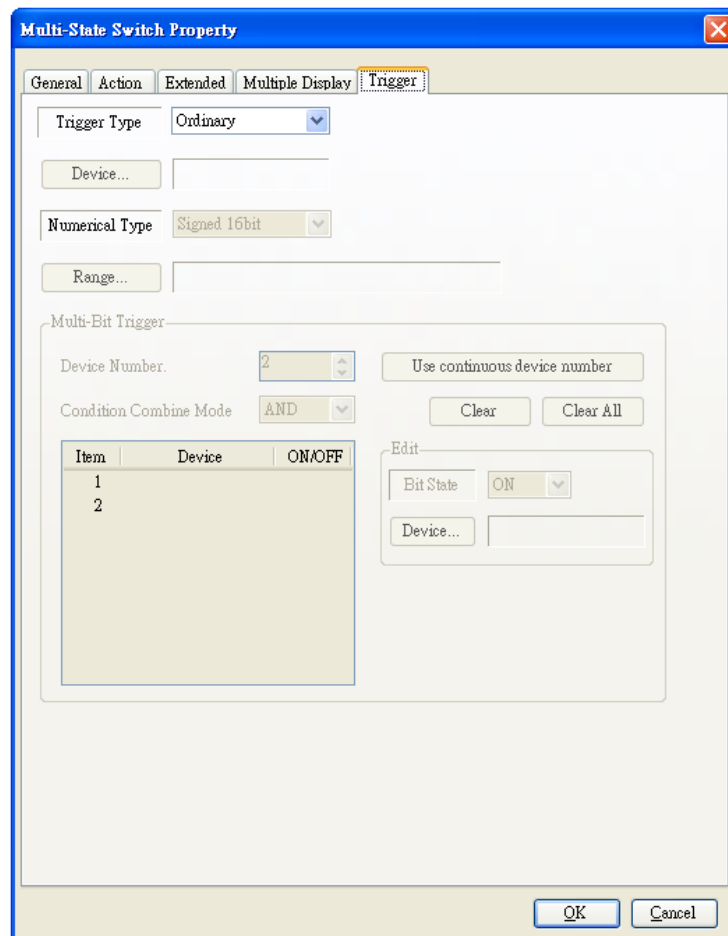


Fig. 3-6-2C-28 Setup of Multi-state Text Properties

In the text editing, comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Trigger properties allow the user to set the triggering conditions.
See Figure 3-6-2C-29 below.

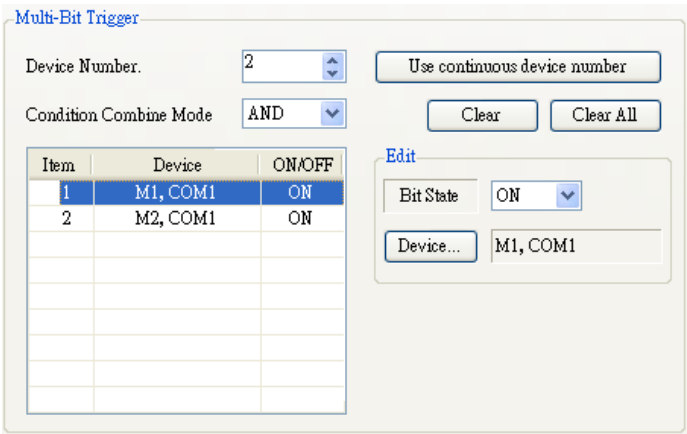


Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON.
OFF	Action is taken only when the device is OFF.
Range	Action is taken only when the device value is within the defined range.
Multiple Bit Trigger	Set two or more devices, and only when all the devices reach the condition will the action start.

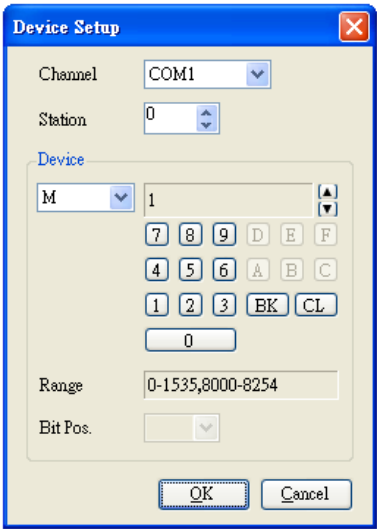
Fig. 3-6-2C-29 Trigger Patterns



To set a multi-Bit trigger with 2 devices, click Device... to open the device setup window and set the trigger devices as M1, M2. Confirm the setting and send it to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-2C-30 below.



(a)



(b)

Fig. 3-6-2C-30 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set up the properties, you can also click **Edit** and then click **Unit Property**, or directly use the property window on the right of the screen, to make the setting.
- In the Text properties, the text contents can be comments and direct text. The comment takes fixed font, while the direct text takes variable fonts. See Figure 3-6-2C-31 below.

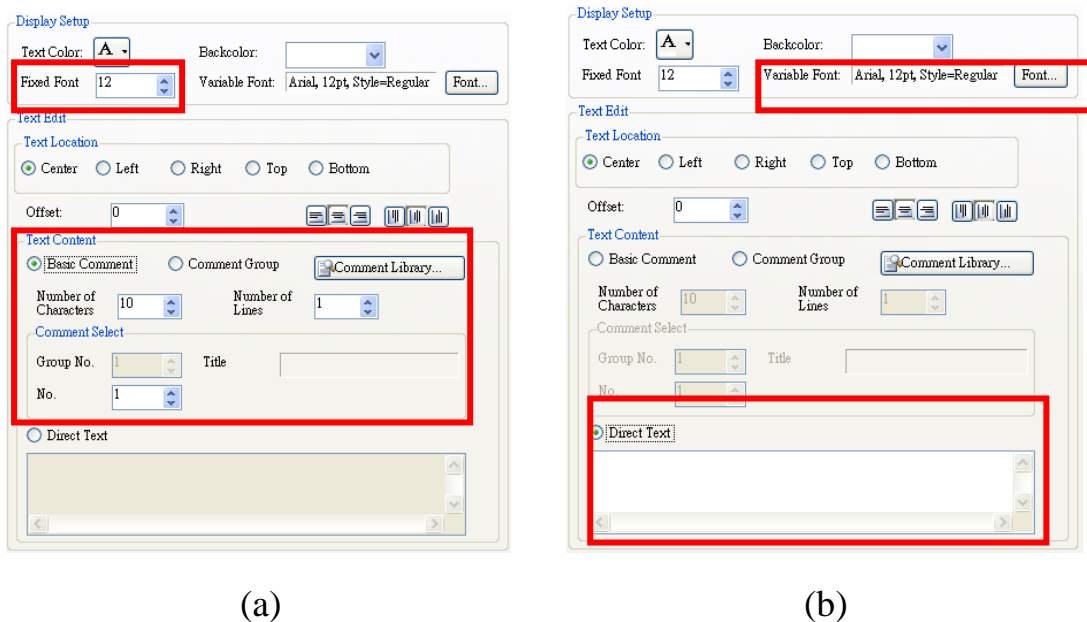

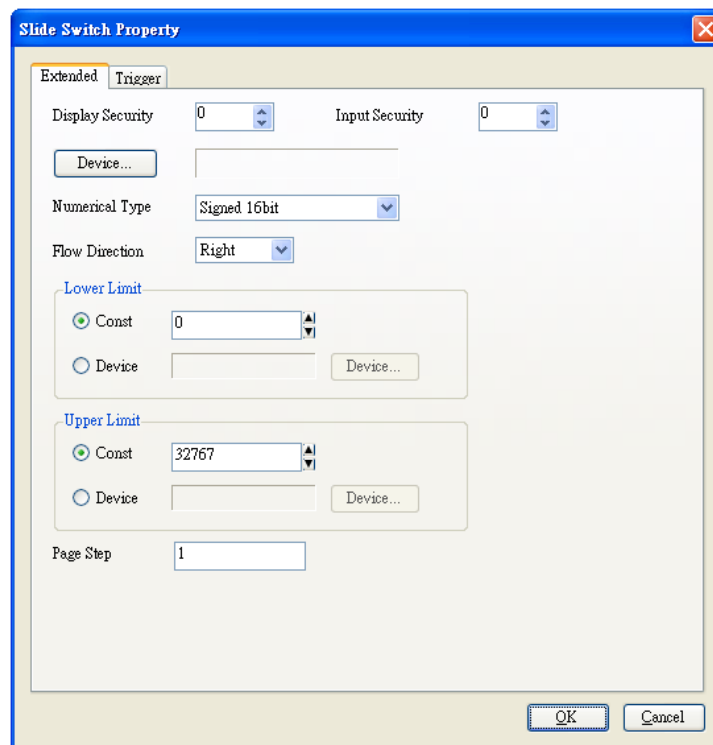


Fig. 3-6-2C-31 Text Display Setting (a) Comment Text (b) Direct Text

d. Slide Switch

To set up a slide switch, click **Unit** and click **Switch** and then click **Slide Switch**, or directly click the shortcut , and in the editing window left click the mouse to set up a slide switch. Then, click the object and then double left click the mouse to open the property window of the object and make the property setting.

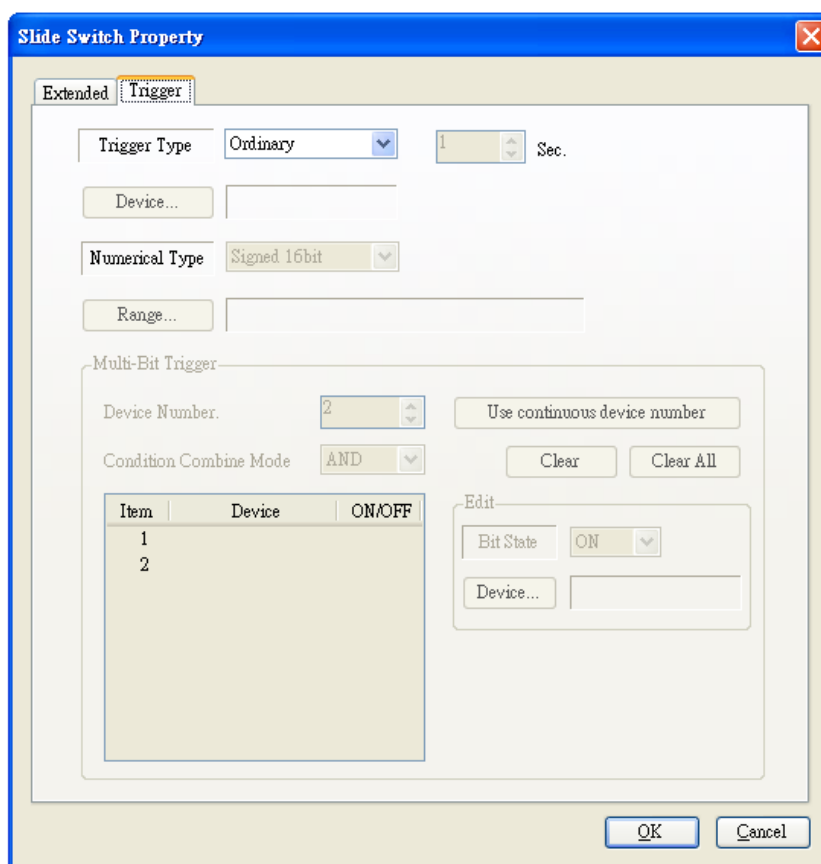
The user can drag the slide switch to change the device value on HMI. The Device, security level, flow direction, page step can be set from property window. See Figure 3-6-2D-1 below.



Function	Description
Security Level	The security level is ranged from 0 (lowest privilege) to 15 (highest privilege). The default level is 0.
Flow Direction	The scrolling direction of the slide switch.
Page Step	When click is used to move the slide switch, this is the movement volume of each click.

Fig. 3-6-2D-1 General Property Setup

The user can set the triggering conditions, as shown in Figure 3-6-2D-2 below.



Trigger Pattern	Description
Ordinary	No triggering pattern.
ON	Action is taken only when the device is ON
OFF	Action is taken only when the device is OFF
Range	Action is taken only when the device value is within the defined range.
Multiple Bit Trigger	Set two or more (up to 8) devices, and only when all the devices reach the condition will the action start.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-2D-2 Trigger Patterns



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setup window and set the trigger devices as M1, M2. Confirm the setting and send it to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-2D-3 below.

Multi-Bit Trigger

Device Number.

Condition Combine Mode

Item	Device	ON/OFF
1	M1, COM1	ON
2	M2, COM1	ON

Edit

Bit State

M1, COM1

(a)

Device Setup

Channel

Station

Device





Range

Bit Pos.

(b)

Fig. 3-6-2D-3 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

e. Combo Box

To set up a menu, click  and click  and then click , or directly click the shortcut , and then in the editing window left click the mouse to set up a combo box. Click the combo box and then double left click the mouse to open the property window of the object and make the property setting.

The Extended property setting allows the user to set the selection mode, security level, font size, and scroll bar width. See Figure 3-6-2E-1 below.

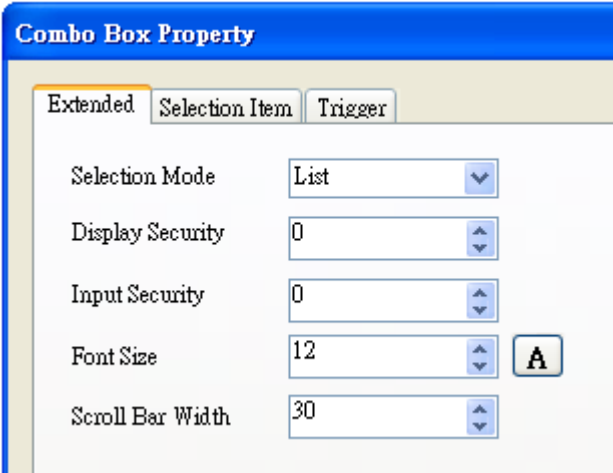
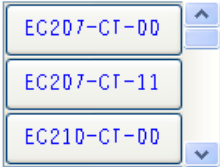
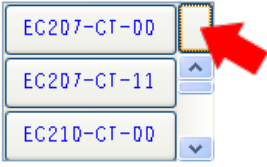
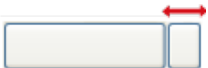

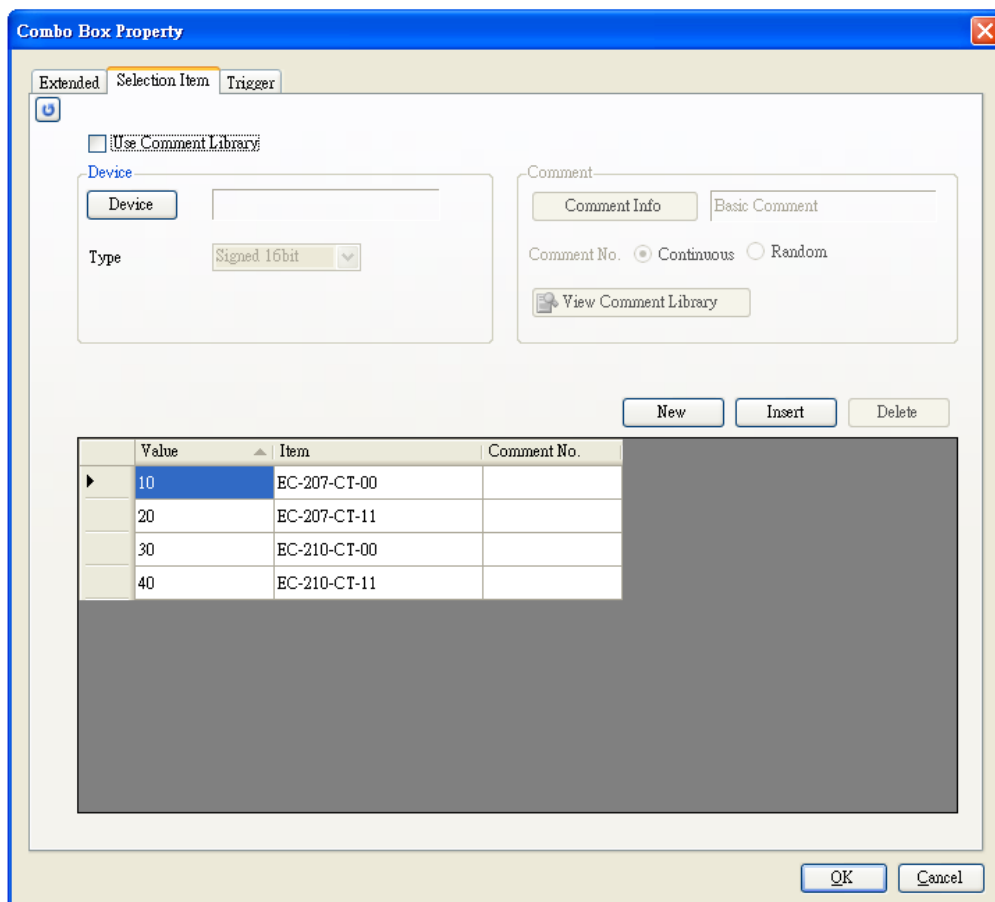


Fig. 3-6-2E-1 Extended Setup

Funtion	Description
Selection Mode	List :  Drop Down List : 
Security Level	The security level is ranged from 0 (lowest privilege) to 15 (highest privilege). The default level is 0.
Scroll Bar Width	Scroll Bar Width range is 15~50. 

In the Selection Item Setting, click a defined value to write it to the designated device. Tick the option ☒ Use Comment Library to set comments in the comment library as the text to display. To do this, click  View Comment Library to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#). See Figure 3-6-2E-2 below.



Column	Description
Value	Click the value and send it to the device.
Item	Directly enter the item name.
Comment No.	Item name is displayed via the comment data

Fig. 3-6-2E-2 Option Setup

The Trigger property setting allows the user to set the triggering conditions. See Figure 3-6-2E-3 below.

Trigger Pattern	Description
Ordinary	No triggering pattern.
ON	Action is taken only when the device is ON
OFF	Action is taken only when the device is OFF
Range	Action is taken only when the device value is within the defined range.
Multiple Bit Trigger	Set two or more devices, and only when all the devices reach the condition will the action start.

Fig. 3-6-2E-3 Trigger Patterns



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setup window and set the trigger devices as M1, M2. Confirm the setting and send it to HMI. So, only when the M1 and M2 switches are both ON will the switch actions be started. See Figure 3-6-2E-4 below.

Multi-Bit Trigger

Device Number.

Condition Combine Mode

Item	Device	ON/OFF
1	M1, COM1	ON
2	M2, COM1	ON

Edit

Bit State M1, COM1

(a)

Device Setup

Channel

Station

Device

Range

Bit Pos.

(b)

Fig. 3-6-2E-4 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

3.6.3. Lamp








Click  and then click  , or directly click the shortcut  , and in the editing window left click the mouse to set up a lamp. See Figure 3-6-3 below.



Fig. 3-6-3 Lamp Menu

a. Lamp

To set up an lamp, click  and click  and then click  , or directly click the shortcut  , and in the editing window left click the mouse to finish the set up. Click the lamp and then double left click the mouse to open the property window of the object and make the property setting.

The General property setting allows the user to set the ON/OFF display, color, transparency and line pattern. See Figure 3-6-3A-1 below.

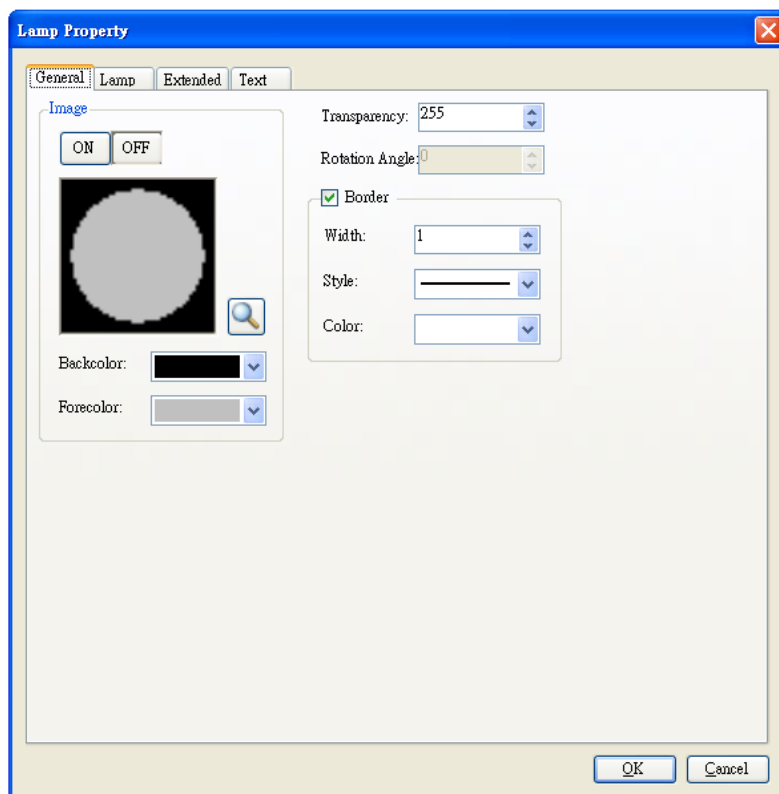



Fig. 3-6-3A-1 General Property Setup

To change the displayed picture, click  to open the image library. For operational guide, please refer to Section 3.4.2 Image Library.

The lamp property setting allows the user to change the device, Bit type, numeric type, and value range.

Figure 3-6-3A-2 below demonstrates the setting of the lamp device. The user can set Bit or Word for the lamp monitoring.

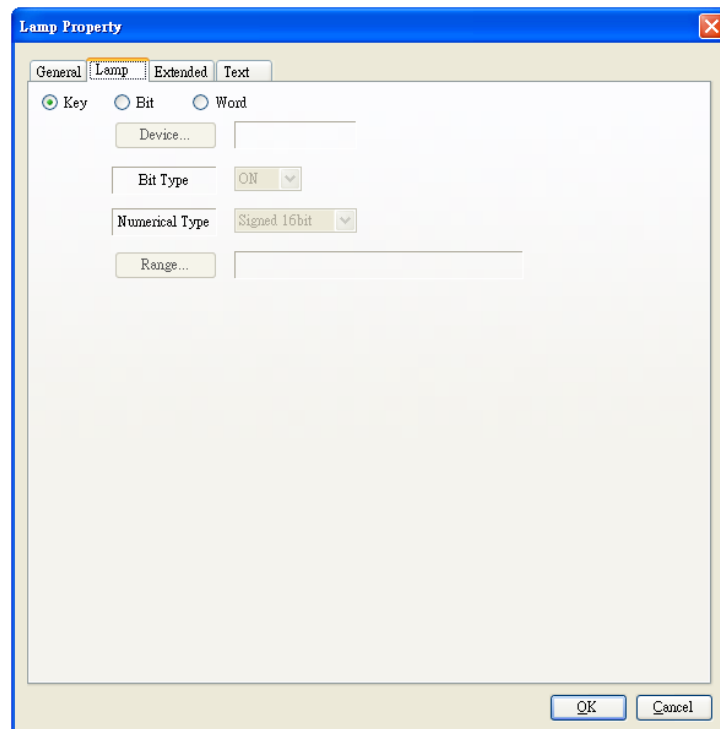


Fig. 3-6-3A-2 Lamp Property Setup

The available action types of Bit device are ON/OFF. See Figure 3-6-3A-3 below.

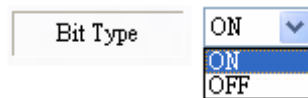


Fig. 3-6-3A-3 Bit Action Type



To set the Bit device M0 to the ON/OFF alternating type, select the Bit option first, and then click to select device M0 to finish the setting. See Figure 3-6-3A-4 below.

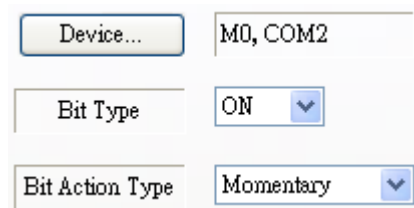


Fig. 3-6-3A-4 Bit Device Setup

There are 7 numeric types available for the actions of the Word device. See Figure 3-6-3A-5 below.

Numerical Type

Signed 16bit

Signed 16bit

Unsigned 16bit

Signed 32bit

Unsigned 32bit

BCD 16bit

BCD 32bit

Real

Types	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-3A-5 Numeric Types and Value Ranges



To set the lamp light on when the value of the Word device D0 is 10, select the Word option first, and then click **Device...** to select device D0, Then, click **Range...** and enter the statement 10=D0 to finish the setting. See Figure 3-6-3A-6 below.

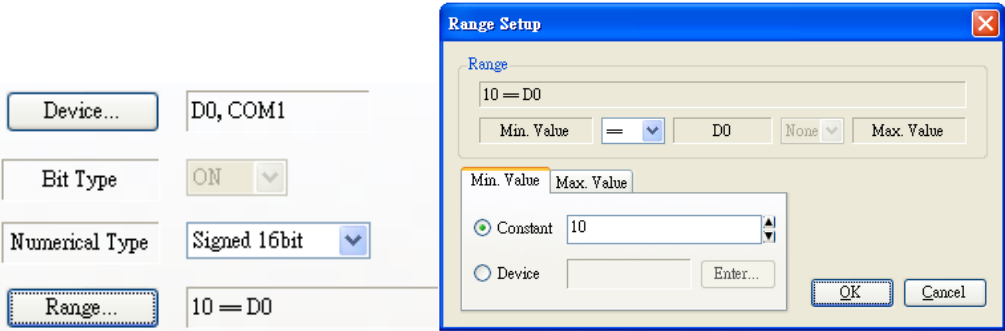


Fig. 3-6-3A-6 Word Device Setup

The Extension property setting allows the user to set the security level and object blinking. Figure 3-6-3A-7 below demonstrates the setting of the object's security level. Both the security level (display) and security level (input) are ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

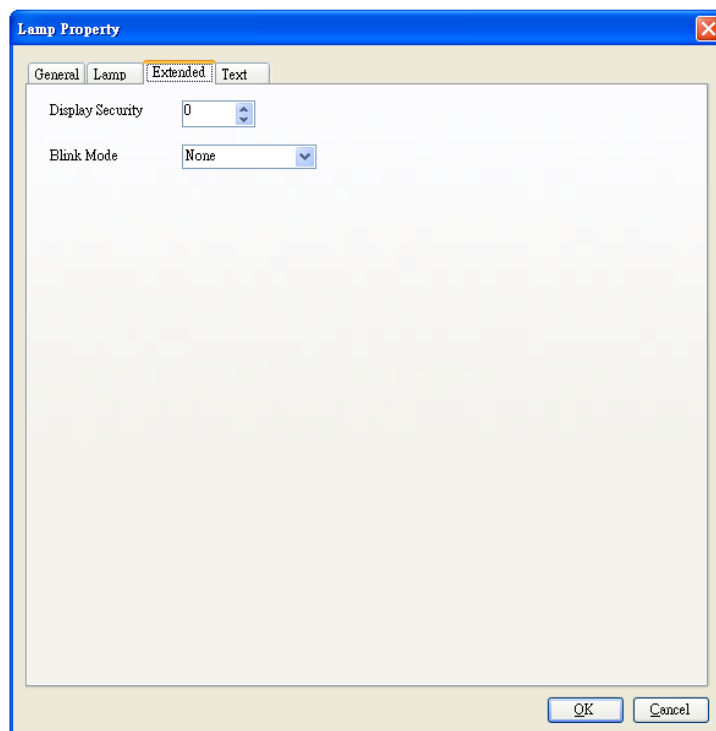


Fig. 3-6-3A-7 Setup of Security Level

To set the lamp blinking, use the pull-down menu to select one of the 3 blinking speed. See Figure 3-6-3A-8 below.

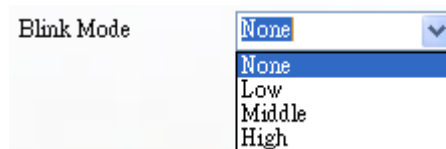


Fig. 3-6-3A-8 Blinking Modes

The Text property setting allows the user to set the text ON/OFF text display, text color, text font, text location, alignment, and the content. See Figure 3-6-3A-9 below.

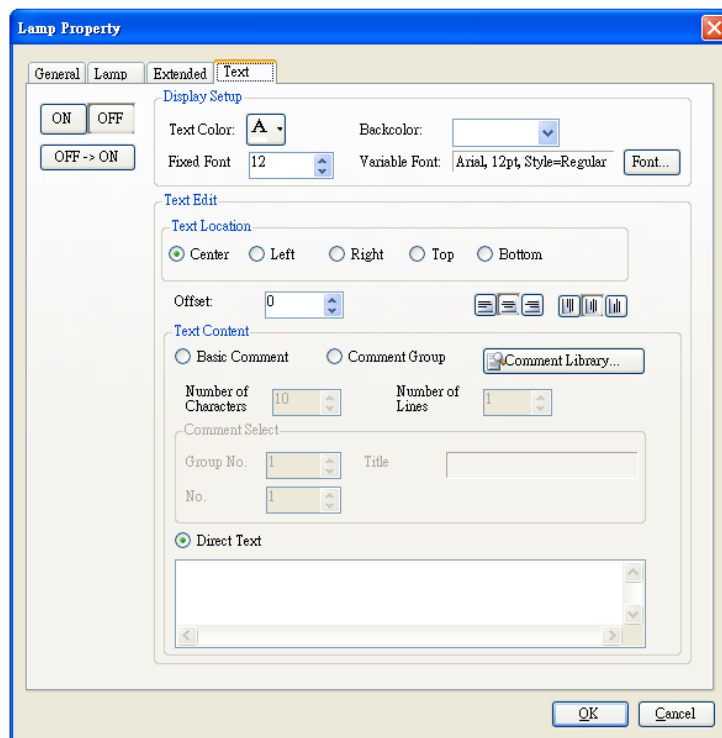




Fig. 3-6-3A-9 Text Property Setup

In the text editing, the comments in the comment library can be set as text to display. To do this, click  Comment Library... to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#)

b. Multi-State Lamp

To set up a multi-state lamp, click **Unit** and click **Lamp** and then click **Multi-State Lamp**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the transparency and line pattern. See Figure 3-6-3B-1 below.

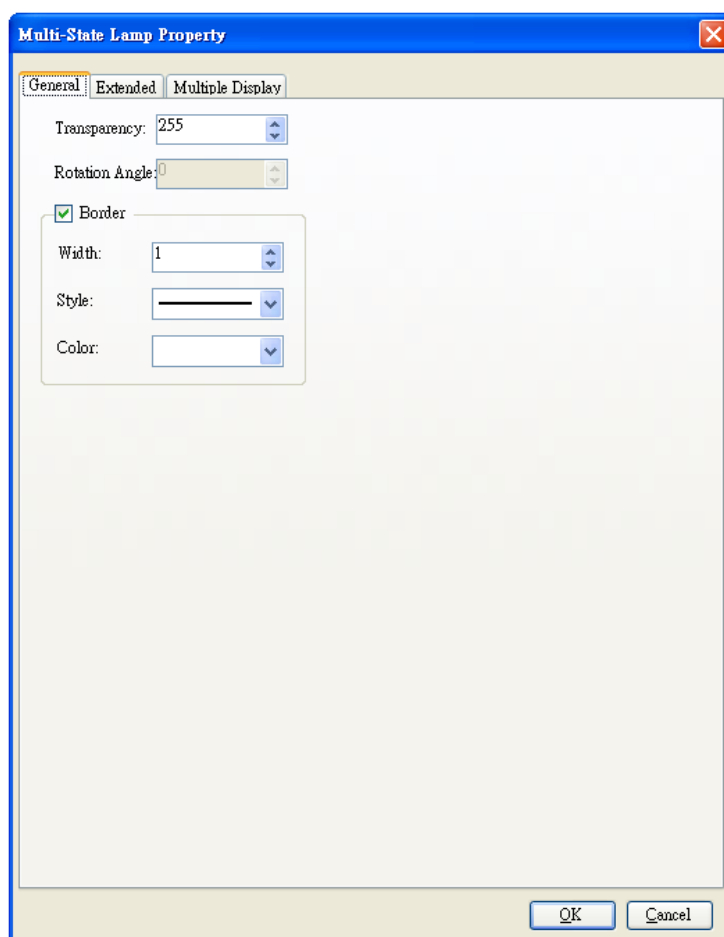


Fig. 3-6-3B-1 General Property Setting

The Extension properties allow the user to change the security level and blinking mode. Figure 3-6-3B-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

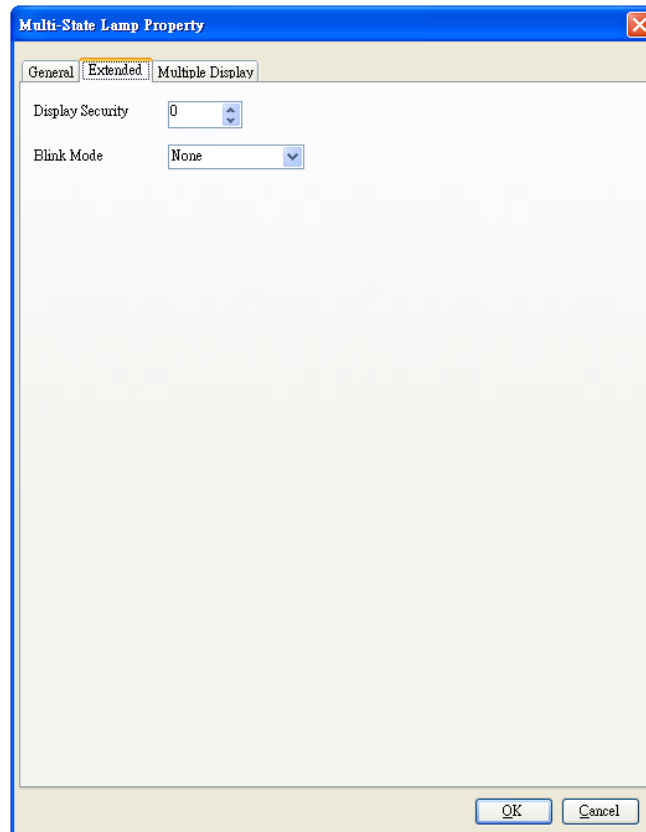


Fig. 3-6-3B-2 Security Level Setting

To set up the blink mode of the multi-state lamp, use the pull-down menu to select one of the three blinking speeds provided by the system. See Figure 3-6-3B-3 below.

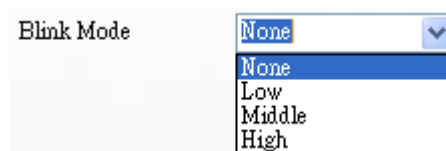




Fig. 3-6-3B-3 Blinking Mode Setup

The Multi-display property setting allows the user to change the Bit/Word device, the picture and the text content. The system default state is 0; click **New State** to increment the state forward starting from 0; click **Delete State** to decrement the state backward. Click   to view the state. And the state can be incremented up to 16. See Figure 3-6-3B-4 below.

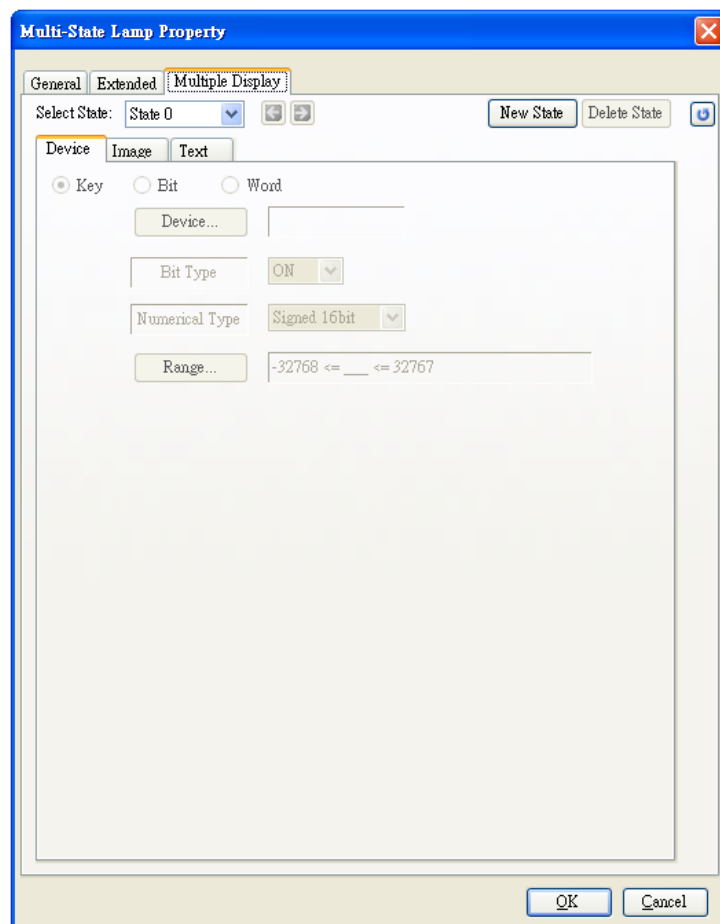


Fig 3-6-3B-4 Multi-display Property Setting

The Multi-display Property Setting also allows the user to select Bit/Word device to monitor. See Figure 3-6-3B-5 below.

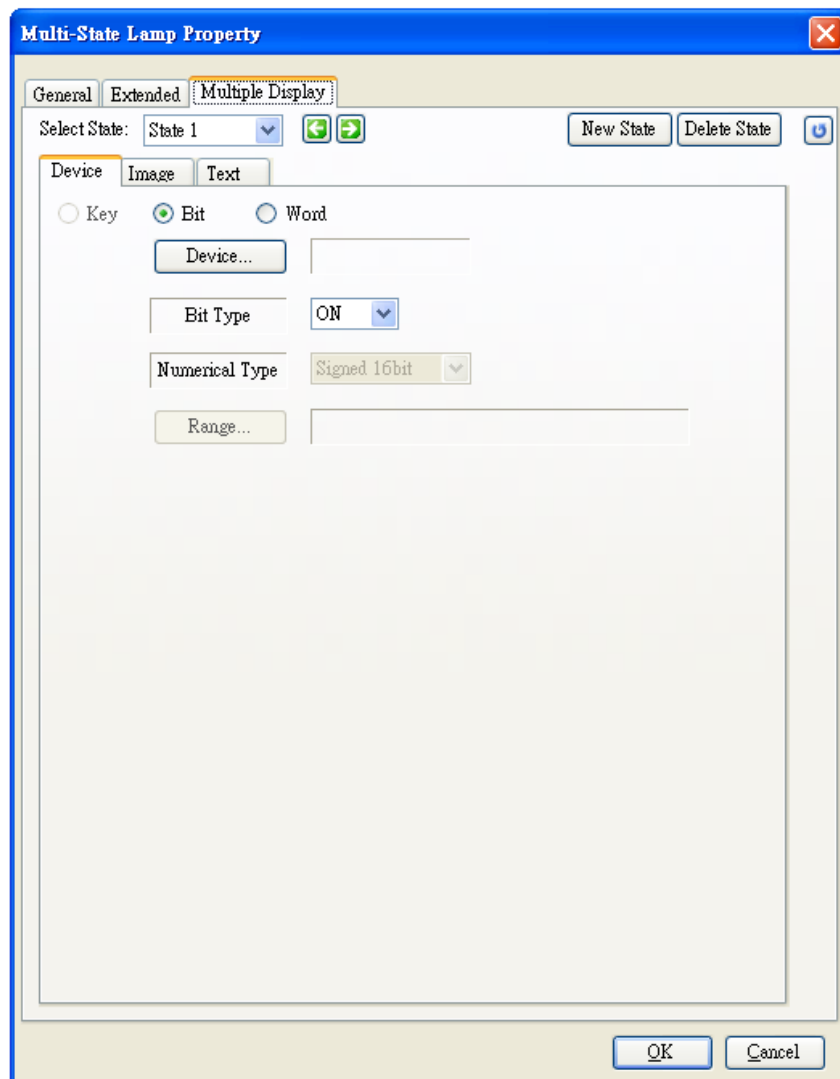


Fig. 3-6-3B-5 Multi-display Device Property Setting

The Bit action device types are ON/OFF displays. See Figure 3-6-3B-6 below.

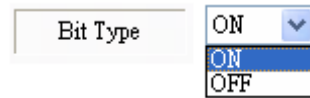


Fig. 3-6-3B-6 Bit Action Type Setting



To operate the Bit device M0 as ON/OFF alternating type, select Bit first, and then click to select device M0 to finish the setting. See Figure 3-6-3B-7 below.

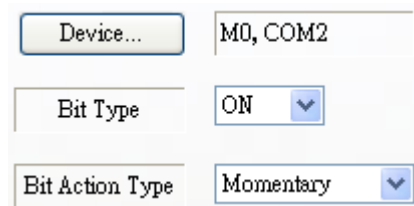


Fig. 3-6-3B-7 Bit Device Setting

The Word action device has 7 numeric types available. See Figure 3-6-3B-8 below.

Numerical Type

Signed 16bit

Signed 16bit

Unsigned 16bit

Signed 32bit

Unsigned 32bit

BCD 16bit

BCD 32bit

Real

Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-3B-8 Numeric Types and Value Ranges



To operate the Word device D0 to open the lamp when D0 is 10, select Word first, and then click **Device...** to select the device D0, and then click **Range...** to set 10=D0 to finish the setting. See Figure 3-6-3B-9 below.

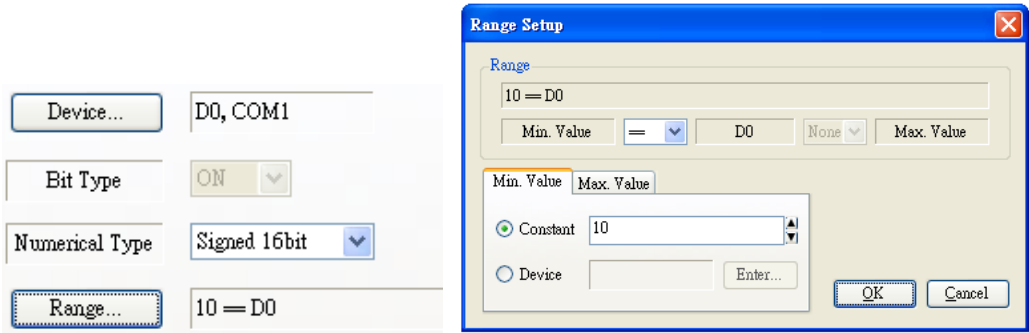


Fig. 3-6-3B-9 Word Device Setting

The Multi-display picture property allows the user to change the picture shape and the color. See Figure 3-6-3B-10 below.

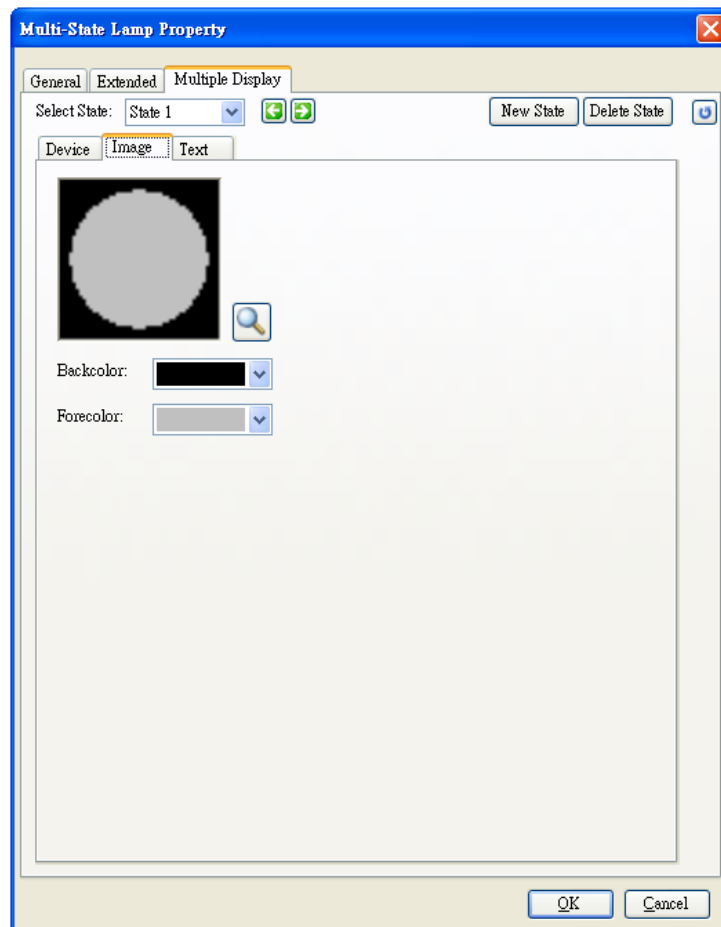



Fig. 3-6-3B-10 Multi-display Picture Property Setting

To change the picture, click  to open the picture library. For detailed instructions, please see [Section 3.4.2 Image Library](#).

Multi-state Text property setting allows the user to change the text display, text color, text font, text location, alignment and the text content. See Figure 3-6-3B-11 below.

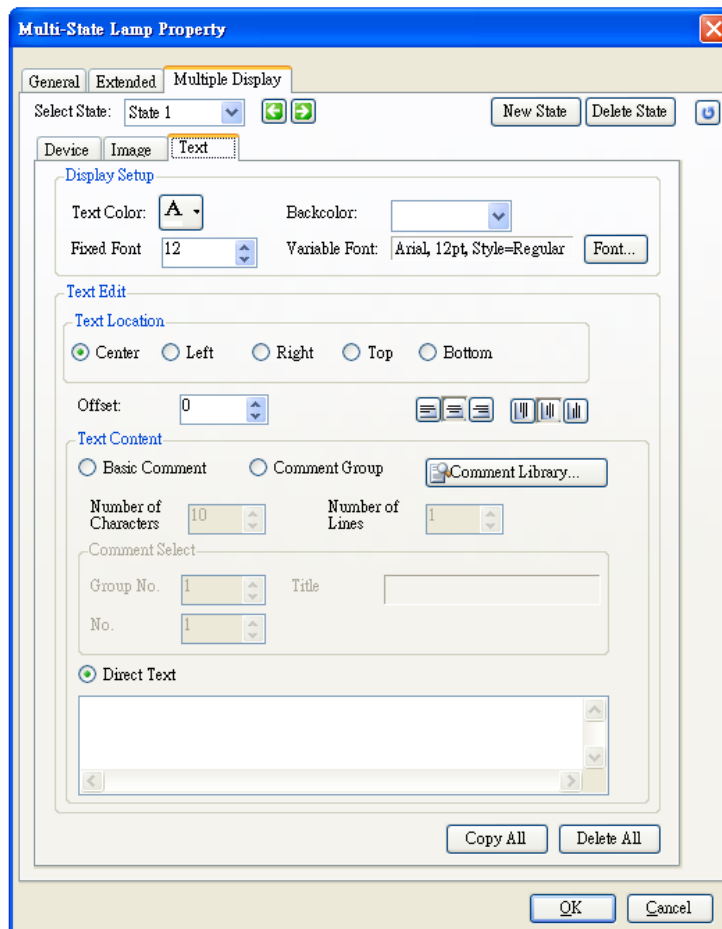

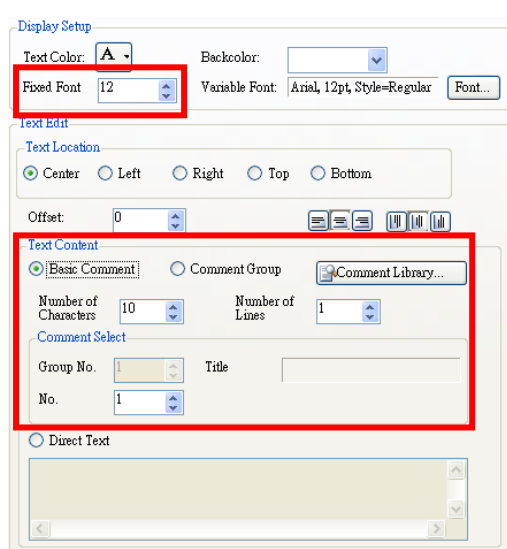


Fig. 3-6-3B-11 Multi-state Text Property Setting

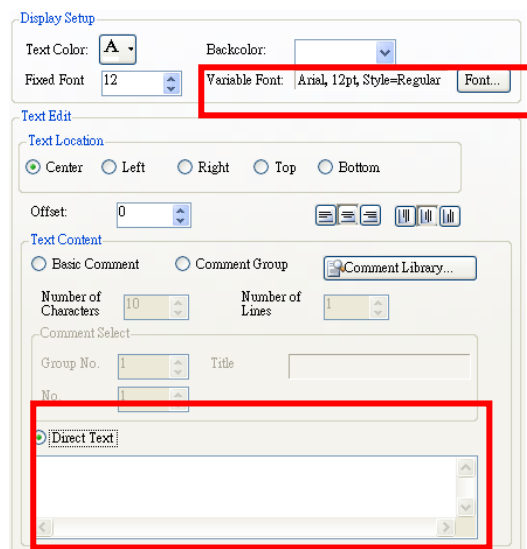
In the editing of the text, the comments of the comment library can be set as the text content. To do this, click  Comment Library... to open the dialogue box of the comment library. For detailed instructions, please see Section 3.4.4 Comment Library.



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- In the Text properties, the text contents can be comments and direct text. The comment takes fixed font, while the direct text takes variable fonts. See Figure 3-6-3B-12 below.



(a)



(b)

Fig. 3-6-3B-12 Text Display Setting (a) Comment Text (b) Direct Text

3.6.4. Data input









Click  and then click  Data Input , or directly click the shortcut , and in the editing window left click the mouse to set up a data input object. See Figure 3-6-4 below.



Fig. 3-6-4 Data Input Menu

a. Numeric Input Box

To set up a numeric input box, click  and click  and then click  Numerical Input Box, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture, transparency level and the line pattern. See Figure 3-6-4A-1 below.

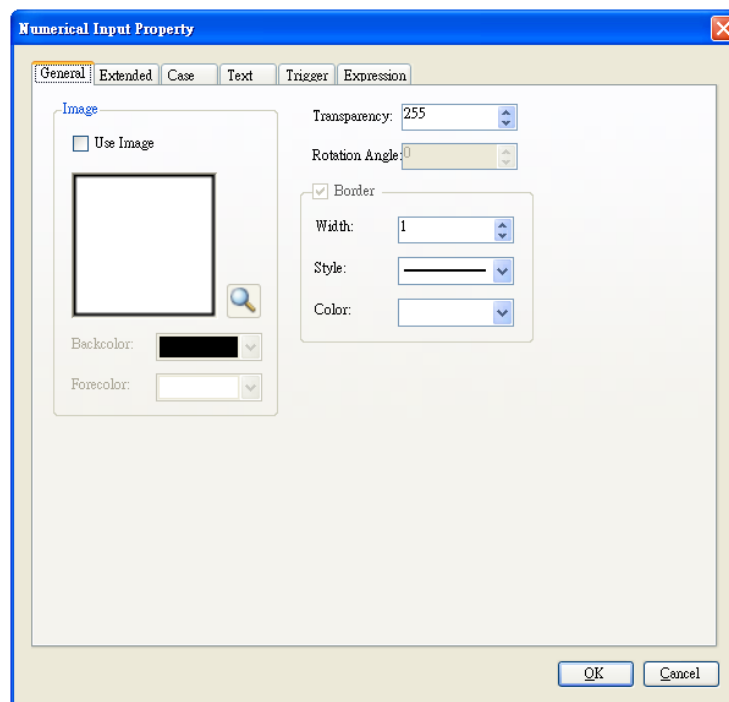




Fig. 3-6-4A-1 General Property Setting

Tick the option  Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property setting allows the user to change the security level, device type and range, and keypad type. Figure 3-6-4A-2 below demonstrates the setting of the object's security level. Both security level (display) and security level (input) are ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

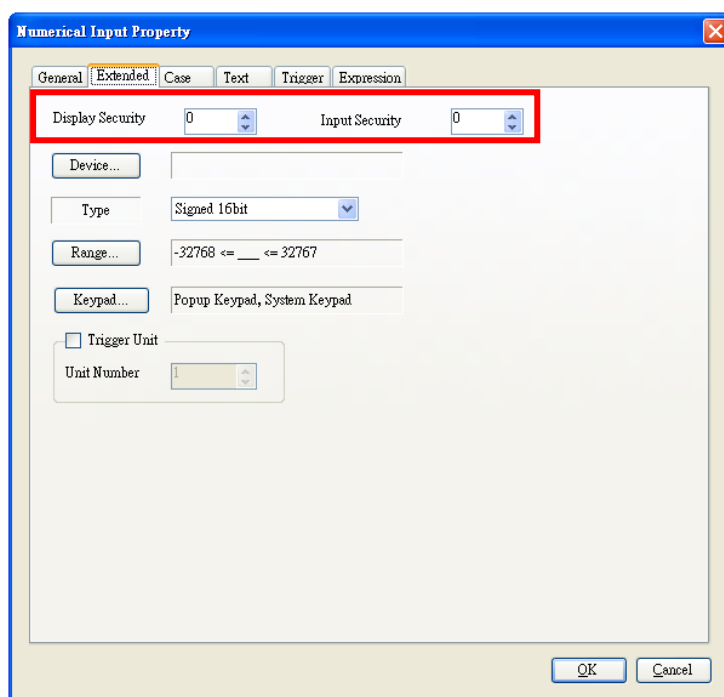
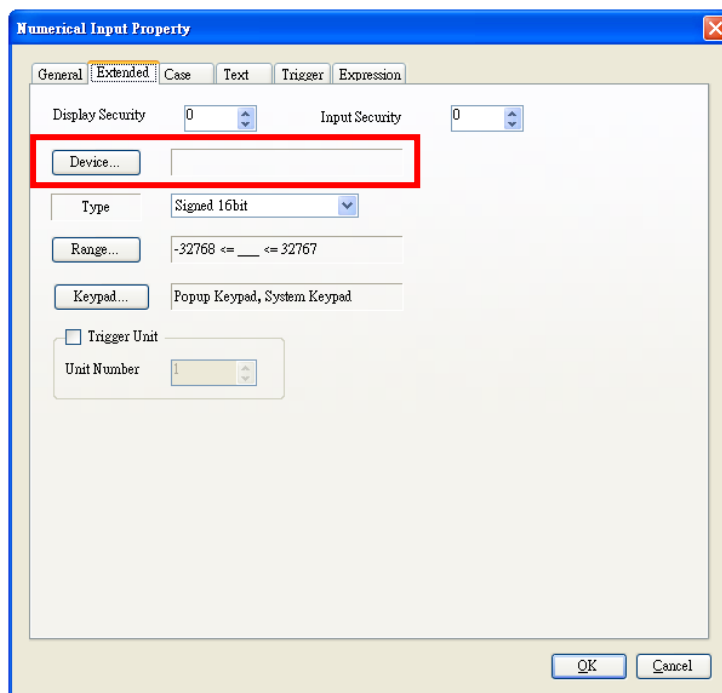


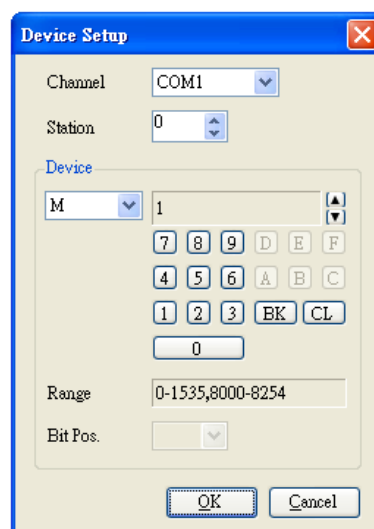
Fig. 3-6-4A-2 Security Level Setting

To set the device, click **Device...** to open the device setting window.

Confirm to finish the device setting. See Figure 3-6-4A-3 below.



(a)



(b)

Fig. 3-6-4A-3 Device (a) Device Setting (b) Input Setting

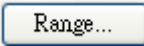
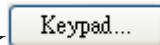
To change the numeric type, use the pull-down menu to select. The numeric types are described in Table 3-6-4A-4 below; to set the value range, click  to open the value range dialogue box; to select the keypad type, click  to open the keypad type selection dialogue box , and set the keypad type and source. See Figure 3-6-4A-5 below.

Table 3-6-4A-4 Numeric Types

Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

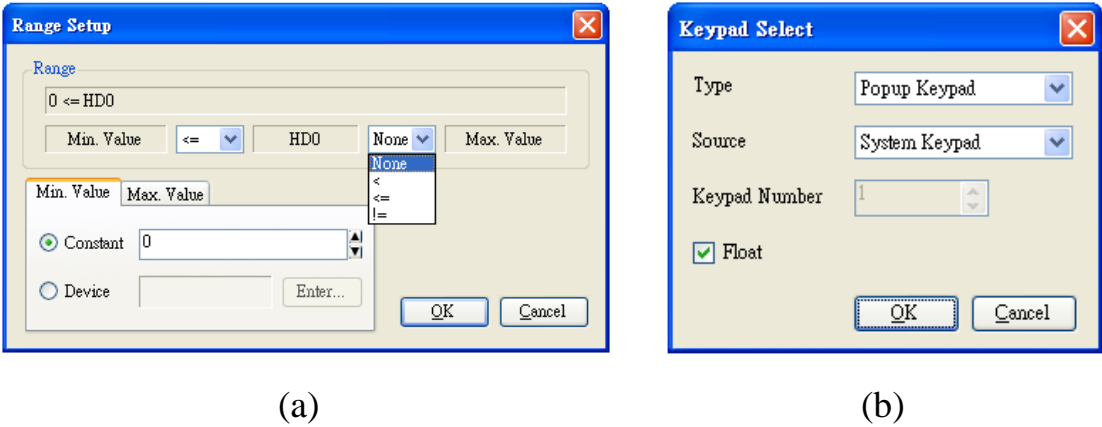


Fig. 3-6-4A-5 Keypad Range Setting (a) Range Setting (b) Selecting Keypad

The Trigger object functions correspond to both switch input and multi-action switch input, but the object code number is the same. When the switch object is clicked, the keypad will pop up for numeric value input. See Figure 3-6-4A-6 below.

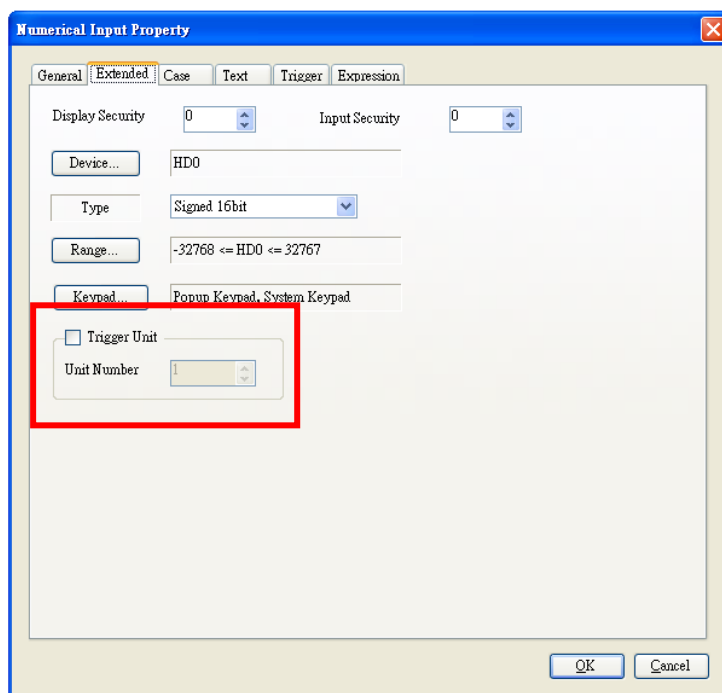


Fig. 3-6-4A-6 Trigger Object Setting

The Trigger object functions correspond to both numeric and character inputs, but the object code number is the same. When the switch object is clicked, the numeric input or character input keypad will pop up.



To use the switch to operate the numeric or character keypad, in the editing window set up a switch object, and then double left click the mouse to open the property setting window, and then from the Extension property setting select the general functions, and then set the code number of the trigger object to 1; in addition, in the editing window set up another numeric input object, and then double left click the mouse to open the property setting window, and set the object's code number to 1, and set the device as D0. Confirm and have the file sent to HIM. When the switch object is clicked, the keypad input window will pop up. Enter a number and confirm it, the number will turn up in the number input object. See Figure 3-6-4A-7 below.

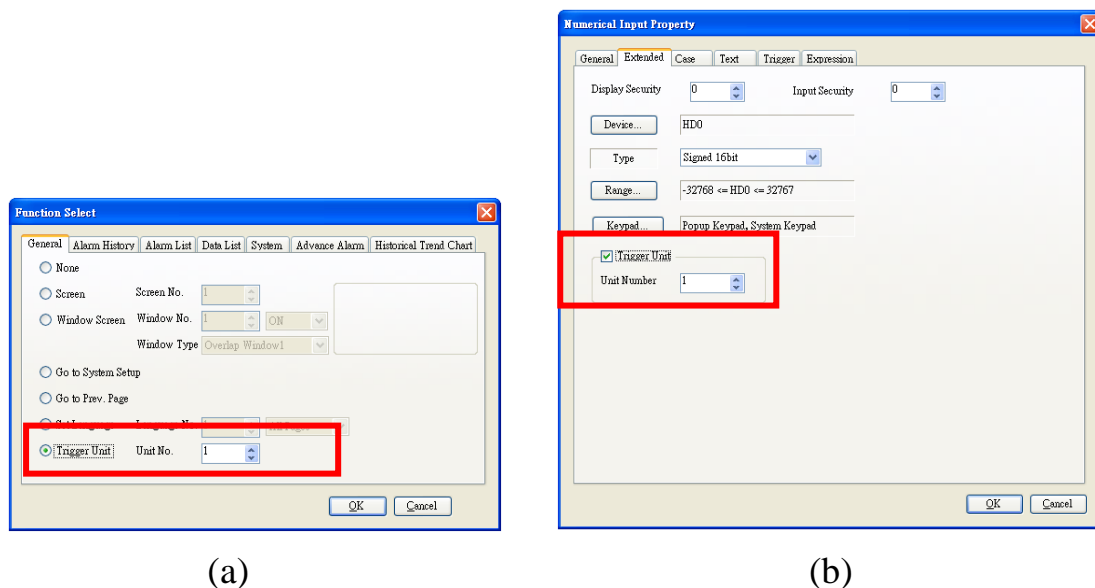
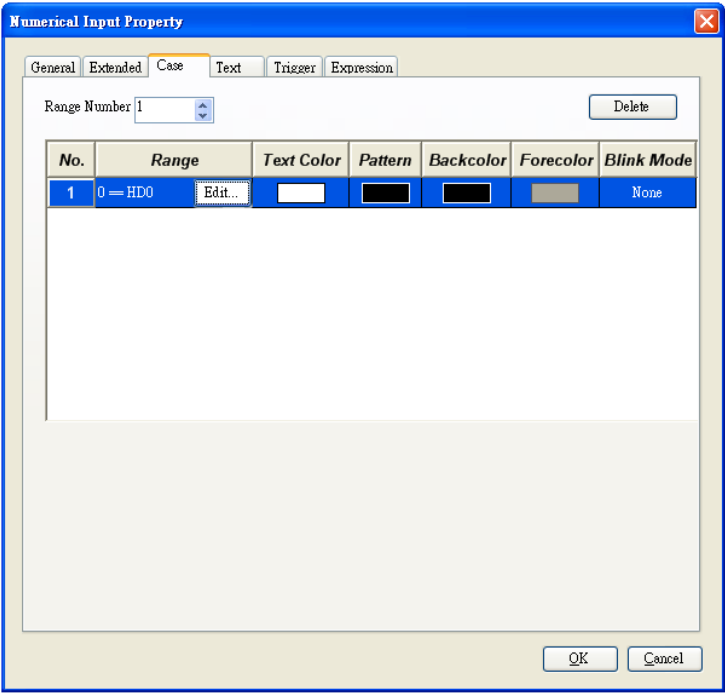
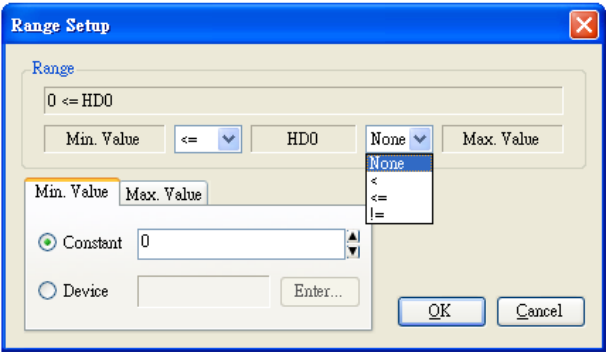


Fig. 3-6-4A-7 Trigger Object Setting (a) Switch Trigger Object (b) Numeric Input
Object Code Number

Figure 3-6-4A-8 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the range, text color, image pattern, blink mode, and delete the range. Click to open the dialogue box and change the numeric range.



(a)



(b)

Fig. 3-6-4A-8 Numeric Range Setting (a) Editing Window (b) Setting Device Range

The Text property setting allows the user to change the numeric format, character spacing, font size, text color and alignment. See Figure 3-6-4A-9 below.

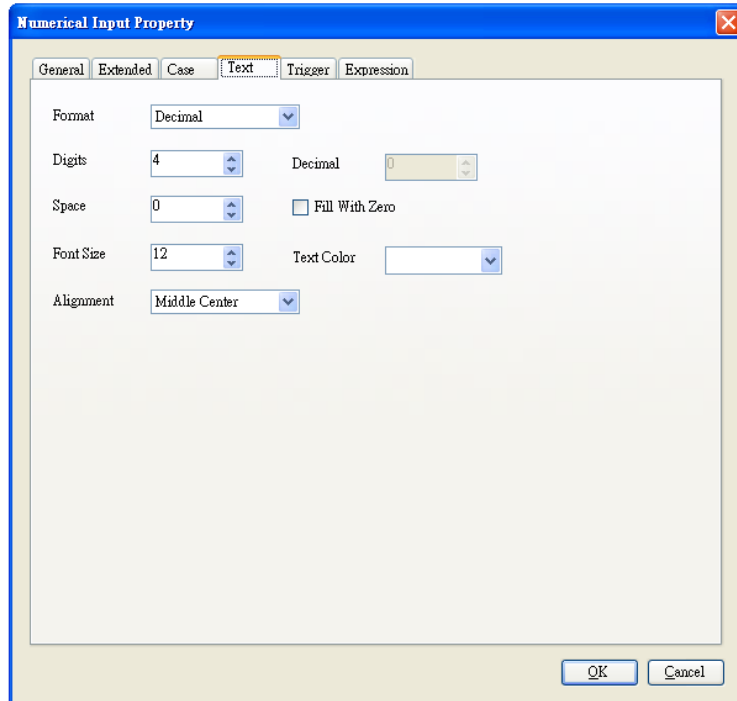
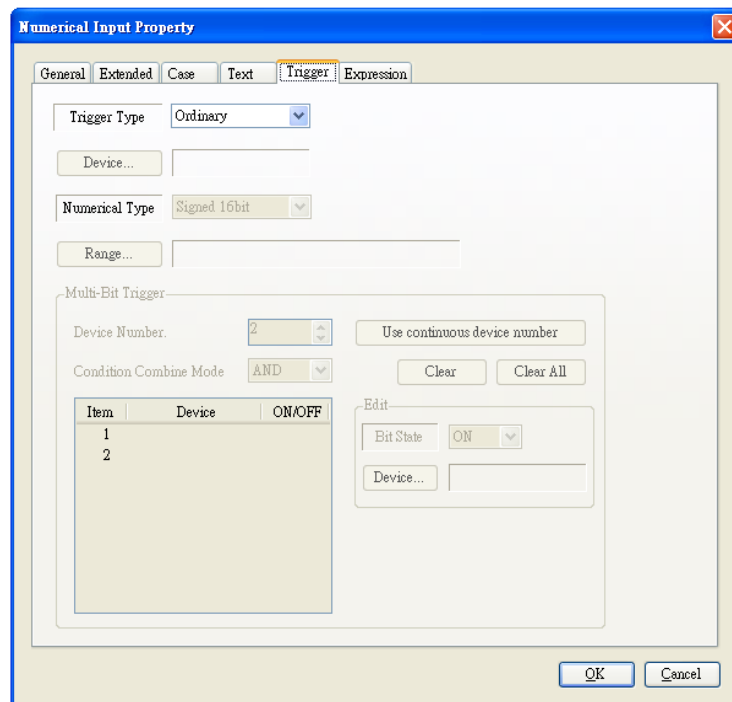


Fig. 3-6-4A-9 Text Property

The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-4A-10 below.

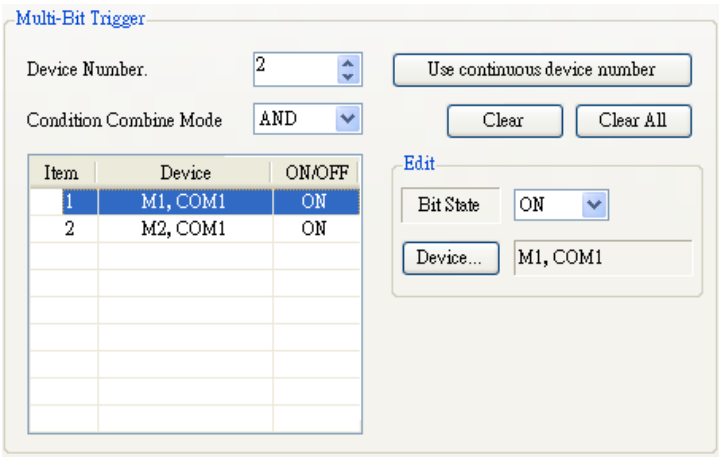


Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices, and only when all the devices meet the condition will the action be taken.

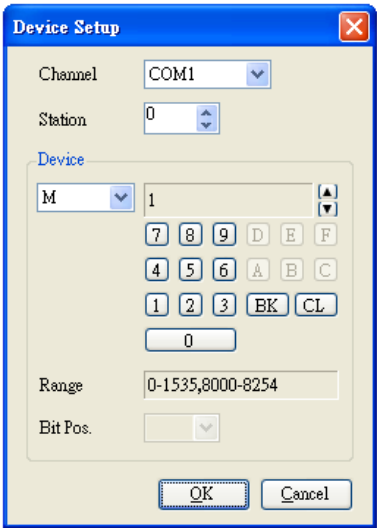
Fig. 3-6-4A-10 Trigger Patterns and Settings



To set the trigger pattern as multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-4A-11 below.



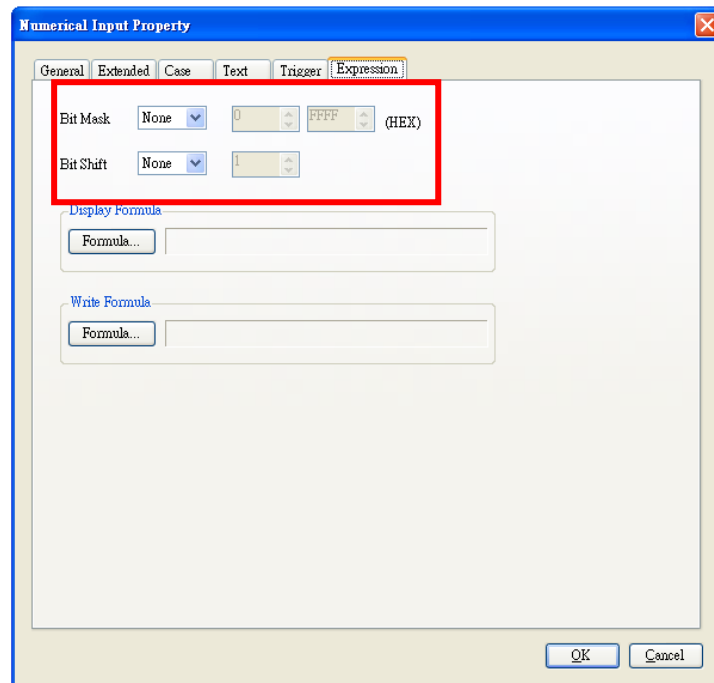
(a)



(b)

Fig. 3-6-4A-11 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

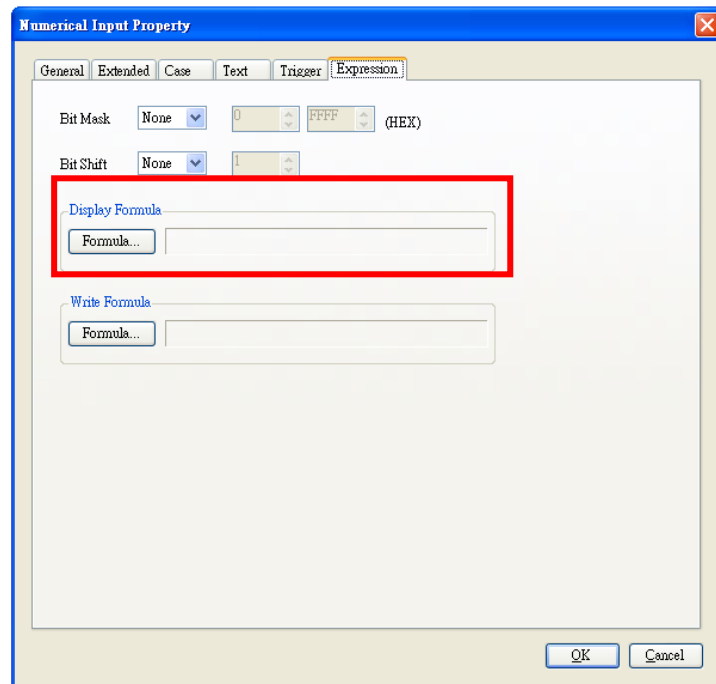
The Numeric Operation properties allow the user to set the value, bit mask, bit **Shift**, display formula and write formula. The system uses hexadecimal input. See Figure 3-6-4A-12 below.



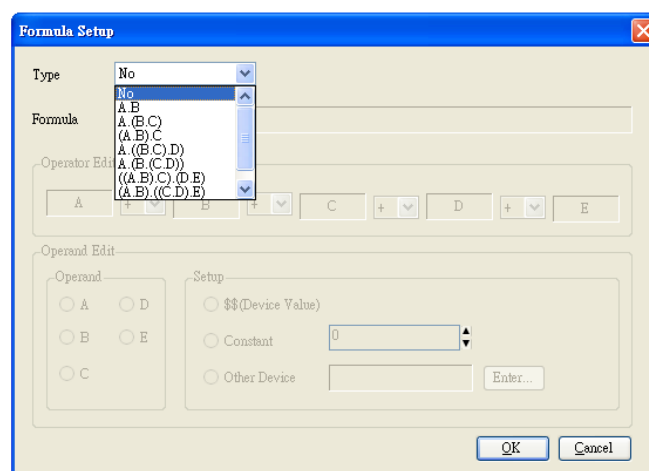
Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-4A-12 Logic Operations

To set display formula, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-4A-13 below.



(a)



(b)

Fig. 3-6-4A-13 Displaying formula (a) Setting formula (b) Formula Set

To set writing formula, click **Formula...** to open the formula setup window, and then pick up a preferred formula pattern. And then select from the A~E options, and then select \$\$ (device vale) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-4A-14 below.

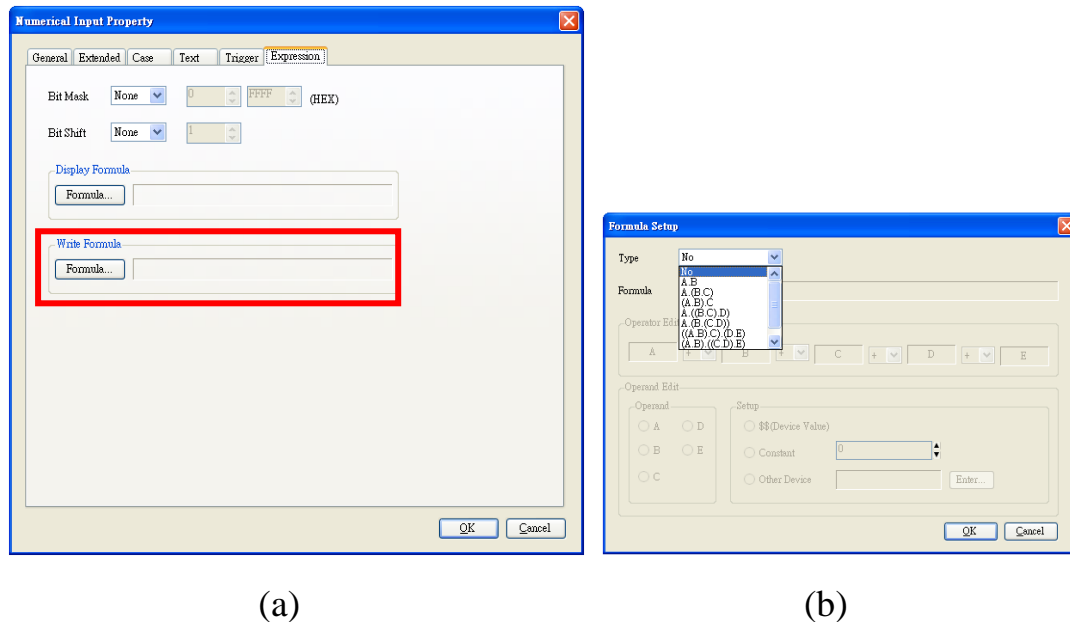






Fig. 3-6-4A-14 Write formula (a) Setting formula (b) formula Set



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

b. Character Input Box

To set up a character input box, click  and click  and then click  Character Input Box, or directly click the shortcut , and in the editing window left click the mouse to set up a character input box. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picture, display color, transparency and line pattern. See Figure 3-6-4B-1 below.

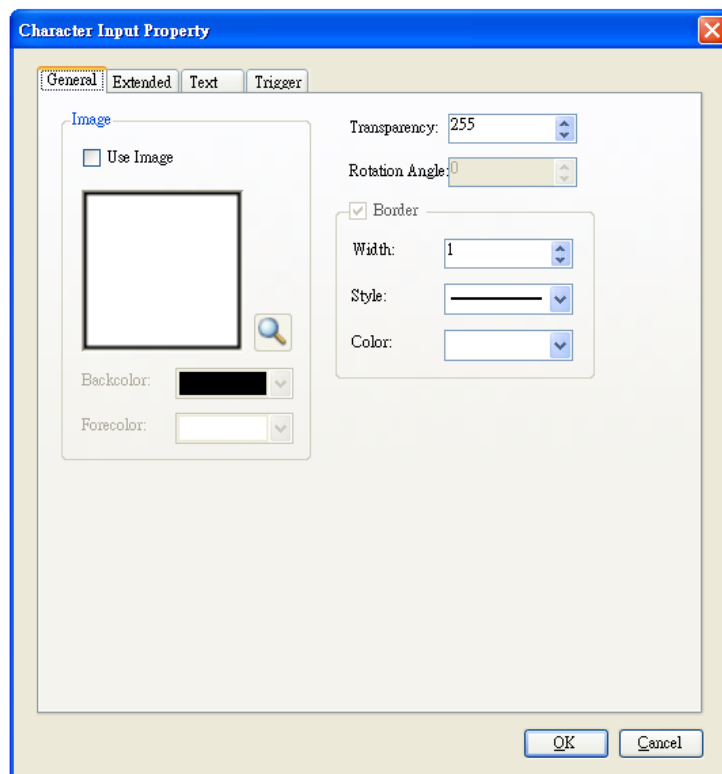




Fig. 3-6-4B-1 General Property Setting

Tick the option  Use Image to change the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to change the security level, device type and range, and keypad type. Figure 3-6-4B-2 below demonstrates the setting of the object's security level. The security level (display) and security level (input) are both ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

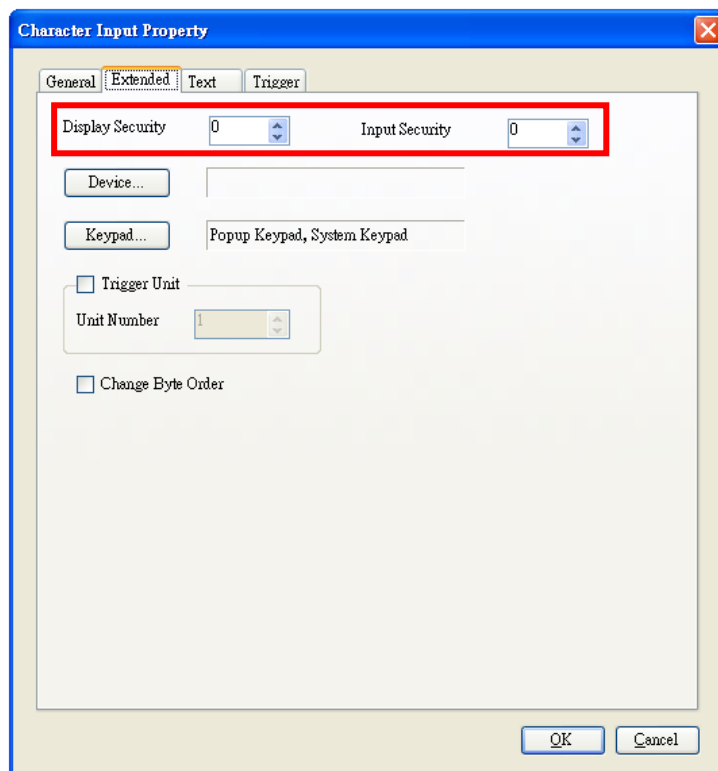


Fig. 3-6-4B-2 Security Levels

To set device, click **Device...** to open the device setup window.
Confirm to finish the device setting. See Figure 3-6-4B-3 below.

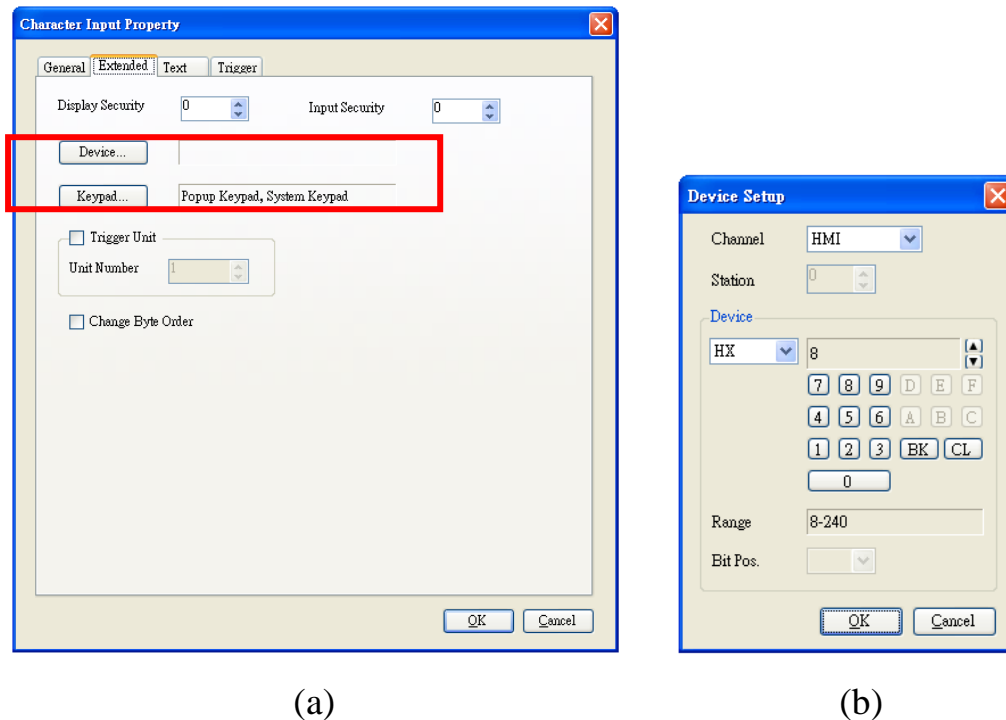


Fig. 3-6-4B-3 Device (a) Device Setting (b) Input Setting

To change the keypad type, click **Keypad...** to open keypad selection dialogue box and set the keypad type and source. See Figure 3-6-4B-4 below.

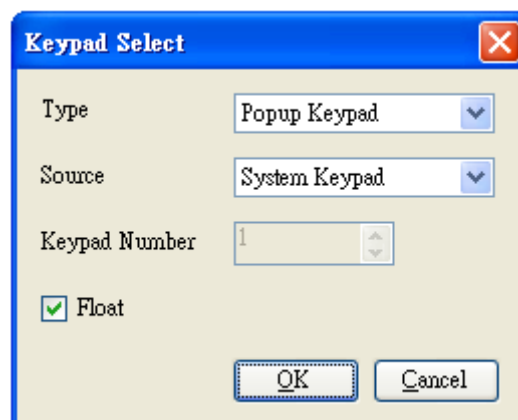


Fig. 3-6-4B-4 Selecting Keypad

The Trigger object functions correspond to both switch input and multi-action switch input, but the object code number is the same. When the switch object is clicked, the keypad will pop up for character input. See Figure 3-6-4B-5 below.

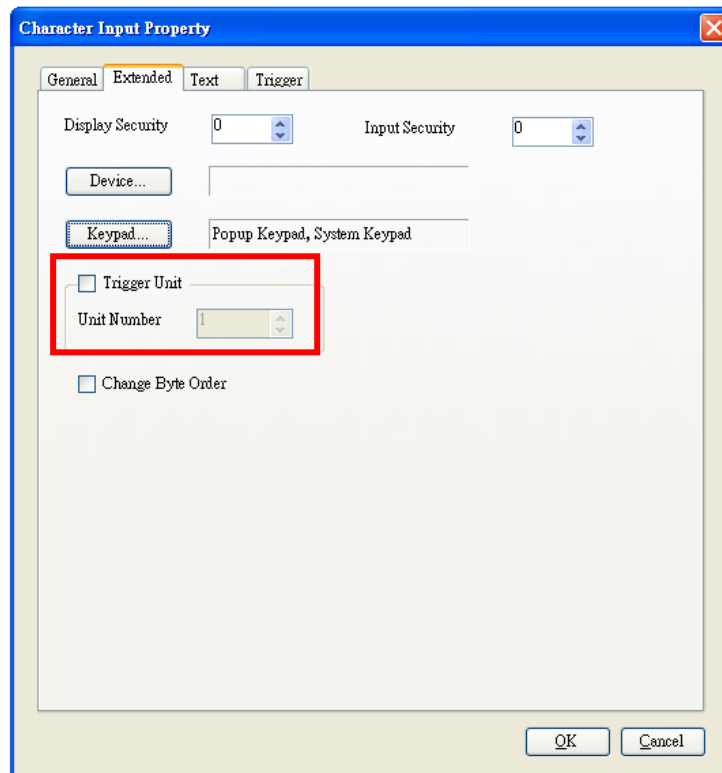
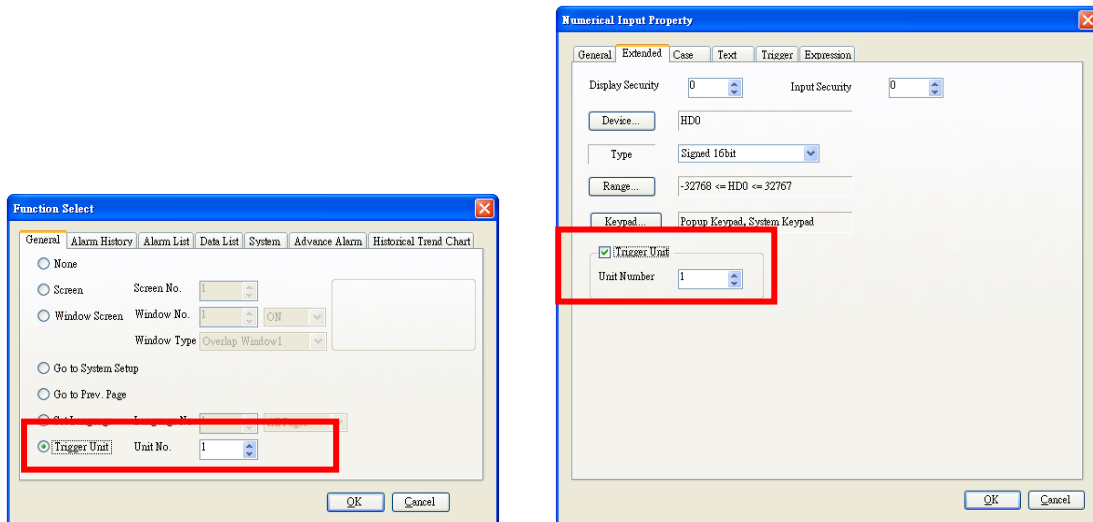


Fig. 3-6-4B-5 Trigger Object Setting

The Trigger object functions correspond to both numeric input and character input, but the object code number is the same. When the switch object is clicked, the numeric keypad or character keypad will pop up.



To use the switch to operate numeric and character keypad, in the editing screen set up a switch object, and then double left click the mouse to open the property setting window, then from the Extension property setting select the general functions, and set the code number of the trigger object to 1; in addition, in the editing screen set up another numeric input object, and then double left click the mouse to open the property setting window, and set the object code number to 1, and set the device to D0. Confirm and have the file sent to HMI. So, when the switch object is clicked, the keypad input window will pop up. Enter a number and confirm it, the number will show up in the numeric input object. See Figure 3-6-4B-6 below.



(a)

(b)

Fig. 3-6-4B-6 Trigger Object Setting (a) Switch Trigger Object (b) Numeric Input

Object Code Number

The Text properties allow the user to change the numeric format, character spacing, font size, text color and alignment. See Figure 3-6-4B-7 below.

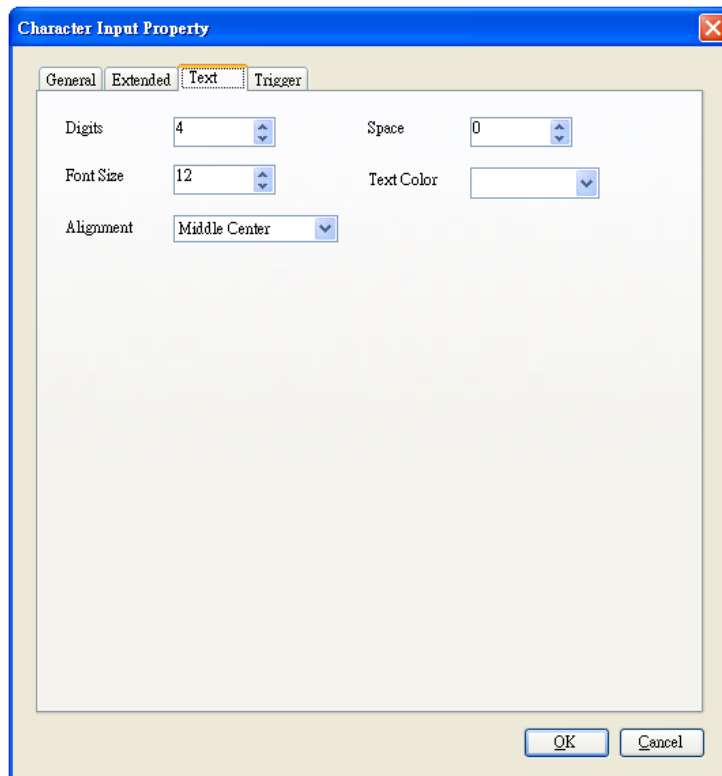
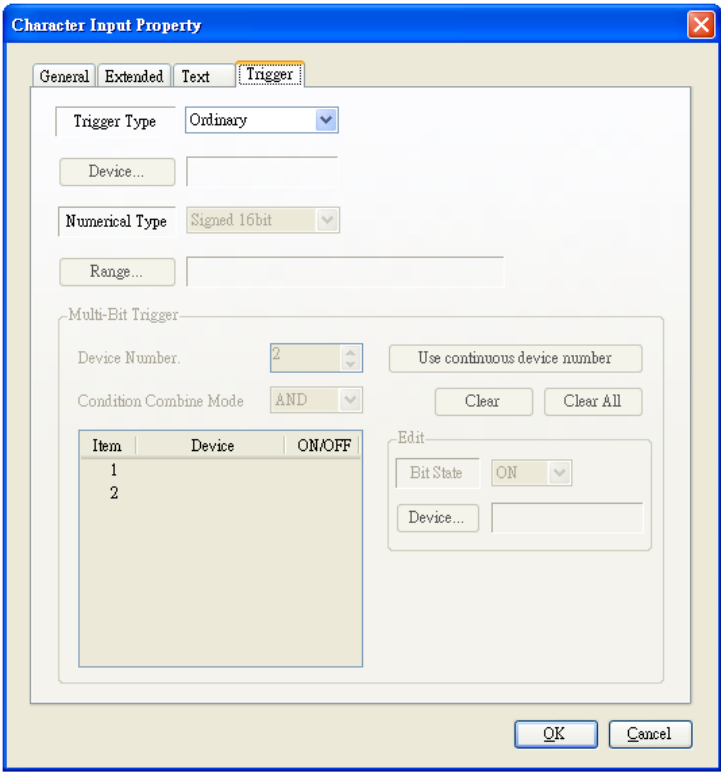


Fig. 3-6-4B-7 Text Property

The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-4B-8 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices, and only when all the devices meet the condition will the action be taken.

Fig. 3-6-4B-8 Trigger Patterns and Settings



To set the trigger pattern as multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-4B-9 below.

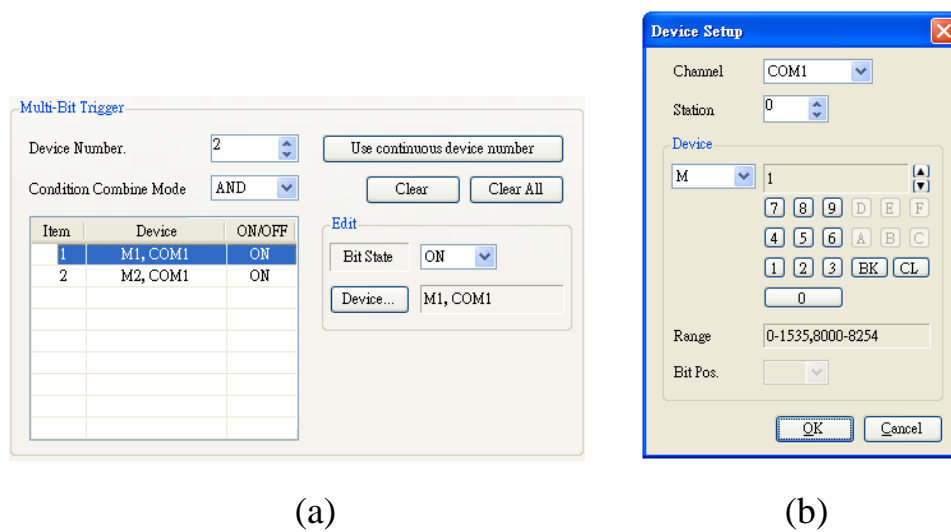





Fig. 3-6-4B-9 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- For property setting, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

3.6.5. Data Display

Click  and then click , or directly click the shortcut , and in the editing window left click the mouse to set up a data display object. See Figure 3-6-5 below.

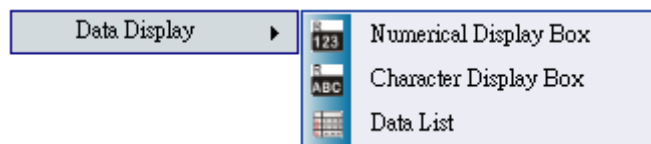


Fig. 3-6-5 Data Display Menu

a. Numerical Display Box

To set up a numeric display box, click **Unit** and click **Data Display** and then click **Numerical Display Box**, or directly click the shortcut **123**, and in the editing window left click the mouse to set up a numeric display. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picture, display color, transparency and line pattern. See Figure 3-6-5A-1 below.

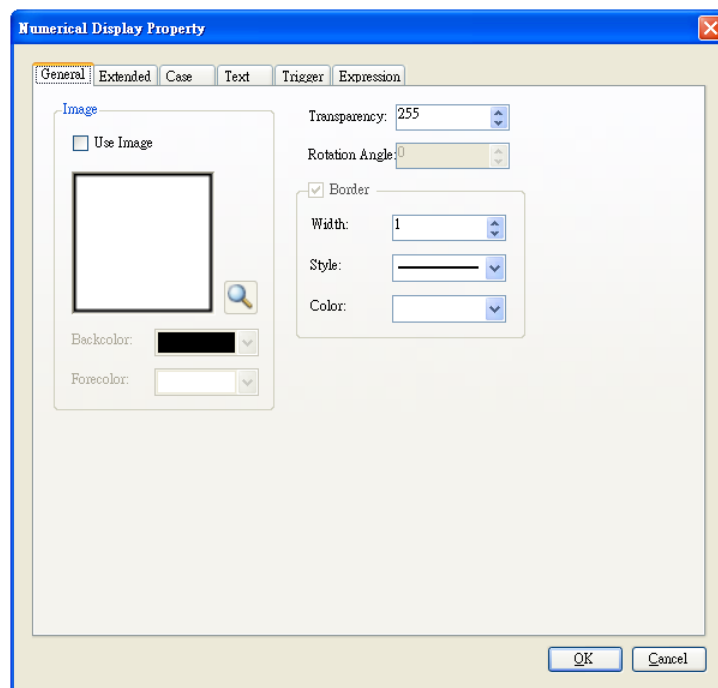



Fig. 3-6-5A-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to change the security level, device type and range, and keypad type. Figure 3-6-5A-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

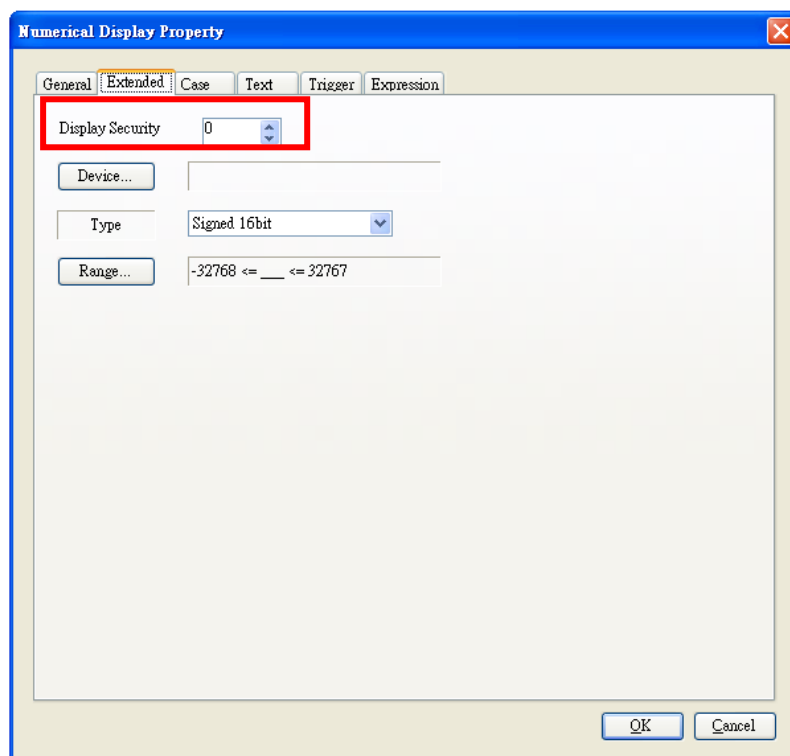

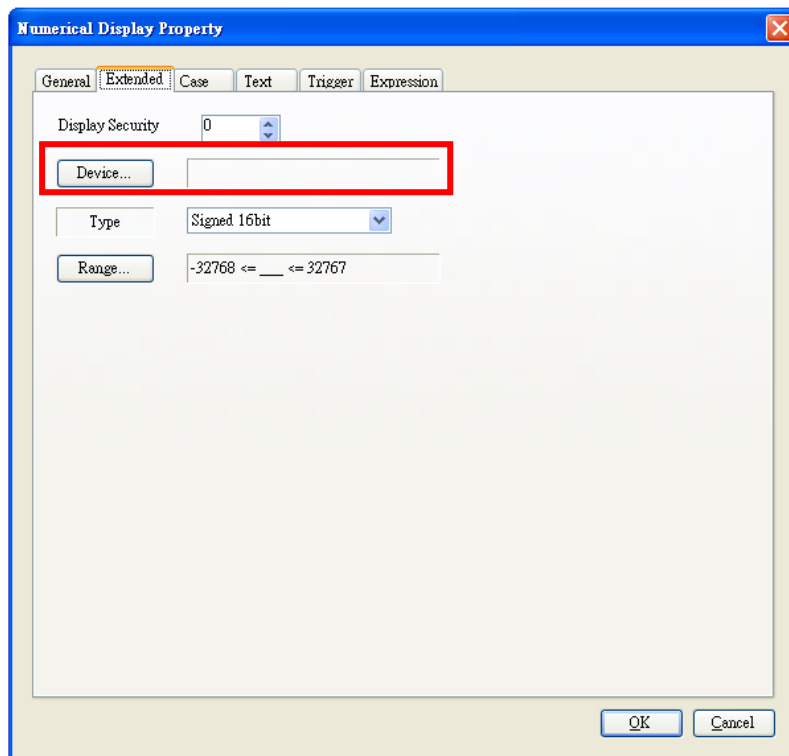
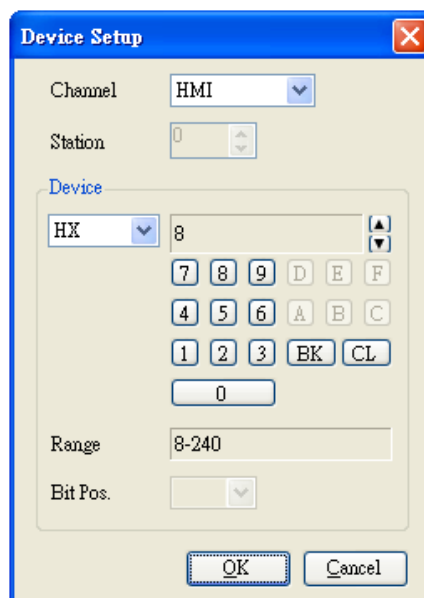


Fig. 3-6-5A-2 Security Levels

To set the device, click  to open the device setup window.
Confirm to finish the device setting. See Figure 3-6-5A-3 below.



(a)



(b)

Fig. 3-6-5A-3 Device (a) Device Setting (b) Input Setting

To change the numeric type, use the pull-down menu to select a type. The types are described in Table 3-6-5A-4 below; to set the value range, click Range... to open the range dialogue box and make the setting. See Figure 3-6-5A-5 below.

Table 3-6-5A-4 Numeric Types

Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

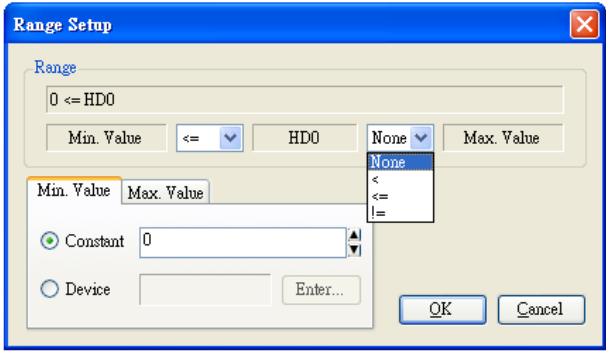
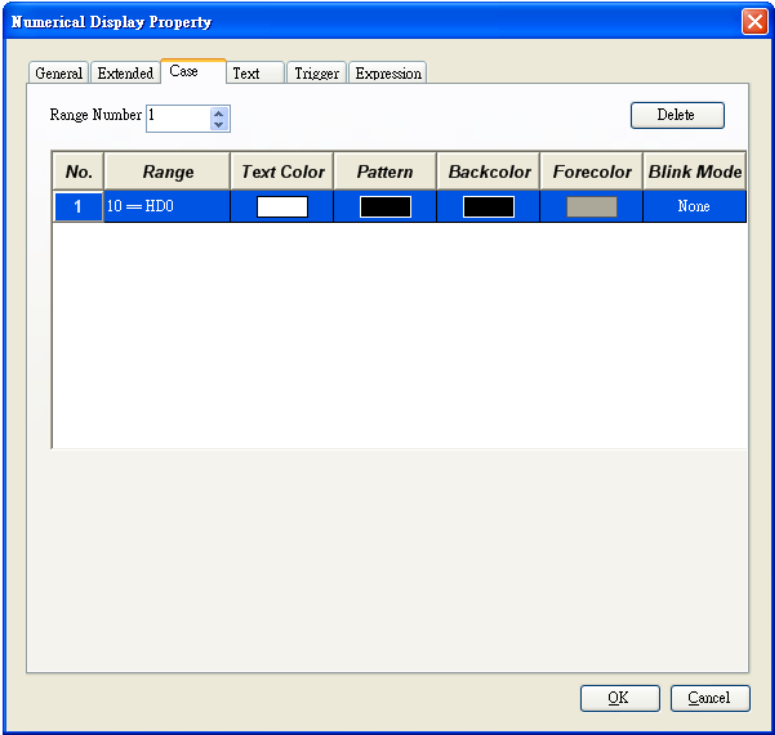
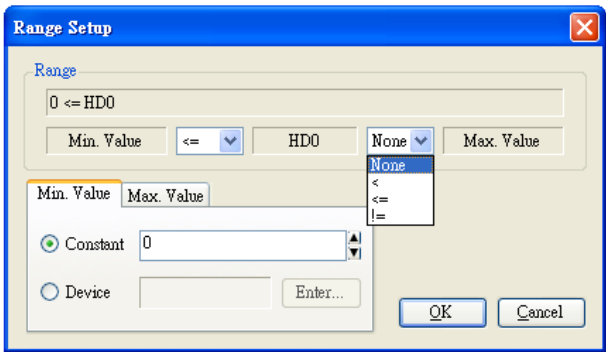


Fig. 3-6-5A-5 Range Setting

Figure 3-6-5A-6 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the range, text color, image pattern, blink mode, and delete the range. Click to open the dialogue box and make the setting.



(a)



(b)

Fig. 3-6-5A-6 Range Setting (a) Edit Window (b) Setting Device

The Text properties allow the user to change the numeric format, character spacing, font size, text color, and alignment. See Figure 3-6-5A-7 below.

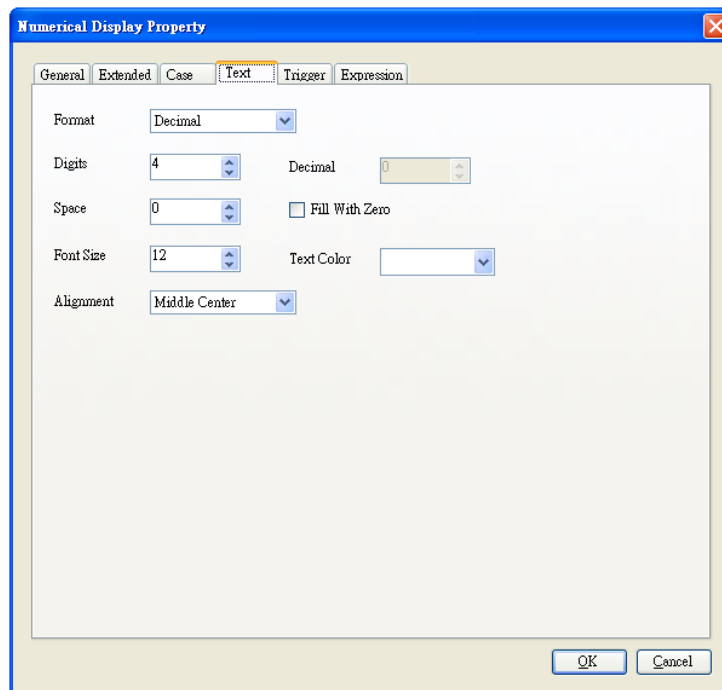
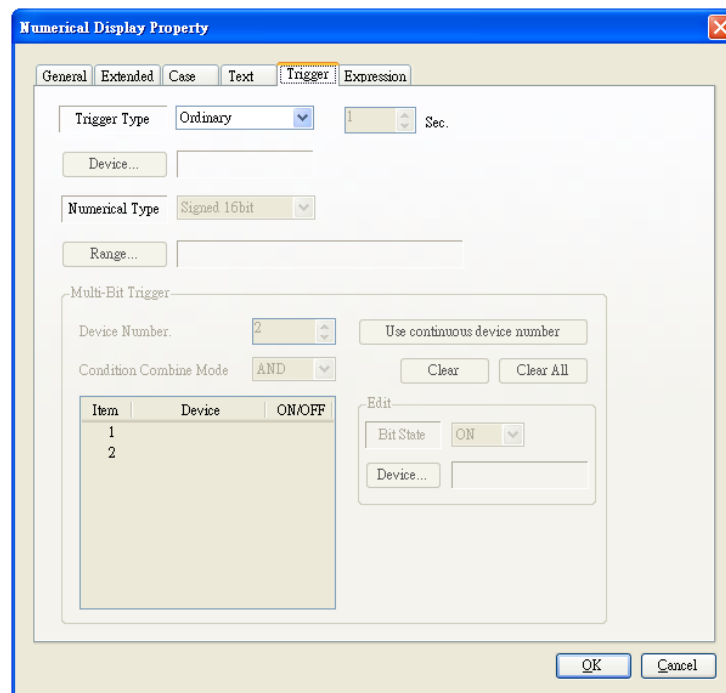


Fig. 3-6-5A-7 Text Property

The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-5A-8 below.

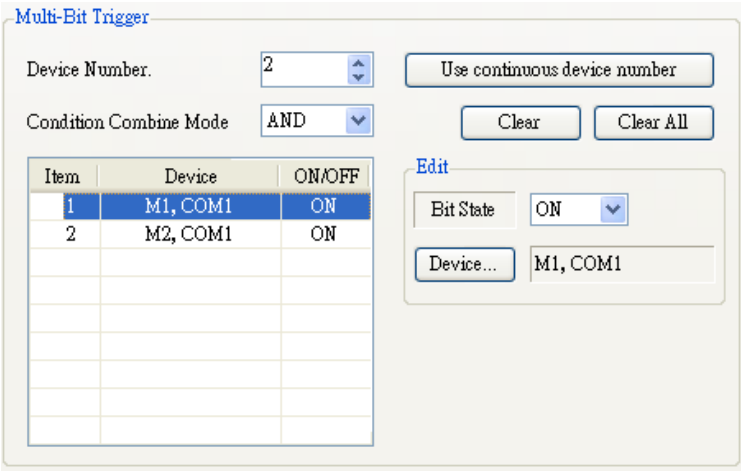


Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

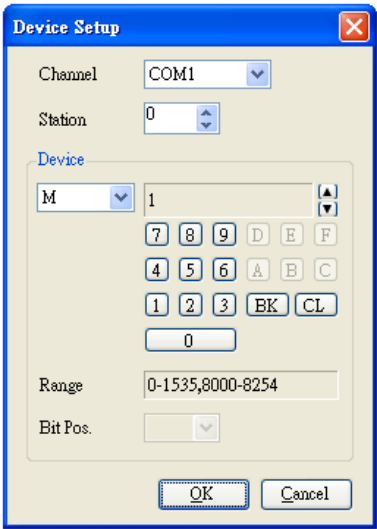
Fig. 3-6-5A-8 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-5A-9 below.



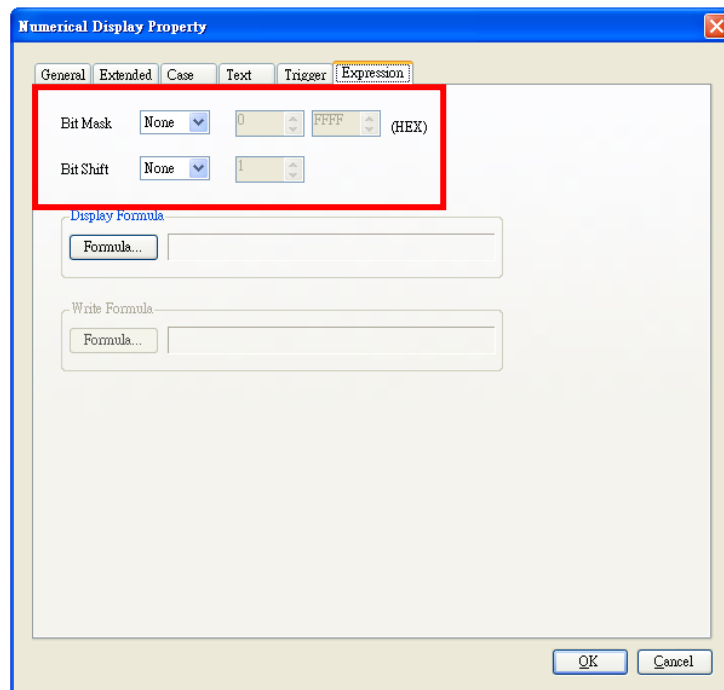
(a)



(b)

Fig. 3-6-5A-9 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

The Numeric Operation properties allow the user to set the values, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-5A-10 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-5A-10 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-5A-11 below.

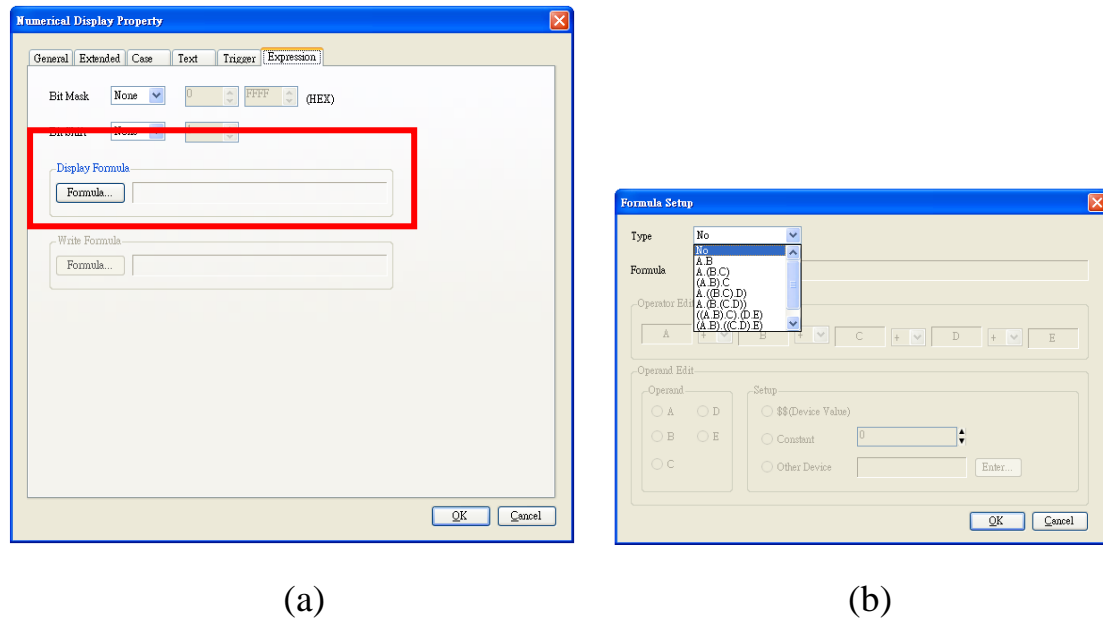


Fig. 3-6-5A-11 Displaying formula (a) Setting formula (b) formula Set



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

b. Character Display Box

To set up a character display box, click **Unit** and click **Data Display** and then click **Character Display Box**, or directly click the shortcut **ABC**, and in the editing window left click the mouse to set up a character display box. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picture, display color, transparency and line pattern. See Figure 3-6-5B-1 below.

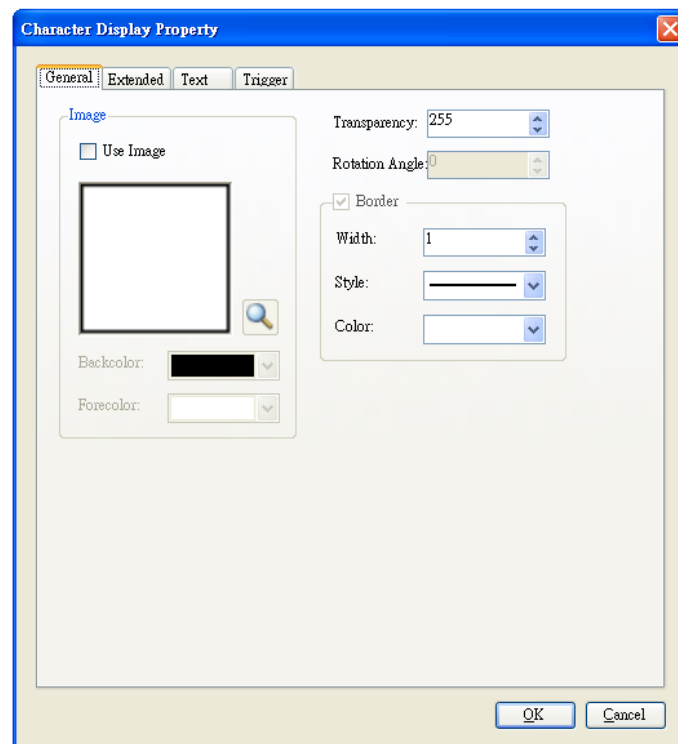



Fig. 3-6-5B-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property allows the user to change the security level and device type. Figure 3-6-5B-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

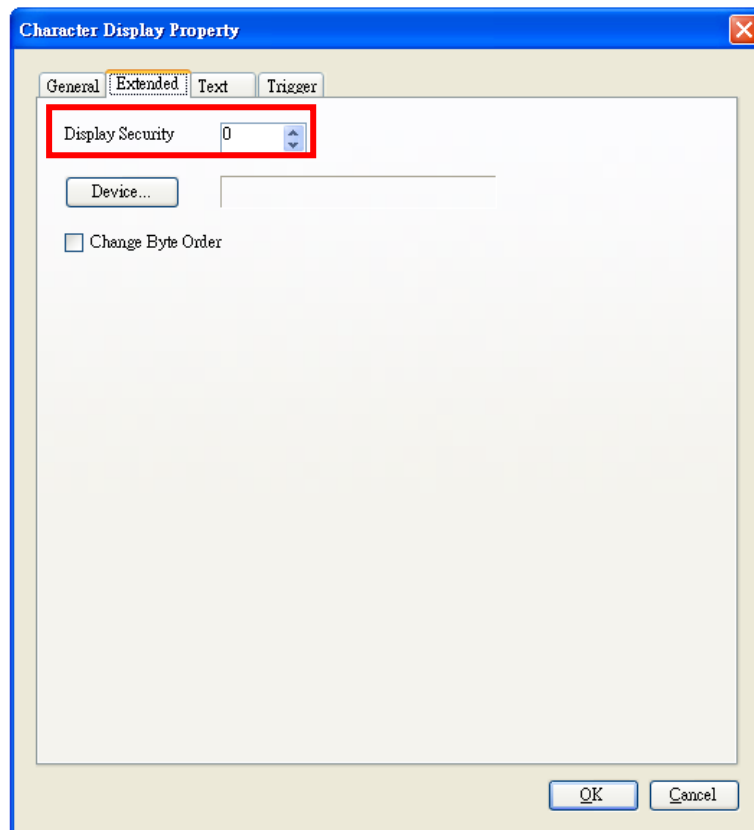
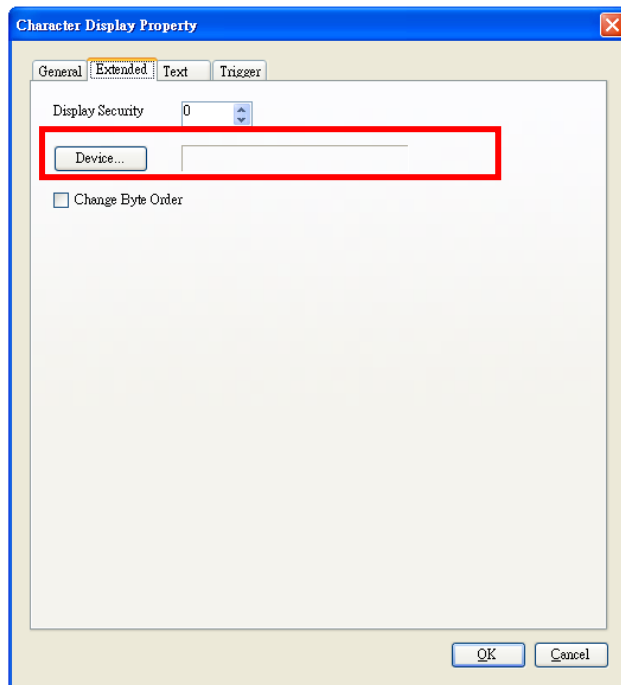


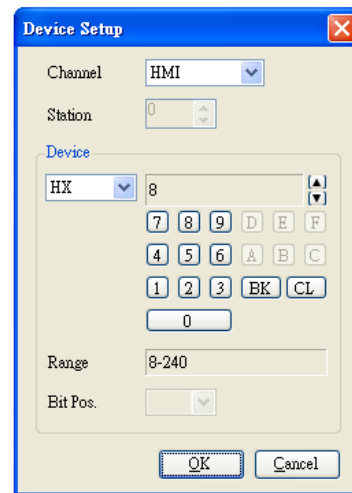
Fig. 3-6-5B-2 Security Levels

To set device, click  to open the device setup window.

Confirm to finish the device setting. See Figure 3-6-5B-3 below.



(a)



(b)

Fig. 3-6-5B-3 Device (a) Device Setting (b) Input Setting

The Text properties allow the user to change the numeric format, character spacing, font size, text color and alignment. See Figure 3-6-5B-5 below.

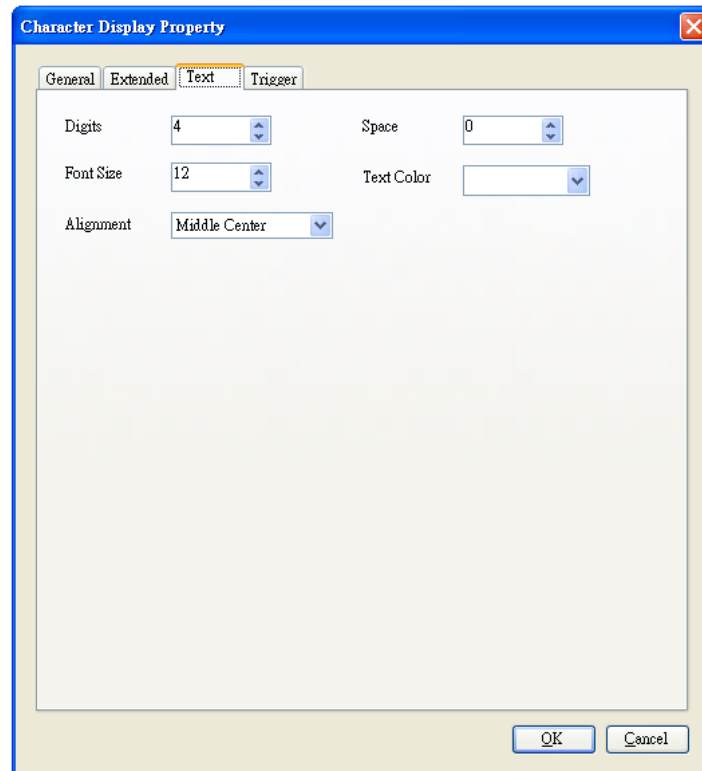
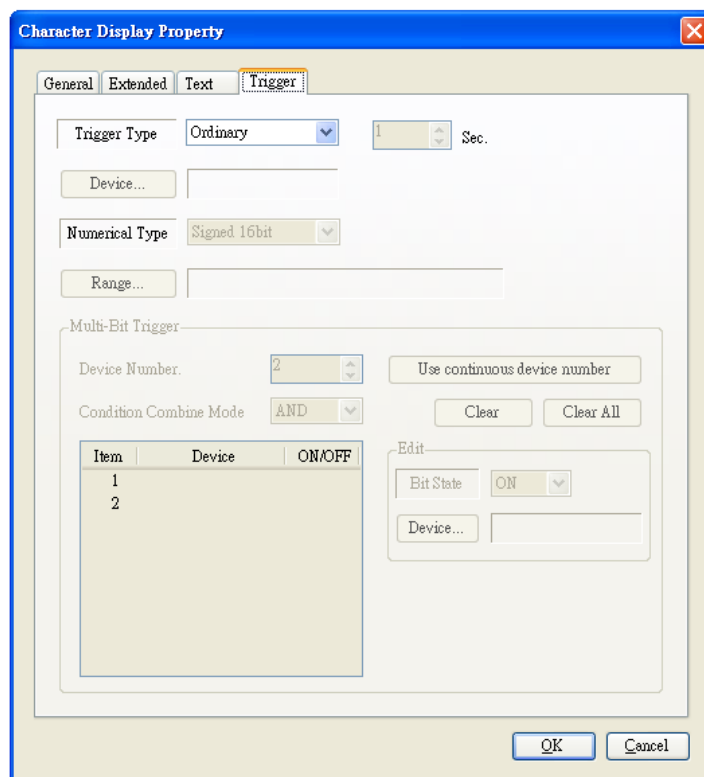


Fig. 3-6-5B-5 Text Property

The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-5B-6 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-5B-6 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-5B-7 below.

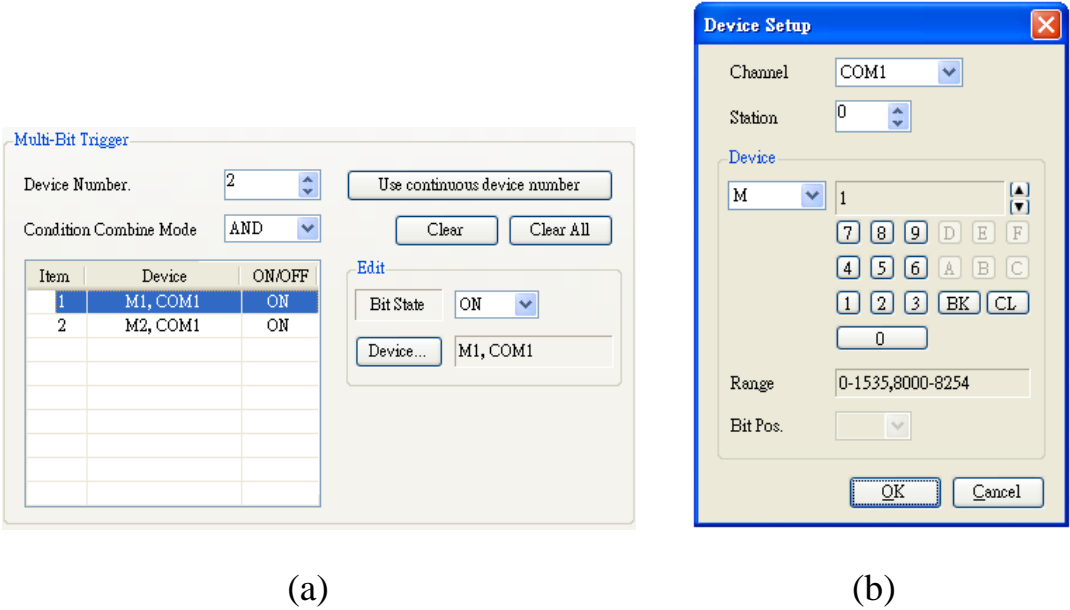


Fig. 3-6-5B-7 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

c. Data List

To set up a data list, click **Unit** and click **Data Display** and then click **Data List**, or directly click the shortcut, and in the editing window left click the mouse to set up a data list. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picture, display color, transparency and line pattern. See Figure 3-6-5C-1 below.

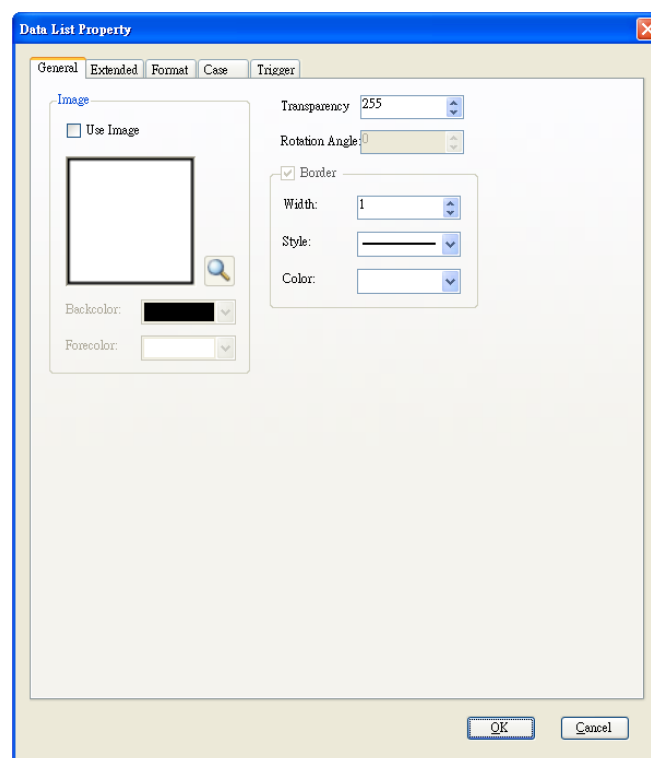



Fig. 3-6-5C-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property allows the user to change the display security, display sort and font size, and text color, and col/row number, and interval. Figure 3-6-5C-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

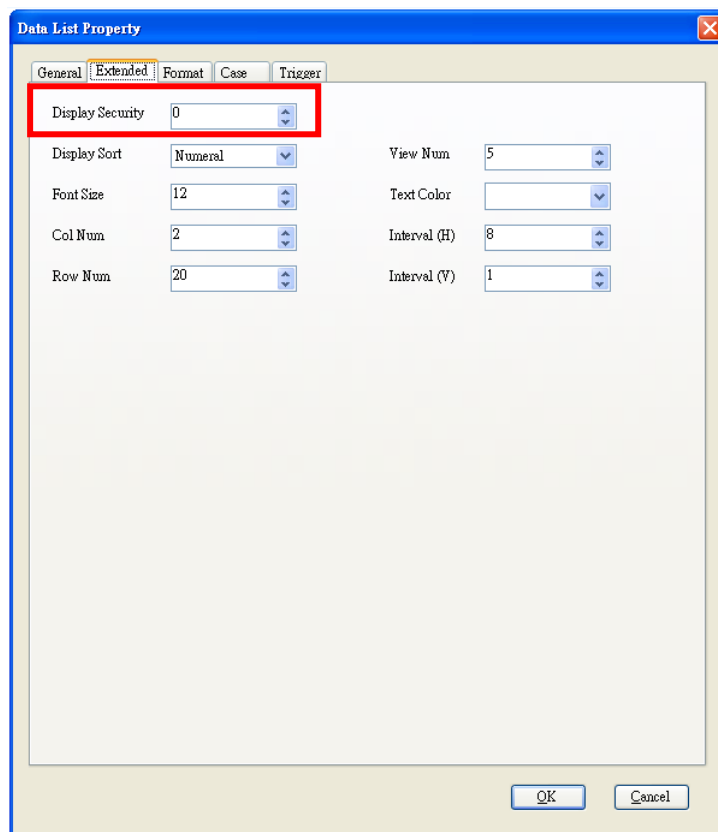
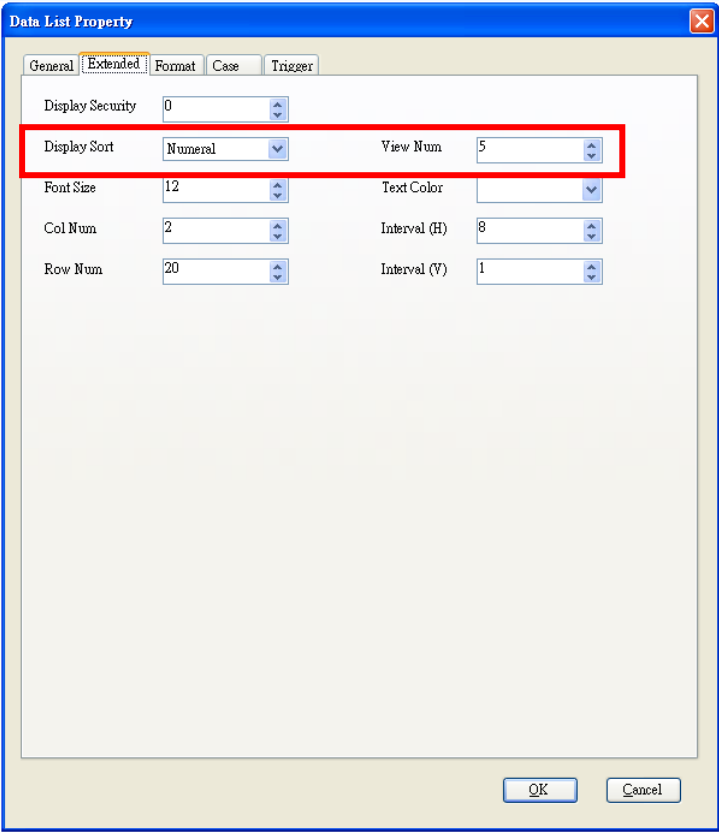


Fig. 3-6-5C-2 Security Levels

The user can set the display sort and the view number. See Figure 3-6-5C-3 below.



	Description
Display sort	Value: with the largest value on the top, sorting by descending order. Incremental: with the smallest comment number on the top, sorting by ascending order. Decremental: with the largest comment number of the top, sorting by descending order.
View number	The maximum number of displays on the screen.

Fig. 3-6-5C-3 Data Display Pattern

The Format properties allow the user to set the titles of the row and column, device and comment. See Figure 3-6-5C-4 below.

Data List Property

General Extended **Format** Case Trigger

Column Edit

☒ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth ☐ Sixth

Title:

Format:

No.	First	Second	Third	Fourth	Fifth	Sixth
1	1					
2	2					
3	3					
4	4					
5	5					
6	6					
7	7					
8	8					

Device

Device Number ☒ Continuous ☐ Random

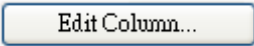
Comment

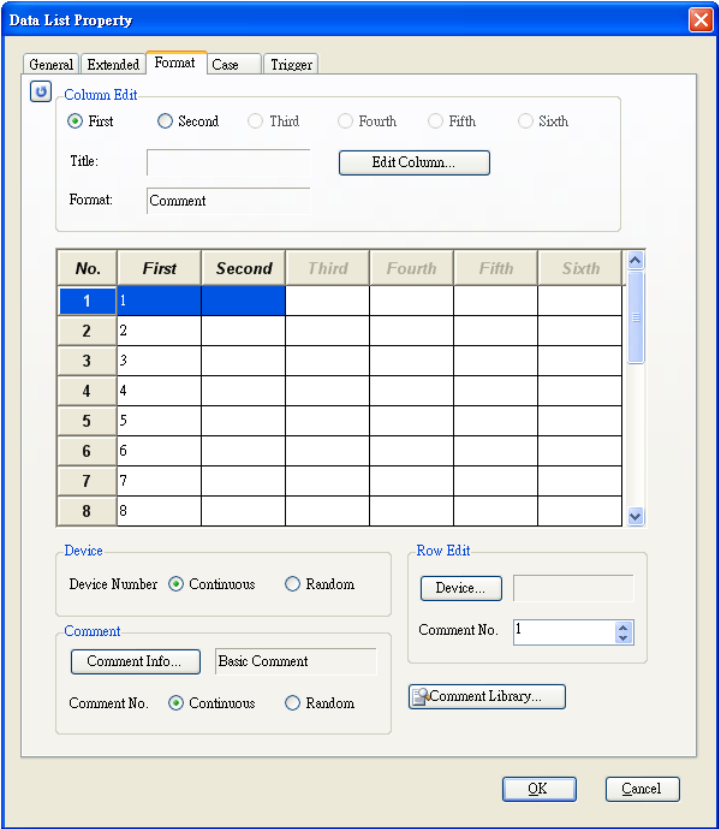
Comment No. ☒ Continuous ☐ Random

Row Edit

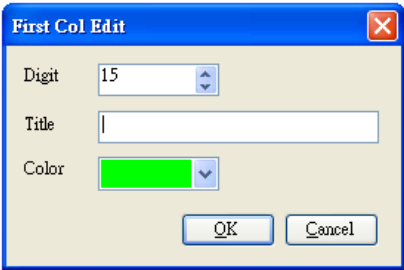
Comment No.

Fig. 3-6-5C-4 Format Property

The data list can have as many as 6 rows. Click  to open the row edit dialogue box and make preferred property setting. See Figure 3-6-5C-5 below.



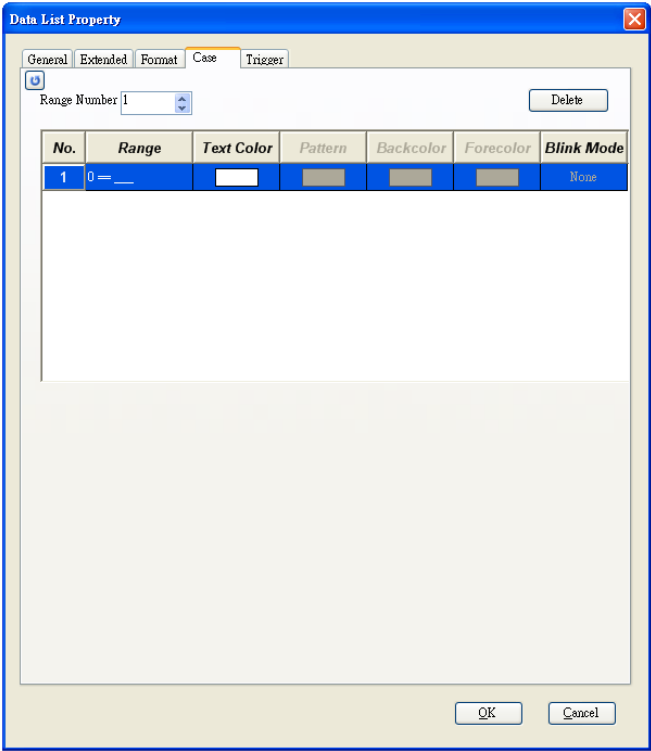
(a)



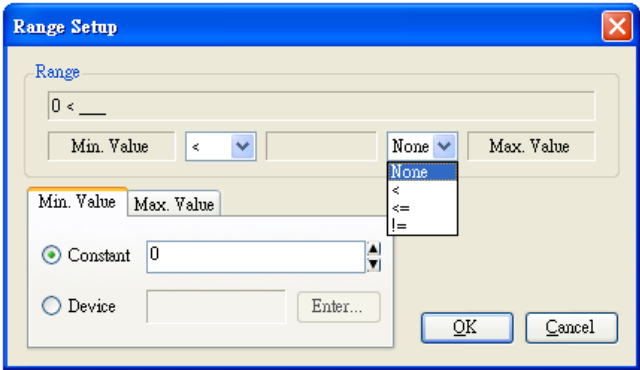
(b)

Fig. 3-6-5C-5 Row Edit (a) Editing Row (b) Row Format Edit

Figure 3-6-5C-6 below is the Range setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the range and color, and delete the range. Click to open the dialogue box and set the numeric range.



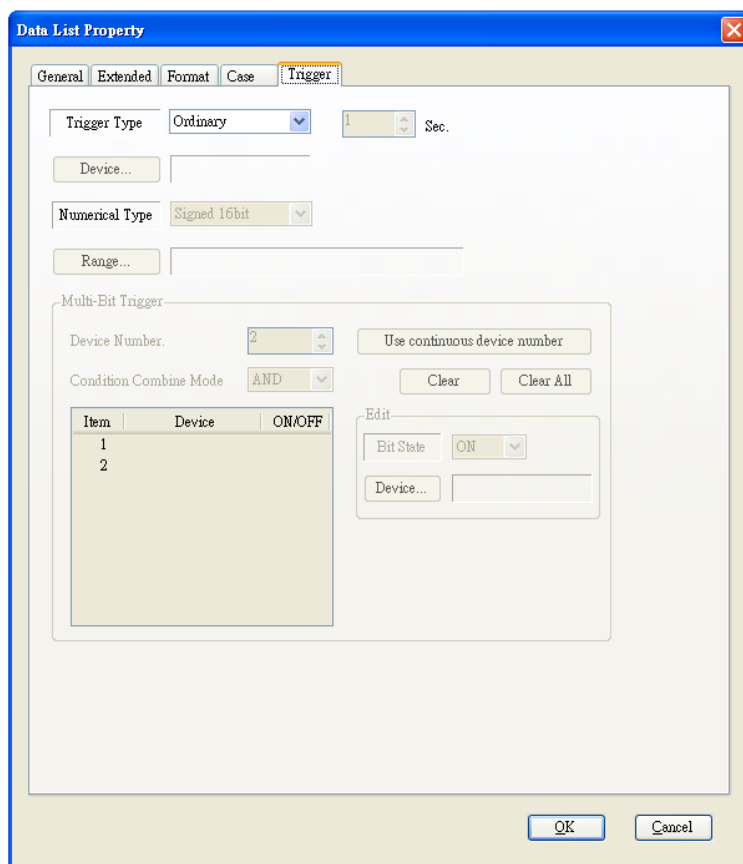
(a)



(b)

Fig. 3-6-5C-6 Range Setting (a) Edit Window (b) Setting Device

The Trigger property setting allows the user to set the triggering conditions. See Figure 3-6-5C-7 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-5C-7 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-5C-8 below.

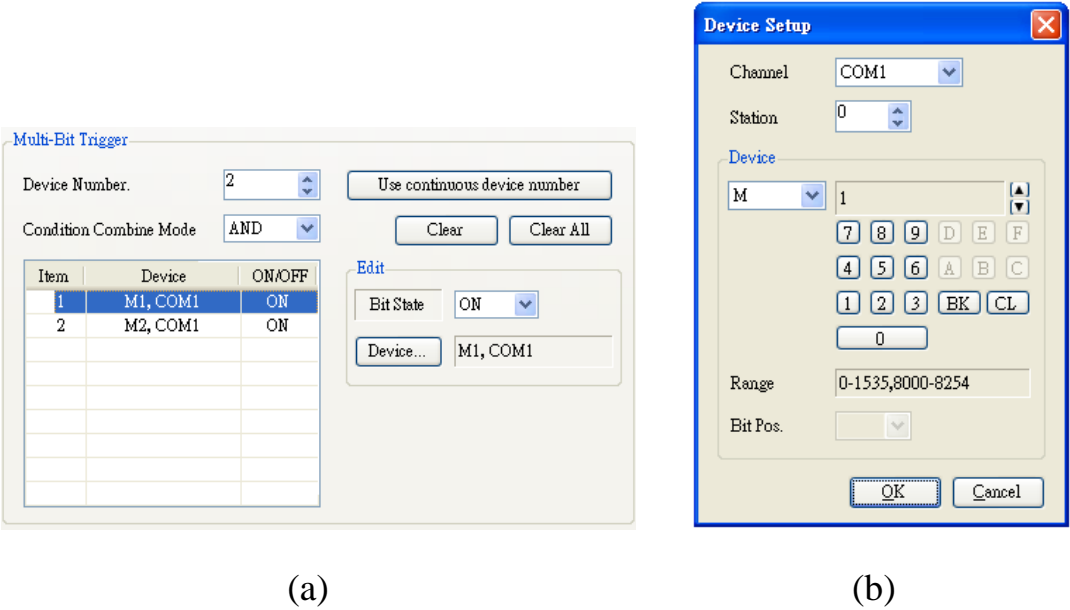



Fig. 3-6-5C-8 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

3.6.6. Message Display

Click **Unit** and then click **Message Display** , or directly click the shortcut , and in the editing window left click the mouse to set up a message object. See Figure 3-6-6 below.

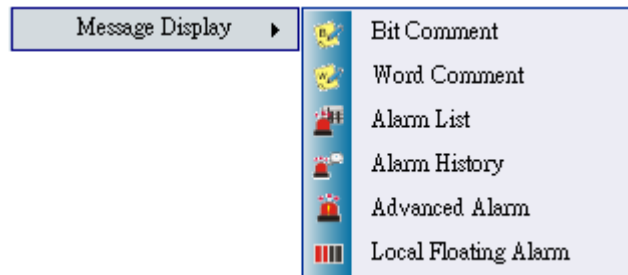



Fig. 3-6-6 Message Display Menu

a. Bit Comment

To set up a Bit comment, click **Unit** and click **Message Display** and then click **Bit Comment**, or directly click the shortcut , and in the editing window left click the mouse to set up a Bit comment. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture, display color, transparency and line pattern. See Figure 3-6-6A-1 below.

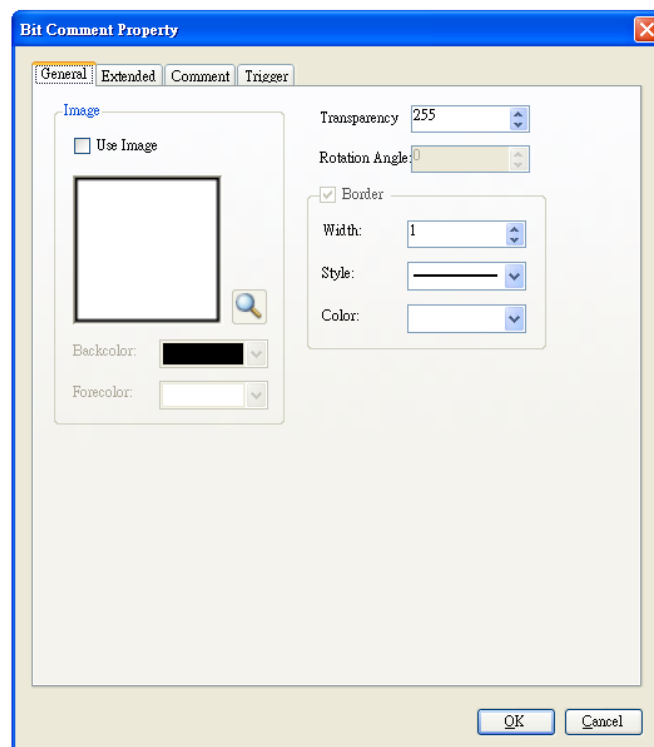



Fig. 3-6-6A-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property allows the user to change the security level, device, font size, and alignment. Figure 3-6-6A-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

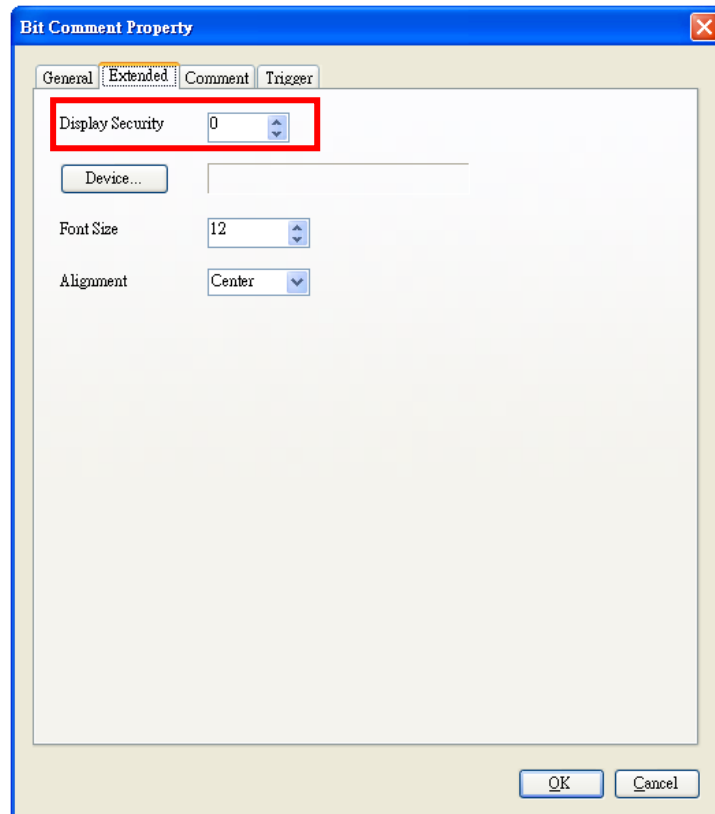
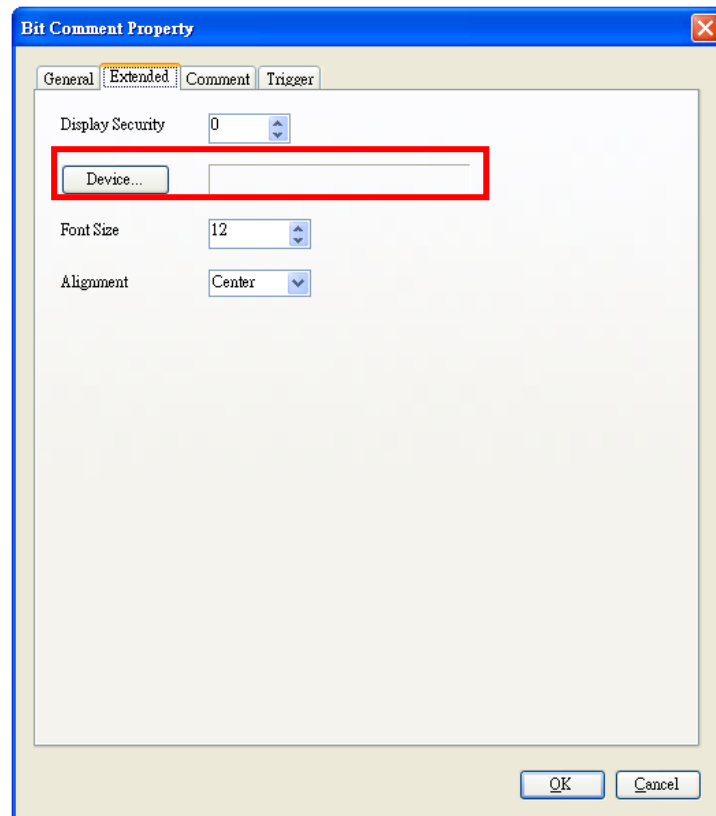


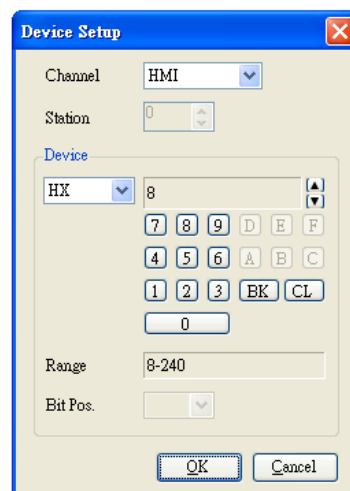
Fig. 3-6-6A-2 Security Levels

To set device, click  to open the device setup window.

Confirm to finish the device setting. See Figure 3-6-6A-3 below.



(a)



(b)

Fig. 3-6-6A-3 Device (a) Device Setting (b) Input Setting

The Comment properties allow the user to set the comment pattern, ON/OFF display, text color and font, and reverse font. See Figure 3-6-6A-4 below.

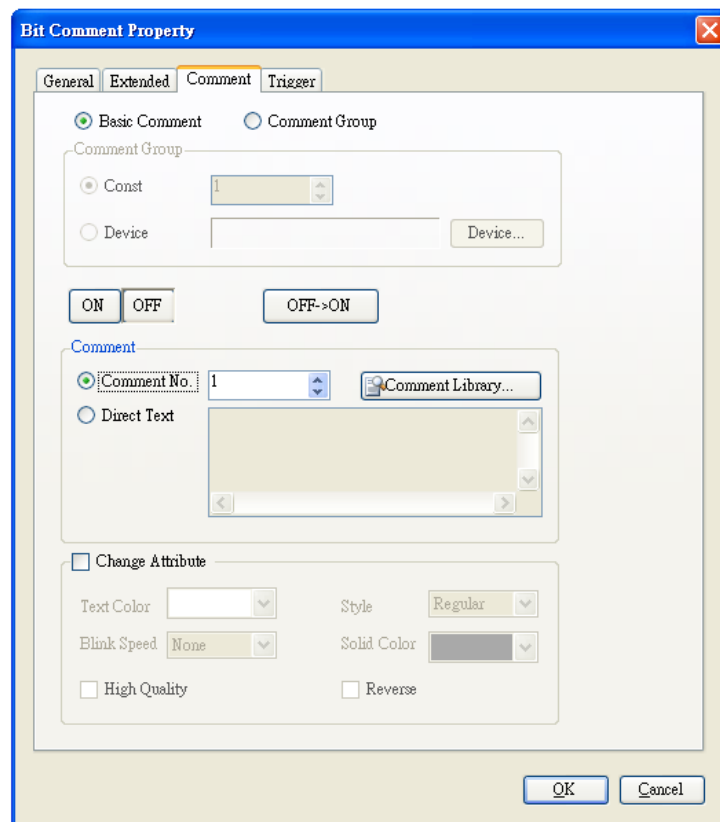

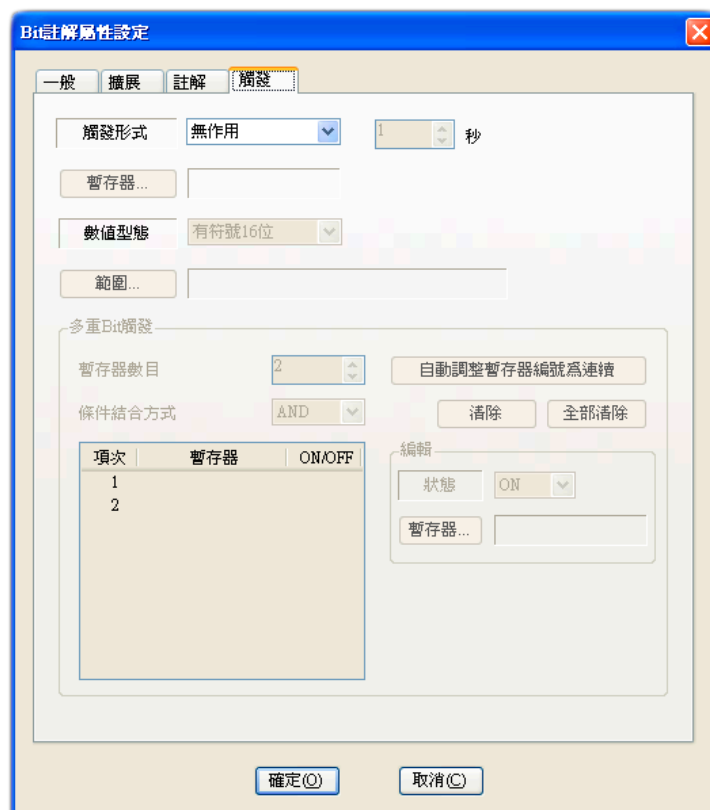


Fig. 3-6-6A-4 Comment Property

In the text editing, the comments in the comment library can be set as text to display. To do this, click  Comment Library... to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-6A-5 below.

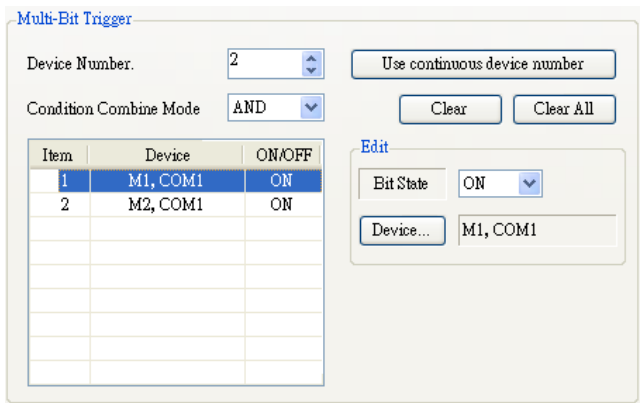


Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

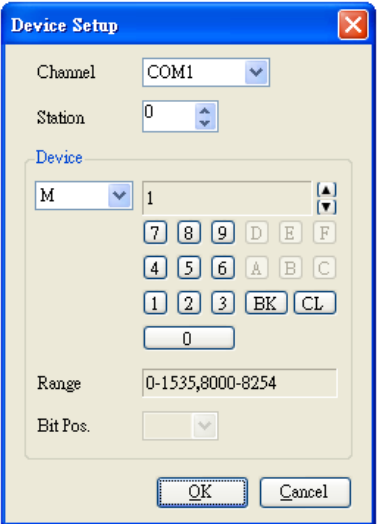
Fig. 3-6-6A-5 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-6A-6 below.



(a)







(b)

Fig. 3-6-6A-6 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

b. Word Comment

To set up a Word Comment, click  and click  and then click , or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture, display color, transparency and line pattern. See Figure 3-6-6B-1 below.

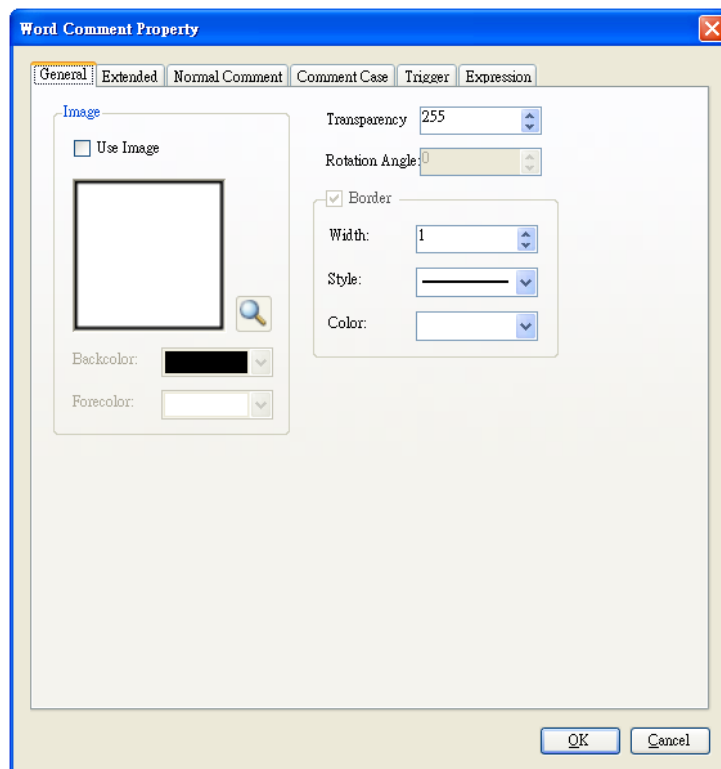




Fig. 3-6-6B-1 General Property Setting

Tick the option  Use Image to set the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property allows the user to set the security level, device, font size, and alignment. Figure 3-6-6B-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

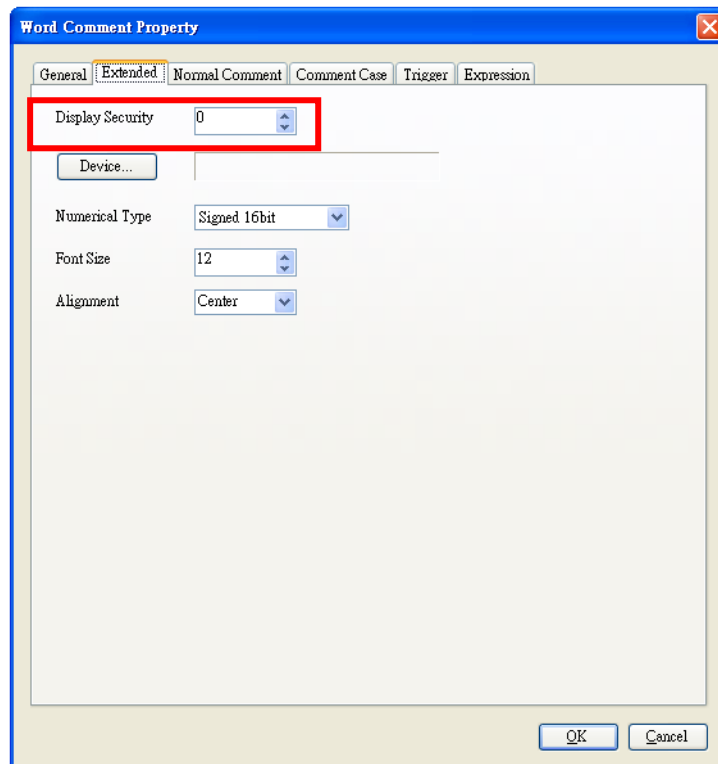
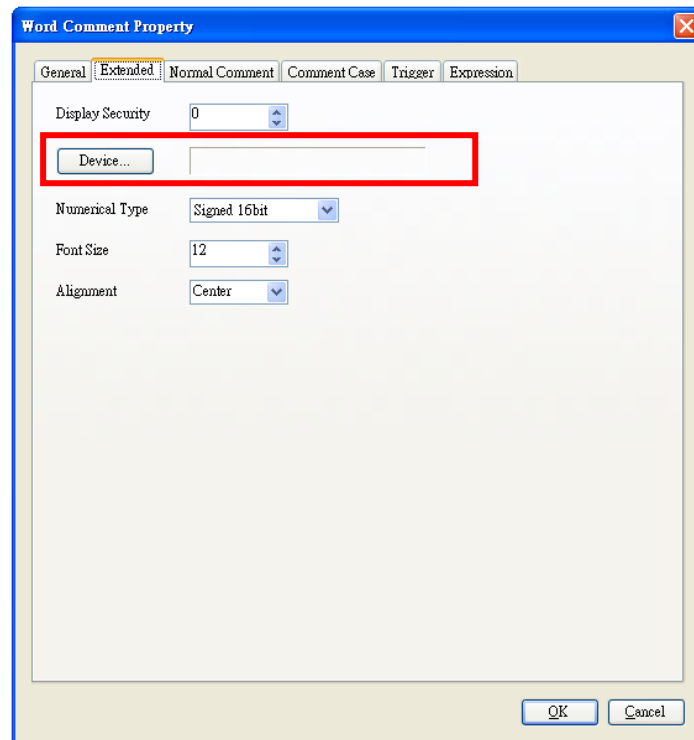
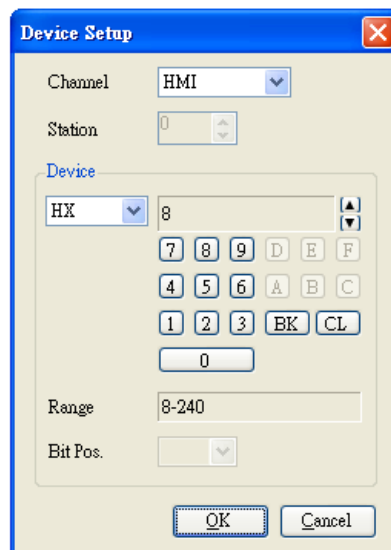


Fig. 3-6-6B-2 Security Levels

To set device, click **Device...** to open the device setup window.
Confirm to finish the device setting. See Figure 3-6-6B-3 below.



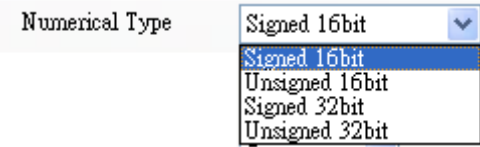
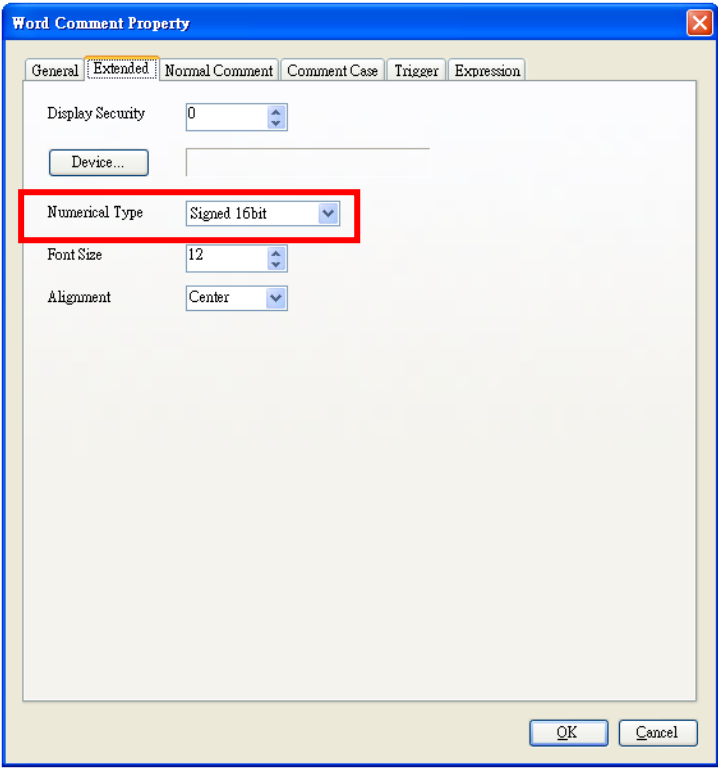
(a)



(b)

Fig. 3-6-6B-3 Device (a) Device Setting (b) Input Setting

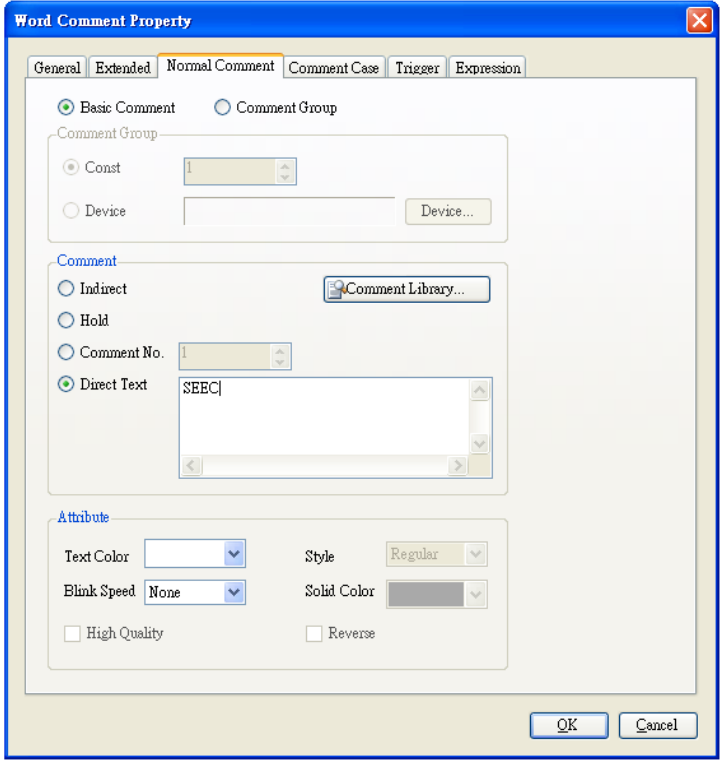
There are 4 numeric types available to the user. See Figure 3-6-6B-4 below.



Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295


Fig. 3-6-6B-4 Numeric Types and Value Ranges

The General Comment properties allow the user to set the comment library, comment type, text color and font, and reverse font. See Figure 3-6-6B-5 below.



Comment Type	Description
Indirect	The device value corresponds to the text in the comment number.
Hold	Maintain the comment text of the last state.
Comment Number	Can set basic comment and comment group.
Direct Text	Edit the text to be displayed

Fig. 3-6-6B-5 General Comment Propertys

In the text editing, the comments in the comment library can be set as text to display. To do this, click  Comment Library... to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Range Comment properties allow the user to add/delete/change the device, and set the comment type and text color. See Figure 3-6-6B-6 below.

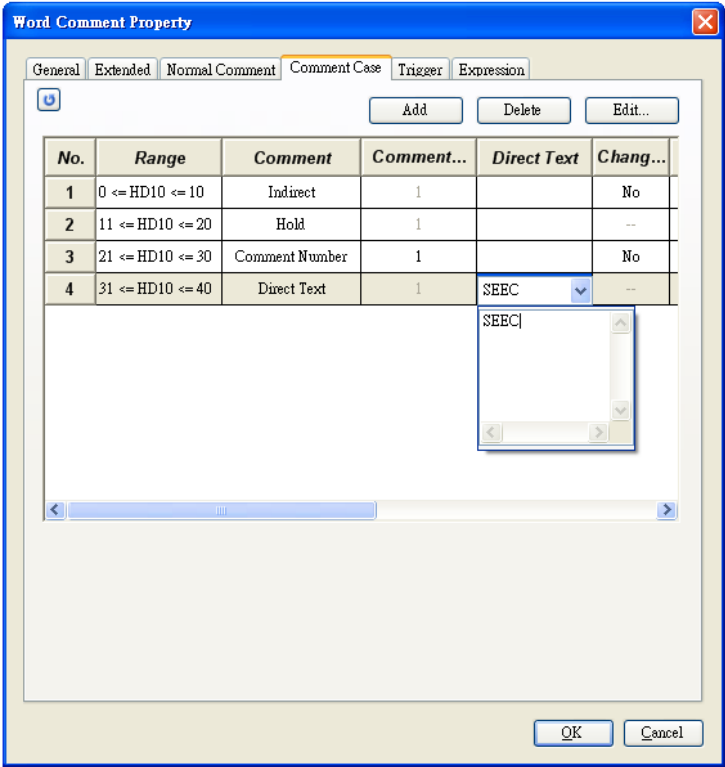



Fig. 3-6-6B-6 Range Comment Properties

To change the device settings of the Range comment, click  to open the comment setup window and set the device range, comment type and text properties. See Figure 3-6-6B-7 below.

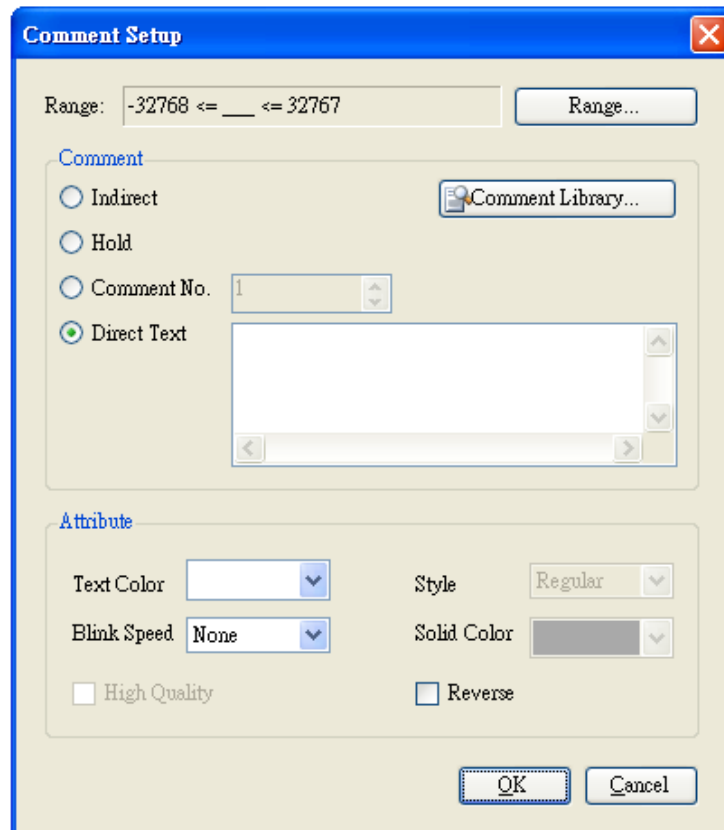
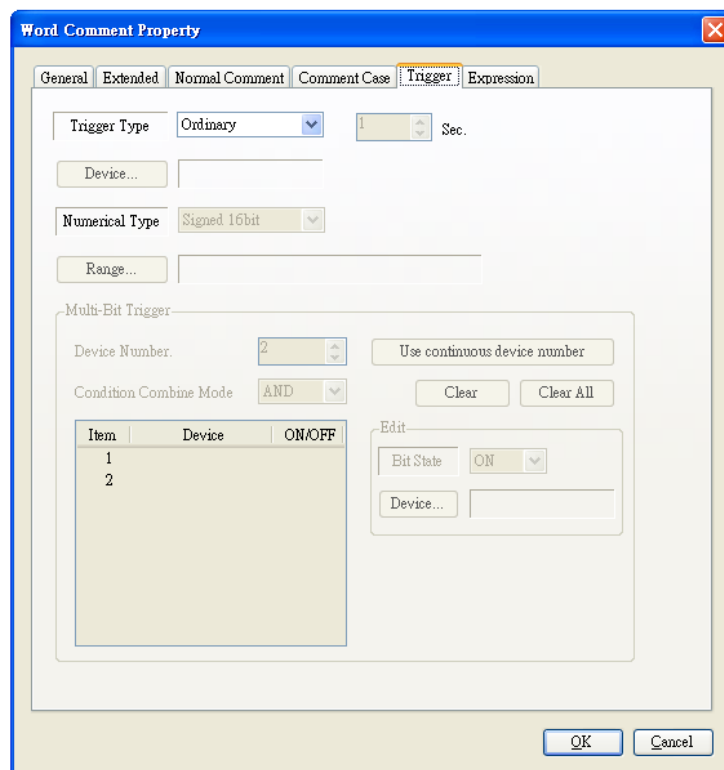


Fig. 3-6-6B-7 Comment Setting

The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-6B-8 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-6B-8 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click Device... to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-6B-9 below.

Multi-Bit Trigger

Device Number. Use continuous device number

Condition Combine Mode Clear Clear All

Item	Device	ON/OFF
1	M1, COM1	ON
2	M2, COM1	ON

Edit

Bit State

Device...

(a)

Device Setup

Channel

Station

Device

Range

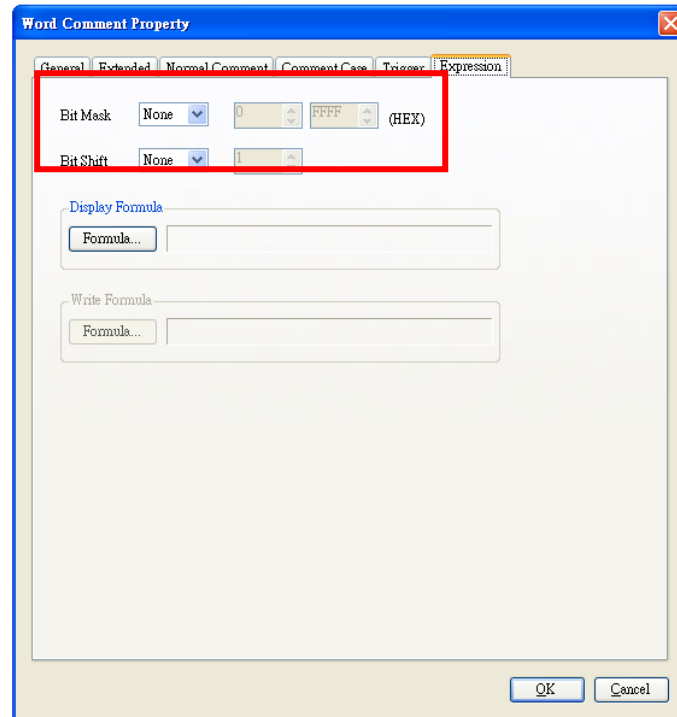
Bit Pos.

OK Cancel

(b)

Fig. 3-6-6B-9 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

The Numeric Operation properties allow the user to set bit mask, bit shift, display, and display formula. The system uses hexadecimal input. See Figure 3-6-6B-10 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-6B-10 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-6B-11 below.

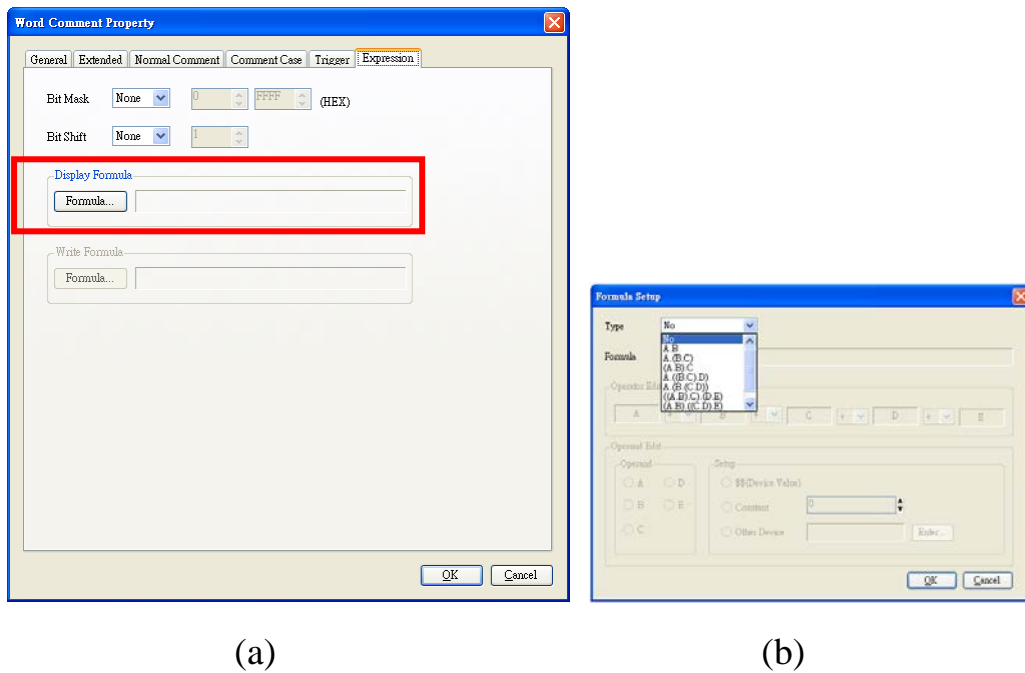



Fig. 3-6-6B-11 Displaying formula (a) Setting formula (b) formula Set



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

c. Alarm List

To set up an alarm list, click **Unit** and click **Message Display** and then click **Alarm List**, or directly click the shortcut , and in the editing window left click the mouse to set up an alarm list. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picture, display color, transparency and line pattern. See Figure 3-6-6C-1 below.

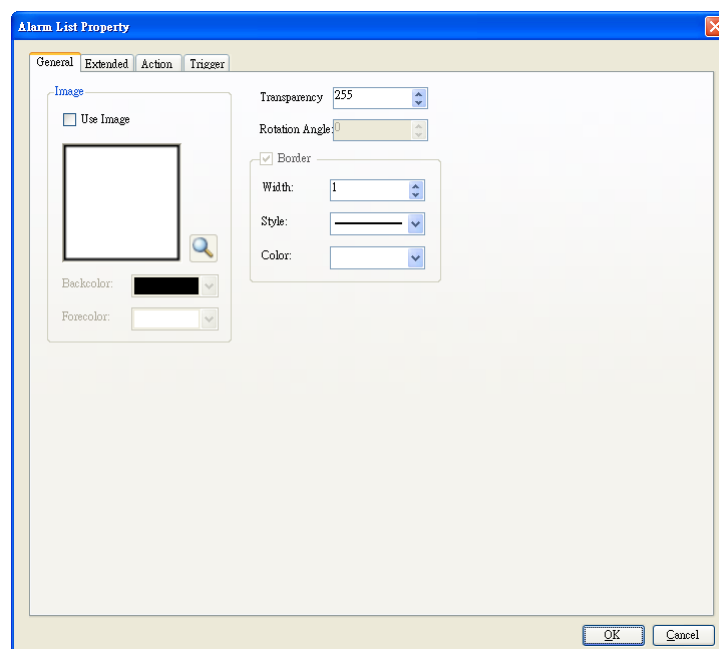

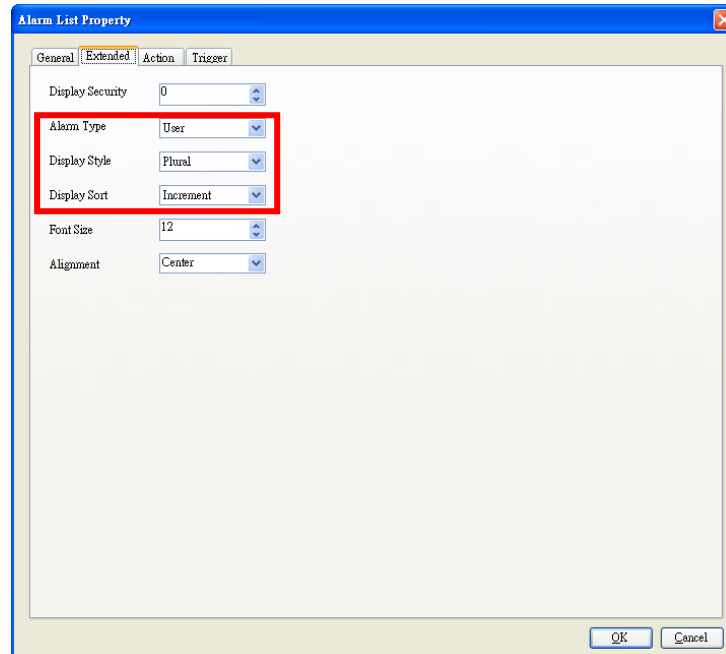


Fig. 3-6-6C-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and pick up a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to change the security level, alarm type, display pattern, sorting order, font size and alignment. See Figure3-6-6C-2 below.



	Description
Display Security	Set the security level of an object. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.
Alarm Type	User: user-defined alarm messages. System: system-related alarm messages.
Display Style	Plural: Multiple displays: the window displays multiple alarm transactions. Singular: the window displays a single alarm transaction.
Display Sort	Increment: the alarm numbers are sorted by ascending order with the smallest on the top. Decrement: the alarm numbers are sorted by descending order with the largest on the top. Oldest: the earliest issued alarm on the top, in time ascending order. Latest: the latest issued alarm on the top, in time descending order.

Fig. 3-6-6C-2 Extension Property Setting

The Action property setting allows the user to set the number of alarms displayed (up to 1024 transactions), device type, comment and detailed text contents. See Figure 3-6-6C-3 below.

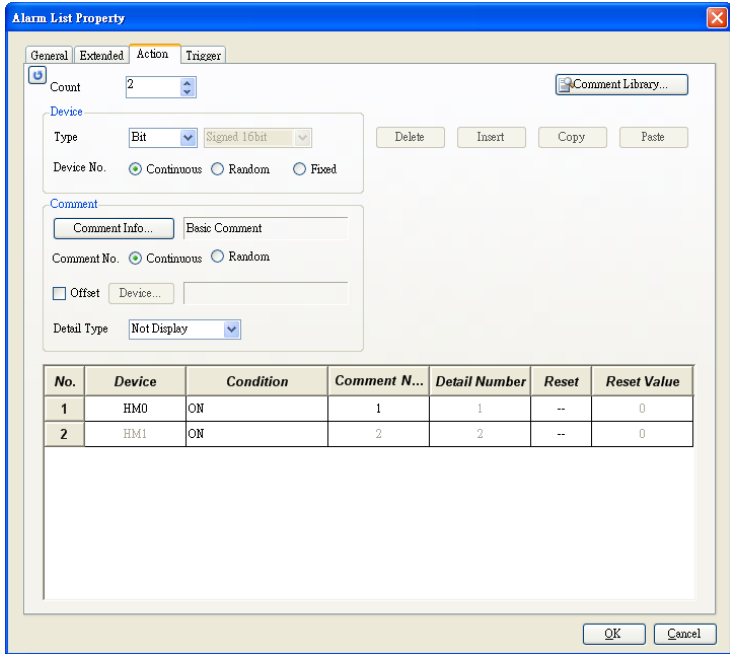



Fig. 3-6-6C-3 Action Property Setting

In the text editing, comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Bit action device types are ON/OFF displays. The user can set comment information, number, offset and Details type. See Figure 3-6-6C-4 below.

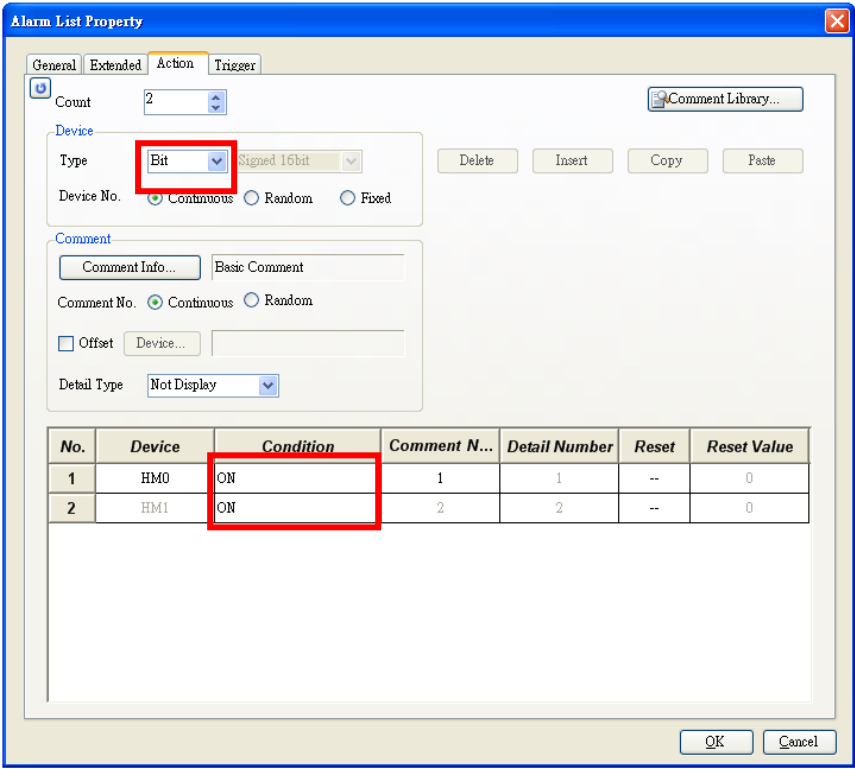



Fig. 3-6-6C-4 Bit Alarm List

Click  to open the comment information dialogue box and select basic or comment group. See Figure 3-6-6C-5 below.

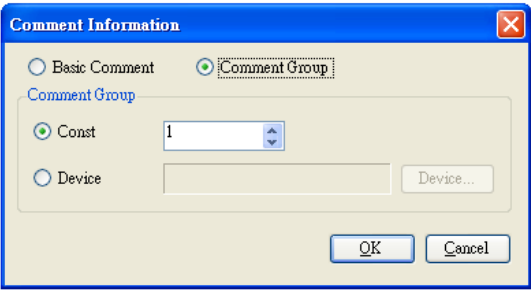


Fig. 3-6-6C-5 Comment Information Setting



Tick ☒ Offset and select device HD0 to offset the comment number.

The action is HD0 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as HD0 + original comment number. If the internal value of HD0 is 10, after the offset operation the HM0 internal comment number will become 11. See Figure 3-6-6C-6 below.

Comment

Comment Info...

Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ Offset

Device...

HD0

Detail Type

Not Display

No.	Device	Condition	Comment N..	Detail Number	Reset	Reset Value
1	HM0	ON	1	1	--	0
2	HM1	ON	2	2	--	0

Fig. 3-6-6C-6 Offsetting Device

Use the Details type to describe the comments in details. The Details types are comment window, window screen, and basic screen. See Figure 3-6-6C-7 below.

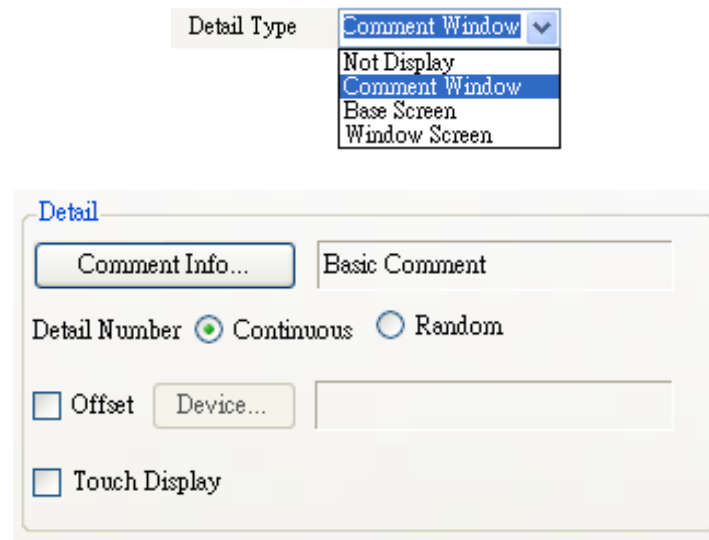



Fig. 3-6-6C-7 Details Types

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6C-8 below.

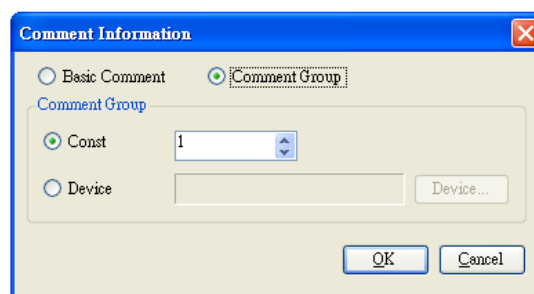


Fig. 3-6-6C-8 Comment Information Setting



Tick ☒ Offset and select device HD0 to offset the Details number. The action is HD0 adds its internal value up to the original Details number, and then the operational equation calculates the new Details number as HD0 + original Details number. If the internal value of HD0 is 10, after the offset operation the HM0 internal Details number will become 11. See Figure 3-6-6C-9 below.

Detail

Comment Info... Comment Group No.1

Detail Number ☒ Continuous ☐ Random

☒ Offset HD0

☐ Touch Display

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HM0	ON	1	1	--	0
2	HM1	ON	2	2	--	0

Fig. 3-6-6C-9 Offsetting Device

To use the touch mechanism to pop up the Details window, tick ☒ Touch Display . If you don't want to tick the option but still need to have the Details window pop up, you need to set up the switch or multi-action switch function. To do this, click to open the function selection dialogue box and set up the corresponding functional switch. See Figure 3-6-6C-11 below.

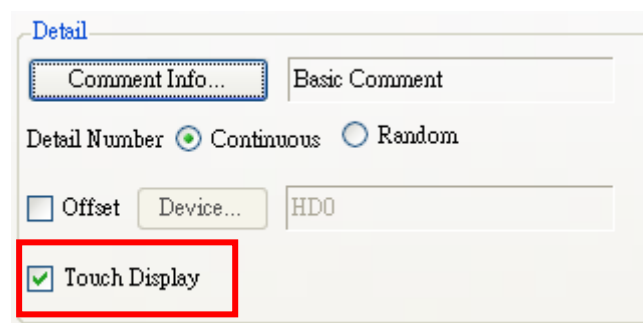
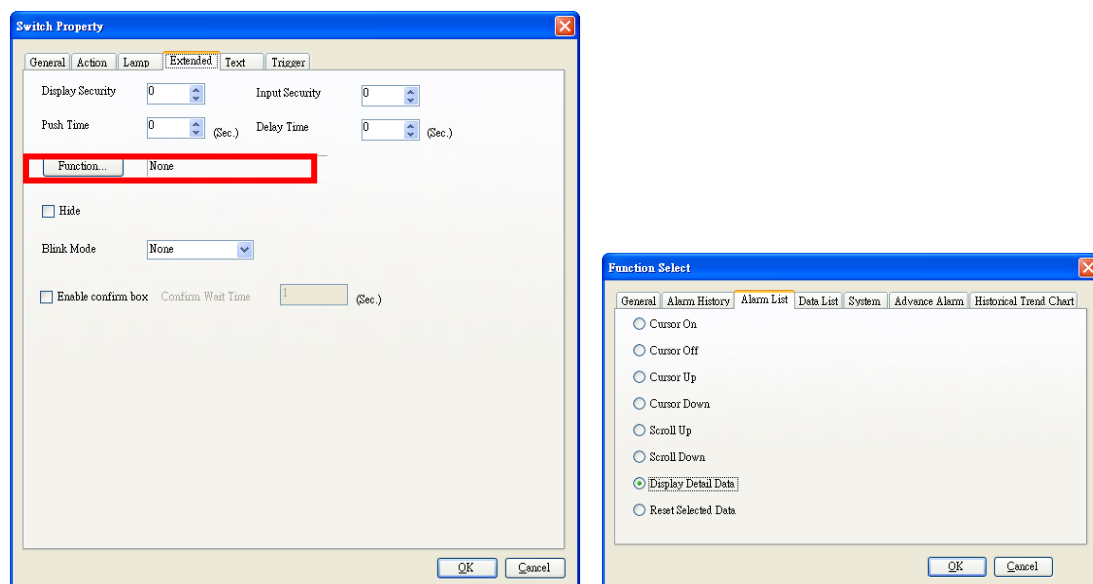


Fig. 3-6-6C-10 Touch Display Mechanism



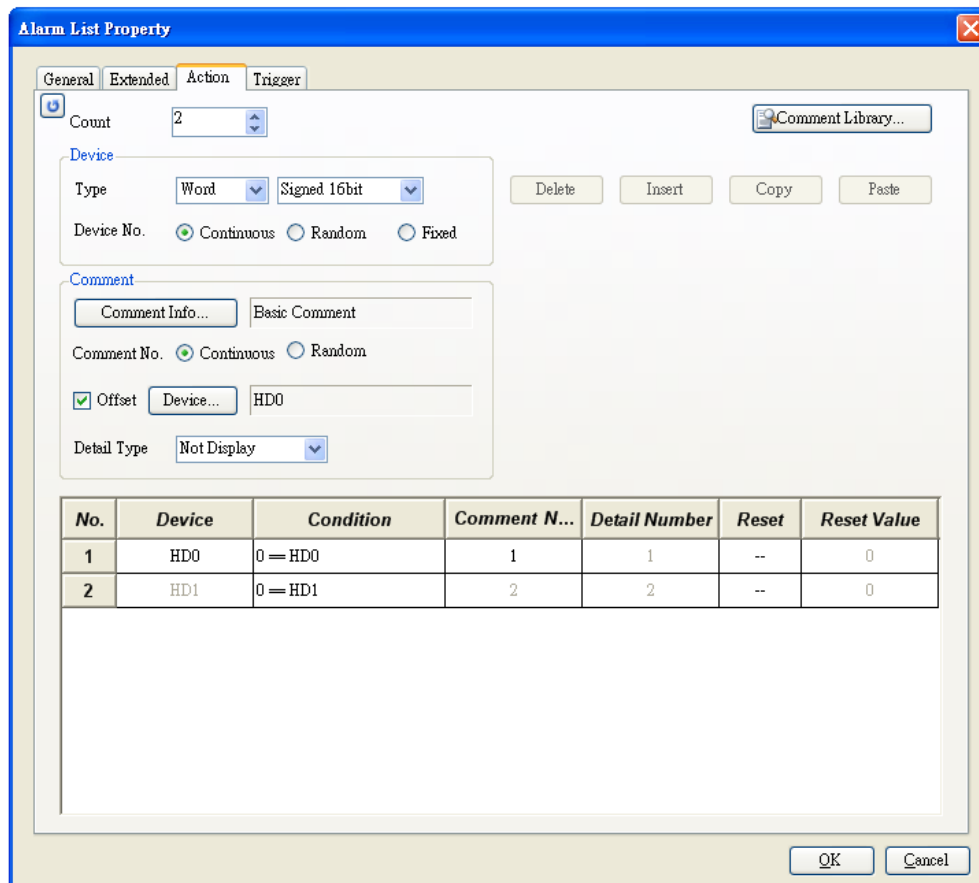
(a)

(b)

Fig. 3-6-6C-11 Switch Object Set to Touch Display (a) Functional Selection (b)


Alarm Options

The Word action device has 7 numeric types available. The user can set the comment information, number, offset and the Details type. See Figure 3-6-6C-12 below.



Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-6C-12 Word Alarm List

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6C-13 below.

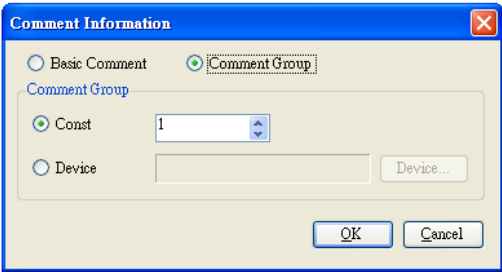




Fig. 3-6-6C-13 Comment Information Setting




Tick  Offset and select device HD10 to offset the comment number. The action is HD10 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as $HD10 + \text{original comment number}$. If the internal value of HD10 is 10, after the offset operation the HD0 internal comment number will become 11. See Figure 3-6-6C-14 below.

Comment

 Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ Offset  HD10

Detail Type

No.	Device	Condition	Comment N..	Detail Number	Reset	Reset Value
1	HD0	$0 = HD0$	1	1	--	0
2	HD1	$0 = HD1$	2	2	--	0

Fig. 3-6-6C-14 Offsetting Device

Use the Details type to describe the comments in details. The Details types are comment window, window screen, and basic screen. See Figure 3-6-6C-15 below.

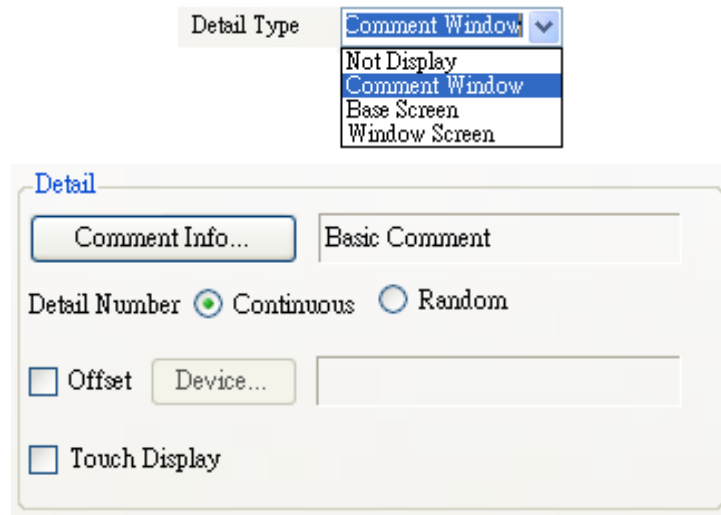
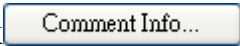


Fig. 3-6-6C-15 Details Types

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6C-16 below.

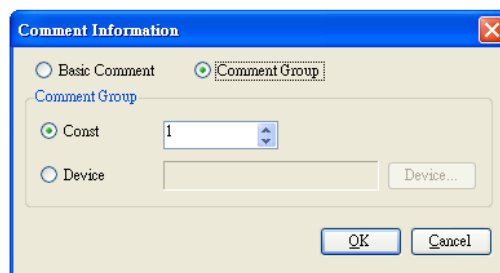


Fig. 3-6-6C-16 Comment Information Setting



Tick ☒ Offset and select device HD10 to offset the Details number.

The action is HD10 adds its internal value up to the original Details number, and then the operational equation calculates the new Details number as HD10 + original Details number. If the internal value of HD10 is 10, after the offset operation the HD0 internal Details number will become 11. See Figure 3-6-6C-17 below.

Detail

Comment Info... Basic Comment

Detail Number ☒ Continuous ☐ Random

☒ Offset HD10

☐ Touch Display

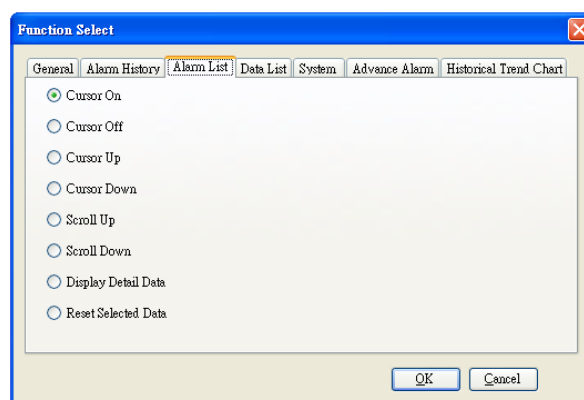
No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HD0	0 = HD0	1	1	--	0
2	HD1	0 = HD1	2	2	--	0

Fig. 3-6-6C-17 Offsetting Device

To use the touch mechanism to pop up the Details window, tick ☒ Touch Display . If you don't want to tick the option but still need to have the Details window pop up, you need to set up the switch or multi-action switch function. To do this, click to open the function selection dialogue box and set up the corresponding functional switch. See Figure 3-6-6C-18 below.



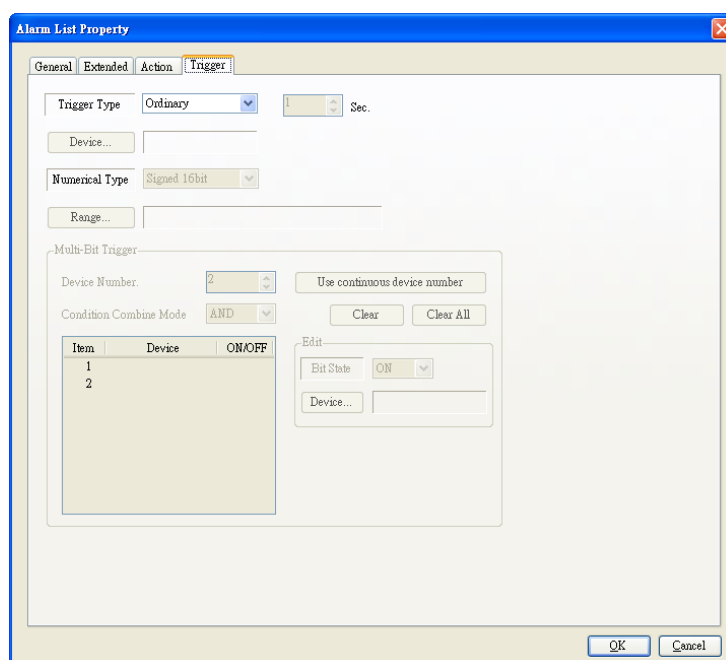
(a)



(b)

Fig. 3-6-6C-18 Setting Touch Display (a) Function Selection (b) Alarm Options

The Trigger property setting allows the use to set the conditions of the trigger pattern. See Figure 3-6-6C-19 below.

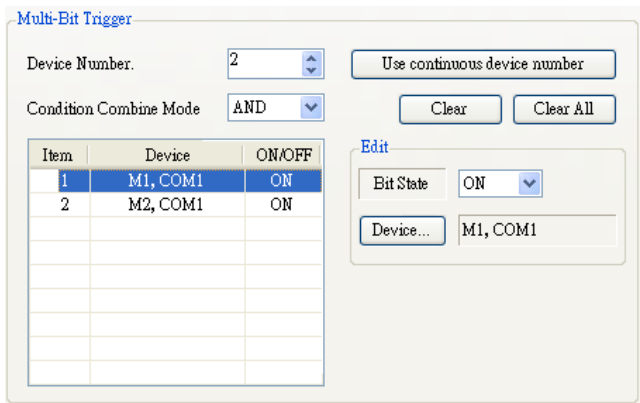


Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

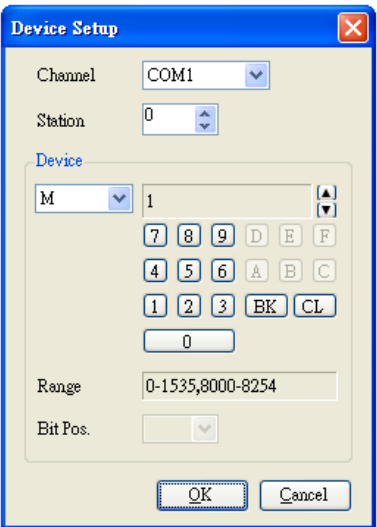
Fig. 3-6-6C-19 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-6C-20 below.



(a)




(b)

Fig. 3-6-6C-20 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

d. Alarm History

To set up an alarm history list, click **Unit** and click **Message Display** and then click **Alarm History**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture, display color, transparency and the line pattern. See Figure 3-6-6D-1 below.

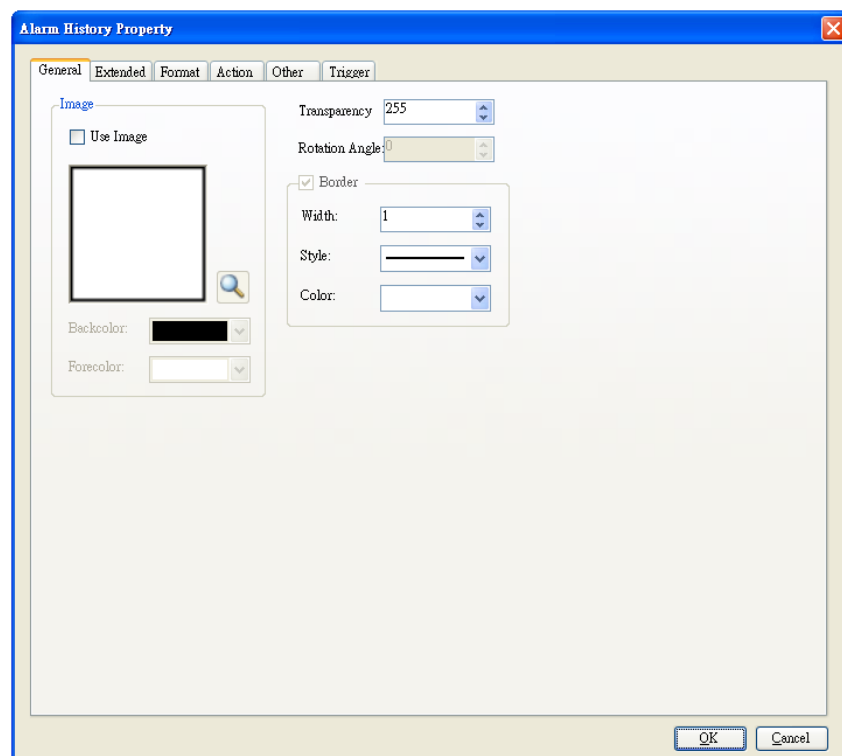



Fig. 3-6-6D-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to change the security level, alarm type, display pattern, sorting order font size, and alignment. Figure 3-6-6D-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

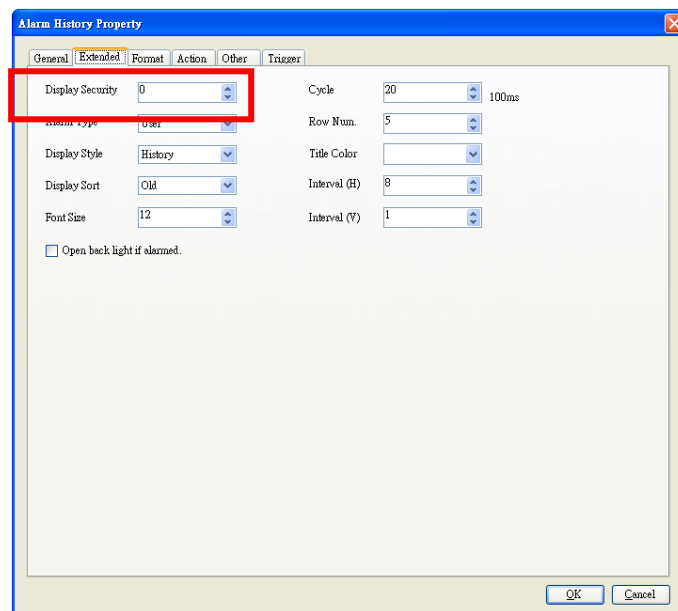
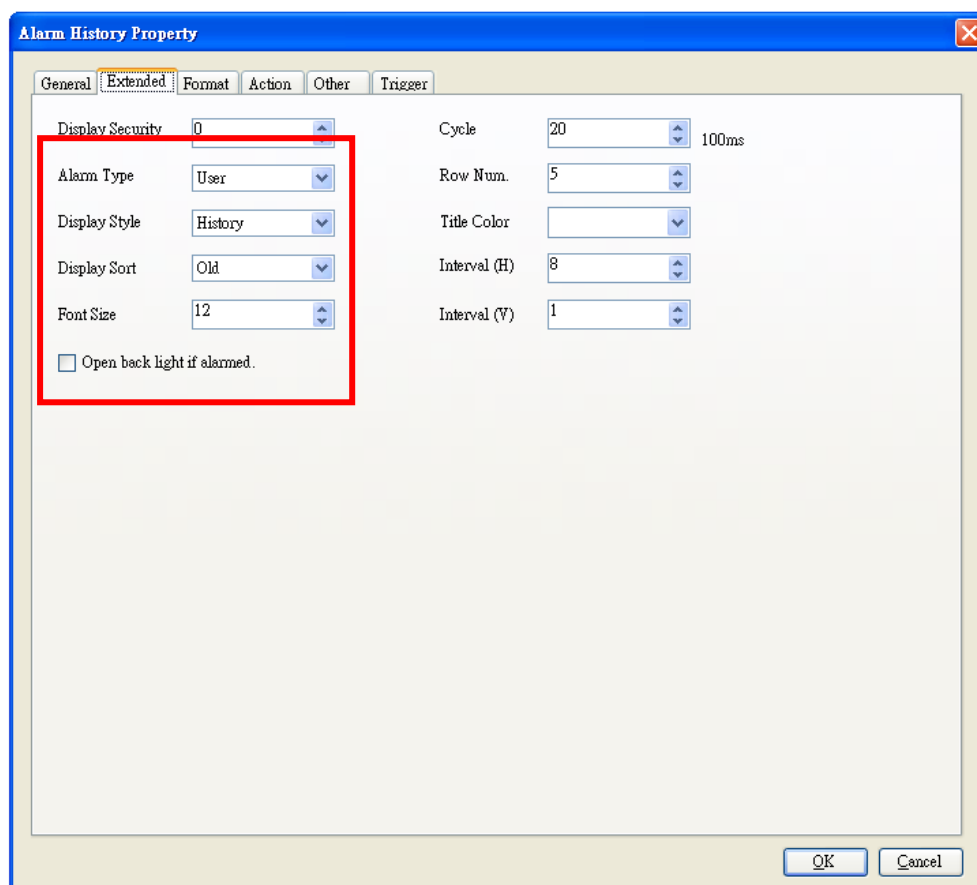


Fig. 3-6-6D-2 Security Levels

For the alarm display, the user can set the alarm type, display style, display sort and open back light if alarmed. See Figure 3-6-6D-3 below.



	Description
Alarm Type	User: user-defined alarm messages. System: system-related alarm messages.
Display Style	History: every single alarm transaction is recoded. Accumulation: repeated alarms are accumulated in the number of occurrences.
Display Sort	Old: the earliest issued alarm on the top, in time ascending order. New: the latest issued alarm on the top, in time descending order.
Open back light if alarmed	When the HMI is in the sleep state, an alarm will automatically switch on the HMI's backlight.

Fig. 3-6-6D-3 Alarm Display Pattern

The Format properties allow the user to set the display title and content, and the formats of date, time and text. See Figure 3-6-6D-4 below.

Alarm History Property

General Extended **Format** Action Other Trigger

Display Type

☒ Event ☐ Restore ☐ Check ☐ Total Time ☐ Event Times

	Event	Message	Restore	Check	Total Time	Event Times
Title	OCCURRED	MESSAGE	REST.	CHECK	CUMULATE	COUNT
Width	18	10	5	5		
Color						
Content	Date, Time		Time	Time		
Date	yy/mm/dd		yy/mm/dd	yy/mm/dd		
Time	hh:mm:ss		hh:mm	hh:mm		
Text						

OK Cancel

Fig. 3-6-6D-4 Format Properties

The Action property setting allows the user to set the number of alarms (up to 1024), device type, comment, and the Details content. See Figure 3-6-6D-5 below.

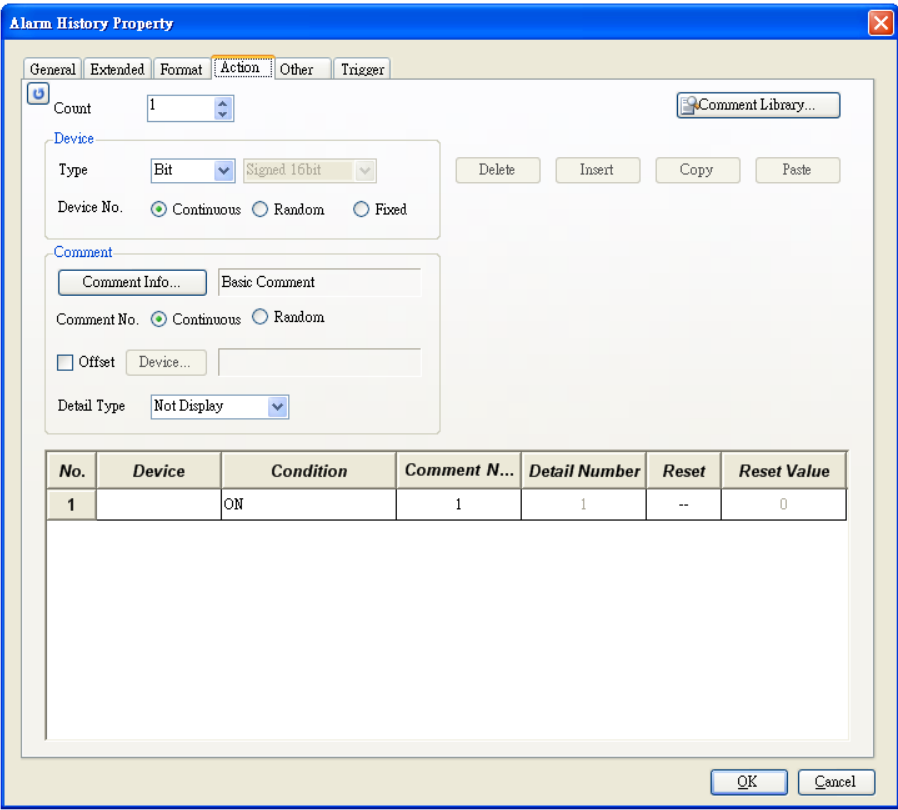



Fig. 3-6-6D-5 Action Property Setting

In the text editing, the comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Bit action device types are ON/OFF displays. The user can set the comment information, number, offset and the Details type. See Figure 3-6-6D-6 below.

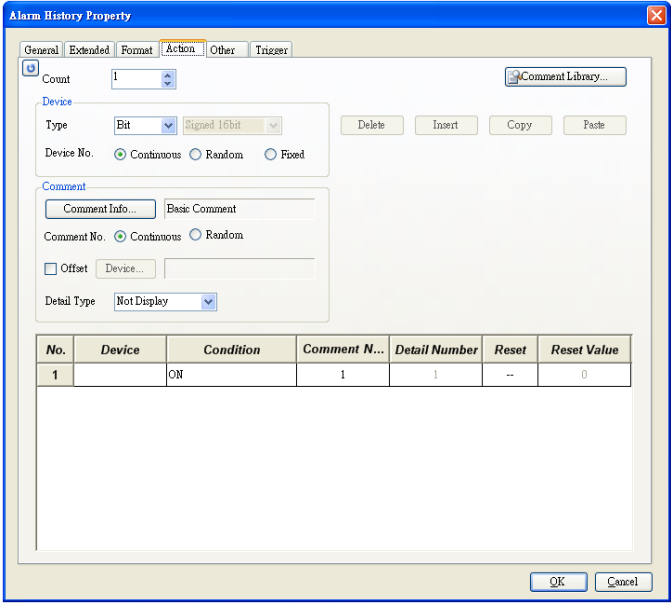



Fig. 3-6-6D-6 Bit Alarm List

Click  to open the comment information dialogue box to select basic comment or comment group. See Figure 3-6-6D-7 below.

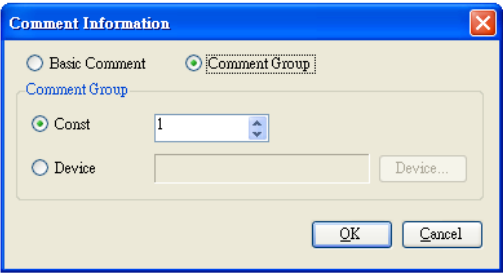


Fig. 3-6-6D-7 Comment Information Setting



Tick ☒ Offset and select device HD0 to offset the comment number.

The action is HD0 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as HD0 + original comment number. If the internal value of HD0 is 10, after the offset operation the HM0 internal comment number will become 11. See Figure 3-6-6D-8 below.

Comment

Comment Info...

Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ Offset

Device...

HD0

Detail Type

Not Display

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HM0	ON	1	1	--	0
2	HM1	ON	2	2	--	0

Fig. 3-6-6D-8 Offsetting Device

Use the Details type to describe the comments in details. The Details types are comment window, window screen, and basic screen. See Figure 3-6-6D-9 below.

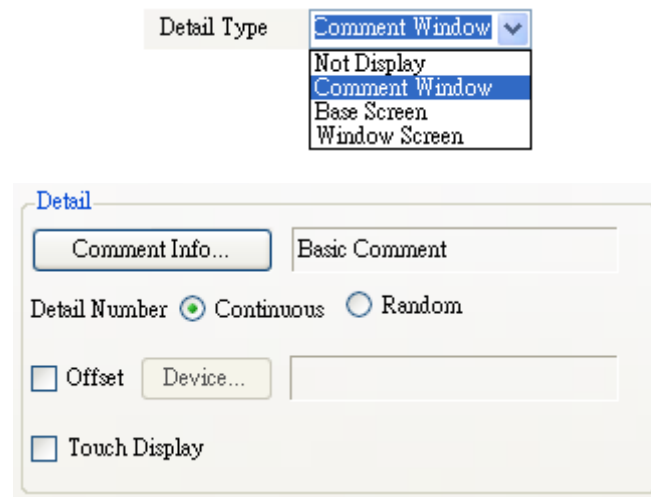
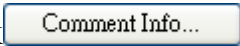


Fig. 3-6-6D-9 Details Types

Click  to open comment information dialogue box and select basic comment or comment group. See Figure 3-6-6D-10 below.

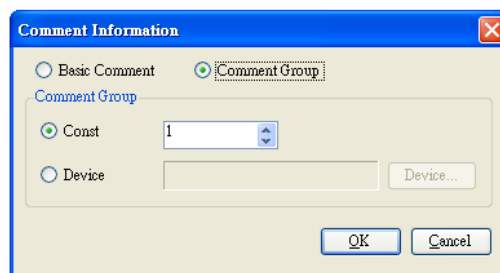


Fig. 3-6-6D-10 Comment Information Setting



Tick ☒ Offset and select device HD0 to offset the Details number. The action is HD0 adds its internal value up to the original Details number, and then the operational equation calculates the new Details number as HD0 + original Details number. If the internal value of HD0 is 10, after the offset operation the HM0 internal Details number will become 11. See Figure 3-6-6D-11 below.

Detail

Comment Info... Basic Comment

Detail Number ☒ Continuous ☐ Random

☒ Offset Device... HD0

☐ Touch Display

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HM0	ON	1	1	--	0
2	HM1	ON	2	2	--	0

Fig. 3-6-6D-11 Offsetting Device

To use the touch mechanism to pop up the Details window, tick ☒ Touch Display . If you don't want to tick the option but still need to have the Details window pop up, you need to set up the switch or multi-action switch function. To do this, click to open the function selection dialogue box and set up the corresponding functional switch. See Figure 3-6-6D-12 below.

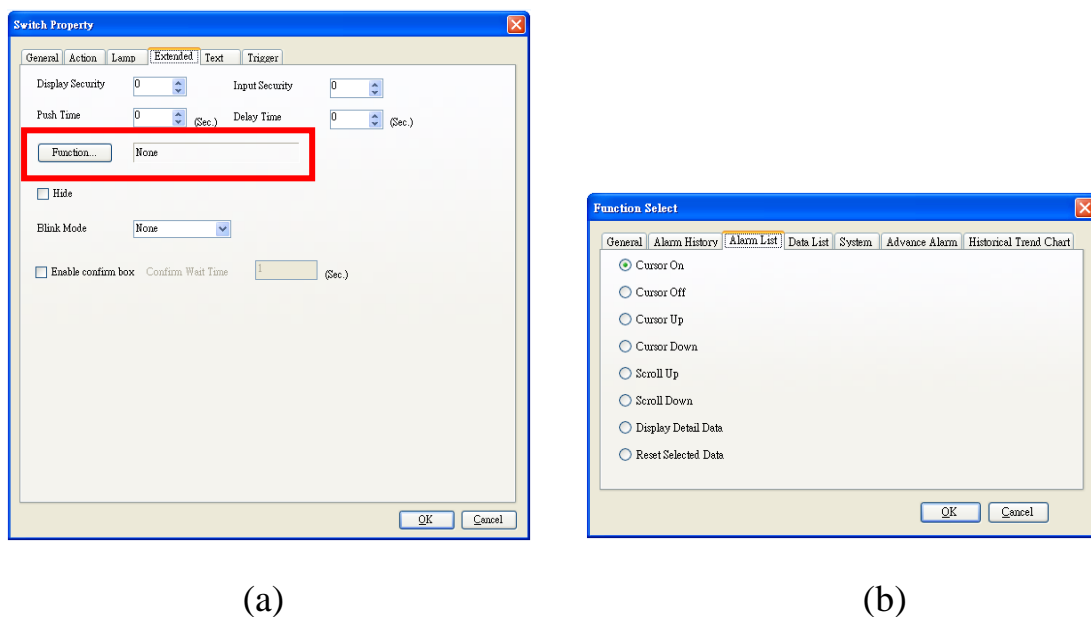
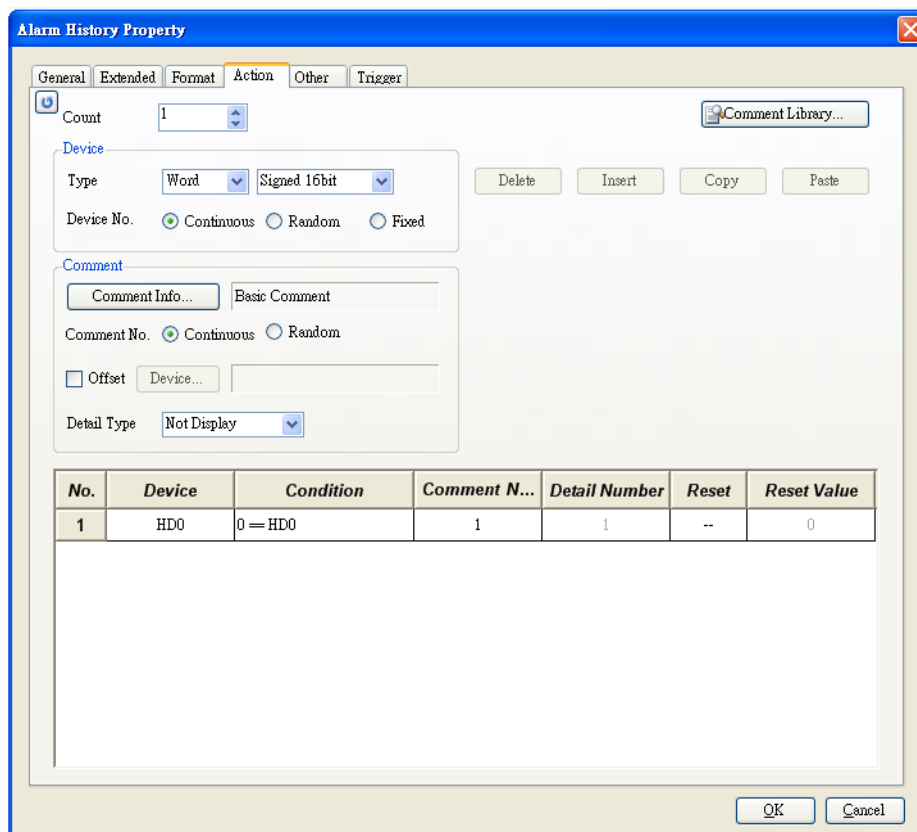


Fig. 3-6-6D-12 Setting Touch Display (a) Function Selection (b) Alarm Options




- If the triggering of alarm history is set, only when the trigger device has an action will the functional switch work. For the Trigger setting, please see Figure 3-6-6D-21.

The Word action device has 7 numeric types. The user can set comment information, number, offset and Details type. See Figure 3-6-6D-13 below.



Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-6D-13 Word Alarm List

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6D-14 Below.

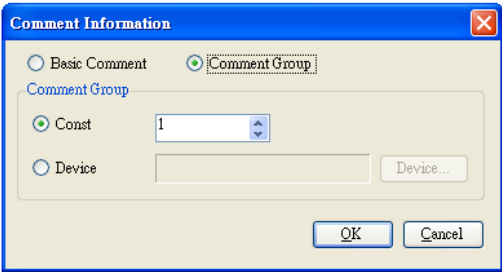




Fig. 3-6-6D-14 Comment Information Setting




Tick  **Offset** and select device HD10 to offset the comment number. The action is HD10 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as HD10 + original comment number. If the internal value of HD10 is 10, after the offset operation the HD0 internal comment number will become 11. See Figure 3-6-6D-15 below.

Comment

 Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ **Offset**  HD10

Detail Type Not Display

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HD0	0 = HD0	1	1	--	0
2	HD1	0 = HD1	2	2	--	0

Fig. 3-6-6D-15 Offsetting Device

Use the Details type to describe the comments in details. The Details types are comment window, window screen, and basic screen. See Figure 3-6-6D-16 below.

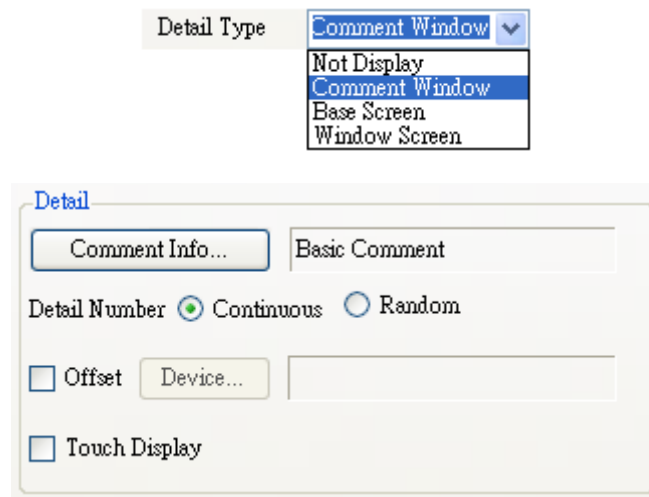
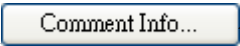


Fig. 3-6-6D-16 Details Types

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6D-17 below.

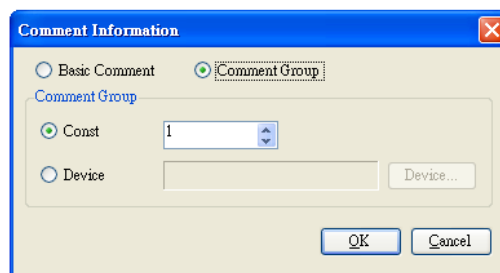


Fig. 3-6-6D-17 Comment Information Setting



Tick ☒ Offset and select device HD10 to offset the Details number.

The action is HD10 adds its internal value up to the original Details number, and then the operational equation calculates the new Details number as HD10 + original Details number. If the internal value of HD10 is 10, after the offset operation the HD0 internal Details number will become 11. See Figure 3-6-6D-18 below.

Detail

Comment Info... Basic Comment

Detail Number ☒ Continuous ☐ Random

☒ Offset Device... HD10

☐ Touch Display

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HD0	0 = HD0	1	1	--	0
2	HD1	0 = HD1	2	2	--	0

Fig. 3-6-6D-18 Offsetting Device

To use the touch mechanism to pop up the Details window, tick ☒ Touch Display . If you don't want to tick the option but still need to have the Details window pop up, you need to set up the switch or multi-action switch function. To do this, click to open the function selection dialogue box and set up the corresponding functional switch. See Figure 3-6-6D-19 below.

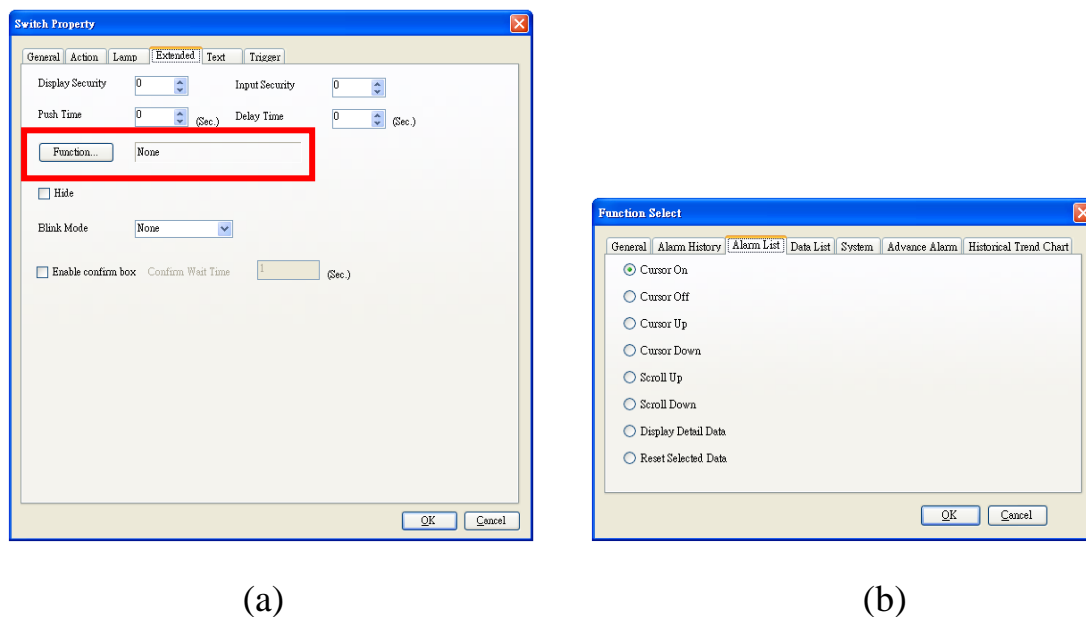
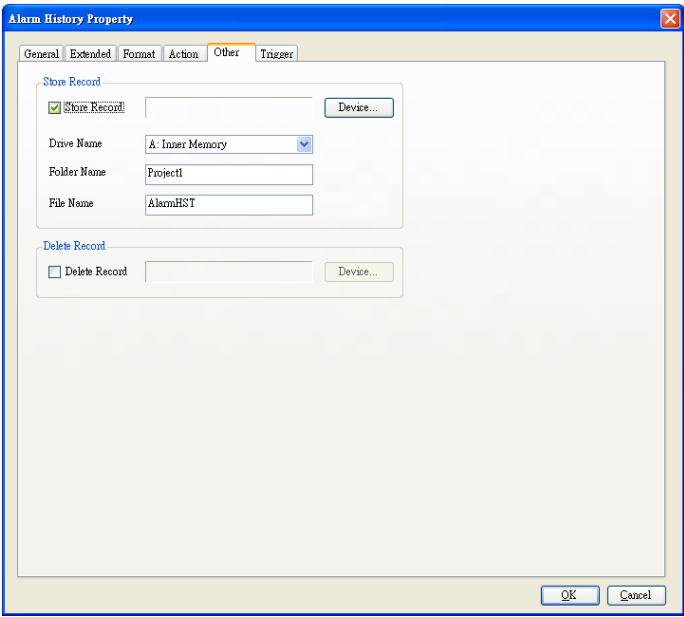


Fig. 3-6-6D-19 Setting Touch Display (a) Function Selection (b) Alarm Options



- If the triggering of alarm history is set, only when the trigger device has an action will the functional switch work. For the Trigger setting, please see Figure 3-6-6D-21.

The Other properties allow the user to set storage device, device, folder, and file name. See Figure 3-6-6D-20 below.



Device Name	Description
Inner Memory	HMI internal memory
Standard SD Card	External SD memory card
USB Disk	External USB disk

Fig. 3-6-6D-20 Other Properties

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-6D-21 below.

Alarm History Property

General Extended Format Action Other **Trigger**

Trigger Type: Ordinary 1 Sec.

Device...

Numerical Type: Signed 16bit

Range...

Multi-Bit Trigger

Device Number: 2 Use continuous device number

Condition Combine Mode: AND Clear Clear All

Item	Device	ON/OFF
1		
2		

Edit

Bit State: ON Device...

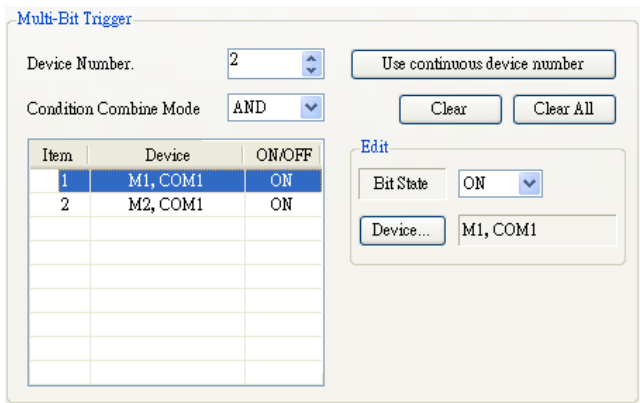
OK Cancel

Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-6D-21 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-6D-22 below.



(a)





(b)

Fig. 3-6-6D-22 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

e. Advanced Alarm

To set up an advance alarm, click **Unit** and click **Message Display** and then click  **Advanced Alarm**, or directly click the shortcut , and in the editing window left click the mouse to set up a multi-state lamp. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture, display color, transparency and line pattern. See Figure 3-6-6E-1 below.

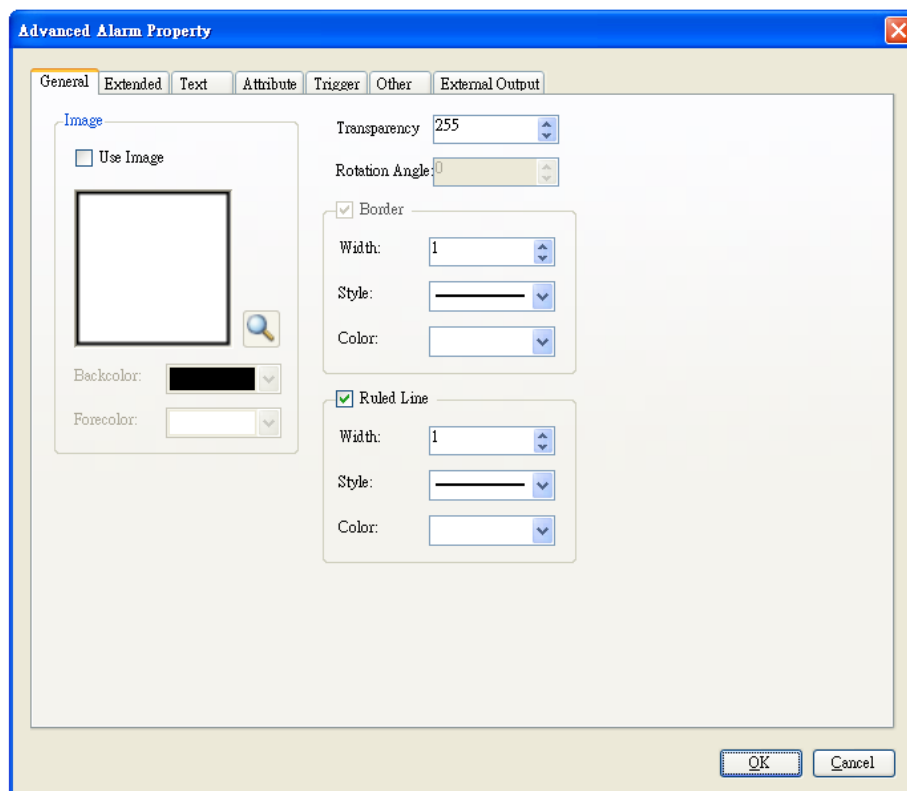



Fig. 3-6-6E-1 General Property Setting

To change the picture, click  to open the picture library. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, alarm type, target status, initial hierarchy, display type, number of rows, font size, interval, touch mode, and title format. Figure 3-6-6E-2 below demonstrates the setting of the object's security level. Both the security level (display) and security level (input) are ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

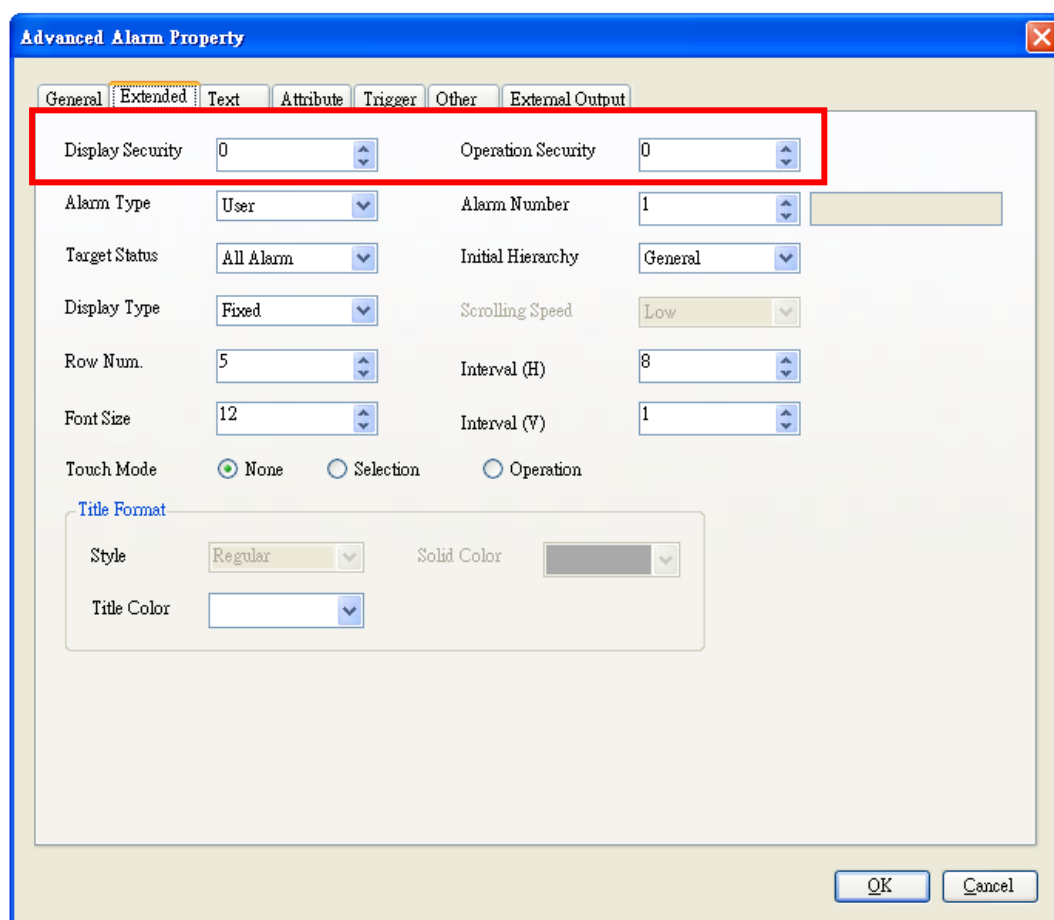


Fig. 3-6-6E-2 Security Levels

The Text properties allow the user to set the alarm format, text color switching, status, level and group. See Figure 3-6-6E-3 below.

The image shows a software window titled "Advanced Alarm Property" with a blue title bar and a close button. It contains several tabs: "General", "Extended", "Text" (which is selected and highlighted in orange), "Attribute", "Trigger", "Other", and "External Output".

Under the "Text" tab, there are three main sections:

- Alarm Format:** Contains a "Style" dropdown menu set to "Regular" and a "Solid Color" color selection box.
- Text Color Switching:** Contains a "Switching" dropdown menu set to "Fixed". Below it, there is a "Fixed" dropdown menu.
- Status:** Contains three dropdown menus labeled "Occurred", "Restored", and "Checked".

To the right of the "Text Color Switching" section, there are two columns of controls:

- Level:** A vertical list of six items numbered 1 to 6, each with a dropdown menu and a small up/down arrow.
- Group:** A vertical list of six items numbered 1 to 6, each with a dropdown menu and a small up/down arrow.

At the bottom right of the dialog box are "OK" and "Cancel" buttons.

Fig. 3-6-6E-3 Text Attributes

The Text Color Switch has 4 types, which are Fixed, Status, Level and Group. See Figure 3-6-6E-4 below, which shows the comment color is set as the color defined in the comment library.

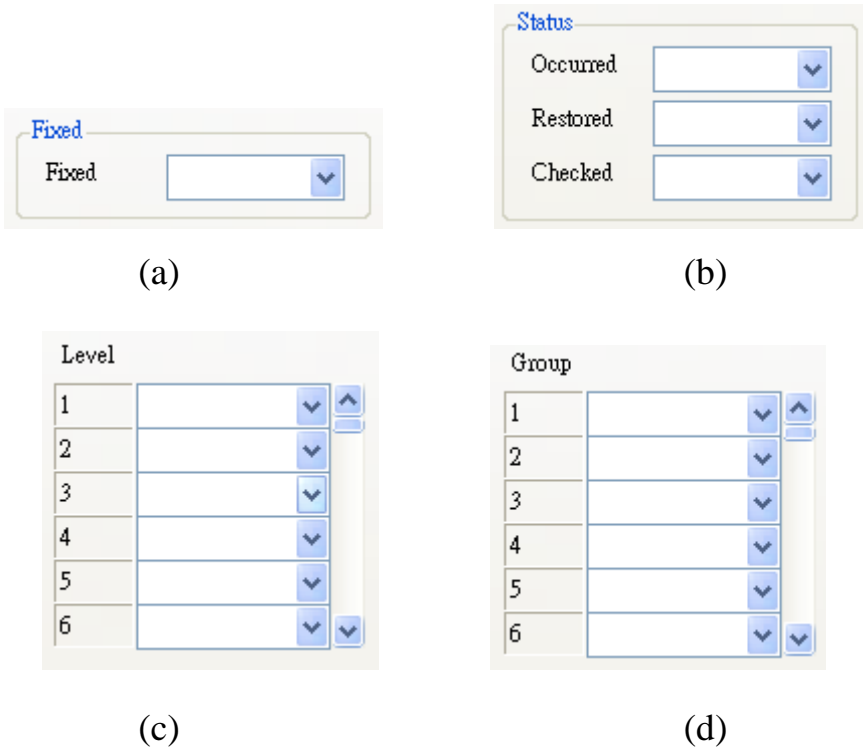


Fig. 3-6-6E-4 Text Color Switch (a) Fixed (b) Status (c) Level (d) Group

The Property setting allows the user to set title, number of display attribute, format and sorting order. See Figure 3-6-6E-5 below.

Advanced Alarm Property

GeneralExtendedTextAttributeTriggerOtherExternal Output

Direct

Comment

Group Number1

Number of Display Attribute4

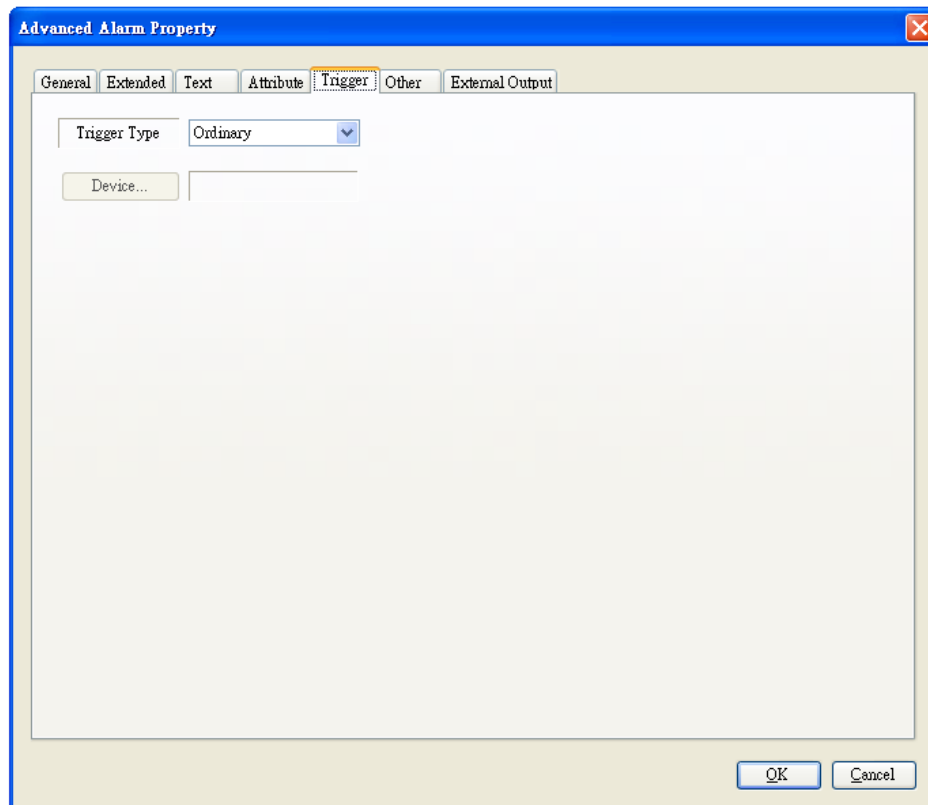
Attribute	Occurred	Comment	Restored	Checked	Occurred
Title (Direct)	OCCURRED	COMMENT	REST.	CHECK	OCCURRED
Title (Comment)	1	1	1	1	1
Title (Contents)					
Width	15	10	5	5	15
Contents	Date Time		Time	Time	Date Time
Date Format	12/2/16	..	12/2/16	12/2/16	12/2/16
Time Format	15:6	..	15:6	15:6	15:6

SortOccurredDescending

OKCancel

Fig. 3-6-6E-5 Property Setting

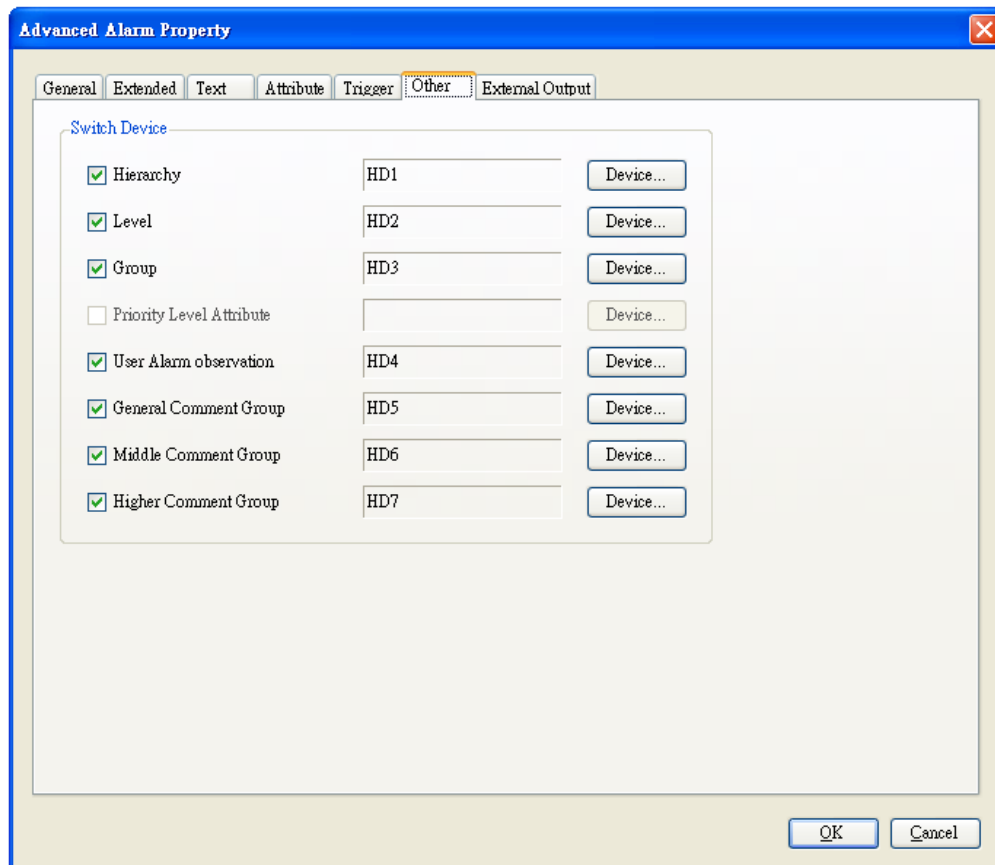
The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-6E-6 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF

Fig. 3-6-6E-6 Trigger Property Setting

The Other properties allow the user to tick the options of preferred functions to be displayed, and set the storage device. See Figure 3-6-6E-7 below.



Function	Remark
Hierarchy	Switch among general, middle and high class
Level	After the level is input, all alarms in this level will
Group	After the group is input, all alarms of this group
User Alarm Observation	Change the alarm group.
General Comment Group	Change the general comment group.
Middle Comment Group	Change the middle class comment group.
Higher Comment Group	Change the high class comment group.

Fig. 3-6-6E-7 Other Property Setting

To set the external output properties, tick ☒ Use External Output to set external output device triggering. See Figure 3-6-6E-8 below.

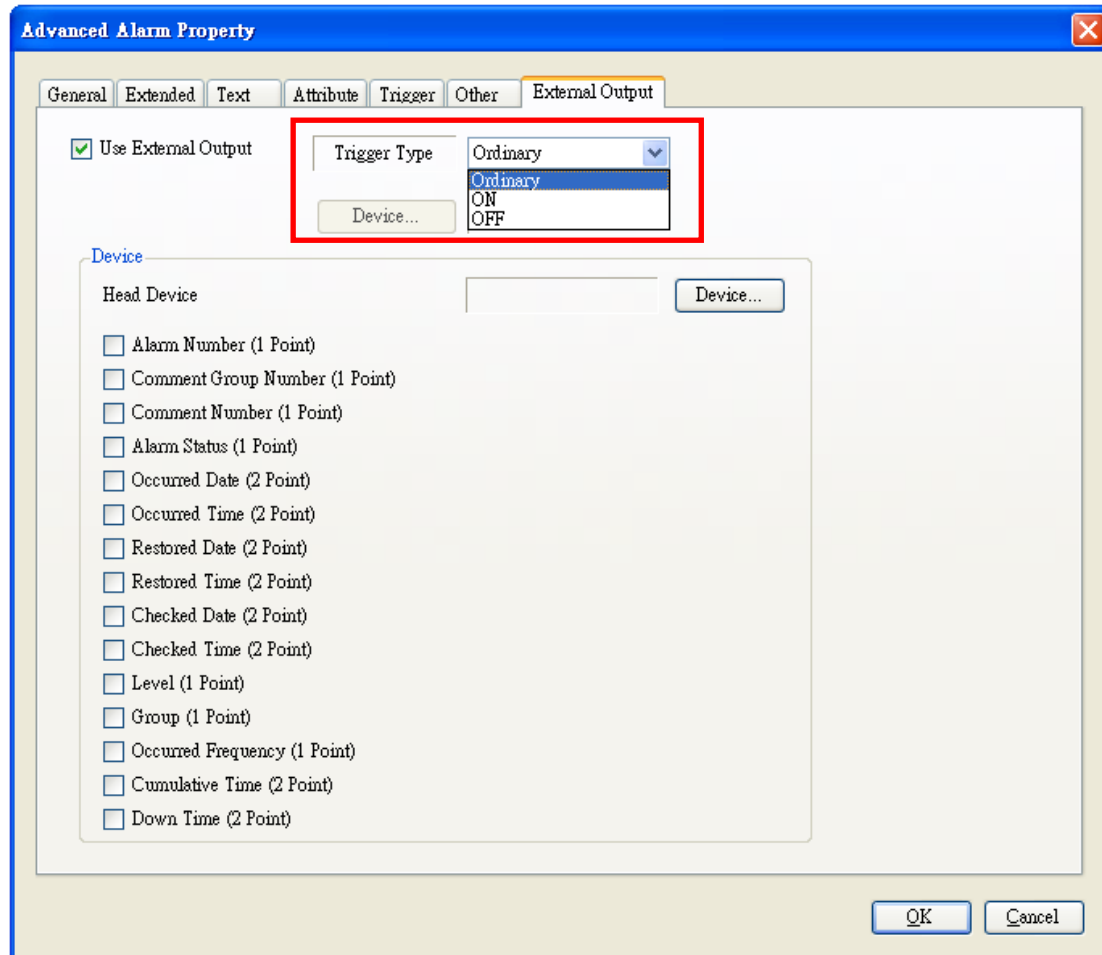
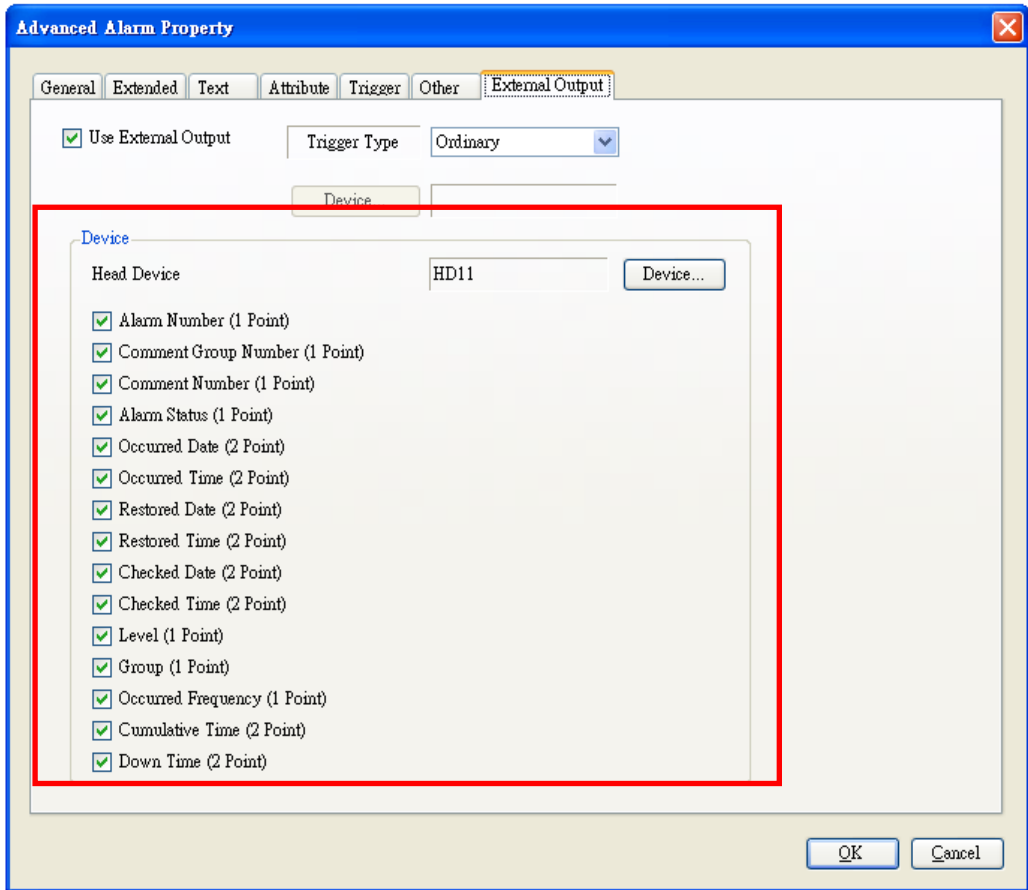


Fig. 3-6-6E-8 Setting Trigger Device

To display alarm information, assign an initial device first, and then tick the needed items for display. The device displays the items orderly according to the option sequence. The point of an item shows the numeric display pattern. See Figure 3-6-6E-9 below.

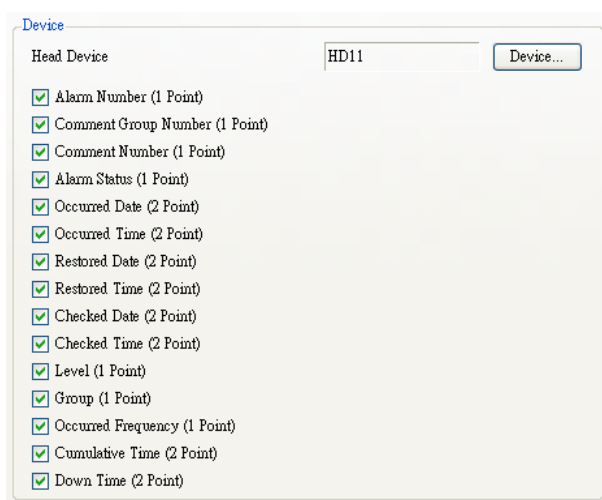


Point	Pattern
1 Point	16-bit signed.
	16-bit unsigned
2 points	32-bit signed
	32-bit unsigned

Fig. 3-6-6E-9 External Output Device Setting



Set the initial device as HD11, and the device will automatically make the setting in sequence. Figure 3-6-6E-10 below describes the device.




Display	Device
Alarm Number(1 point)	HD11
Comment Group Number (1 point)	HD12
Comment Number (1 point)	HD13
Alarm Status (1 point)	HD14
Occurred Date (2 points)	HD15 (32 bits)
Occurred Time (2 points)	HD17 (32 bits)
Restored Date (2 points)	HD19 (32 bits)
Restored Time (2 points)	HD21 (32 bits)
Checked Date (2 points)	HD23 (32 bits)
Checked Time (2 points)	HD25 (32 bits)
Level (1 point)	HD27
Group (1 point)	HD28
Occurred Frequency (1 point)	HD29
Cumulative Time (2 points)	HD30 (32 bits)
Down time (2 points)	HD32 (32 bits)

Fig. 3-6-6E-10 Examples of External Output Device Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

f. Local Floating Alarm

To set up a local floating alarm, click **Unit** and click **Message Display** and then click **Local Floating Alarm**, or directly click the shortcut , and in the editing window left click the mouse to set up a multi-state lamp. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency and line pattern. See Figure 3-6-6F-1 below.

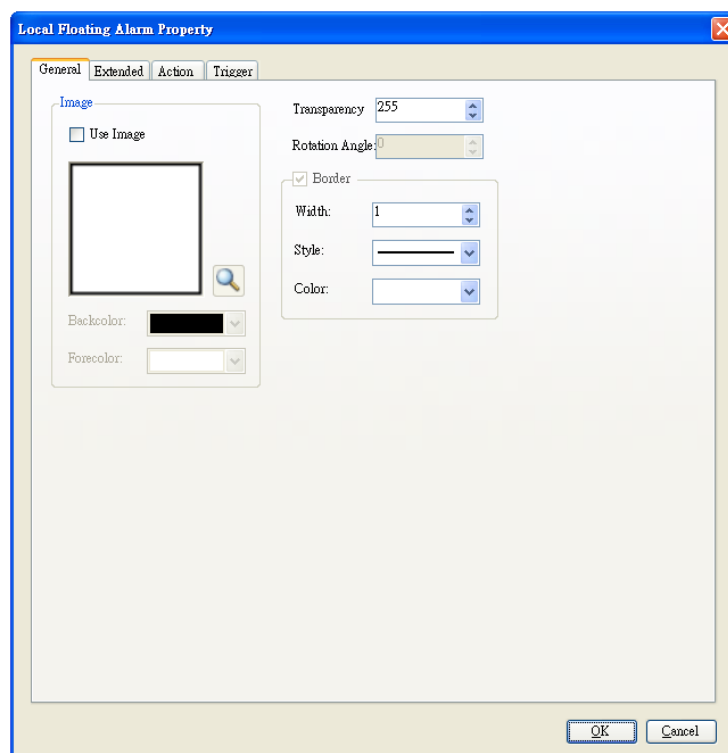



Fig. 3-6-6F-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and select a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, display type, font size, and alignment. Figure 3-6-6F-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

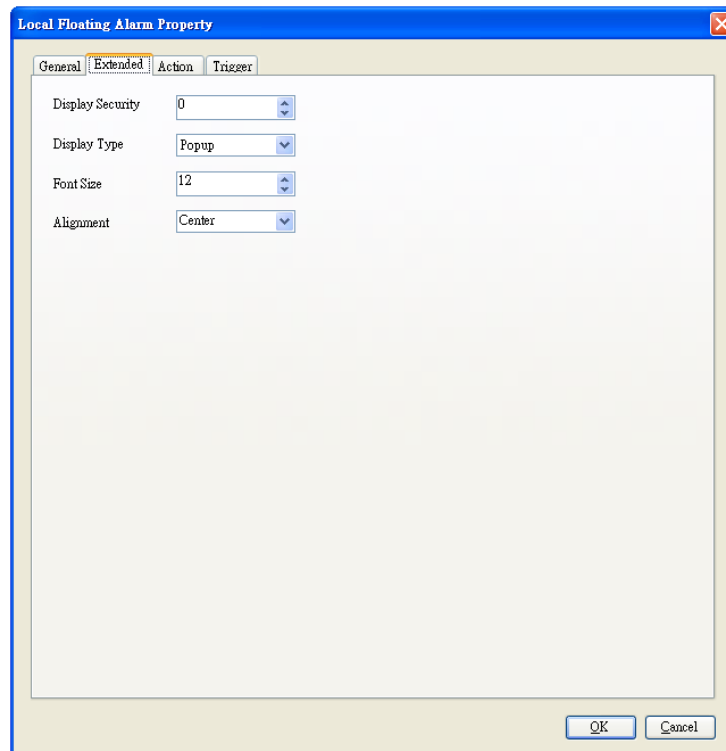


Fig. 3-6-6F-2 Security Levels

The Bit action device types are ON/OFF displays. The user can set the comment information, code number and offset. See Figure 3-6-6F-3 below.

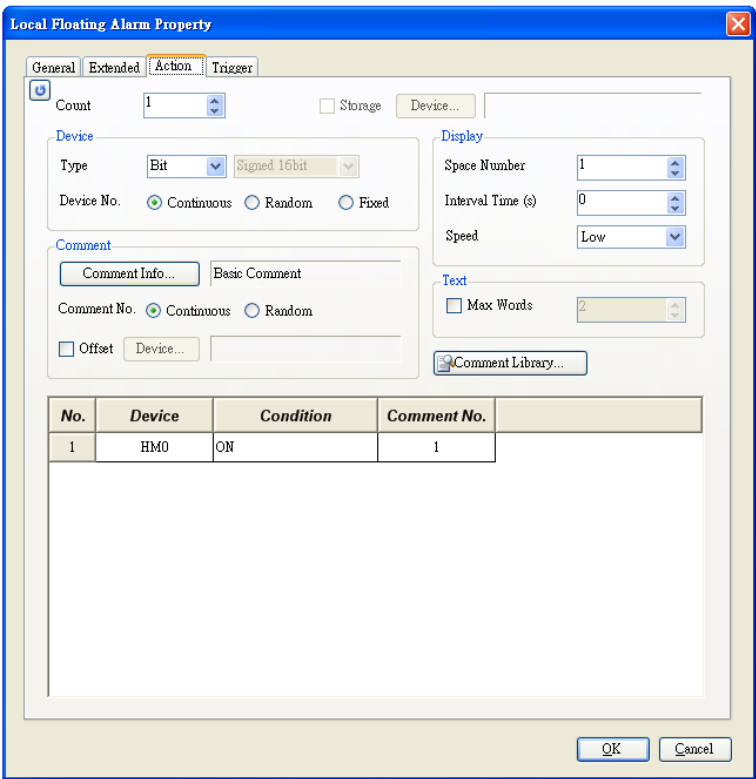



Fig. 3-6-6F-3 Bit Local Floating Alarm

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6F-4 below.

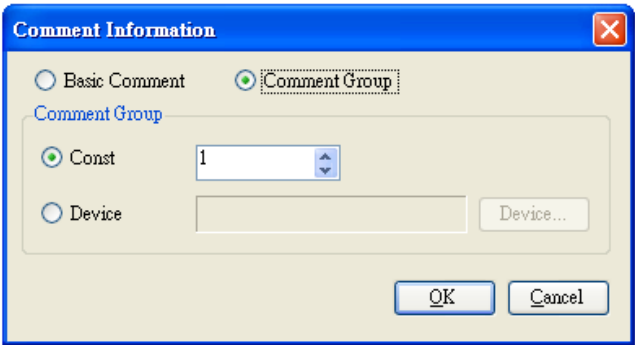


Fig. 3-6-6F-4 Comment Information Setting



Tick ☒ Offset and select device HD0 to offset the comment number. The action is HD0 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as HD0 + original comment number. If the internal value of HD0 is 10, after the offset operation the HM0 internal comment number will become 11. See Figure 3-6-6F-5 below.

Comment

Comment Info...

Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ Offset

Device...

HD0

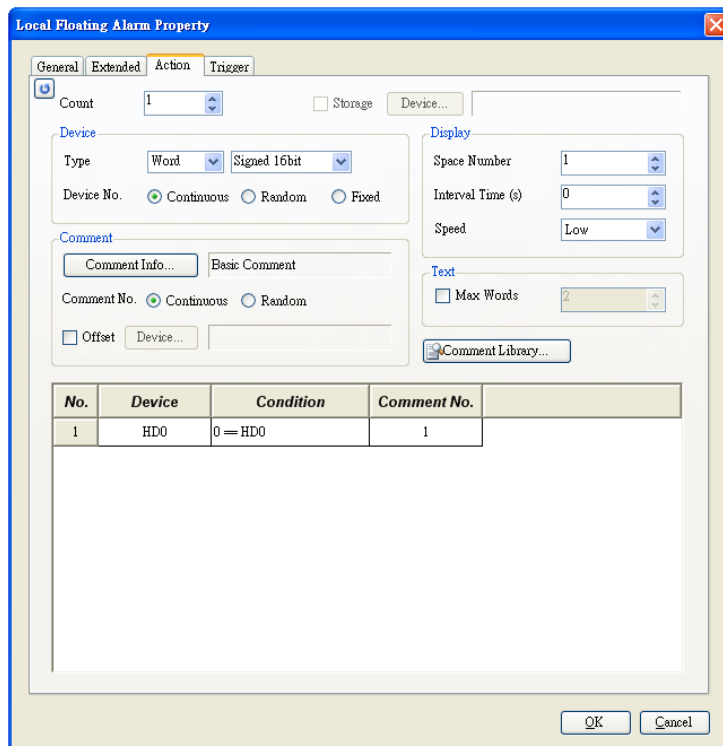
Detail Type

Not Display

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HM0	ON	1	1	--	0
2	HM1	ON	2	2	--	0


Fig. 3-6-6F-5 Offsetting Device

The Word action device has 7 numeric types available. The user can set the comment information, code number and offset. See Figure 3-6-6F-6 below.



Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-6-6F-6 Word Local Floating Alarm

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-6-6F-7 below.

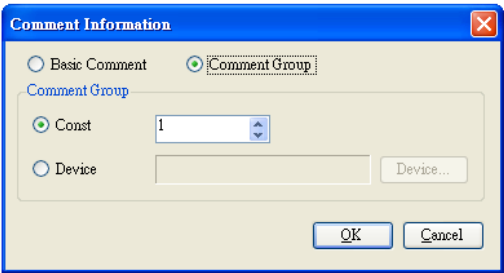




Fig. 3-6-6F-7 Comment Information Setting





Tick  **Offset** and select device HD10 to offset the comment number. The action is HD10 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as $HD10 + \text{original comment number}$. If the internal value of HD10 is 10, after the offset operation the HD0 internal comment number will become 11. See Figure 3-6-6F-8 below.

Comment

 Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ **Offset**  HD10

Detail Type Not Display 

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	HD0	0 = HD0	1	1	--	0
2	HD1	0 = HD1	2	2	--	0

Fig. 3-6-6F-8 Offsetting Device

For the floating alarm and its text, the user can set the floating alarm character spacing, interval time, speed and maximum words. See Figure 3-6-6F-9 below.

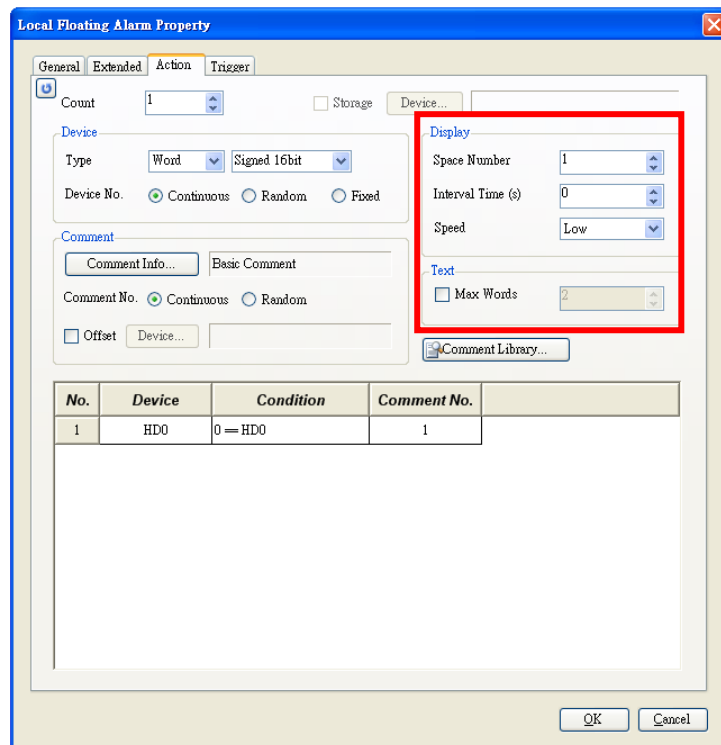

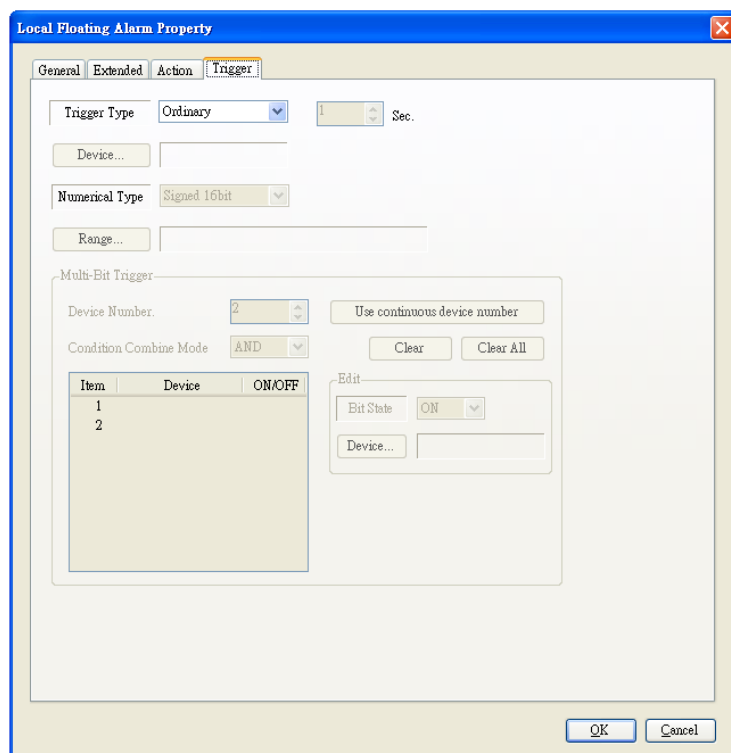


Fig. 3-6-6F-9 Display and Text Setting

In the text editing, the comments in the comment library can be set as text to display. To do this, click  **Comment Library...** to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-6F-11 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-6F-11 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-6F-12 below.

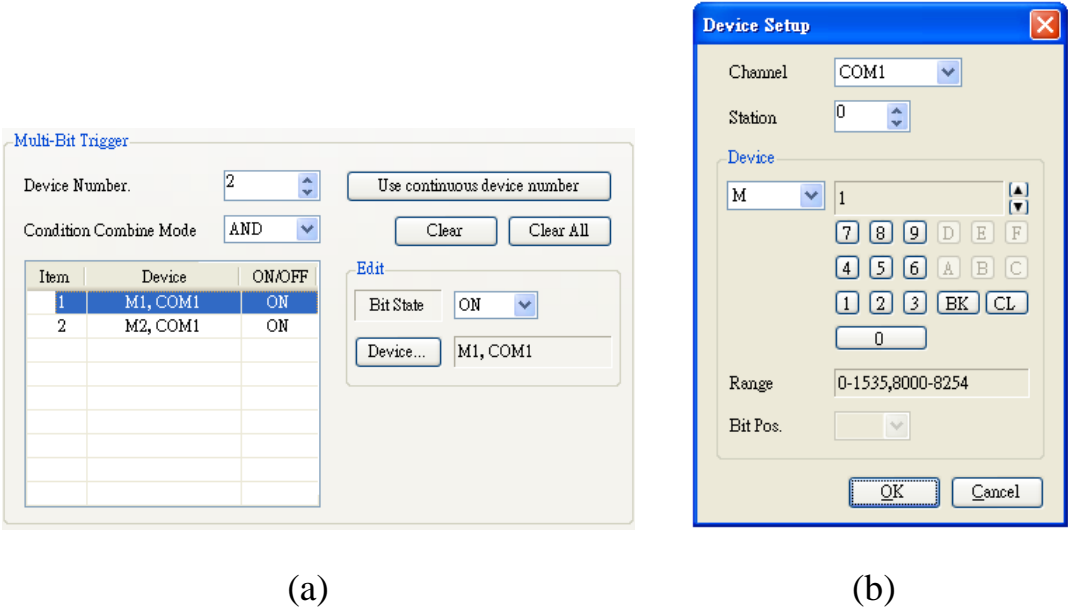


Fig. 3-6-6F-12 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

3.6.7. Chart Display

Click **Unit** and then click **Chart Display**, or directly click the shortcut , and in the editing window left click the mouse to set up a chart object. See Figure 3-6-7 below.

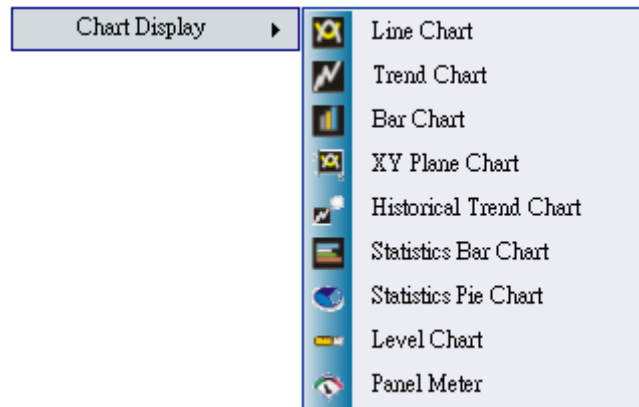



Fig. 3-6-7 Chart Display Menu

a. Line Chart

To set up a line chart, click **Unit** and click **Chart Display** and then click **Line Chart**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open property window of the object and make the setting.

The General property setting allows the user to change the picture and set the display color, transparency and line pattern. See Figure 3-6-7A-1 below.

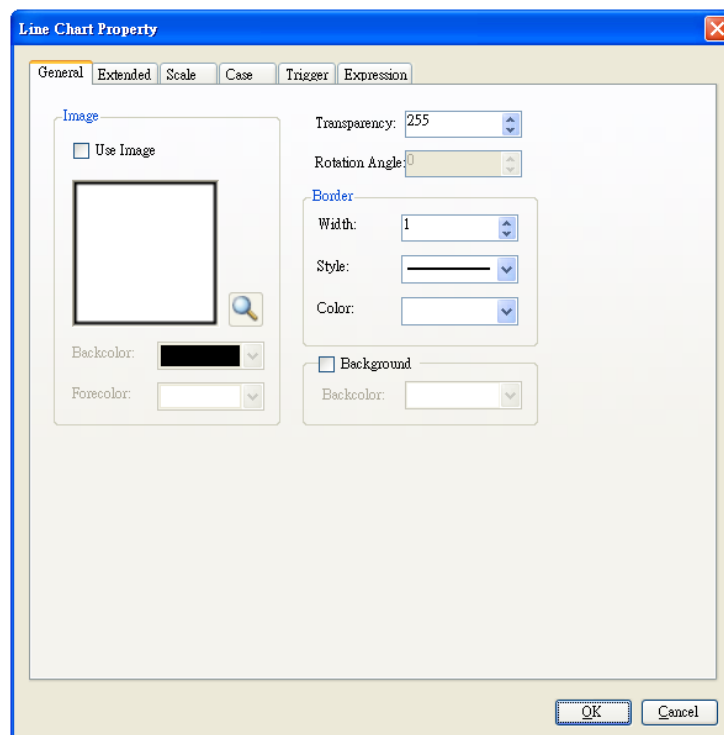



Fig. 3-6-7A-1 General Attribute Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the display security , flow direction, upper and lower limits, and clear locus device. Figure 3-6-7A-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

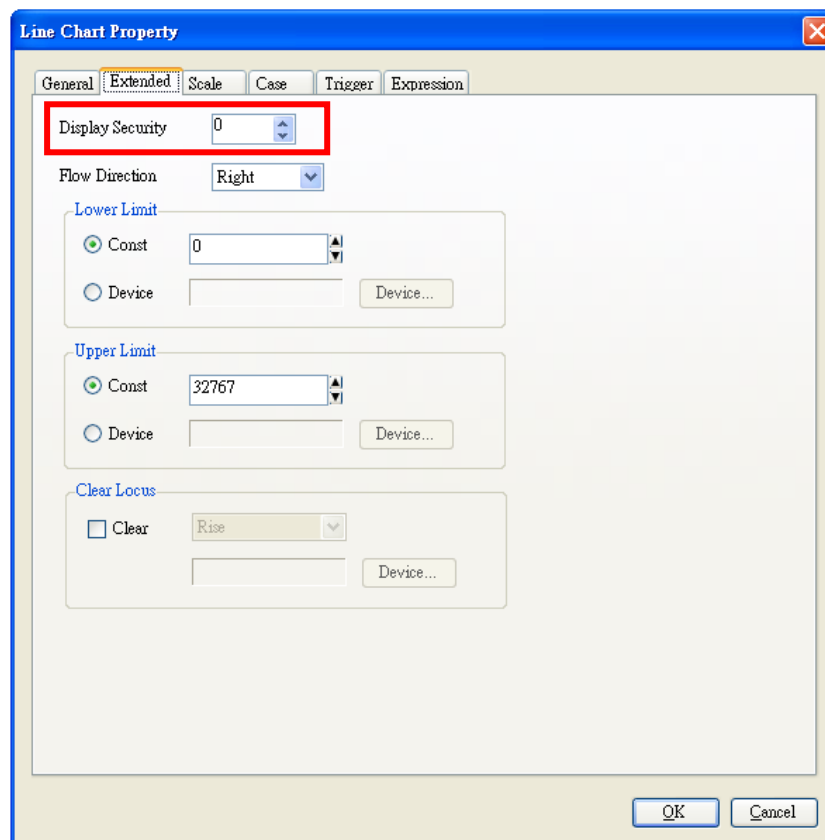


Fig. 3-6-7A-2 Security Levels

The Scale properties allow the user to set the scale display, color, font size and number of scales. See Figure 3-6-7A-3 below.

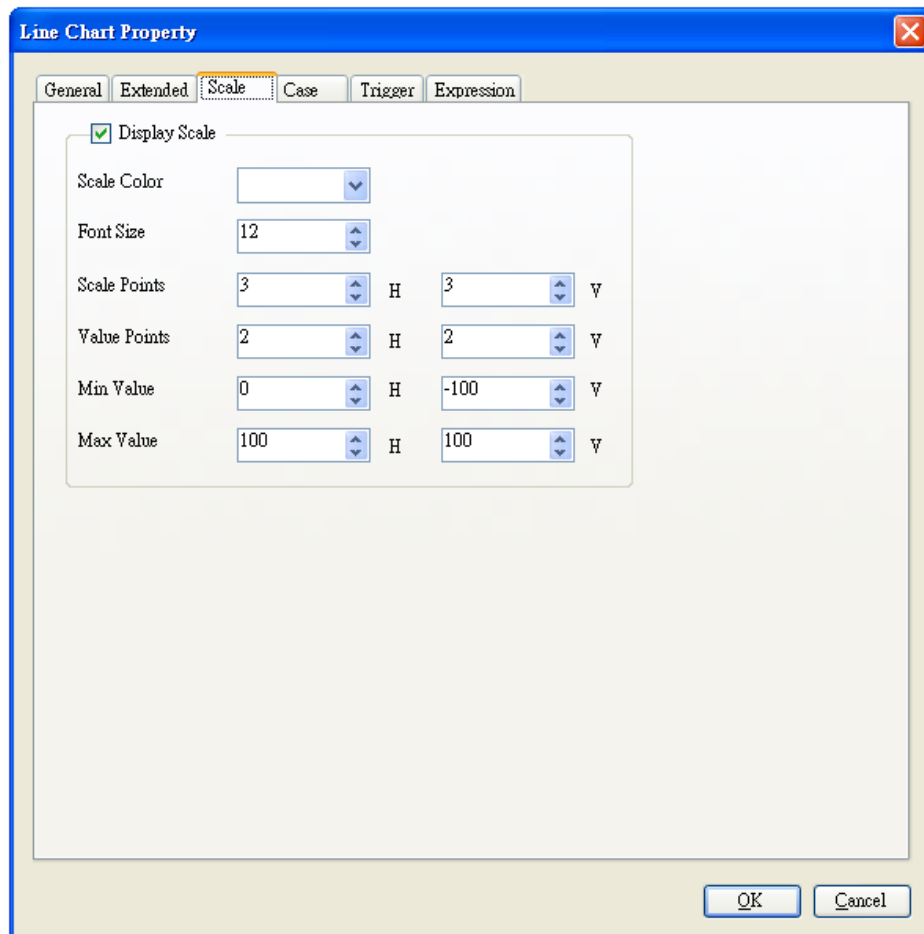


Fig. 3-6-7A-3 Scale Properties

Figure 3-6-7A-4 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set devices, colors, patterns, and widths. Click to open the device setup dialogue box to change the device.

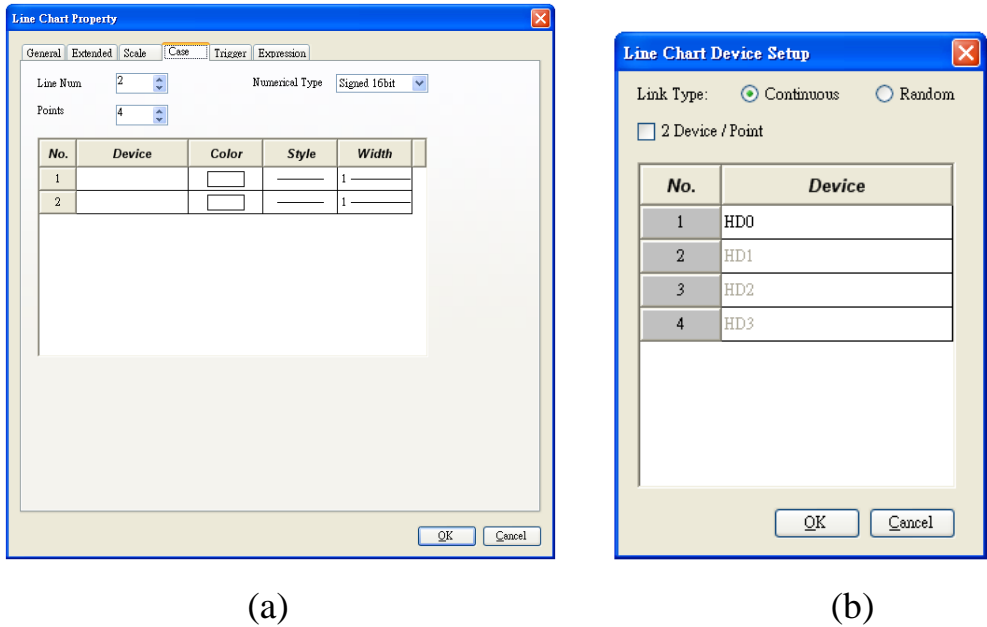


Fig. 3-6-7A-4 Range Setting (a) Edit Window (b) Setting Device

Tick ☒ 2 Device / Point and the linear chart shows that there are two device values in one state. See Figure 3-6-7A-5 below.

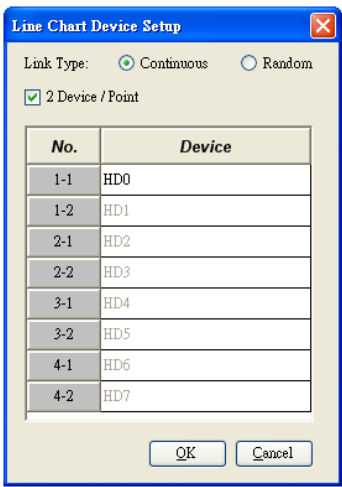
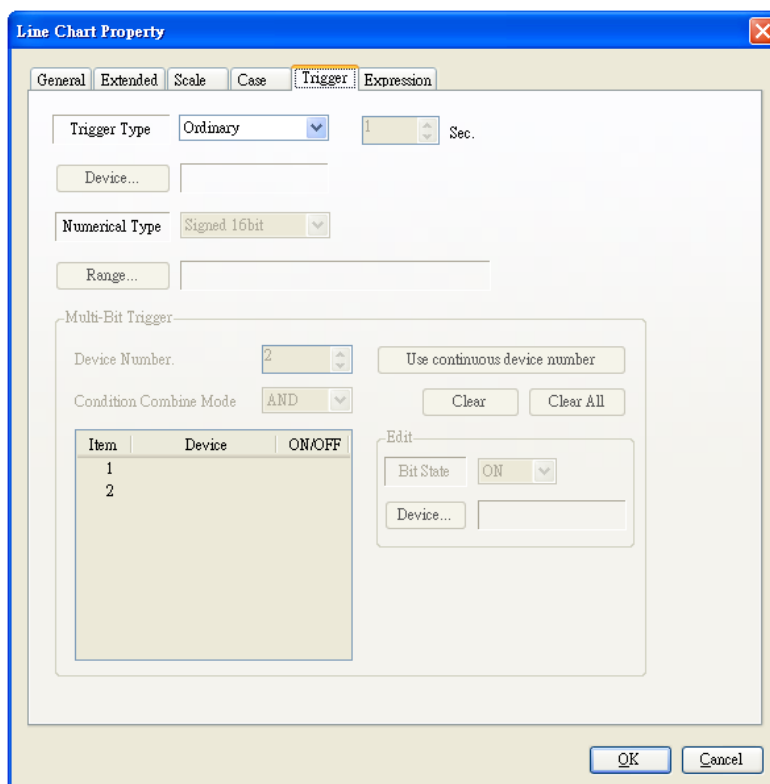


Fig. 3-6-7A-5 Two Devices/Point

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-7A-6 below.

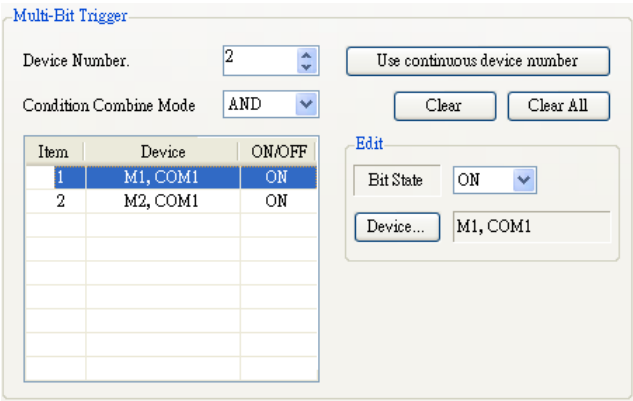


Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

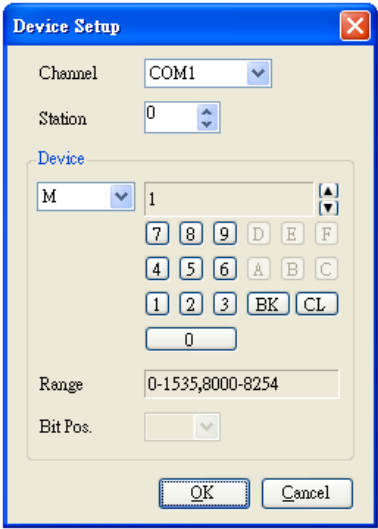
Fig. 3-6-7A-6 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See 3-6-7A-7 below.



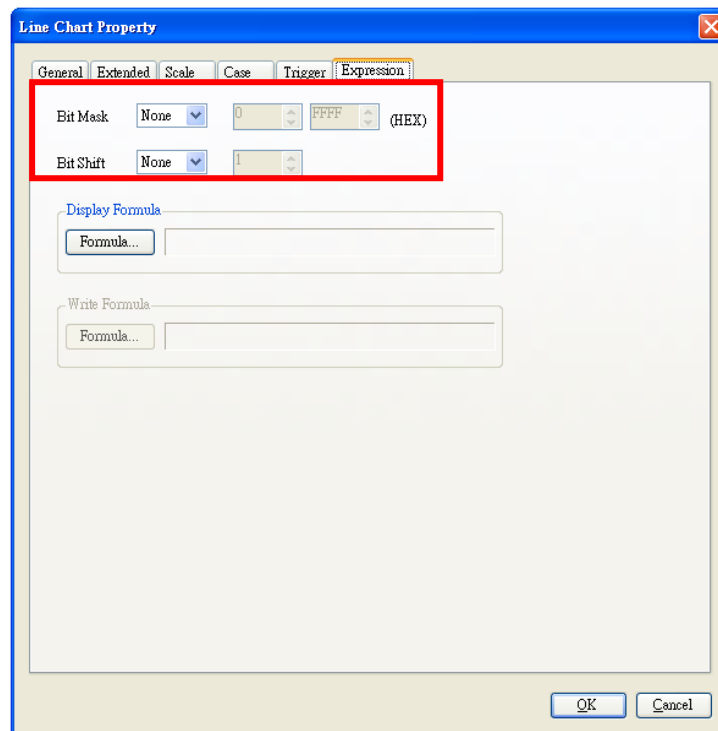
(a)



(b)

Fig. 3-6-7A-7 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-7A-8 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7A-8 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7A-9 below.

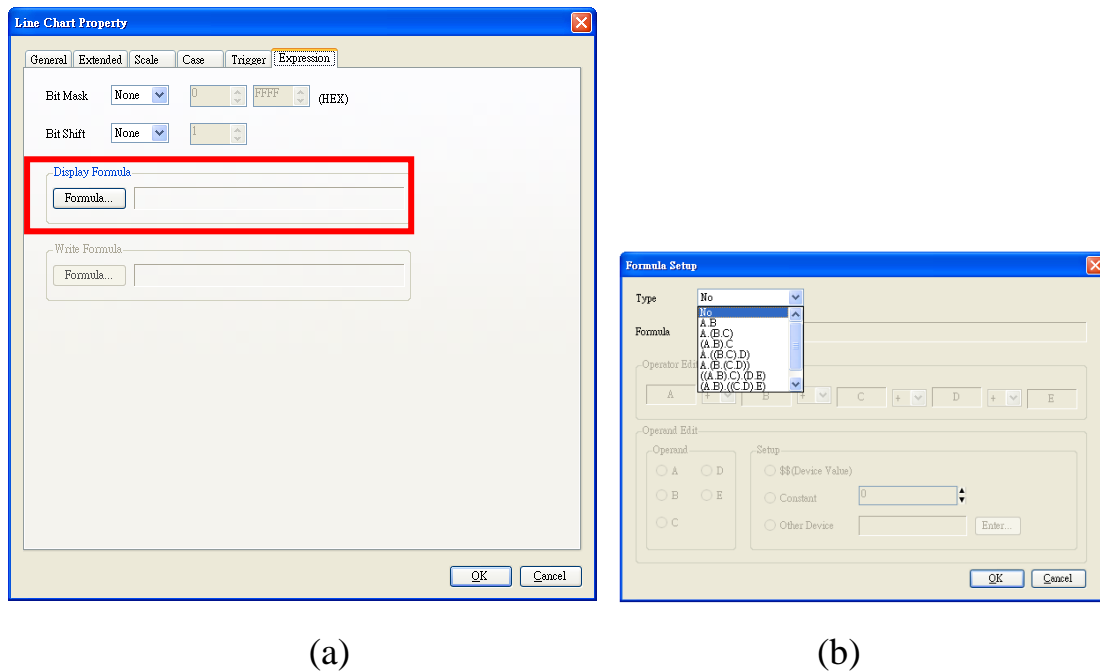



Fig. 3-6-7A-9 Displaying formula (a) Setting formula (b) formula Set



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

b. Trend Chart

To set up a trend chart, click **Unit** and click **Chart Display** and then click **Trend Chart**, or directly click the shortcut , and in the editing window left click the mouse to set up a multi-state lamp. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picture pattern, display color, transparency, line pattern, and background color. See Figure 3-6-7B-1 below.

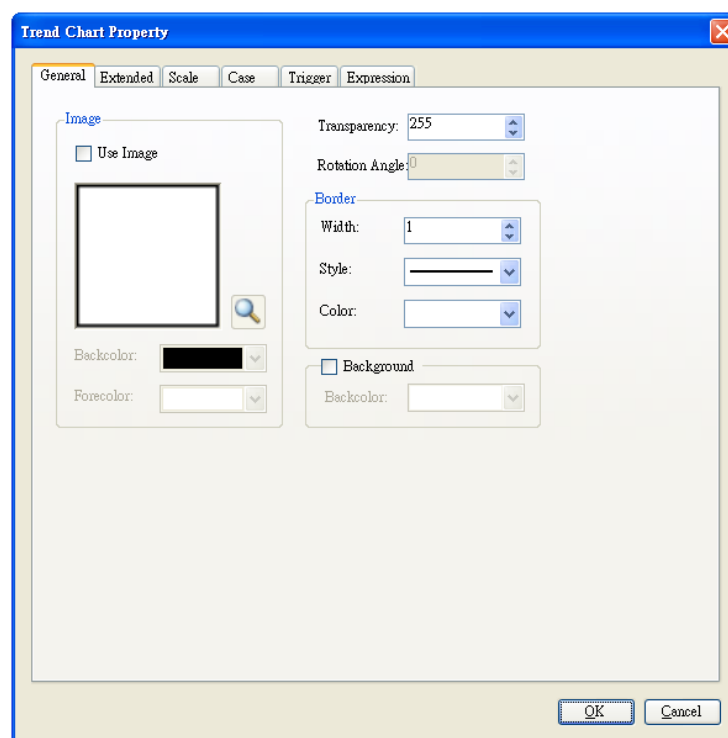



Fig. 3-6-7B-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and select a preferred picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property setting allows the user to set the security level, line direction, upper and lower limits, and clear track device. Figure 3-6-3B-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

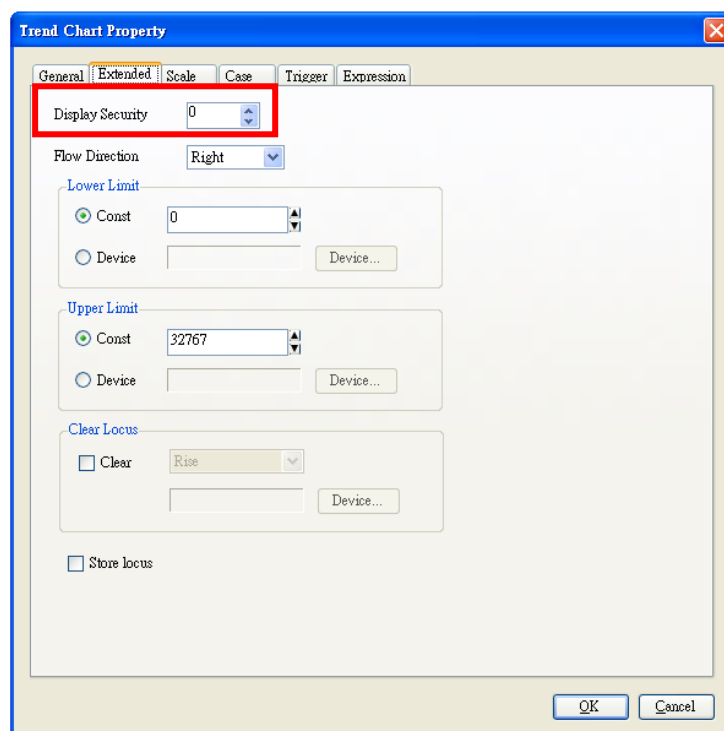


Fig. 3-6-7B-2 Security Levels

The Scale properties allow the user to set the scale display, color, font size and number of scales. See Figure 3-6-7B-3 below.

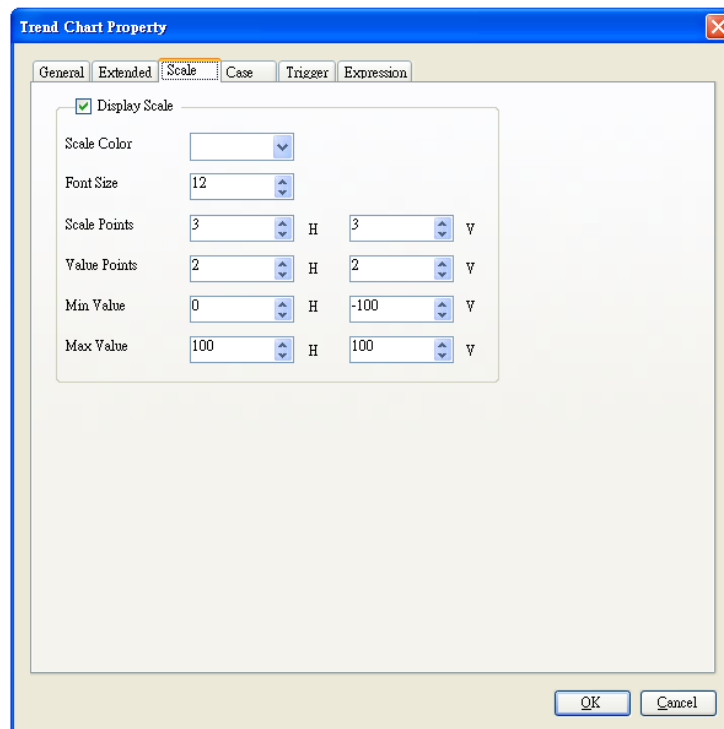
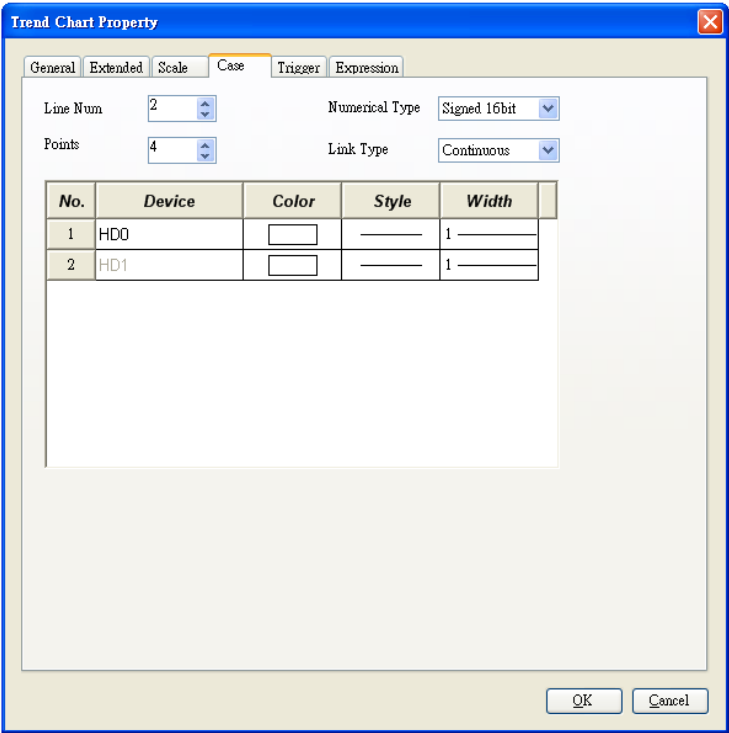


Fig. 3-6-7B-3 Scale Attributes

Figure 3-6-7B-4 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the devices, colors, patterns, and widths. Click to open the device setup dialogue box to change the device.



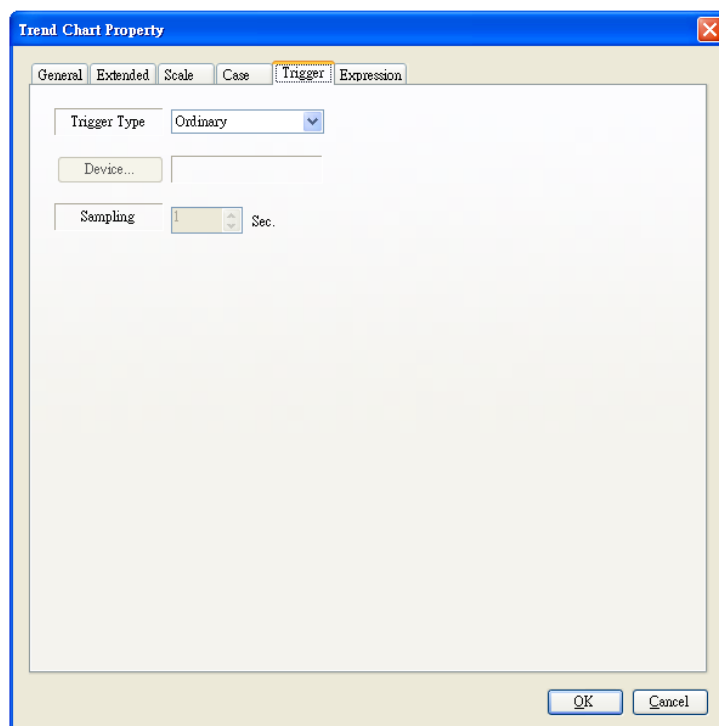
(a)



(b)

Fig. 3-6-7B-4 Range Setting (a) Edit Window (b) Setting Device

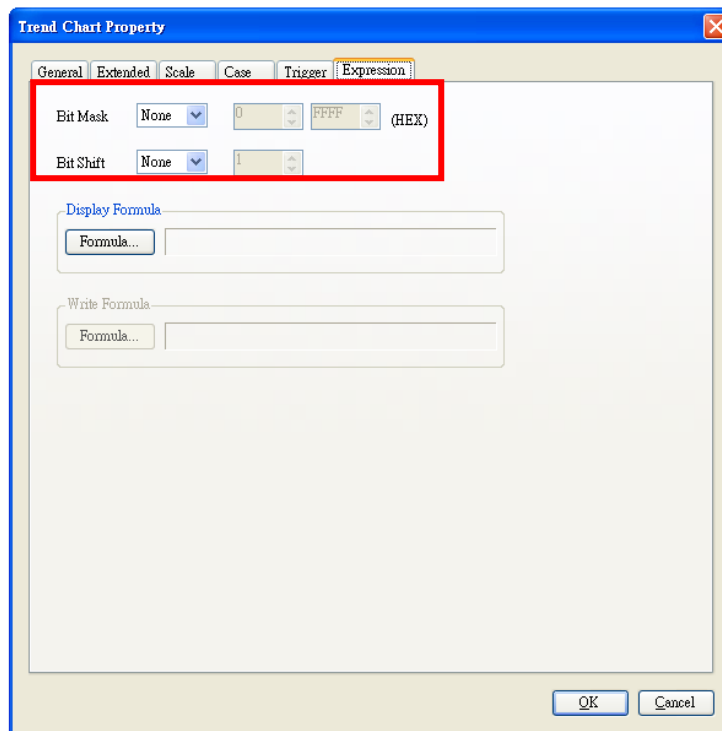
The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-7B-5 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-7B-5 Trigger Pattern Setting

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-7B-6 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7B-6 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the

A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7B-7 below.

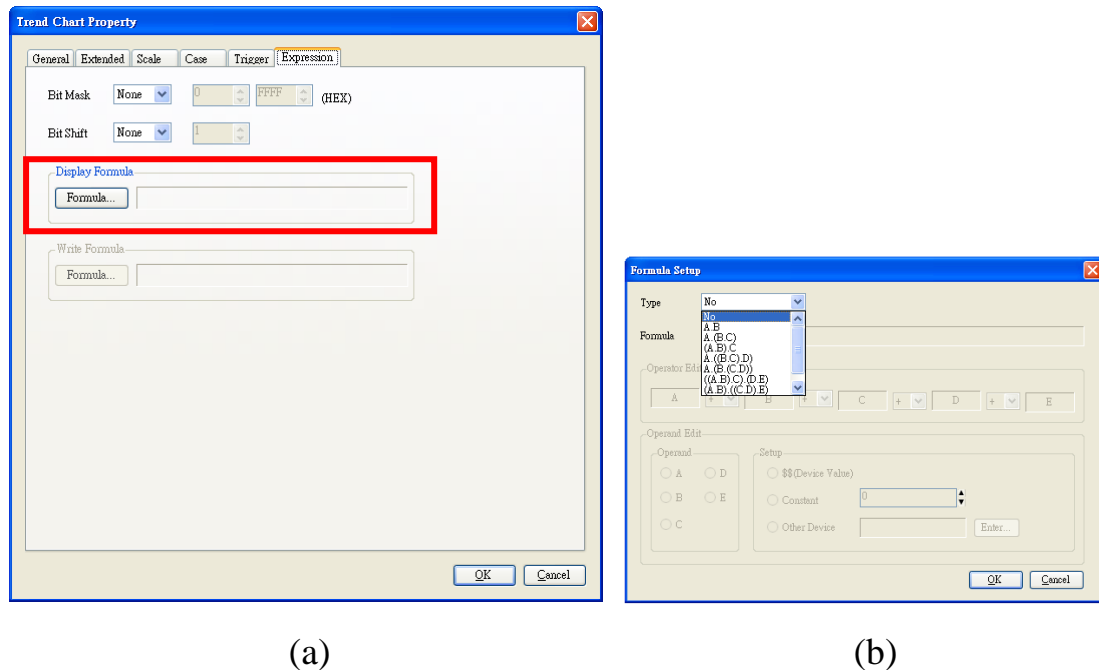



Fig. 3-6-7B-7 Displaying formula (a) Setting formula (b) formula Set



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

c. Bar Chart

To set up a bar chart, click **Unit** and click **Chart Display** and then click **Bar Chart**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency, line pattern, background color, and bar shape. See Figure 3-6-7C-1 below.

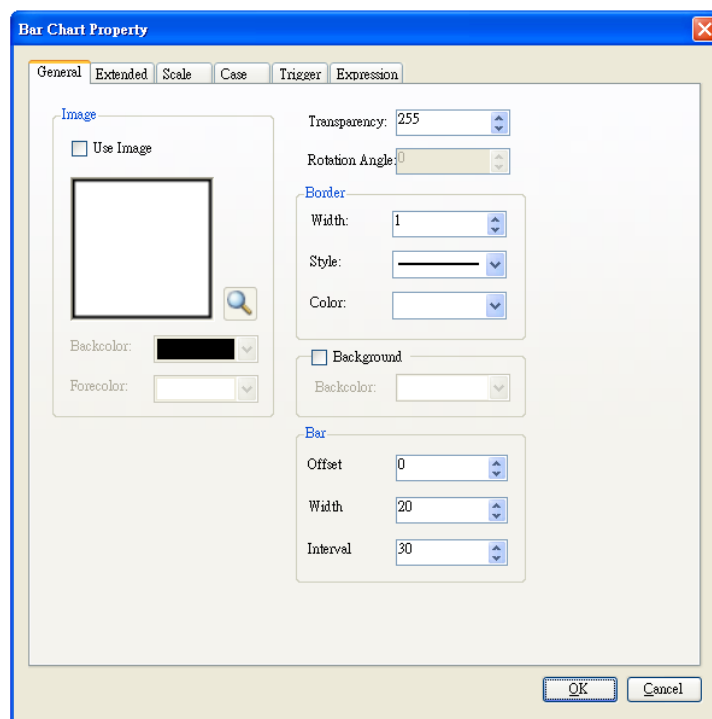



Fig. 3-6-7C-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, flow direction, sorting order, upper and lower limits. Figure 3-6-7C-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

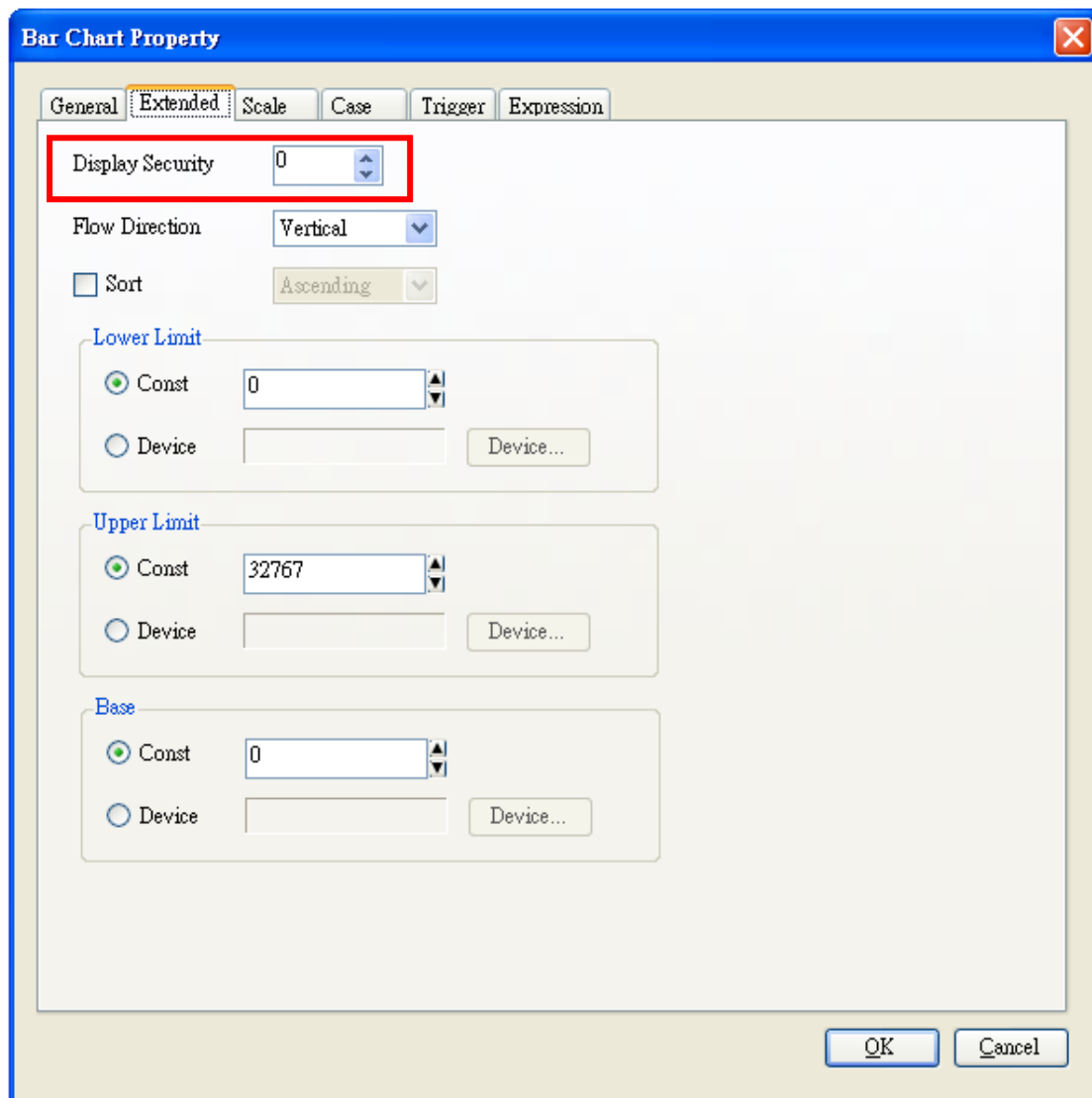


Fig. 3-6-7C-2 Security Levels

The Scale properties allow the user to set the scale display, color, font size, number of scales, and the maximum and minimum values. See Figure 3-6-7C-3 below.

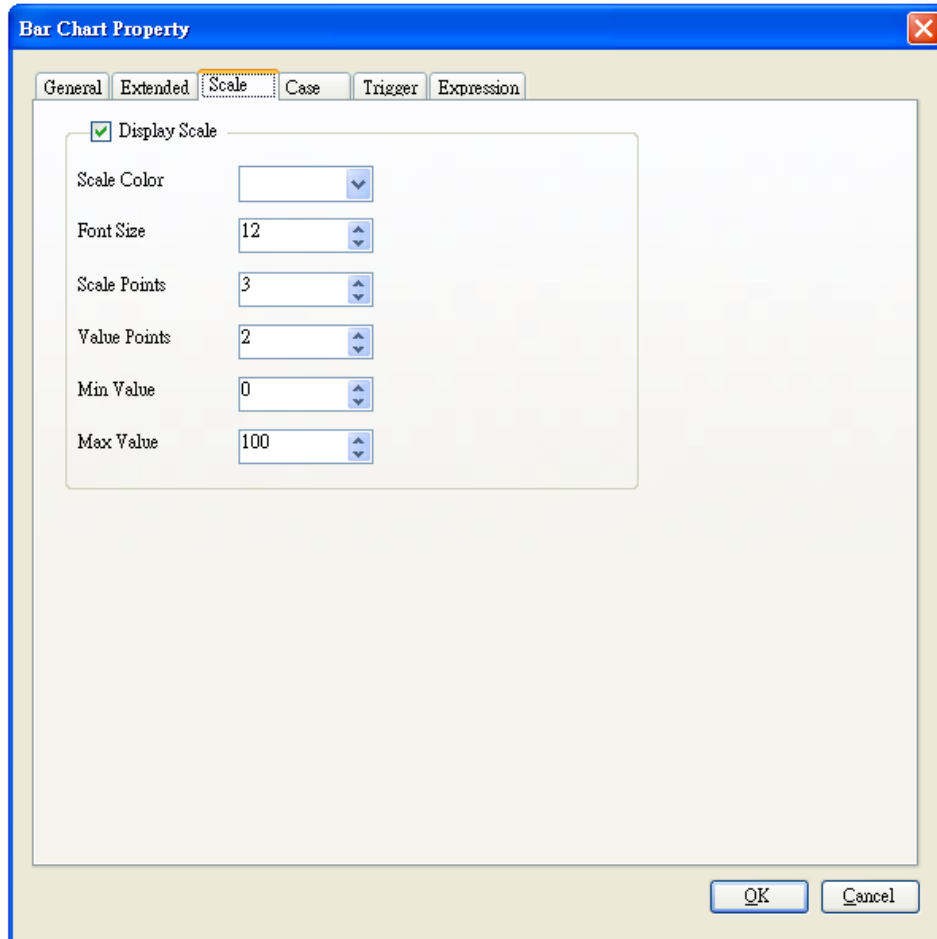
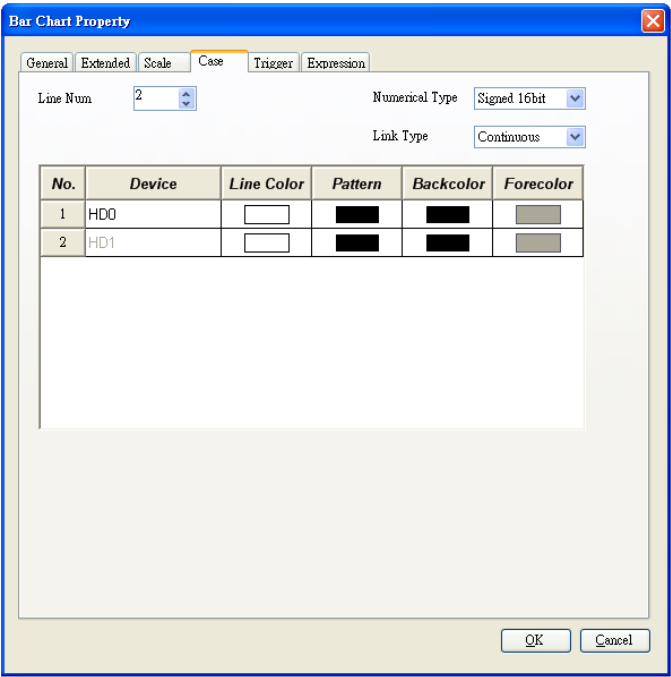
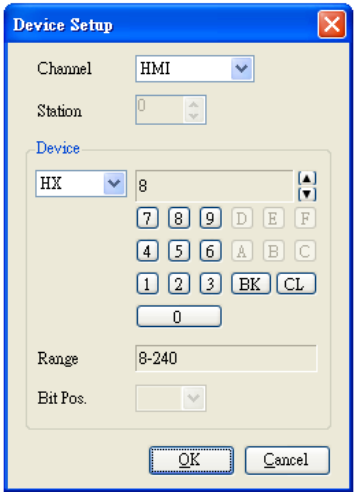


Fig. 3-6-7C-3 Scale Attributes

Figure 3-6-7C-4 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the devices, colors, patterns and widths. Click to open the device setup dialogue box to change the device.



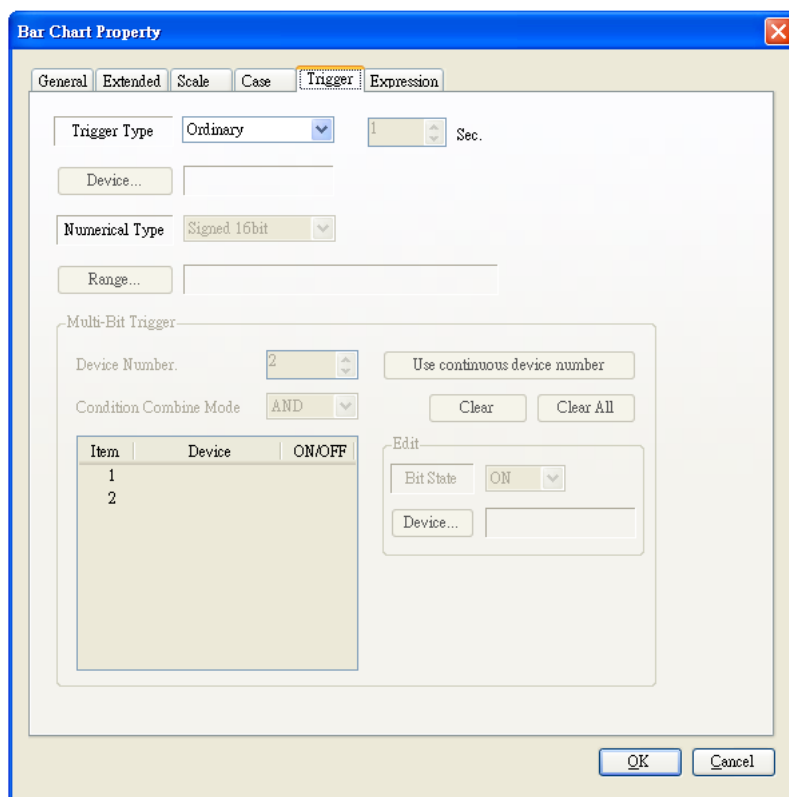
(a)



(b)

Fig. 3-6-7C-4 Range Setting (a) Edit Window (b) Setting Device

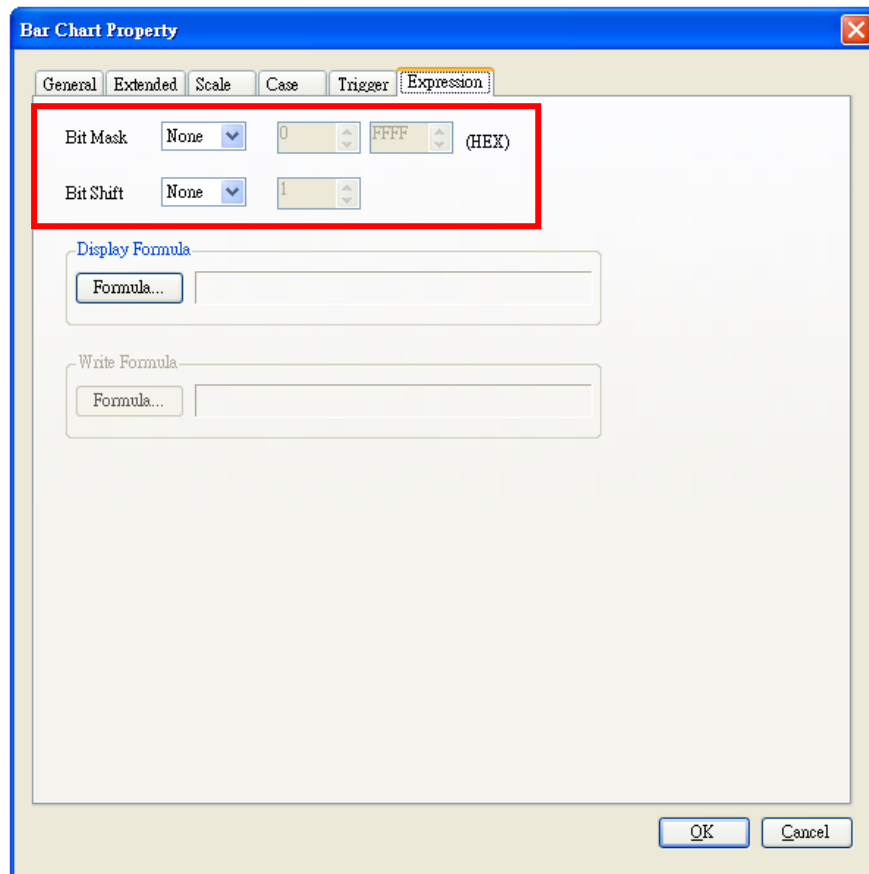
The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-7C-5 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-7C-5 Trigger Pattern Setting

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-7C-6 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7C-6 Logic Operation

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7C-7 below.

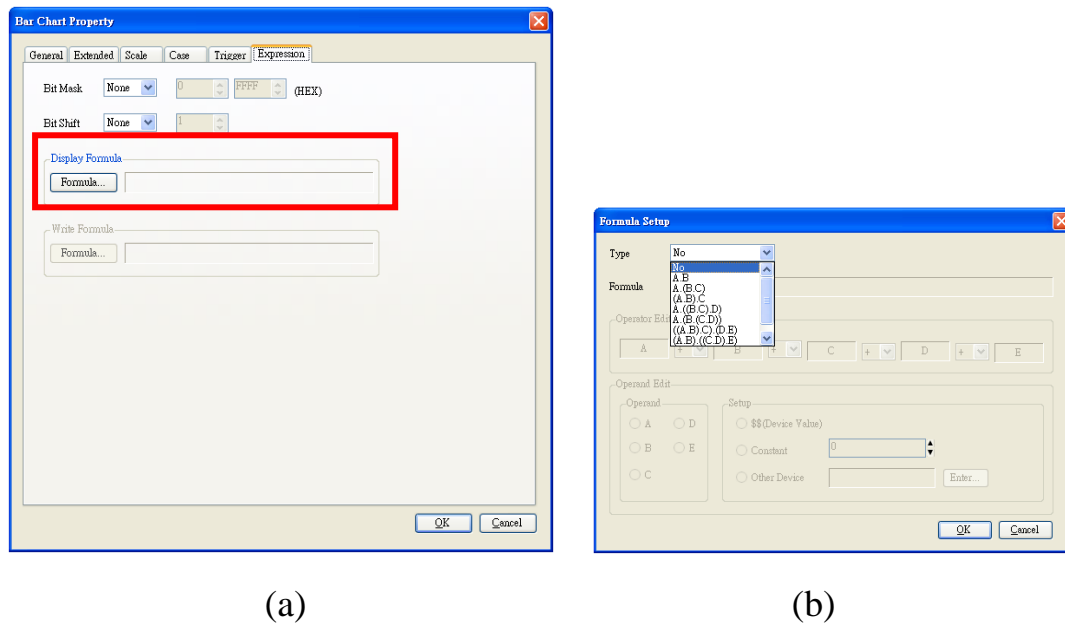



Fig. 3-6-7C-7 Displaying formula (a) Setting formula (b) formula Set



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

d. XY Plane Chart

To set up a XY Plane chart, click **Unit** and click **Chart Display** and then click **XY Plane Chart**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to change the picker pattern, display color, transparency, line pattern, and background color. See Figure 3-6-7D-1 below.

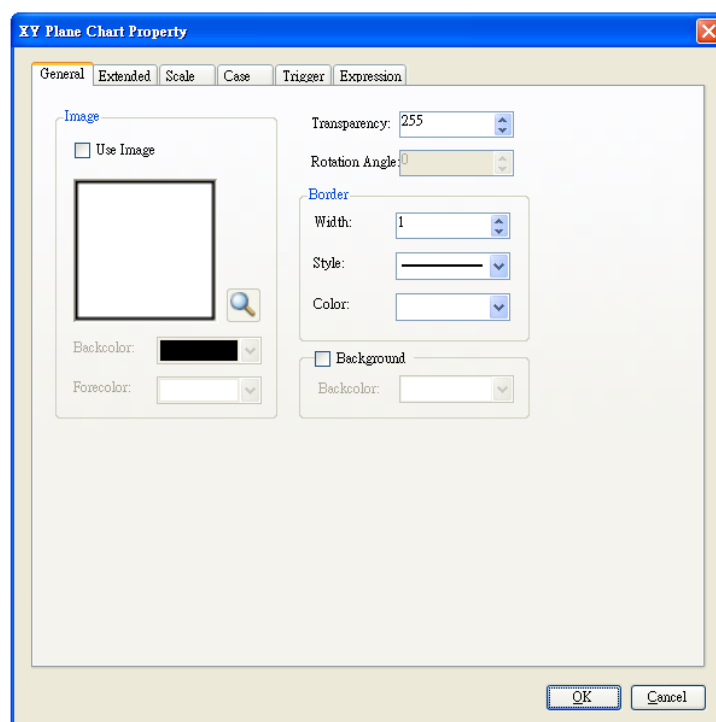



Fig. 3-6-7D-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, clear locus device, horizontal/vertical upper and lower limits. Figure 3-6-7D-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

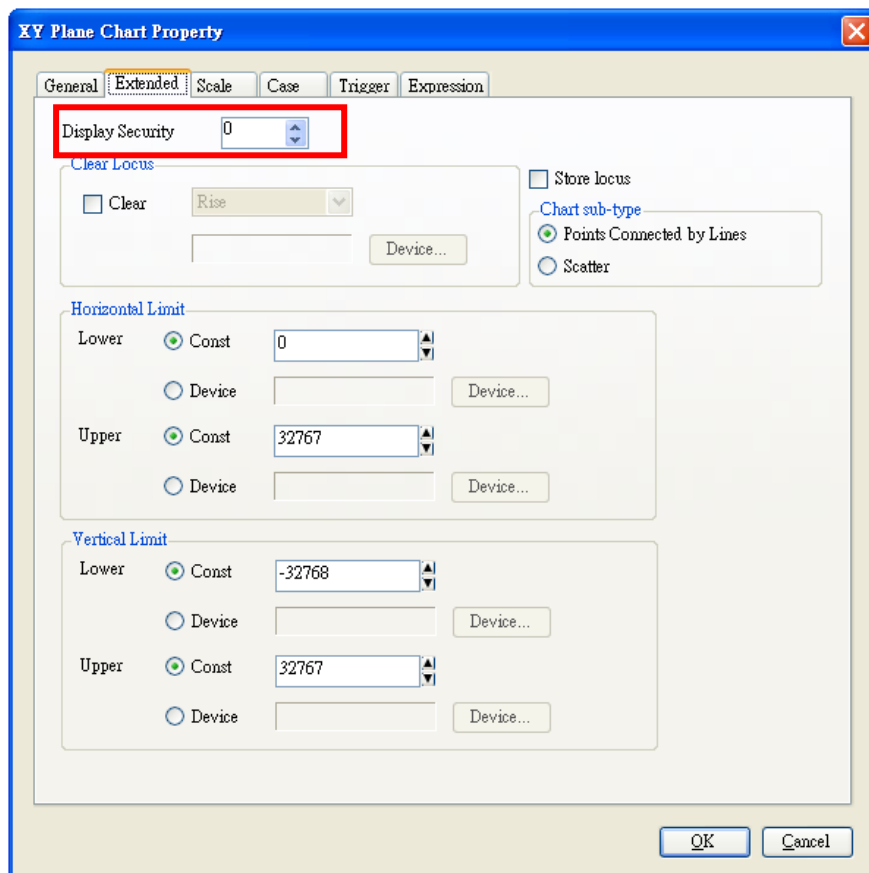


Fig. 3-6-7D-2 Security Levels

The Scale properties allow the user to set the scale display, color, font size, number of scale points, and the maximum and minimum values. See Figure 3-6-7D-3 below.

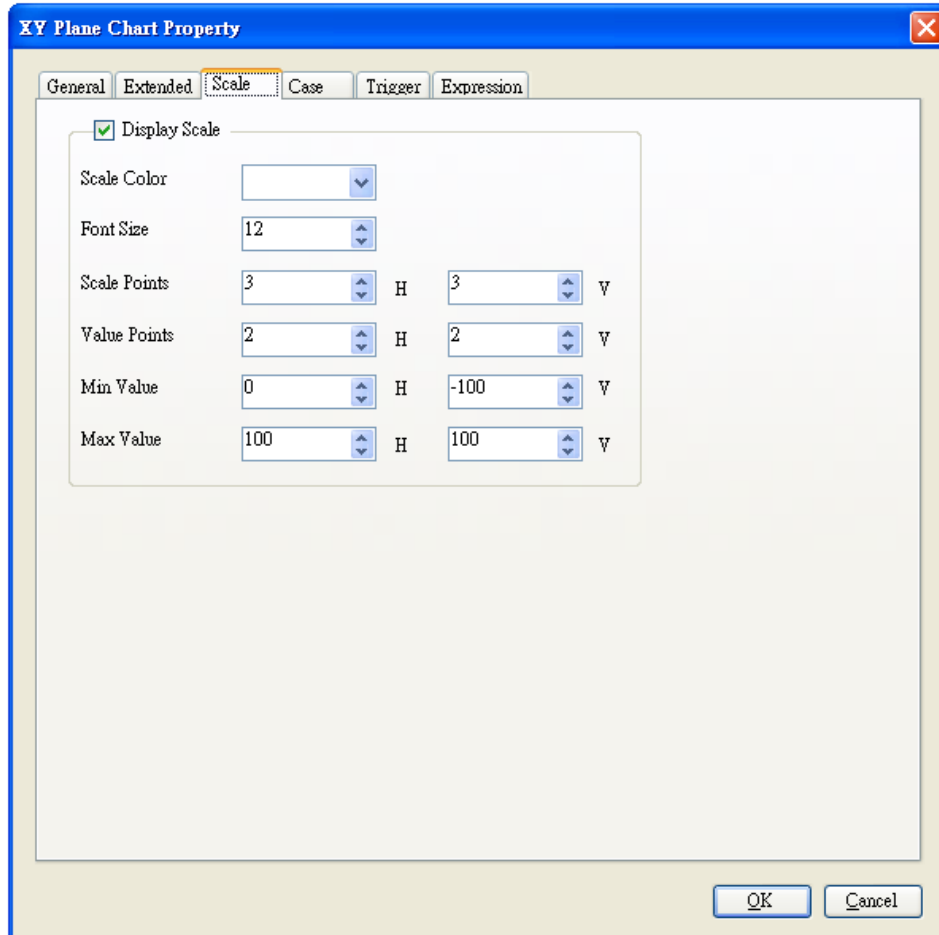
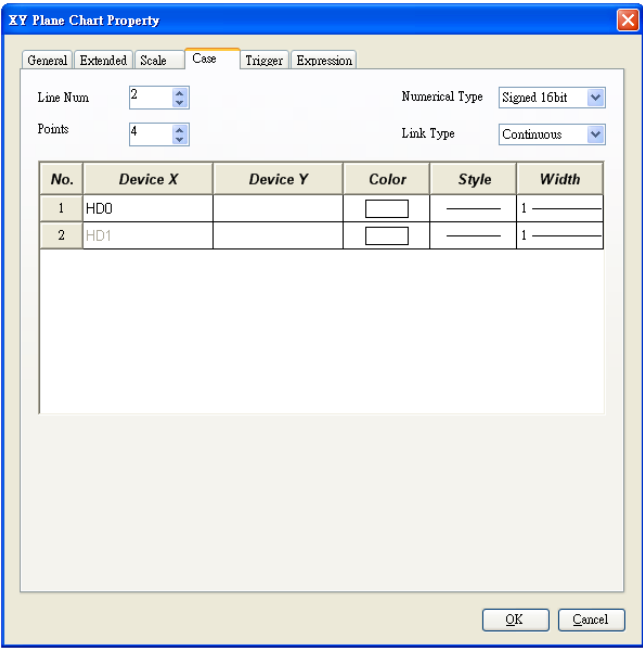
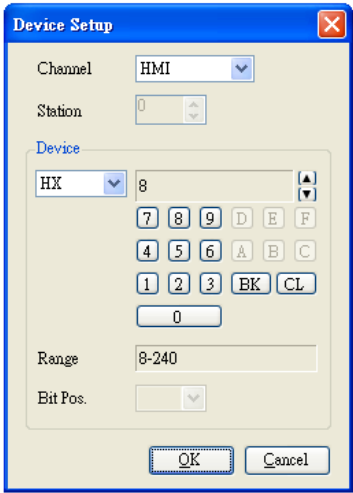


Fig. 3-6-7D-3 Scale Attributes

Figure 3-6-7D-4 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set devices, colors, patterns, widths. Click to open the device dialogue box and make the setting.



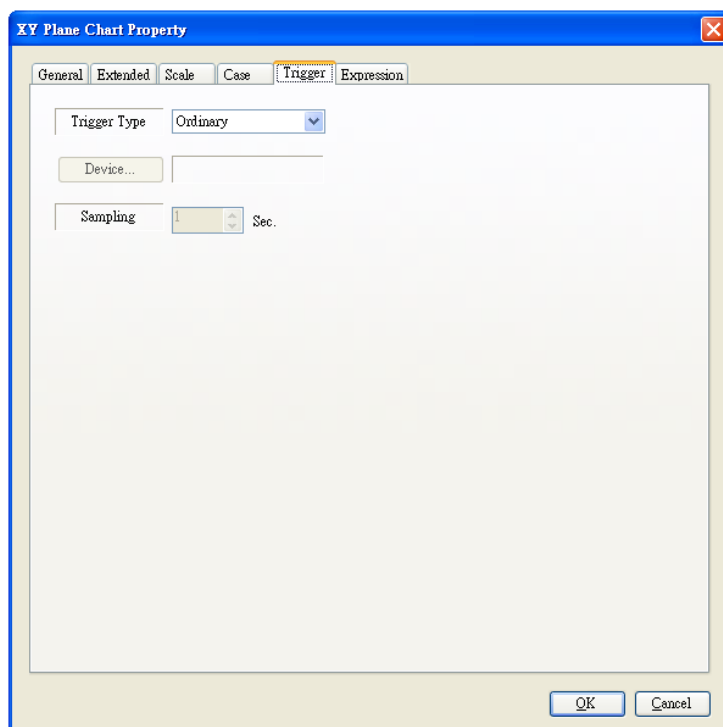
(a)



(b)

Fig. 3-6-7D-4 Range Setting (a) Edit Window (b) Setting Device

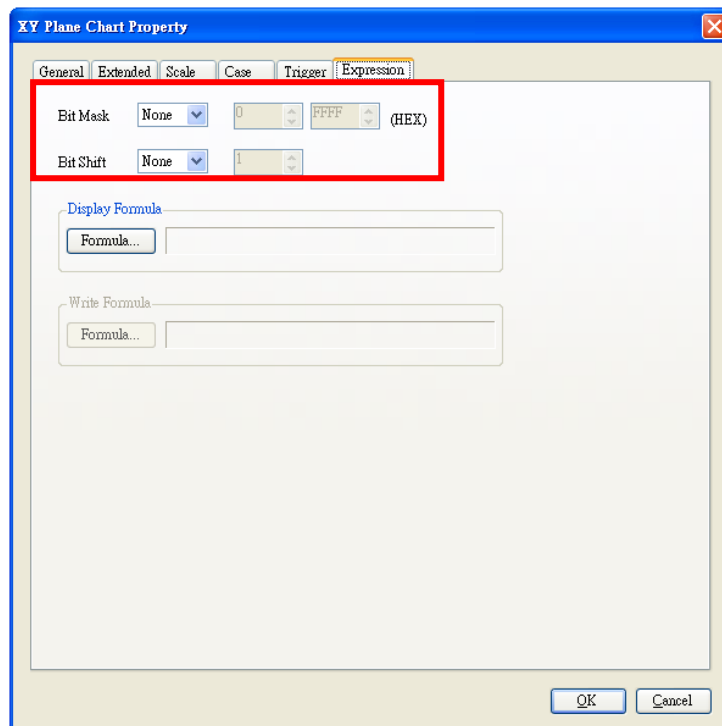
The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-7D-5 below.



Trigger Pattern	Description
Ordinary	No Trigger Pattern
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.
ON Sampling	Action is taken only when the device in ON and the sampling item elapses.
OFF Sampling	Action is taken only when the device in OFF and the sampling item elapses

Fig. 3-6-7D-5 Trigger Pattern Setting

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-7D-6 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7D-6 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7D-7 below.

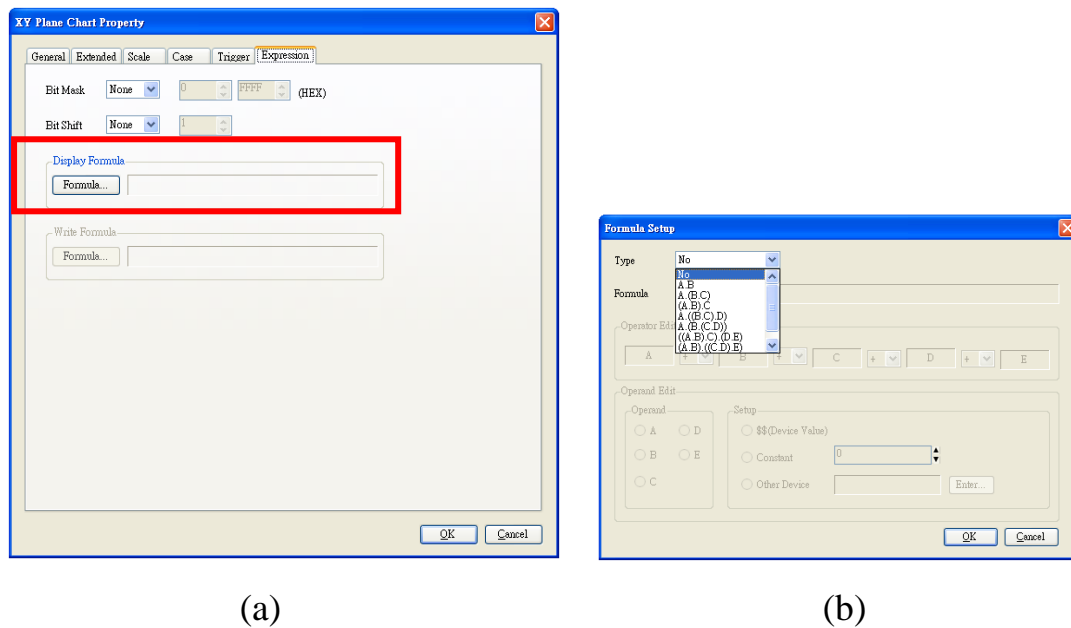



Fig. 3-6-7D-7 Displaying formula (a) Setting formula (b) formula Set



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

e. Historical Trend Chart

To set up a historical trend chart, click **Unit** and click **Chart Display** and then click **Historical Trend Chart**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency, line pattern, and background color. See Figure 3-6-7E-1 below.

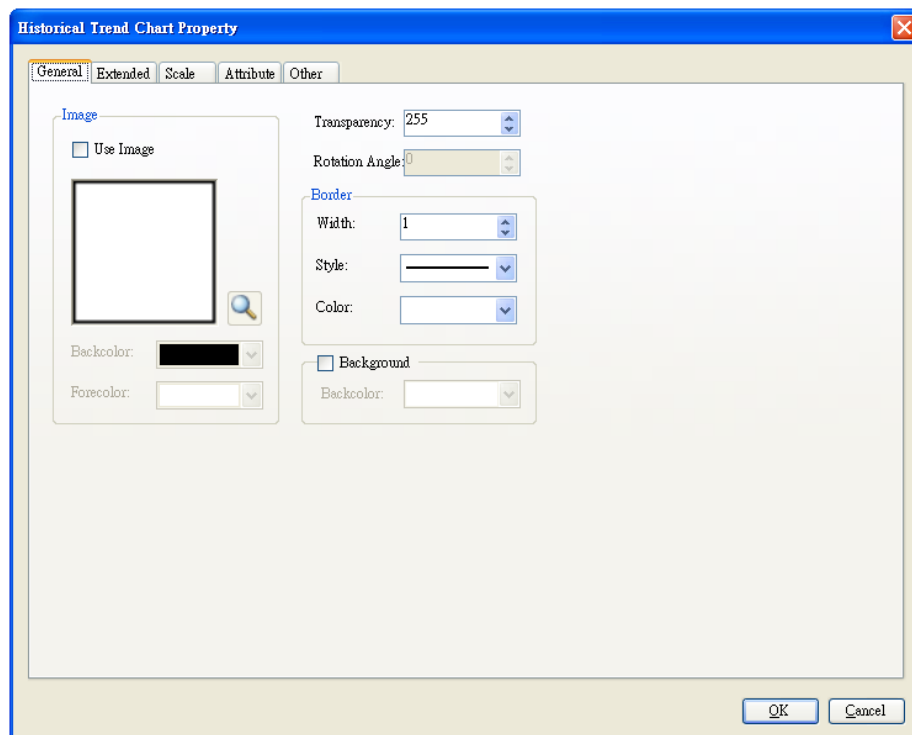

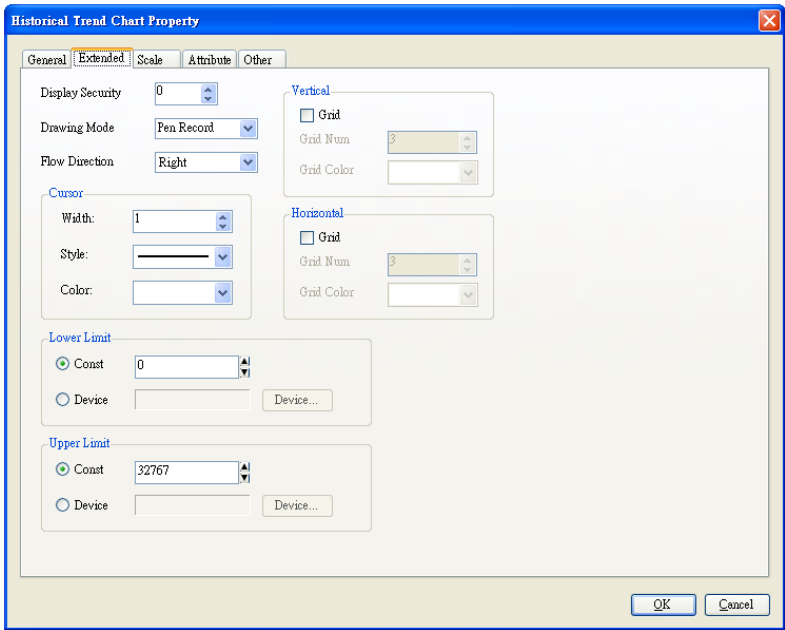


Fig. 3-6-7E-1 General Property Setting

Tick the option ☒ **Use Image** to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, drawing model, flow direction, cursor, upper and lower directional limits, and grid. See Figure 3-6-7E-2 below.



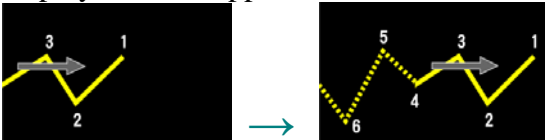

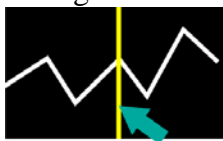
Extension Setting		Description
Display Security		Security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.
Drawing Model	Pen Record	<p>The values are displayed in the opposite direction to the line's direction.</p> 
	One by one	<p>The values are displayed in the opposite direction to the line's direction. When the display crosses over the scope, the graph will be erased before the display is resumed.</p> 
Flow Direction		The graph shows the moving directions. The user can set the moving direction up, down, left or right.
Cursor		<p>Set the cursor properties including line width, pattern and color.</p> 

Fig. 3-6-7E-2 Extension Property Setting

The Scale properties allow the user to set the scale display, color, font size, number of scales, and the maximum and minimum values. See Figure 3-6-7E-3 below.

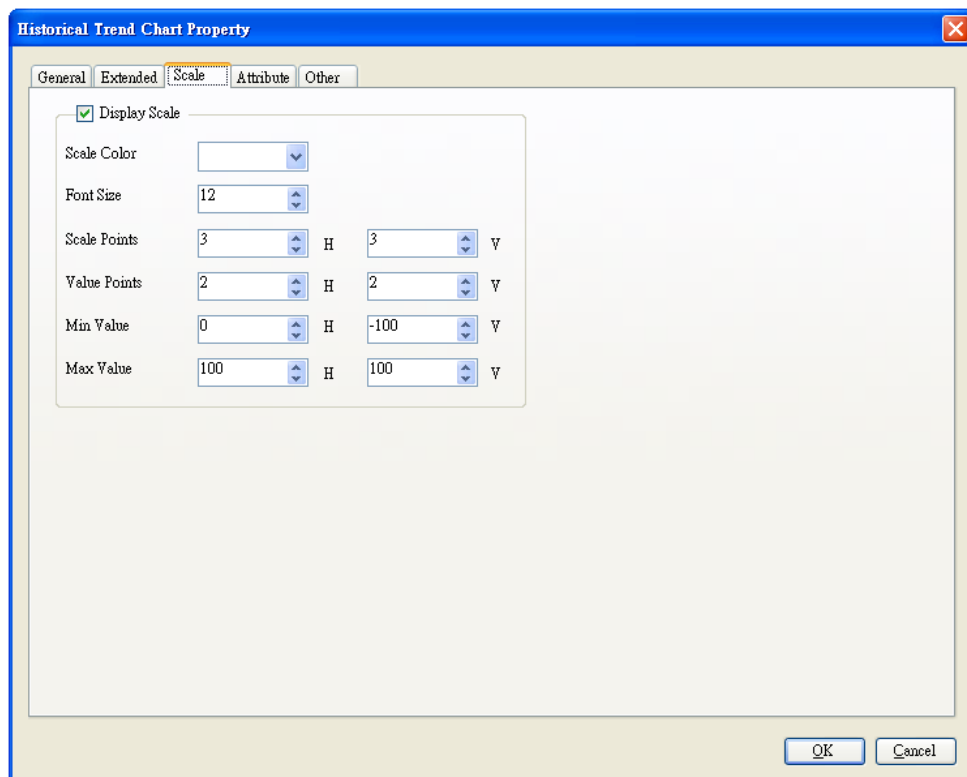


Fig. 3-6-7E-3 Scale Attributes

Figure 3-6-7E-4 below is the Property Setup window. Set the number of lines and they will be displayed in the table beneath for the user to set the devices, numeric operations, dotted line properties, graph information, and step modes.

Historical Trend Chart Property

General Extended Scale **Attribute** Other

Line Num 2 Numerical Type Signed 16bit





Points 4 Link Type Continuous

Logging Number 1 Line Type Line + Point

No.	Device	Operation	Line Attribute	Point Attribute	Graph Info	Step Mode
1			1 <input type="checkbox"/>	6 <input checked="" type="checkbox"/>		No
2			1 <input type="checkbox"/>	6 <input checked="" type="checkbox"/>		No

OK Cancel

Fig. 3-6-7E-4 Property

To set the device, click  to open the dialogue box of the resume device table, the editing software will then refer to the resume numbers and simulatively click  and click  and then click  to read the settings. Pick up a resume number and click it to monitor the device. See Figure 3-6-7E-5 below.

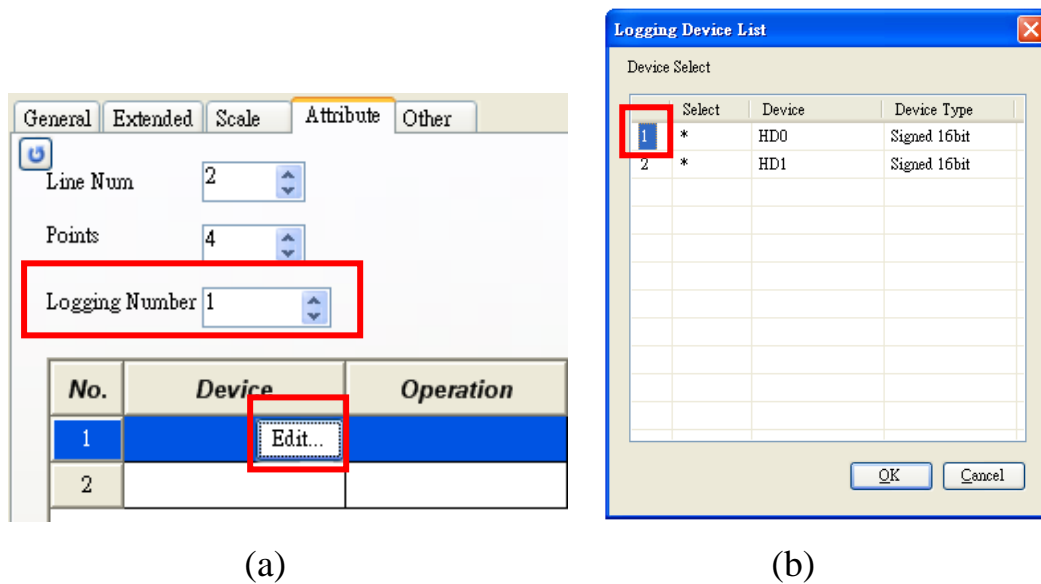


Fig. 3-6-7E-5 Biography Setting (a) Device Editing (b) Device Table List




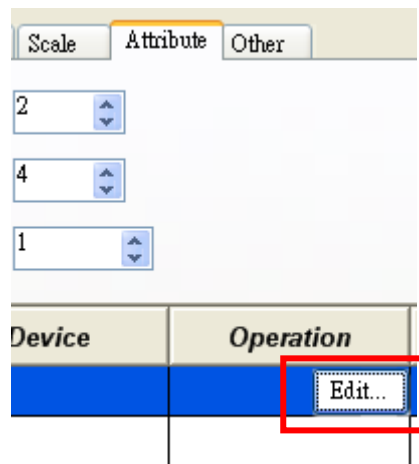
If devices are not set through the menu sequence of ,  and , the editing software will pop up the warning message as shown in Figure 3-6-7E-6 below.

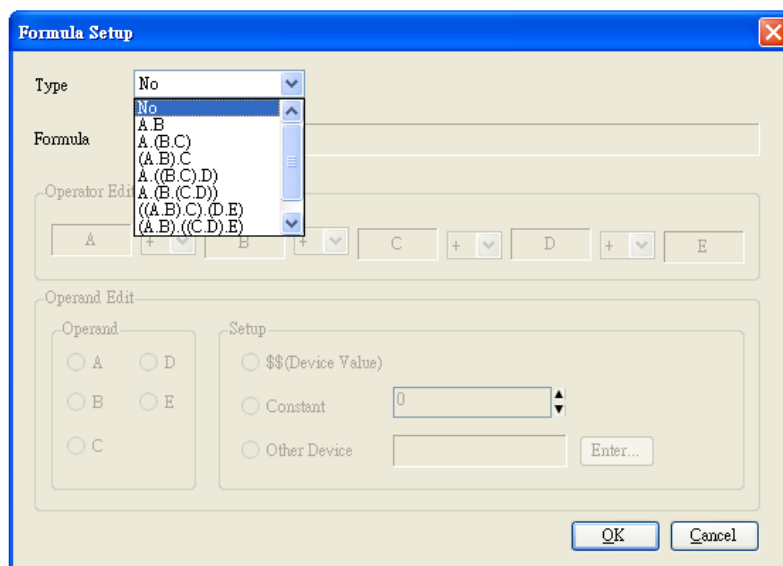


Fig. 3-6-7E-6 Warning Dialogue Box

To set up the operation, click **Edit...** to open the formula setup dialogue box, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7E-7 below.



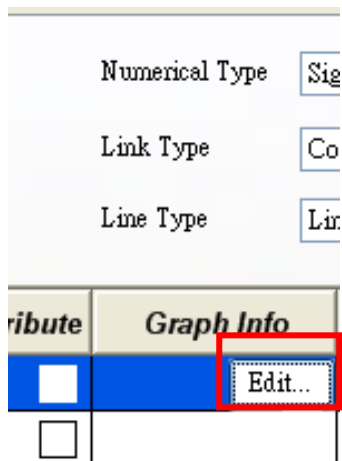
(a)



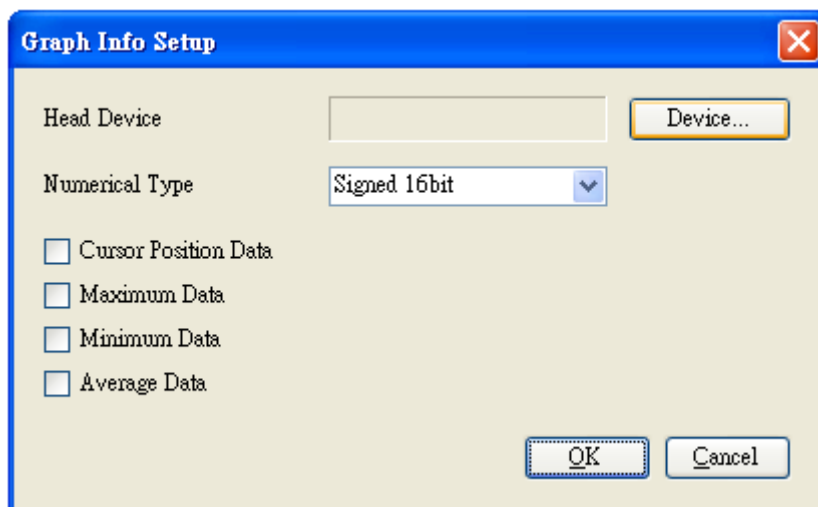
(b)

Fig. 3-6-7E-7 Biography Setting (a) Operation Setting (b) formula Setting

To set up the Graph Information, click **Edit...** to open the dialogue box and set the head device, numerical type, cursor position data, maximum and minimum values, and the average data. See Figure 3-6-7E-8 below.



(a)

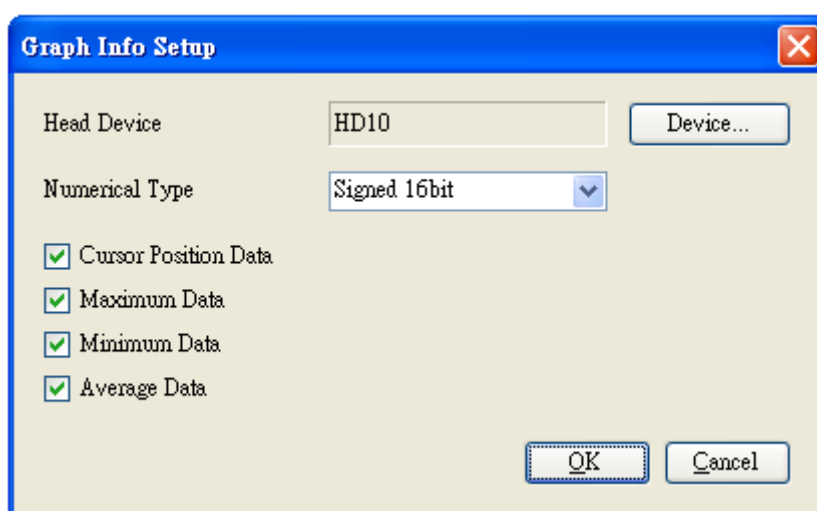


(b)

Fig. 3-6-7E-8 Biography Setting (a) Graph Information (b) Graph Information Setting



Set HD10 device as the first (starting) device, and the rest devices will then be orderly set up. The option ☒ Cursor Position Data points to device HD10, and the options ☒ Maximum Data, ☒ Minimum Data and ☒ Average Data point to HD11, HD12 and HD13, respectively. See Figure 3-6-7E-9 below.



	Device	Remark
Cursor Position Data	HD10	X-axis position in the chart
Maximum Data	HD11	Monitoring the maximum value in the trend chart
Minimum Data	HD12	Monitoring the minimum value in the trend chart
Average Data	HD13	Monitoring the average value in the trend chart

Fig. 3-6-7E-9 Chart Information Device

The Other properties allow the user to set the auxiliary lines and the time devices. To set up the auxiliary lines, tick the needed auxiliary line types and then set their constants, devices, line widths, line style and colors. See Figure 3-6-7E-10 below.

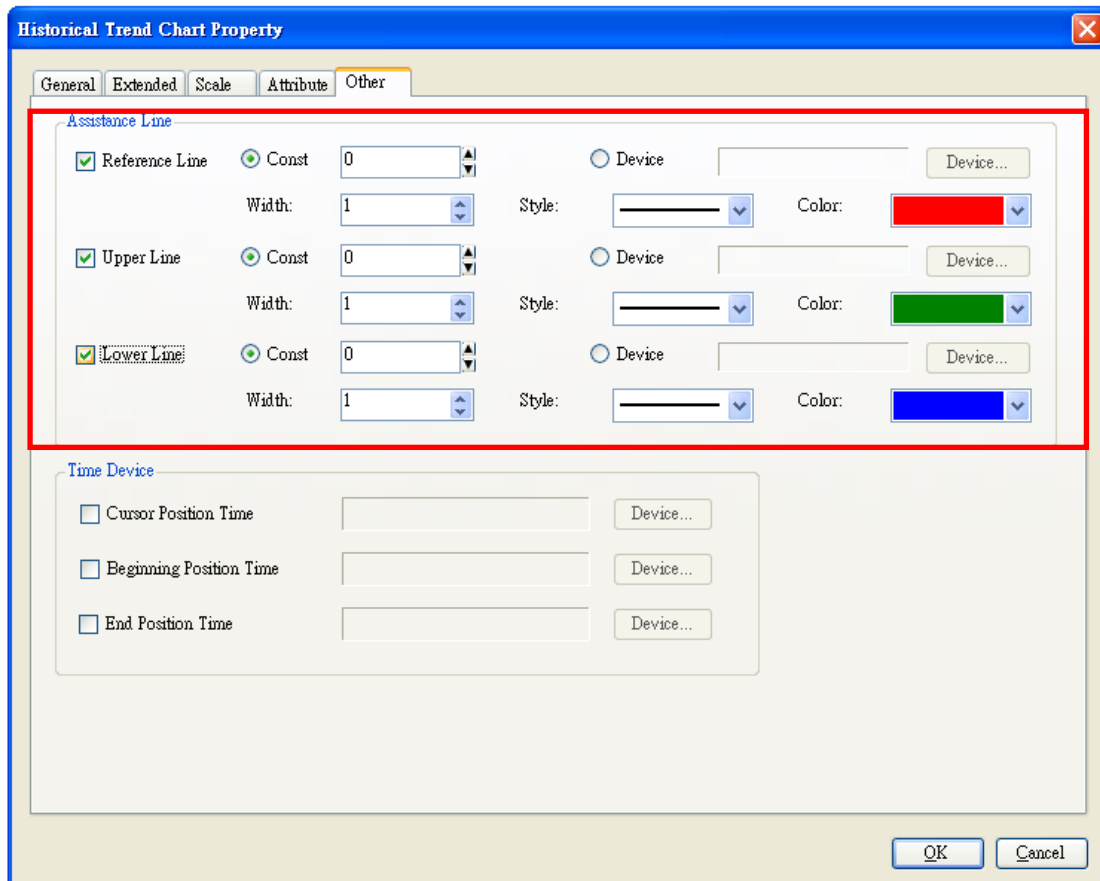


Fig. 3-6-7E-10 Auxiliary Line Setting

Tick the preferred time devices to be displayed, and set one of them as the starting device. See Figure 3-6-7E-11 below.

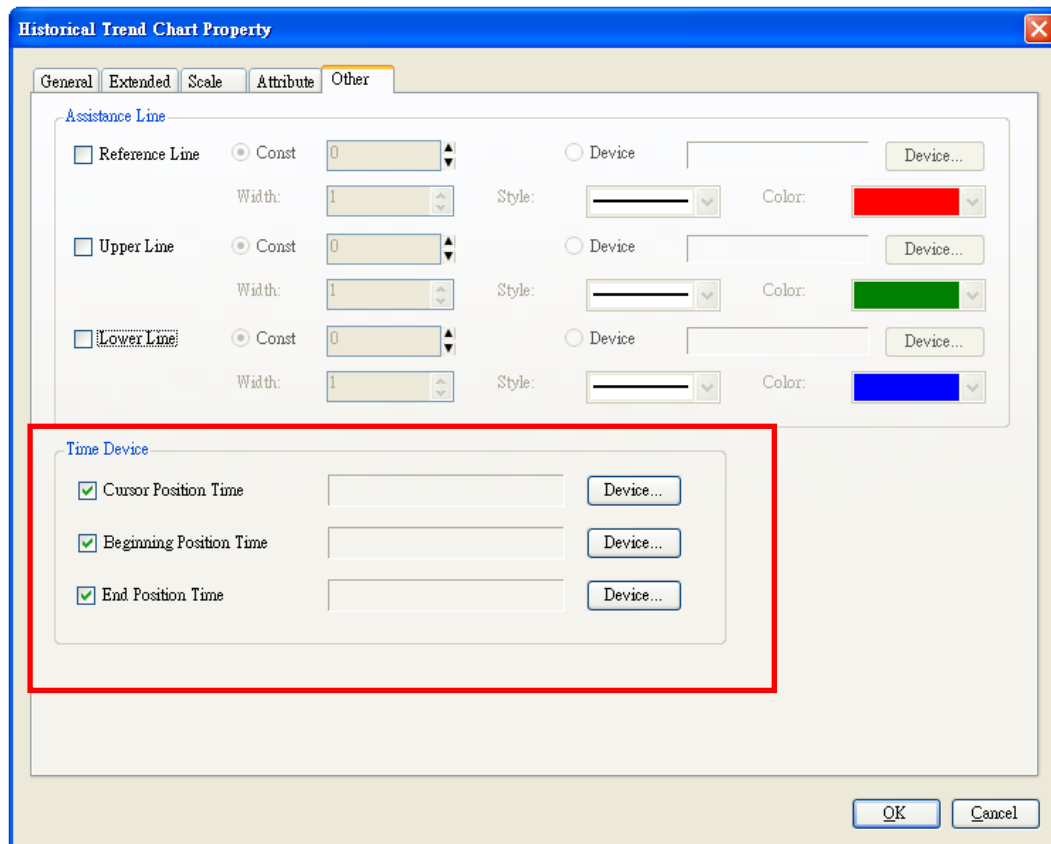


Fig. 3-6-7E-11 Time Device Setting



Tick ☒ **Cursor Position Time** to set the cursor position/time device as HD100, and the rest devices will be automatically set in sequence to show the position/time-representing devices HD100, HD101, HD102 and HD103; tick ☒ **Beginning Position Time** and ☒ **End Position Time** to set the starting and ending position/time device as HD200 and HD300, and the automatic setup of the rest time devices is the same as the above. See Table 3-6-7E-12 below for illustrations.

Table 3-6-7E-12 Time Device Setting

	Device	Display
Cursor Position Time	HD100	Year/Month
	HD101	Date/Time
	HD102	Minute/Second
	HD103	Week
Beginning Position Time	HD200	Year/Month
	HD201	Date/Time
	HD202	Minute/Second
	HD203	Week
End Postion Time	HD300	Year/Month
	HD301	Date/Time
	HD302	Minute/Second
	HD303	Week

NOTE

- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- In the setting of graph information and time devices, tick the Display Cursor option of the switch functions under the Historical Trend Chart tab. See Figure 3-6-7E-13 below.

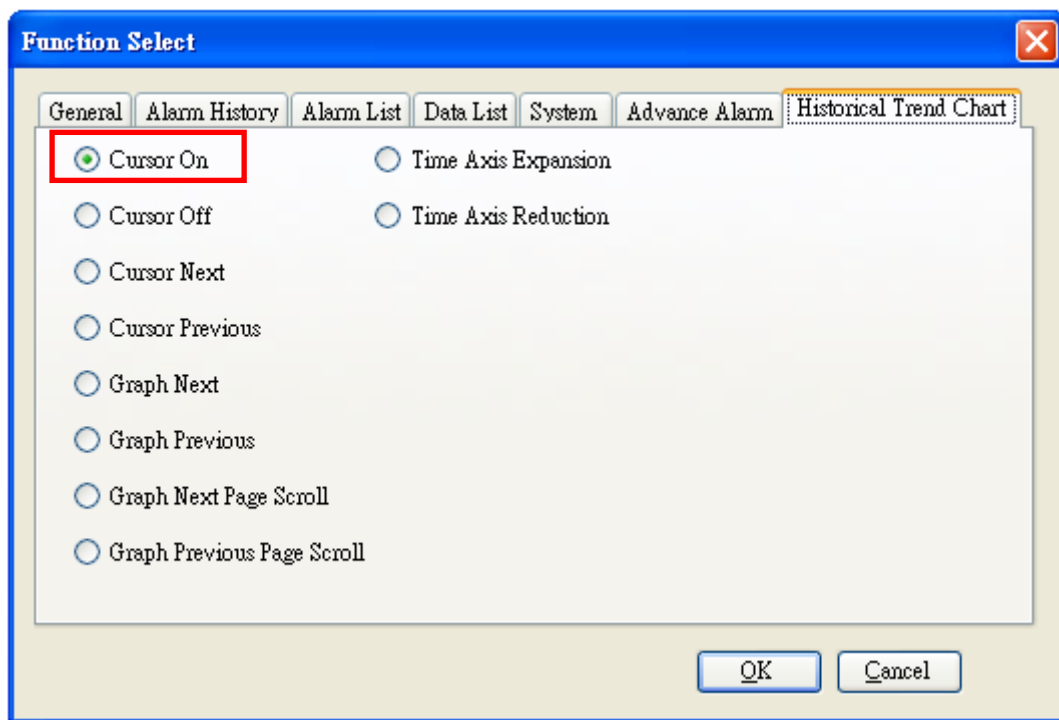






Fig. 3-6-7E-13 Options of Switch Functions

f. Statistic Bar Chart

To set up a statistic bar chart, click  and click  and then click  , or directly click the shortcut  , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency and line pattern. See Figure 3-6-7F-1 below.

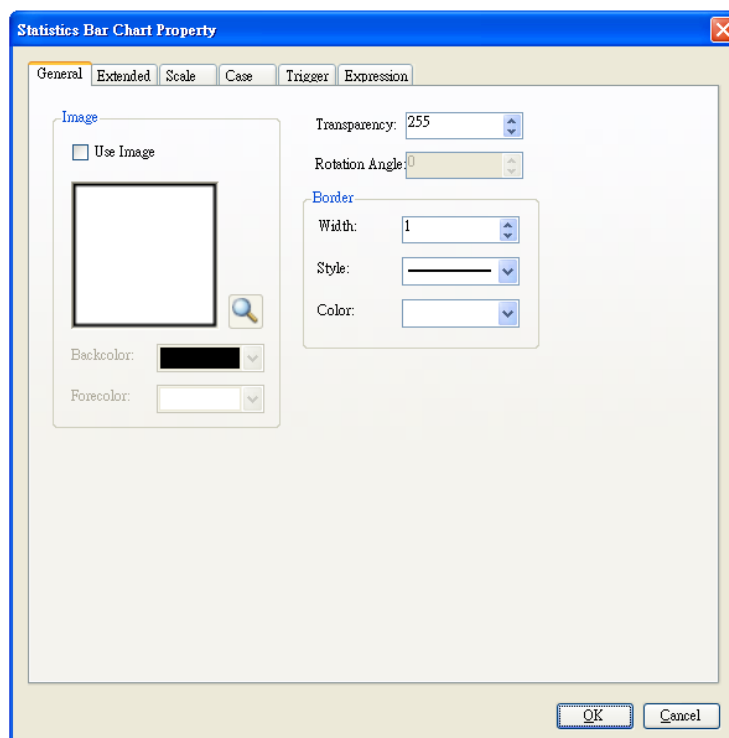



Fig. 3-6-7F-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, direction and sorting order. Figure 3-6-7F-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

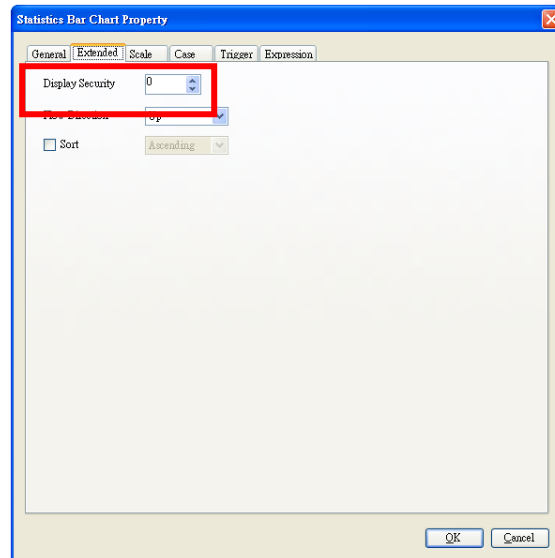


Fig. 3-6-7F-2 Security Levels

The Scale properties allow the user to set the scale display, color, font size and number of scales. See Figure 3-6-7A-33-6-7F-3 below.

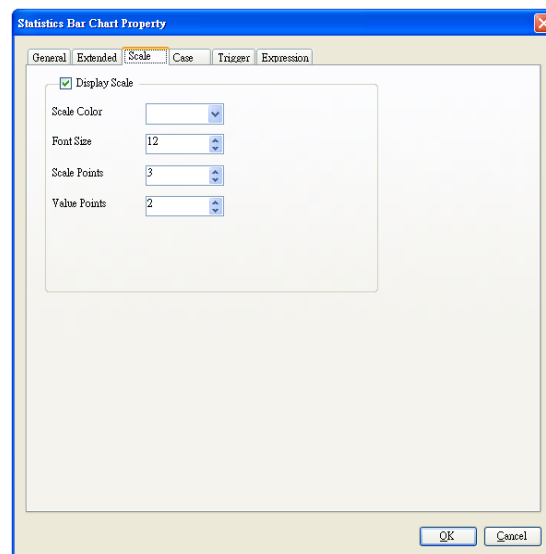
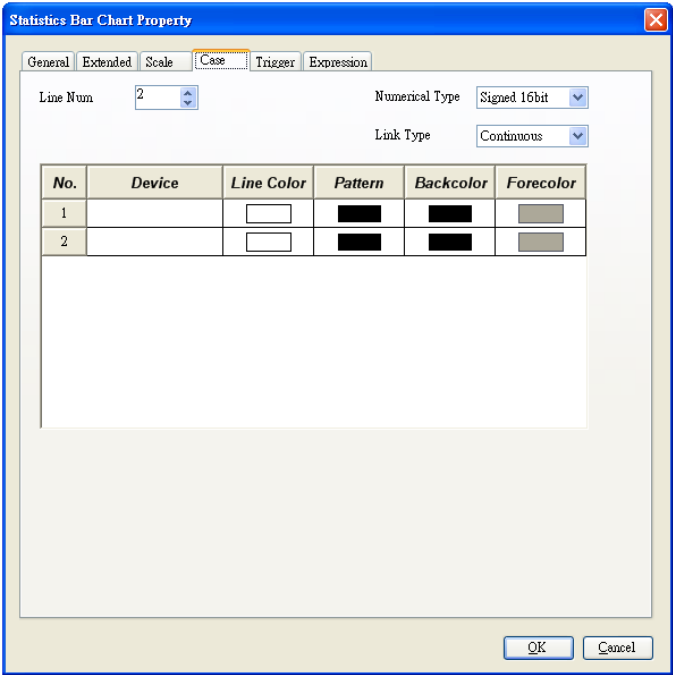
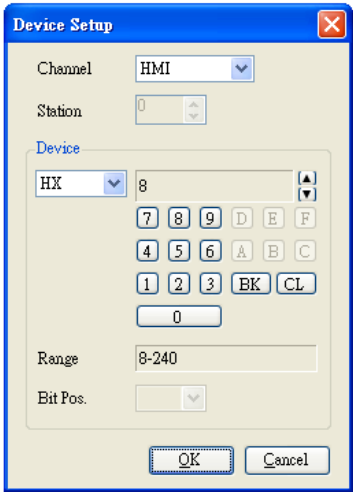


Fig. 3-6-7F-3 Scale Attributes

Figure 3-6-7F-4 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the devices, lines and colors. Click to open the device setup dialogue box and change the devices.



(a)



(b)

Fig. 3-6-7F-4 Range Setting (a) Edit Window (b) Setting Device

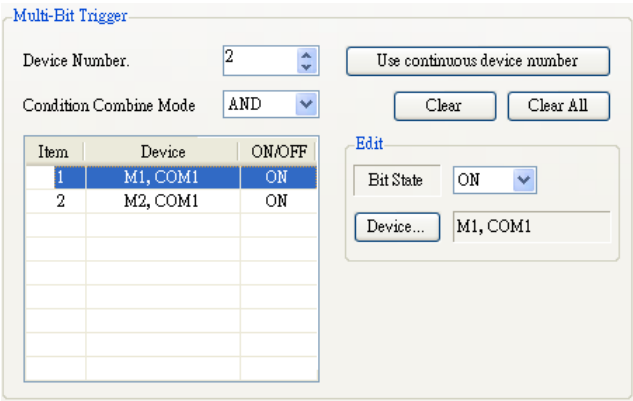
The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-7F-5 below.

Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

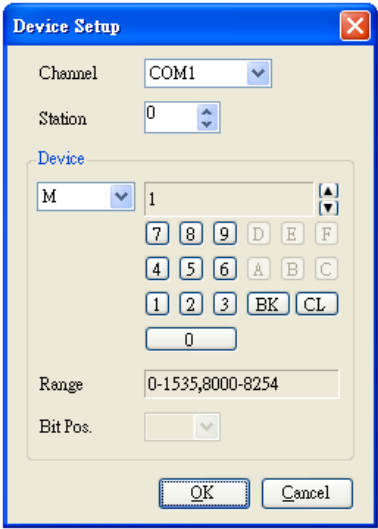
Fig. 3-6-7F-5 Trigger Pattern Setting



To set a multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-7F-6 below.



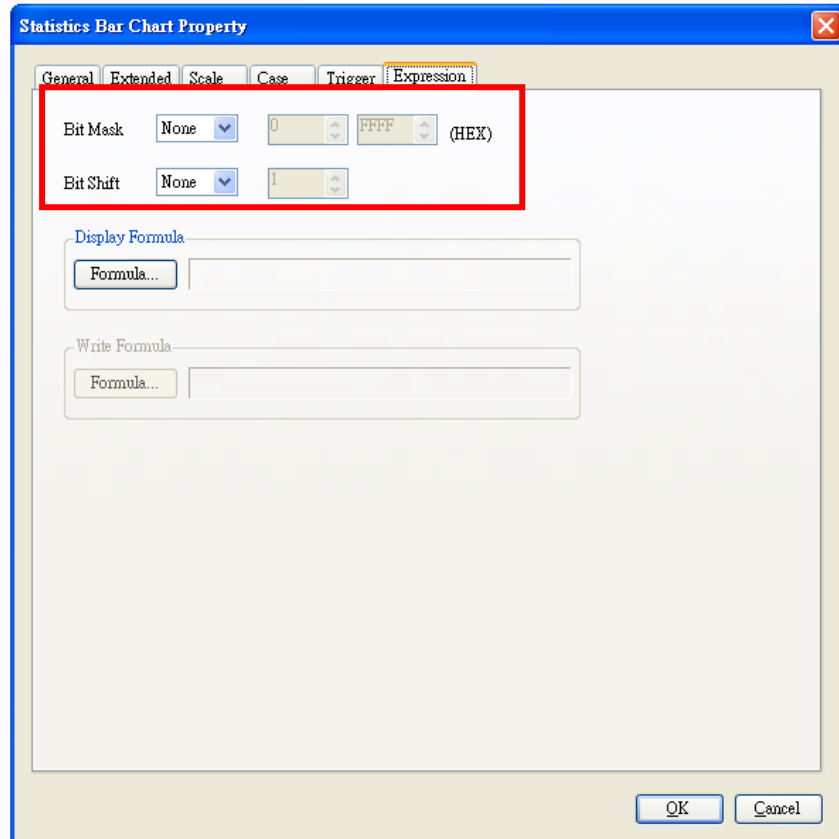
(a)



(b)

Fig. 3-6-7F-6 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula. The software uses hexadecimal input. See Figure 3-6-7F-7 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7F-7 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7F-8 below.

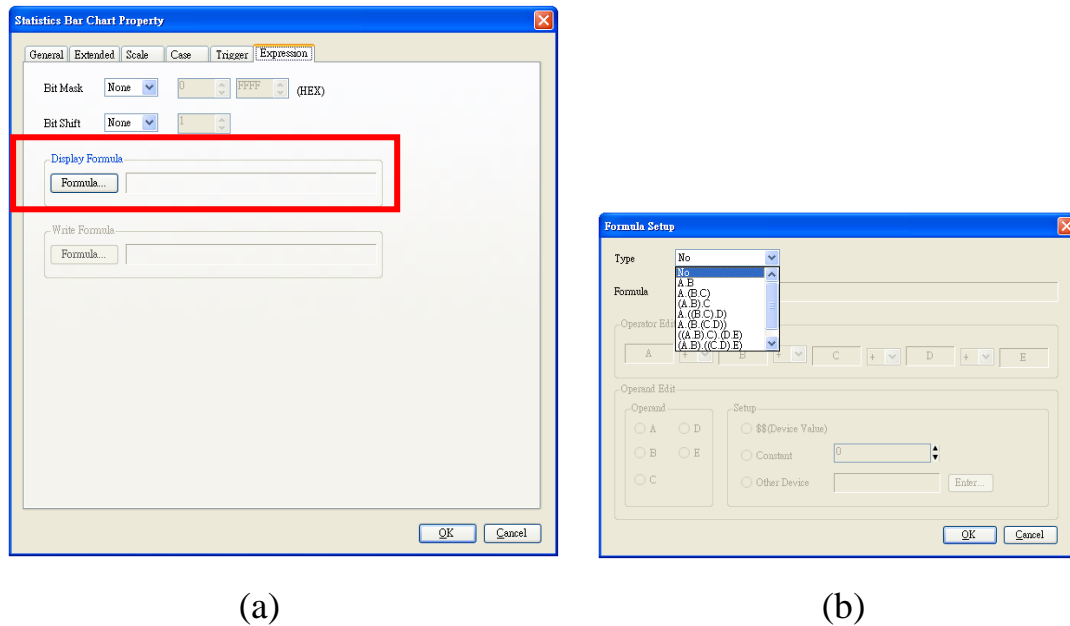






Fig. 3-6-7F-8 Displaying formula (a) Setting formula (b) formula Set



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

g. Statistic Pie Chart

To set up a statistics pie chart, click  and click  and then click  , or directly click the shortcut  , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency, line pattern, and background color. See Figure 3-6-7G-1 below.

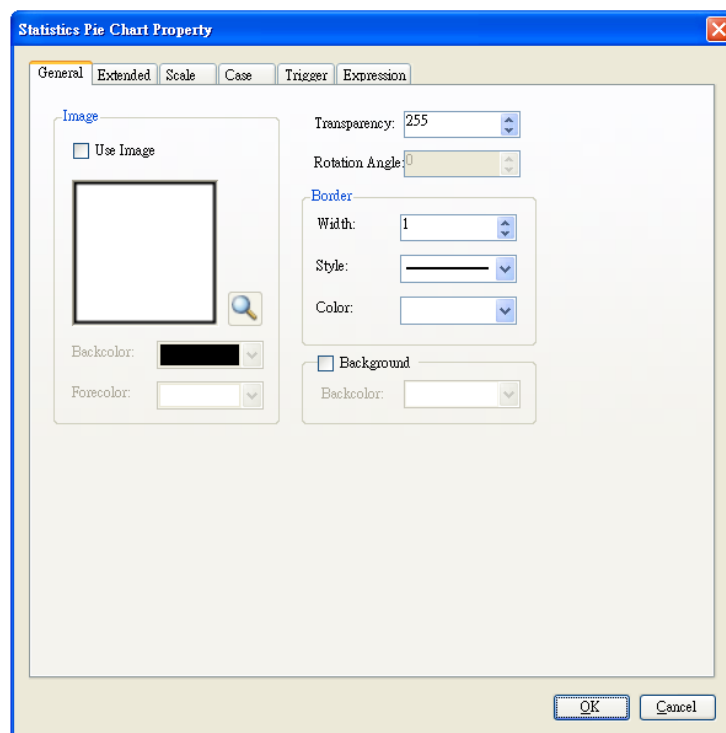




Fig. 3-6-7G-1 General Property Setting

Tick the option  Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property setting allows the user to change the security level and blinking feature. Figure 3-6-7G-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

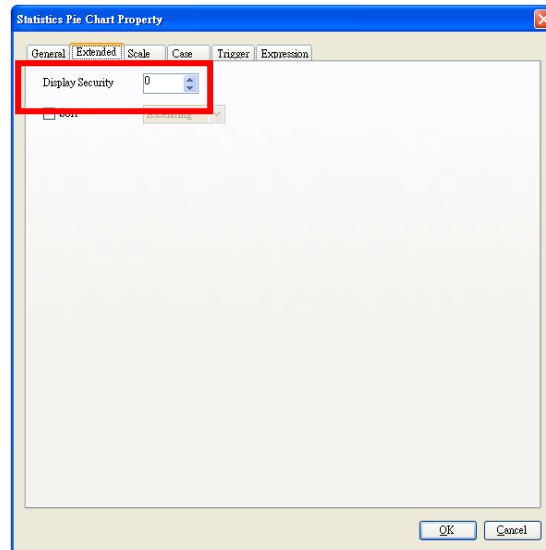


Fig. 3-6-7G-2 Security Levels

The Scale properties allow the user to set the scale display, color, font size and number of scales. See Figure3-6-7G-3 below.

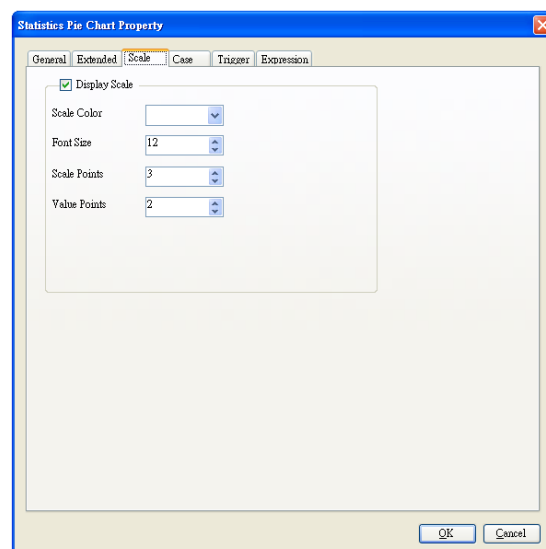
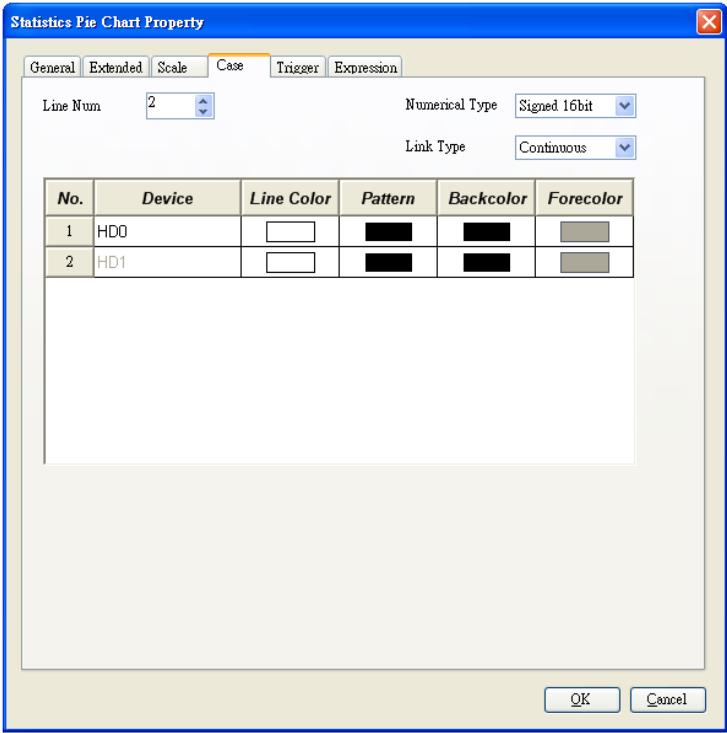
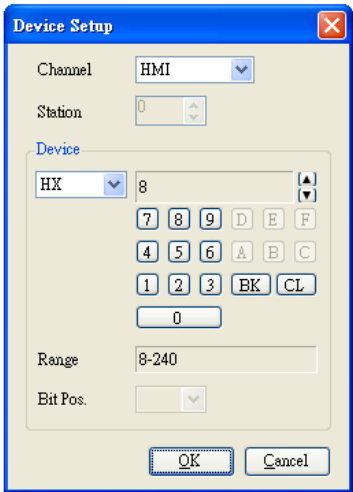


Fig. 3-6-7G-3 Scale Attributes

Figure 3-6-7G-4 below is the Range Setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the devices, lines, image patterns, and colors. Click to open the device dialogue box and change the device.



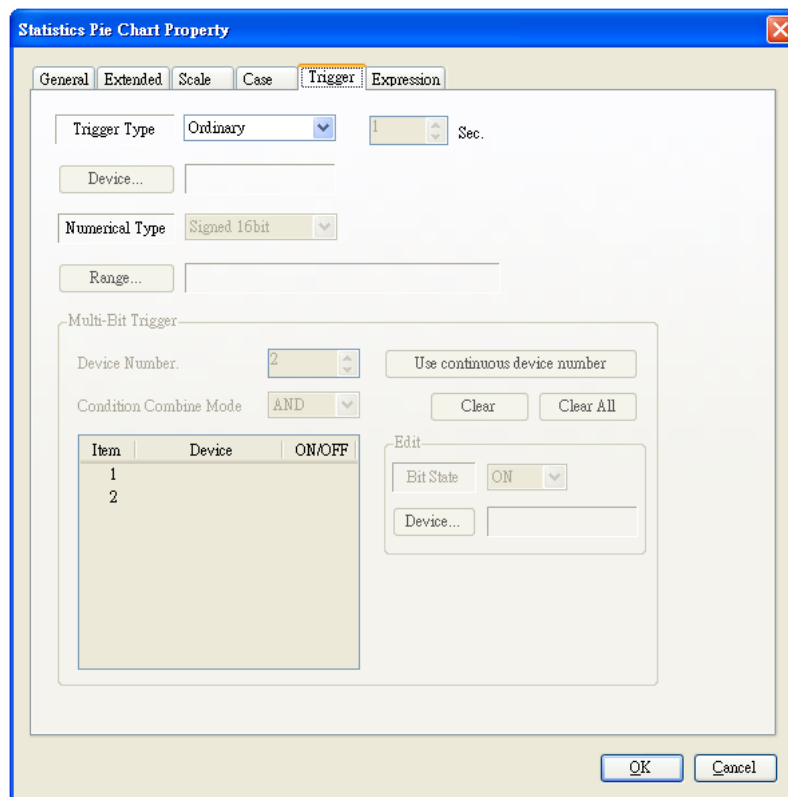
(a)



(b)

Fig. 3-6-7G-4 Range Setting (a) Edit Window (b) Setting Device

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-7G-5 below.

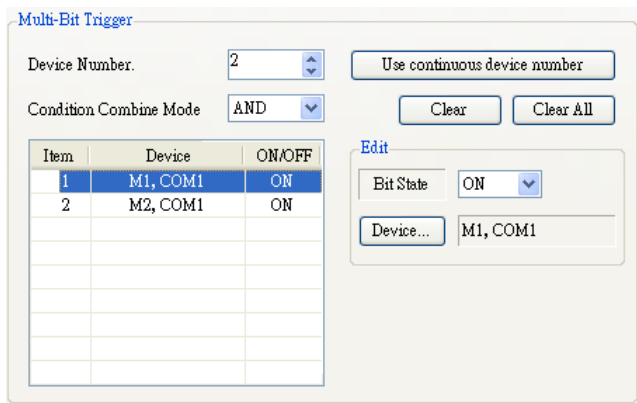


Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

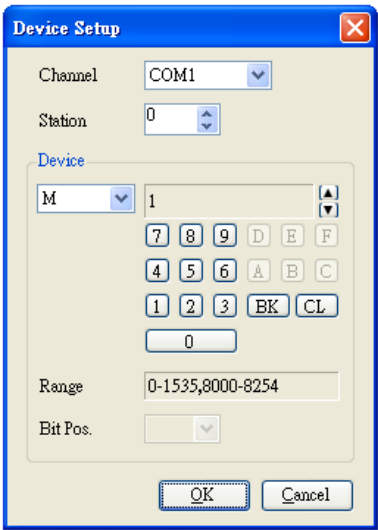
Fig. 3-6-7G-5 Trigger Pattern Setting



To set the trigger pattern as multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-7G-6 below.



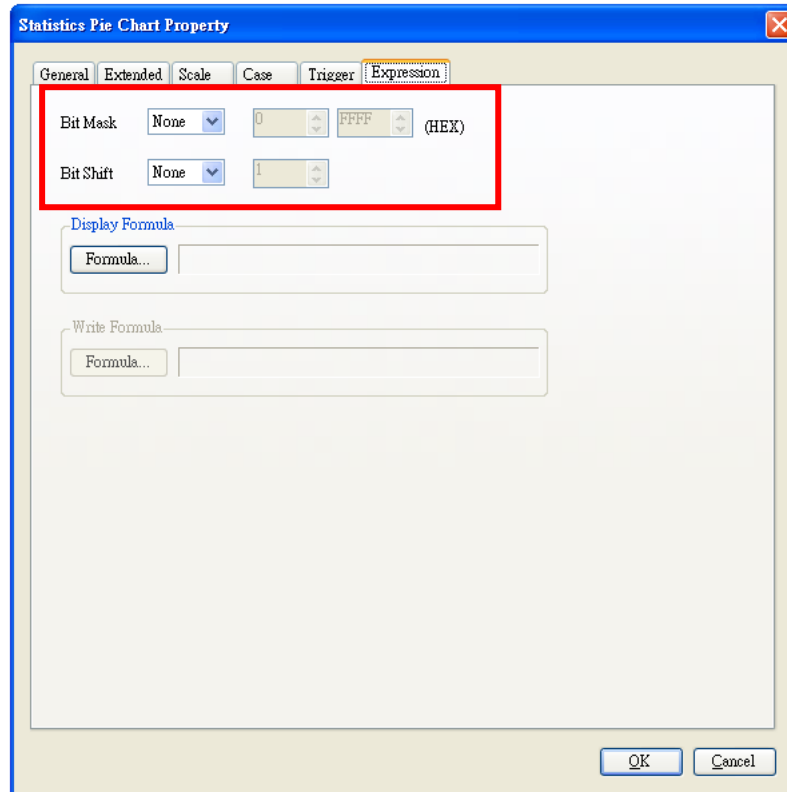
(a)



(b)

Fig. 3-6-7G-6 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formulas. The system uses hexadecimal input. See Figure 3-6-7G-7 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7G-7 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-4A-133-6-7G-8 below.

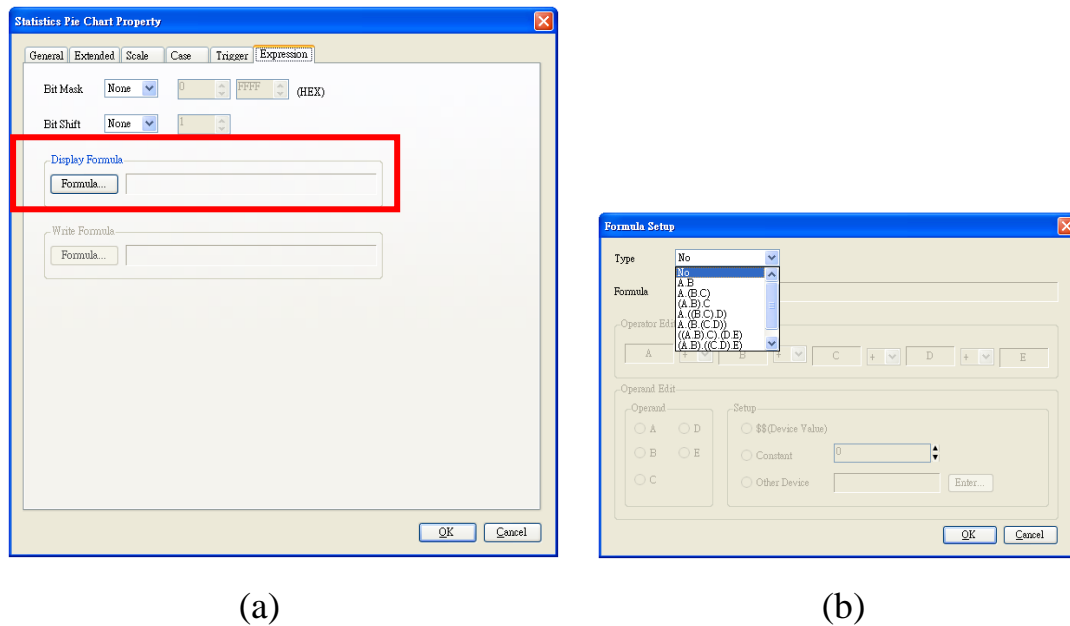



Fig. 3-6-7G-8 Displaying formula (a) Setting formula (b) formula Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

h. Level Chart

To set up a level chart, click **Unit** and click **Chart Display** and then click **Level Chart**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency, line pattern, and background color. See Figure 3-6-7H-1 below.

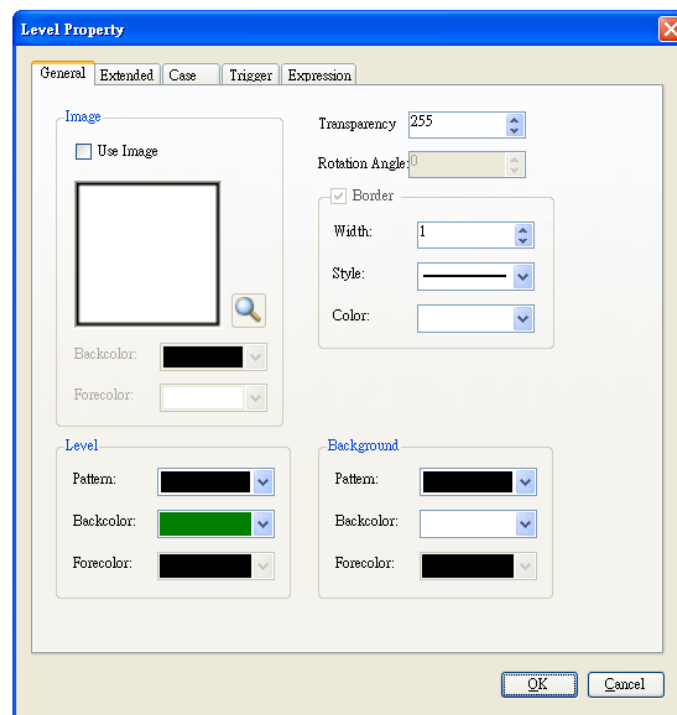



Fig. 3-6-7H-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension properties allow the user to set the security level, device, numeric type, meter direction, and horizontal/vertical upper and lower limits. Figure 3-6-7H-2 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

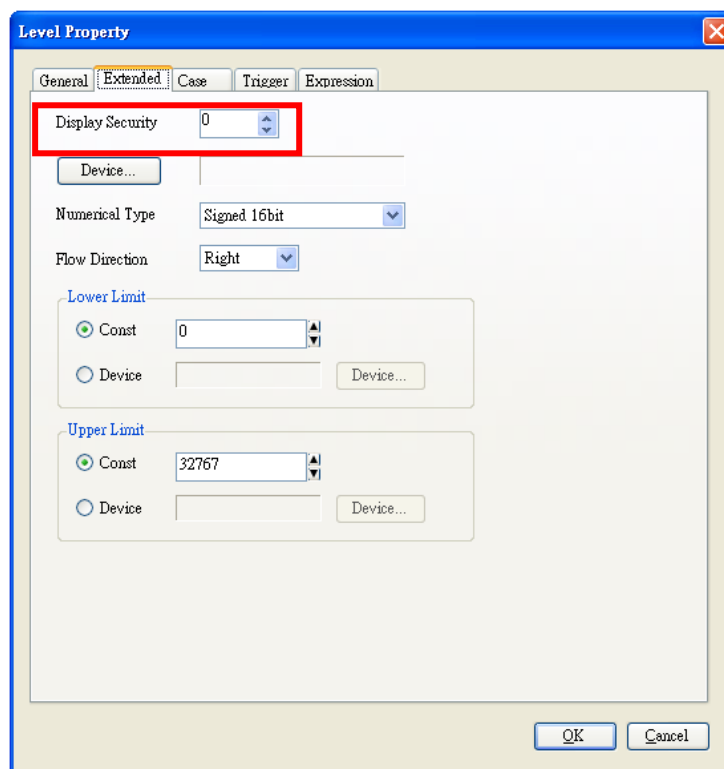
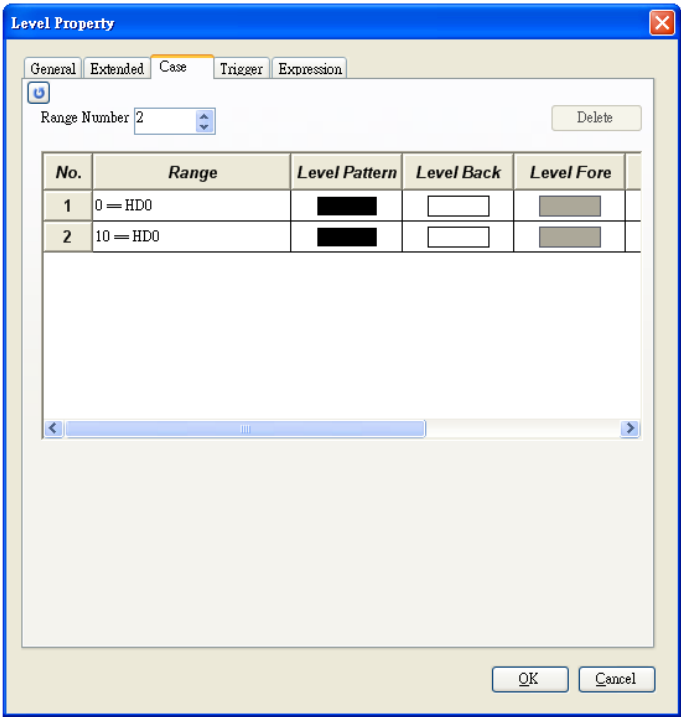
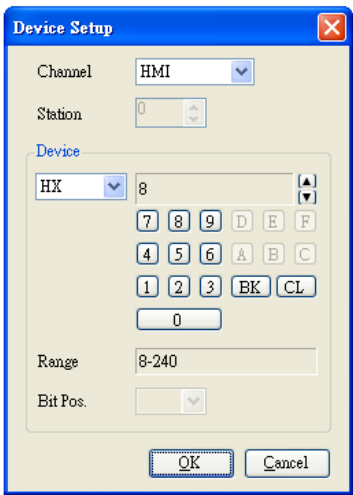


Fig. 3-6-7H-2 Security Levels

Figure 3-6-7H-3 below is the Range setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the device, color and pattern. Click to open the dialogue box and set the device.



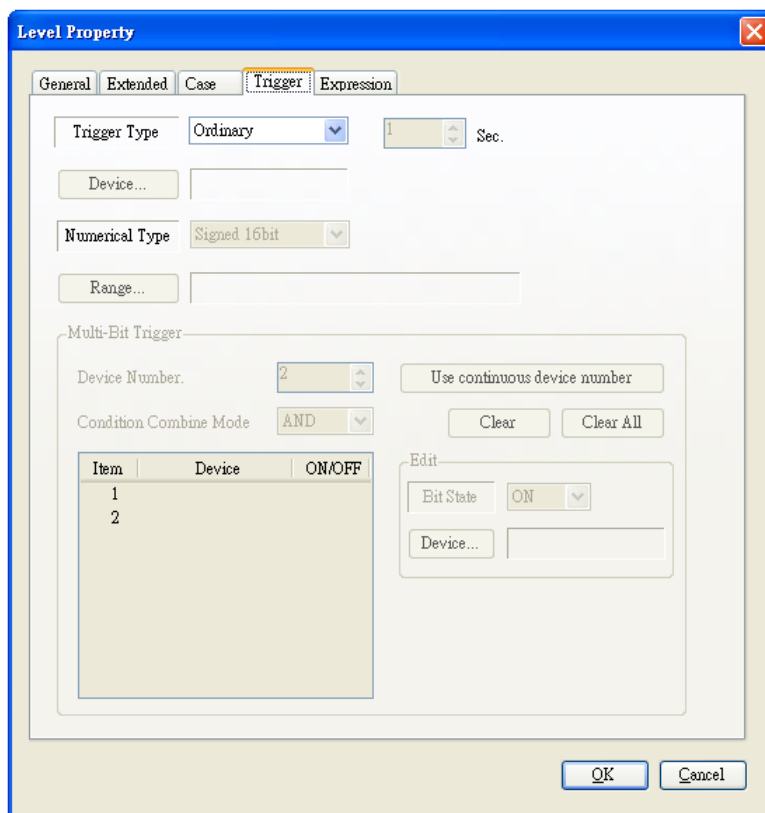
(a)



(b)

Fig. 3-6-7H-3 Range Setting (a) Edit Window (b) Setting Device

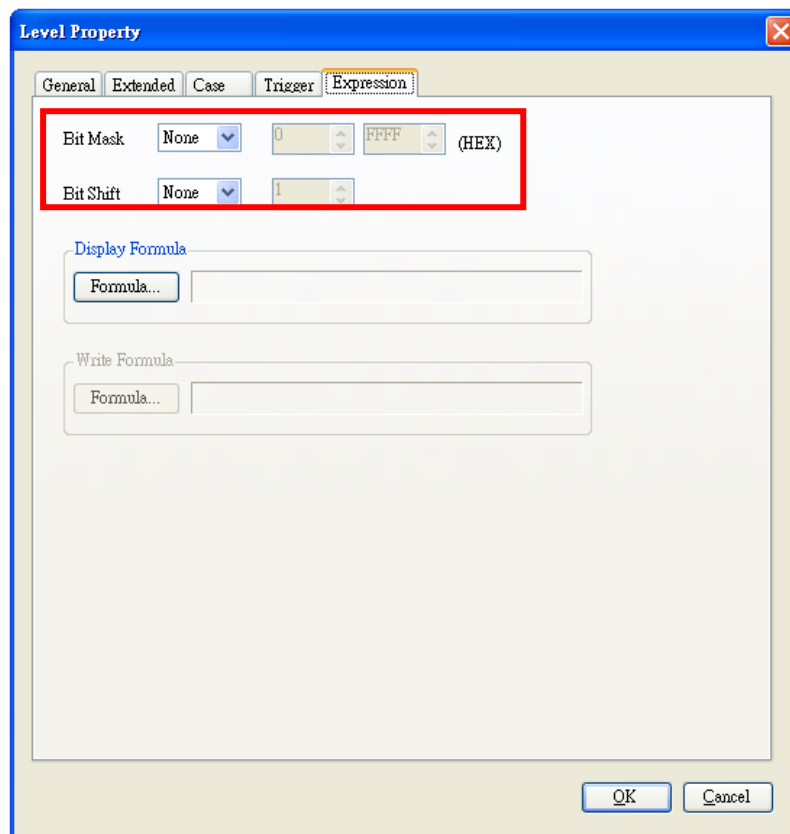
The Trigger properties allow the user to set trigger pattern. See Figure 3-6-7H-4 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-7H-4 Trigger Pattern Setting

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula . The system uses hexadecimal input. See Figure 3-6-7H-5 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7H-5 Logic Operations

To set formula display, click **Formula...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure3-6-7H-6 below.

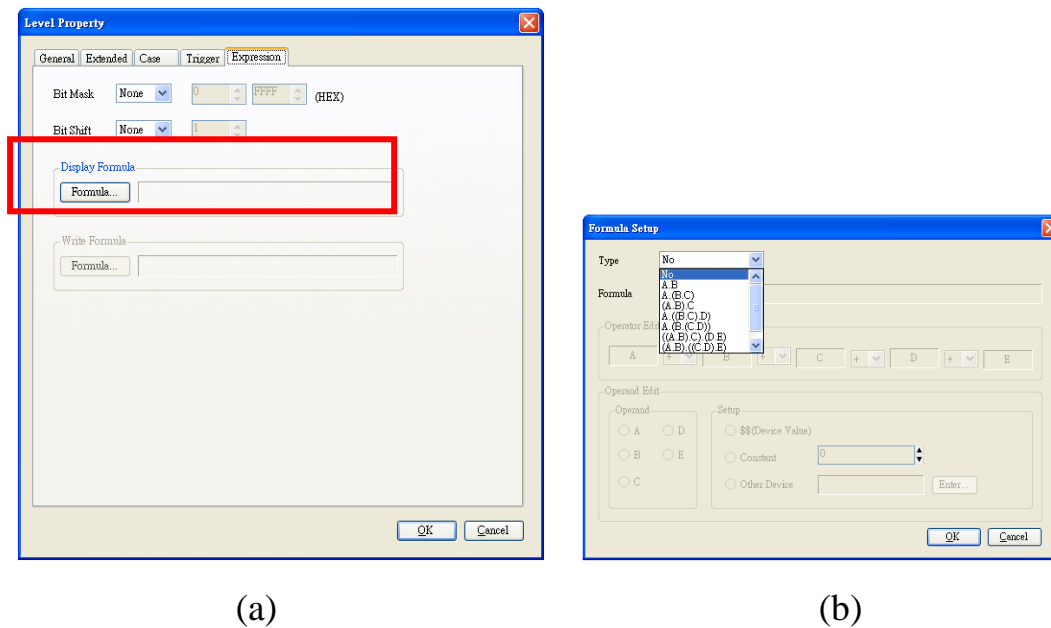






Fig. 3-6-7H-6 Displaying formula (a) Setting formula (b) formula Set



To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

i. Panel Meter

To set up a panel meter, click  and click  and then click  Panel Meter, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency, line pattern, and background color. See 3-6-7I-1 below.

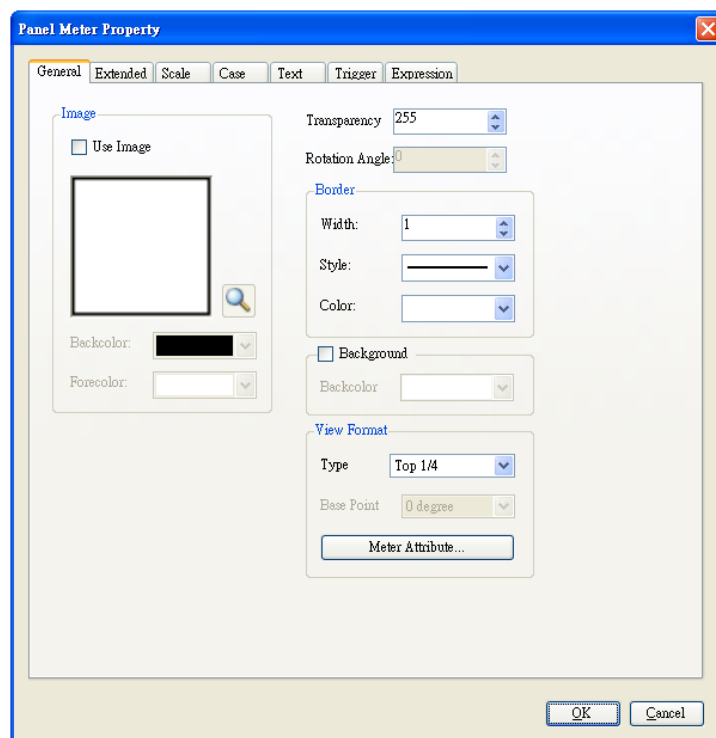



Fig. 3-6-7I-1 General Property Setting

Tick the option ☒ Use Image to change the picture. Click  to open the picture library and select a desired picture. For detailed instructions, please see [Section 3.4.2 Image Library](#).

To change the panel meter display pattern, make the setting in the window, as shown in the following Figure 3-6-7I-2. The setting is described in the following Table 3-6-7I-3.

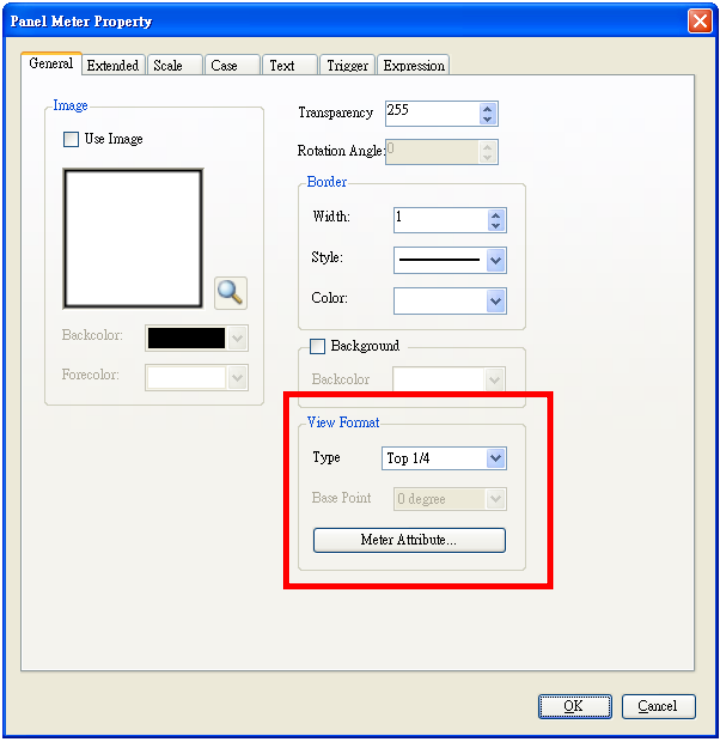
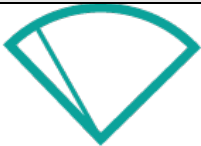
















Fig. 3-6-7I-2 Display Pattern Setting

Table 3-6-7I-3 Display Patterns

Patterns			
Top 1/4		Bottom 1/4	
Left Side 1/4		Right Side 1/4	
Upper Left 1/4		Upper Right 1/4	
Lower Left 1/4		Lower Right 1/4	
Top 1/2		Bottom 1/2	
Left Side 1/2		Right Side 1/2	
3/4		All	

To change the panel meter settings, click  to open the panel meter property setting window. See Figure 3-6-7I-4 below.

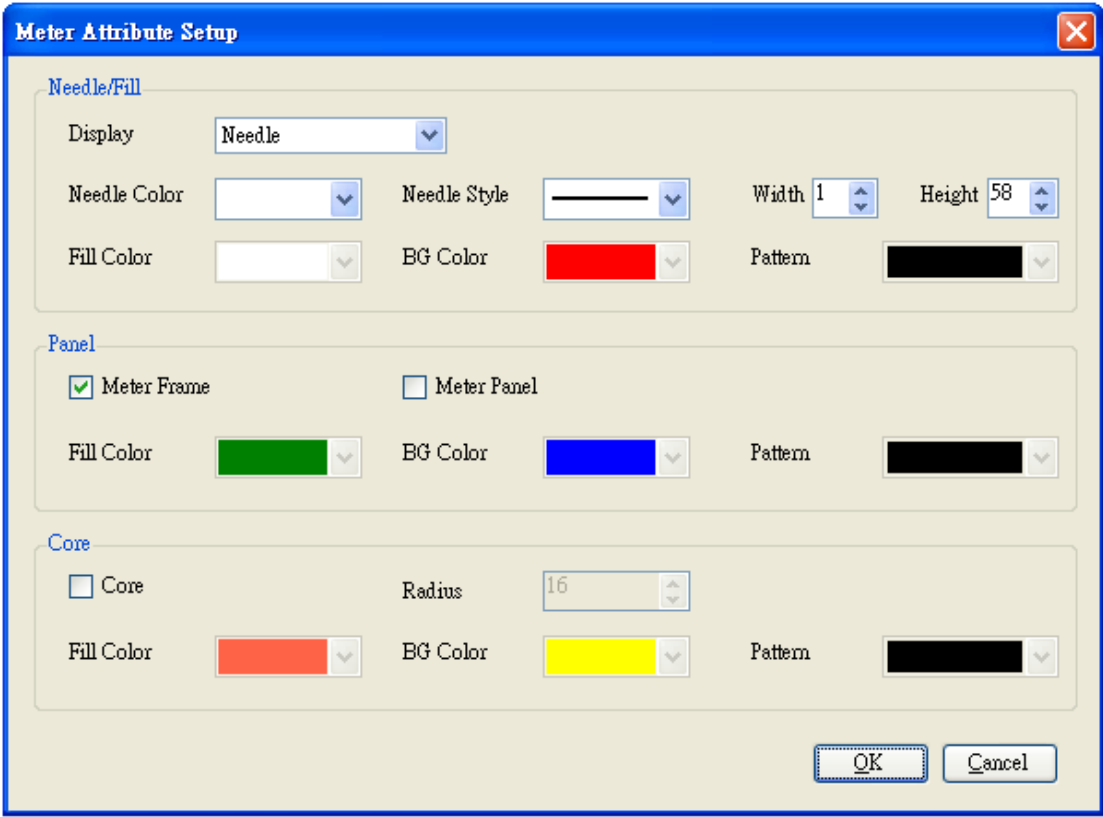


Fig. 3-6-7I-4 Panel Meter Property Setting

The Extension properties allow the user to set the security level, device, numeric type, direction, and horizontal/vertical upper and lower limits. Figure 3-6-7I-5 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

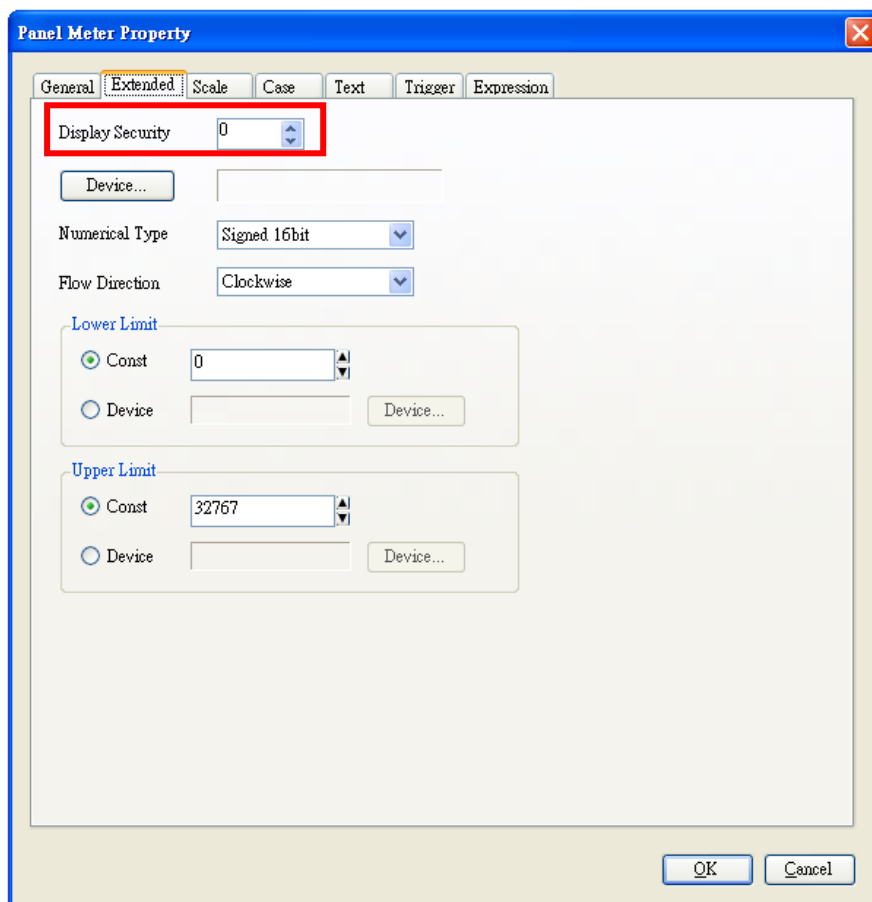


Fig. 3-6-7I-5 Security Levels

The Scale properties allow the user to set the scale display, color, font size, number of scales, and the maximum and minimum scale values. See Figure 3-6-7I-6 below.

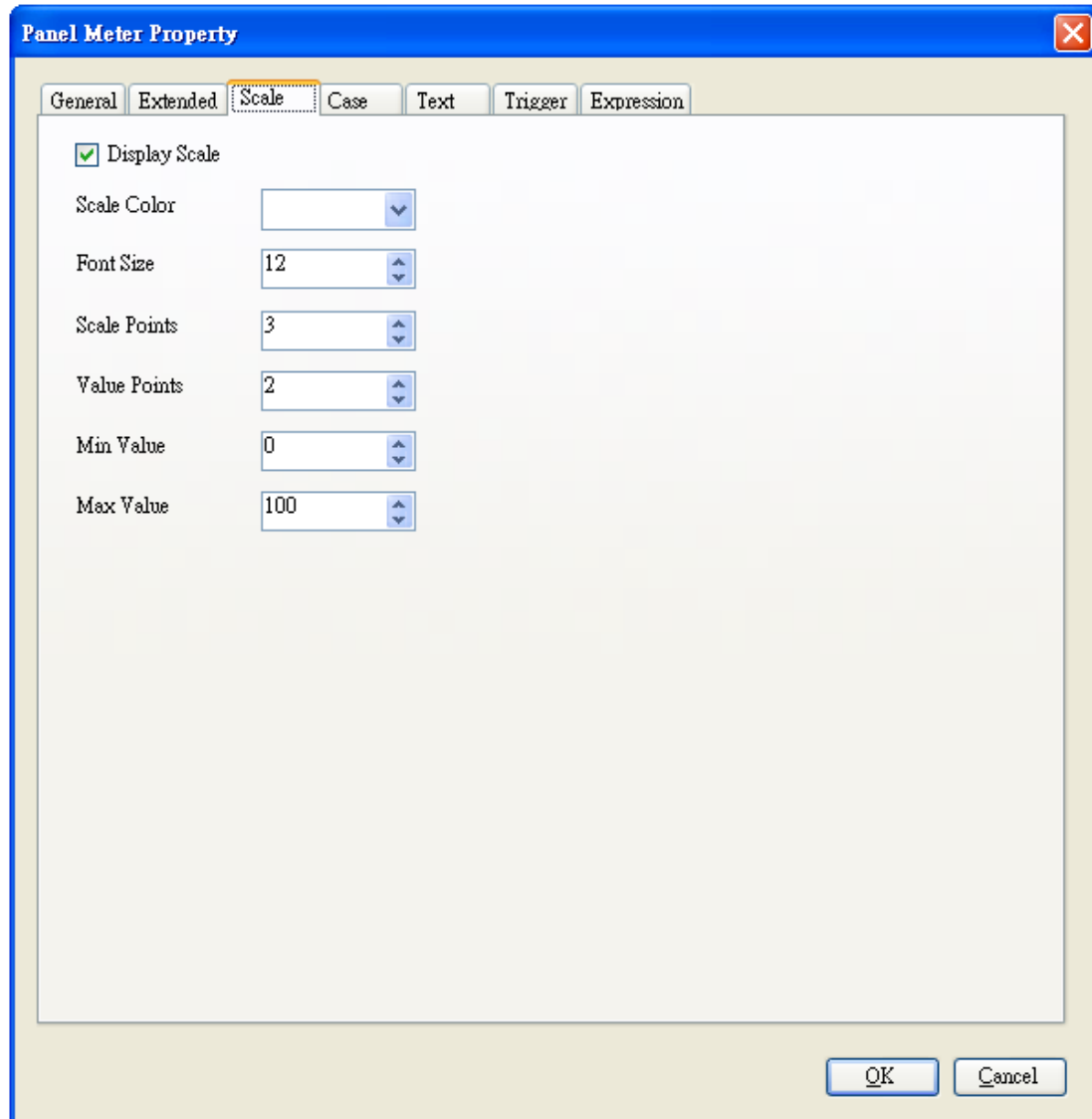
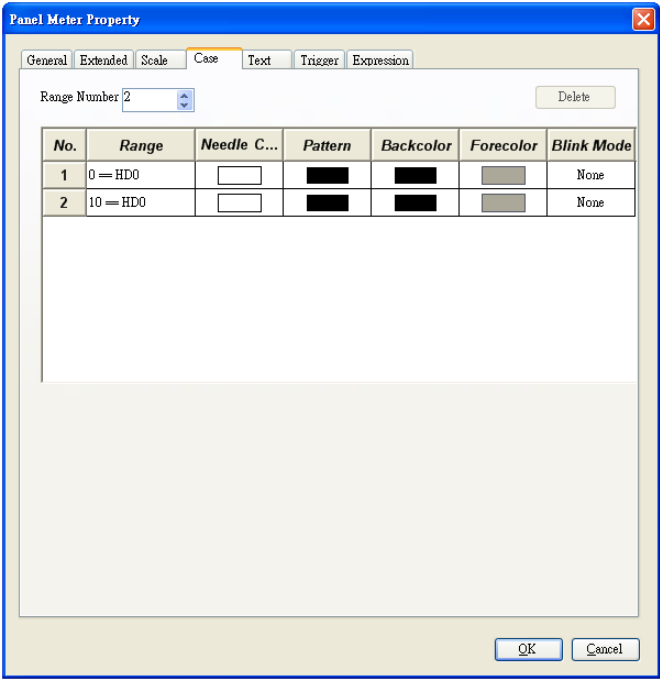
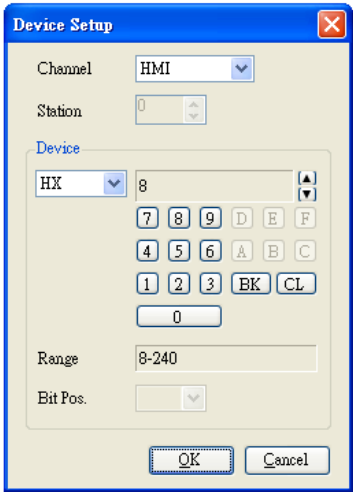


Fig. 3-6-7I-6 Scale Attributes

Figure 3-6-7I-7 below is the Range setup window. Set the number of ranges and they will be displayed in the table beneath for the user to set the device, color and pattern. Click to open the device dialogue box and set the device.



(a)



(b)

Fig. 3-6-7I-7 Range Setting (a) Edit Window (b) Setting Device

The Text property setting allows the user to set the display, color, font, editing position, alignment and the content. See Figure 3-6-7I-8 below.

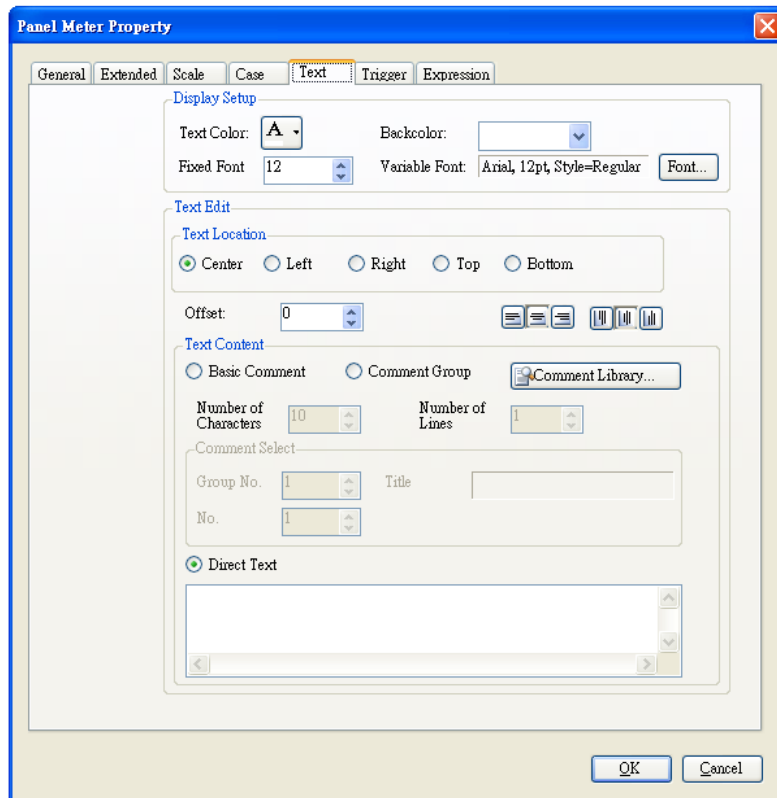



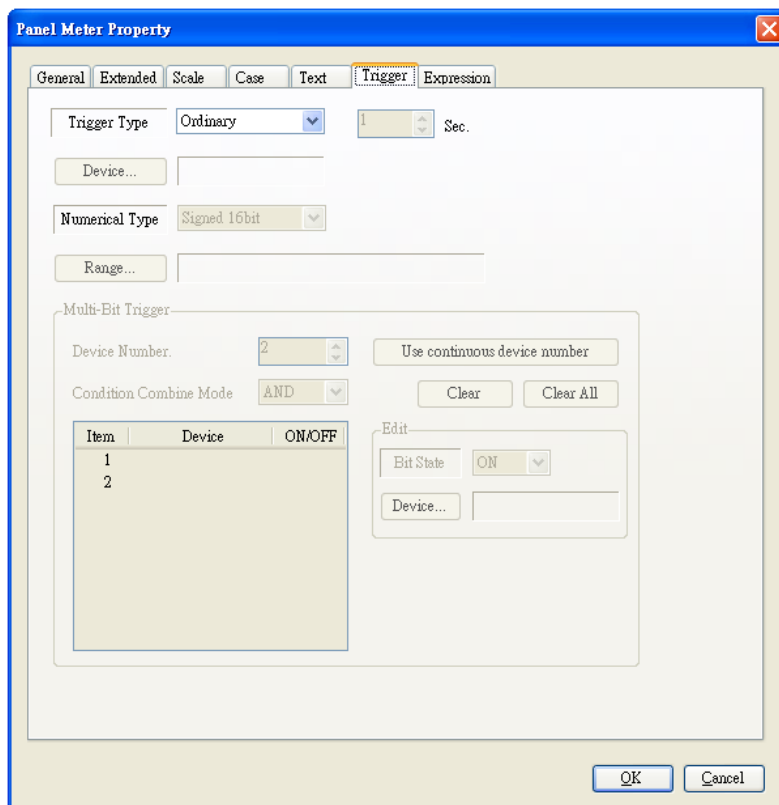
Fig. 3-6-7I-8 Text Property Setting

In the text editing, comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).



- If basic comment or comment group is selected for the text contents, the text will be presented according to the Range settings (such color, blinking); if direct text is selected, the contents will be presented according to the Text settings.

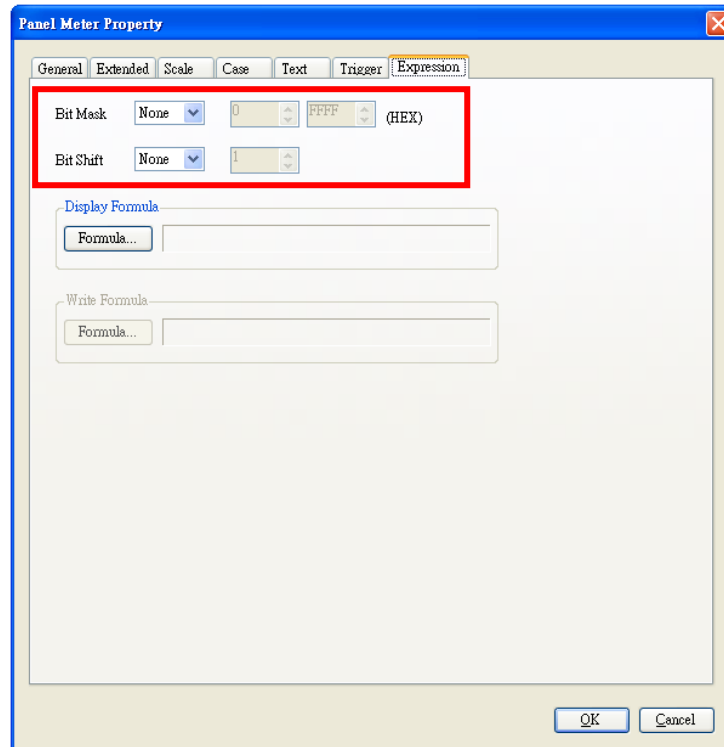
The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-7I-9 below.



Trigger Pattern	Description
Ordinary	No trigger pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.


Fig. 3-6-7I-9 Trigger Pattern Setting

The Numeric Operation properties allow the user to set the value, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-7I-10 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-7I-10 Logic Operations

To set formula display, click  to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-7I-11 below.

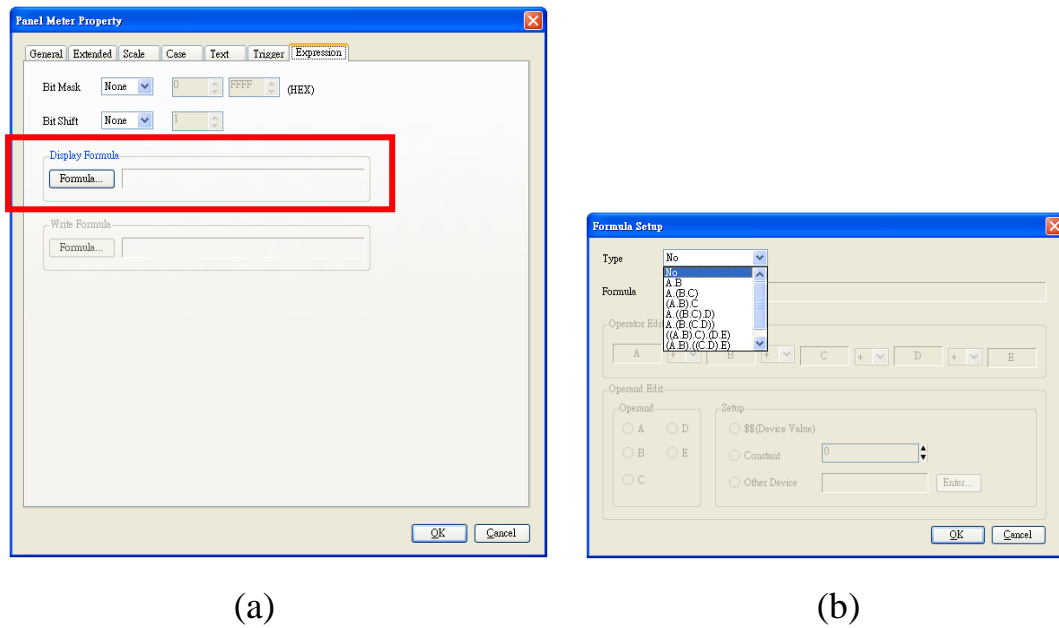


Fig. 3-6-7I-11 Displaying formula (a) Setting formula (b) formula Set



- To set the properties, you can also click **Edit** and then click **Unit Property**, or directly use the property window on the right of the screen, to make the setting.
- In the Text properties, the text contents can be comments and direct text. The comment takes fixed font, while the direct text takes variable fonts. See Figure 3-6-7I-12 below.

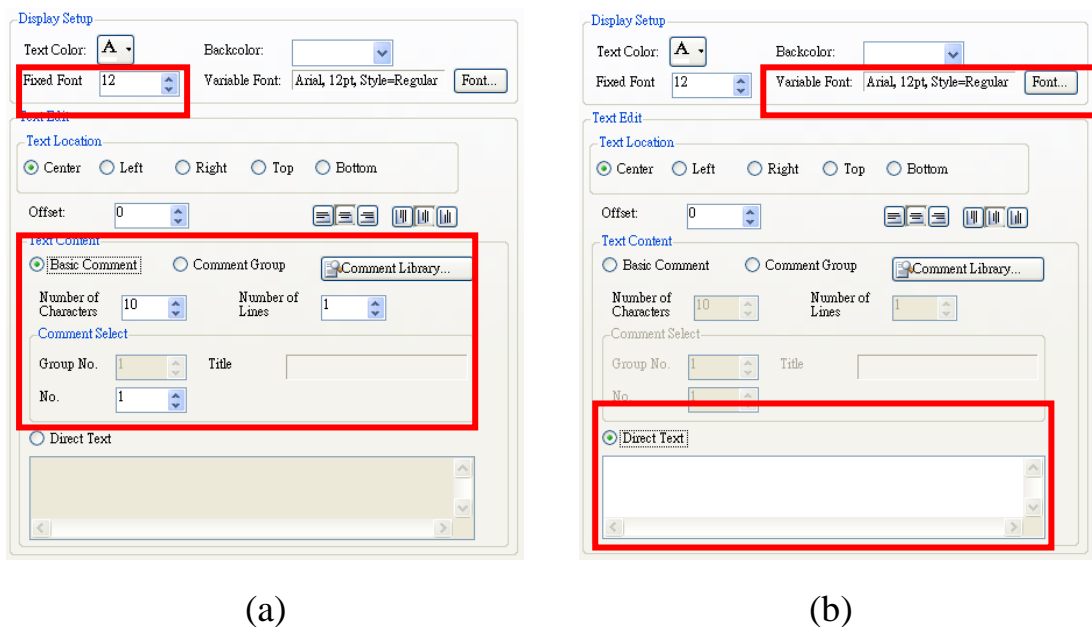


Fig. 3-6-7I-12 Text Display Setting (a) Comment Text (b) Direct Text

3.6.8. Parts Display


Click **Unit** and then click **Parts Display**, or directly click the shortcut , and in the editing window left click the mouse to set up a part object. See Figure 3-6-8 below.



Fig. 3-6-8 Parts Display Menu

a. Bit Parts

To set up a Bit Parts, click **Unit** and click **Parts Display** and then click **Bit Parts**, or directly click the shortcut **B**, and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the transparency, component type, and display format. See Figure 3-6-8A-1 below.

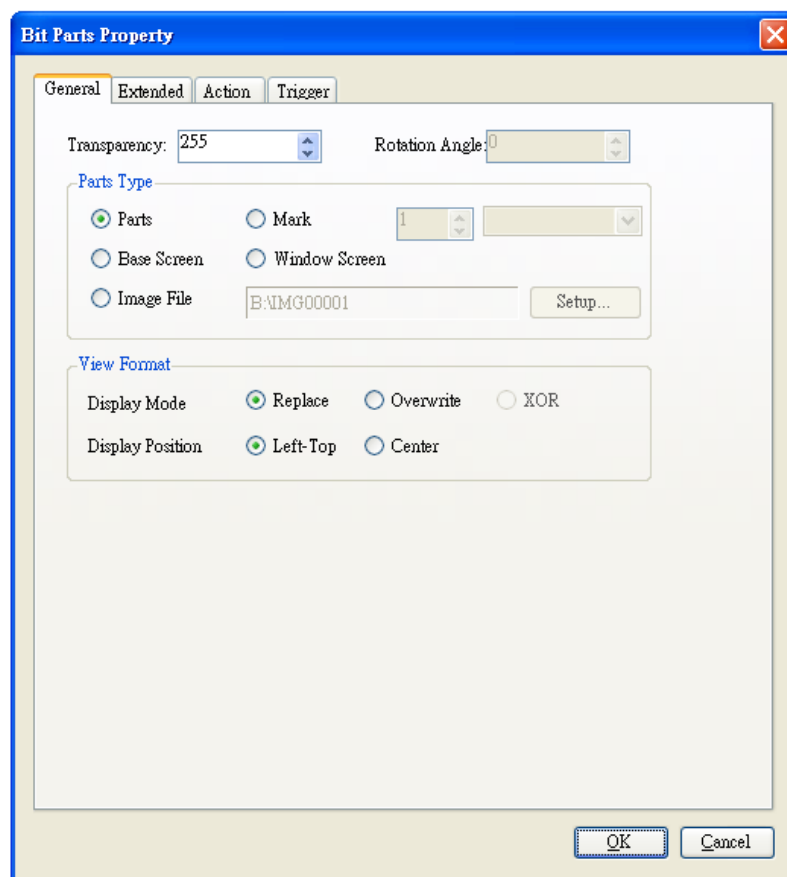


Fig. 3-6-8A-1 General Property Setting

The Bit parts include parts, mark, basic screen, window screen and image file. See Figure 3-6-8A-2 below.

Parts Type

☒ Parts ☐ Mark 1

☐ Base Screen ☐ Window Screen

☐ Image File B:\IMG00001 Setup...

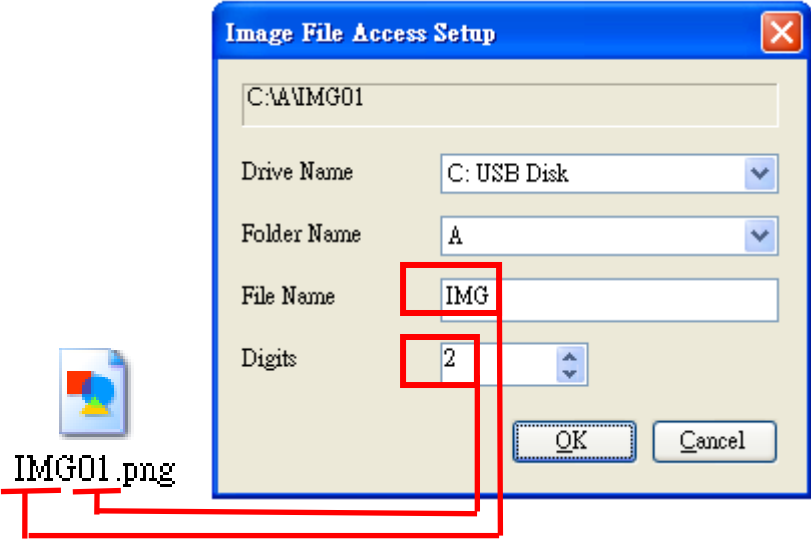
Part Type	Description
Parts	Set the Parts number (color is unchangeable).
Mark	Set the Mark number (color is changeable).
Basic Screen	Set the basic screen number.
Window Screen	Set the window screen number
Image File	<p>Set the number of the image files on the external storage device. The image format is .png, and the maximum size of the image is 800X480mm.</p> <p>Device name: Select a preferred external storage device.</p> <p>Folder name: the name of the folder on the storage device. For naming, please see Section 3.2.17 Removable Drive Image Directory Setup.</p> <p>File name: Set the image's file name.</p> <p>Digits: The code number of the image's file name.</p> <div></div>

Fig. 3-6-8A-2 Bit Parts Setting



- To access the image file, do the HMI system setup→ communication setup→download & upload to install the external storage device.

The display modes are Replacement, Coverage, Exclusive, Moving and Tracking. The positioning can be upper left-based and center-based. See Figure 3-6-8A-3 below.

The following display modes are available when the option of moving display ☐ Movement Display of the Extension properties is not ticked:

View Format

Display Mode ☒ Replace ☐ Overwrite ☐ XOR

Display Position ☒ Left-Top ☐ Center

When the option of moving display ☒ Movement Display of the Extension properties is ticked:

View Format

Display Mode ☒ Movement ☐ Locus

Display Position ☒ Left-Top ☐ Center

Display	Description
Display Mode	Replace: the 2 nd parts object replaces the 1 st one. Overwrite: the 2 nd parts object caps on the 1 st one. XOR: the non-overlapped portion of the 1 st and 2 nd parts object is displayed. Movement: the parts moves with the moving pattern. Locus: the parts object moves with the moving pattern, and keeps the last 9 ones on the track.
Display Position	Left-Top: based on the upper left corner of the parts. Center: based on the center of the parts.

Fig. 3-6-8A-3 Display Format Setting

The Extension properties allow the user to set the security level and moving display. Figure 3-6-8A-4 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

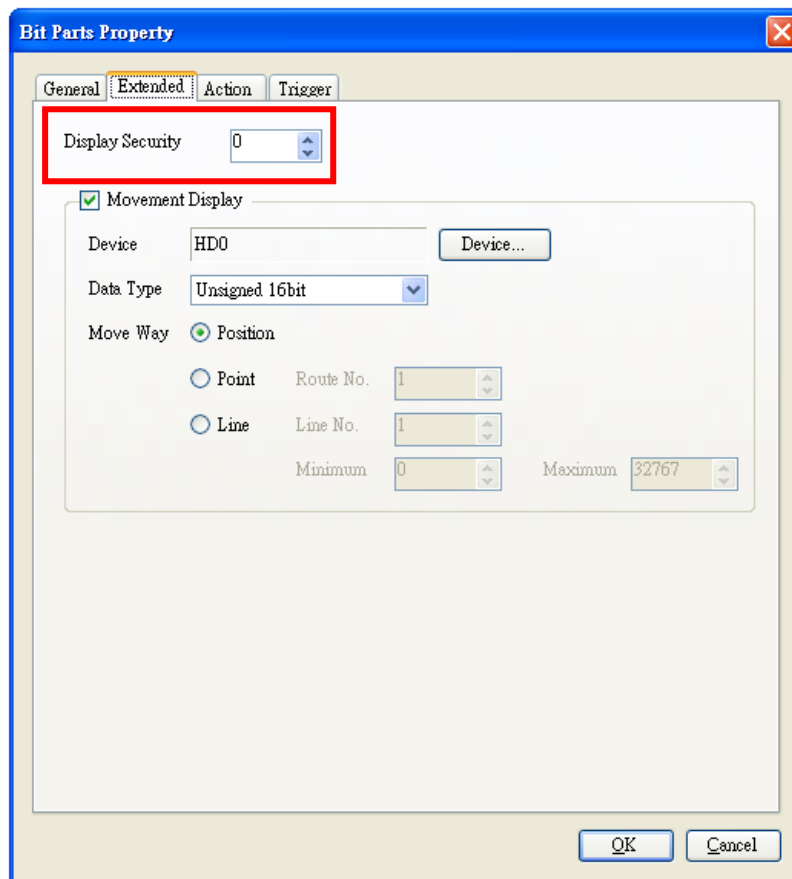


Fig. 3-6-8A-4 Security Level Setting

To move the parts, the user can change the device, numeric type and the moving method. See Figure 3-6-8A-5 below.

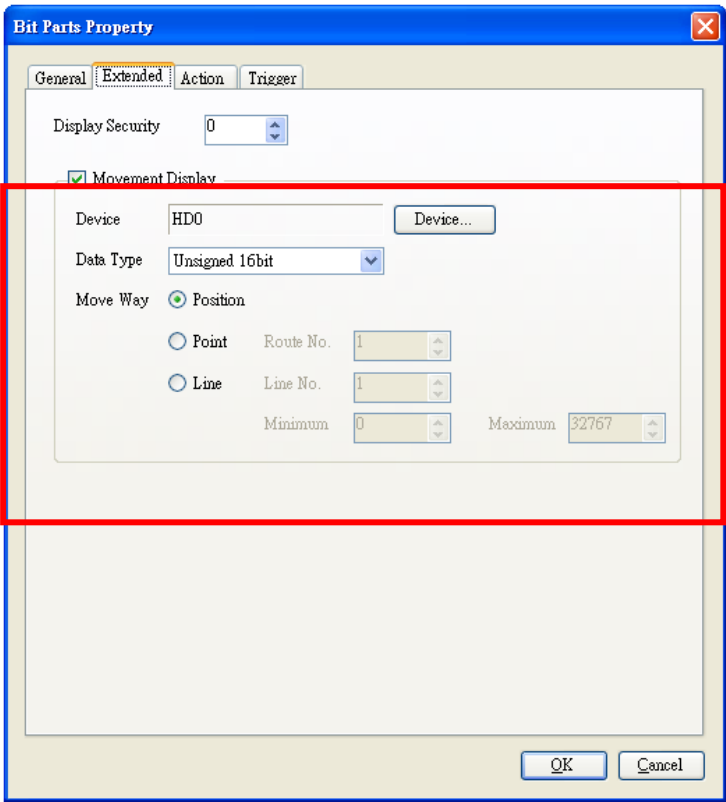


Fig. 3-6-8A-5 Moving Display Setting

Click **Device...** to open the device setup dialogue box and set up a device to store the parts screens. See Figure 3-6-8A-6 below.

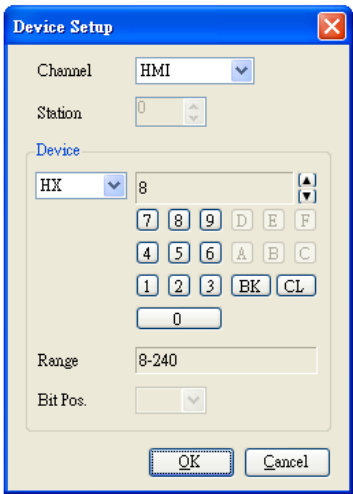


Fig. 3-6-8A-6 Device Setting

The parts device has 4 numeric types. See Figure 3-6-8A-7 below.

Data Type Unsigned 16bit ▼

- Unsigned 16bit
- Unsigned 32bit

Numeric Type	Value Range
Unsigned 16 bit	0~65535
Unsigned 32 bit	0~4294967295

Fig 3-6-8A-7 Numeric Type Setting

The moving method allows the user to change the position, point and line. See Figure 3-6-8A-8 below.

Bit Parts Property

General Extended Action Trigger

Display Security 0

☒ Movement Display

Device HD0 Device...

Data Type Unsigned 16bit

Move Way ☒ Position

☐ Point Route No. 1

☐ Line Line No. 1

Minimum 0 Maximum 32767

OK Cancel

Fig. 3-6-8A-8 Moving Method Setting

The moving method takes HD0 as X-axis and automatically assigns HD1 as Y-axis, to decide the moving of the picture. The Point moving method needs a set of points in the editing screen, so that the parts can move along the points. The Line moving method needs a line in the editing screen so that the picture moves along the line. The maximum and minimum values can be set for the Line.

The Action property setting allows the user to change the device and its properties. See Figure 3-6-8A-9 below.

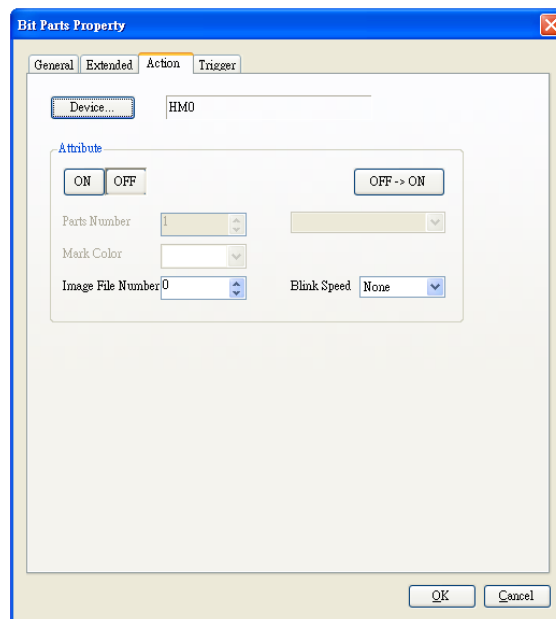


Fig. 3-6-8A-9 Action Attribute Setting

Click **Device...** to open the device setup dialogue box and change the device to store the parts. See Figure 3-6-8A-10 below.

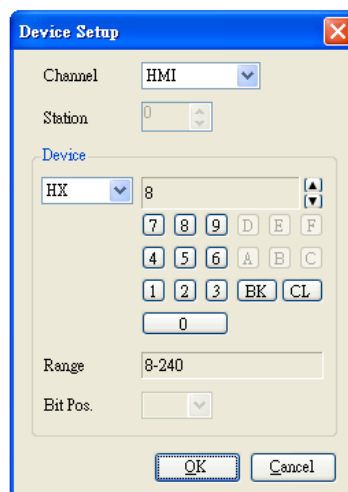


Fig. 3-6-8A-10 Device Setting

The properties allow the user to set the ON/OFF state, component number, mark color, file number, and blinking feature. See Figure 3-6-8A-11 below. The component number is used as an identifier for reading the parts library; the mark color can change the color of the parts number; the file number of the picture is the identifier for reading the external storage device.

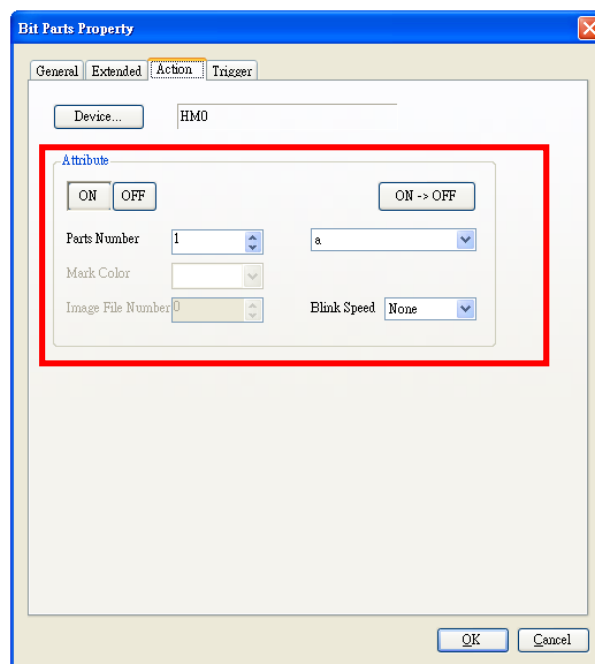


Fig. 3-6-8A-11 Moving Method Setting

To set the Bit parts blinking, use the pull-down menu to select one of the three blinking speeds provided by the system. See Figure 3-6-8A-12 below.

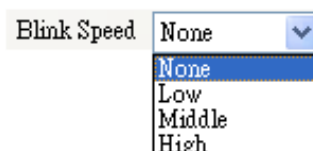
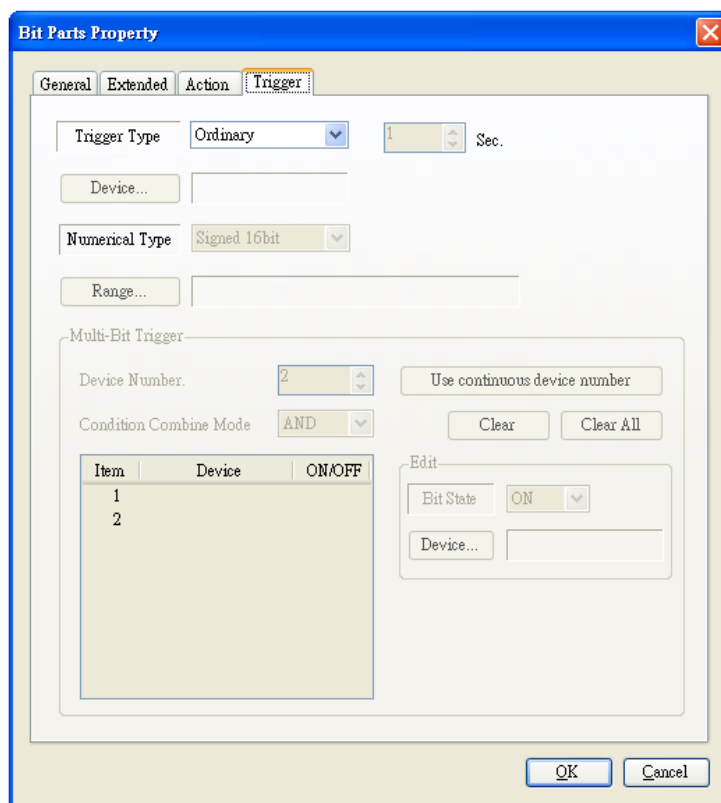


Fig. 3-6-8A-12 Blinking Speed Setting

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-8A-13 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-8A-13 Trigger Pattern Setting



To set the trigger pattern as multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-6-8A-14 below.

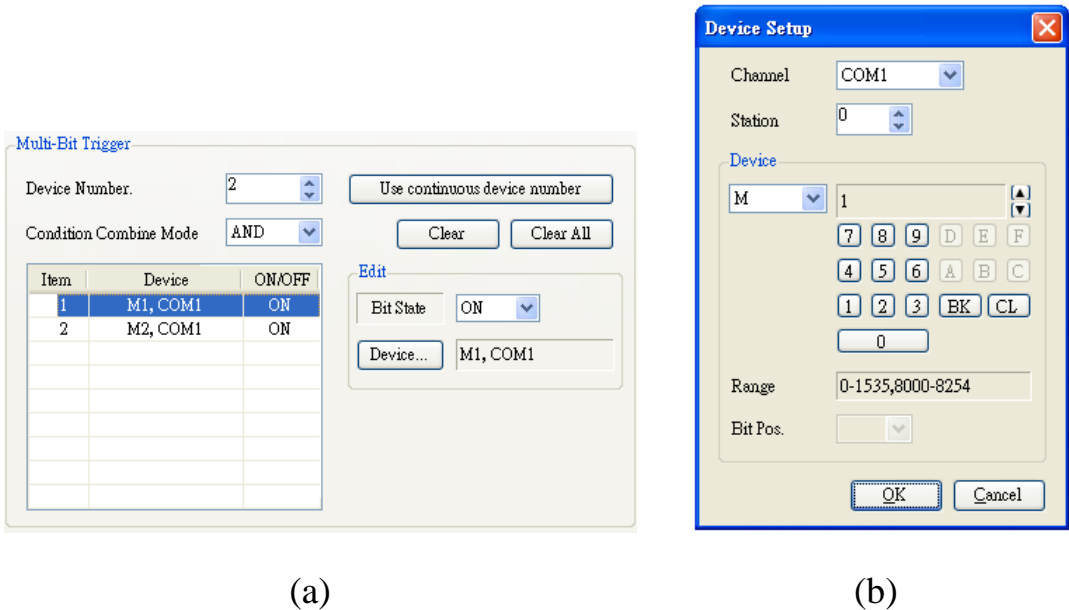



Fig. 3-6-8A-14 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

b. Word Parts

To set up a Word, click **元件(U)** and click **動畫顯示** and then click **Word動畫物件**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the transparency, component type and display format. See Figure 3-6-8B-1 below.

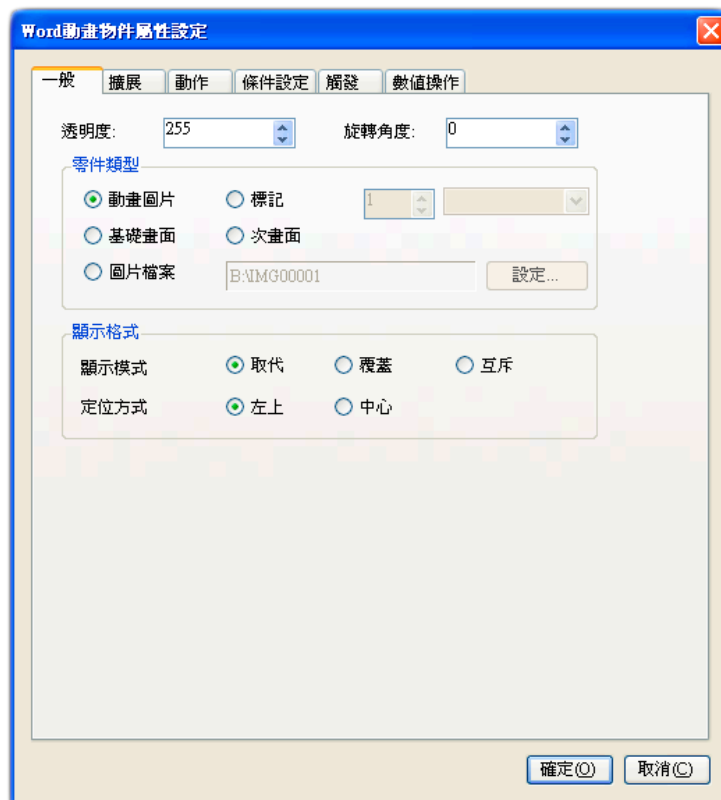


Fig. 3-6-8B-1 General Property Setting

The Word parts include Parts, Mark, Basic Screen, Window Screen and Image File. See Figure 3-6-8B-2 below.

Parts Type

☒ Parts ☐ Mark 1

☐ Base Screen ☐ Window Screen

☐ Image File B:\IMG00001 Setup...

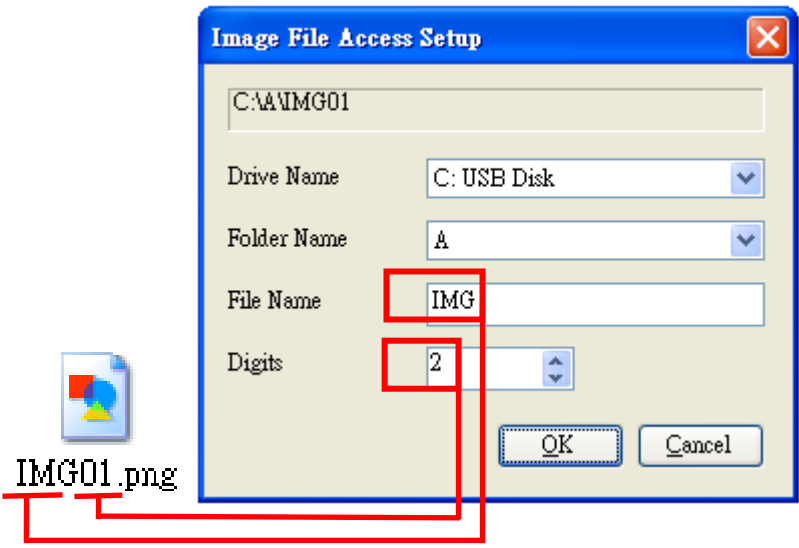
Part Type	Description
Parts	Set the Parts number (color is unchangeable).
Mark	Set the mark number (color is changeable).
Basic Screen	Set the basic screen number.
Window Screen	Set the window screen number.
Image File	<p>Set the number of the image file on the external storage device. The image format is .png, and the maximum size of the image is 800X480mm. Device name: Select a preferred external storage device. Folder name: the name of the folder on the storage device. For naming, please see Section 3.2.17 Removable Drive Image Directory Setup. File name: Set the image's file name. Code number: The code number of the image's file name.</p> <div></div>

Fig. 3-6-8B-2 Word Parts Setting



- To access the image file, do the HMI system setup→communication setup→download & upload to install the external storage device.

The display modes are Replacement, Coverage, Exclusive, Moving and Tracking. The positioning can be upper left-based and center-based. See Figure 3-6-8B-3 below.

When the option of moving display ☐ Movement Display of the Extension properties is not ticked:

View Format

Display Mode ☒ Replace ☐ Overwrite ☐ XOR

Display Position ☒ Left-Top ☐ Center

When the option of moving display ☒ Movement Display of the Extension properties is ticked:

View Format

Display Mode ☒ Movement ☐ Locus

Display Position ☒ Left-Top ☐ Center

Display	Description
Display Mode	Replace: the 2 nd parts object replaces the 1 st one.
	Overwrite: the 2 nd parts object caps on the 1 st one.
	XOR: the non-overlapped portion of the 1 st and 2 nd parts is displayed.
	Movement: the parts moves with the moving pattern.
	Locus: the parts object moves with the moving pattern, and keeps the last 9 ones on the track.
Display Position	Left-Top: based on the upper left corner of the parts.
	Center: based on the center of the parts.

Fig. 3-6-8B-3 Display Format Setting

The Extension properties allow the user to set the security level and moving display. Figure 3-6-8B-4 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

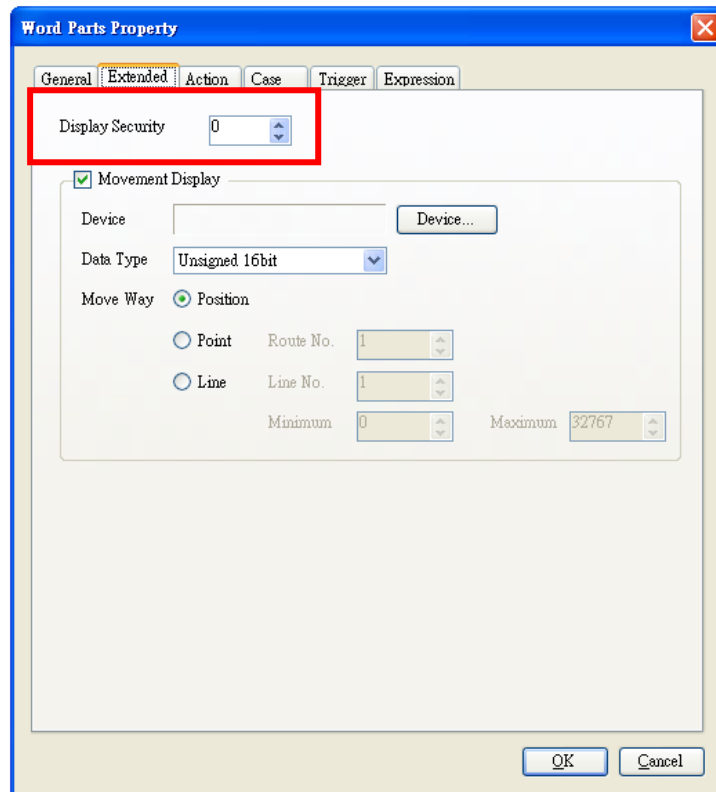


Fig. 3-6-8B-4 Security Level Setting

To move the parts, the user can change the device, numeric type and the moving method. See Figure 3-6-8B-5 below.

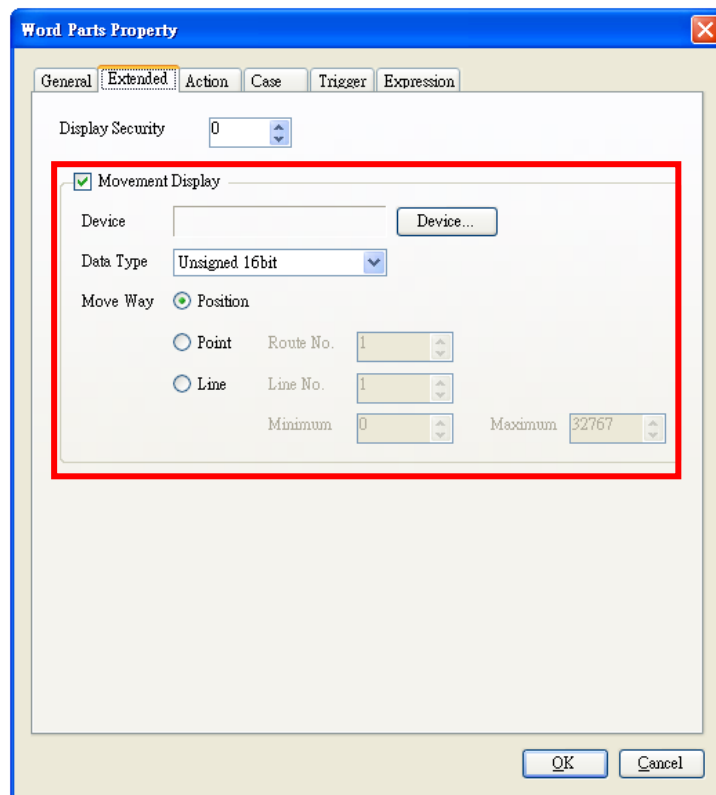


Fig. 3-6-8B-5 Moving Display Setting

Click **Device...** to open the device setup dialogue box and set up a device to store the parts screens. See Figure 3-6-8B-6 below.

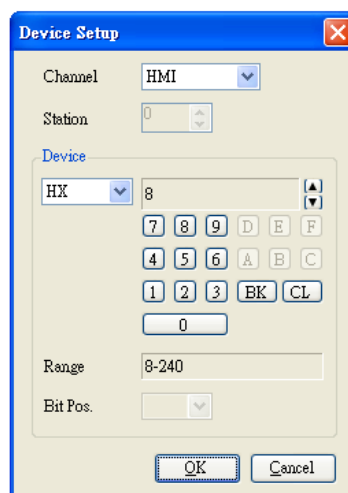


Fig. 3-6-8B-6 Device Setting

The parts device has 4 numeric types. See Figure 3-6-8B-7 below.

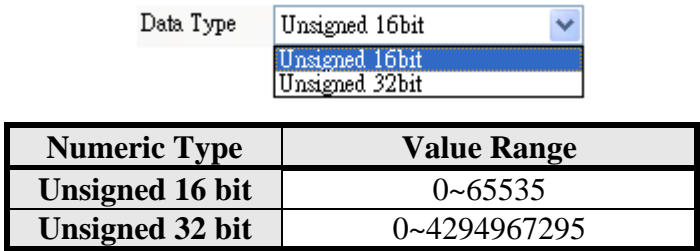


Fig. 3-6-8B-7 Numeric Type Setting

The moving method allows the user to change the position, point and line. See Figure 3-6-8B-8 below.

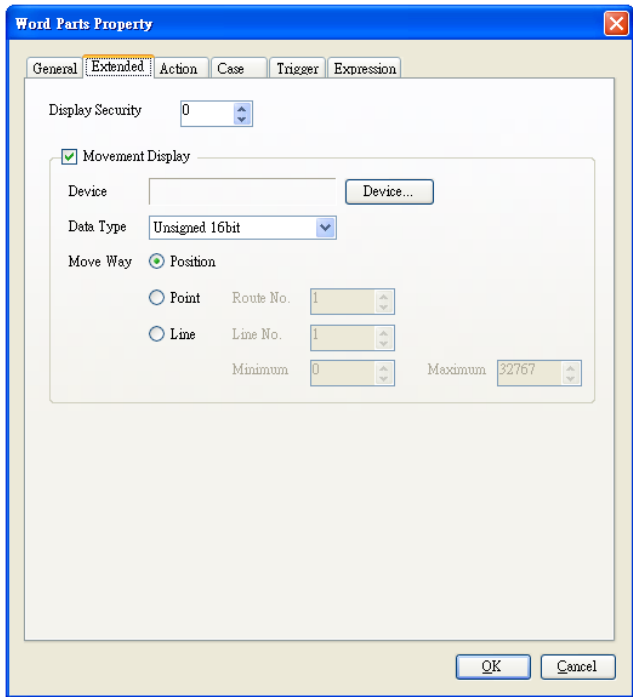


Fig. 3-6-8B-8 Moving Method Setting

The moving method takes HD0 as X-axis and automatically assigns HD1 as Y-axis, to decide the moving of the picture. The Point moving method needs a set of points in the editing screen, so that the parts can move along the points. The Line moving method needs a line in the editing screen so that the picture moves along the line. The maximum and minimum values can be set for the Line.

The Action property setting allows the user to change the device and its properties. See Figure 3-6-8B-9 below.

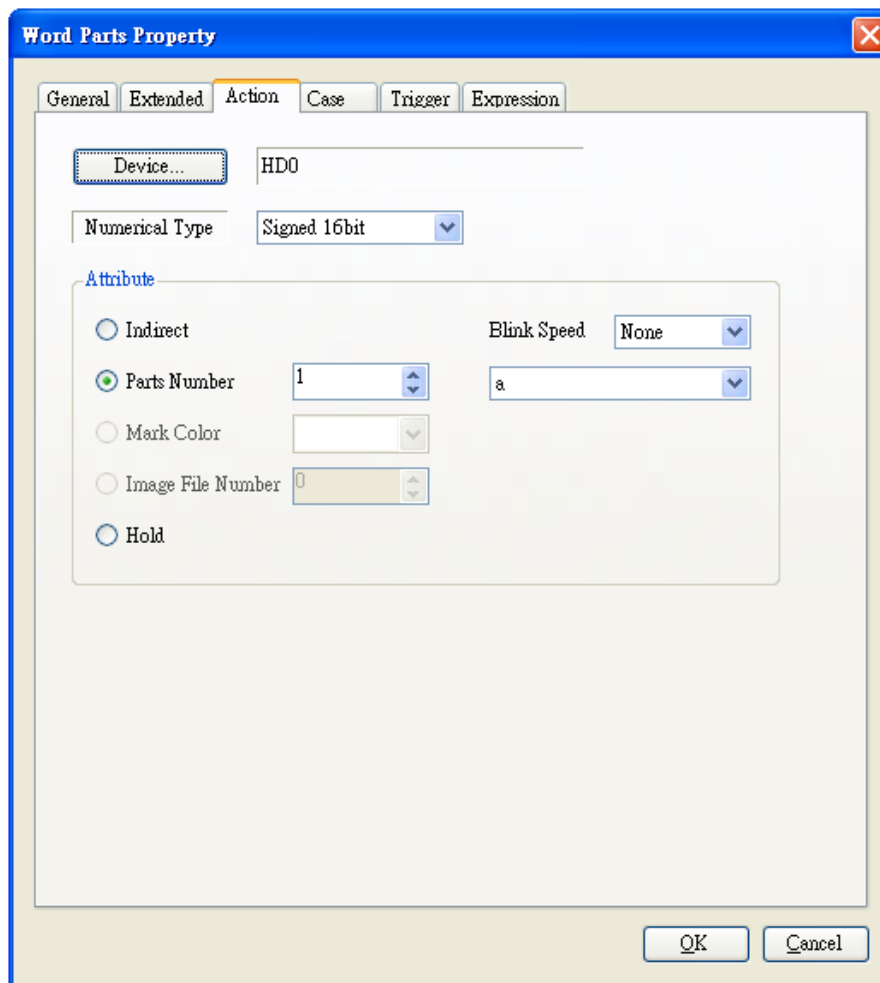



Fig. 3-6-8B-9 Action Property Setting

Click  to open the device setup dialogue box and change the device to store the parts. See Figure 3-6-8B-10 below.

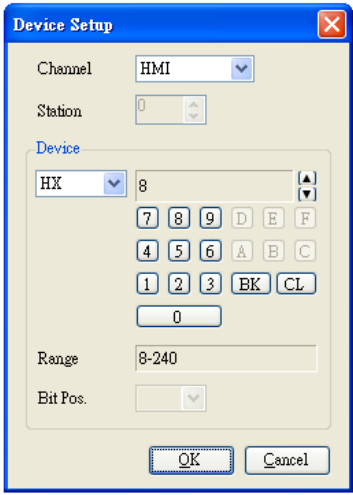


Fig. 3-6-8B-10 Device Setting

The parts device has 4 numeric types. See Figure 3-6-8B-11 below.



Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295

Fig. 3-6-8B-11 Numeric Type Setting

The properties allow the user to set Indirect, Blinking, component number, Mark color, file number and Maintain. See Figure 3-6-8B-12 below.

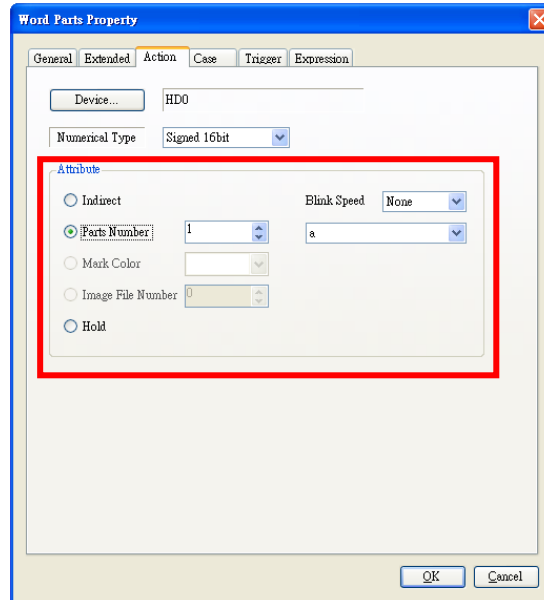


Fig. 3-6-8B-12 Moving Method Setting

The Indirect property is based on the device value to correspond to an parts number; the component number is the identifier for reading the parts library; the Mark color can change the color of the parts number; the image file number is the identifier for reading the external storage device; the Maintain property keeps the same parts number as the previous one.

To set Word parts blinking, use the pull-down menu to select one of the three blinking speeds provided by the system. See Figure 3-6-8B-13 below.

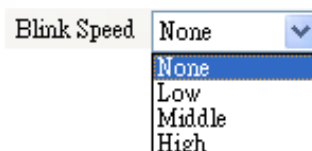


Fig. 3-6-8B-13 Blinking Speeds

The Condition Setup properties allow the user to add/delete/change devices, and assign properties, component numbers, colors, and the blinking feature. See Figure 3-6-8B-14 below.

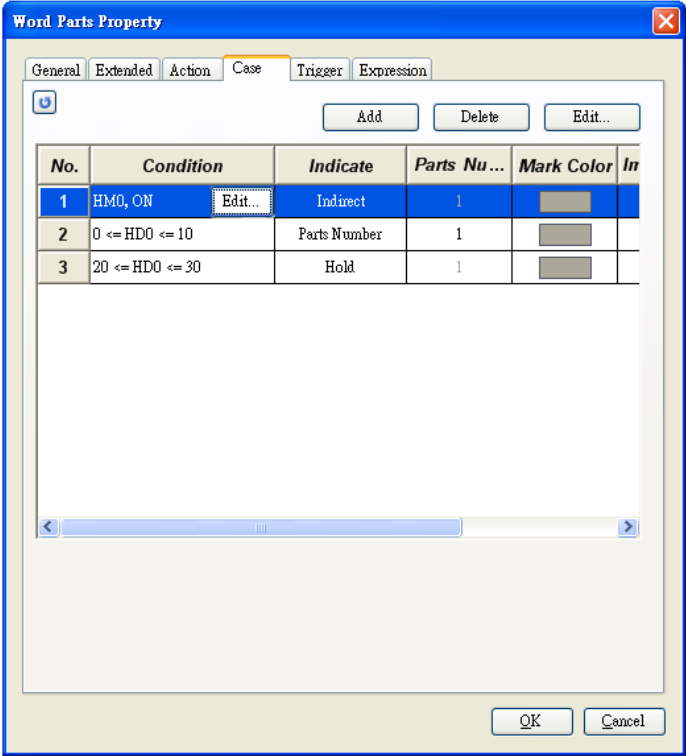


Fig. 3-6-8B-14 Condition Setting

To change the device settings of the Condition parts object, click **Edit...** to open the Condition Setup dialogue box and change the Bit/Word device. See Figure 3-6-8B-15 below.

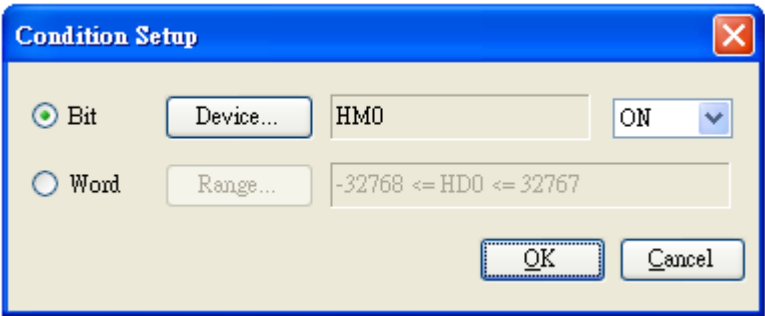
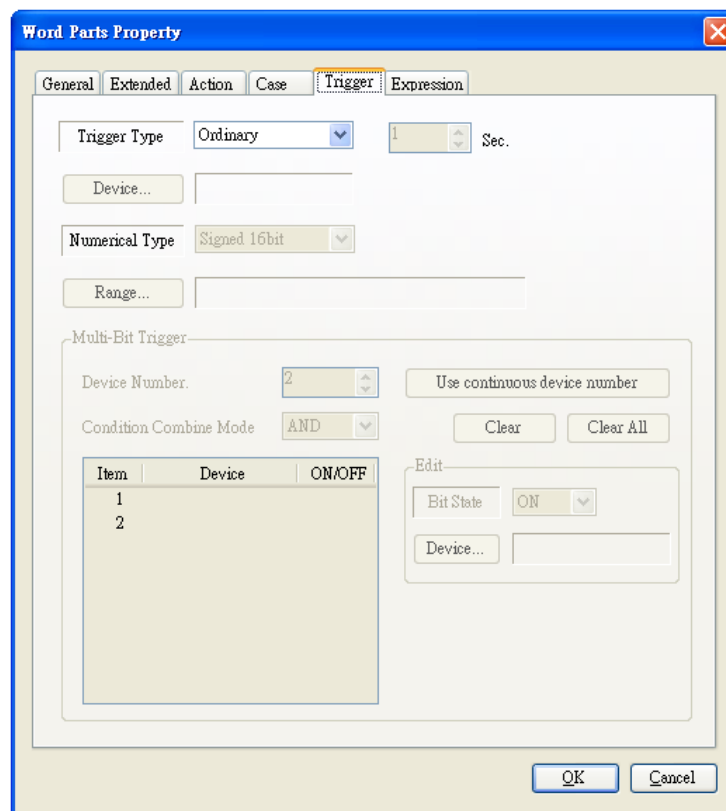


Fig. 3-6-8B-15 Condition Setting

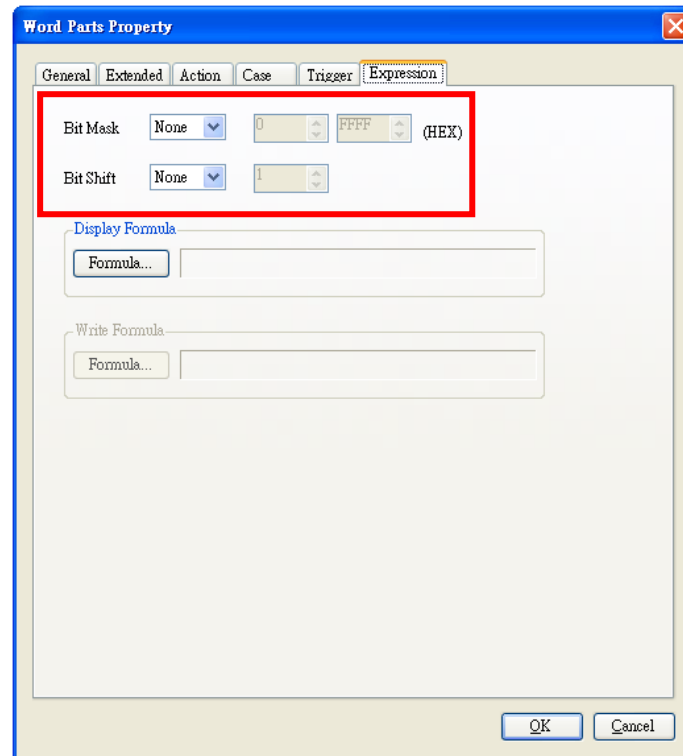
The Trigger property setting allows the user to change the trigger pattern. See Figure 3-6-8B-16 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.

Fig. 3-6-8B-16 Trigger Pattern Setting

The Numeric Operation properties allow the user to set the values, bit mask, bit shift, and display formula. The system uses hexadecimal input. See Figure 3-6-8B-17 below.



Name		Description
Bit Mask	None	No Bit mask.
	AND	Values are converted to binary for AND operation. EX~ Decimal value 8 ANDing with A gets 8.
	OR	Values are converted to binary for OR operation. EX~ Decimal value 8 ORing with A gets 10.
	XOR	Values are converted to binary for XOR operation. EX~ Decimal value 8 XORing with A gets 2.
Bit Shift	None	No Bit offset.
	<<	Values are converted to binary for left shift. EX~ Decimal value 8 left shifting 2 bits becomes 32.
	>>	Values are converted to binary for right shift. EX~ Decimal value 8 left shifting 2 bits becomes 2.

Fig. 3-6-8B-17 Logic Operations

To set formula display, click **Function...** to open the formula setup window, and pick up a preferred formula pattern, and then select from the A~E options, and then select \$\$ (device value) and any one of the constant or other device, and then select an operator. Confirm to finish the formula setting. See Figure 3-6-8B-18 below.

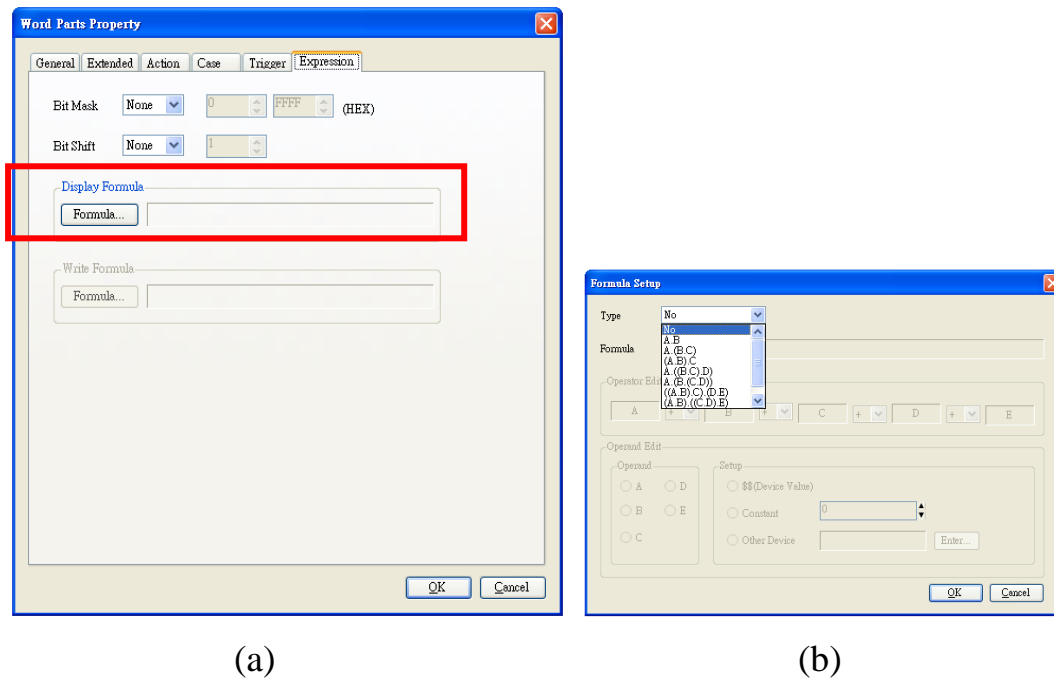


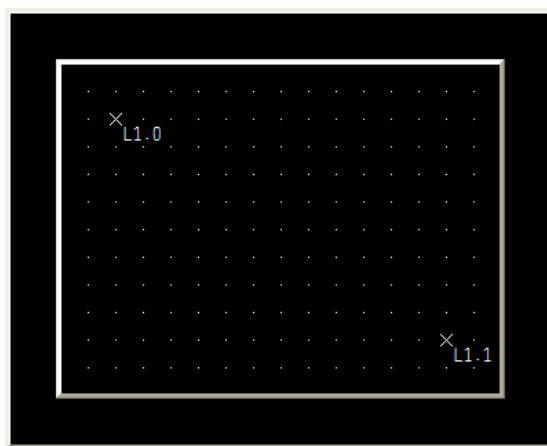
Fig. 3-6-8B-18 Displaying formula (a) Setting formula (b) formula Set



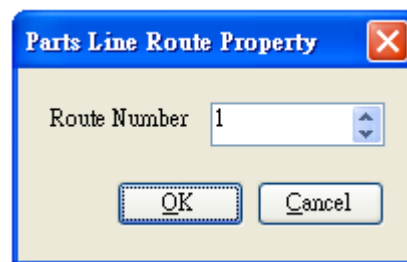
- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

c. Line Route

To set up a Line Route, click **Unit** and click **Chart Display** and then click **Line Route**, or directly click the shortcut, and in the editing window hold down the left button of the mouse to decide the first point of the line, then drag the line to the length and position you prefer and then release the left button to finish the setup of the object. Click the object and then double left click the mouse to open the property window of the object and make the setting. See Figure 3-6-8C-1 below.



(a)



(b)

Fig. 3-6-8C-1 Line Route (a) Line Route Setup (b) Property Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- Use Line Route with the Bit/Word parts to make the parts object moves along the path you have defined.

d. Route

To set up a Route, click **Unit** and click **Chart Display** and then click **Route**, or directly click the shortcut, and in the editing window left click the mouse to decide the first point of the track, and then move the mouse to a preferred position and left click the mouse again to decide the second point of the track, and then move the mouse and left click again to make the third point, and so on. Finally, right click the mouse to finish the setup of the object. There can be as many as 100 points on the track. Click the object and then double left click the mouse to open the property window of the object and make the setting. See Figure 3-6-8D-1 below.

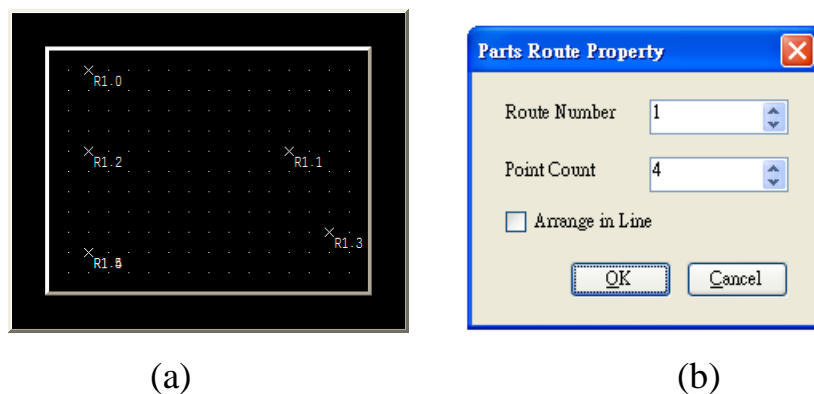




Fig. 3-6-8D-1 Route (a) Route Setup (b) Property Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- Use Route with the Bit/Word parts to make the parts object moves along the path you have defined.

3.6.9. Clock

To set up a Clock, click **Unit** and then click  **Clock**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency and line pattern. See Figure 3-6-9-1 below.

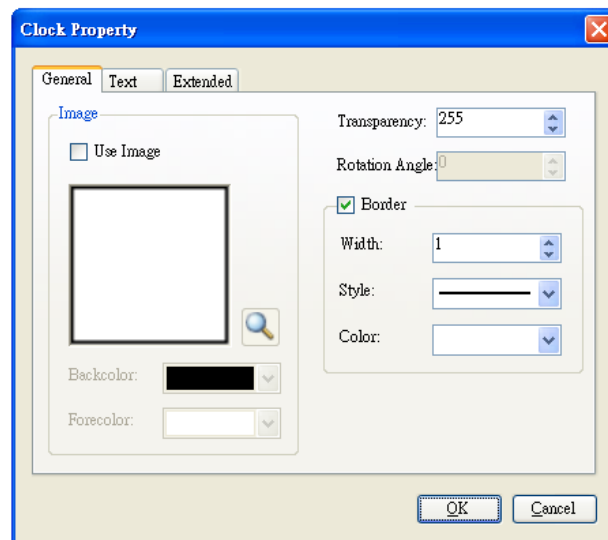



Fig. 3-6-9-1 General Property Setting

To change the picture, click  to open the picture library. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Text property setting allows the user to set the character spacing, size, color and alignment. See Figure 3-6-9-2 below.

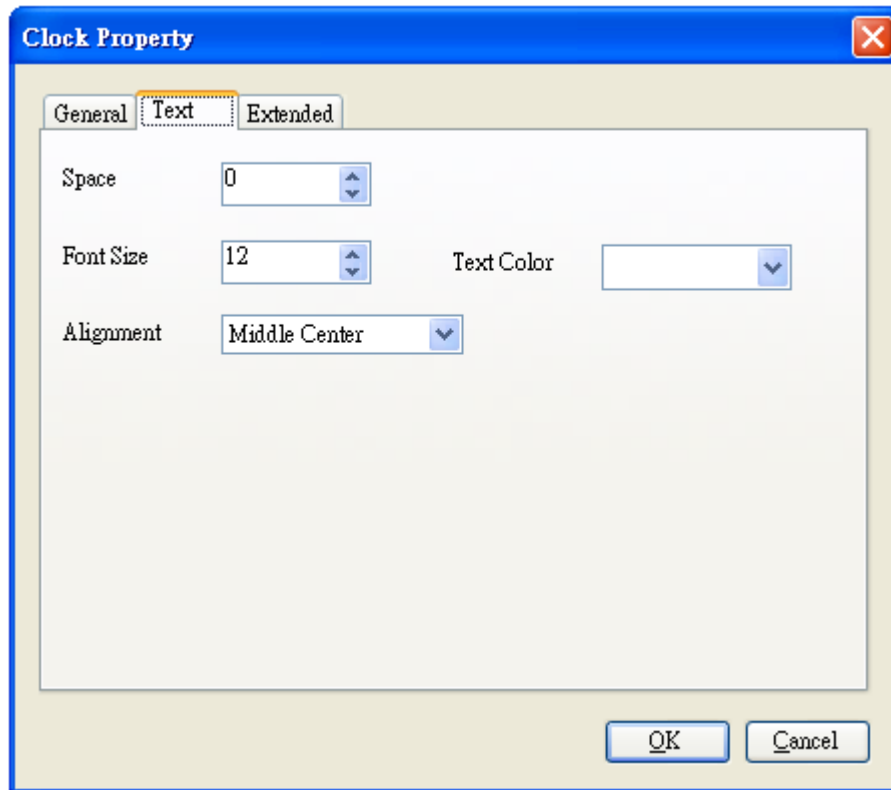


Fig. 3-6-9-2 Text Property Setting

The Extension properties allow the user to set the security level and the clock format. Figure 3-6-9-3 below demonstrates the setting of the object's security level. The security level (display) is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

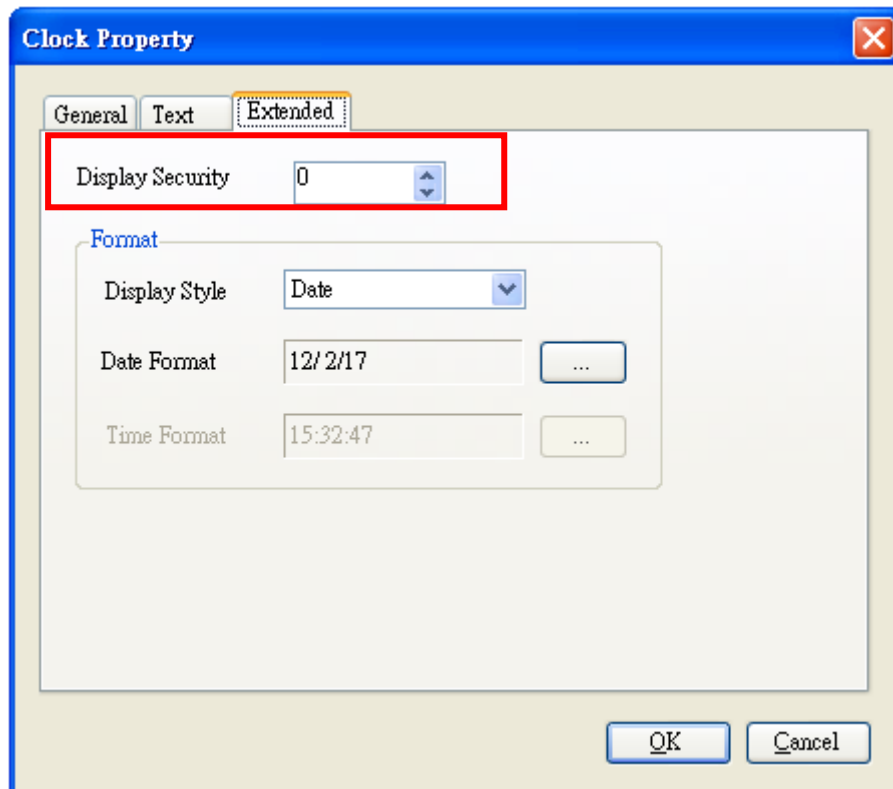


Fig. 3-6-9-3 Security Level Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

3.6.10. Dynamic Image


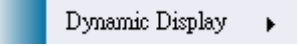


Click  and then click , or directly click the shortcut , and in the editing window left click the mouse to set up a dynamic image. See Figure 3-6-10-1 below.



Fig. 3-6-10-1 Dynamic Image Menu

a. Dynamic Line

To set up a dynamic straight line, click **Unit** and then click **Dynamic Line**, or directly click the shortcut , and in the editing window click and hold down the left button of the mouse to decide the first point of the line, and then drag the line to the preferred length and position and release the left button to finish the setup of the object. Click the object and then double left click the mouse to open the property window of the object and make the setting. See Figure 3-6-10A-1 below.

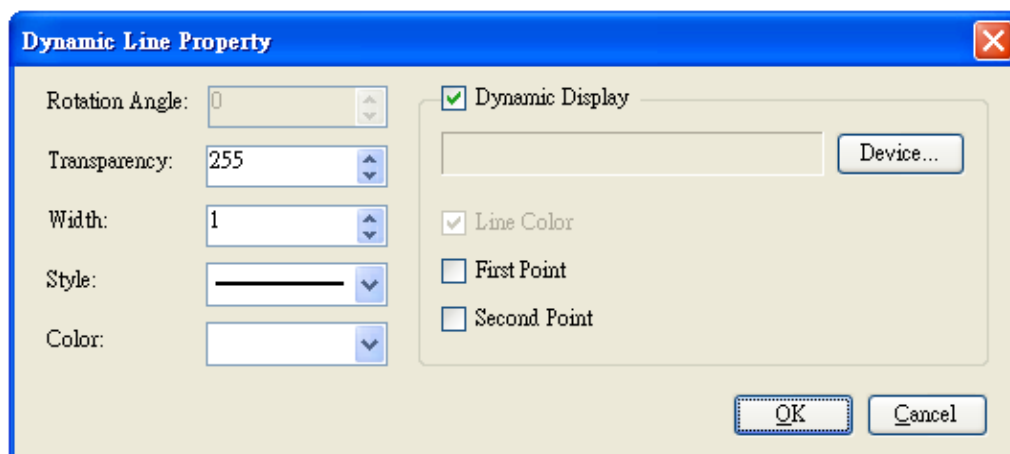


Fig. 3-6-10A-1 Dynamic Straight Line Property Setting




Set device HD0 as the first (starting) device, the line color (RGB) stands for the devices HD0 and HD1; if the option ☒ First Point or ☒ Second Point is ticked, it means the devices HD2 and HD4.



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- Tick off the option ☒ **Dynamic Display** to return to normal display as a general straight line.

b. Dynamic Rectangle

To set up a dynamic rectangle, click **Unit** and then click **Dynamic Rectangle**, or directly click the shortcut , and in the editing window click and hold down the left button of the mouse to decide the first point of the dynamic rectangle, and then drag the rectangle to the preferred size and release the left button to finish the setup of the object. Click the object and then double left click the mouse to open the property window of the object and make the setting. See Figure 3-6-10B-1 below.

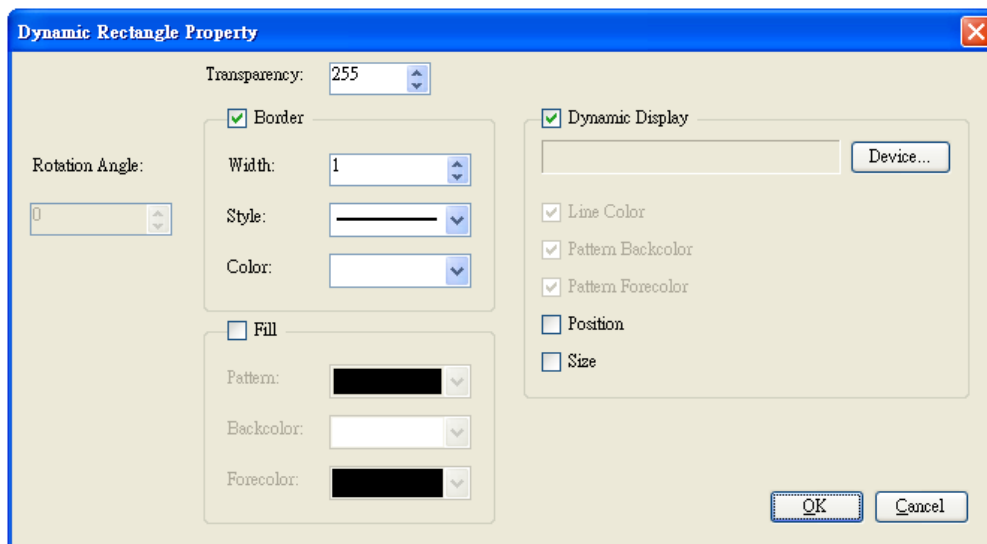


Fig. 3-6-10B-1 Dynamic Rectangle Property Setting




Set device HD0 as the first (starting) device, and the line color (RGB) stands for the devices HD0 and HD1, then the picture's background and foreground colors are devices HD2, HD3, HD4 and HD5. If the option ☒ Position or ☒ Size is ticked, it means the devices are HD6 and HD8.



- To set the properties, you can also click and then click , or use the property window on the right of the screen, to make the setting.
- Tick off the option ☒ Dynamic Display to return to normal display as a general rectangle.

c. Dynamic Ellipse

To set up a dynamic ellipse, click **Unit** and then click **Dynamic Ellipse**, or directly click the shortcut , and in the editing window click and hold down the left button of the mouse to decide the first point of the dynamic ellipse, and then drag the ellipse to the preferred size and release the left button to finish the setup of the object. Click the object and then double left click the mouse to open the property window of the object and make the setting. See Figure3-6-10C-1 below.

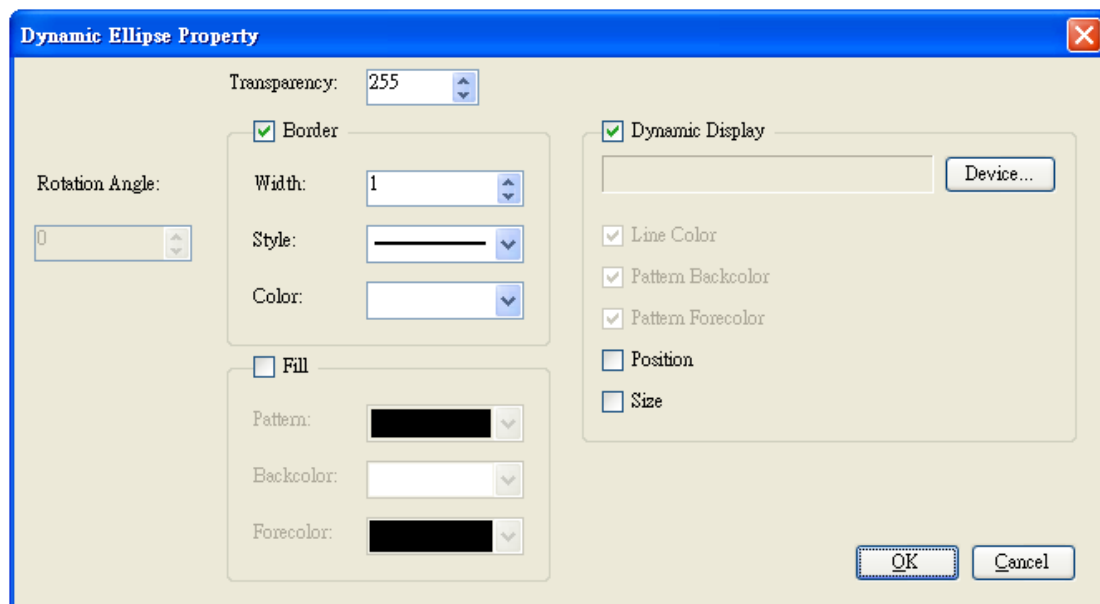


Fig. 3-6-10C-1 Dynamic Ellipse Property Setting







Set device HD0 as the first (starting) device, and the line color (RGB) stands for the devices HD0 and HD1, then the picture's background and foreground colors are devices HD2, HD3, HD4 and HD5. If the option ☒ Position or ☒ Size is ticked, it means the devices are HD6 and HD8.



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.
- Tick off the option ☒ Dynamic Display to return to normal display as a general circle/ellipse.

3.6.11. Keypad

Click  and then click  Keypad , or directly click the shortcut , and in the editing window left click the mouse to set up a keypad object. See Figure 3-6-11 below.

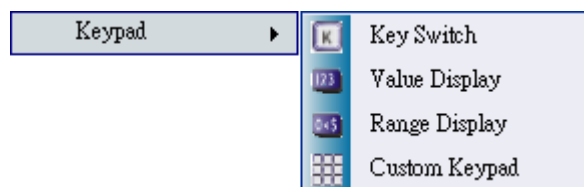


Fig. 3-6-11 Keypad Menu

a. Key Switch

To set up a key switch, click **Unit** and click **Keypad** and then click **Key Switch**, or directly click the shortcut **K**, and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture ON/OFF, display color, transparency and line pattern. See Figure 3-6-11A-1 below.

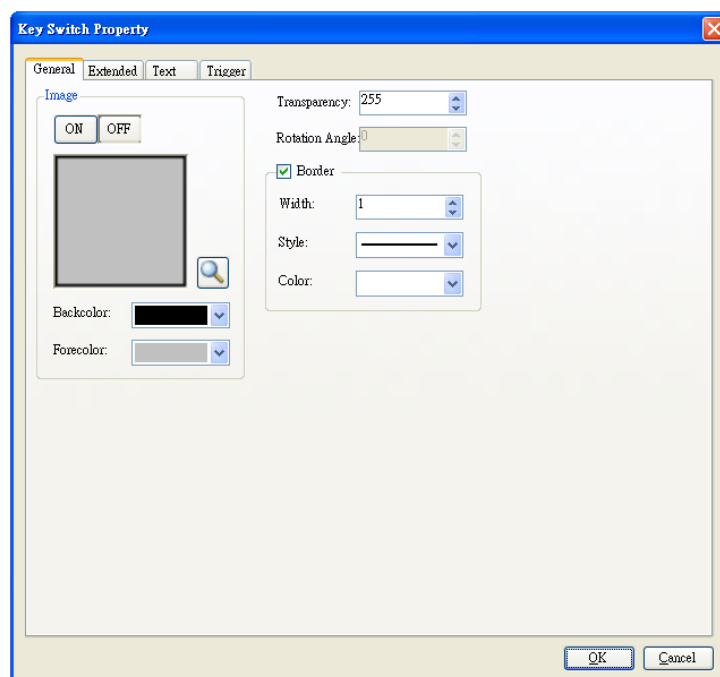



Fig. 3-6-11A-1 General Property Setting

To change the picture, click  to open the picture library. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Extension property setting allows the user to set the security level and functional options. Figure 3-6-11A-2 below demonstrates the setting of the object's security level. The security level (display) and security level (input) are both ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

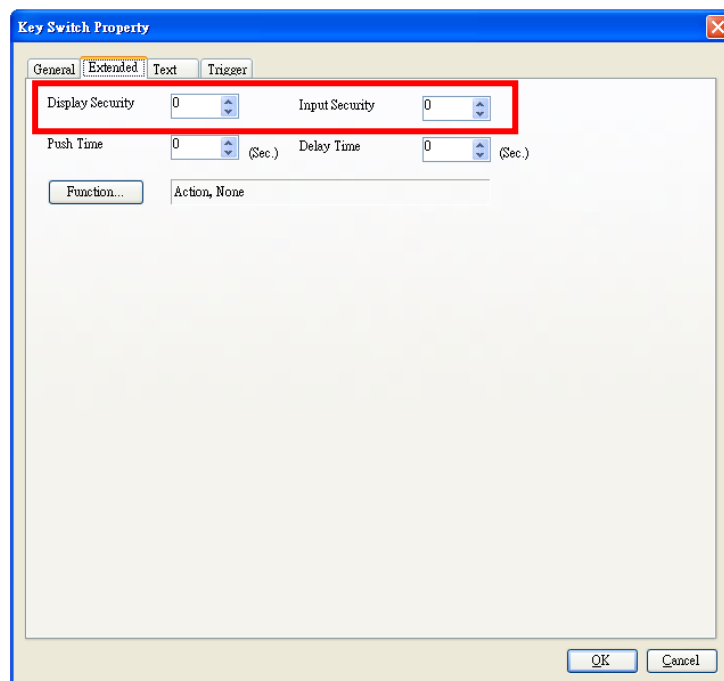
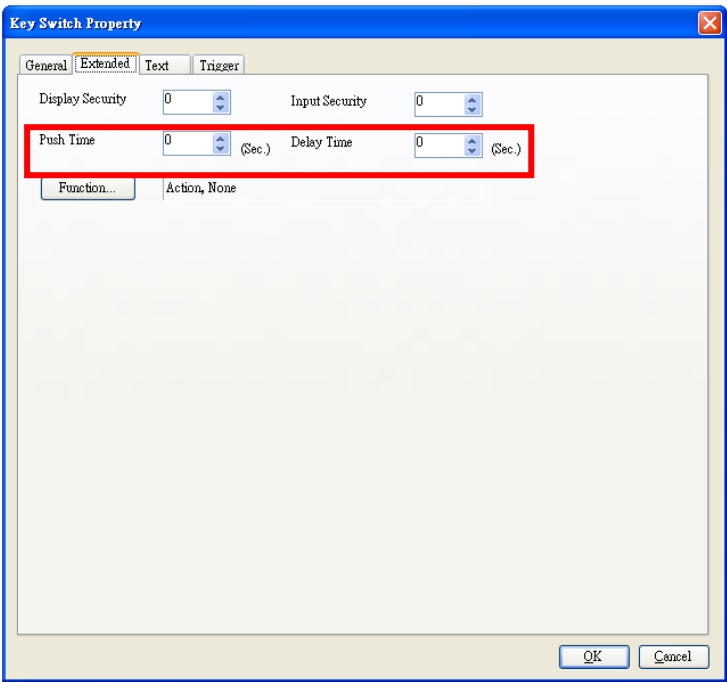



Fig. 3-6-11A-2 Security Level Setting

Figure 3-6-11A-3 below shows the setup of the object’s action times of press-and-hold and latency.



Action Time	Description
Push Time	When the time is set to 5 seconds, press and hold down the switch for 5 seconds to start action.
Delay Time	When the time is set to 5 seconds, press the switch and wait for 5 seconds for action to start.

Fig. 3-6-11A-3 Action times

To set up a key code of the keypad, click  to open the dialogue box of the keypad key code and set up the keypad input character and its action. See Figure 3-6-11A-4 below.

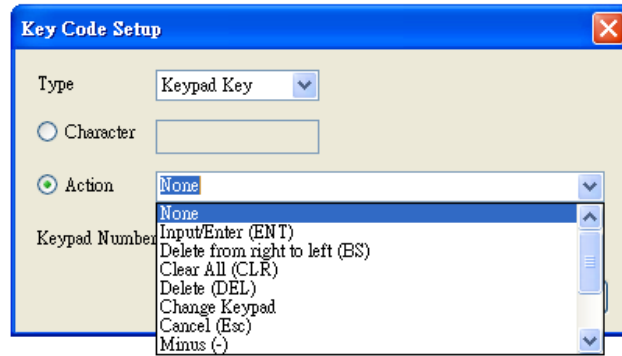


Fig. 3-6-11A-4 Keypad Key Codes Setting

The Text property setting allows the user to set the display ON/OFF, color, font, edit position, alignment, and text content. See Figure 3-6-11A-5 below.

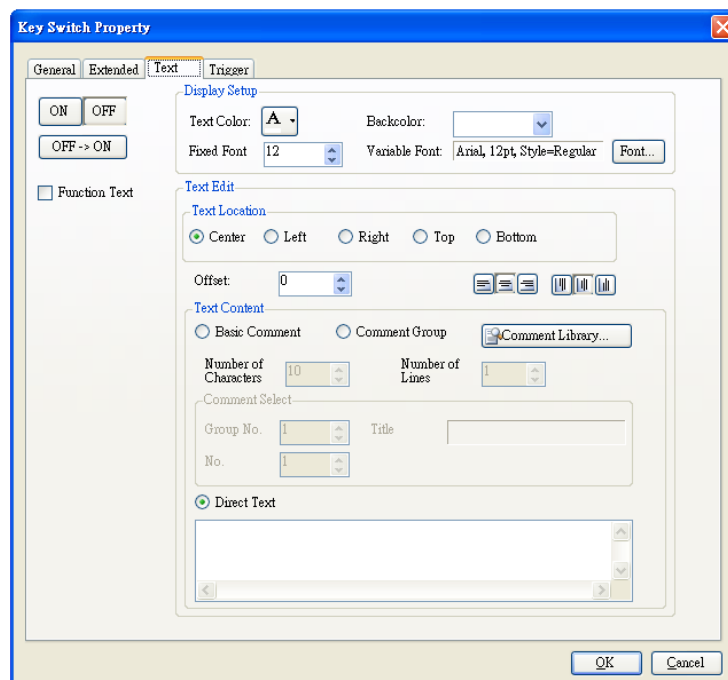



Fig. 3-6-11A-5 Text Property Setting

In the text editing, comments in the comment library can be set as text to display. To do this, click  to open the comment library dialogue box. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

To display the keypad function directly on the switch, tick ☒ Function Text to change the display ON/OFF, color and font. See Figure 3-6-11A-6 below.



Fig. 3-6-11A-6 Functional Text

The Trigger property setting allows the user to set the conditions of the trigger pattern. See Figure 3-6-11A-7 below.

Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multi-Bit Trigger	Set two or more devices, and only when all the devices meet the condition will the action be taken.

Fig. 3-6-11A-7 Trigger Pattern Setting



To set the trigger pattern as multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure3-6-11A-8 below.

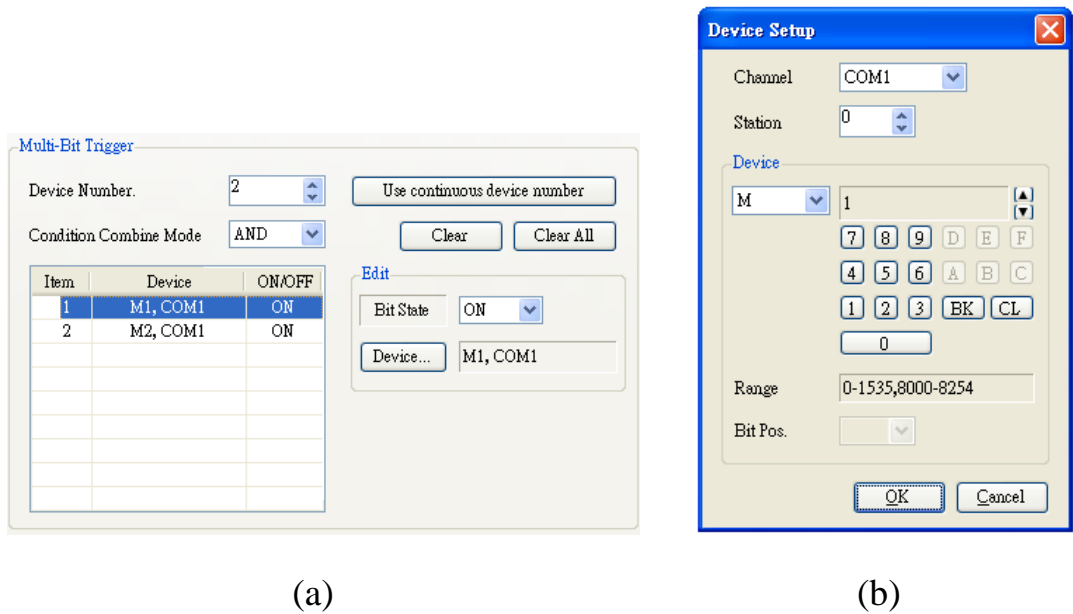






Fig. 3-6-11A-8 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

b. Value Display

To set up a data display keypad, click  and click  and then click  Value Display, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency and line pattern. See Figure 3-6-11B-1 below.

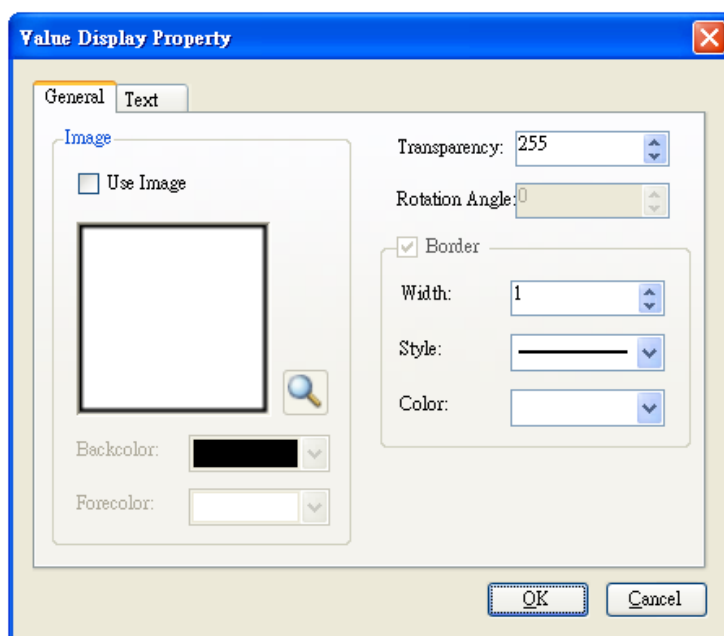



Fig. 3-6-11B-1 General Property Setting

To change the picture, click  to open the picture library. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Text property setting allows the user to set the numeric type, figure, character font and spacing, and alignment. See Figure 3-6-11B-2 below.

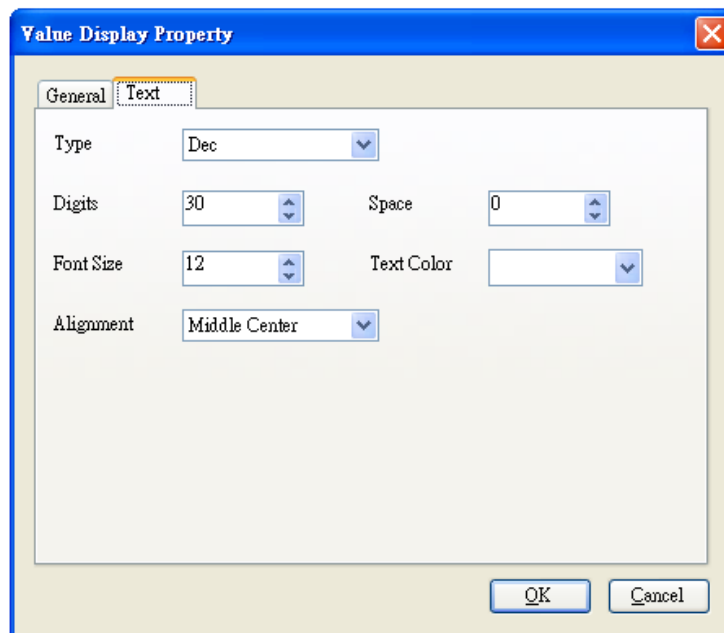



Fig. 3-6-11B-2 Text Property Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

c. Range Display

To set up a range display keypad, click **Unit** and click **Keypad** and then click **Value Display**, or directly click the shortcut , and in the editing window left click the mouse to set up the object. Click the object and then double left click the mouse to open the property window of the object and make the setting.

The General property setting allows the user to set the picture pattern, display color, transparency and line pattern. See Figure 3-6-11C-1 below.

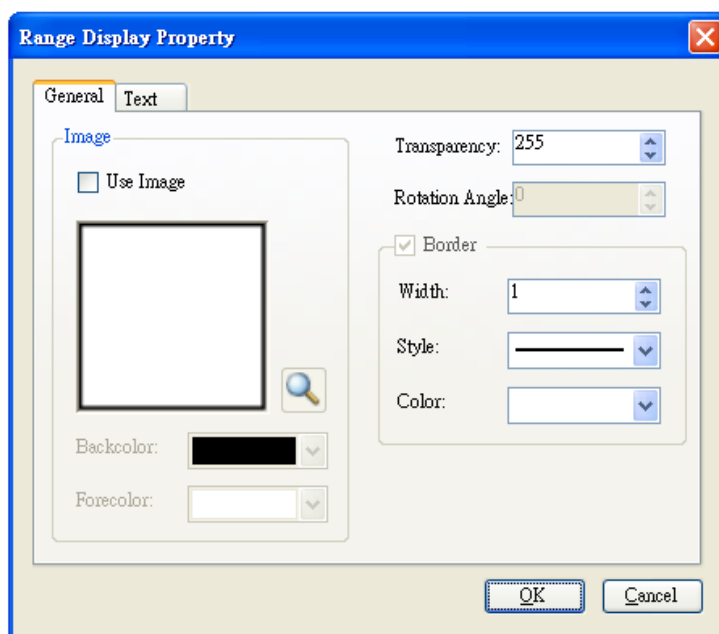



Fig. 3-6-11C-1 General Property Setting

To change the picture, click  to open the picture library. For detailed instructions, please see [Section 3.4.2 Image Library](#).

The Text property setting allows the user to set the numeric type, digits, font size and space, and alignment. See Figure 3-6-11C-2 below.

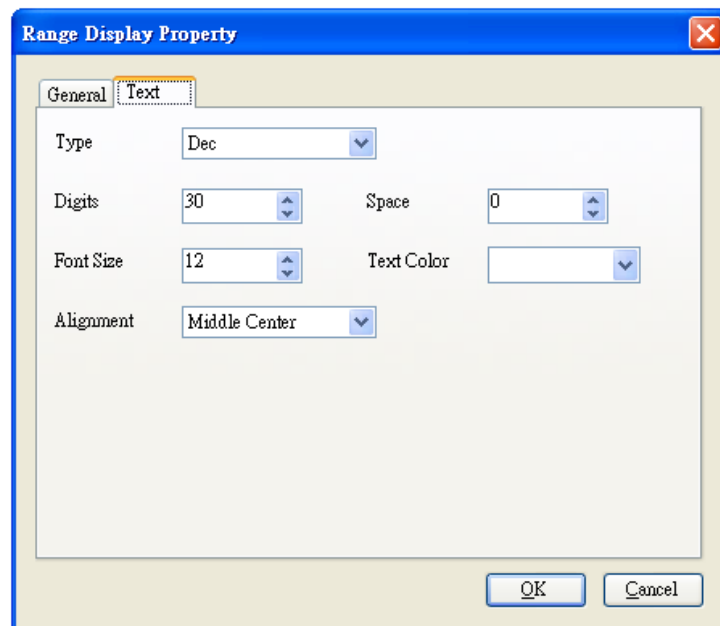



Fig. 3-6-11C-2 Text Property Setting



- To set the properties, you can also click **Edit** and then click **Unit Property**, or use the property window on the right of the screen, to make the setting.

d. Custom Keypad

To set up a custom keypad, click **Unit** and click **Keypad** and then click **Custom Keypad**, or directly click the shortcut  to open the package list window. Use the built-in numeric/character keypad in the package list, and drag it to the editing window and ungroup it to edit. The user can also define the package for the edit of add/open/delete/rename. See Figure 3-6-11D-1 below.

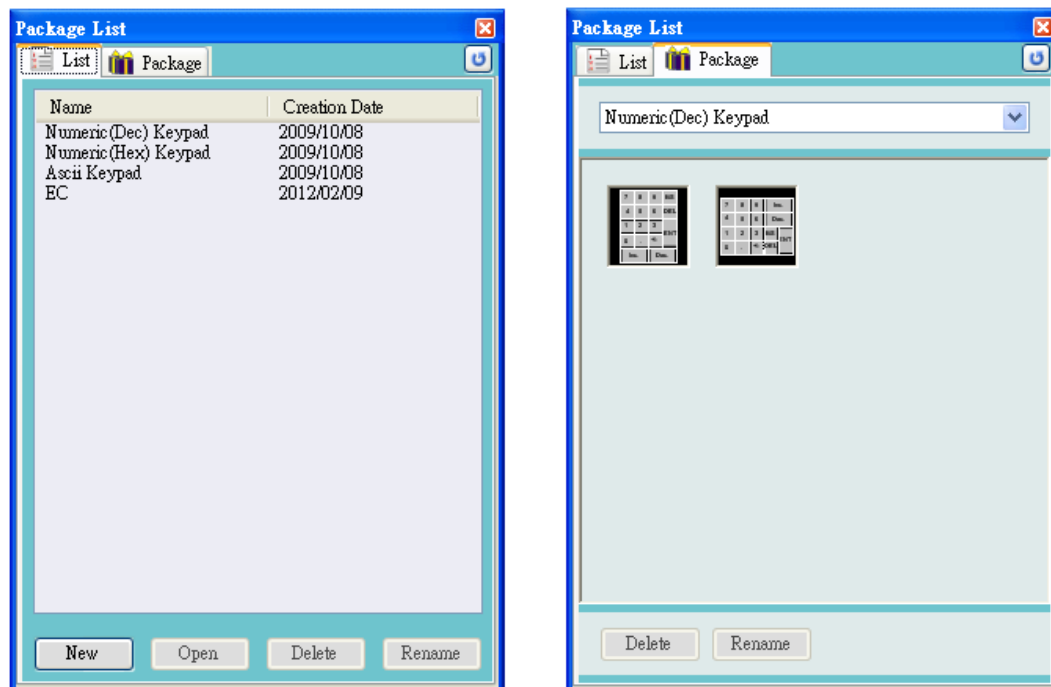



Fig. 3-6-11D-1 Package List



- The value display and range display can only be set up in the keypad screen.

To add user-defined graphs to the package list, click  to enter the new package name, and then select the needed graphs from the basic screen and left click the mouse and hold, and drag the graphs to the package list to finish the job. To use the graphs in the package list, just click the needed graphs and drag them to the screen. See Figure 3-6-11D-2 below.

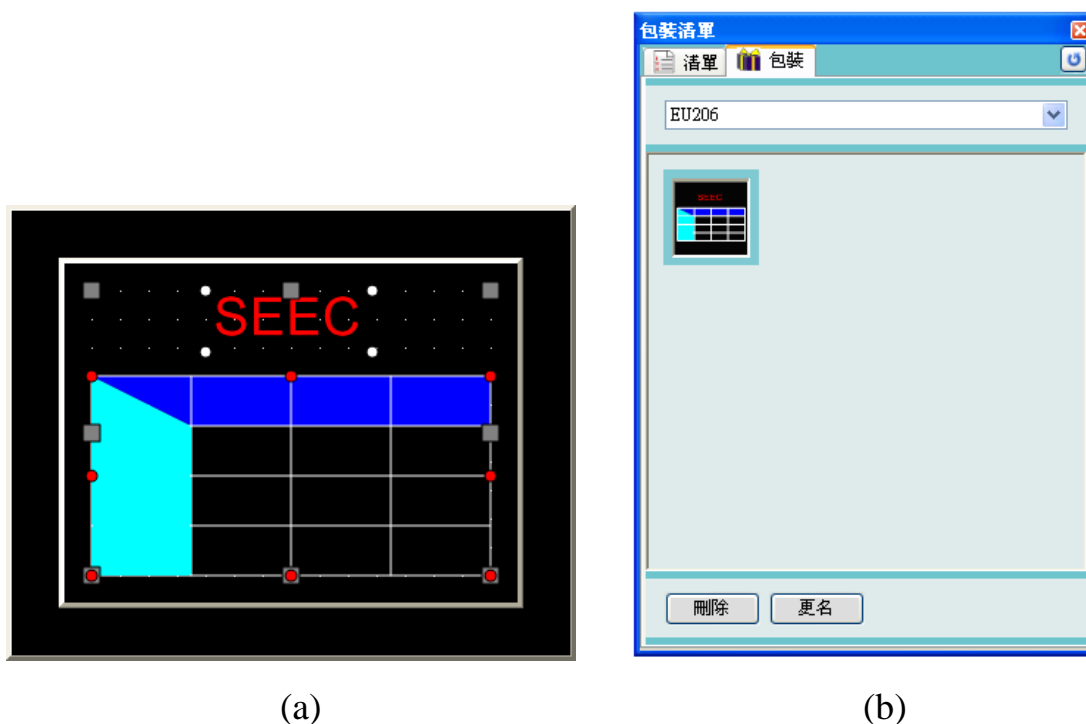

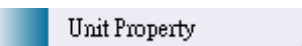


Fig. 3-6-11D-2 Editing Package List (a) Graphs of Basic Screen (b) Dragging to Package List



- To set the properties, you can also click  and then click , or use the property window on the right of the screen, to make the setting.

3.7. Screen Menu

3.7.1. Description of Screen Functions













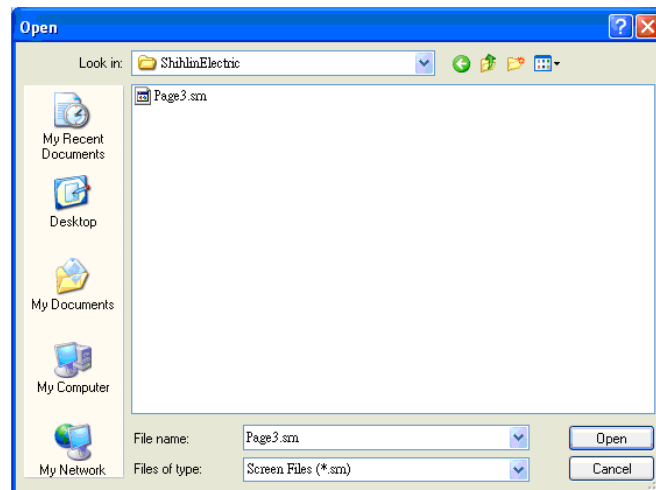
All the functions of the  menu are listed in the Table 3-7-1 below.

Table 3-7-1 Image Menu

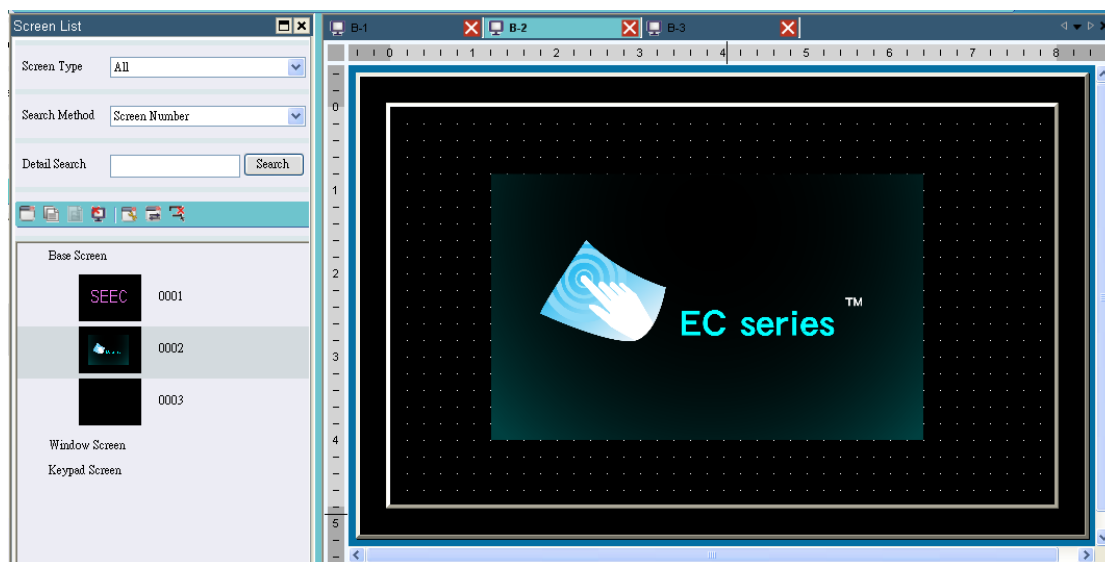
Name	Function
 Load...	Load the saved screen data.
 Save As...	Save the screen data as a new file.
 New Screen...	Add a new edit screen.
 Delete Screen	Delete an edit screen.
 Page Up	View the previous screen page.
 Page Down	View the next screen page.
 Page Skip...	Select the screen page to be viewed.
 Screen Open Macro...	Edit the macro of opening a single screen.
 Screen Close Macro...	Edit the macro of closing a single screen.
 Screen Cycle Macro...	Edit the cyclic macro of a single screen.
 Screen Property...	Set properties of screen display.

3.7.2. Load

Click **Screen** and then click **Load...** to open the Load dialogue box and select the screen file (*.smn) to be loaded. When the screen is loaded, it will be placed behind the screen of the original number. See Figure 3-7-2 below.



(a)



(b)

Fig. 3-7-2 Loading Screen (a) Opening Screen File (b) Loading Completed

3.7.3. Save As

Click **Screen** and then click **Save As...** to open the Save dialogue box and enter a filename, and then confirm to finish saving the screen file (*.sm). See Figure 3-7-3 below.

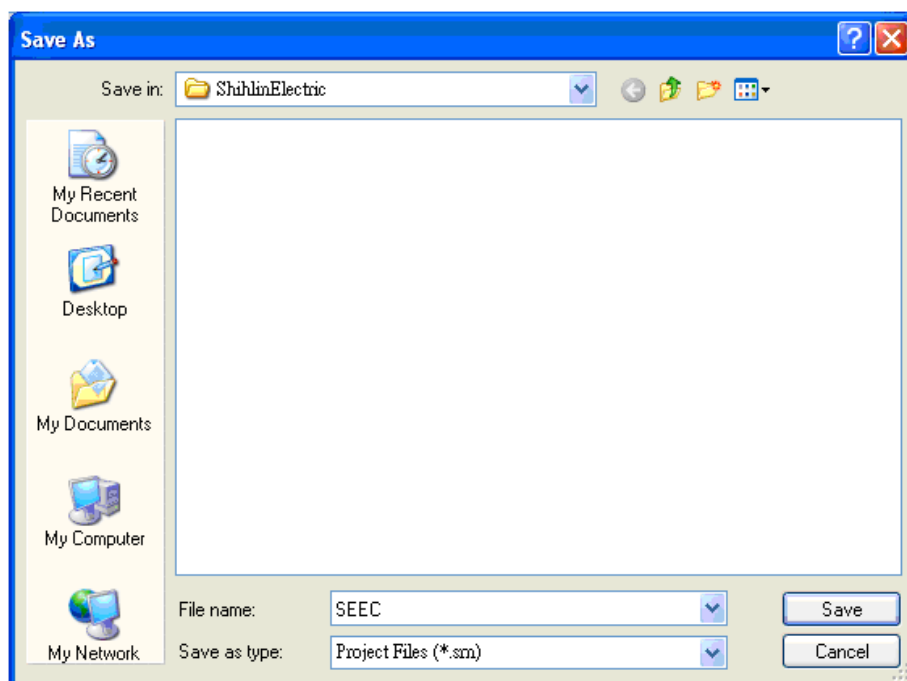



Fig. 3-7-3 Saving Screen

3.7.4. New Screen

Click **Screen** and then click **New Screen...**, or directly click the shortcut  to open the New Screen dialogue box and add a basic screen/window screen/keypad screen, or change the color and security level. See Figure 3-7-4-1 below.

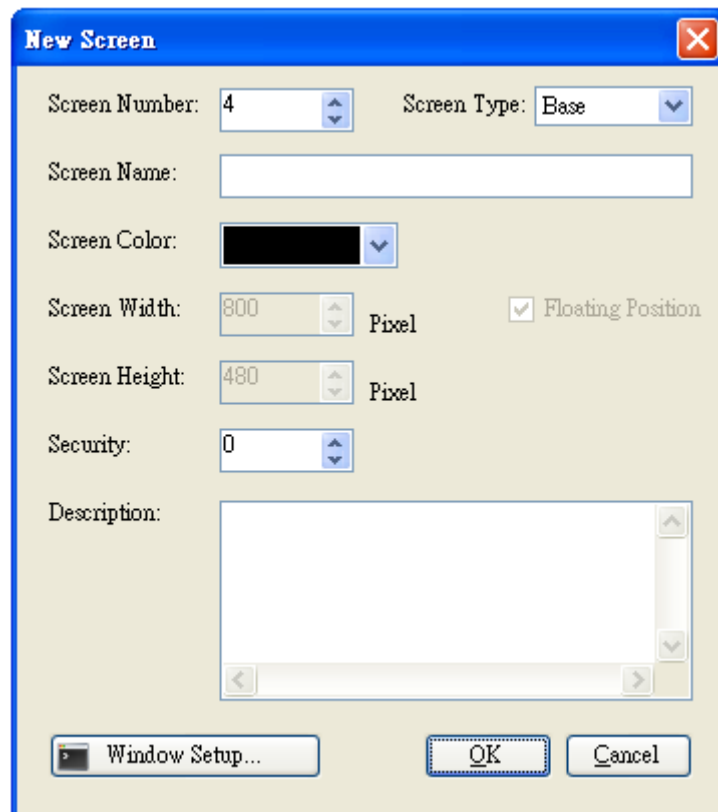
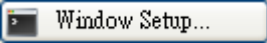


Fig. 3-7-4-1 New Screen Dialogue Box

Click  to open the dialogue box of the window screen position setting and change the window screen's display position. See Figure 3-7-4-2 below.

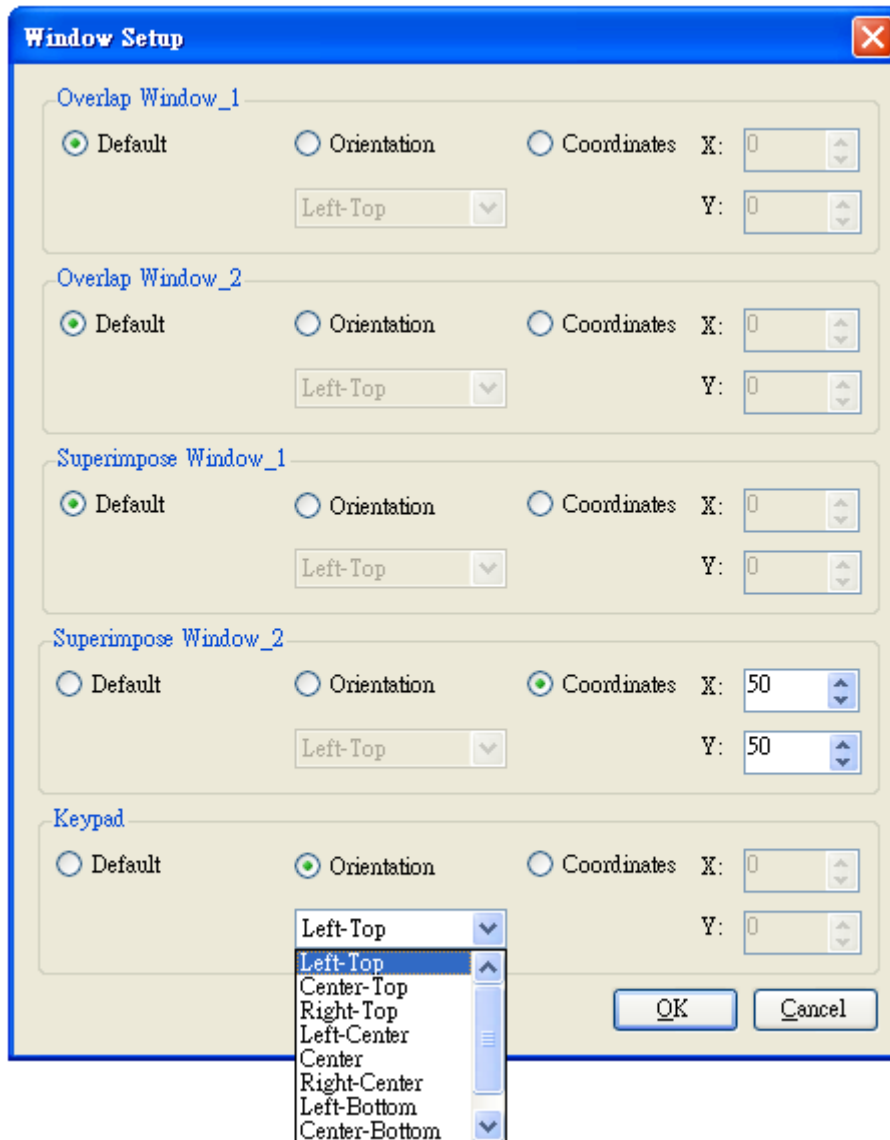





Fig. 3-7-4-2 Window Screen Setting

3.7.5. Delete Screen

Click  and then click  **Delete Screen**, or directly click the shortcut  to pop up the confirmation box for the deletion. Confirm to finish the deletion. See Figure 3-7-5 below.

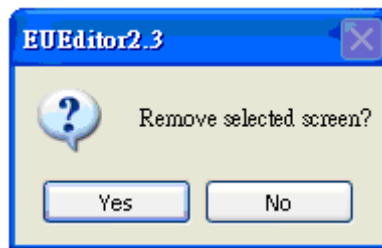





Fig. 3-7-5 Deletion Dialogue Box




3.7.6. Page Up

Click  and then click  **Page Up**, or directly click the shortcut  to view the first page or the previous page.

3.7.7. Page Down

Click  and then click  **Page Down**, or directly click the shortcut  to view the next page or the last page.

3.7.8. Page Skip

Click  and then click  Page Skip..., or directly click the shortcut  to open the dialogue box of options. See Figure 3-7-8 below.



For example, the screen numbers are P1, P5, P10, and the screen names are One, Five, Ten, correspondingly. To jump to page P5, enter “2” for page jump; enter “5” for screen number jump; enter “Five” for screen name jump.

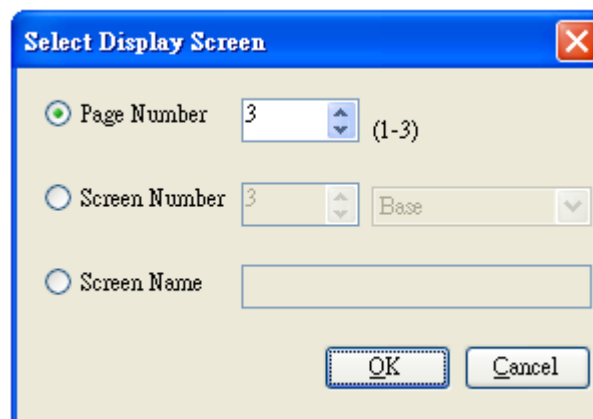


Fig. 3-7-8 Screen Selection

3.7.9. Screen Open Macro

Click **Screen** and then click **Screen Open Macro...** to open the dialogue box of the screen open macro. See Figure 3-7-9 below. This is used for editing a single-page macro. When the screen is opened, the macro will be executed. For detailed information about editing macro, please see Section 3.4.5 Macro Library.

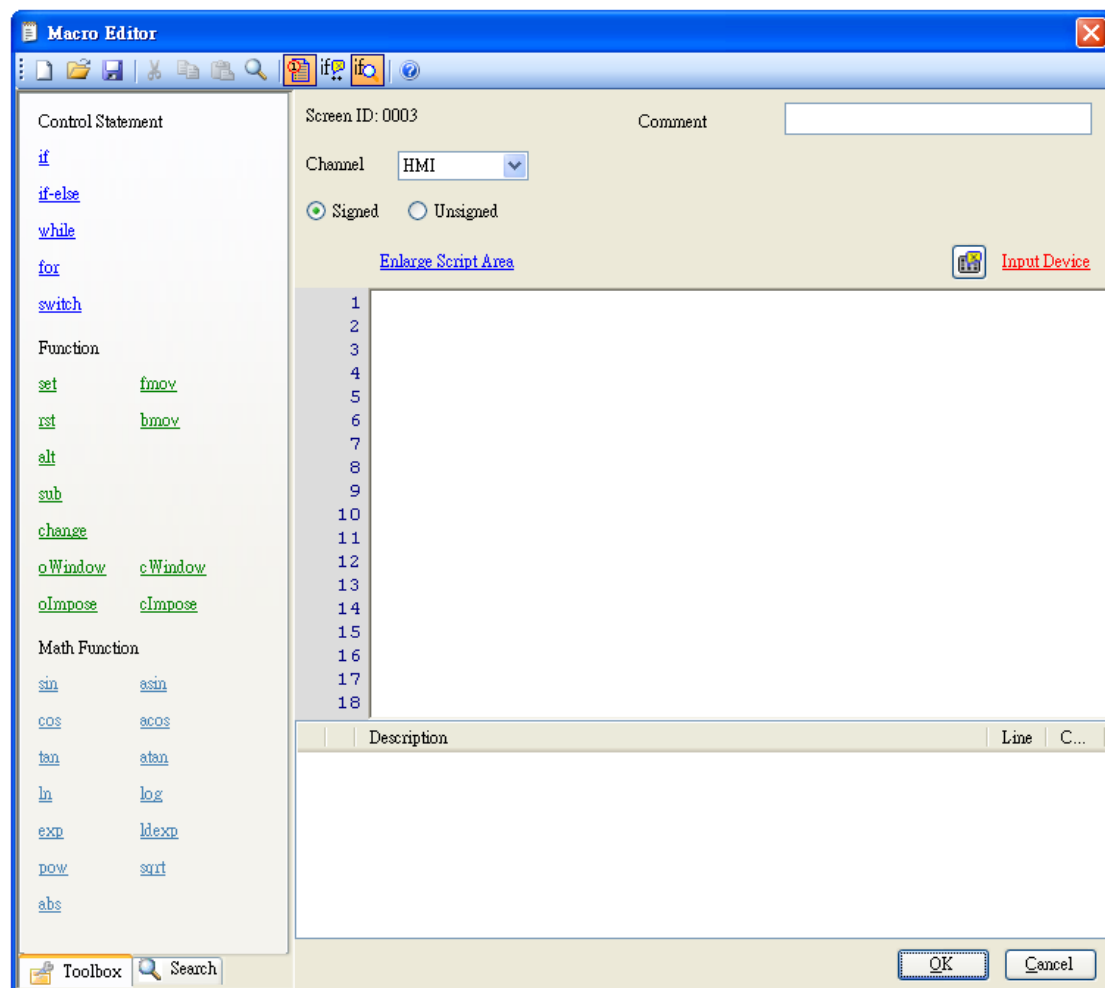


Fig. 3-7-9 Setup of Screen Open Macro

3.7.10. Screen Close Macro

Click **Screen** and then click **Screen Close Macro...** to open the dialogue box of the screen close macro. See Figure 3-7-10 below. This is used for editing a single-page macro. When the screen is closed, the macro will be executed. For detailed information about editing macro, please see Section 3.4.5 Macro Library.

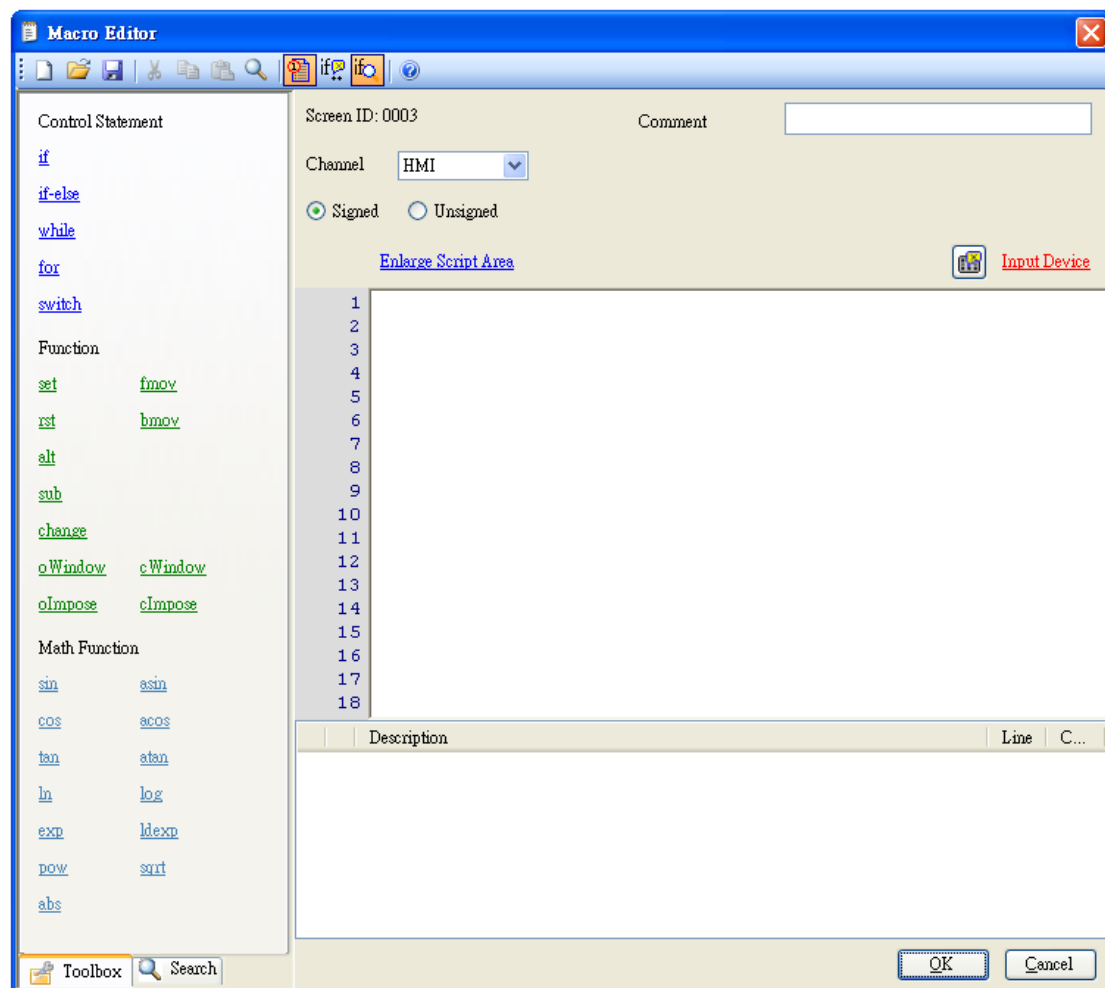


Fig. 3-7-10 Setup of Screen Close Macro

3.7.11. Screen Cycle Macro

Click **Screen** and then click **Screen Cycle Macro...** to open the dialogue box of the screen cycle macro. See Figure 3-7-11 below. This is used for editing a single-page macro. When the screen is opened, the macro will be executed cyclically till the screen is closed. For detailed information about editing macro, please see [Section 3.4.5 Macro Library](#).

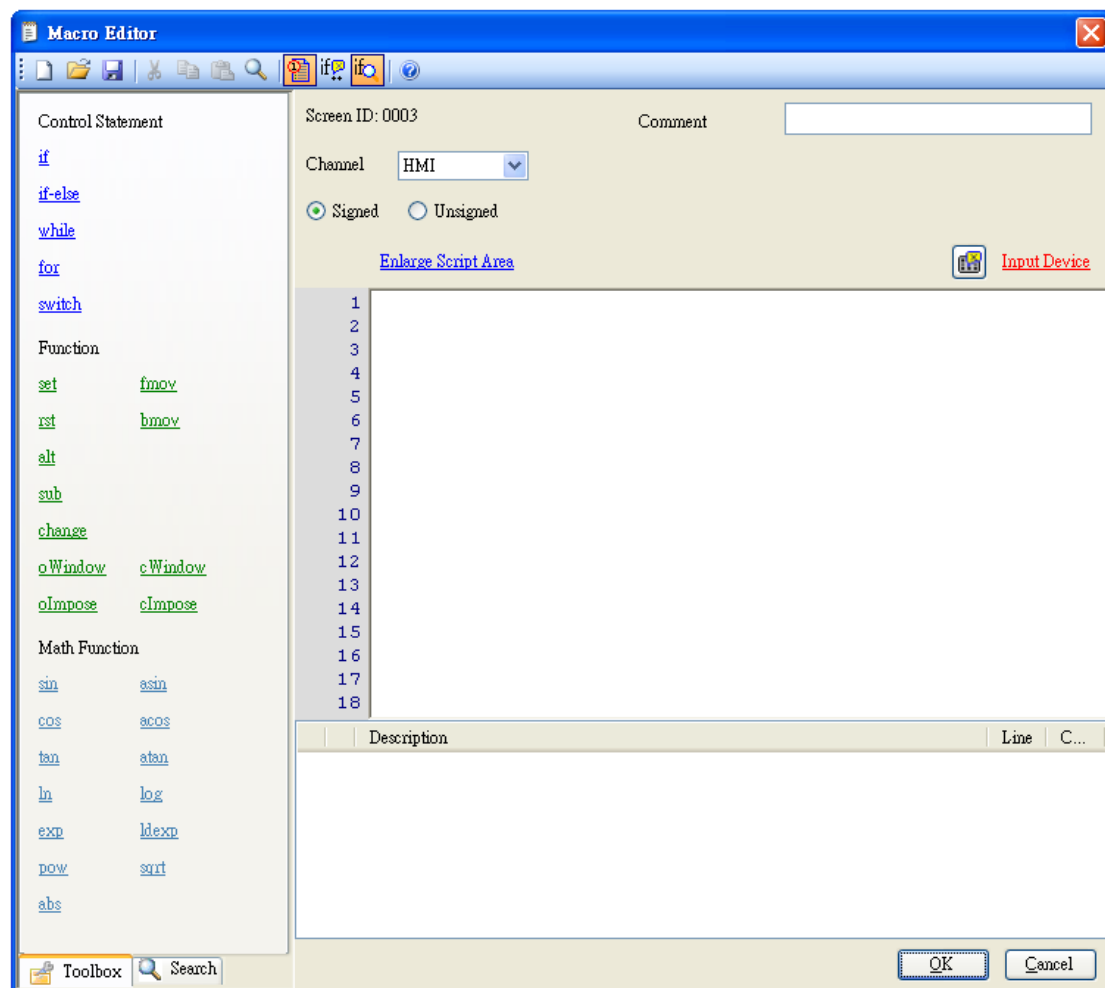


Fig. 3-7-11 Setup of Screen Cycle Macro

3.7.12. Screen Property Setting

Click **Screen** and then click **Screen Property...** to open the dialogue box of the screen property setting and make the property setting. See Figure 3-7-12 below.

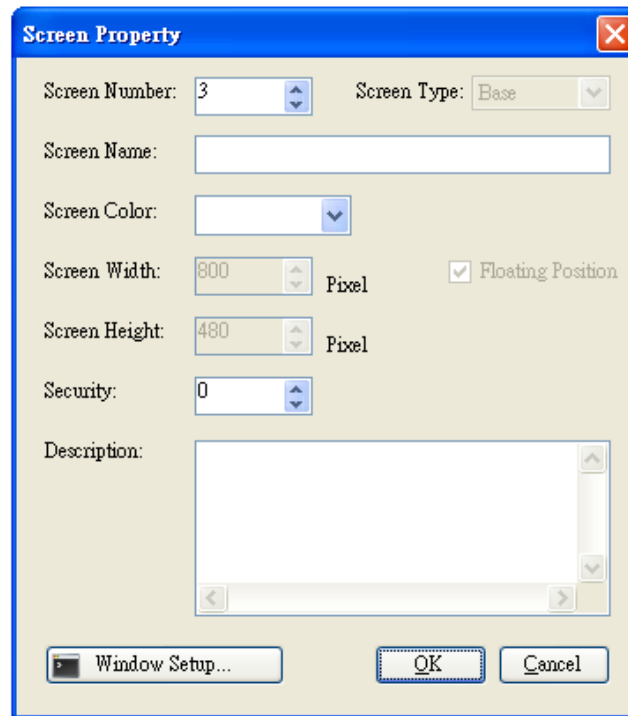


Fig. 3-7-12 Screen Property Window



- To set the properties, you can also select from the property window on the right of the screen, or double left click the mouse on the blank space of the screen, to make the setting.

3.8. Operations Menu

3.8.1. Operational Functions

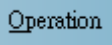





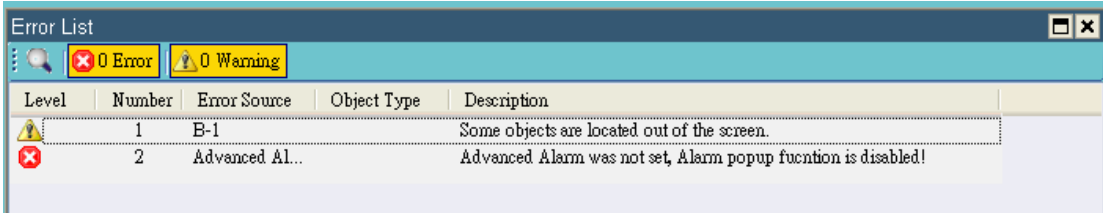
All the functions in the  menu are listed in Table 3-8-1 below.

Table 3-8-1 Menu of Operational Functions

Name	Function
 Error Check	Check for any errors in the editing screen.
 Transfer Tool...	Set the data transmission method.
 Simulation File Generator...	Generate a simulation file
 Environment Setup...	System's detailed environment setting.

3.8.2. Error Checks

Click **Operation** and then click **Error Check**, or directly click the shortcut , and in the editing screen make the error detection. See Figure 3-8-2 below.






Level	Number	Error Source	Object Type	Description
	1	B-1		Some objects are located out of the screen.
	2	Advanced AL...		Advanced Alarm was not set, Alarm popup function is disabled!

Fig. 3-8-2 Error List



- Double left click the mouse can switch the screen and jump to the selected object.

3.8.3. Transfer Tool

Click **Operation** and then click **Transfer Tool...**, or directly click the shortcut  to send/receive projects and update the O.S. programs. See Figure 3-8-3-1 below.

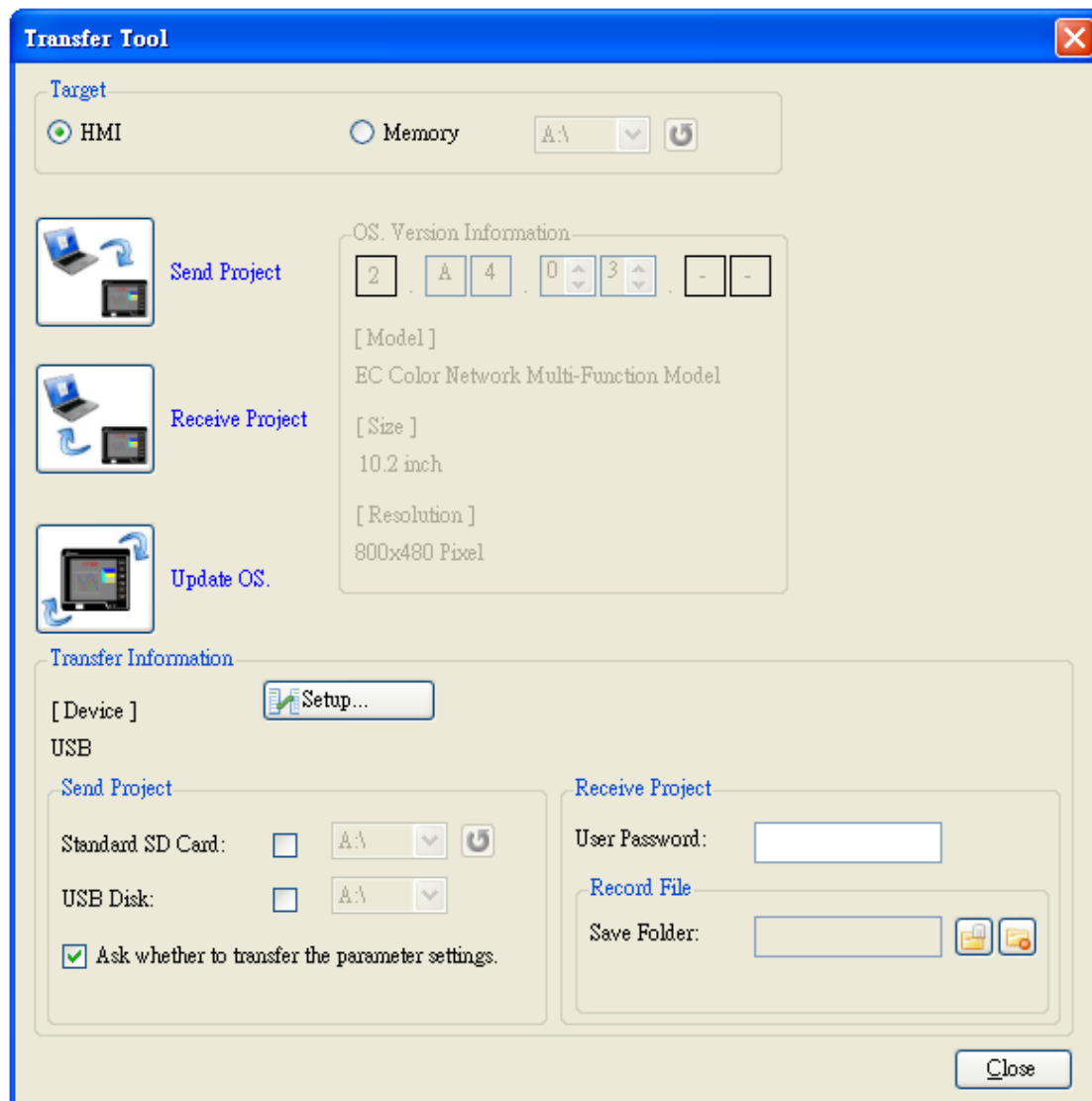



Fig. 3-8-3-1 Transmission Tool

When the transmission destination is  Memory, select a storage device, and then key in the information of the latest O.S. version, and the name of the O.S. version should be the filename provided. Figure 3-8-3-2 below takes the model EC-210-CT-11 as an example.

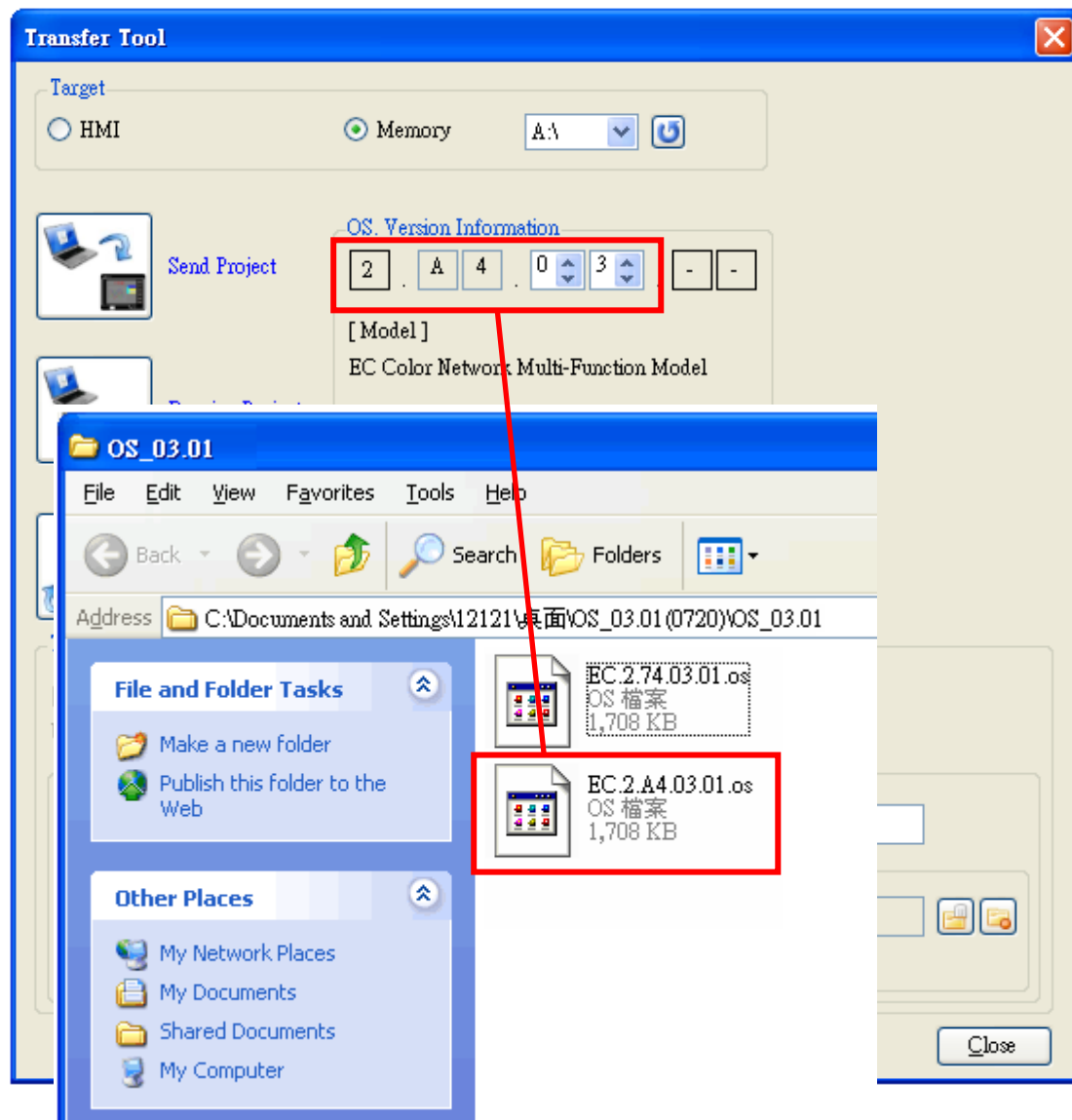



Fig. 3-8-3-2 Setup of O.S. Version Information

Click  to open the dialogue box of the device setting and set the transmission devices of COM, USB and Ethernet. See Figure 3-8-3-3 below. If USB is select, the software driver of the USB will have to be installed before the device can be used.

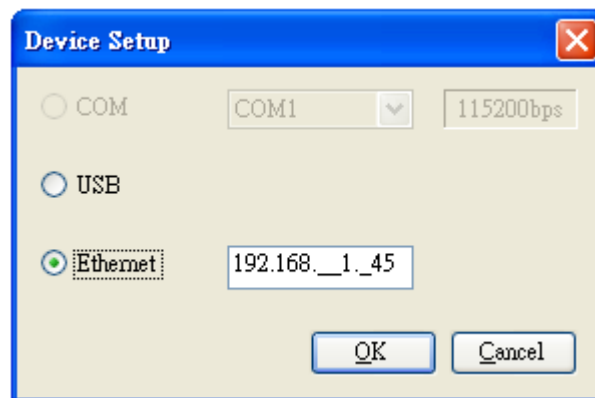



Fig. 3-8-3-3 Device Setting

NOTE

- Please be aware the basic model does not have the Ethernet communication port!!!
- When the transmission has been up longer than expected, unplug the transmission line and then plug it back to redo the transmission.
- Do not unplug the transmission line during the data transmission!
- When it is done using the USB to update the O.S., it is suggested to unplug the USB transmission line before using it for other transmissions.

3.8.4. Simulation File Generator

Click **Operation** and then click  **Simulation File Generator...** to open the dialogue box of the simulation file generator. Click **Browse...** and then save the simulation file (*.emu0). See Figure 3-8-4-1 below. And then click **Generate** to generate the simulation file. See Figure 3-8-4-2 below.

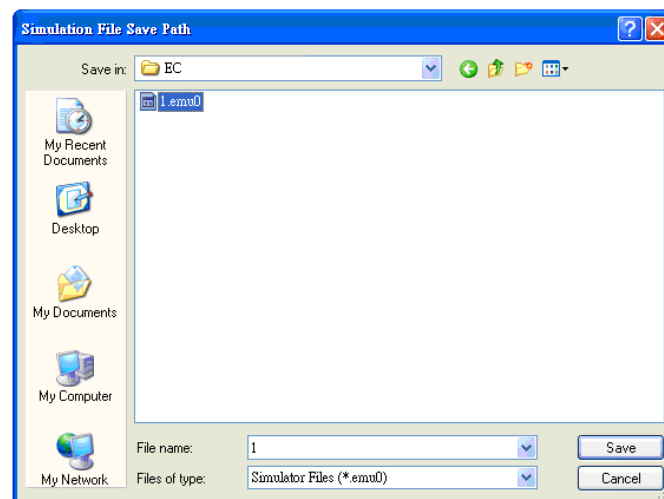


Fig. 3-8-4-1 Saving Simulation File

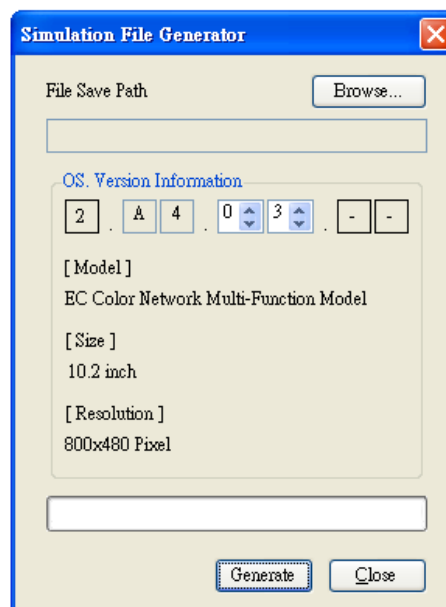
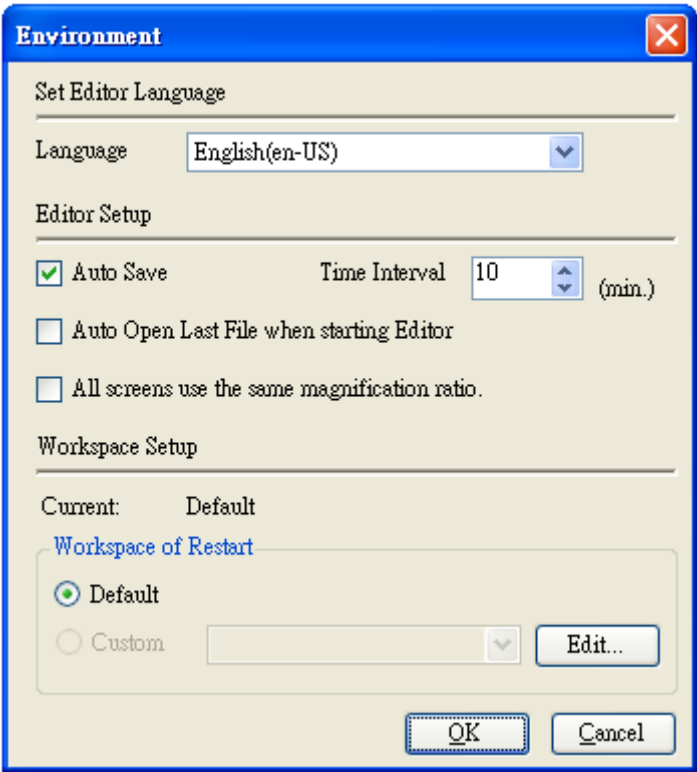


Fig. 3-8-4-2 Generating Simulation File

3.8.5. Environment Setup

Click **Operation** and then click **Environment Setup...** to open the environment setup dialogue box. See Figure 3-8-5 below.



Function Setting		Description
Set Editor Language		The language options are traditional Chinese, simplified Chinese, and English.
Editor Save	Auto save	Automatically save the file at the predefined time.
	Auto open last file when starting editor	Upon the start of the editing software, automatically open the last saved file.
	All screens use the same magnification ratio.	Upon the screen scaling, all the screens of the project are scaled at the same time.
Workspace Setup		The user can define the usual work space, so when the editing software is started, the screen will be displayed at the predefined space.

Fig. 3-8-5 Environment Setting

3.9. System Menu

3.9.1. System Functions















All the functions in the  menu are listed in the Table 3-9-1 below.

Table 3-9-1 Menu of System Functions

Name	Function
 HMI Type/Device Setup	Change HMI model/device
 Password Setup	Set up the password device and its security level.
 Recipe ▶	Edit/read recipe data.
 Floating Alarm	Set the floating alarm's message.
 Barcode Setup...	Read external barcode information.
 Logging ▶	Set device to monitor historical data.
 Advanced Alarm Observation ▶	Set device to monitor alarm information.
 Advanced Alarm Popup Display	Set pop-up display of advanced alarm.
 Auxiliary Setup	Set screen switch and simple macro.
 Parameter Setup	Set HMI's internal parameters.
 Startup Logo	Set HMI's system start-up screen.
 Time Action...	Edit scheduling data.
 Sound Setup	Set sound data.

3.9.2. HMI Model/Device Setup

Click **System** and then click **HMI Type/Device Setup** to change the HMI/device/model. Make the setting based on the connected communication port, device and model. Confirm to finish the setting. The EC series comes with the new setting of start-up first page number, so when the system is started, the first page will be displayed. See Figure 3-9-2 below.

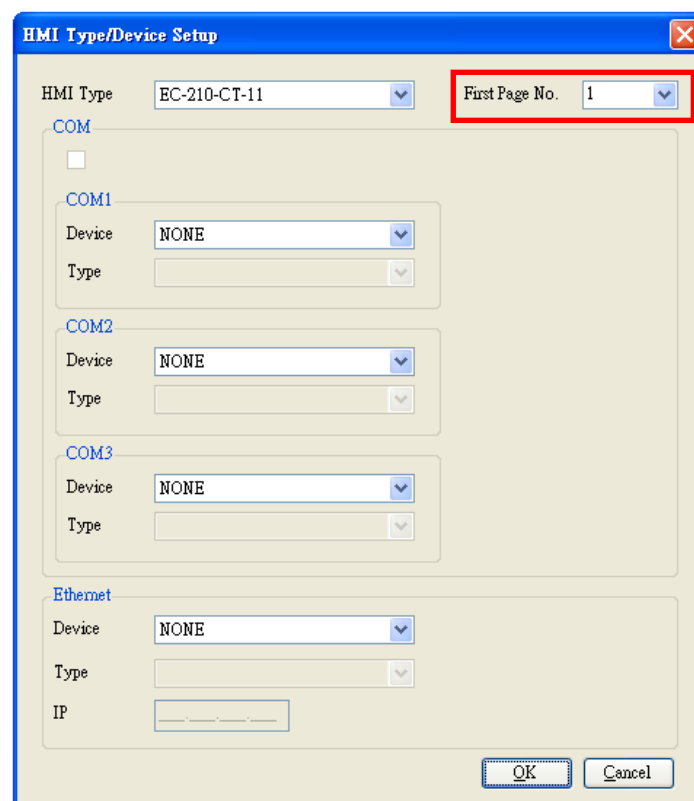


Fig. 3-9-2 Change HMI Model/Device Setting



- For detailed description of communication port, please refer to the [EC200 Hardware Manual](#).

3.9.3. Password Setup

Click **System** and then click **Password Setup** to open the password setting dialogue box and change the device, security level and the password for data transmission. See Figure 3-9-3-1 below.

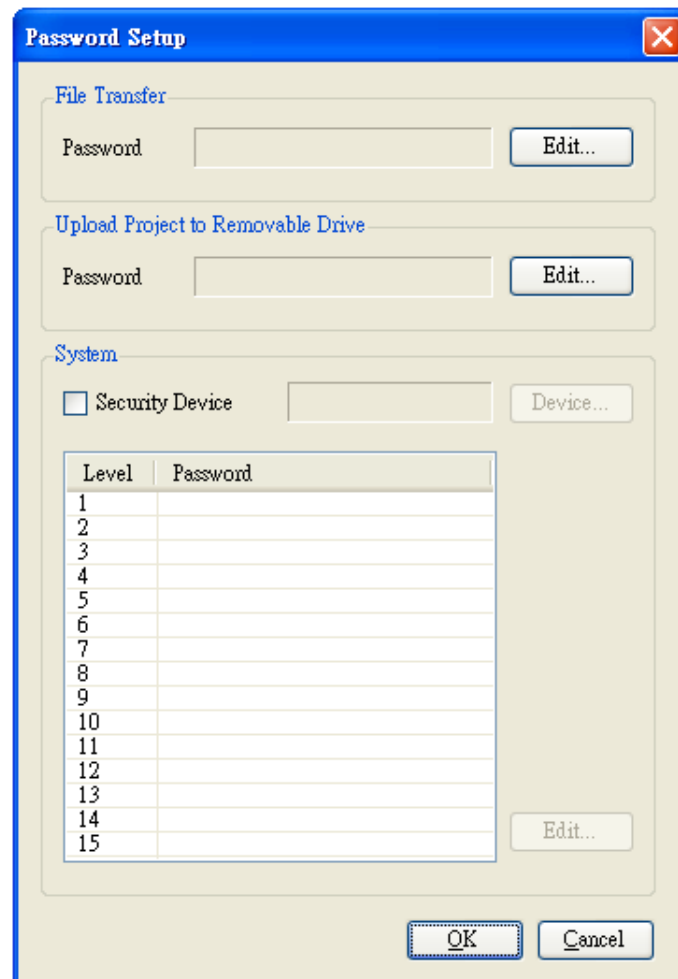


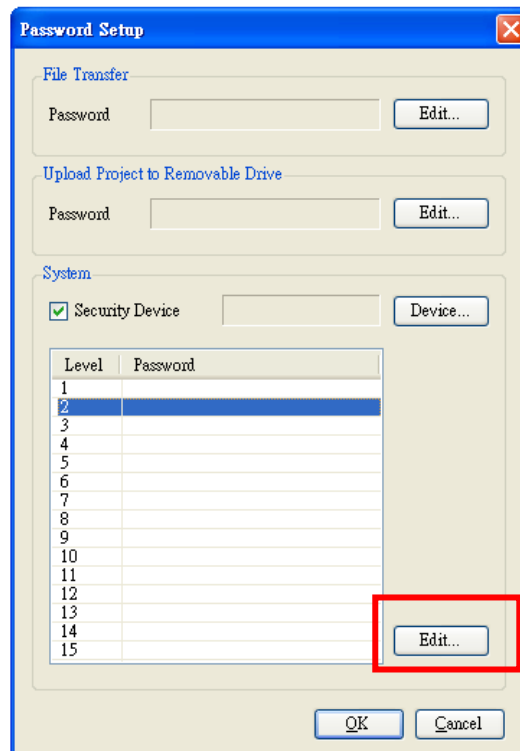


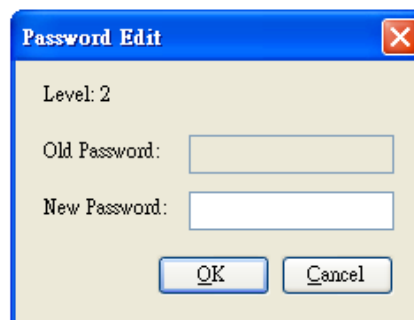
Fig. 3-9-3-1 Password Setting

The password device allows the user to set a device management security level. Tick ☒ **Security Device** and set up the device, and then confirm to finish the setting of the security level device.

To set a user password, in the system menu click  Password Setup to open the password setup dialogue box, and select a level number, and then click  to do the password editing. Confirm to finish the setting of the password security level. See Figure 3-9-3-2 below.





(a)



(b)

Fig. 3-9-3-2 Setup of Password Security Level (a) Password Setting Dialogue

Box (b) Password Setting

To set the password for data transmission, in the system menu click  Password Setup to open the password setup dialogue box, and then click  to do the password editing. Confirm to finish the setting of the data transmission password. See Figure 3-9-3-3 below.

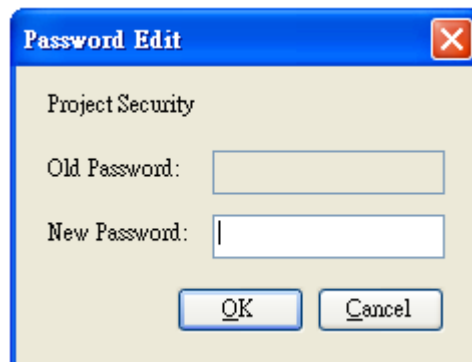



Fig. 3-9-3-3 Password Setting



- To set up the data transmission password, use the user password registered in  Transfer Tool... .

3.9.4. Recipe

Click **System**, and in the menu click **Recipe** to make recipe-related setting. See Figure 3-9-4 below.

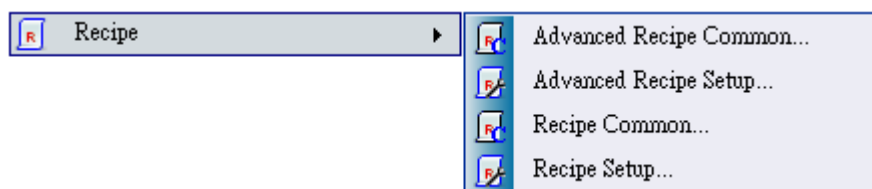


Fig. 3-9-4 Recipe Function List

a. Advanced Recipe Common Setup

To set up a recipe commonality, click **System**, and click **Recipe** and then click **Advanced Recipe Common...** to open the dialogue box of the advanced recipe commonality. Then, tick ☒ **External Control Device** for the device controlling the reading and writing of the recipe data, and the device controlling the recipe numbers and record numbers. To set up the device, click **Device...** to open the device setup dialogue box. See Figure 3-9-4A-1 below.

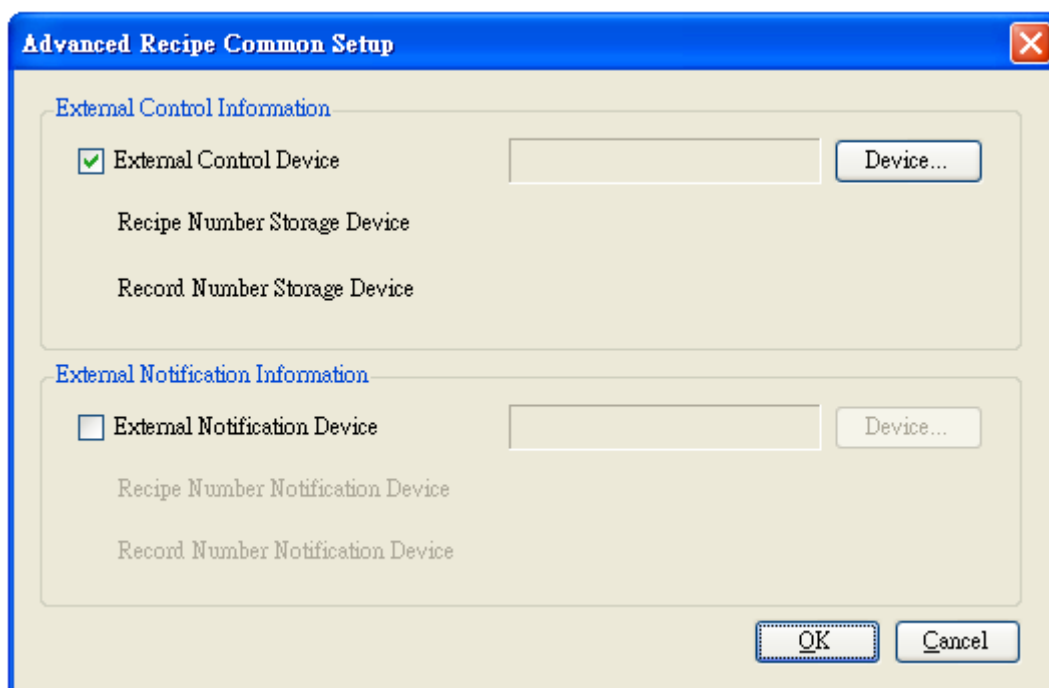


Fig. 3-9-4A-1 Advanced Recipe Commonality

b. Advanced Recipe Setup

Click **System** and click **Recipe**, and then click **Advanced Recipe Setup...** to open the dialogue box of the advanced recipe setting. There can be as many as 255 advanced recipes. Click **New...** to open the advanced recipe editing. See Figure 3-9-4B-1 below.

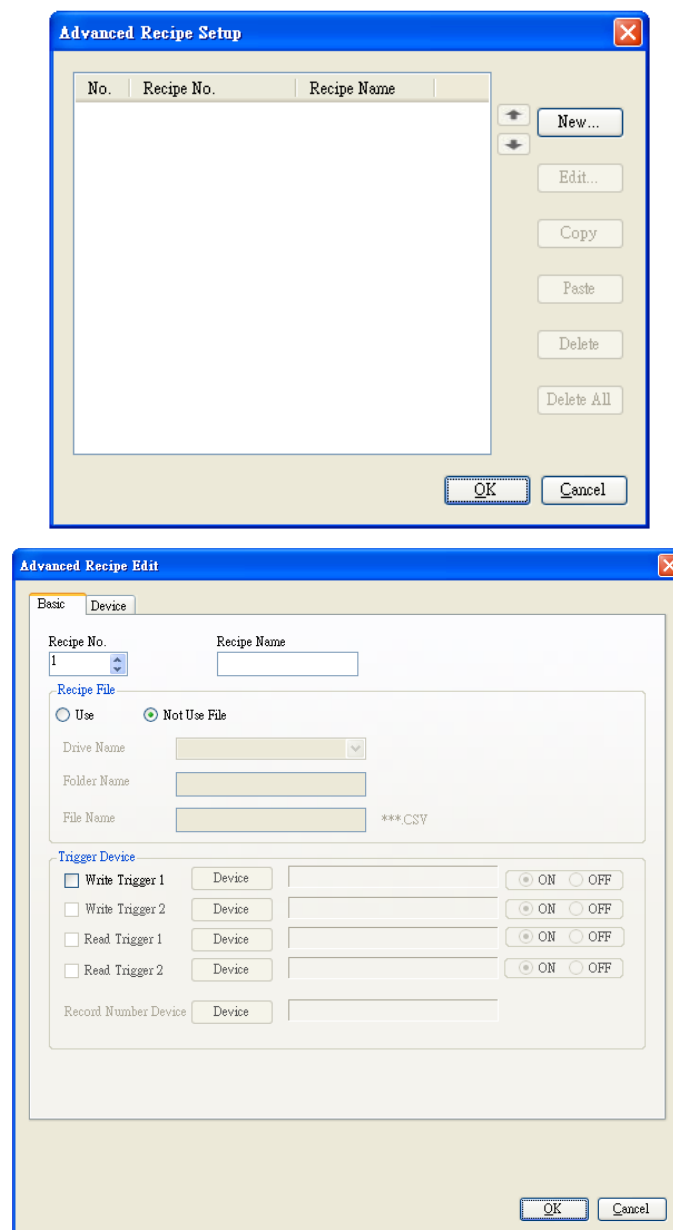


Fig. 3-9-4B-1 Advance Recipe Setting

The basic setting allows the user to set the recipe number, recipe name, recipe file, and trigger device. See Figure 3-9-4B-2 below.

Advanced Recipe Edit

Basic Device

Recipe No. 1 Recipe Name

Recipe File

☐ Use ☒ Not Use File

Drive Name Folder Name File Name ***.CSV

Trigger Device

☐ Write Trigger 1 Device ON OFF

☐ Write Trigger 2 Device ON OFF

☐ Read Trigger 1 Device ON OFF

☐ Read Trigger 2 Device ON OFF

Record Number Device Device

OK Cancel

Function		Description
Recipe File		In the file access, the writing trigger and reading trigger enable the writing and reading of the external storage device.
Trigger Device	Write Trigger	Write the recipe value to the device.
	Read Trigger	Read the value from the device and write it to the recipe.
Record Number Device		Save the record point number set by the device.

Fig. 3-9-4B-2 Basic Setting

The device setting allows the user to set the number of modules, number of records, devices, points, and record points. The devices can be serially numbered by setting the points. See Figure 3-9-4B-3 below.

Advanced Recipe Edit

Basic | **Device**

Block Number: 5 | Record Number: 3

Im Ex

No.	Device	Device Type	Point	Device Comm...	Record1	Record2	Record3
1	HD0	Signed 16bit	3	Signed Dec.	500	1000	1500
2	HD1				250	500	750
3	HD2				42	84	126
4	HD5	Signed 16bit	1	Signed Dec.	20	40	60
5	HD6	Signed 16bit	1	Signed Dec.	1	2	3
6	HD7	Signed 16bit	1	Signed Dec.	2	4	6
7	HD8	Signed 16bit	1	Signed Dec.	50	100	150

OK Cancel

Function	Description
Number of Modules	Device can set as many as 1024 transactions (including the points).
Points	Devices can be serially numbered via the setting of the points.
Number of Records	There can be as many as 1024 transactions. ((recipe devices)x(recipe records) must not be greater than 255k capacity)

Fig. 3-9-4B-3 Device Setting

c. Recipe Common Setup

To set up a recipe commonality, click **System** and click **Recipe** and then click **Recipe Common...** to open the dialogue box of the recipe commonality. Tick **External Control Device** for the device controlling the reading and writing of the recipe data, and the device controlling the recipe numbers. To set up the device, click **Device...** to open the device setup dialogue box. Select the device to finish the device setting. When the option of the extension notification device **External Notification Device** is ticked, the information of the extension notification device will be displayed. See Figure 3-9-4C-1 below.

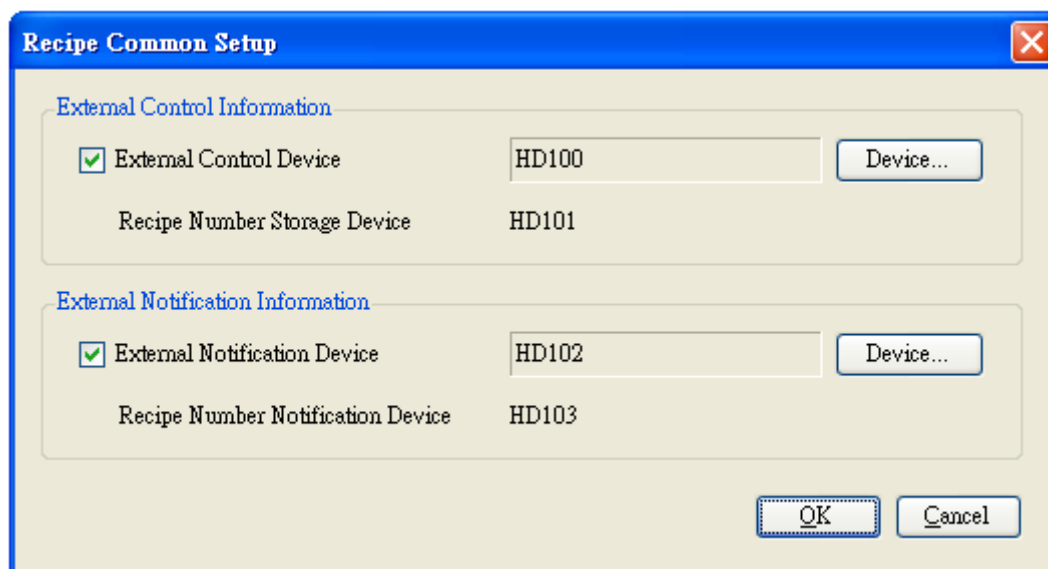



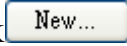
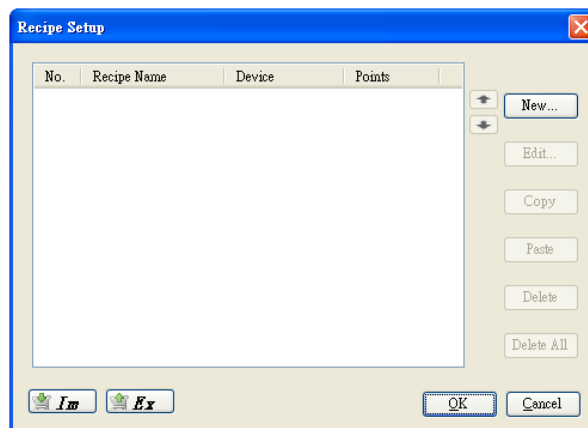


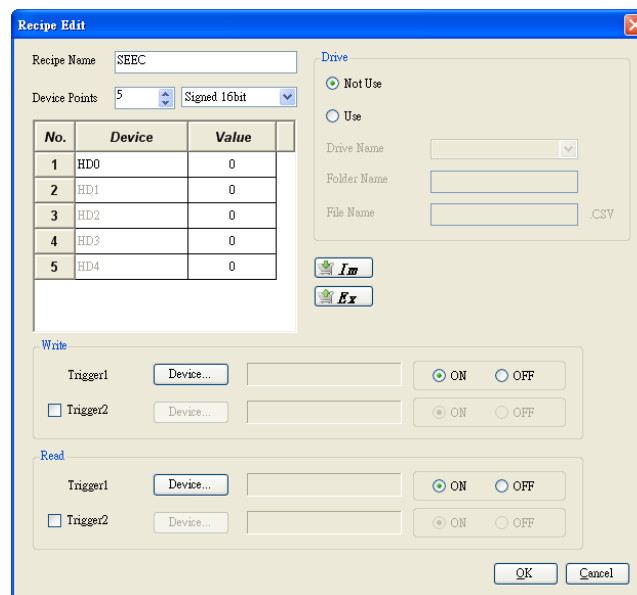
Fig. 3-9-4C-1 Recipe Commonality

d. Recipe Setup

Click  and click  Recipe and then click  Recipe to open the recipe setting dialogue box. There can be as many as 255 recipes. Click  to open the recipe edit dialogue box and set the recipe name, number of devices (up to 1024 devices), import/export, storage device, and the functions of the reading/writing device. See Figure 3-9-4D-1 below.



(a)



(b)

Fig. 3-9-4D-1 Recipe Setting (a) Recipes (b) Recipe Editing

To set a Writing device, click **Device...** to open the device setting dialogue box and select a device to finish the setting. Tick **ON** or **OFF** to decide the trigger pattern preferred. If setting 2 switches is needed, tick ☒ **Trigger2** and then click **Device...** to select the second writing device. The action of the Writing device is when you click the trigger switch, the software will write the original value you set. See Figure 3-9-4D-2 below.

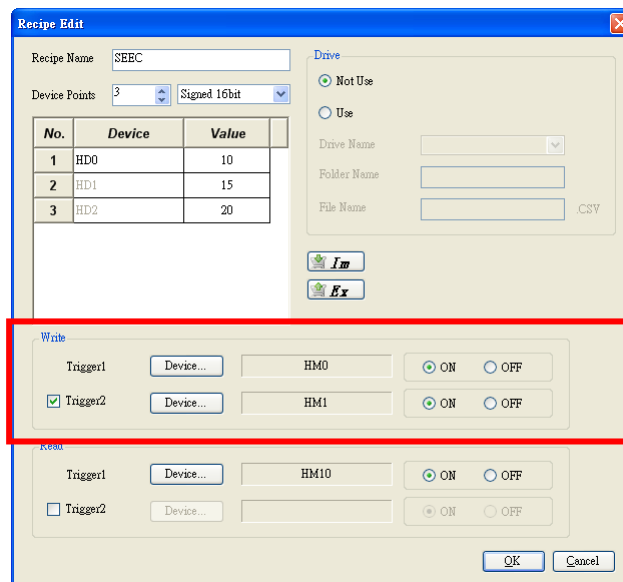


Fig. 3-9-4D-2 Writing Recipe Device



If the read switch HM10 is not pressed, and you want to restore the value you set in the recipe, press HM0 and HM1, the software will then write 10, 15 and 20 to HD0, HD1 and HD2, respectively.

If the values in the devices are 1, 2 and 3, when you click the read switch HM10, and then click HM0 and HM1, the software will then write 1, 2 and 3 to HD0, HD1 and HD2, respectively.

To set a Reading device, click **Device...** to open the device setting dialogue box and select the device to finish the setting. Tick **ON** or **OFF** to decide the trigger pattern preferred. The action of the Reading device is that when you click the trigger switch, the software will read the value you set from the device. See Figure 3-9-4D-3 below.

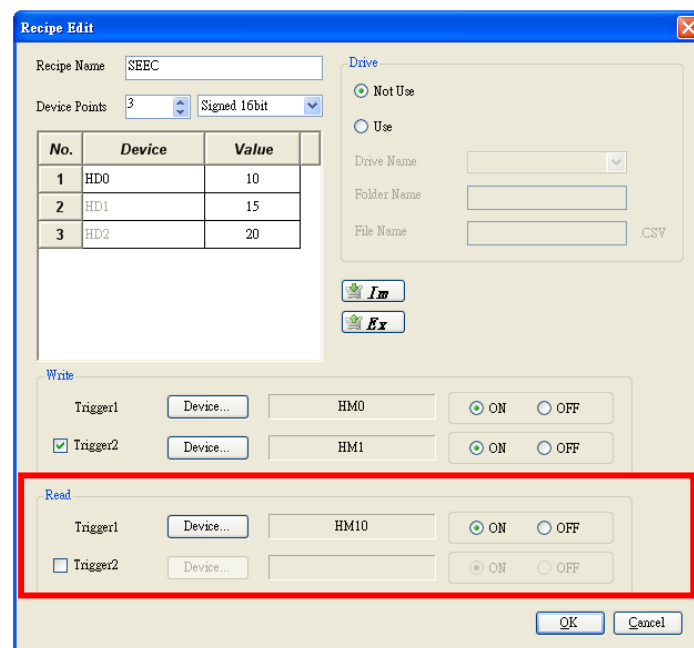
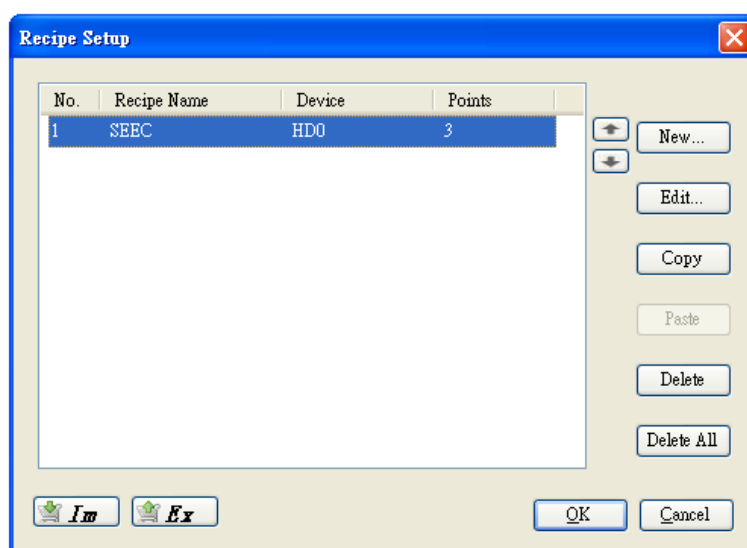


Fig. 3-9-4D-3 Reading Recipe Device

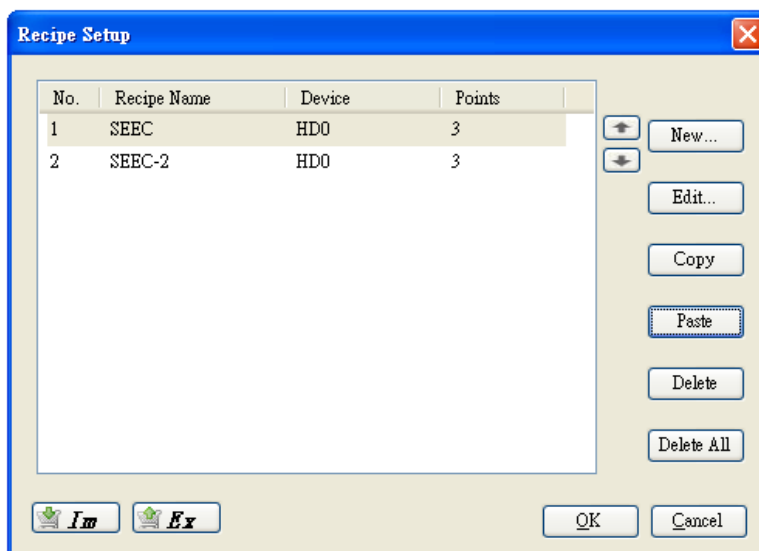


If the values in the devices HD0, HD1 and HD2 are 10, 15 and 20, respectively, when you click the HM10 switch, the software will re-read from the devices to overwrite the original values of 10, 15 and 20.

When the recipe is set and confirmed, the recipe information will be displayed in the recipe dialogue box. To copy the recipe value, select the recipe to be copied and then click **Copy**, and then confirm to finish the copy. Afterwards, click **Paste** to copy the recipe value onto the next line. See Figure 3-9-4D-4 below.

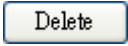


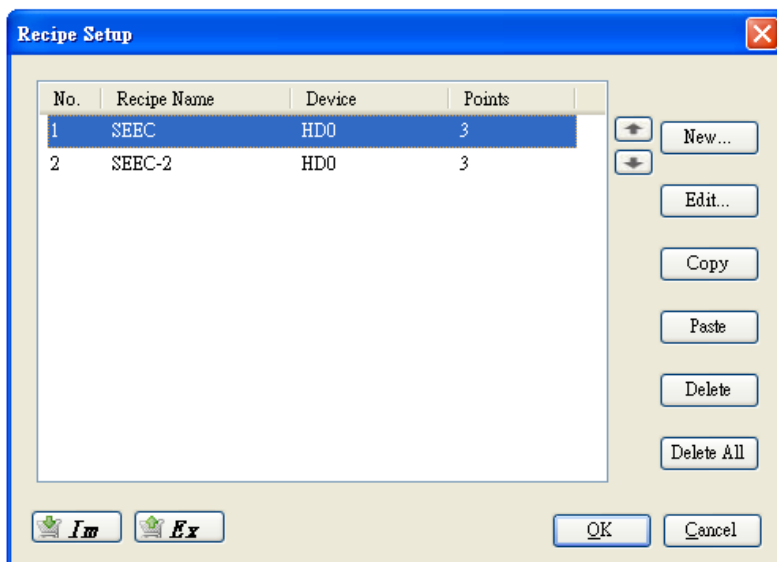
(a)



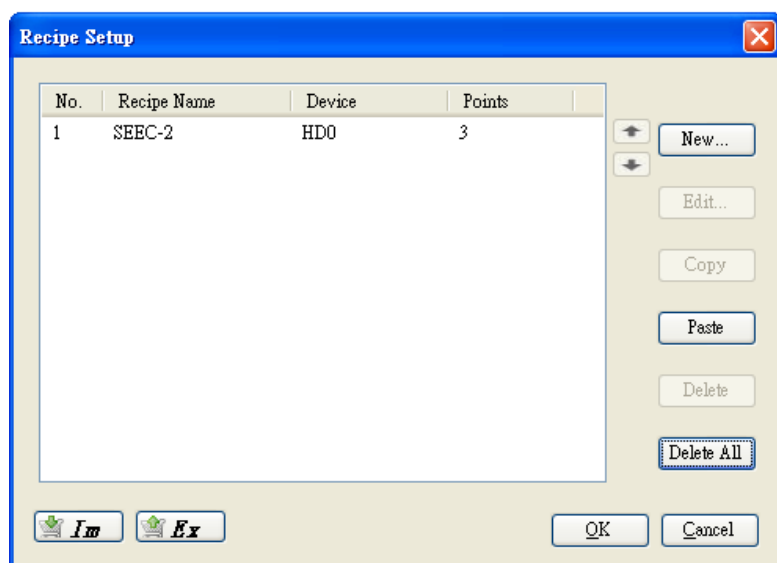
(b)

Fig. 3-9-4D-4 Copying Recipe (a) Selecting Recipe (b) Copy Completed

To delete a recipe value already set, select the recipe value by clicking it and then click  to finish the deletion. See Figure 3-9-4D-5 below.



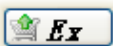
(a)

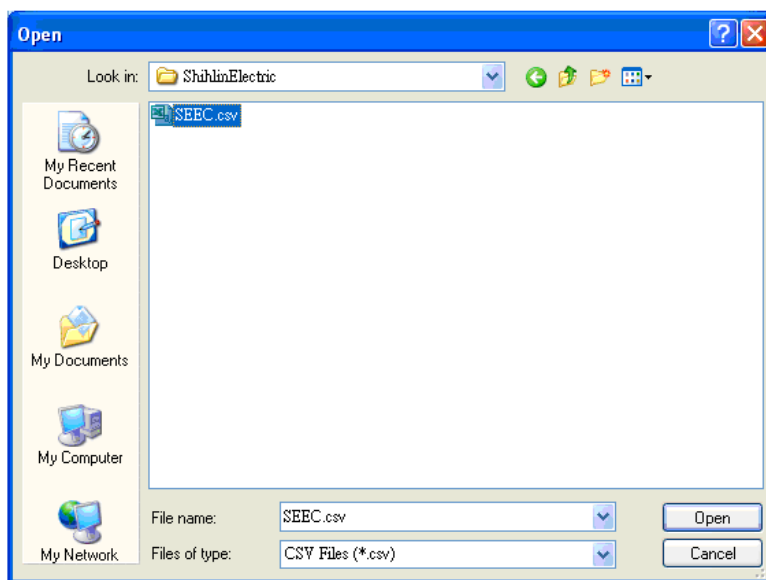


(b)

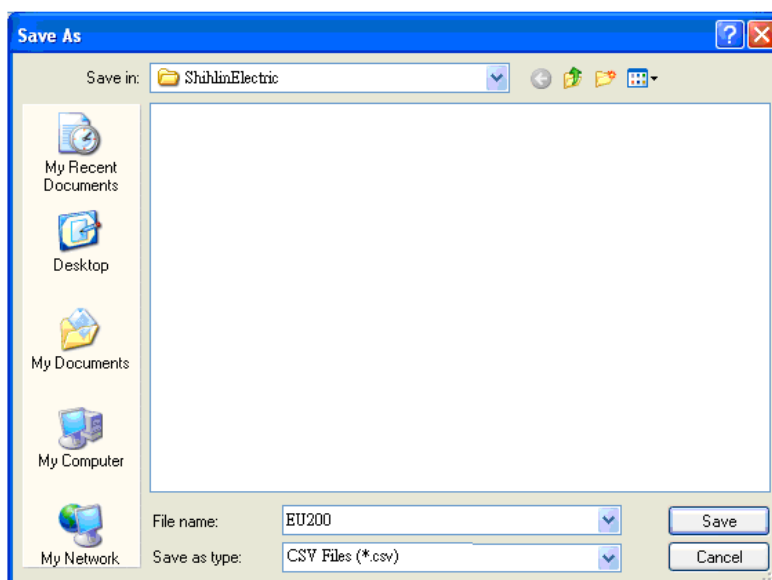
Fig. 3-9-4D-5 Deleting Recipe (a) Selecting Recipe (b) Deletion Completed

To import recipe data, click  to open the dialogue box, and select the recipe data to be imported (.csv). Confirm to finish the import.

To export recipe data, click  to open the dialogue box and export the recipe data (.csv) to the destination. Confirm to finish the export. See Figure 3-9-4D-6 below.



(a)



(b)

Fig. 3-9-4D-6 Recipe Data (a) Recipe Import (b) Recipe Export

Recipe data can be imported from and exported to an external device. The user can change the device name, data folder name, and the filename. See Figure 3-9-4D-7 below.

Recipe Edit

Recipe Name: SEEC

Device Points: 3 Signed 16bit

No.	Device	Value
1	HD0	0
2	HD1	0
3	HD2	0

Drive

☐ Not Use
☒ Use

Drive Name: A: Inner Memory
Folder Name: Project1
File Name: RECIPE001 .CSV

Write

Trigger1: Device... HM0 ☒ ON ☐ OFF
☒ Trigger2: Device... HM1 ☐ ON ☒ OFF

Read

Trigger1: Device... HM10 ☐ ON ☒ OFF
☐ Trigger2: Device... ☒ ON ☐ OFF

OK Cancel

Memory Drive	Description
Drive Name	Selecting external memory device. A : Inner Memory B : Standard SD Card C : USB Disk
Folder Name	The name of the folder storing recipes.
File Name	The name of the file containing the recipe.

Fig. 3-9-4D-7 Memory Device Setting



- When the memory drive of recipes is not used, it means that when you trigger the read/write drive, the action will point to the data at the edit-end.

- If the memory device is used, it means that when you trigger the read/write drive, the action will point to the csv files; if there is no csv file available, the action will point to the data at the edit-end.

3.9.5. Floating Alarm

Click **System** and then click **Floating Alarm** to open the floating alarm setting dialogue box and set the number of devices and their types, comment, outline, display and the text. See Figure 3-9-5-1 below.

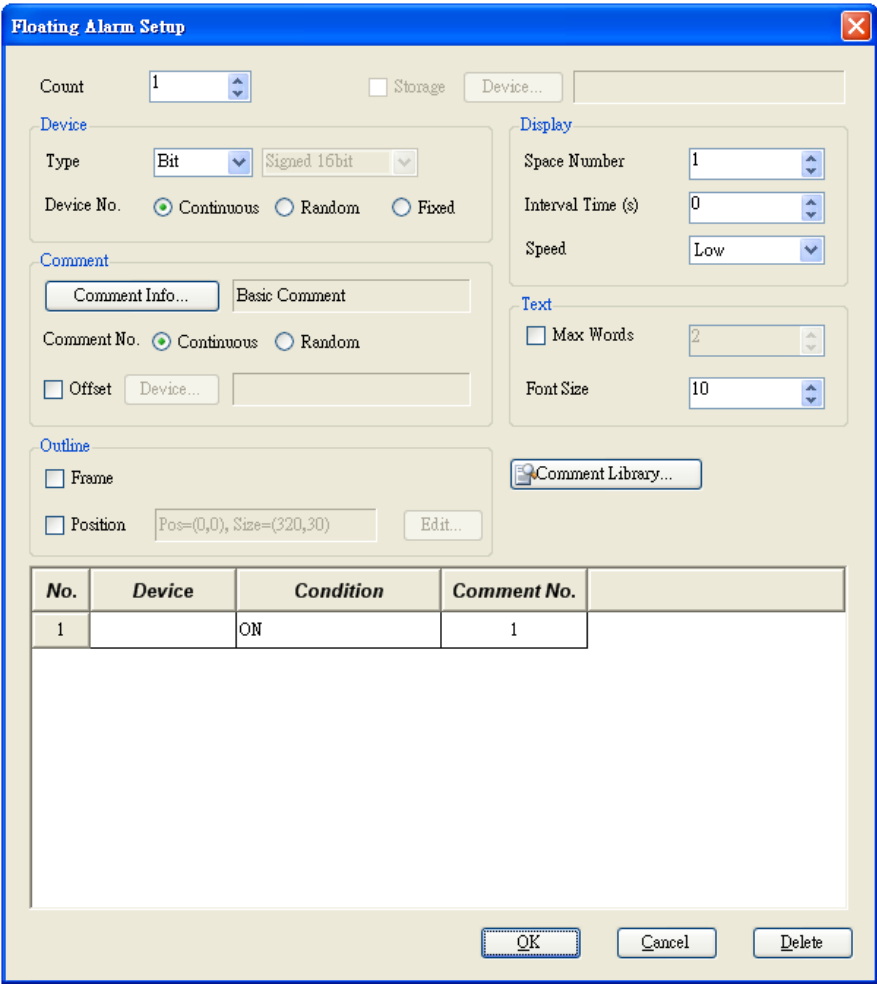


Fig. 3-9-5-1 Floating Alarm Setting



- Whenever the device's setting is changed, the floating alarm background will be started.

To select the Bit action device, its types are ON/OFF display. The user can change the comment information, number and offset. See Figure 3-9-5-2 below.

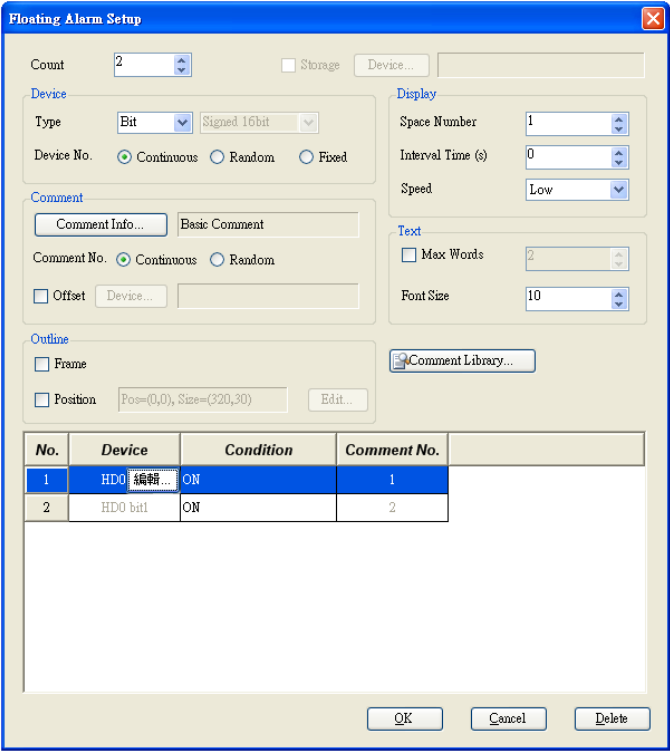



Fig. 3-9-5-2 Bit Floating Alarm

Click  to open the comment information dialogue box and select basic comment or comment group. See Figure 3-9-5-3 below.

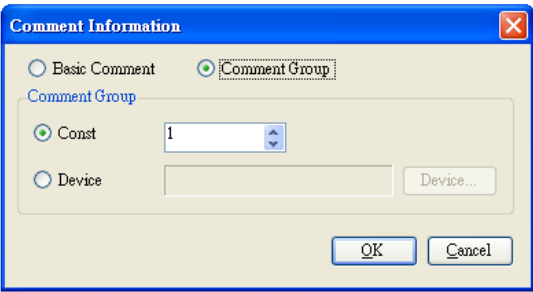


Fig. 3-9-5-3 Comment Information Setting



Tick ☒ Offset and select device HD10 to offset the comment number.

The action is HD10 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as HD10 + original comment number. If the internal value of HD10 is 10, after the offset operation the HD0 internal comment number will become 11. See Figure 3-9-5-4 below.

Comment

Comment Info... Basic Comment

Comment No. ☒ Continuous ☐ Random

☒ Offset Device... HD10

Outline

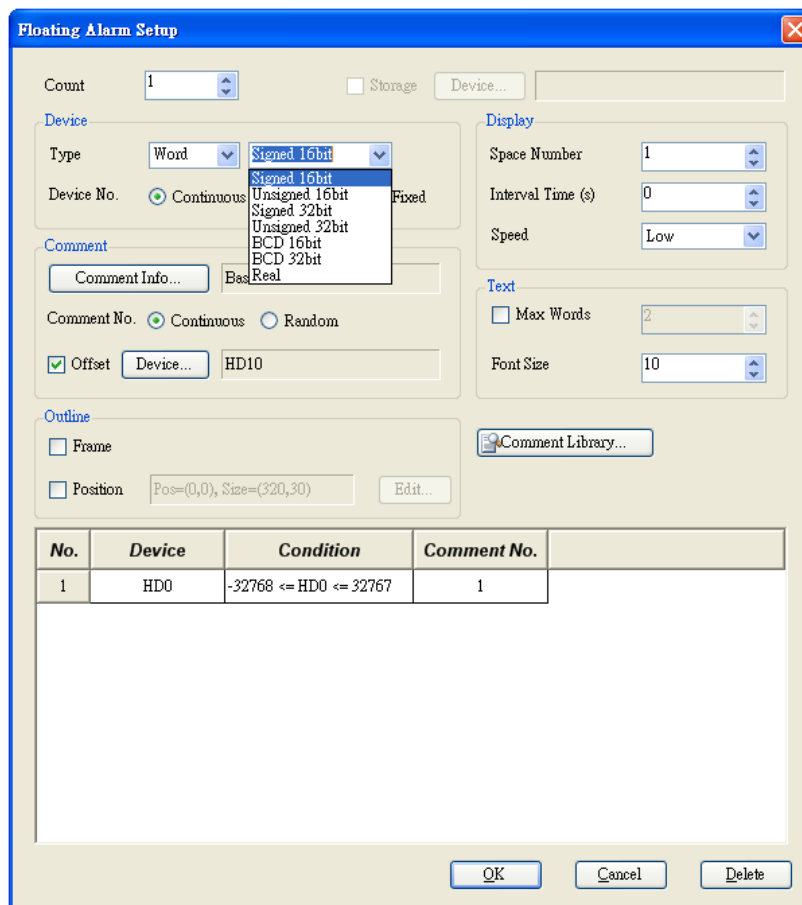
☐ Frame

☐ Position Pos=(0,0), Size=(320,30) Edit...

No.	Device	Condition	Comment No.
1	HM0	ON	1
2	HM1	ON	2

Fig. 3-9-5-4 Offsetting Device

To select the Word action device, there are 7 numeric types available. The user can change the comment information, number and offset. See Figure 3-9-5-5 below.



Numeric Type	Value Range
Signed 16bit	-32768~32767
Unsigned 16 bit	0~65535
Signed 32 bit	-2147483648~2147483647
Unsigned 32 bit	0~4294967295
BCD16 bit	0~9999
BCD32 bit	0~32767
Real	-2.147484E+09~2.147484E+09

Fig. 3-9-5-5 Word Floating Alarm

Click **Comment Info...** to open the comment information dialogue box and select basic comment or comment group. See Figure 3-9-5-6 below.

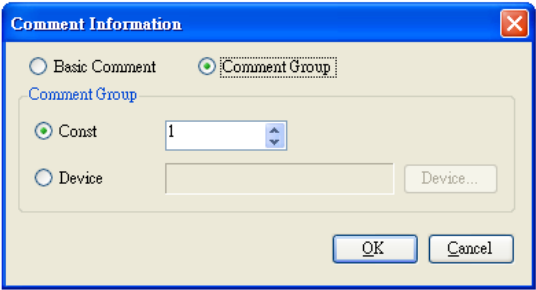


Fig. 3-9-5-6 Comment Information Setting



Tick ☒ **Offset** and select device HD10 to offset the comment number. The action is HD10 adds its internal value up to the original comment number, and then the operational equation calculates the new comment number as HD10 + original comment number. If the internal value of HD10 is 10, after the offset operation the HD0 internal comment number will become 11. See Figure 3-9-5-7 below.

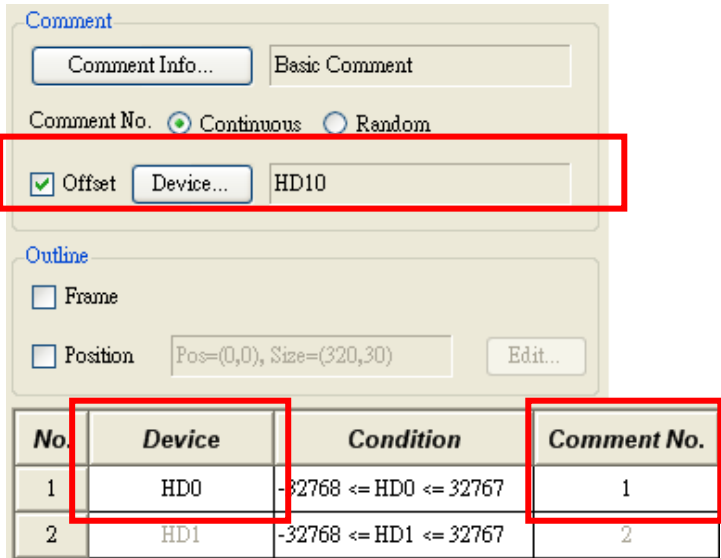


Fig. 3-9-5-7 Offsetting Device

For the display of the floating alarm and its text, the user can change the spacing of the floating alarm character, cyclic time, speed, maximum number of characters, and the font size. See Figure 3-9-5-8 below.

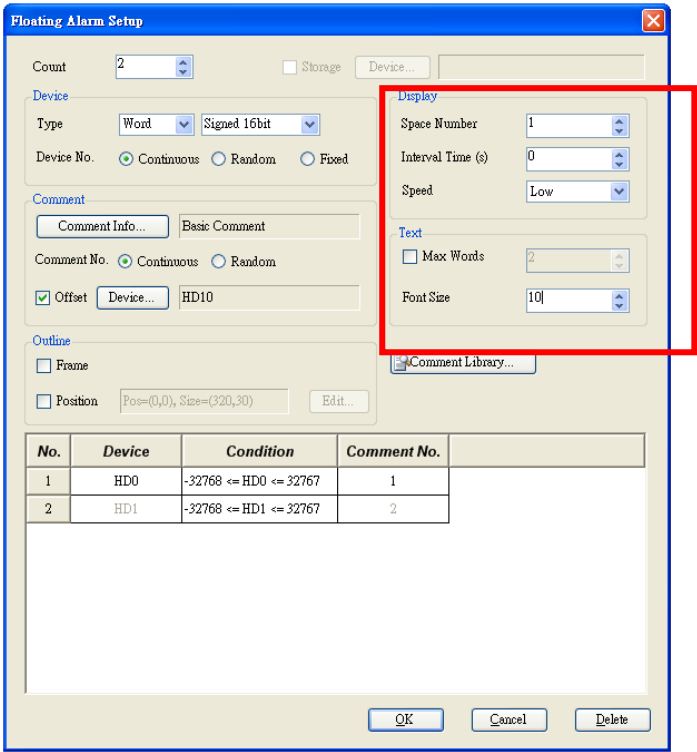


Fig. 3-9-5-8 Floating Alarm Display and Text Setting

To set the floating alarm's outer frame and its position, tick ☒ Frame and tick ☒ Position to change the setting. See Figure 3-9-5-9 below.

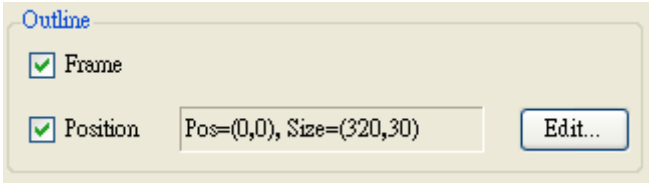



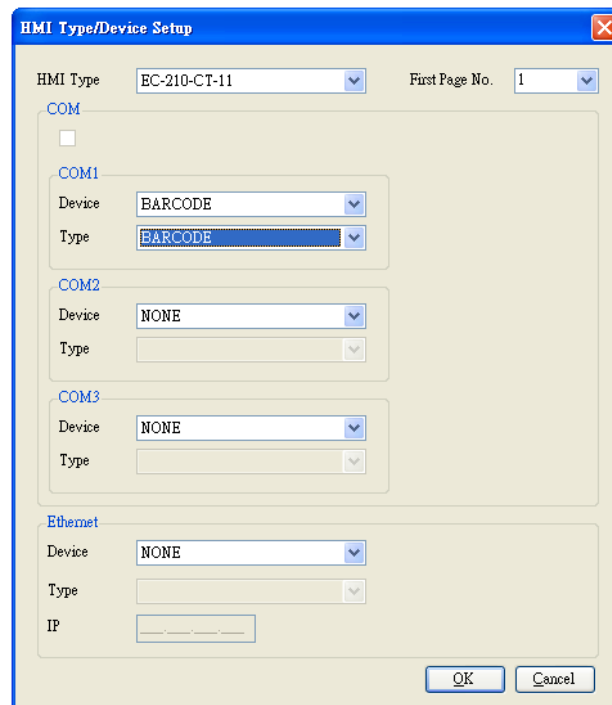


Fig. 3-9-5-9 Profile Setting

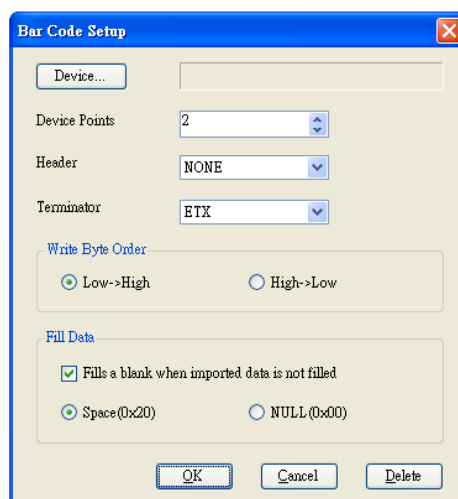
In the editing of the text, the comments of the comment library can be set as the text content. To do this, click to open the dialogue box of the comment library. For detailed instructions, please see [Section 3.4.4 Comment Library](#).

3.9.6. Barcode Setup

Click  and then click  HMI Type/Device Setup, and then in the pull-down menu of the COM1 device select BARCODE to open the function, and then click  Barcode Setup... to open the barcode setting dialogue box. See Figure 3-9-6-1 below.



(a)



(b)

Fig. 3-9-6-1 Opening Barcode Device (a) Changing Device (b) Barcode Setting

Click **Device...** to open the device setting dialogue box, and then select the device to finish the setting. See Figure 3-9-6-2 below. The settings are detailed in Table 3-9-6-3 below.

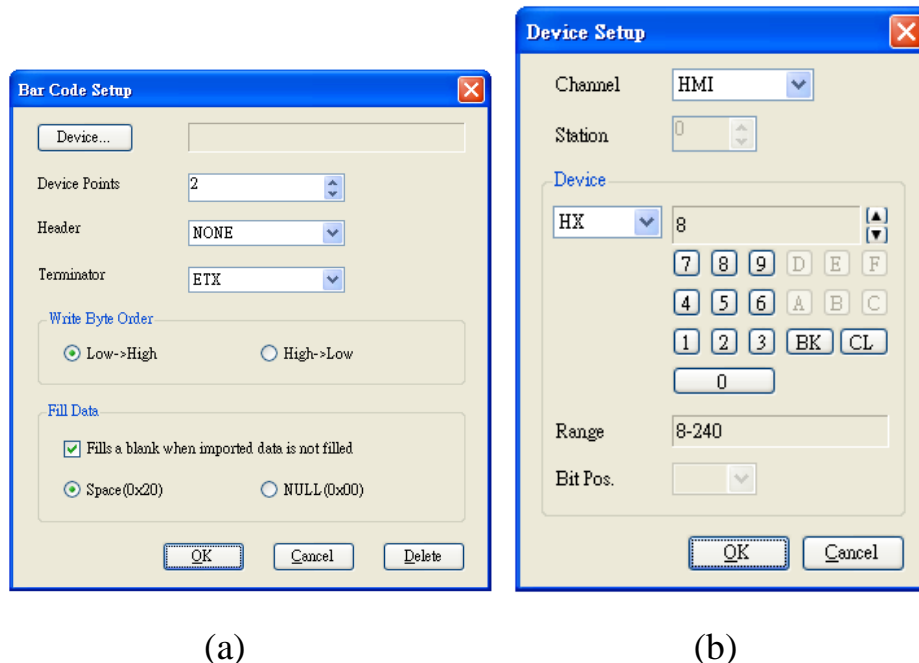


Fig. 3-9-6-2 Barcode Device (a) Barcode Setting (b) Device Setting

Table 3-9-6-3 Barcode Setting Descriptions

Name	Description
Devices Points	One Word device can contain two characters. For example, to read the character string ABCDEF, there will be 3 Word devices needed.
Header	NONE: no start code is required to do the scan. STX: scan starts when the string STX is read.
Terminator	ETX: scan stops when the string ETX is read. LF: scan stops when the line-feed character is read. CR: scan stops when the carriage-return character is read. LF+CR: scan stops when LF+CR are read.
Write Byte Order	Set the writing to start from low bit or high bit.
Fill Data	When data is not long enough, use blanks or null string to fill up the space.

3.9.7. Logging

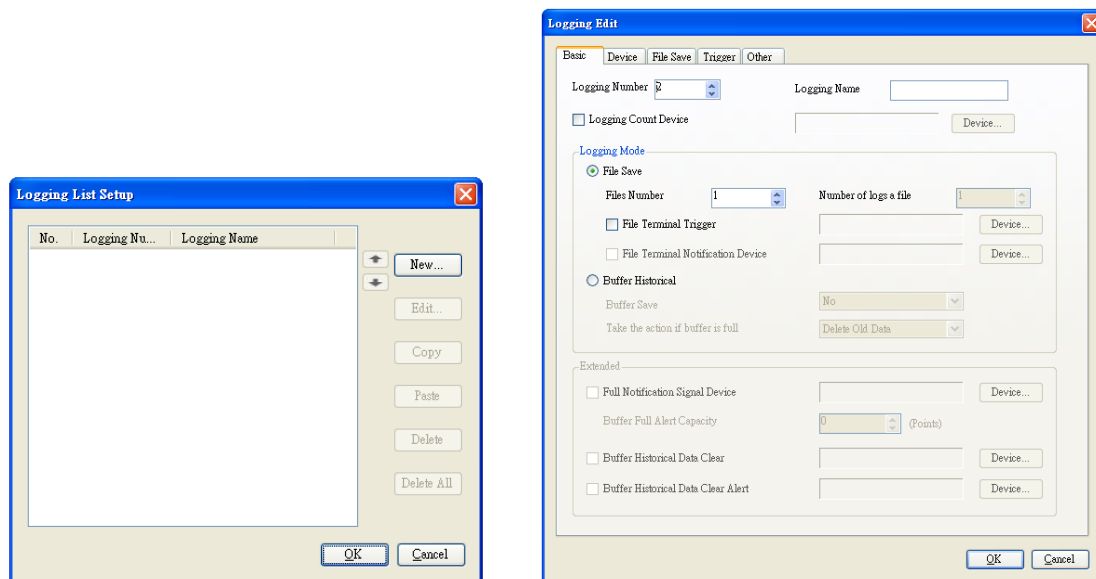
Click **System** and then click **Logging** to make the setting of the historical data resume. See Figure below 3-9-7 below.



Fig. 3-9-7 Menu of Historical Data Resume

a. Logging Setup

To set up a Logging, click **System** and click **Logging** and then click **Logging Setup...** to open the Logging dialogue box. Then, click **New...** to open the Logging edit dialogue box and set the Logging name, Logging pattern, device, file storage, trigger, and others. See Figure 3-9-7A-1 below.



(a)

(b)

Fig. 3-9-7A-1 Resume Setting (a) Adding Resume (b) Editing Resume

The basic properties allow the user to set the Logging number, Logging name, counter device, Logging pattern, and extension functions. To set up a Logging counter device, Tick ☒ Logging Count Device to show the counts of the Logging's appearance. Click to open the device setup dialogue box and select a device. See Figure 3-9-7A-2 below.

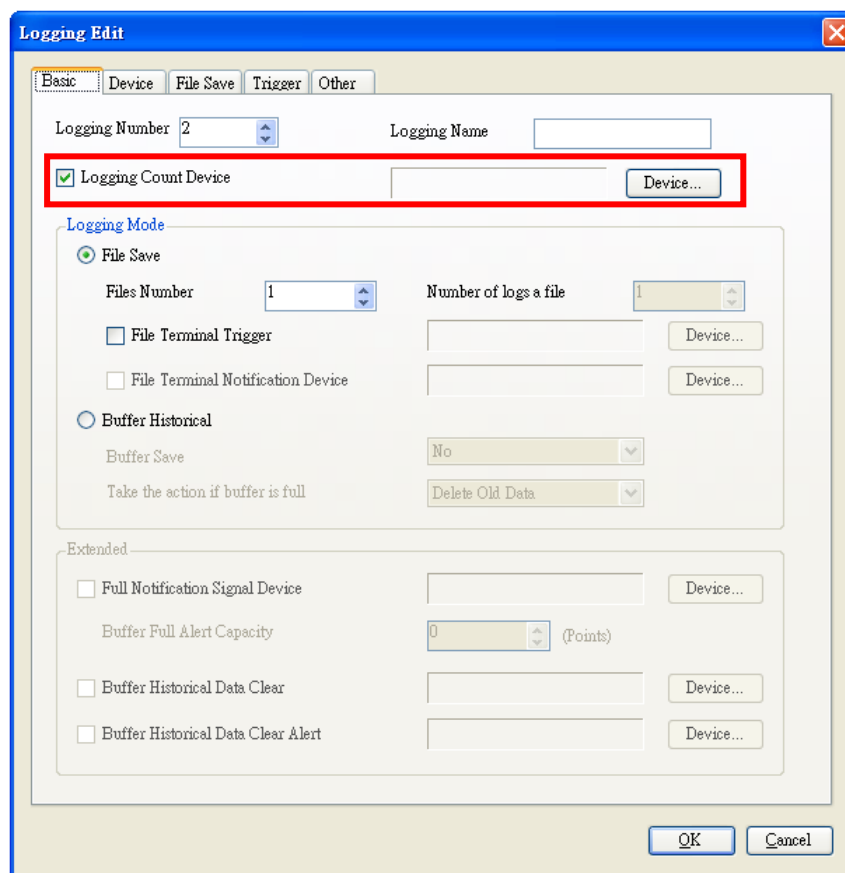


Fig. 3-9-7A-2 Basic Property

For storing the files, the user can set the number of files, number of Logging, file termination device, and termination notification device. See Figure 3-9-7A-3 below.

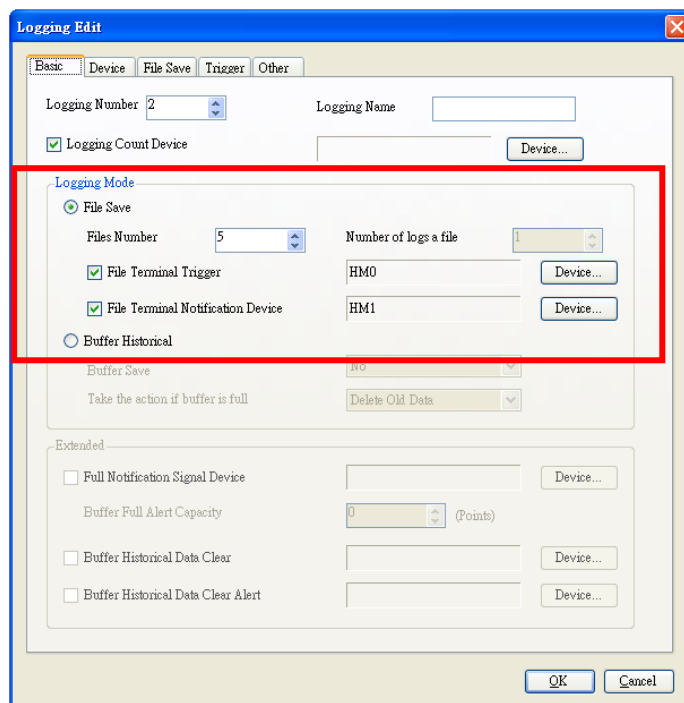


Fig. 3-9-7A-3 Logging File Storage



Set 5 file folders with each containing 10 Loggings so that there will be 50 Loggings in total. When the File Termination Device HM0 is click-triggered, the writing of the resume file will stop immediately. When the File Termination Notification Device HM1 is on, it will show the stoppage of the writing. See Figure 3-9-7A-4 below.



Fig. 3-9-7A-4 File Saving

For the buffer Logging, the user can set the save-or-not option, action for saturated buffer, notification, and data erasing device. See Figure 3-9-7A-5 below.

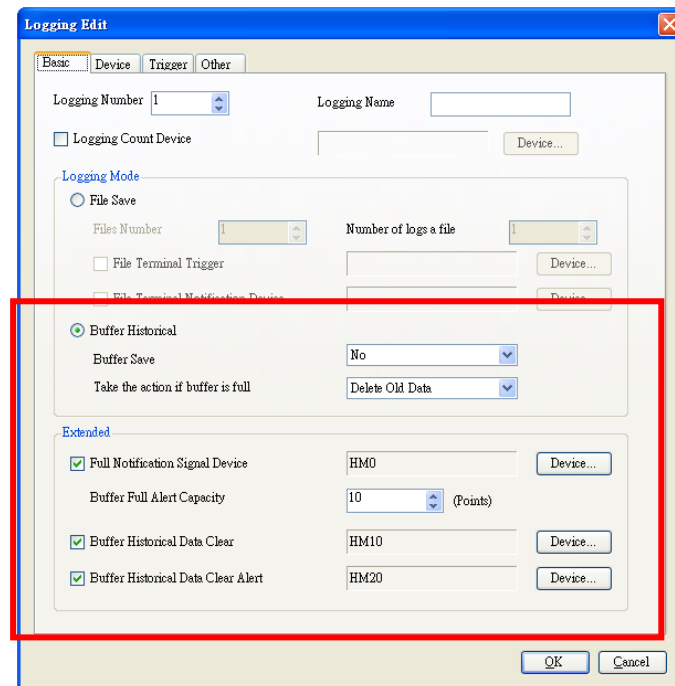


Fig. 3-9-7A-5 Buffer Resume



If the number of Loggings is set to 50 transactions, when the number of Loggings reaches 40, the HM0 device will be switched on, so that when the user click the HM10 device, the Logging data will be erased, and the Erase Alarm Device HM20 will be switched on at the same time. See Figure 3-9-7A-6 below.

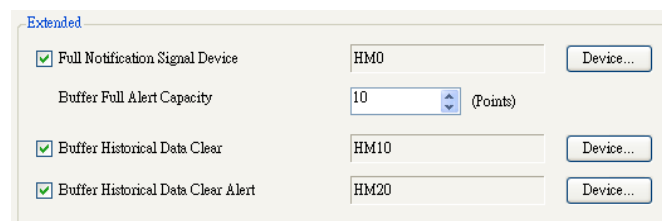


Fig. 3-9-7A-6 Extension Functions Setting

For the Device properties, the user can set the number of modules, export properties, import/export, device type, display of points and comment. See Figure 3-9-7A-7 below.

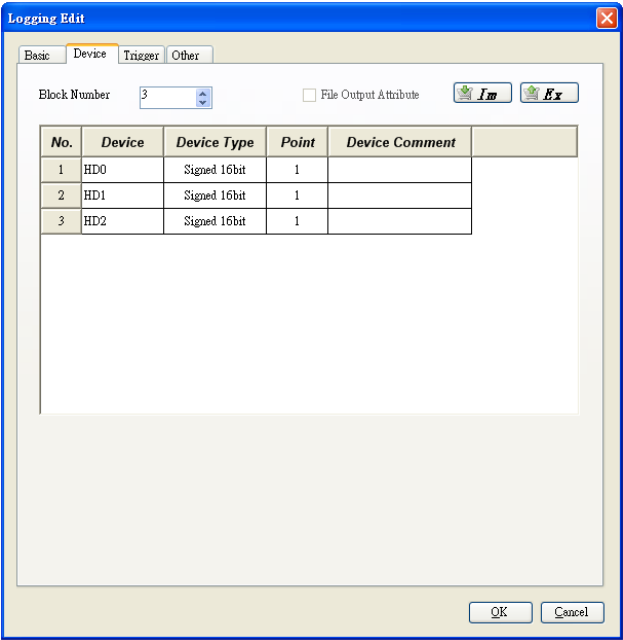


Fig. 3-9-7A-7 Device Setting

Tick ☒ File Output Attribute to have the file export property table displayed beneath. The user can set the display type, number of digits, and the zero-filled feature. See Figure 3-9-7A-8 below.

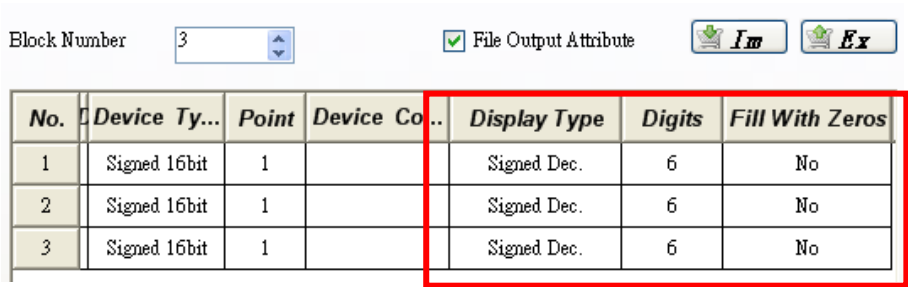
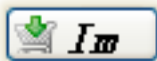
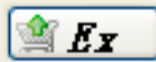


Fig. 3-9-7A-8 File Export Properties

To import the Logging file, click  to open the dialogue box and select the Logging file (.csv) to be imported. Confirm to finish

the import. To export the Logging file, click  to open the dialogue box and export the Logging file (.csv) to the specified destination. Confirm to finish the export. See Figures 3-9-7A-9 and 3-9-7A-10 below.

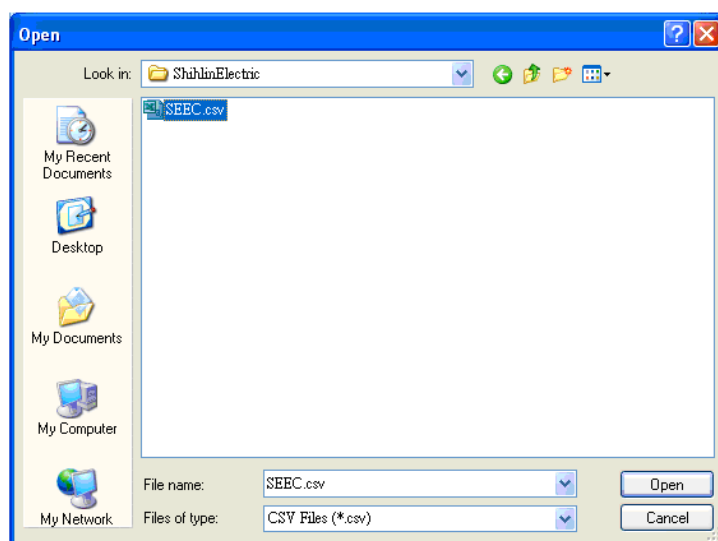


Fig. 3-9-7A-9 Logging Import

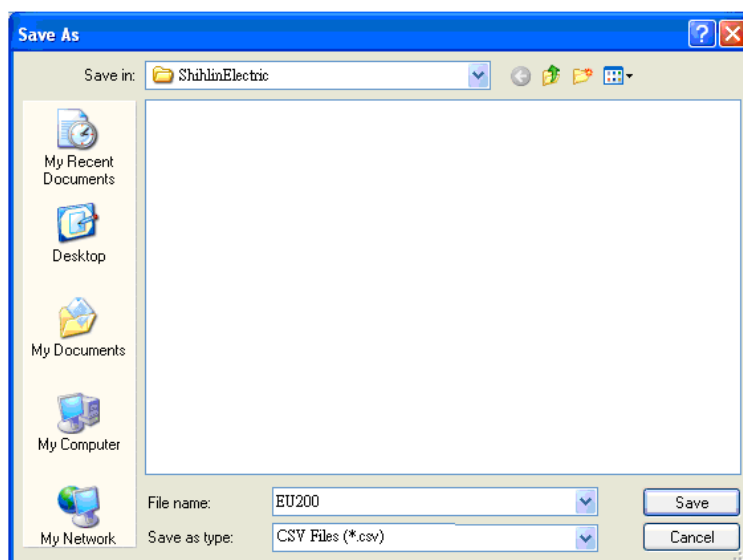


Fig. 3-9-7A-10 Logging Export

For the File Saving properties, the user can set the storage device name, attached file and information format. See Figure 3-9-7A-11 below.

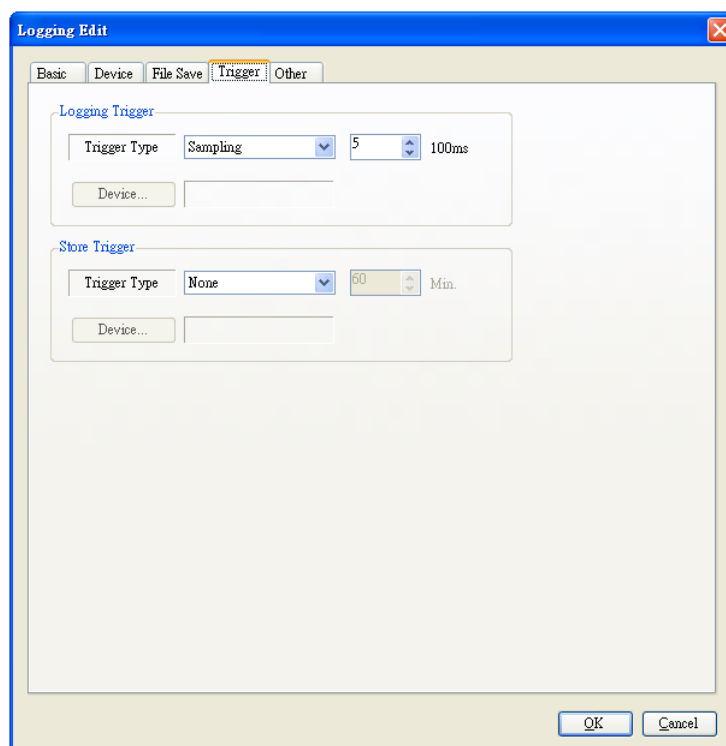
Memory Drive	Description
Device Name	A : Inner Memory
	B : Standard SD Card
	C : USB Disk
Folder Name	Name of the folder storing resumes.
File Name	Name of the file containing resumes.

Fig. 3-9-7A-11 File Saving

To set file export format, tick ☒ File Output Time Information Format and change the formats of the date and time. See Figure 3-9-7A-12 below.

Fig. 3-9-7A-12 File Export Format

The Trigger properties allow the user to set the triggers of Logging recording and Logging saving. See Figure 3-9-7A-13 below.



Trigger Pattern	Description
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.
ON Sampling	Action is taken only when the device in ON and the sampling item elapses.
OFF Sampling	Action is taken only when the device in OFF and the sampling item elapses

Fig. 3-9-7A-13 Trigger Properties

For Other properties, the user can set the Notification Device and the number of stored buffer Loggings. See Figure 3-9-7A-14 below.

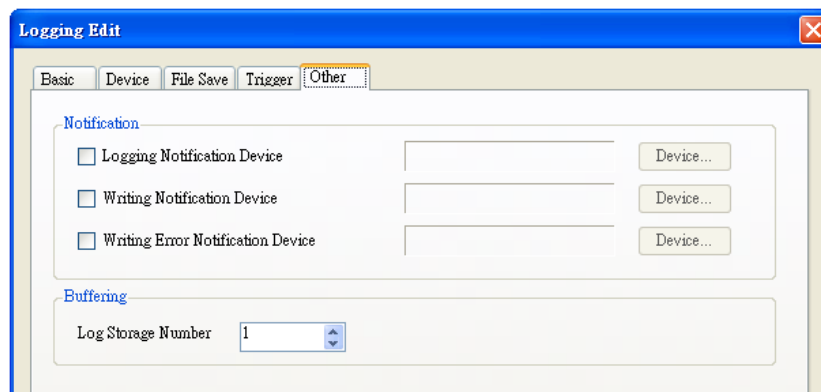


Fig. 3-9-7A-14 Other Properties



Tick ☒ Logging Notification Device and set the device to HM0, so when a record is generated, the HM0 device will be switched on; tick ☒ Writing Notification Device and tick ☒ Writing Error Notification Device and set the devices as HM10 and HM20, respectively, so when the data is being written or when a write error occurs, the devices HM10 and HM20 will be respectively switched on. See Figure 3-9-7A-15 below.

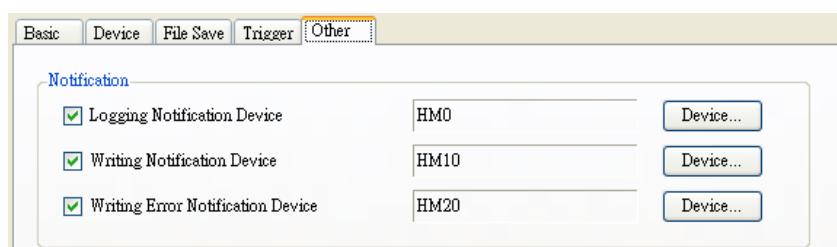


Fig. 3-9-7A-15 Notification Device

For the number of stored Loggings, the user can set the number of Loggings to be stored and retrieved. Do the setting with the buffer Logging mode. See Figure 3-9-7A-16 below.

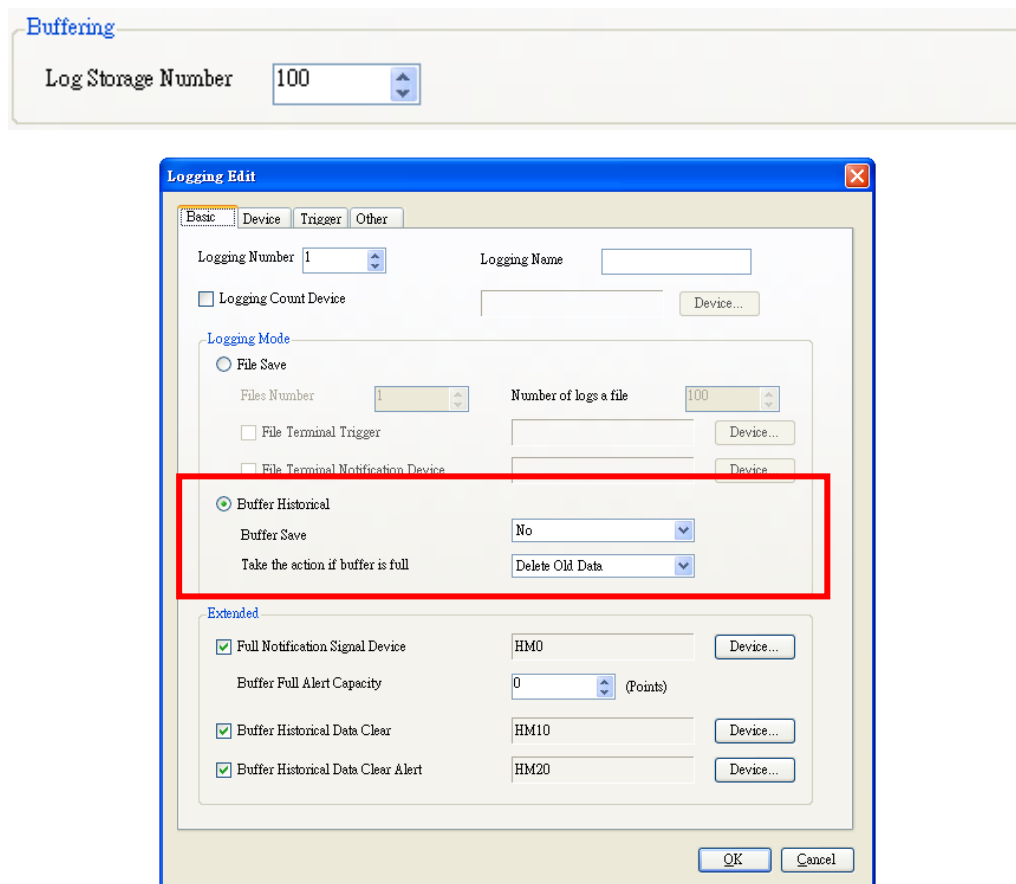


Fig. 3-9-7A-16 Number of Stored Loggings



- Click **System** and click **Logging** and then click **Logging Setup...** to make the setting in order to use the historical trend chart.
- In the function manager, double left click the mouse to open the corresponding dialogue box.

3.9.8. Advanced Alarm Observation

Click **System** and click **Advanced Alarm Observation** to make the setting of the advanced alarm observation. See Figure 3-9-8 below.



Fig. 3-9-8 Menu of Advanced Alarm observation

a. Advanced Alarm Common

To set up an advanced alarm common, click **System** and click **Advanced Alarm Observation** and then click **Advanced Alarm Common...** to open the dialogue box of the common advanced alarm, and set the concurrent language switch and fixed line numbers. See Figure 3-9-8A-1 below.

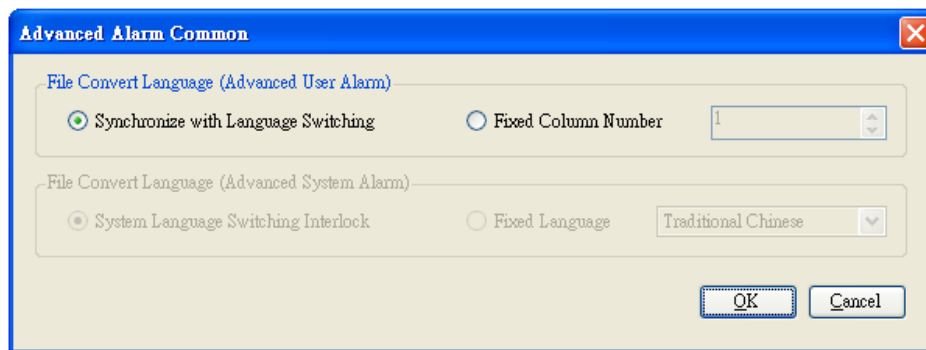


Fig. 3-9-8A-1 Common Advanced Alarm Setting



- Click **System** and click **Advanced Alarm Observation** and then click **Advanced Alarm Common...** to make the setting in order to start using the advanced alarm file conversion.
- In the function manager, double left click the mouse to open the corresponding dialogue box.

b. Advanced Alarm Setup

To make the advanced alarm setup, click **System** and click **Advanced Alarm Observation** and then click **Advanced Alarm Setup...** to open the dialogue box of the advanced alarm setting. Then, click **New...** to open the dialogue box of the advanced alarm editing. There can be as many as 32 sets of alarm. The user can set the alarm name, buffer, device, and file saving. See Figure 3-9-8B-1 below.

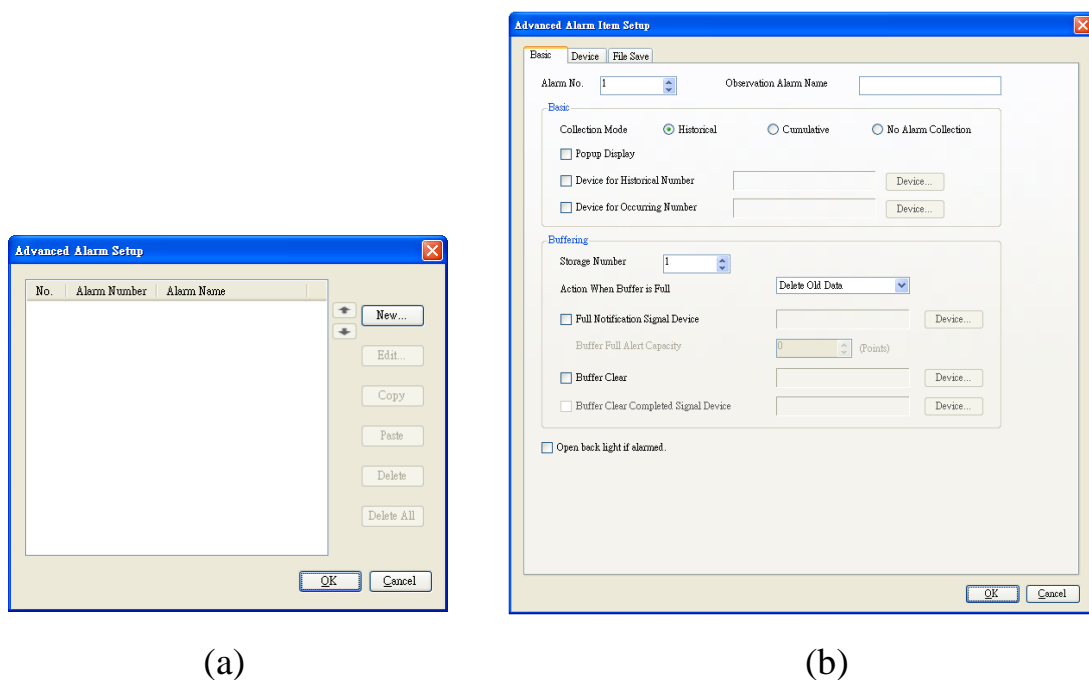


Fig. 3-9-8B-1 Advanced Alarm Setting (a) Adding Advanced Alarm (b) Editing Advanced Alarm

The basic properties allow the user to set collection model, pop-up display, class and event numbering device. See Figure 3-9-8B-2 below.

Advanced Alarm Item Setup

Basic | Device | File Save

Alarm No. 1 Observation Alarm Name

Basic

Collection Mode ☒ Historical ☐ Cumulative ☐ No Alarm Collection

☐ Popup Display

☐ Device for Historical Number Device...

☐ Device for Occurring Number Device...

Buffering

Storage Number 1

Action When Buffer is Full Delete Old Data

☐ Full Notification Signal Device Device...

Buffer Full Alert Capacity 0 (Points)

☐ Buffer Clear Device...

☐ Buffer Clear Completed Signal Device Device...

☐ Open back light if alarmed.

OK Cancel

Basic	Description
Collection Mode	Historical: every alarm is recorded in the buffer. Cumulative: the number of repeats of a same alarm is recorded in the buffer. No alarm collection: alarm appears only once and is not recorded.
Popup Display	When the option is ticked, the alarm message will be displayed at the bottom of the screen.
Device for Historical Number	Device display the cumulative number of alarm since the HMI boot.
Device for Occurring Number	Device display the current alarm number.


Fig. 3-9-8B-2 Basic Setting

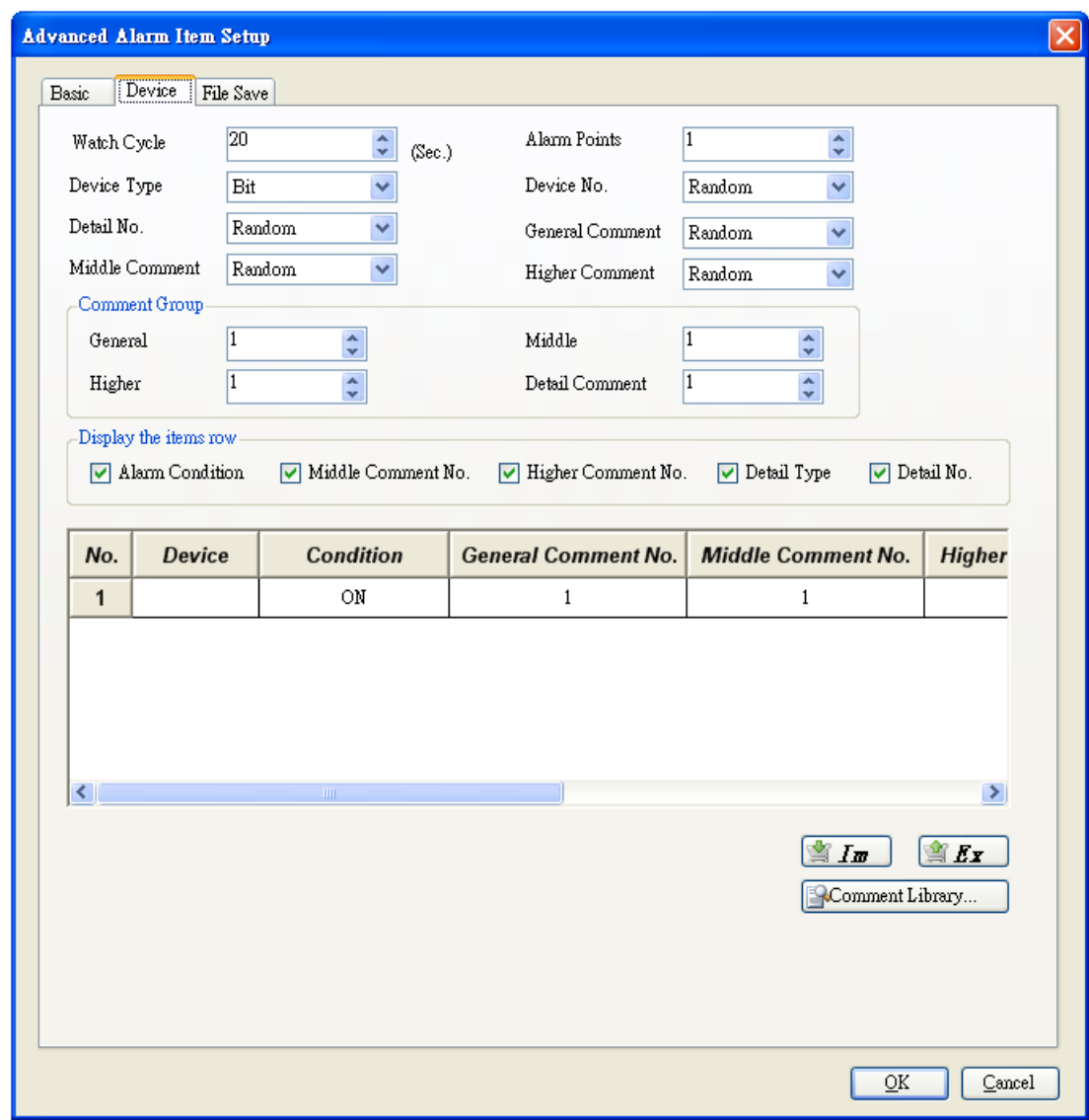
The Buffer properties allow the user to set the number of stored alarms, action to saturation, Saturation Notification Device, and Erasion-complete Notification Device. See Figure 3-9-8B-3 below.

The screenshot shows the 'Advanced Alarm Item Setup' window with the 'Buffering' tab selected. The 'Storage Number' is set to 1. The 'Action When Buffer is Full' is set to 'Delete Old Data'. The 'Full Notification Signal Device' is set to an empty field. The 'Buffer Full Alert Capacity' is set to 0 (Points). The 'Buffer Clear' is set to an empty field. The 'Buffer Clear Completed Signal Device' is set to an empty field. The 'Open back light if alarmed' checkbox is unchecked. The 'Basic' tab is also visible, showing 'Collection Mode' set to 'Historical'.

Buffer	Description
Storage Number	The maximum number of alarms to be stored in the buffer.
Action When Buffer is Full	Delete old data: delete the earliest data to make room for the incoming data. Stop New Addition: no more data will be added to buffer.
Full Notification Signal Device	Notify the storage is filled up and saturated.
Buffer full Alert Capacity	Notify data stored is about to reach the capacity limit.
Buffer Clear	Erase all data in buffer.
Buffer Clear Completed Signal Device	Notify data in buffer is erased.
Open Back Light if Alarmed	In the sleep state, when there is an alarm issued, the HMI will automatically turn on the backlight.

Fig. 3-9-8B-3 Buffer Setting

The Device properties allow the user to set the monitoring period, alarm points (up to 32767 transactions), type, number, detailed number, comment, displayed items, and device. In the editing of the text, the comments in the comment library can be set as the text content. To do this, click  Comment Library... to open the dialogue box of the comment library. For detailed instructions, please see [Section 3.4.4 Comment Library](#). See Figure 3-9-8B-4 below.



The dialog box 'Advanced Alarm Item Setup' has three tabs: 'Basic', 'Device', and 'File Save'. The 'Device' tab is active. It contains several configuration fields:

- Watch Cycle: 20 (Sec.)
- Device Type: Bit
- Detail No.: Random
- Middle Comment: Random
- Alarm Points: 1
- Device No.: Random
- General Comment: Random
- Higher Comment: Random

Below these is a 'Comment Group' section with a table:

	General	Middle	Detail Comment
1	1	1	1


Underneath is a 'Display the items row' section with five checked checkboxes: Alarm Condition, Middle Comment No., Higher Comment No., Detail Type, and Detail No.


A table at the bottom shows the current configuration:

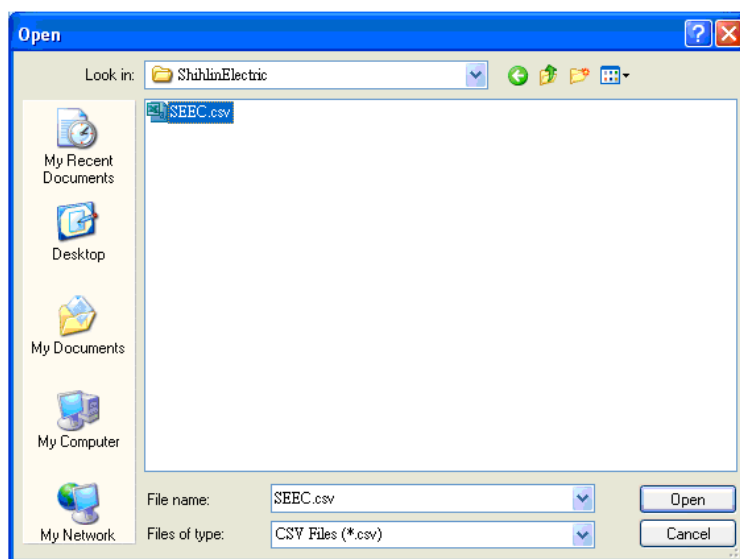
No.	Device	Condition	General Comment No.	Middle Comment No.	Higher
1		ON	1	1	

At the bottom right are buttons for 'Im' (Import), 'Ex' (Export), 'Comment Library...', 'OK', and 'Cancel'.

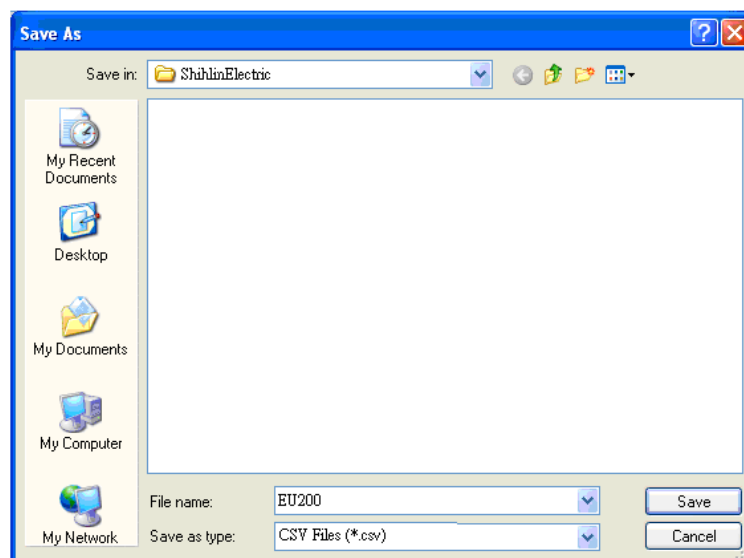
Fig. 3-9-8B-4 Device Properties

To import the resume file, click  to open the dialogue box and select the resume file (.csv) to be imported. Confirm to finish the import.

To export the resume file, click  to open the dialogue box and export the resume file (.csv) to the specified destination. Confirm to finish the export. See Figures 3-9-8B-5 below.



(a)



(b)

Fig. 3-9-8B-5 File Resume (a) Resume Import (b) Resume Export

The File Saving properties allow the user to set the file saving, trigger saving and others. See Figure 3-9-8B-6 below.

Advanced Alarm Item Setup

Basic Device **File Save**

☒ Save Alarm Log File

File Access

Drive Name: A: Inner Memory

Folder Name: Project1

File Name: AAM00001.CSV

Store Trigger

Trigger Type: Sampling 60 Min.

Device...

Other

☒ Writing Notification Device HM0 Device...

☒ Writing Error Notification Device HM1 Device...

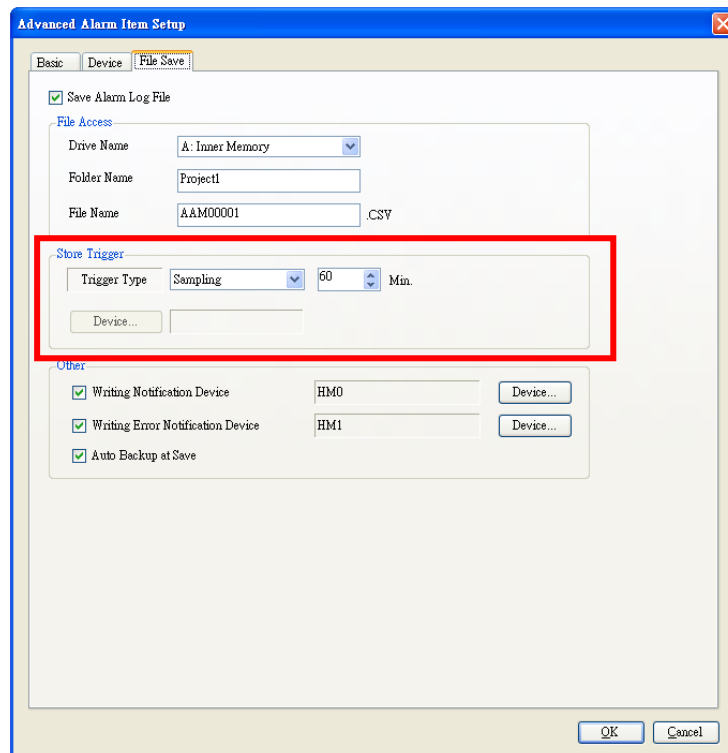
☒ Auto Backup at Save

OK Cancel

File Access	Description
Device Name	A : Inner Memory B : Standard SD Card C : USB Disk
Folder Name	The name of the folder storing resumes.
File Name	The name of the file containing a resume.

Fig. 3-9-8B-6 File Access

The Trigger Saving properties allow the user to set the conditions of the trigger pattern and device. See Figure 3-9-8B-7 below.



Trigger Pattern	Description
Rise	Action is taken only when the device is switched from OFF to ON.
Fall	Action is taken only when the device is switched from ON to OFF.
Sampling	Action is taken only after the sampling time elapses.
ON Sampling	Action is taken only when the device in ON and the sampling item elapses.
OFF Sampling	Action is taken only when the device in OFF and the sampling item elapses

Fig. 3-9-8B-7 Trigger Properties



Tick ☒ Writing Notification Device and tick ☒ Writing Error Notification Device and set the devices as HM0 and HM1, respectively, so when the data is being written or when a write error occurs, the devices HM0 and HM1 will be respectively switched on. See Figure 3-9-8B-8 below.

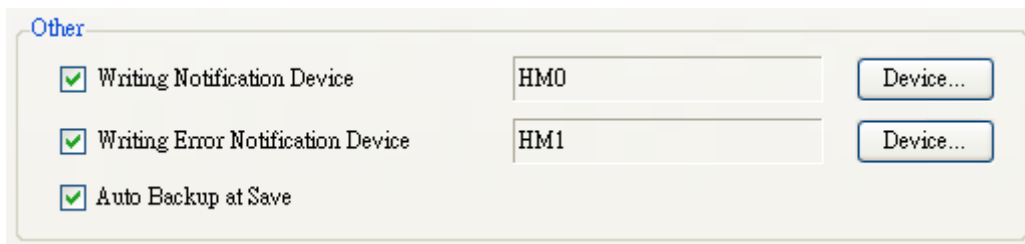



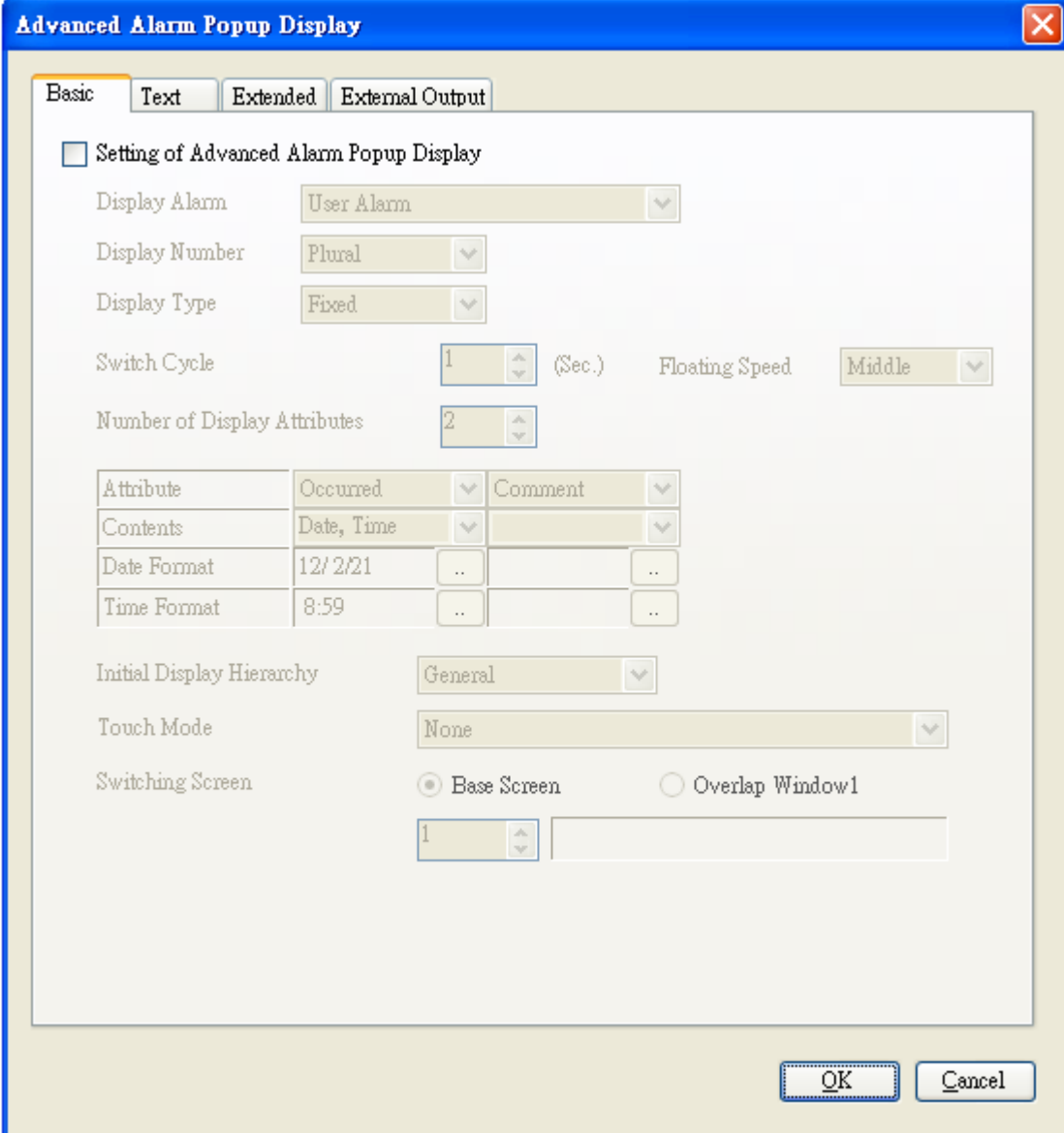
Fig. 3-9-8B-8 Notification Device



- In the function manager, double left click the mouse to open the corresponding dialogue box.

3.9.9. Advanced Alarm PopUp Display

To set up an advanced alarm pop-up display, click **System** and then click  **Advanced Alarm Popup Display** to open the dialogue box of the advanced alarm pop-up display and set the pop-up display, touch mode, text, advanced device, and external export. See Figure 3-9-9-1 below.



The dialog box titled "Advanced Alarm Popup Display" has a blue title bar with a close button. It contains four tabs: "Basic", "Text", "Extended", and "External Output". The "Basic" tab is selected. Below the tabs is a checkbox labeled "Setting of Advanced Alarm Popup Display".

Below the checkbox are several settings:

- Display Alarm:** A dropdown menu showing "User Alarm".
- Display Number:** A dropdown menu showing "Plural".
- Display Type:** A dropdown menu showing "Fixed".
- Switch Cycle:** A numeric input field showing "1" with up/down arrows, followed by "(Sec.)".
- Floating Speed:** A dropdown menu showing "Middle".
- Number of Display Attributes:** A numeric input field showing "2" with up/down arrows.

Below these are two columns of dropdown menus for attributes:

Attribute	Occurred	Comment
Contents	Date, Time	
Date Format	12/ 2/21	..
Time Format	8:59	..

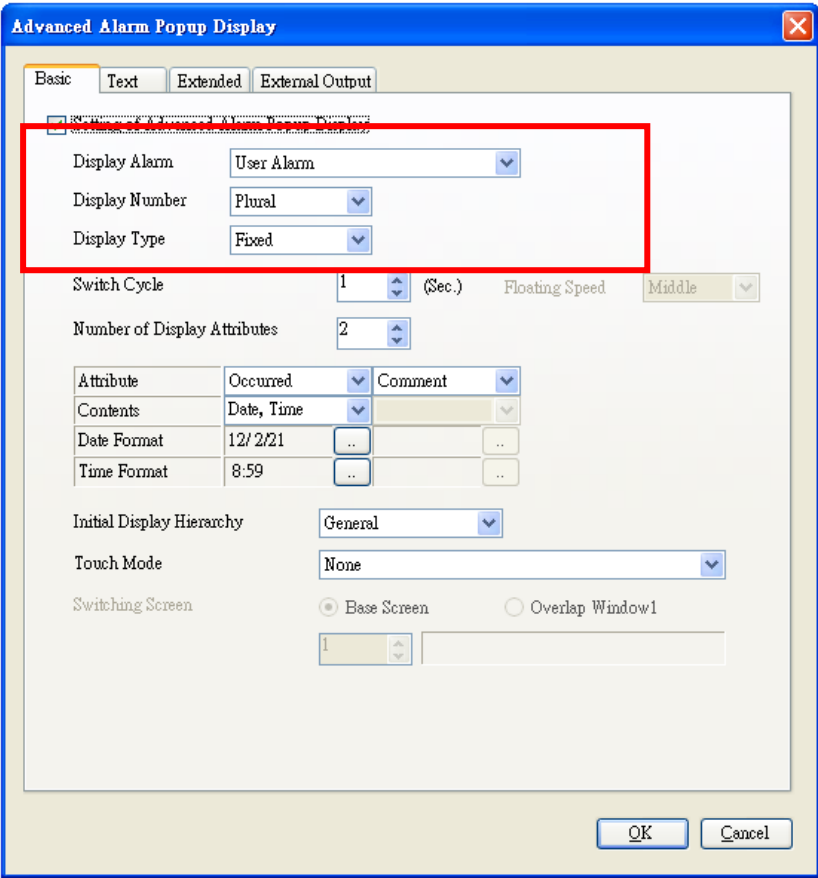
Below the table are more settings:

- Initial Display Hierarchy:** A dropdown menu showing "General".
- Touch Mode:** A dropdown menu showing "None".
- Switching Screen:** Two radio buttons: "Base Screen" (selected) and "Overlap Window1".
- Below the radio buttons is a numeric input field showing "1" with up/down arrows, followed by an empty text input field.

At the bottom right are "OK" and "Cancel" buttons.

Fig. 3-9-9-1 Advanced Alarm Pop-Up Display

For displaying alarms, the user can change the display of alarms, the number of alarms and the types. See Figure 3-9-9-2 below.



	Description
Display Alarm	User Alarm: displays user alarms. System Alarm: displays system alarms. User Alarm+System Alarm: displays both the user alarms and the system alarms.
Display Number	Plural: multiple alarms are cyclically displayed at the bottom of the screen. Singular: only a single alarm is displayed at the bottom of the screen.
Display Type	Fixed: the alarm message is statically displayed at the bottom of the screen, and can be periodically displayed. Floating Alarm: the alarm message is running displayed. There are 3 running speeds available.

Fig. 3-9-9-2 Basic Properties

For displaying the alarms, the user can change the display and the number of alarms, and their types. See Figure 3-9-9-3 below.

	Description
Initial Display Hierarchy	General: displays the general class. Middle: displays the middle class. Higher: displays the high class.
Touch Mode	None: no effect. Screen Switch: jump to the specified basic screen or the overlapped window screen. Stage Hierarchy Switching/Detail Display: from high to low, cyclically switch class/details display.
Switching Screen	The screen-switch option must be first selected in order to make the switch. There are basic screen and window screen to switch to.

Fig. 3-9-9-3 Basic Properties

The Text properties allow the user to set the alarm format, text color switch, class, group, comment and the background display. See Figure 3-9-9-4 below.

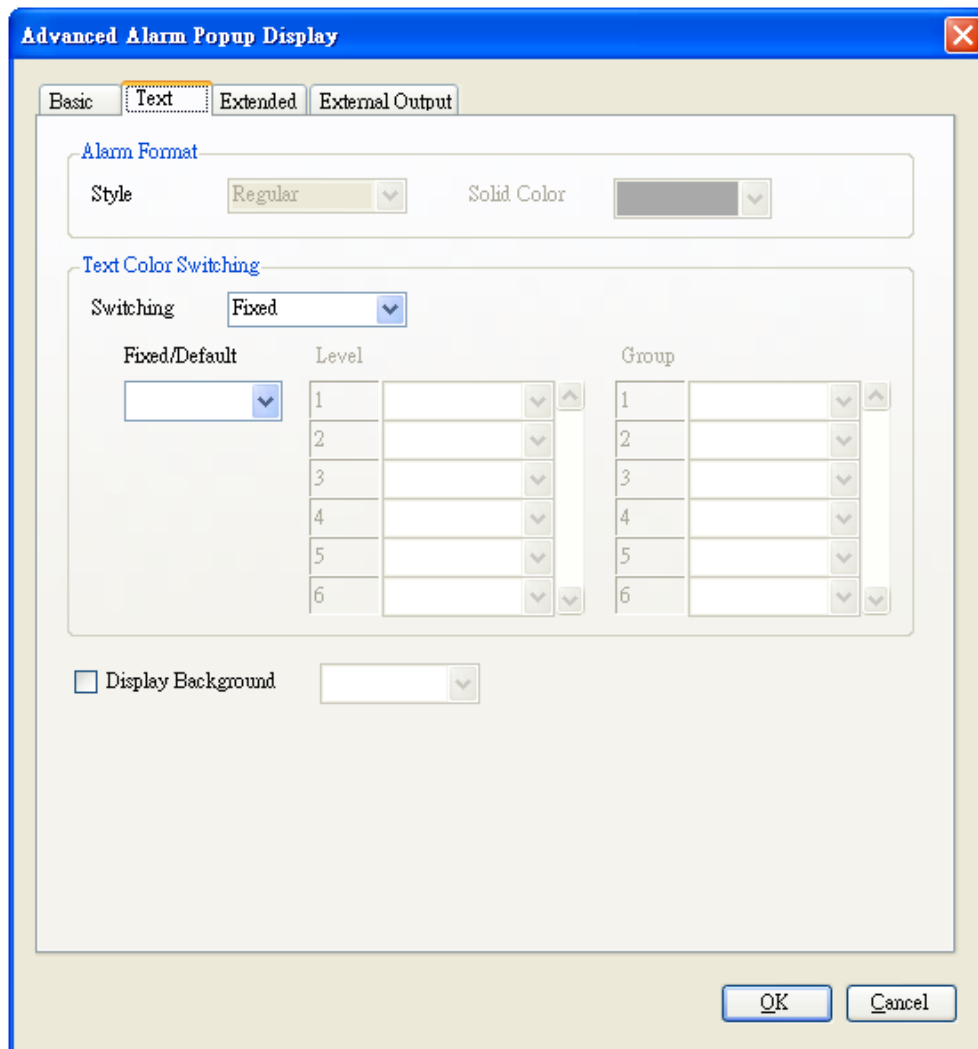


Fig. 3-9-9-4 Text Properties

The Text color switch comes with 4 different types which correspond to fixed, Level, group and comment color. See Figure 3-9-9-5 below. The comment display uses the color set in the comment library.

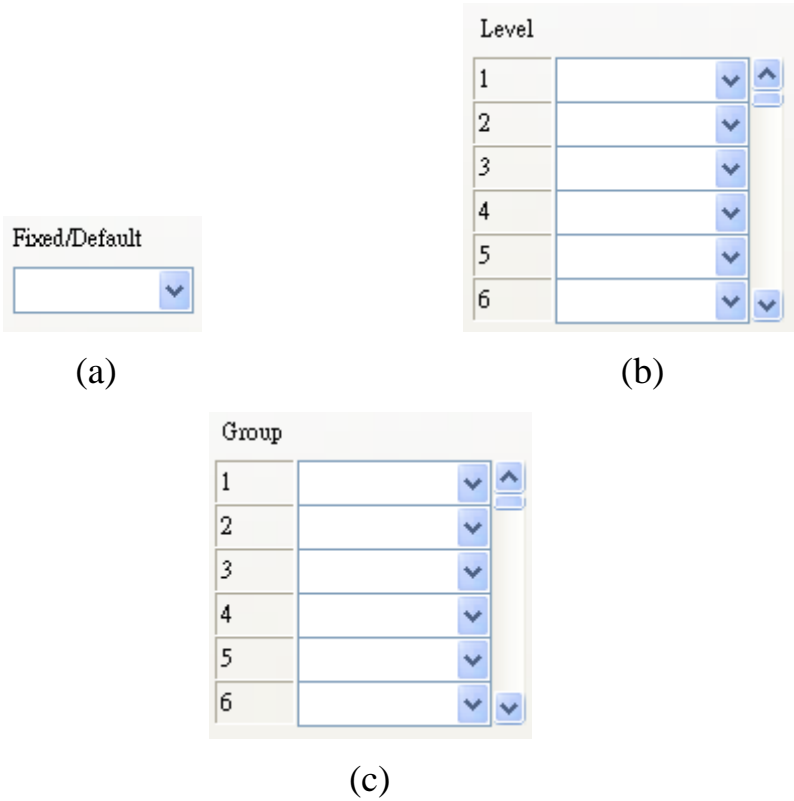


Fig. 3-9-9-5 Text Color Switch (a) Fixation (b) Class (c) Group

The functions of switching devices are to tick the option to set the device and change the value in the device to switch the alarm pop-up status. See Figure 3-9-9-6 below.

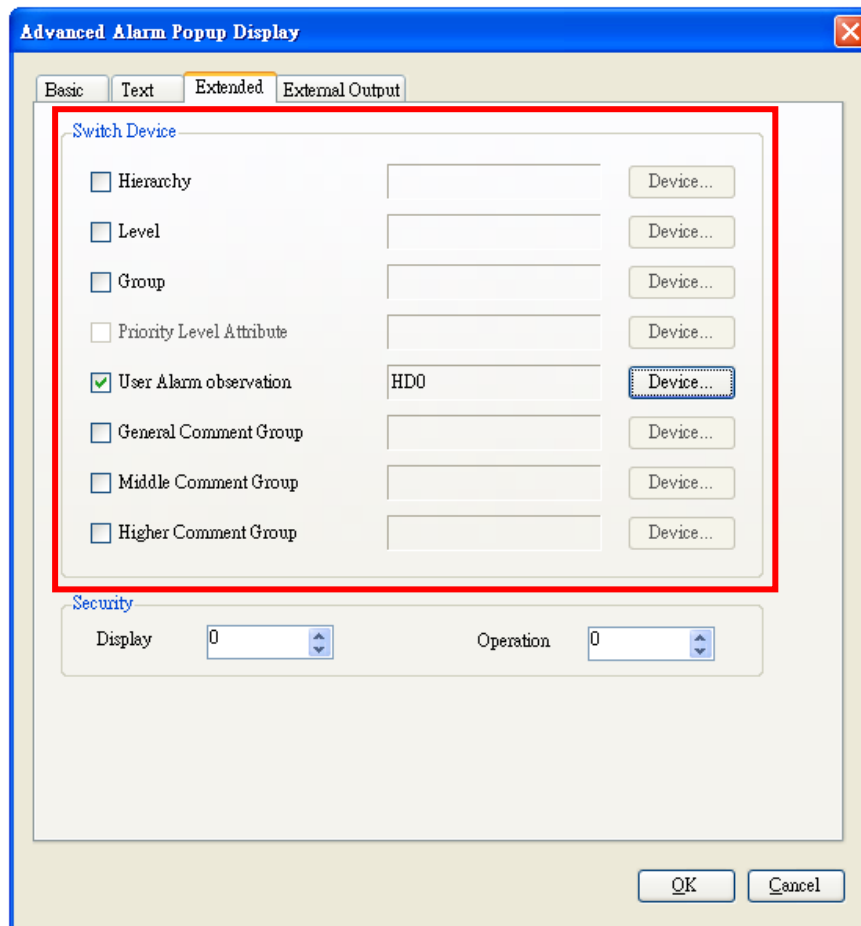


Fig. 3-9-9-6 Other Properties



When the option ☒ User Alarm observation is ticked, and the HD0 device is set to 1, the advanced alarm will pop up the display of the alarm numbered 1; if HD0 is set to 2, the alarm numbered 2 will be displayed, and so on.

Figure 3-9-9-7 below shows the setting of the object's security level. The security level (display) and security level (operation) are both ranged from 0 (least privilege) to 15 (highest privilege). The default security levels of the edit software and the system are both 0.

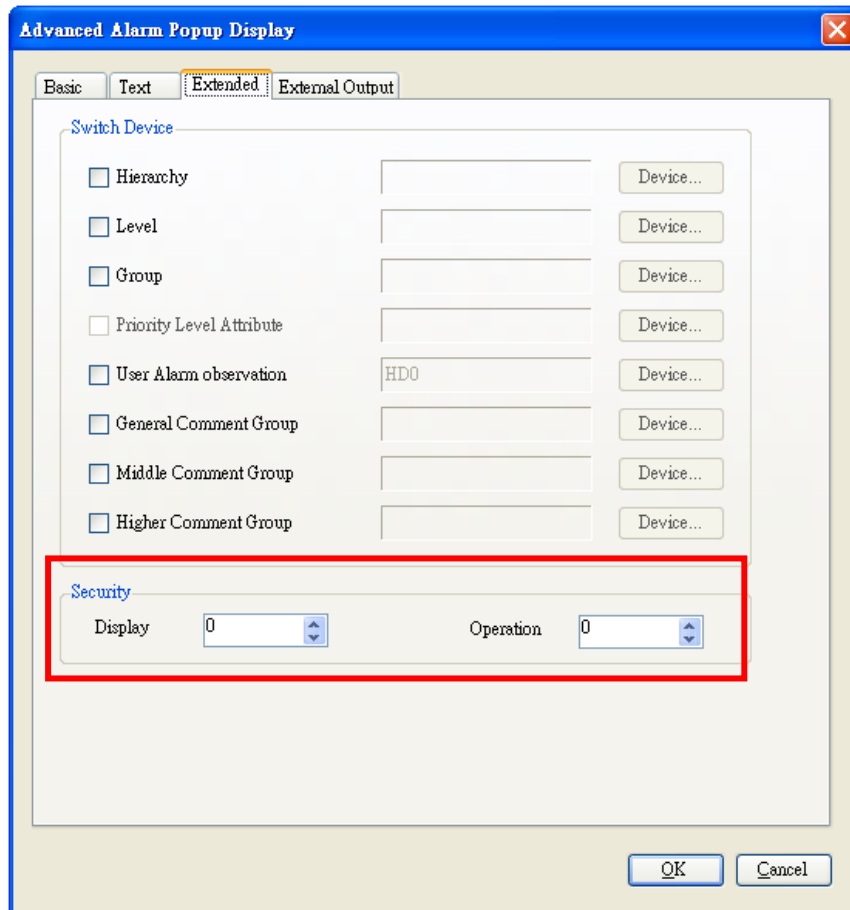
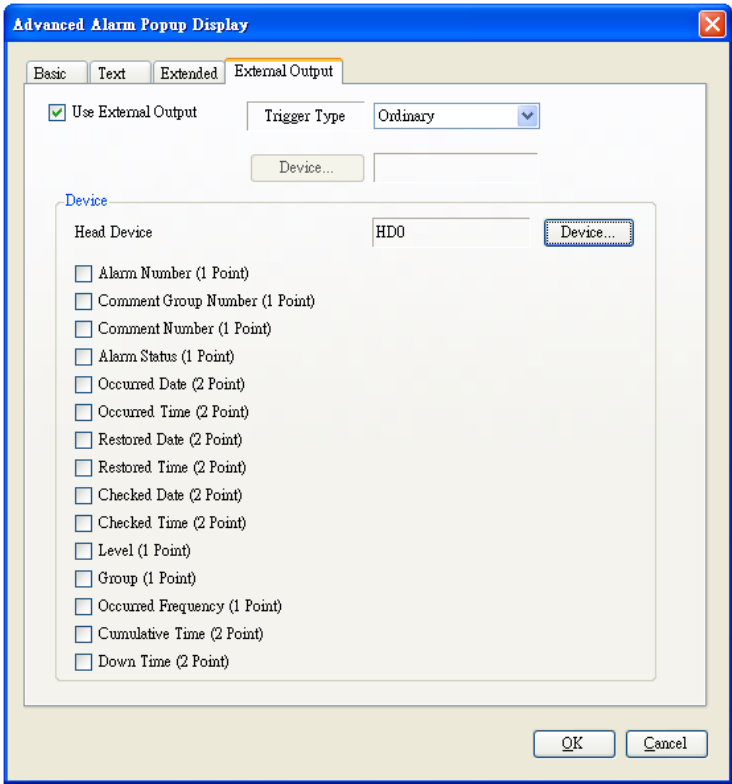


Fig. 3-9-9-7 Security Levels

The External Export properties allow the user to set the conditions of the trigger pattern and device display. See Figure 3-9-9-8 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF

Fig. 3-9-9-8 External Export Properties




Tick ☒ Use External Output to set up the external export device. So, when the Initiate device is set to HD0, there will be options of devices orderly displayed by their numbers at the bottom.

If ☒ Alarm Status (1 Point) and ☒ Occurred Date (2 Point) are ticked and the Alarm Status device is set to HD0, the Event Date devices will be HD1 and HD2.



- In the function manager, double left click the mouse to open the corresponding dialogue box.

3.9.10. Auxiliary Setup

Click **System** and then click  **Auxiliary Setup** to open the dialogue box for the auxiliary setting and set the screen switch and simple macro. See Figure 3-9-10-1 below.

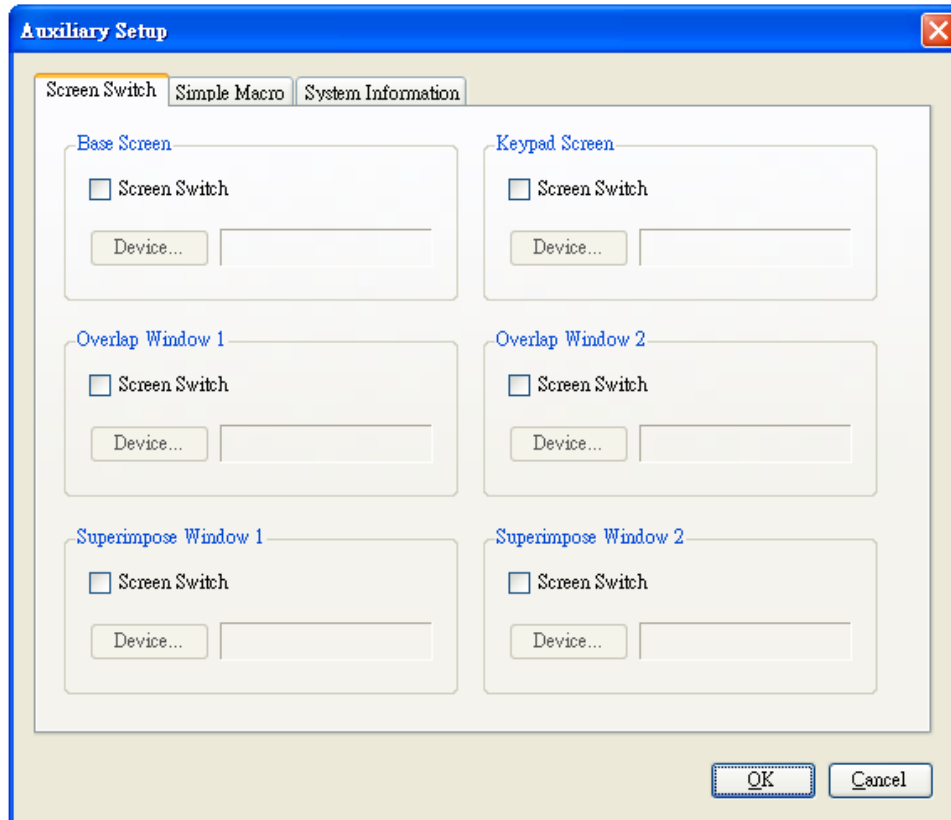


Fig. 3-9-10-1 Auxiliary Setting

The Screen Switch properties allow the user to monitor the device doing screen switch. See Figure 3-9-10-2 below.

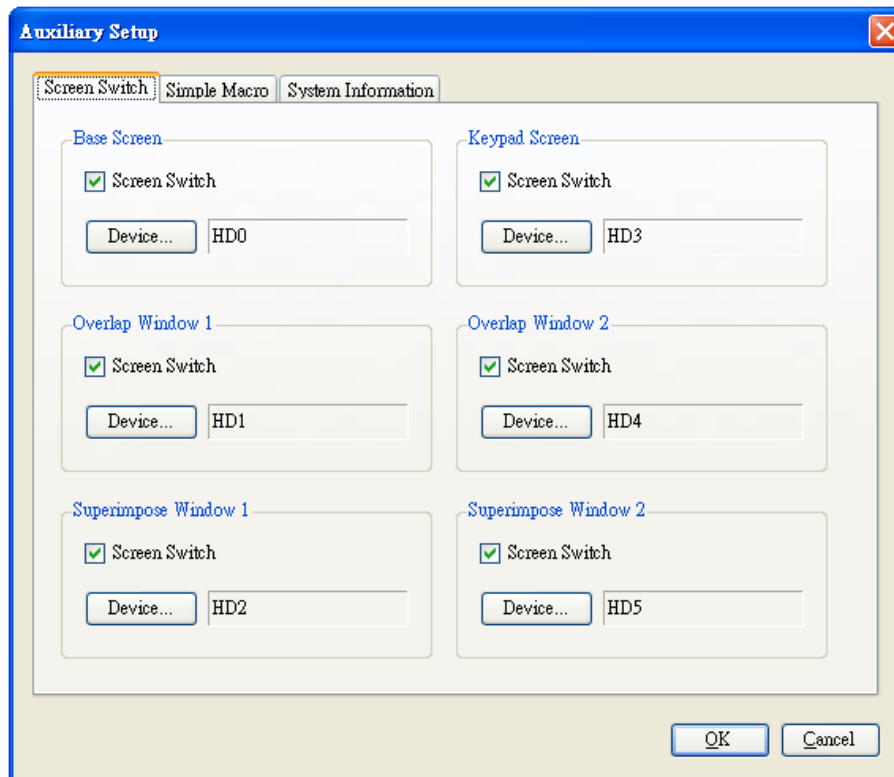


Fig. 3-9-10-2 Screen Switch



Set the numbers of the edit screens as P1, P5, P10, and the Basic Screen Switch device to HD0, so when HMI detects the value of HD0 is 5, the basic screen will pop up to P5; if HD0 is 10, the basic screen will pop up to P10; if HD0 has any other value, the HMI will not make any action. The above scenarios also apply to the setting of window screen and keypad screen. See Figure 3-9-10-3 below.

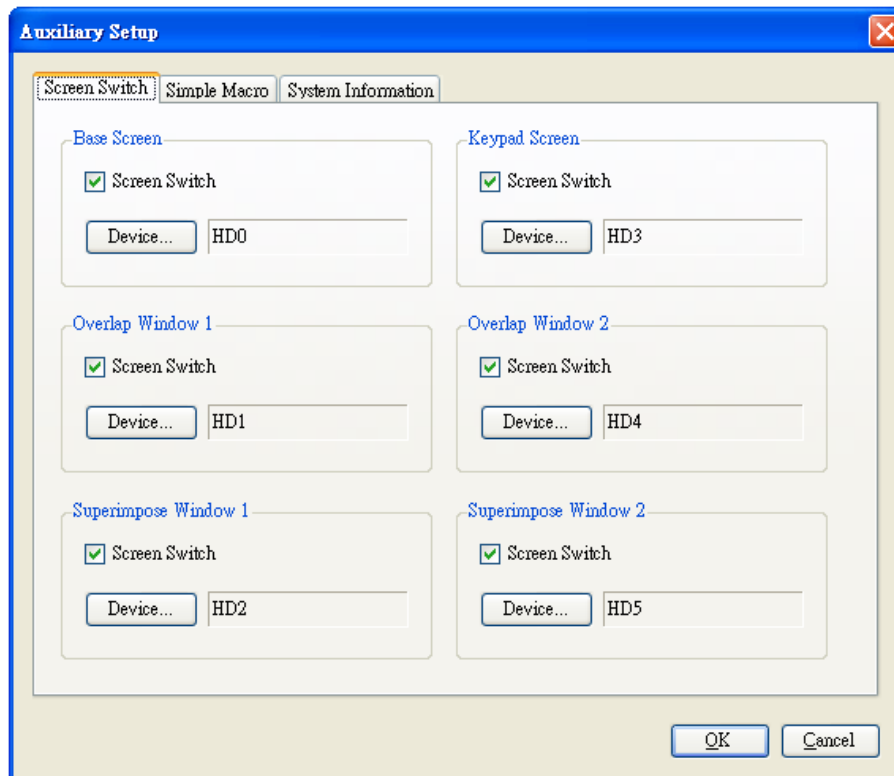
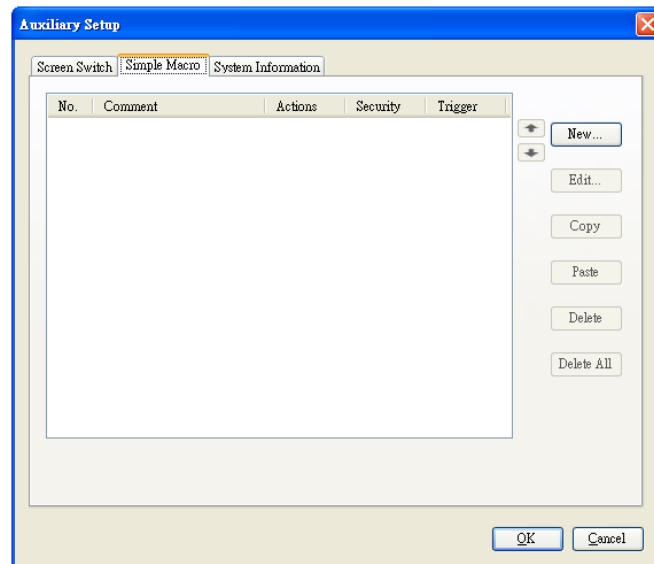
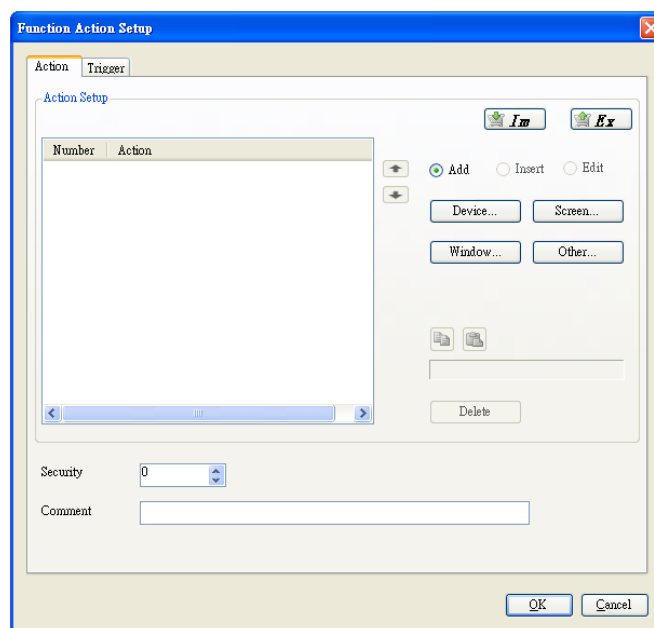


Fig. 3-9-10-3 Screen Switch

The Easy Macro properties provides background execution. The system gives higher priority to this area in execution. Click **New...** to open the setting of the functional actions. See Figure 3-9-10-4 below.



(a)



(b)

Fig. 3-9-10-4 Using Simple Macro (a) Opening Simple Macro (b) Setting Functional Action

The user can set the actions and the trigger conditions. Confirm to finish the setting of the simple macro. See Figure 3-9-10-5 below.

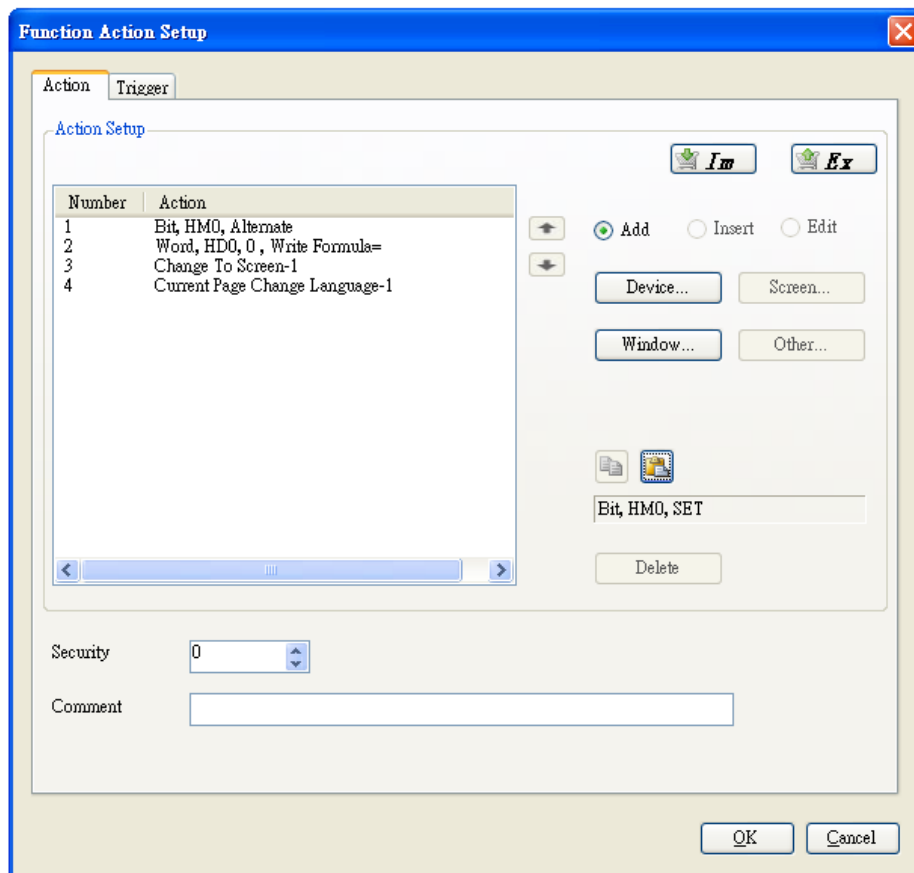




Fig. 3-9-10-5 Completion of Simple Macro Setting

To do copy/paste of devices, pick up a device and set it up first, and then click  to make the copy. The device information copied will be displayed in the text box beneath. Then, click  to finish the copy/paste of the device. See Figure 3-9-10-6 below.

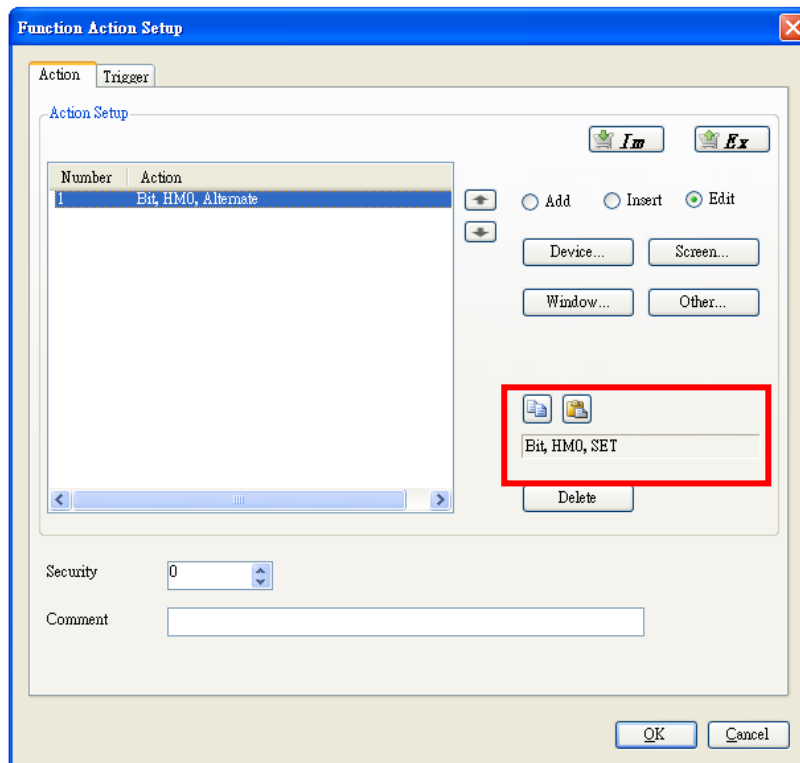


Fig. 3-9-10-6 Copy/Paste Device

Figure 3-9-10-7 below shows the setting of the object's security level. The security level is ranged from 0 (lowest privilege) to 15 (highest privilege). The default security levels of the software and the system are both 0.

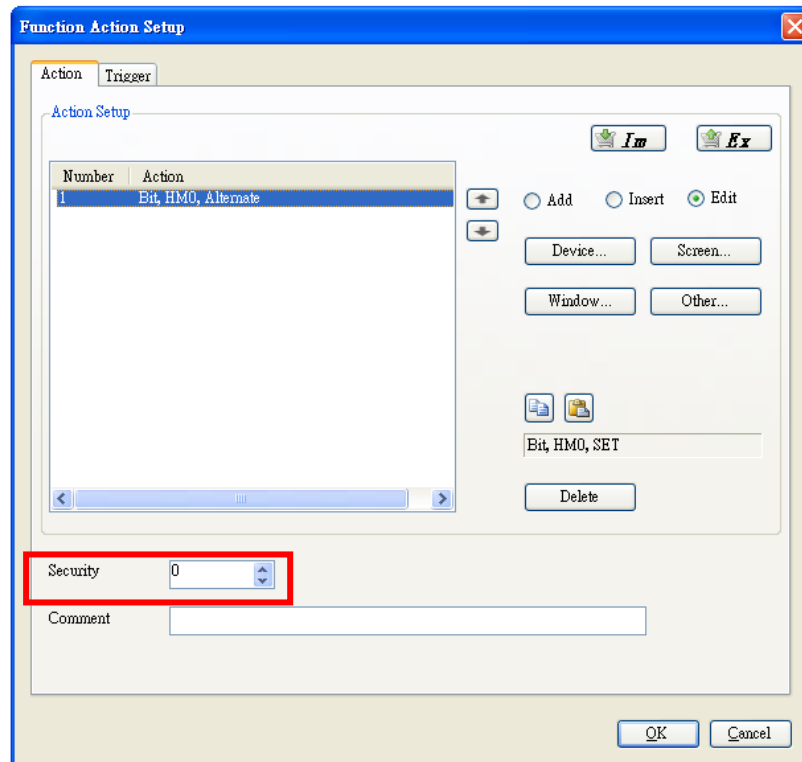
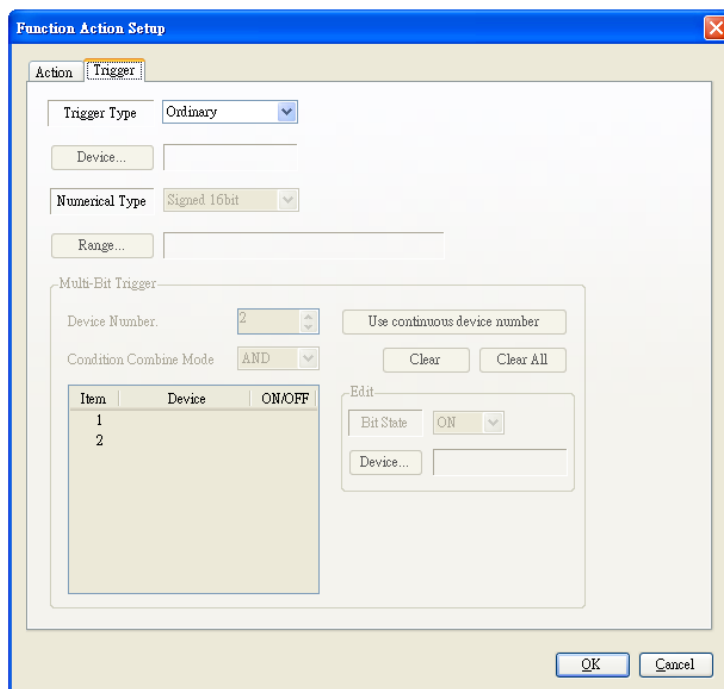


Fig. 3-9-10-7 Security Levels

The Trigger properties allow the user to set the conditions of the trigger pattern. See Figure 3-9-10-8 below.



Trigger Pattern	Description
Ordinary	No triggering pattern
ON	Action is taken only when the device in ON
OFF	Action is taken only when the device in OFF
Range	Action is taken only when the device value is within this range.
Multiple Bit Trigger	Set two or more devices (up to 8), and only when all the devices meet the condition will the action be taken.

Fig. 3-9-10-8 Trigger Pattern Setting



To set the trigger pattern as multi-Bit trigger with 2 devices, click **Device...** to open the device setting window and set the trigger devices as M1 and M2. Confirm the setting and have the file sent to HMI. So, only when M1 and M2 are both ON will the switch actions be started. See Figure 3-9-10-9 below.

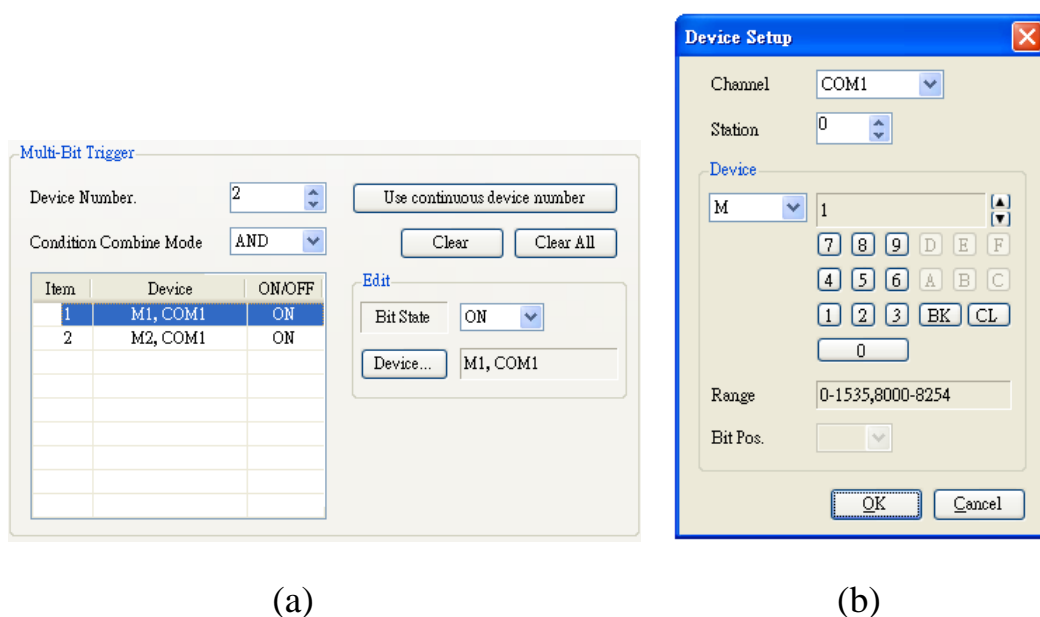


Fig. 3-9-10-9 Multi-Bit Trigger (a) Setup of Multi-Bit Trigger (b) Device Setup



- To delete a single simple macro, select the simple macro to be deleted and then click **Clear** to make the deletion; to delete all the simple macros, click **Clear All** to make the overall deletion. Confirm to finish the deletion.
- Be aware that too many macros may bring heavy load to the system.

The System Information provides the display of screen numbers, the setting of basic screen in the numeric display component, and the setting of overlapped window screen device or attached window screen device. See Figure 3-9-10-10 below.

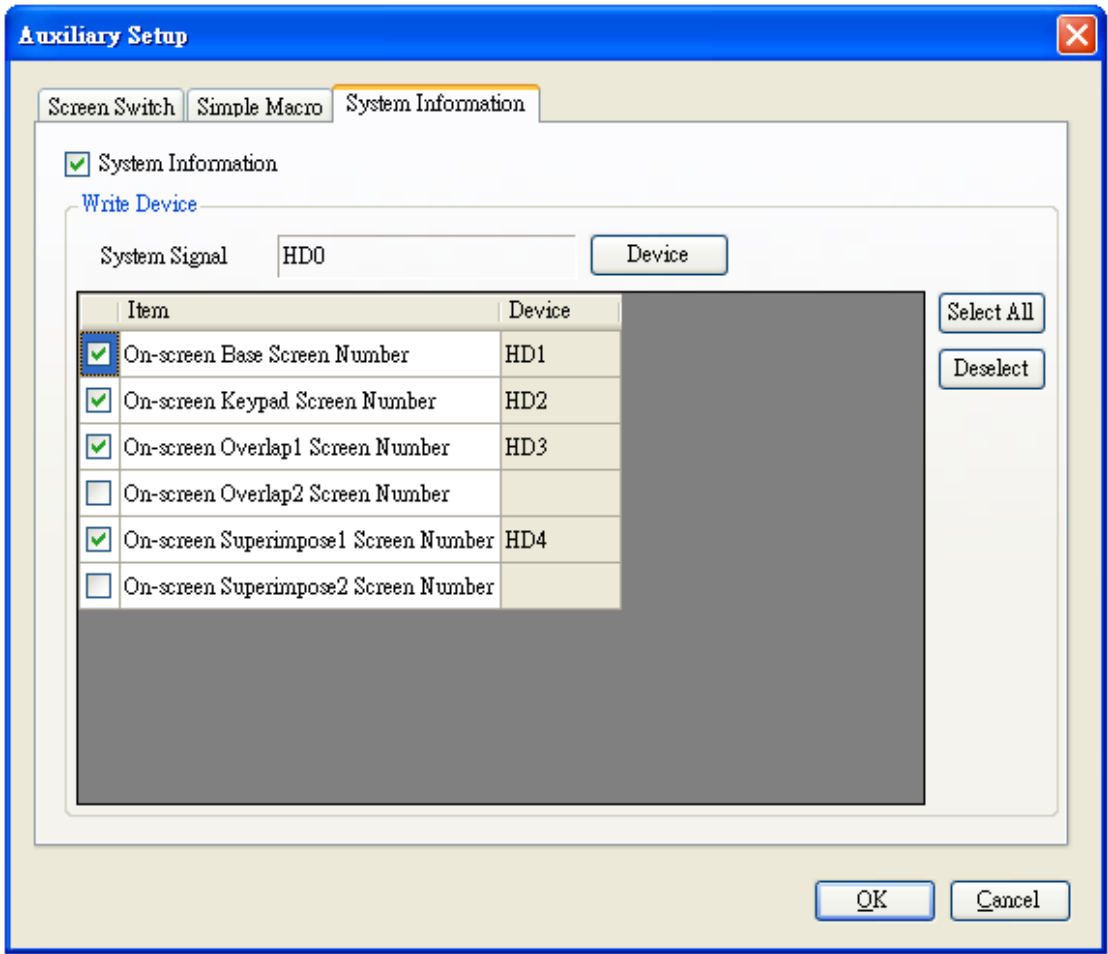



Fig. 3-9-10-10 System Information Setting

3.9.11. Parameter Setup

Click **System** and then click **Parameter Setup** to open the HMI parameter setup dialogue box and set the HMI's internal parameters. See Figures 3-9-11-1 thru 3-9-11-4 blow. Confirm, and click **Operation** and then click **Transfer Tool...**, or directly click the shortcut , to get to the transmission tool dialogue box to execute the file transmission and get done the HMI's internal parameter setting.

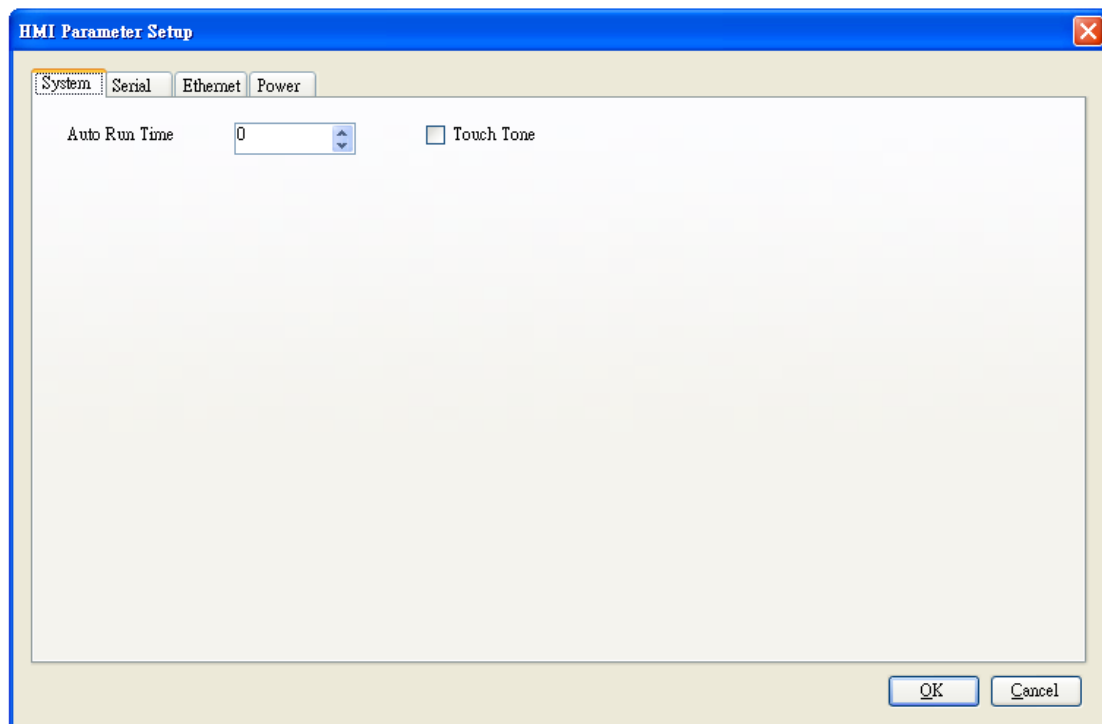


Fig. 3-9-11-1 System Setting

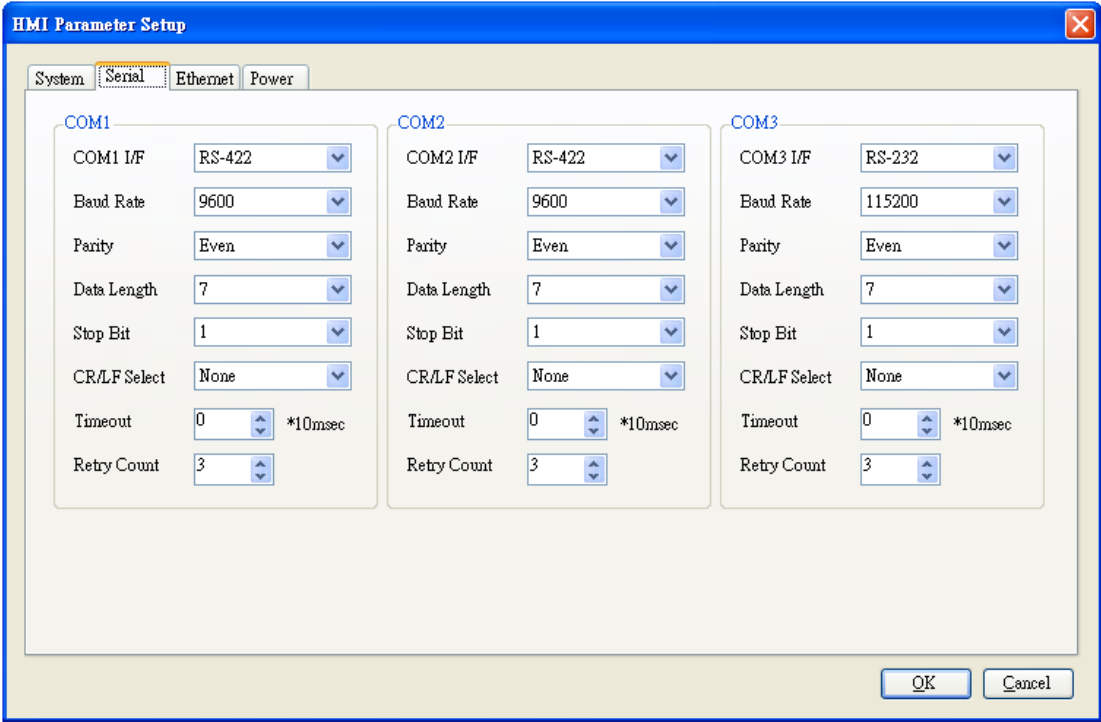


Fig. 3-9-11-2 Serial Port Setting

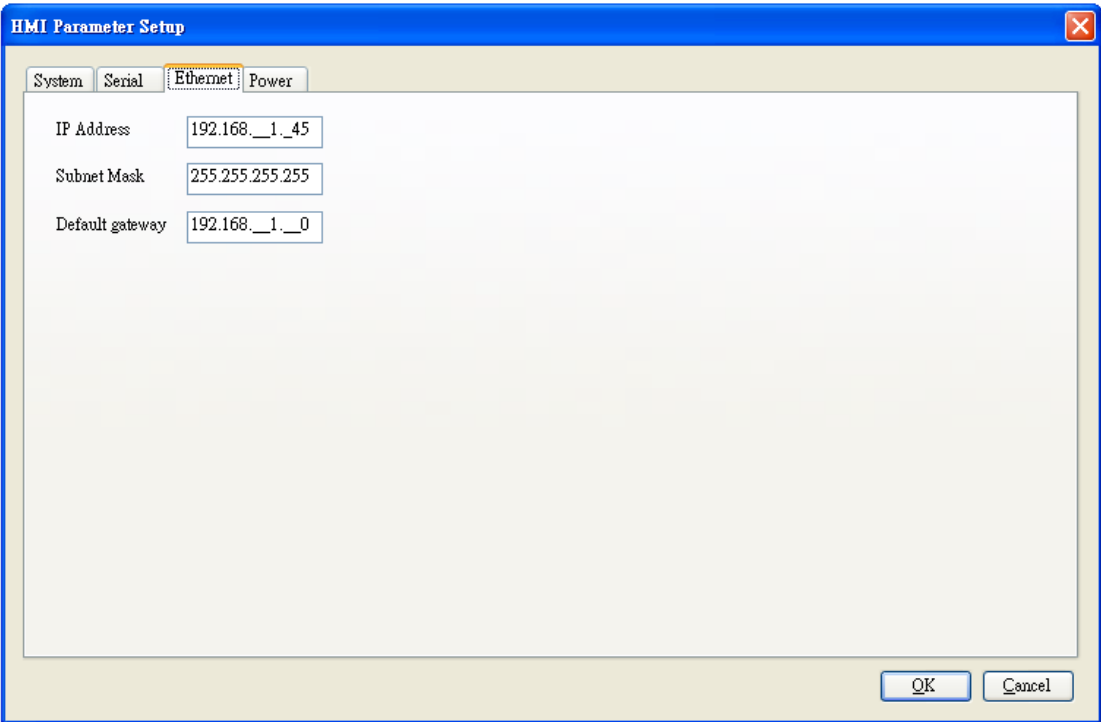


Fig. 3-9-11-3 Ethernet Network Setting

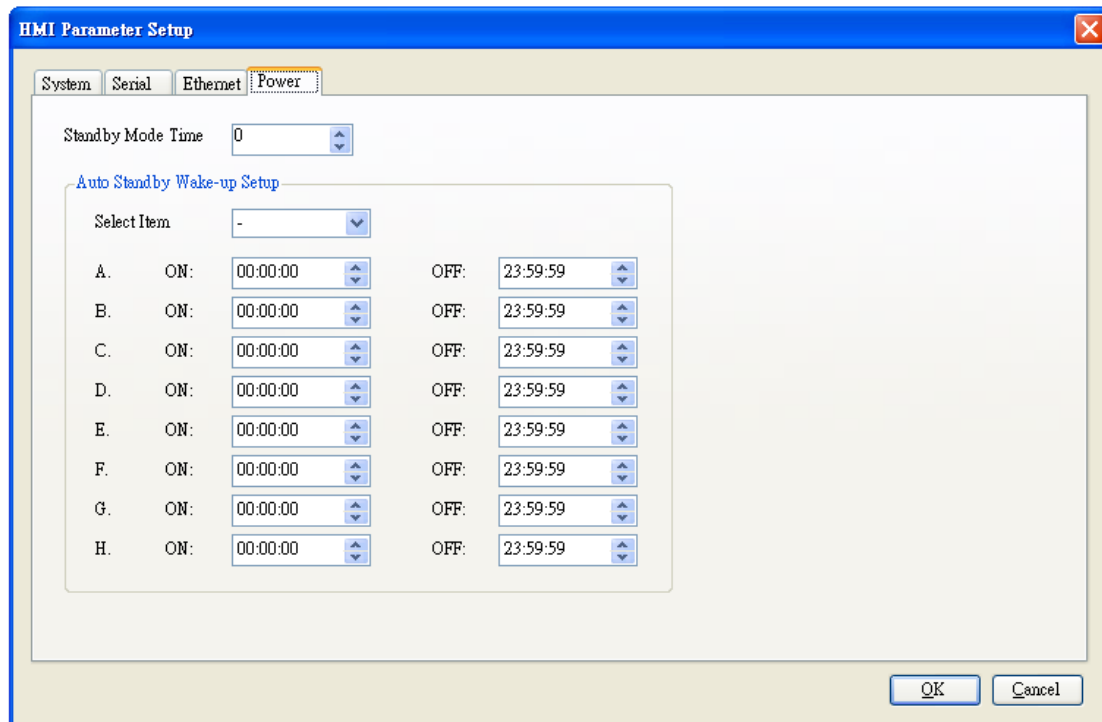



Fig. 3-9-11-4 Electrical Power Setting



- The parameter data for the setting can only be written in from the PC-end to HMI. And there is no way of monitoring the HMI's internal parameters from the PC-end.

3.9.12. Startup Logo

Click **System** and then click  **Startup Logo** to open the dialogue box of the Start-up Screen and set the HMI's start-up screen. See Figure 3-9-12-1 below.

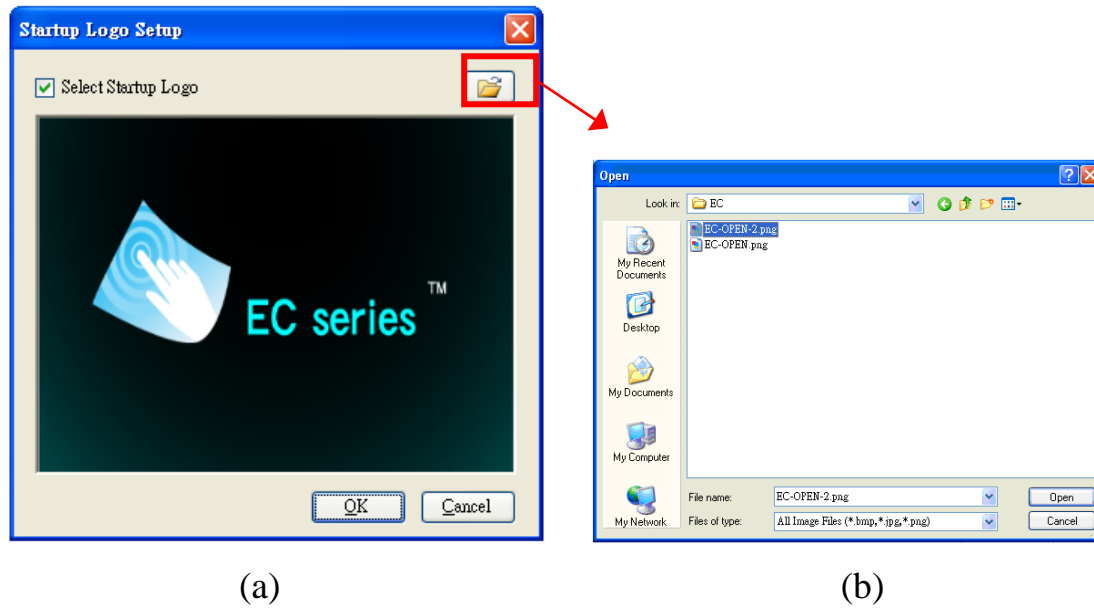
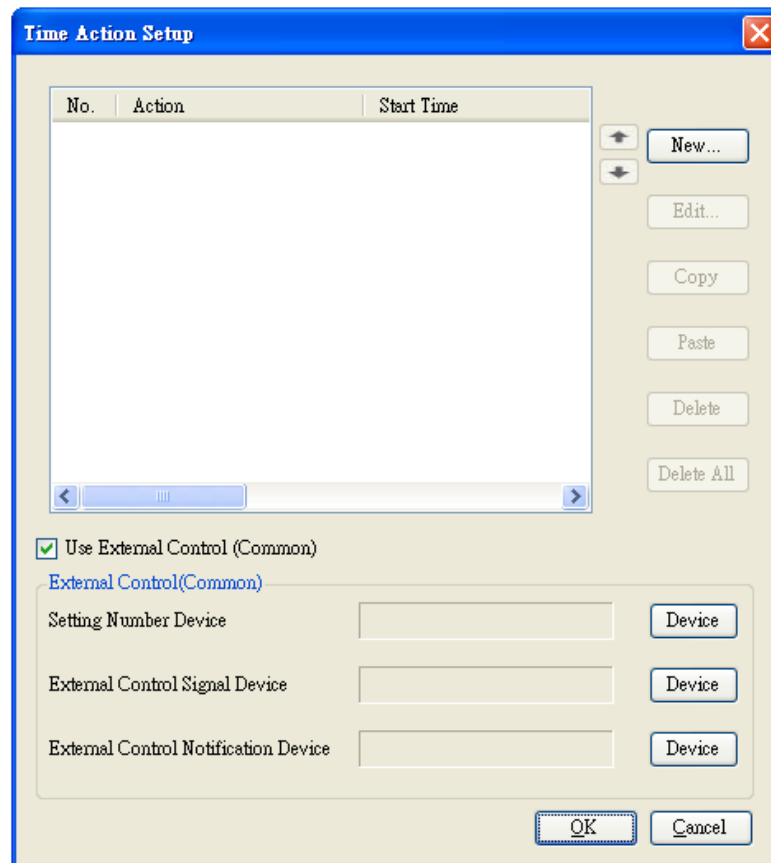


Fig. 3-9-12-1 Start-up Screen (a) Start-up Screen Setting (b) Opening File Window

3.9.13. Time Action

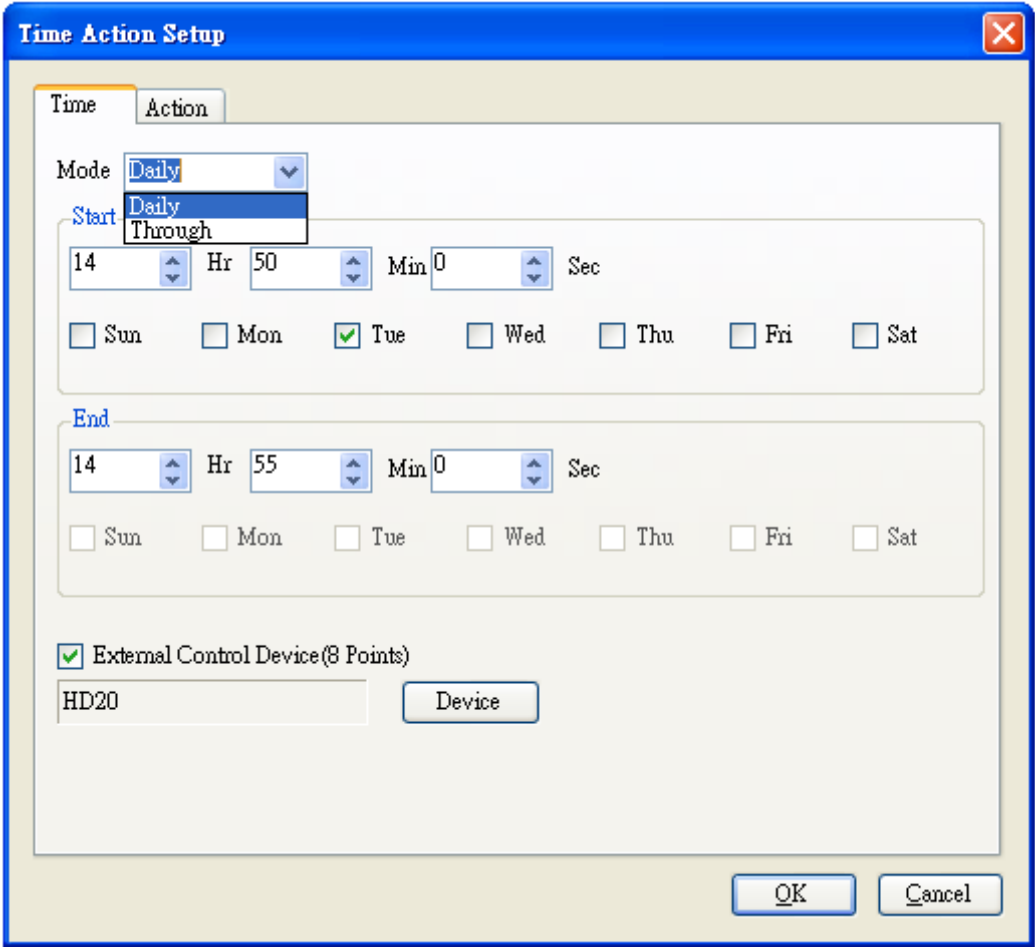
Click **System** and then click **Time Action...** to open the Time Action dialogue box. When the option ☒ Use External Control (Common) is ticked and the Extension Control device is set, use the HMI interface to do the external control. See Figure 3-9-13-1 below.



Device	Description
Setting Number Device	Set the Time Action number and save it.
External Control Signal Device	When the Time Action number is set, this device is for the read/write control, i.e. when its value 1, it is for write; 2 for read.
External Control Notification Device	Notify this device about the external control signal. This function is for message display only, with no control mechanism.

Fig. 3-9-13-1 External Control Setup

The Time setting allows the user to set the time mode, start time, end time, and extension control device. See Figure 3-9-13-2 below.



The 'Time Action Setup' dialog box features two tabs: 'Time' and 'Action'. The 'Time' tab is active. It contains a 'Mode' dropdown menu with 'Daily' selected. Below it, a 'Start' dropdown menu shows 'Daily' and 'Through' options. The 'Start' time is set to 14:50:00 (Hr: 14, Min: 50, Sec: 0). A row of checkboxes for days of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat) is shown, with 'Tue' checked. Below this, an 'End' section shows a time of 14:55:00 (Hr: 14, Min: 55, Sec: 0) and another row of day checkboxes, all of which are unchecked. At the bottom, the 'External Control Device(8 Points)' checkbox is checked, with 'HD20' entered in the adjacent text field and a 'Device' button. 'OK' and 'Cancel' buttons are at the bottom right.

Mode	Description
Daily	Only set a single week.
Through	Set start week and end week.

Fig. 3-9-13-2 Scheduling Setup

Use the Extension Control device to do the external control of the time setting. The device setting is shown in Figure 3-9-13-3 below.

Time Action Setup

Time Action

Mode: Daily

Start: Through

14 Hr 50 Min 0 Sec

☐ Sun ☐ Mon ☒ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat

End:

14 Hr 55 Min 0 Sec

☐ Sun ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat

☒ External Control Device(8 Points)

HD20 Device

OK Cancel

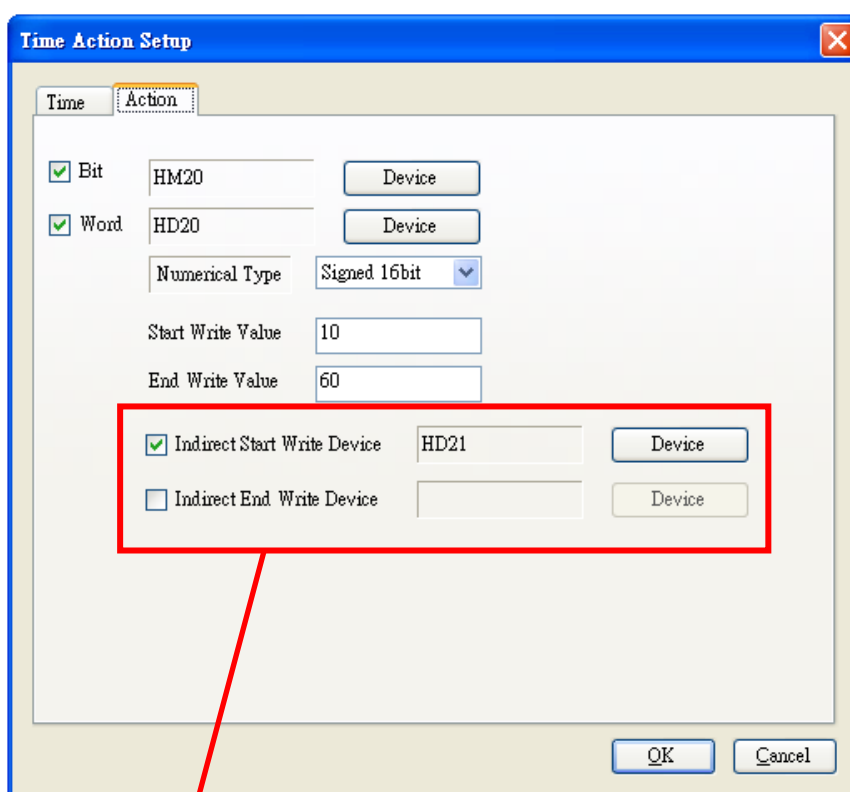
Device	Description
External Control Device	Bit 0 (OFF): daily. Bit 0 (ON): through.
Device +1	Start Time End Time Bit 0 : Sun Bit 8 : Sun Bit 1 : Mon Bit 9 : Mon Bit 2 : Tue Bit 10 : Tue Bit 3 : Wed Bit 11 : Wed Bit 4 : Thu Bit 12 : Thu Bit 5 : Fri Bit 13 : Fri Bit 6 : Sat Bit 14 : Sa
Device +2	Start Time (hour)
Device +3	Start Time (minute)

Device +4	Start Time (second)
Device +5	End Time (hour)
Device +6	End Time (minute)
Device +7	End Time (second)

Fig. 3-9-13-3 Extension Control Device

Action setting means the device triggered upon the scheduled time. The Bit device and Word device can be set up at the same time. The Word device can be set with the start input value and the end input value, so when it is triggered, the pre-set value will be written to the device.

When the option ☒ Indirect Start Write Device or ☒ Indirect End Write Device is ticked, it means to add up the value of the indirect device and the start/end input value of the Word device, and write the sum to the Word device. See Figure 3-9-13-4 below.




At start time : Word device = start write value + value of indirect start write device

At end time: Word device = end write value + value of indirect end write device

Fig. 3-9-13-4 Action Setting

3.9.14. Sound Setup

Click **System** and then click  **Sound Setup** to open the dialogue box for the sound setting. Then, click **New** to enhance the audio effect by setting the sound source, storage device, play mode, end mode, and trigger pattern. See Figure 3-9-14-1 below.

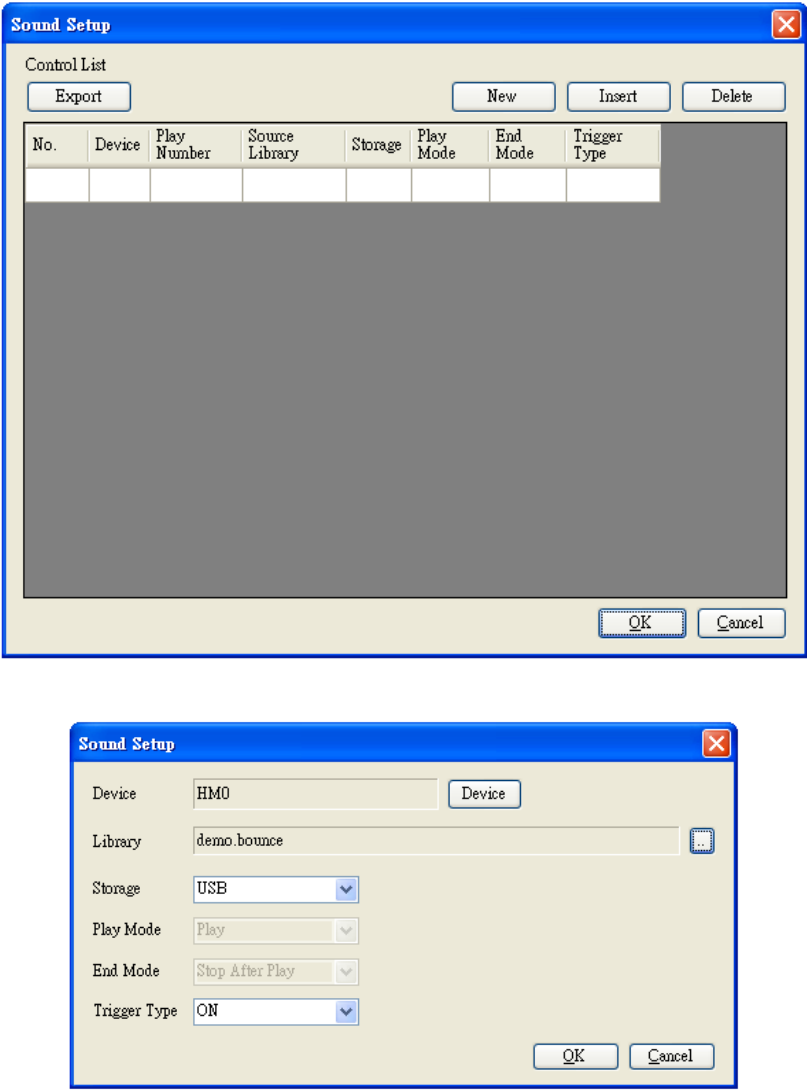



Fig. 3-9-14-1 Sound Setting

To change the sound source, click  to open the sound library and select a preferred sound file. For operational instructions, please see Section 3.4.6 Sound Library. See Figure 3-9-14-2 below.

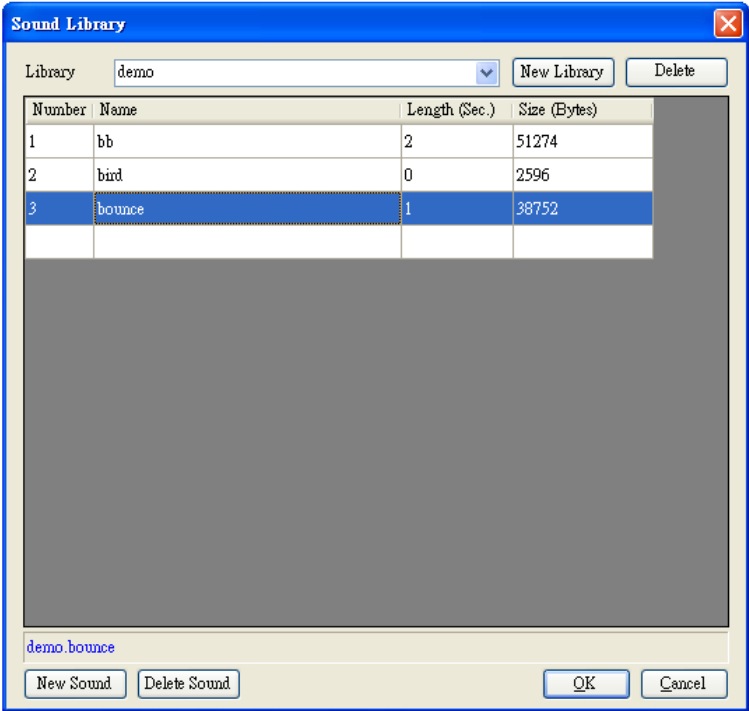
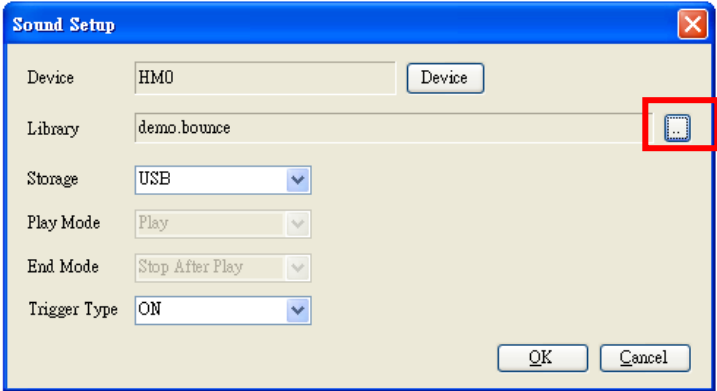
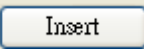
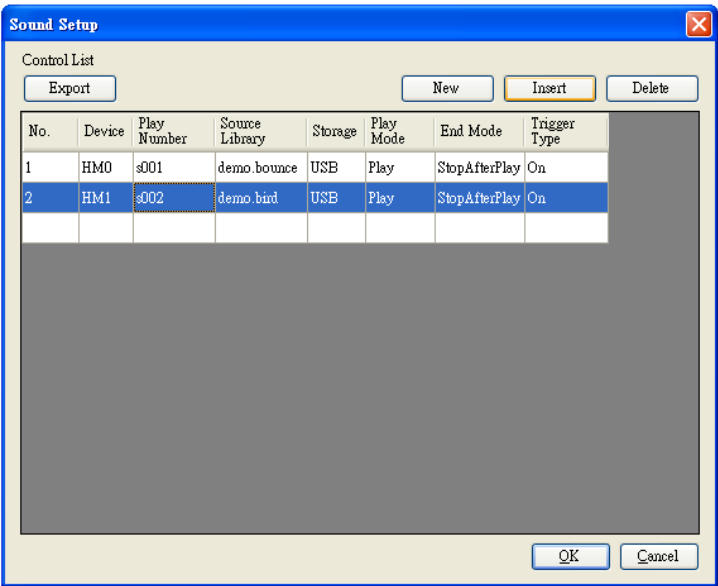
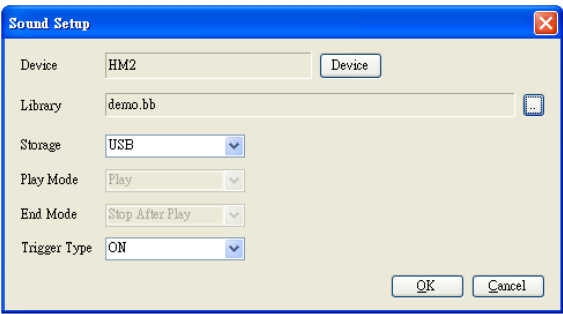


Fig. 3-9-14-2 Sound Source Setting

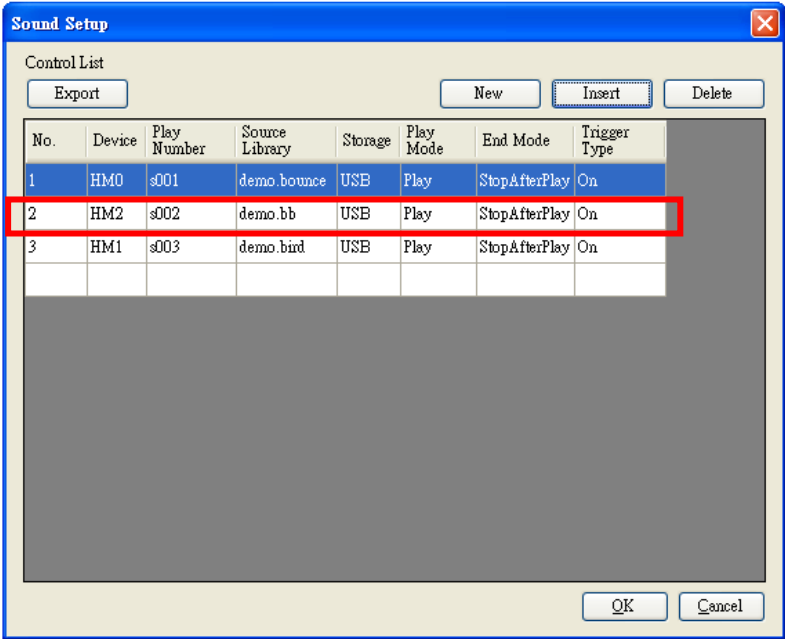
To insert a sound file, click  to set up the sound file to be inserted. See Figure 3-9-14-3 below.



(a)

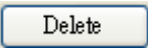


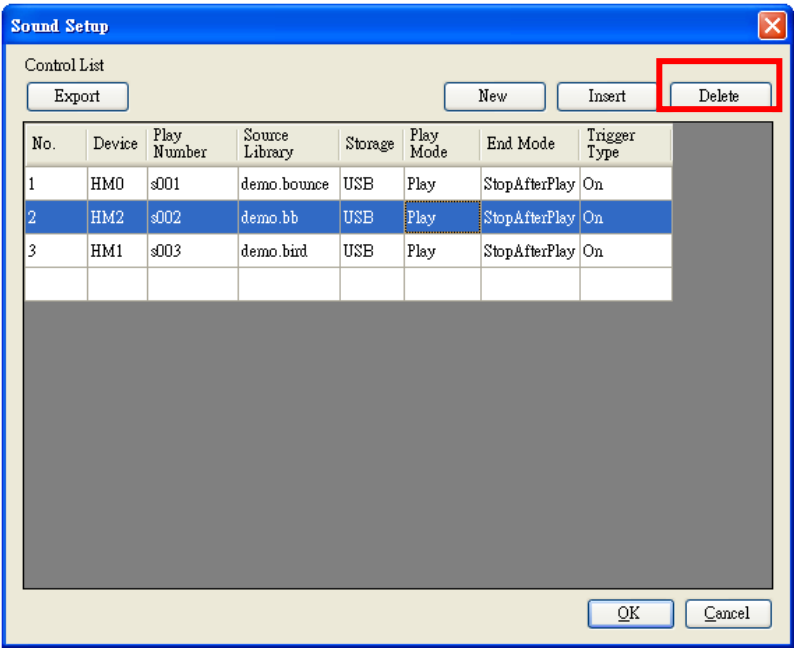
(b)



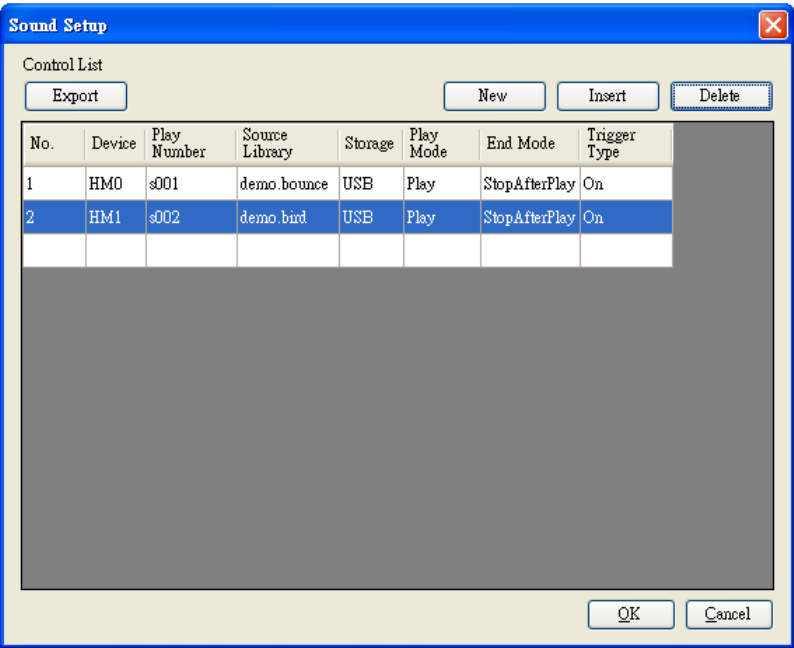
(c)

Fig. 3-9-14-3 Inserting Sound (a) Clicking the Insert Key (b) Sound Setting (c) Sound Inserted

To delete a sound file, select the file and then click  to delete it. See Figure 3-9-14-4 below.

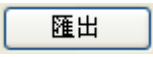


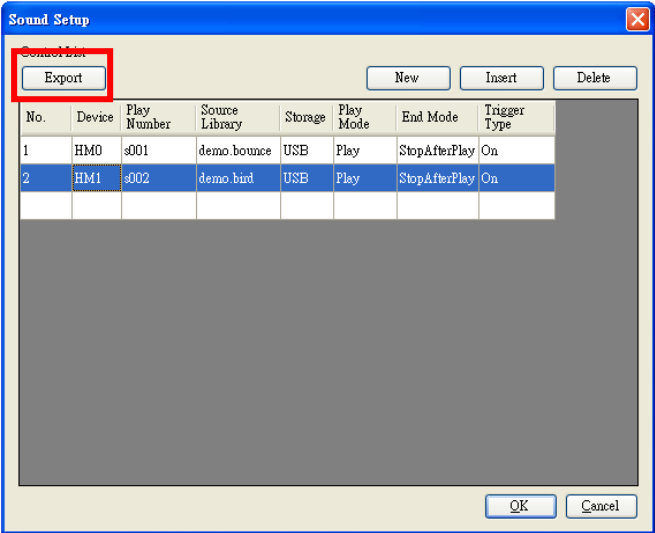
(a)



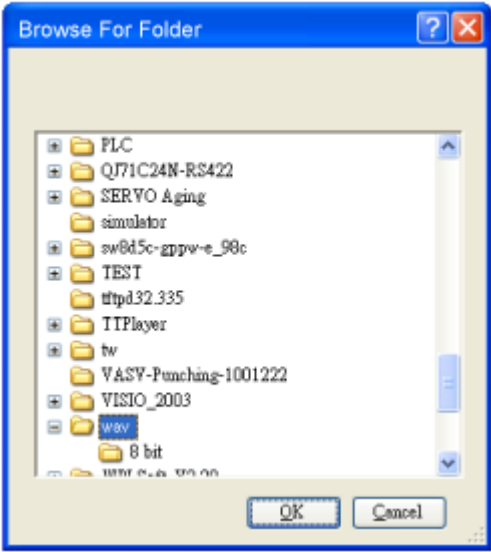
(b)

Fig. 3-9-14-4 Deleting Sound (a) Selecting the file and clicking the Delete key (b) Sound Deleted

After the sound has been set up, click  to export the sound file to the designated storage device (i.e. “storage device” specified in the sound setting), and then load it to HMI. So, when the device triggers, the audio will take effect. See Figure 3-9-14-5 below.



(a)



(b)

Fig. 3-9-14-5 Export (a) Clicking Export Switch (b) Export to Storage Device

Browse For Folder



Appendix A Supplementary Information

A.1. Device Description

The HMI provides devices for the user to edit. The descriptions of devices are detailed in the Table A-1-1 below.

Table A-1-1 Devices and Functions

Internal Device				ModBus Device				
Device	Type	Range	Description	Device	Type	Range	Description	
HX	Bit	0~7	I/O Module - Input	MB	Bit	0~32767	Read/Write	
		8~255	General Usage					
HY	Bit	0~7	I/O Module - Output	MBR	Read Only			
		8~255	General Usage					
HM	Bit	0~65535	General Usage	MW	Word		Read/Write	
HB			For Use at Power Failure	MWR			Read Only	
HD	Word	0~32767	General Usage					
HDR		0~255						
HW		0~8192	For Use at Power Failure					



- Since EC200 series has no I/O module, it is suggested not to use HX0~7 and HY0~7 devices in the setup job.



- The HDR internal devices provide date and time, and display of communication errors and station numbers in use. To use HDR's date and time functions, the HB65000 device needs to be set ON first; to use HDR to display communication errors, the HB65001 device needs to be set OFF; set ON for not to display the errors. The HDR set values are described in the Table A-1-2 below.

Table A-1-2 HDR Device Description

Device	Function	Set Values
HDR	Date Time	00 : Year
		01 : Month
		02 : Date
		03 : Hour
		04 : Minute
		05 : Second
		60 : Week
	Communication Errors	06~14: Monitor COM1 stations numbered 0~128.
		15~23: Monitor COM2 stations numbered 0~128.
		24~32: Monitor COM3 stations numbered 0~128.
	Stations Used	33~41: Monitor COM1 stations numbered 0~128.
		42~50: Monitor COM2 stations numbered 0~128.
		51~59: Monitor COM3 stations numbered 0~128.

- Use the HB65003 internal device to control the backlight with the Bit ON for upper-edge trigger, OFF for lower-edge trigger. To use the HB65003 backlight control, the HB65002 device needs to be set ON first.



To use the HDR device to display month and day, please set up 2 numeric boxes, and set the devices to HDR1 and HDR2. To display time and week, please set 4 numeric boxes, and set the devices to HDR3, HDR4, HDR5 and HDR60.

The HMI can use special devices to connect to Shihlin's converter for communication. The descriptions of the devices are shown in Table A-1-3 below.

Table A-1-3 Comparative Table of Shihlin Converters and Corresponding Devices

Bit Device	Function	Description	Word Device	Function	Description		
ISR0	Converter State	In Operation	IDR0	Operational Model	Read		
ISR1		Forward Operation	IDR1	Monitoring	Output Frequency		
ISR2		Reverse Operation	IDR2		Set Frequency		
ISR3		Frequency Reached	IDR3		Output Current		
ISR4		Overload	IDR4		Output Voltage		
ISR5		Key Tone	IDR5		Abnormal Content		
ISR6		Frequency Detected	IDR6		Abnormal Content		
ISR7		Exception Occurs	IDR7		Abnormal Content		
ISR8		RES ON	IDR8		Abnormal Content		
ISR9		STF ON	IDR9	Display Message	Read		
ISR10		STR ON	IDR10	Converter Status	Read		
ISR11		EXT RUN PUSH STOP	IDW0	Operational Model	Write		
ISR12~15		Reserved	IDW1	Operational Instructions	Write		
IIW0	Operational Instructions	Reserved	IDW2	Operational Frequency	Write		
IIW1		Reverse Operation	IDW3	Converter Reset	Write		
IIW2		Reverse Operation	IDW4	Erase Convert Parameters and Error Codes.	Write		
IIW3		Low Speed	IP	Parameters	Read/Write		
IIW4		Medium Speed					
IIW5		High Speed					
IIW6		Second Selection of Acceleration and Deceleration					
IIW7		Converter Stops Output					
IIW8~15	Reserved						

A.2. Numeric Operations

The Shihlin's HMI provides abundant numeric operations in various applications. Figure A-2-1 below shows the flow chart of the numeric operations.

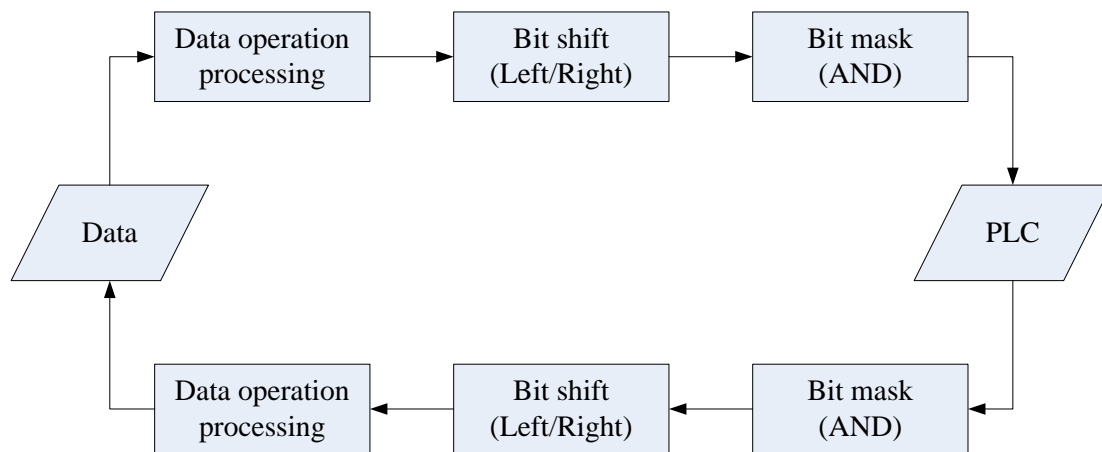


Fig. A-2-1 Numeric Operation Flow



Figure A-2-2 below is the formula for computing the mask value. The software will calculate based on the user input, display, and current values.

$$\{(\text{Input Value}) \text{ AND } (\text{Mask Value})\} \text{ OR } \{(\text{Current Value}) \text{ AND } (\text{Reversed Mask Value})\}$$

Fig. A-2-2 Operational Formula

A.3. Bit Operation

A.3.1. AND

The input states are True and False for AND logic operation. The true values are listed in Table A-3-1 below.

Table A-3-1 AND Logic

AND	True(1)	False(0)
True(1)	1	0
False(0)	0	0



The 2 input values are transformed into binaries and then applied to AND operations. The results are listed in Table A-3-2 below.

Table A-3-2 Results of AND Operations

Bit Address															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	1	0	0	0	1	1	1	0	0	0	1	1
AND															
0	1	0	0	1	0	0	1	0	0	1	0	1	0	1	1
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1

A.3.2. OR

The input states are True and False for OR logic operation. The true values are listed in Table A-3-3 below.

Table A-3-3 OR Logic

OR	True(1)	False(0)
True(1)	1	1
False(0)	1	0



The 2 input values are transformed into binaries and applied to OR operations. The results are listed in Table A-3-4 below.

Table A-3-4 Results of OR Operations

Bit Address															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	1	0	0	0	1	1	1	0	0	0	1	1
OR															
0	1	0	0	1	0	0	1	0	0	1	0	1	0	1	1
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	0	0	1	1	1	1	0	1	0	1	1

A.3.3. XOR

The input states are True and False for XOR logic operation. The true values are listed in Table A-3-5 below.

Table A-3-5 XOR Logic

XOR	True(1)	False(0)
True(1)	0	1
False(0)	1	0



The 2 input values are transformed into binaries and applied to XOR operations. The results are listed in Table A-3-6 below.

Table A-3-6 Results of XOR Operations

Bit Address															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	1	0	0	0	1	1	1	0	0	0	1	1
XOR															
0	1	0	0	1	0	0	1	0	0	1	0	1	0	1	1
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	0	0	0	1	1	1	0	0	1	0	0	0

A.3.4. Left

Transform the input value into binary and then make it left-shifted.
See Table A-3-7 below.

Table A-3-7 Left Shift

Bit Address															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	1	0	0	0	1	1	1	0	0	0	1	1
Left Shifted 2 Bits															
1	1	1	0	0	0	1	1	1	0	0	0	1	1	0	0

A.3.5. Right

Transform the input value into binary and then make it right-shifted.
See Table A-3-8 below.

Table A-3-8 Right Shift

Bit Address															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	1	0	0	0	1	1	1	0	0	0	1	1
Right Shift 2 Bits															
0	0	1	0	1	1	1	0	0	0	1	1	1	0	0	0

Assume the PLC device’s current value is ABCD, the user input value is 12 in hexadecimal, and the mask value is FF, the calculated result will be AB12. See Figure A-3-9 below.

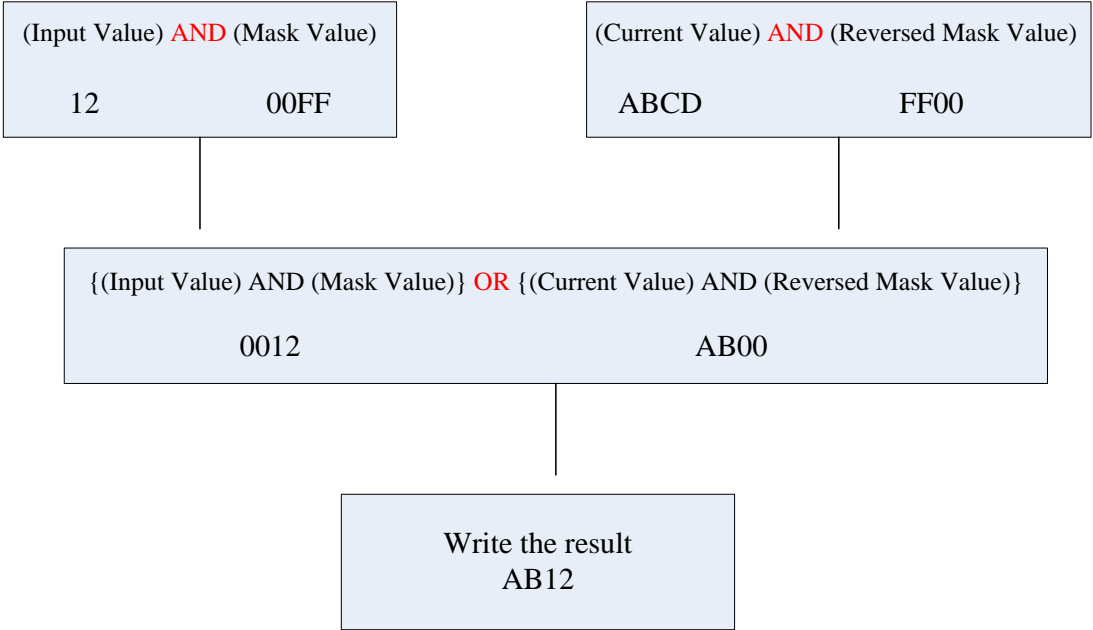


Fig. A-3-9 Mask Operation

A.4. Example – Multiple Languages

The mechanism of multiple languages facilitates the user to have multiple languages displayed in a single screen, without the need of repetitively editing the same screen, thus saves lots of work. Figure A-4-1 below illustrates the screen of multiple languages, which can switch among 3 different languages by just clicking the switches.

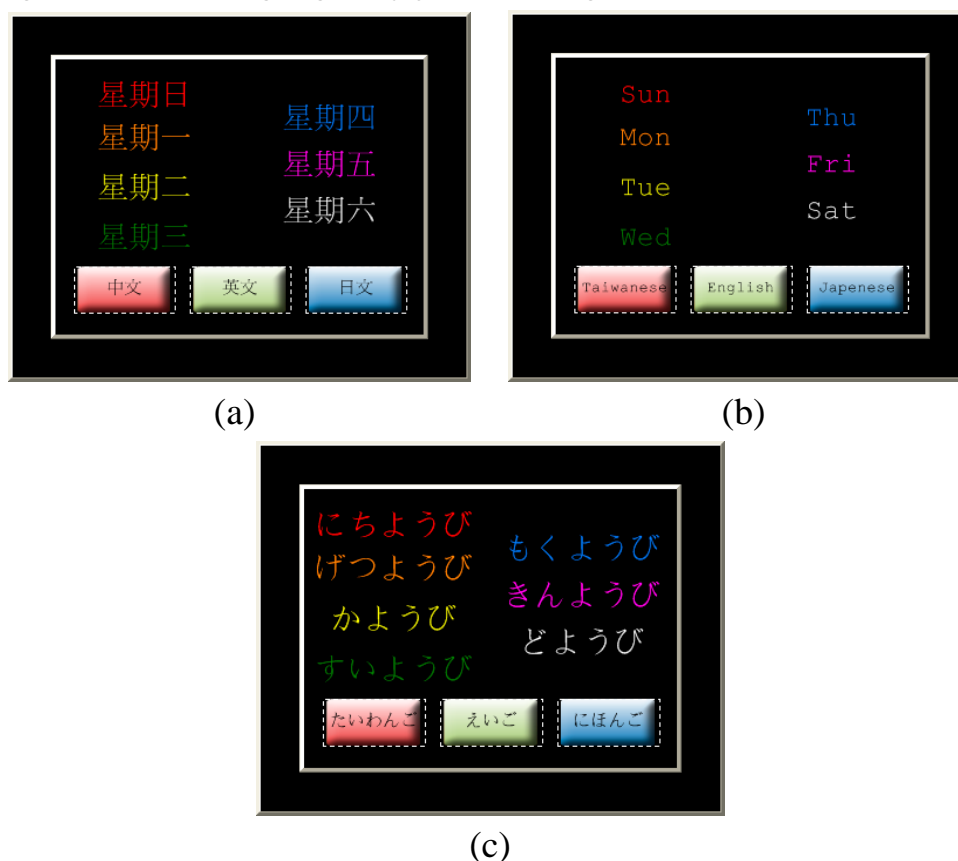


Fig. A-4-1 Multiple Languages Screen (a) Chinese (b) English (c) Japanese

To make a multiple-language screen, click **Library** and then click **Comment Library...** to open the comment library dialogue box and then select an comment group to set up the needed language. See Figure A-4-2 below.

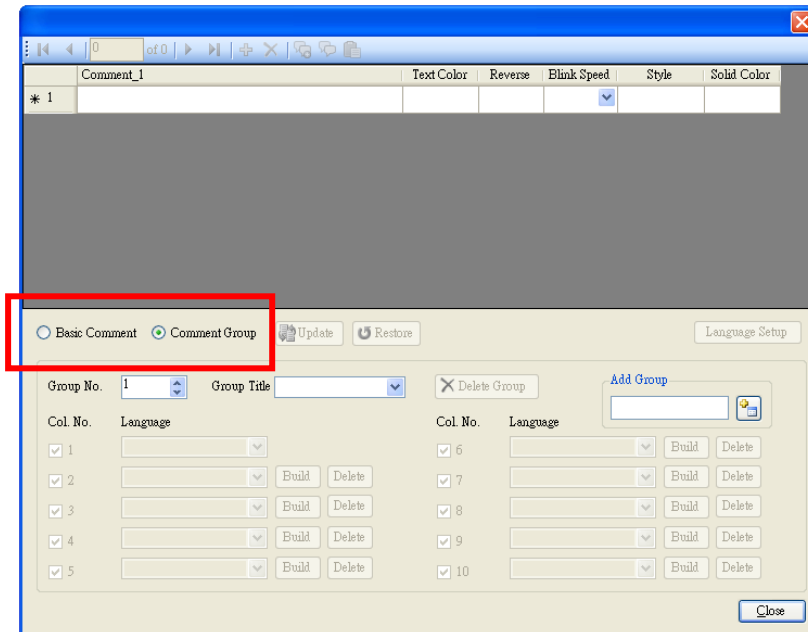

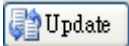
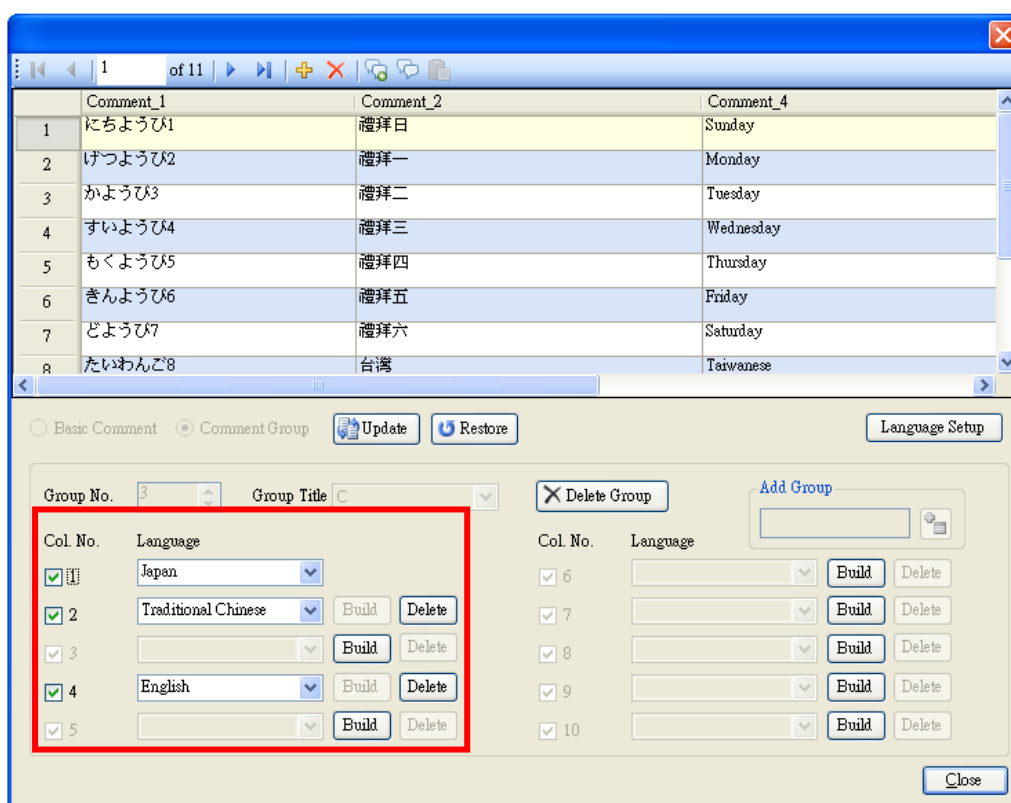


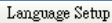


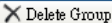

Fig. A-4-2 Comment Group

Click  to add a new group named “Multi-Language”, and in the rows select the needed languages to set up 3 comment groups. The languages in the comment groups are Chinese, English, and Japanese. Confirm and then click  to finish the setup of the comment group. See Figure A-4-3 below.



	Comment_1	Comment_2	Comment_4
1	にちようび1	禮拜日	Sunday
2	げつようび2	禮拜一	Monday
3	かようび3	禮拜二	Tuesday
4	すいようび4	禮拜三	Wednesday
5	もくようび5	禮拜四	Thursday
6	きんようび6	禮拜五	Friday
7	じようび7	禮拜六	Saturday
8	たいわんご8	台灣	Taiwanese

☐ Basic Comment
 ☒ Comment Group
  Update
  Restore
  Language Setup

Group No. 3 Group Title C  Delete Group  Add Group

Col. No.	Language	Build	Delete
<input checked="" type="checkbox"/> 1	Japan		
<input checked="" type="checkbox"/> 2	Traditional Chinese	Build	Delete
<input checked="" type="checkbox"/> 3		Build	Delete
<input checked="" type="checkbox"/> 4	English	Build	Delete
<input checked="" type="checkbox"/> 5		Build	Delete

Col. No.	Language	Build	Delete
<input checked="" type="checkbox"/> 6		Build	Delete
<input checked="" type="checkbox"/> 7		Build	Delete
<input checked="" type="checkbox"/> 8		Build	Delete
<input checked="" type="checkbox"/> 9		Build	Delete
<input checked="" type="checkbox"/> 10		Build	Delete



 Close

Fig. A-4-3 Editing Comment Group

When the setting of the comment library is done, return to the edit screen and set up 7 static text objects and 3 switches. Then, click the static text and double left click the mouse to open the Text property setting. Click  **Comment Group** and select a needed comment number. This example assumes the group number is 1 and the comment number is also 1, so the screen displays the word of “Sunday”. The rest comment words are also set the same way. See Figure A-4-4 below.

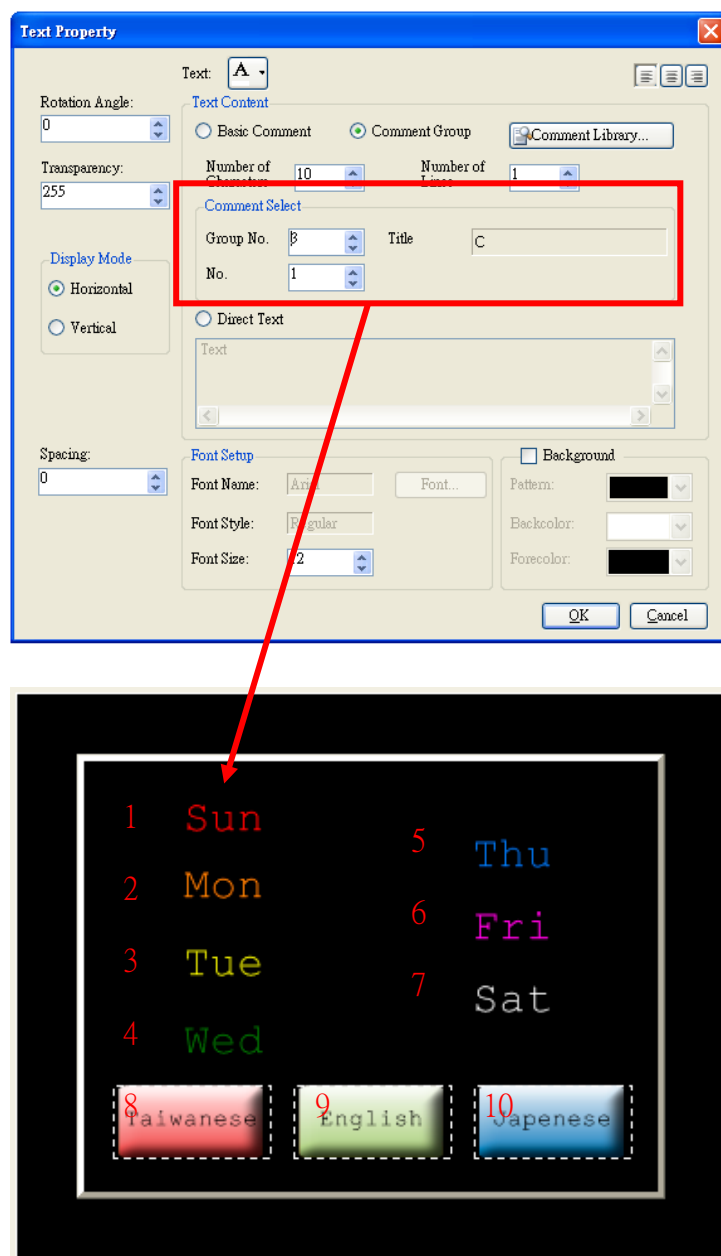



Fig. A-4-4 Comment Word Property Setting

Click the switch and then double left click the mouse to open the property setting of the switch. Then, click  Comment Group and select a needed comment number. This example assumes the group number is 1 and the comment number is 8, so the screen displays the word of “Chinese”. The rest comment words are also set the same way. See Figure A-4-5 below.

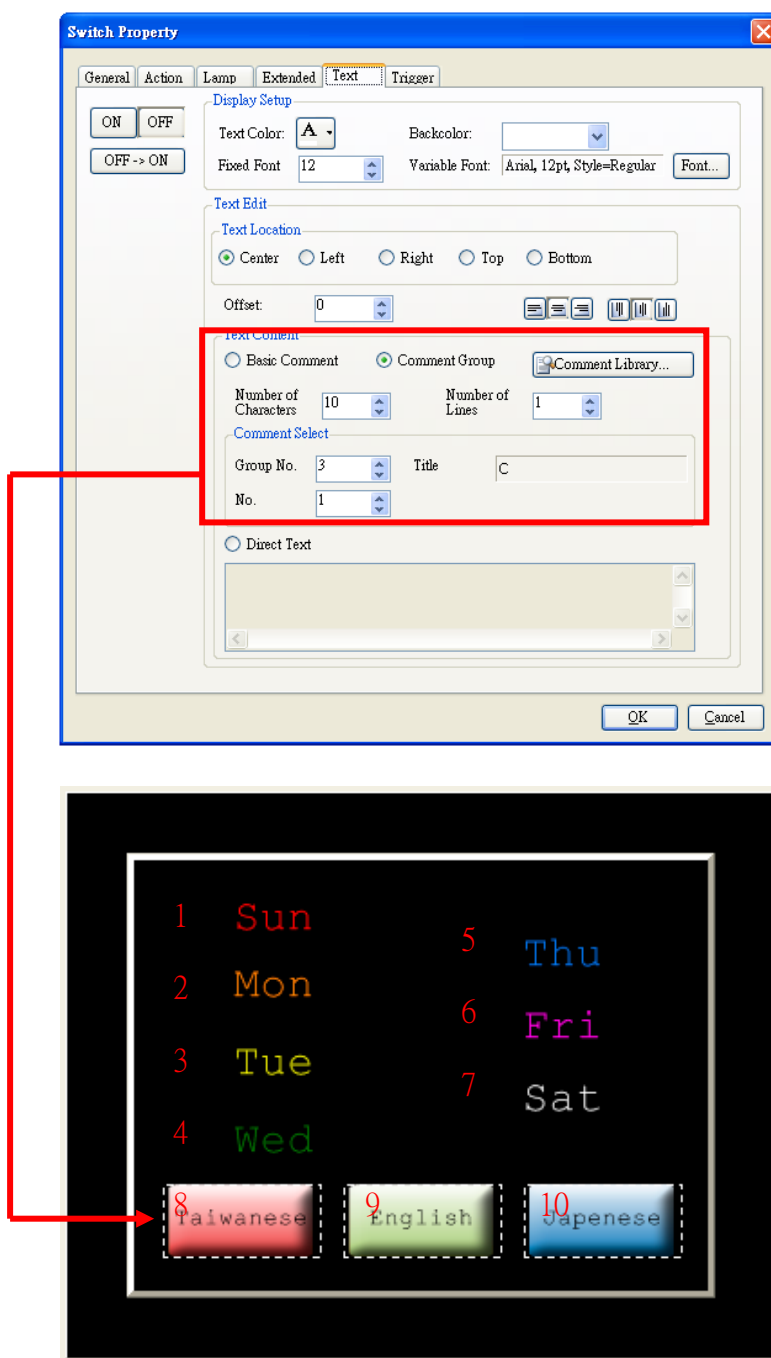


Fig. A-4-5 Comment Switch Property Setting

When the comment word setting is done, proceed with the setting of the switch functions. Click the switch and then double left click the mouse to open the switch's property setting. Click **Function...** to open the dialogue box of function selection and set the language number to 1. So, when the switch is pressed, the language will be switched to Chinese. The rest switches are also set the same way. See Figure A-4-6 below.

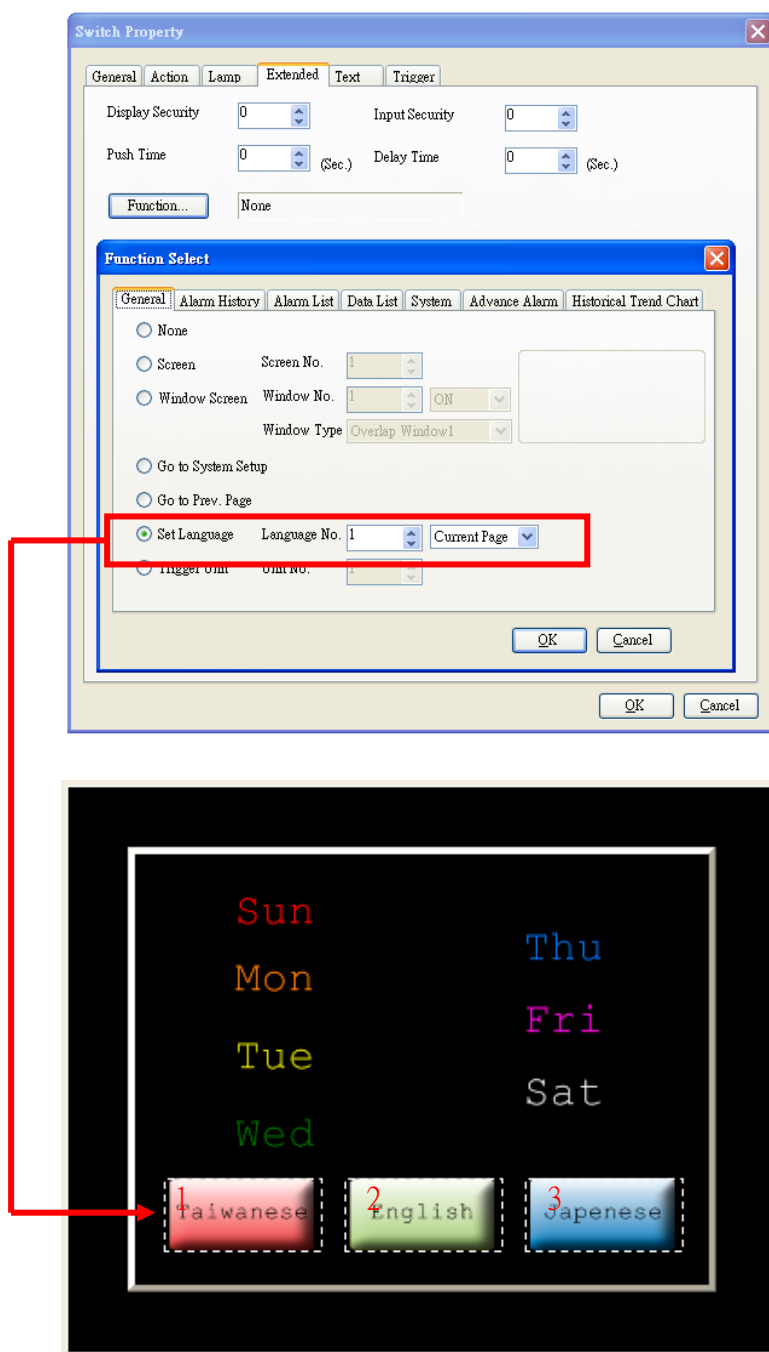


Fig. A-4-6 Language Setting

Follow the above steps to finish the multiple-language setting and have it sent to the HMI. The way of using it is when the “Chinese” switch is pressed, the text content will be comment_1 words read from the comment library; when the “English” switch is pressed, the text content will be comment_2 words read from the comment library; while to get comment_3, press the “Japanese” switch. See Figure A-4-7 below.

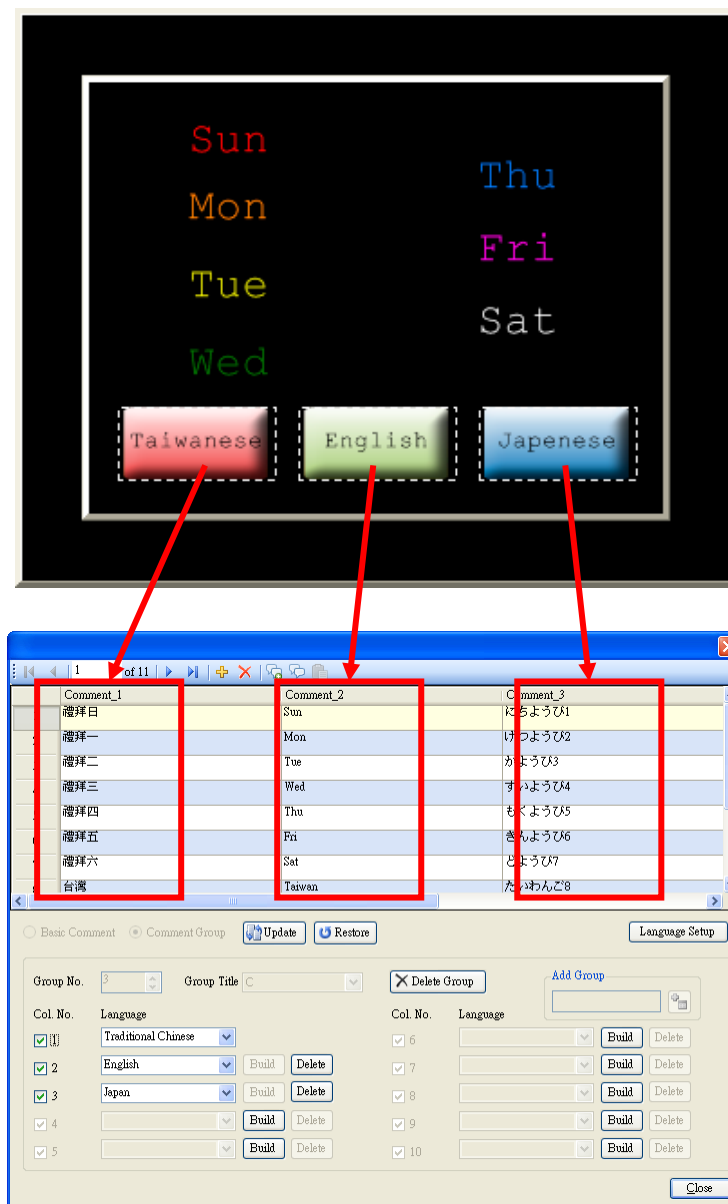


Fig. A-4-7 Language Switch

After the language setting is completed, use the switch to change among different languages. This example illustrates 3 languages. To display more languages, just add other new language words in the comment library. See Figure A-4-8 below.

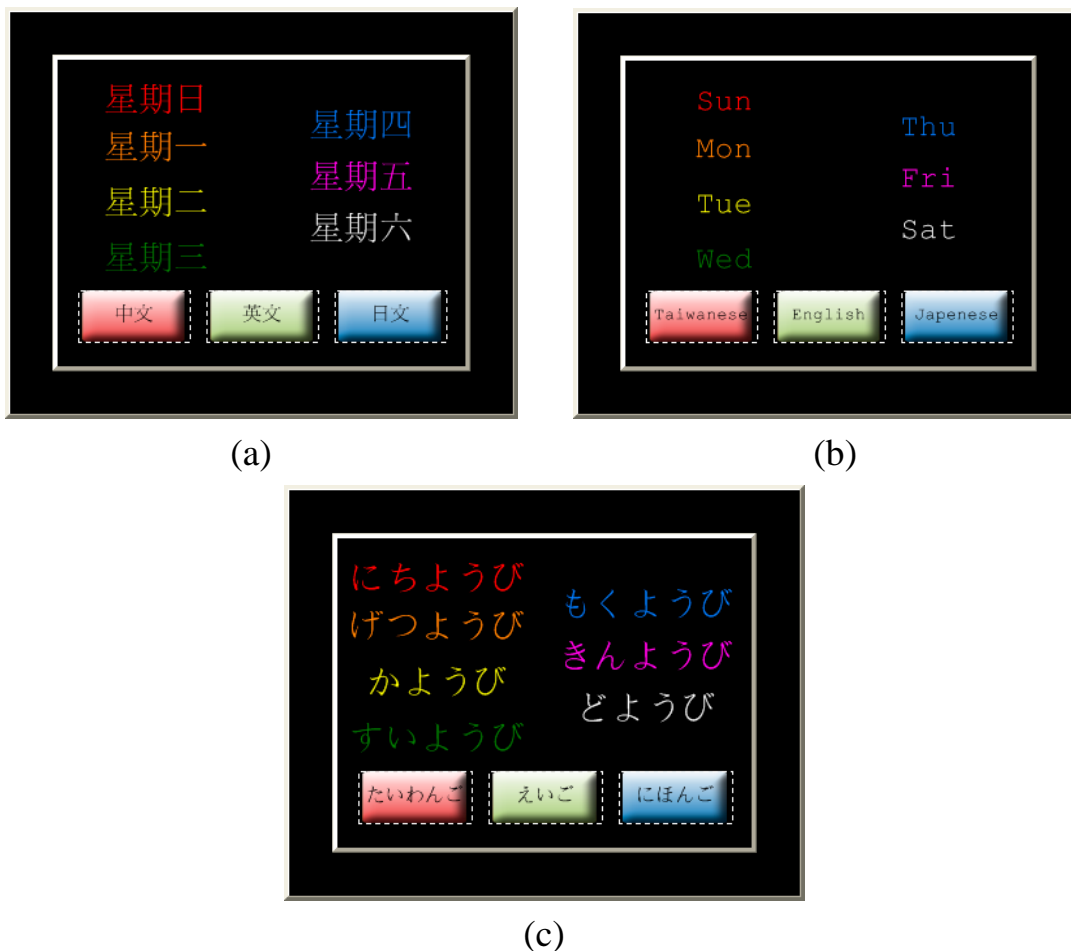


Fig. A-4-8 Multi-language Screen (a) Chinese (b) English (c) Japanese



- When the alarm is set to the comment window, the language in the comment window will be switched based on “Language Setting – All Pages”. If “Language Setting – Current Page” is selected, there will be no action of language switch. For the setting of the comment window, please see Figure A-4-9 below.

The screenshot shows the 'Action' tab of a configuration window. The 'Device' section has 'Type' set to 'Bit' and 'Signed 16bit'. The 'Device No.' is set to 'Continuous'. The 'Comment' section has 'Comment No.' set to 'Continuous'. The 'Detail Type' dropdown is open, showing options: 'Comment Window', 'Not Display', 'Comment Window', 'Base Screen', and 'Window Screen'. The 'Comment Window' option is selected. The 'Detail' section has 'Detail Number' set to 'Continuous'. The 'Touch Display' checkbox is unchecked. Below the settings is a table with columns: No., Device, Condition, Comment N..., Detail Number, Reset, and Reset Value. The first row shows '1' for No., 'ON' for Condition, '1' for Comment N..., '1' for Detail Number, '--' for Reset, and '0' for Reset Value.

No.	Device	Condition	Comment N...	Detail Number	Reset	Reset Value
1	ON		1	1	--	0

Fig. A-4-9 Comment Window Setting

A.5. Example – External Keypad

The edit software provides a default keypad and a user-defined external keypad. The default keypad is the system built-in keypad. To set up a user-defined keypad, use the external keypad to make the user-defined settings. See Figure A-5-1 below.

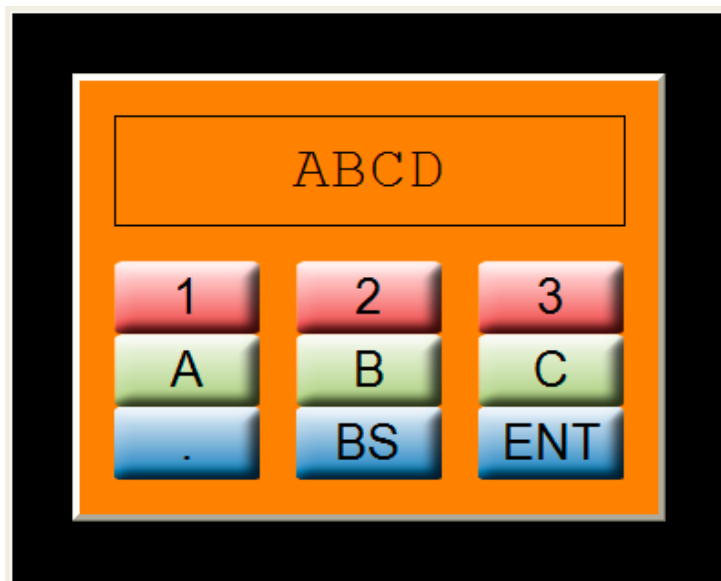


Fig. A-5-1 External Keypad

First, set up a keypad key code of “3”. To do this, click **Unit** and click **Keypad** and then click **Key Switch**, or directly click the shortcut **K**, and in the editing window left click the mouse to set up a keypad key code. Then, double left click the mouse to open the property setting of the keypad key code, and click **Function...** to open the dialogue box of function selection and enter the character “3”. See Figure A-5-2 below.

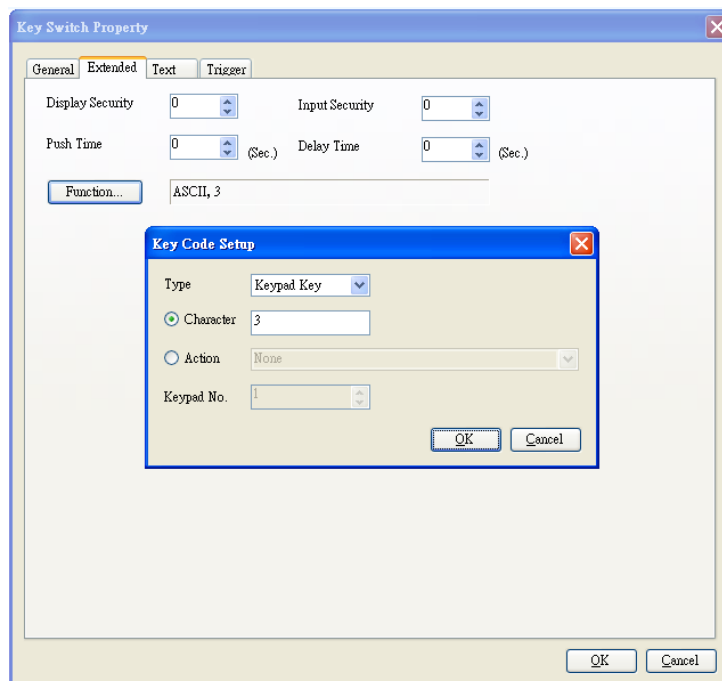


Fig. A-5-2 Keypad Key Code

Then, click ☒ Function Text to display the keypad function on the key switch. If the character entered was “3”, the keypad key code will also show the character “3”. When the display of (or) is set, remember to click (or) to copy the word to another state. Confirm to finish setting the keypad key code “3”. See Figure A-5-3 below.

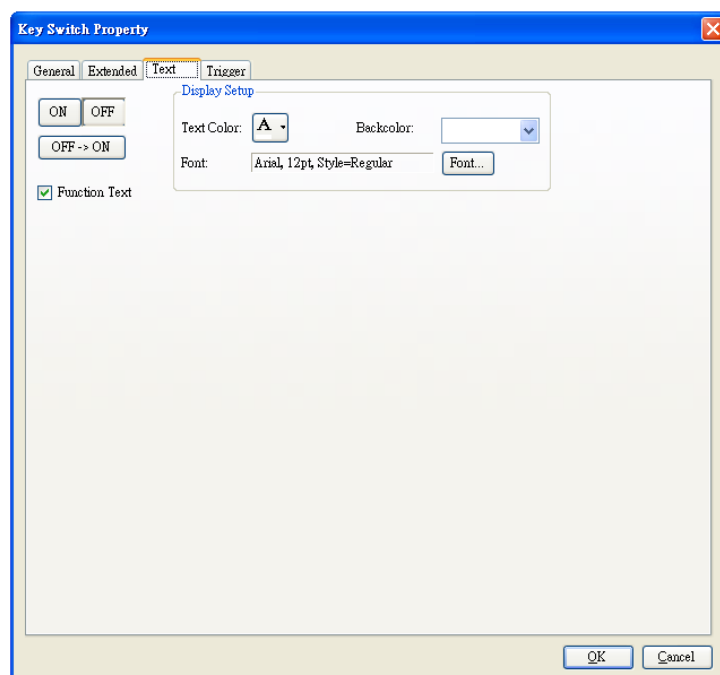


Fig. A-5-3 Functional Word

Now, set up the keypad key code “ENT”. To do this, click **Unit** and click **Keypad** and then click **Key Switch**, or directly click the shortcut **K**, and in the editing window left click the mouse to set up a keypad key code. Then, double left click the mouse to open the property setting of the keypad key code, and click **Function...** to open the dialogue box of function selection and use the pull-down menu to select “Input/Confirm (ENT)”. See Figure A-5-4 below.

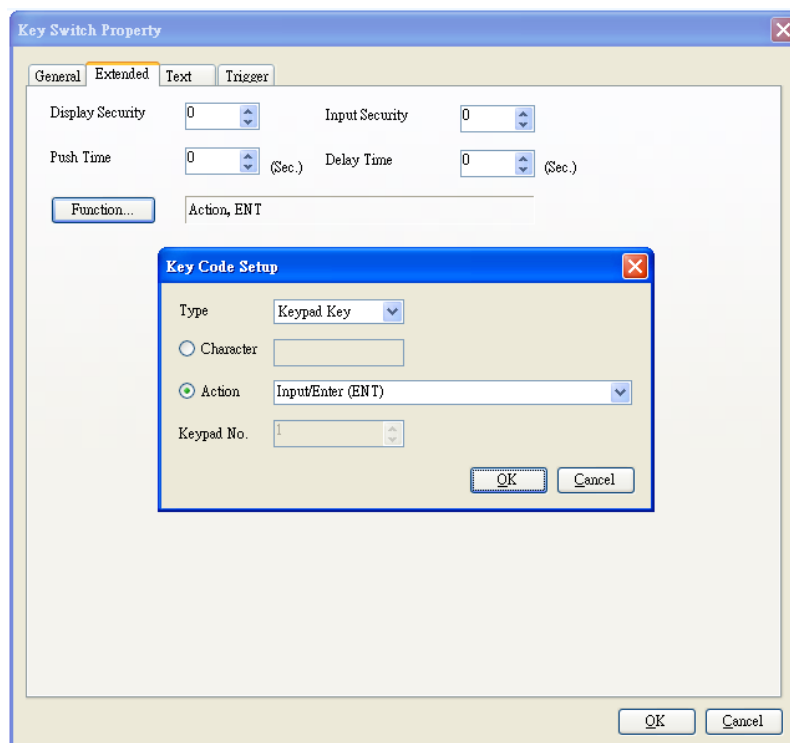


Fig. A-5-4 Keypad key code

Then, click ☒ Function Text to directly display the keypad function on the key switch. When “ENT” is selected, the word displayed on the keypad key code will be “ENT”. When the display of (or) is set, remember to click (or) to copy the word to another state. Confirm to finish the setup of the keypad key code “ENT”. See Figure A-5-5 below.



Fig. A-5-5 Functional Word

Setup of other keypad key codes is the same as the above steps. Repeat the steps to finish 9 keypad key codes on the screen.

After the 9 keypad key codes are established, there still needs to set up a character input to display the input value from the external keypad. Click **Unit** and click **Data Input** and then click **Character Input Box**, or directly click the shortcut **ABC**, and in the editing window left click the mouse to establish the input box, and then double left click the mouse to open the dialogue box of the character input. Set the device to HD0 and select the external keypad. See Figure A-5-6 below.

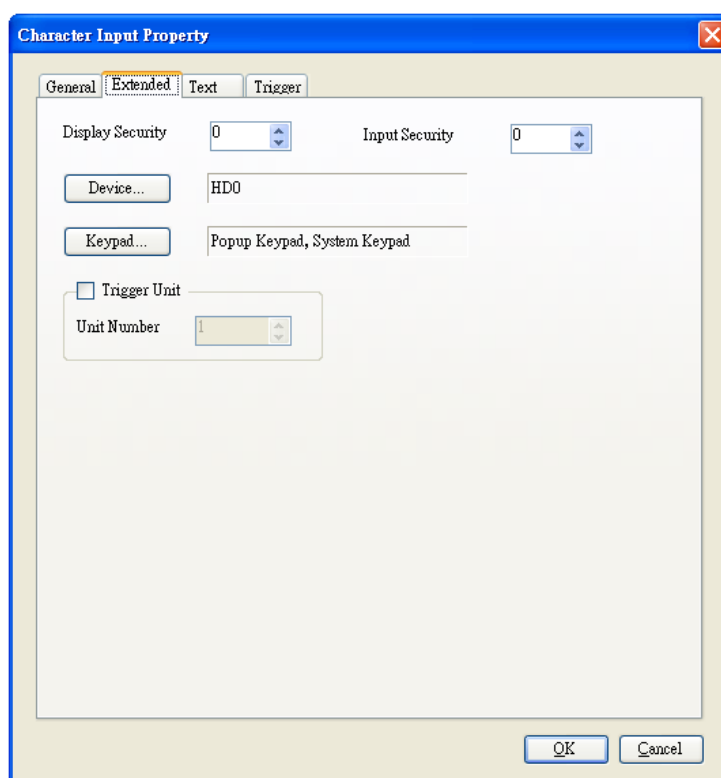


Fig. A-5-6 External Keypad

The user can adjust the look of the character input box and the size of the character.

Execute the above steps to finish the external keypad screen and send it to HMI. This process is click the character input box once first, and then click the keypad key on the screen, the character represented by the key will then be displayed in the character input box. See Figure A-5-7 below.

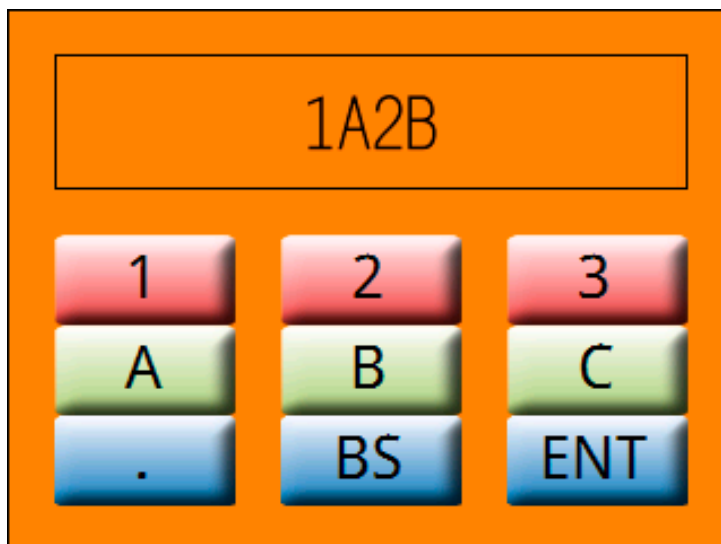


Fig. A-5-7 External Keypad

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