

2. Instructions

2. Instructions

Microsoft Windows™ is undoubtedly the main PC operating environment nowadays. ADP is also designed to make full use of the Windows environment and adopts the concept of “What You See is What You Get.” Users can immediately see their designed objects on a PC screen with their specified attributes such as font size, color, location of objects, picture, scale, frame, and so on. What a user sees on a PC screen will be the same as those displayed on a Workstation. Furthermore, ADP utilizes the principles of **object-oriented** design to implement the **drag-and-drop editing**. Users can conveniently drag objects into another location or change shapes and sizes with a mouse as they wish.

2.1. Introduction

Figure 6 illustrates the major bars and tool boxes in the ADP program environment.

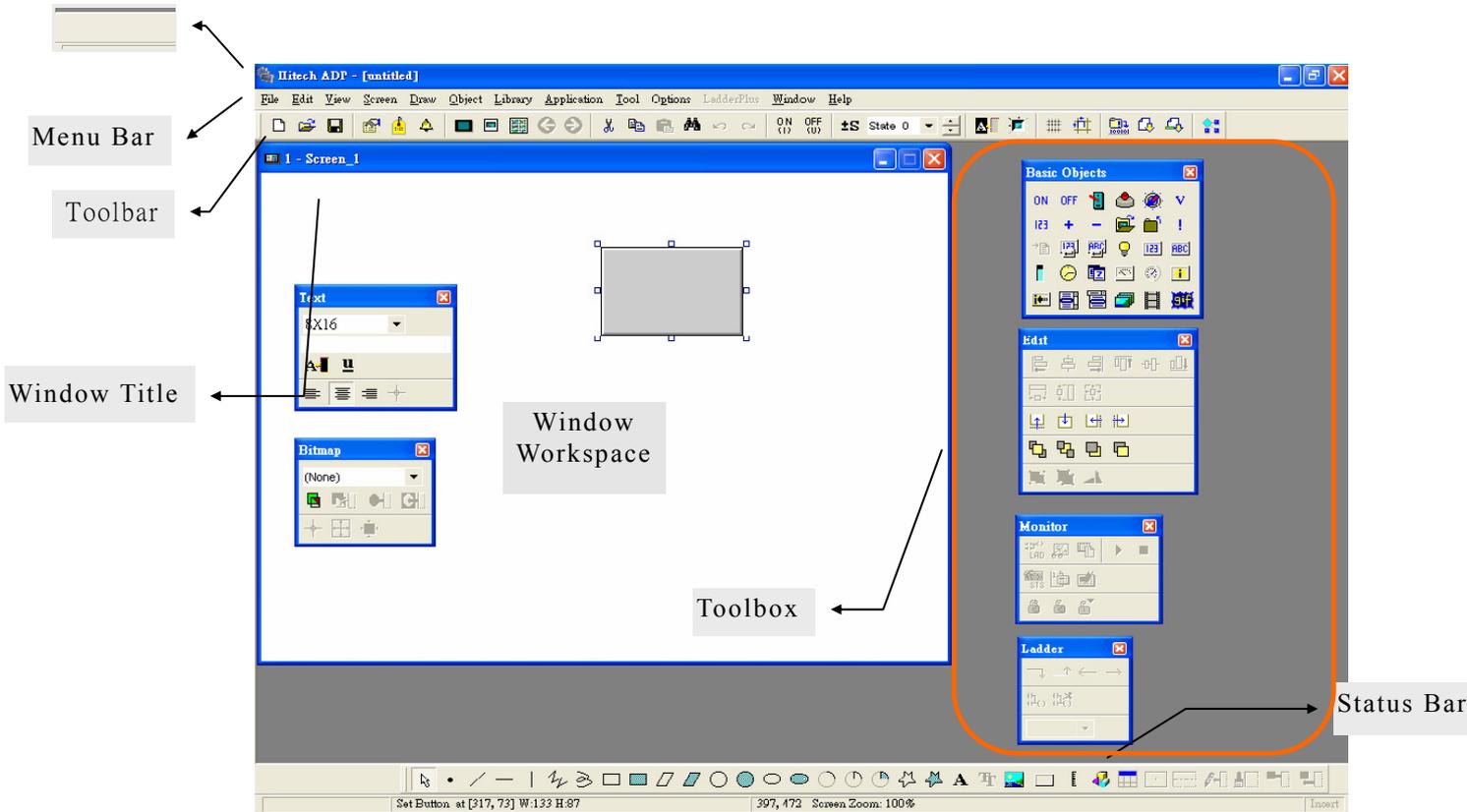


Figure 6. ADP Program Environment Overview

Title Bar:

The Title Bar shows the windows name and the directory of the current application. Example: C:\MyAPP\V6.0 \TEST1.V6F.

If an application file has not been saved, “untitled” will be displayed in the Title Bar.

Menu Bar:

There are 13 menus in the Menu Bar; they are [File], [Edit], [View], [Screen], [Draw], [Object], [Library], [Application], [Tool], [Options], [LadderPlus], [Window] and [Help].

Tool Bar:

Users can create an ADP program simply by clicking the icons on the Tool Bar. This feature also helps new users to learn the software quickly and easily.

Window Workspace

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This is the area to design a Screen. The objects or data created in this area will actually be displayed on an HMI.

In the following sections, we will talk about the function, application, and usage for each of the commands and menus in much more details.

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2.2. File Menu

The main purpose of the [File] menu is to manage the files designed by ADP.

2.2.1. [New]

This command allows users to create a new application and specify its properties such as [Application Name], [Panel/Workstation], [Controller/PLC], [Printer], [Multi-lingual Support], [Control Block], [Status Block] and so on.

To create a new application, select [File]/[New]. The [New Application's Properties] dialog box should be appeared on the screen. See Figure 7.

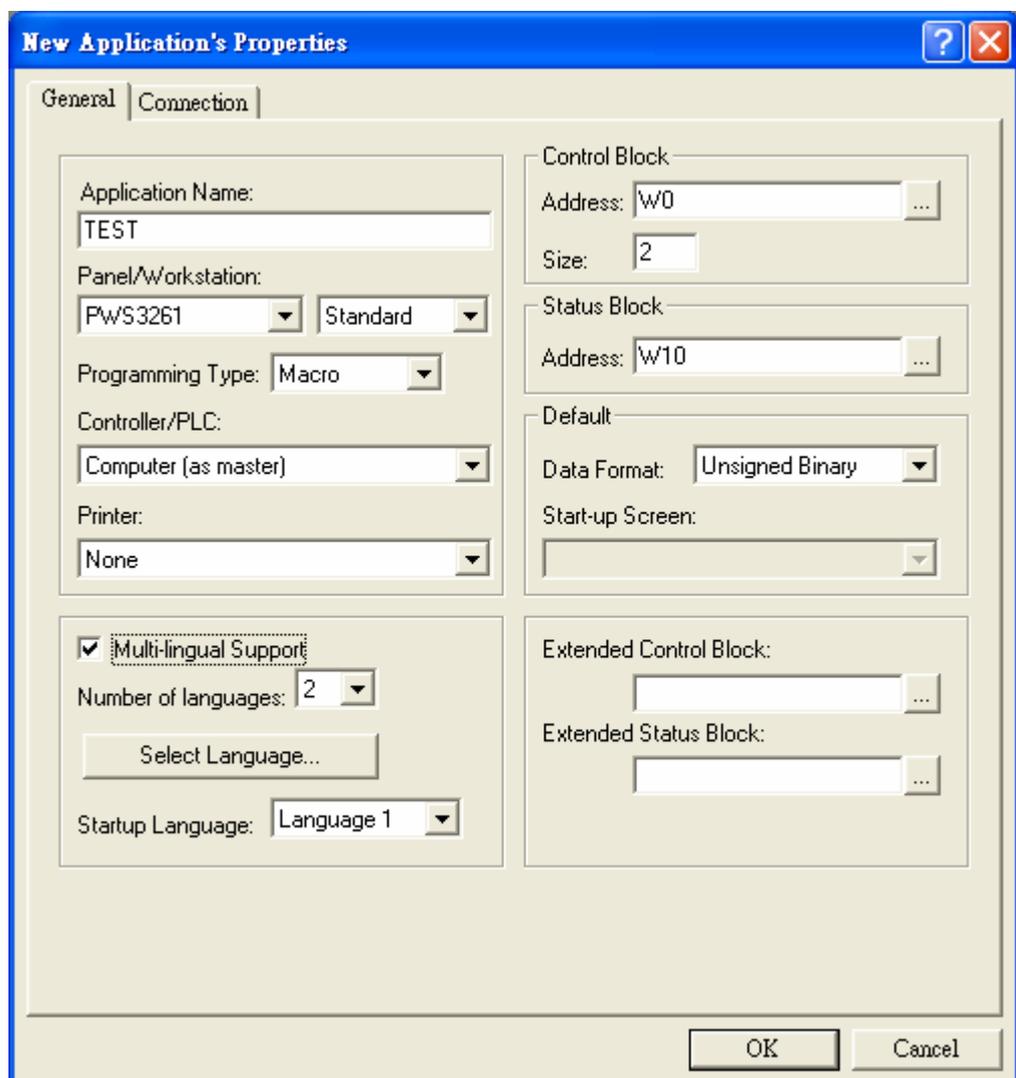


Figure 7. The [New Application's Properties] Dialog Box

The followings are the basic properties a user needs to set up for a new application:

- In the [Application Name] box, enter the name of an application.
- In the [Panel/Workstation] list, select the model of a Workstation.
- In the [Controller/PLC] list, select the type of PLC which a Workstation will communicate with.

Please refer to [Section 2.9 \[Application\]](#) and [Section 2.9.1.2 \[Connection\]](#) for more details.

2.2.2. [Open] and [Close]

[Open] allows users to open an existing application. The compatible format of a file includes *.V6F, *.V4F and *.V3F. See Figure 8.

[Close] allows users to close an application.

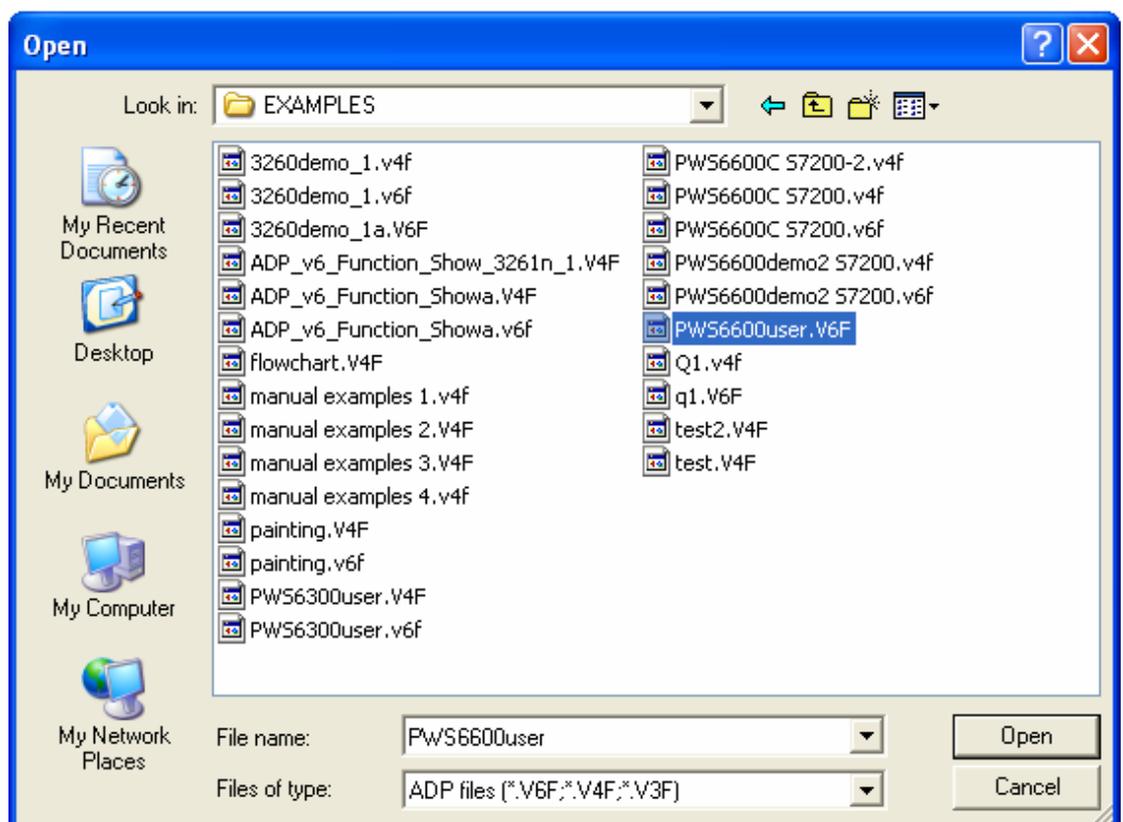


Figure 8. The [Open] dialog box

ADP 6.0 can open an *.V3F file designed by ADP 3.x. To open an *.P3F file designed by ADP 2.x, one needs to open the file in ADP 3.x first and save it as an *.V3F file. Then open the file in ADP 6.0.

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2.2.3. [Save] and [Save as]

[Save]: Saves an existing application to replace the previous copy with the new copy.

[Save As]: Saves a new or existing application with a new name. See Figure 9.

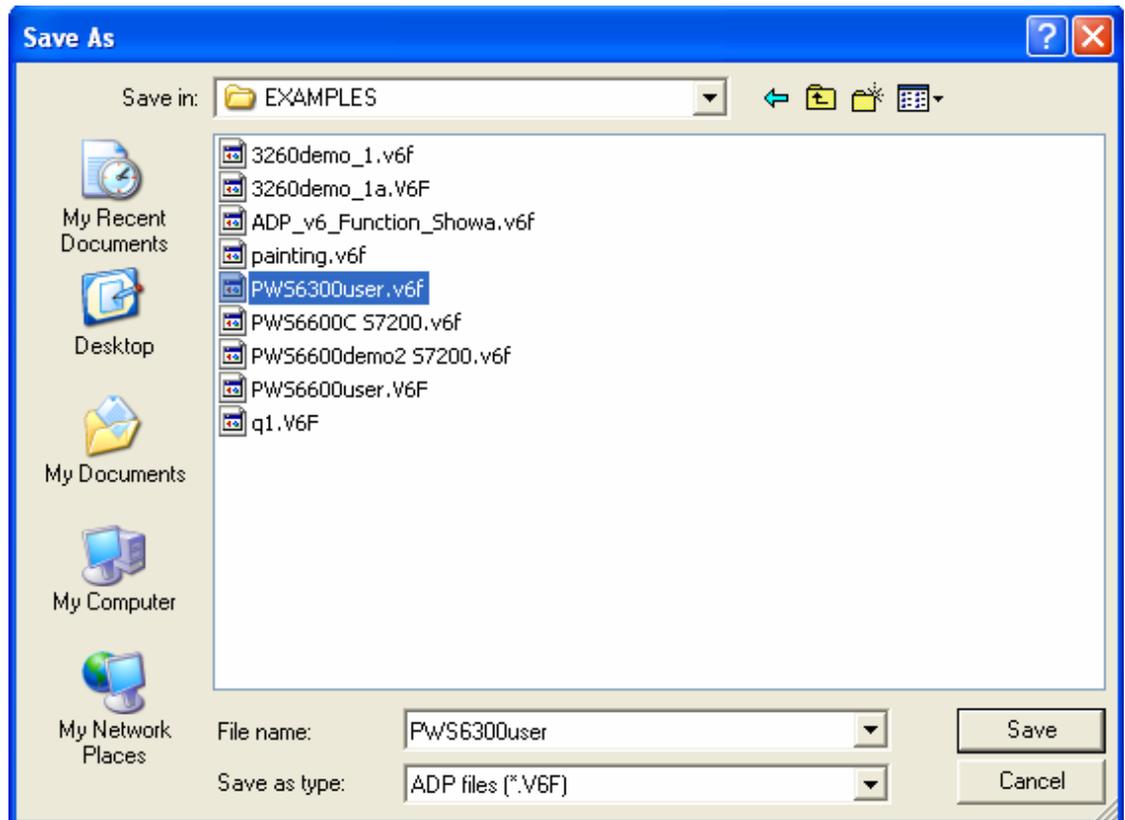


Figure 9. The [Save as] Dialog Box

2.2.4. [Print]

An application file can be printed for the purposes of planning, management or storage.

Select [File]/[Print] and the [Print Options] dialog box should be appeared on the screen. See Figure 10. There are three options available: “Workstation Setup”, “Screen Overview” and “Screen Image.”

The function is not applicable on every HMI model; please refer to [Appendix A. - Table of the ADP 6.0 Features and the HMI Models](#) for the complete details.

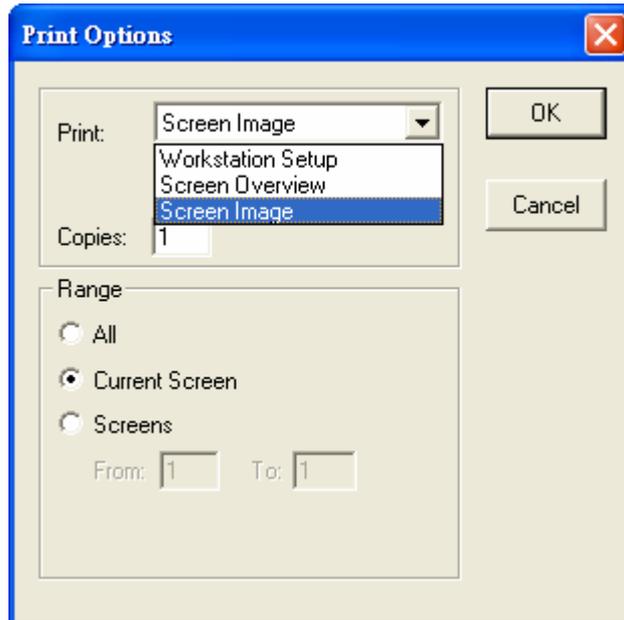


Figure 10. The [Print Option] Dialog Box

The [Print] options:

- “Workstation Setup”: Prints the data of Workstation such as the PLC type, configuration setup and the details of logging buffer. See Figure 11.
- “Screen Overview”: Prints the image of a screen with the PLC location of each object. See Figure 12.
- “Screen Image”: Prints the image of a screen without the PLC locations. See Figure 13.

Other options :

- [Copies]: Specify the number of copies to print.
- [Range]: Only available for the “Screen Overview” and “Screen Image” options.

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Application name: Myapp001 page 1 12/22/1998 17:31

Workstation Type : PWS3160/3260
 PLC Type : Modicon 984 (RTU)
 Printer Type : EPSON Stylus Color II
 Default Startup Screen : 1
 Default Data Format : BCD
 Control Block Address : 40100 Size : 2
 Status Block Address : 40200
 Logging Buffers

| # | Source Address | Record Size | Total | Stamp Time | Auto Date | Triggered | Time Stop By | Interval |
|----|----------------|-------------|-------|------------|-----------|-----------|--------------|----------|
| 1 | 40500 | 4 | 3000 | Yes | No No | Timer | | 5 |
| 2 | | 0 | 0 | No | No No | PLC | | 0 |
| 3 | | 0 | 0 | No | No No | PLC | | 0 |
| 4 | | 0 | 0 | No | No No | PLC | | 0 |
| 5 | | 0 | 0 | No | No No | PLC | | 0 |
| 6 | | 0 | 0 | No | No No | PLC | | 0 |
| 7 | | 0 | 0 | No | No No | PLC | | 0 |
| 8 | | 0 | 0 | No | No No | PLC | | 0 |
| 9 | | 0 | 0 | No | No No | PLC | | 0 |
| 10 | | 0 | 0 | No | No No | PLC | | 0 |
| 11 | | 0 | 0 | No | No No | PLC | | 0 |
| 12 | | 0 | 0 | No | No No | PLC | | 0 |

Figure 11. An Example of the “Workstation Setup” Print Option

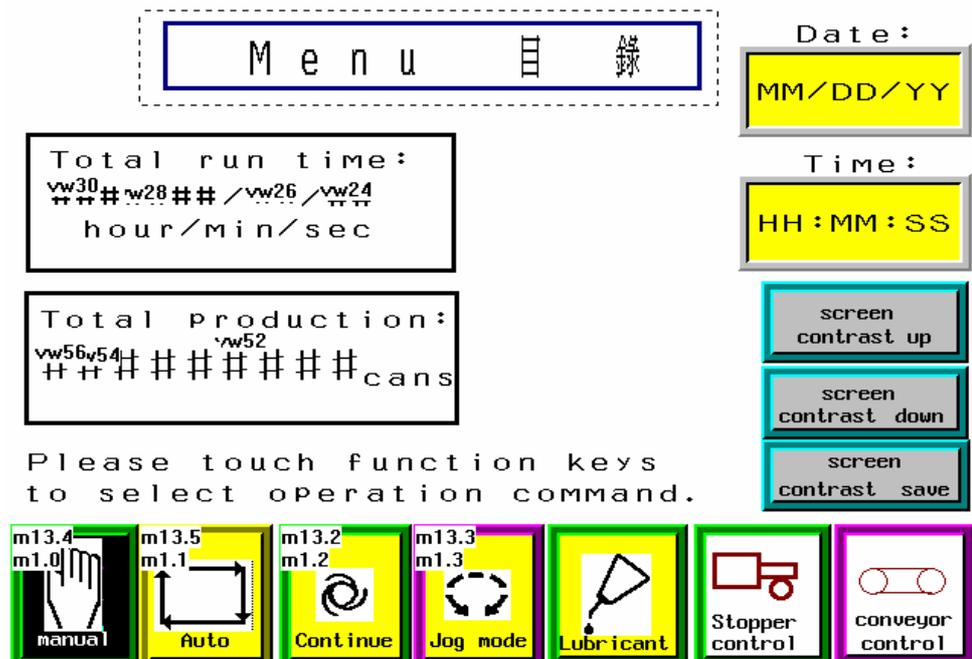


Figure 12. An Example of the “Screen Overview” Print Option

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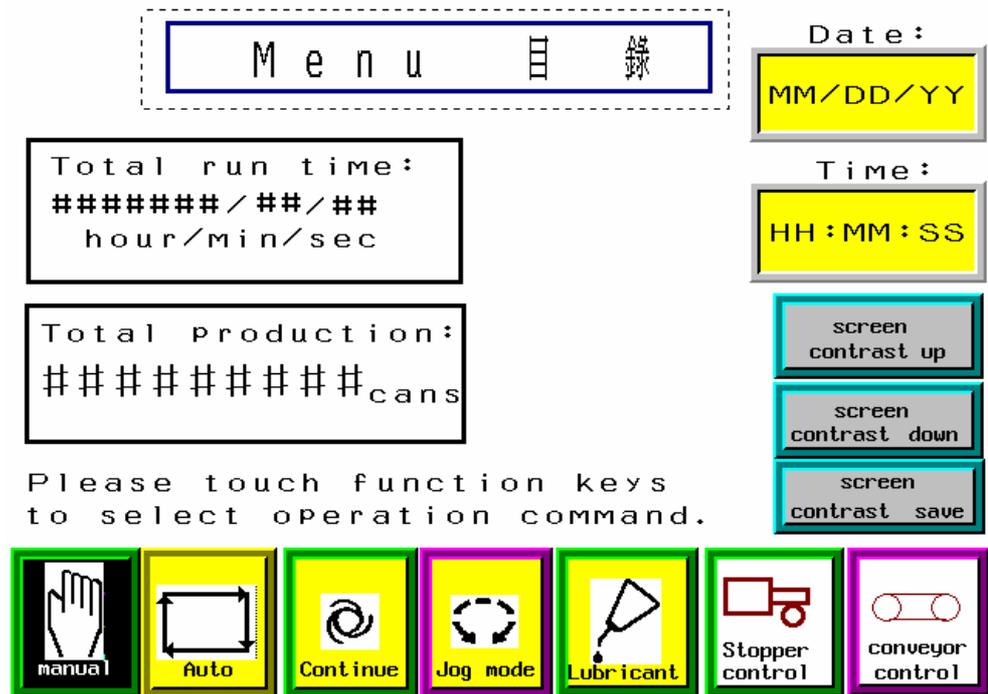


Figure 13. An Example of the “Screen Image” Print Option

2.2.5. [Upload Application] and [Download Application From]

[Upload Application] is to upload an application from a Workstation to a PC and the file will be saved as *.AF6. See Figure 14.

[Download Application From] is to download a program from a PC to a Workstation and the format of the file is *.AF6.

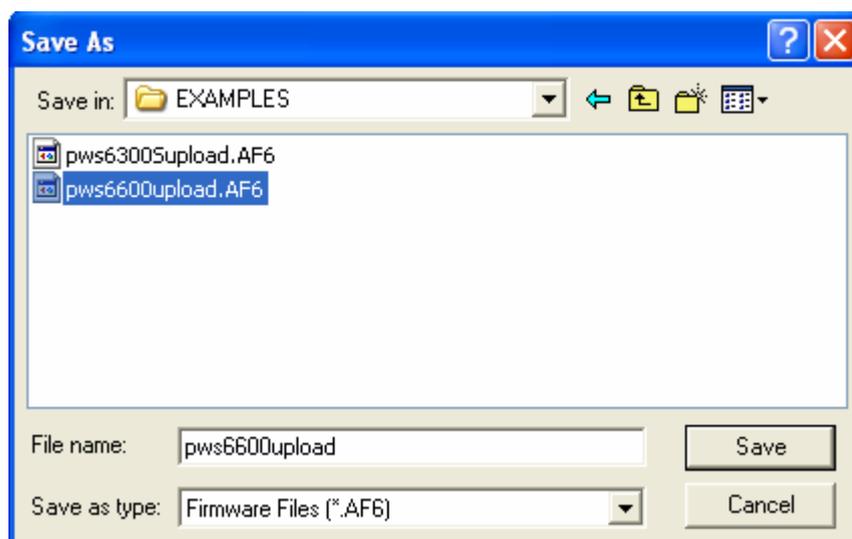


Figure 14. The [Upload Application] Dialog Box

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2.2.6. [Upload Recipes] and [Download Recipes]

[Upload Recipes] is to upload recipes from the Workstation to a PC and the file will be saved as *.RCP. See Figure 15.

[Download Recipes] is to download recipes from a PC to a Workstation and the format of the file is *.RCP.

These functions are not applicable on every HMI model; please refer to [Appendix A. - Table of the ADP 6.0 Features and the HMI Models](#) for the complete details.

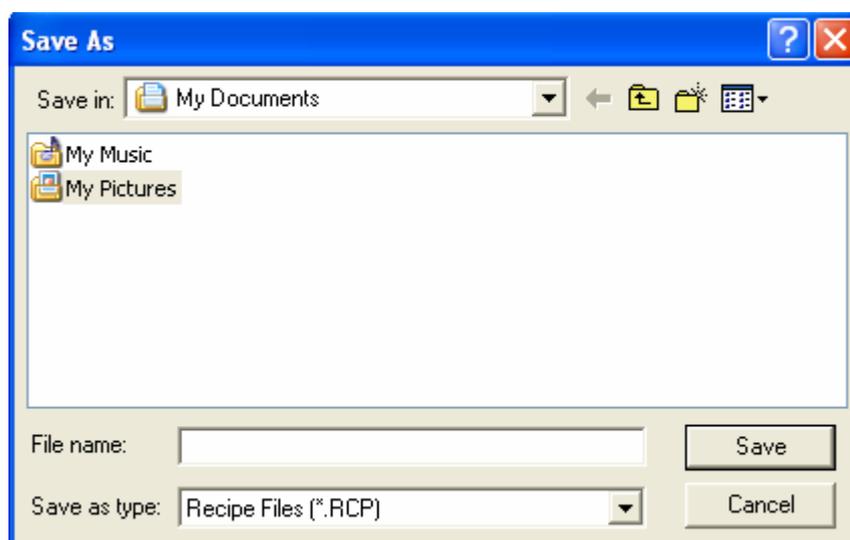


Figure 15. The [Upload Recipes] Dialog Box

2.2.7. [Reconstruct Source]

This function allows users to directly reconstruct a source file of an application via uploading the application file from an HMI to a PC.

[Reconstruct Source] is to reconstruct an uploaded application file from *.AA6 to *.V6F. The application will be displayed on a PC and the source file (*.V6F) can be saved for the purposes of future editing and application.

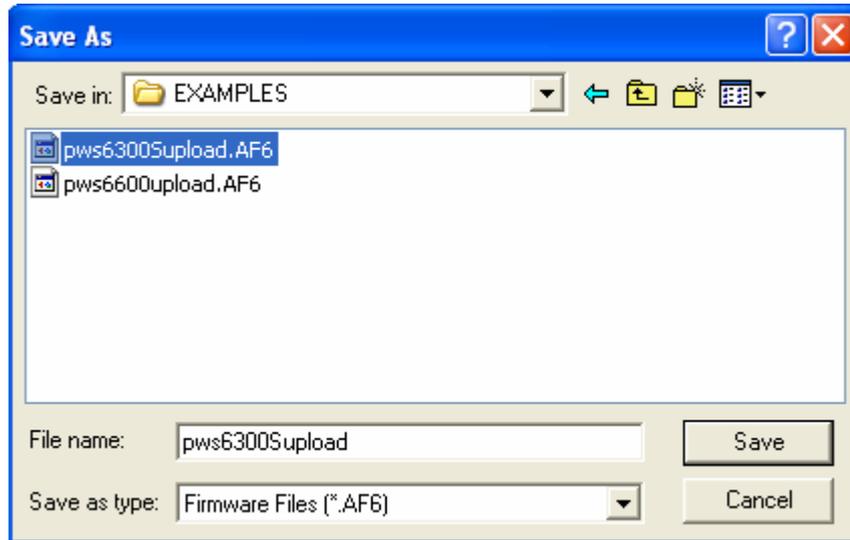
In ADP 6.0 or later, an application downloaded to an HMI is “rebuildable”; [Reconstruct Source] enables a user to directly reconstruct a source file of an uploaded application on an HMI from *.AA6 to *.V6F.

The function is not applicable on every HMI model; please refer to [Appendix A. - Table of the ADP 6.0 Features and the HMI Models](#) for the complete details.

Steps to reconstruct a source file from *.AA6 to *V6F:

(Suppose that an application has been uploaded on the HMI.)

1. On the HMI, select [Upload Application]. In ADP, select [File]/[Upload Application]. The HMI will upload the application to the PC and the file is saved as *.AF6. See below.



2. Next, select [File]/[Reconstruct Source] and open the application file (*.C64 or *.AA6). Thus the application should be appeared on the PC and a user can save the source file as *.V6F for future use. See Figure 16.

2. Instructions

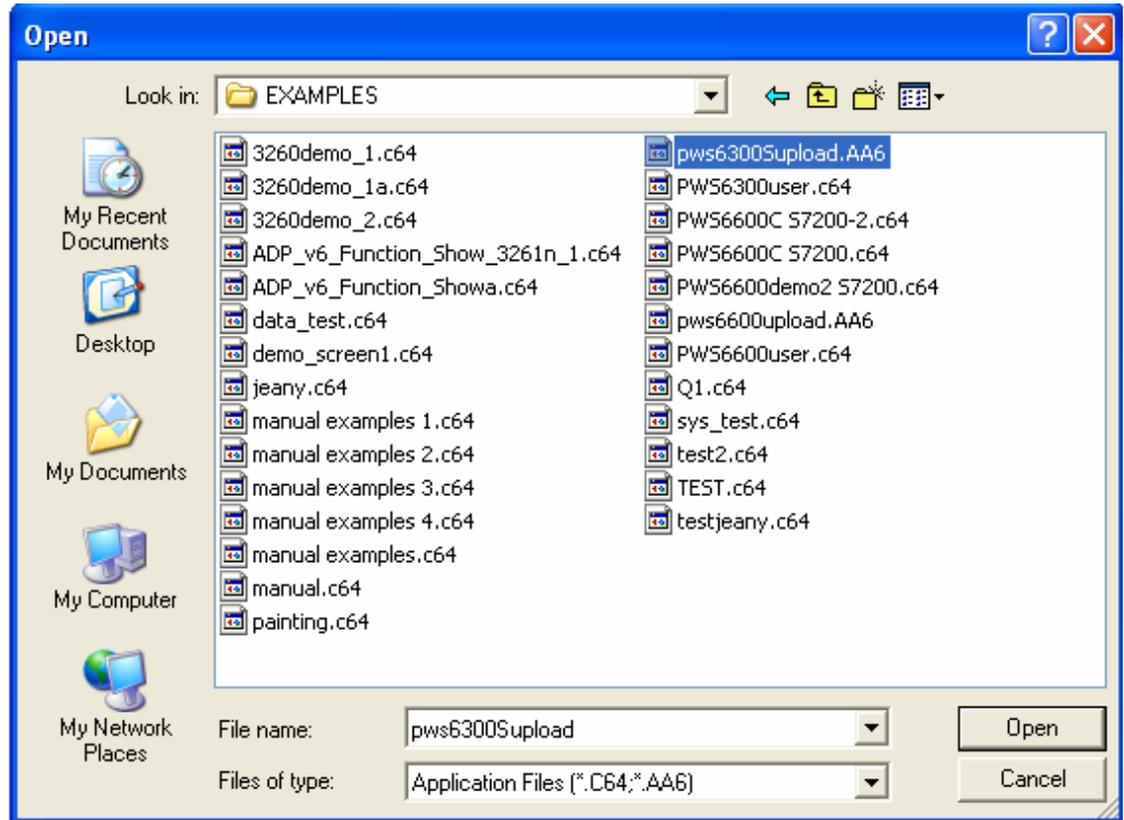


Figure 16. The [Reconstruct Source] Dialog Box

2.2.8. [Exit]

[Exit] is to close and leave ADP.

If any changes have been made, the following dialog box will appear on the screen to ask a user to save the changes or leave. See Figure 17.

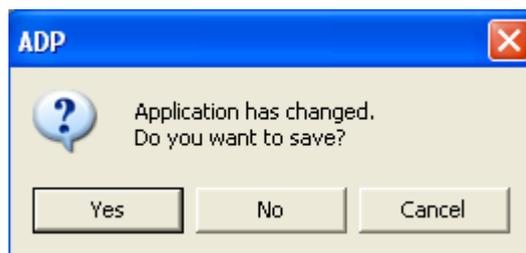


Figure 17. The [Exit] Dialog Box

2.3. Edit

The main purposes of the [Edit] menu include the common editing functions of ADP screen and objects. If a user does not open any image, all of light-colored items in the [Edit] are unavailable.

User can click the icons on the tool bar to speed edit or operate the elements on the list quickly by right-click the mouse.

The following sections will explain the functions more specific to the ADP software.

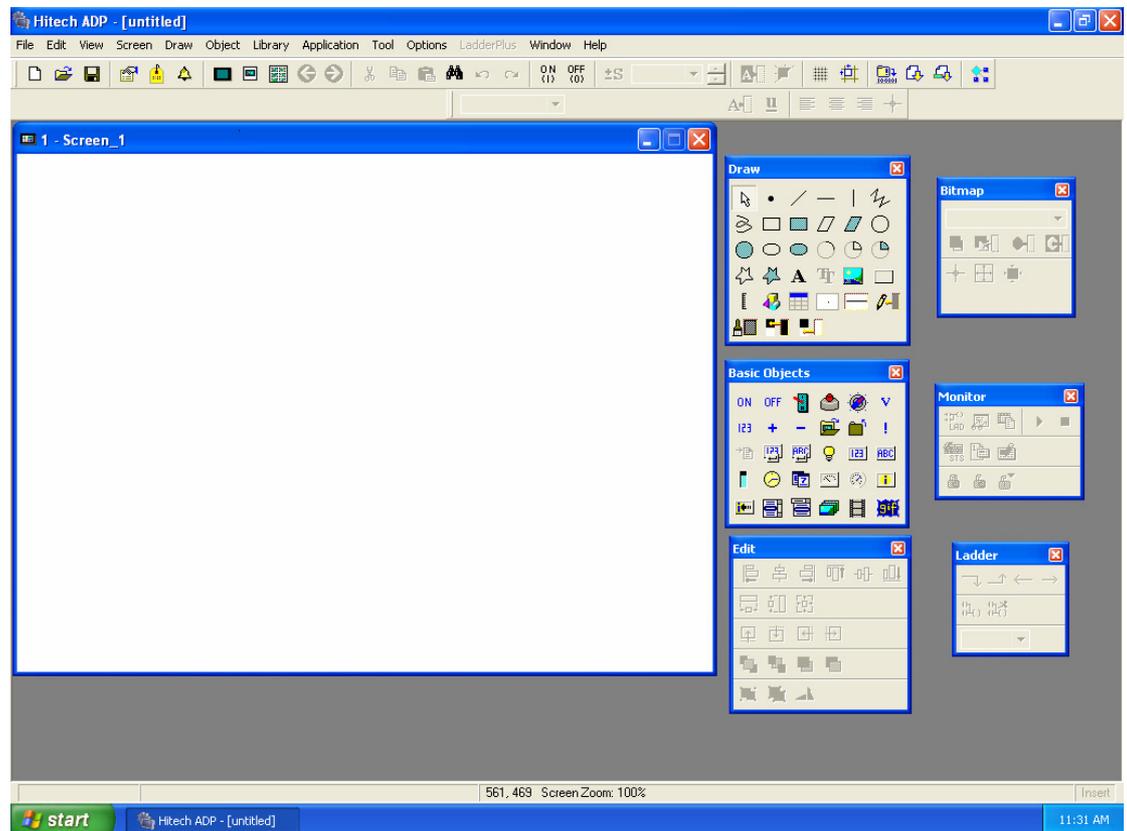


Figure 18. [Edit] Menu

2.3.1. [Duplicate]

Allows a user to make multiple copies of an object and simultaneously increment the corresponding addresses. See Figure 19.

2. Instructions

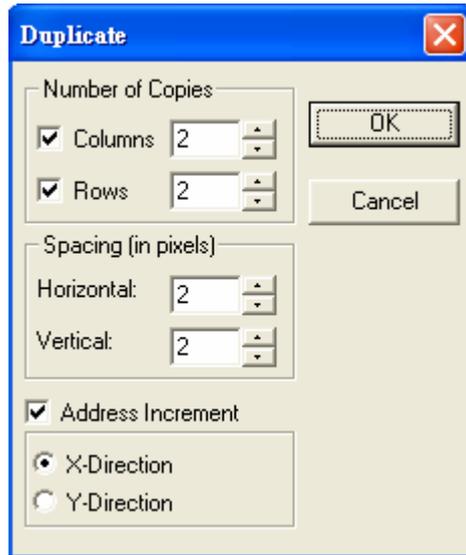


Figure 19. The [Duplicate] Dialog Box

- [Number of Copies]
- [Columns] : Specify number of columns to duplicate.
- [Rows] : Specify number of rows to duplicate.
- [Spacing]
- [Horizontal] : Specify how many pixels to space duplicate objects horizontally.
- [Vertical] : Specify how many pixels to space duplicate objects vertically.
- [Address Increment]
- [X-Direction] : The address of the same dynamic objects increase from left to right.
- [Y-Direction] : The address of the same dynamic objects increase from up to down.

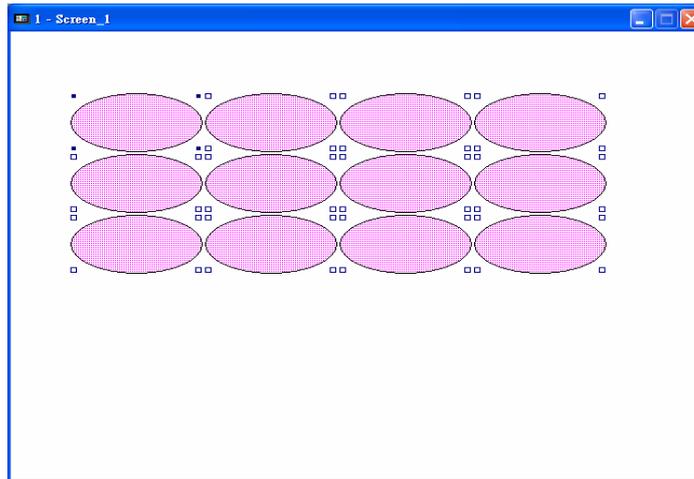


Figure 20. [Duplicate]

2.3.2. [Find/Replace Address] 

The main function is to find or edit the address in designed program; and replace the found address. While select [Edit]/[Find/Replace Address], the dialog box will display on the screen as Figure 21.

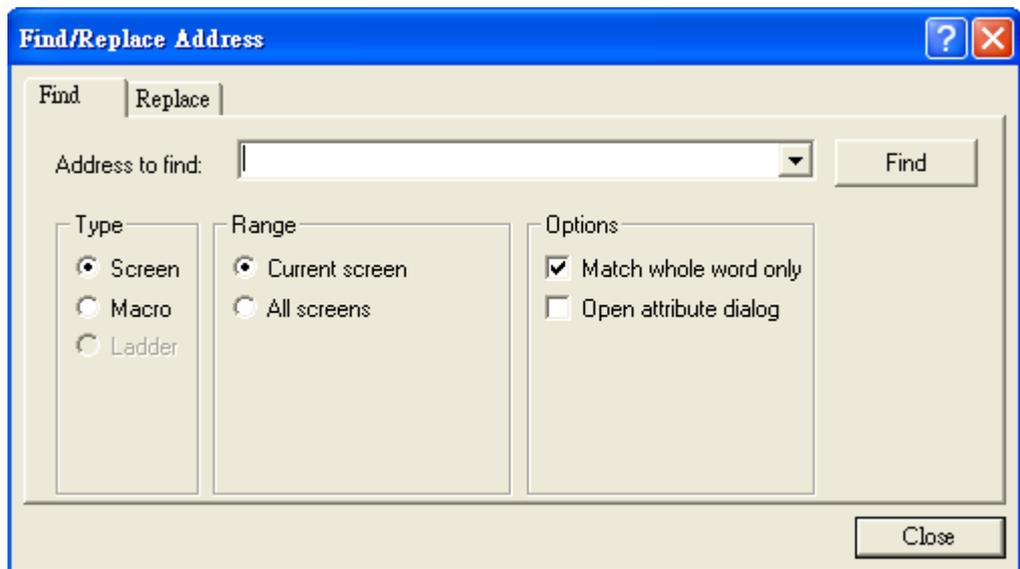


Figure 21. The [Find/Replace Address] Dialog Box

Enter the address in the blank space or select from drop-down list directly (Ex : D100); then press the [Find] button for search. The [Result] index tab displays a detailed list in accordance with the designated range and address. See Figure 22.

2. Instructions

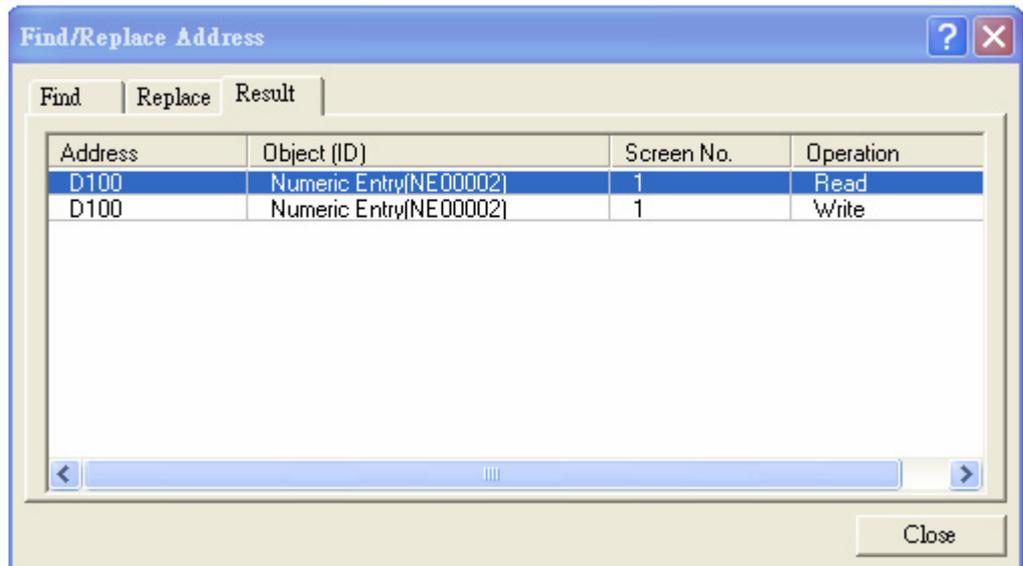


Figure 22. [Result] Index Tab

Select [Replace] button to replace the address to a new one. The function of [Replace] button is to replace the objects address one by one; select [Replace All] to replace all of the objects address at a time. See Figure 23.

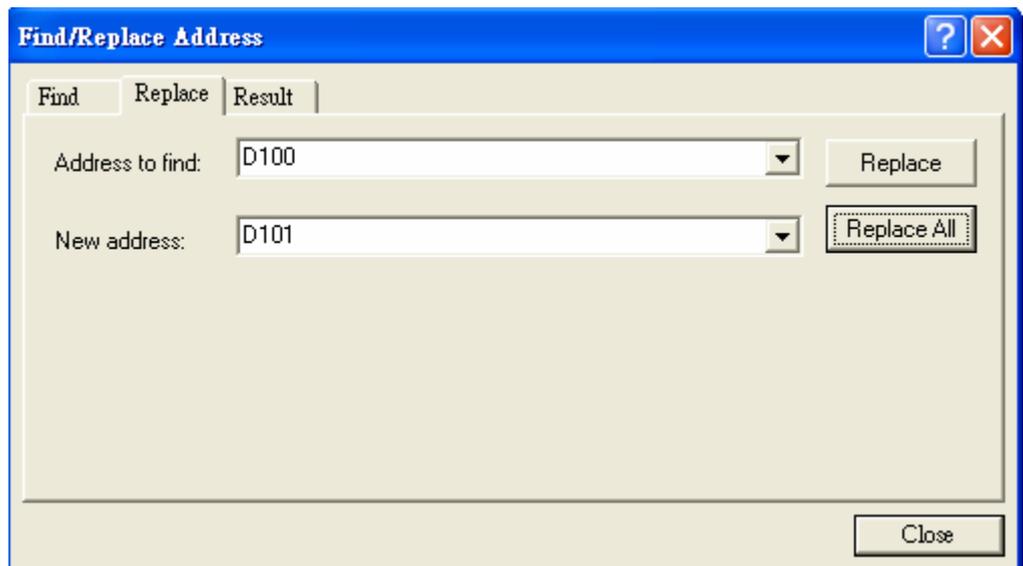


Figure 23. [Replace] Index Tab

I. Find Screen Address

Select [Type]/[Screen] to find the screen address. See Figure 24.

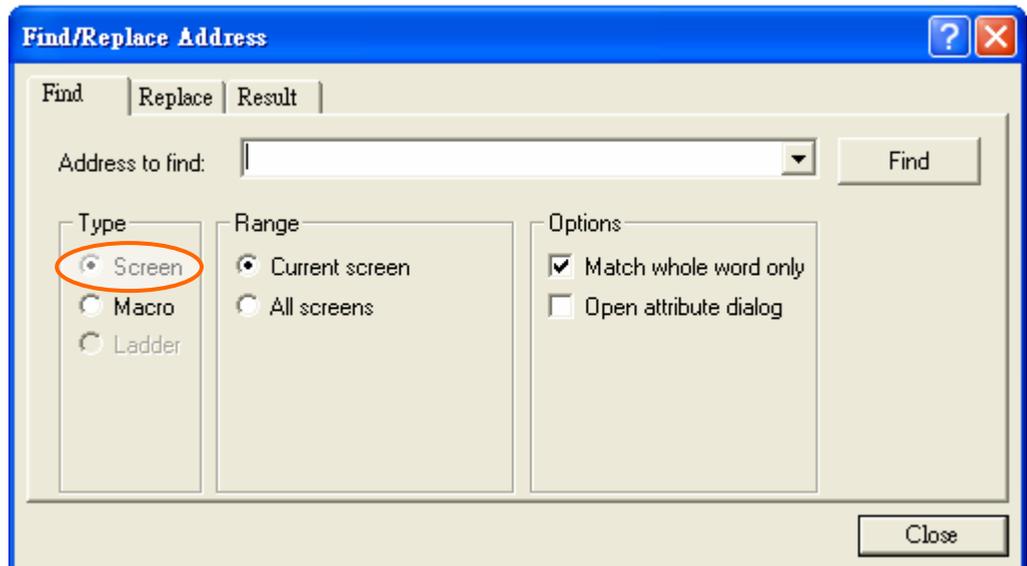


Figure 24. Find [Screen] Address

- [Range] :
 - ◆ [Current screen] : Only find the current open screen.
 - ◆ [All screen] : Finds the entire screens in application program.
- [Option] :
 - ◆ [Match whole word only] : The findings match the entry address entirely. If this option is not selected, the initial findings match the entry address including the partial and entire match.
 - ◆ [Open attribute dialog] : To display the attribute of object by double-clicks on the list of [Result] index tab. If this option is not selected, the attribute of the object dialog box is unavailable.

II. Find Macro Address

Select [Type]/[Macro] to find the macro address. See Figure 25.

2. Instructions

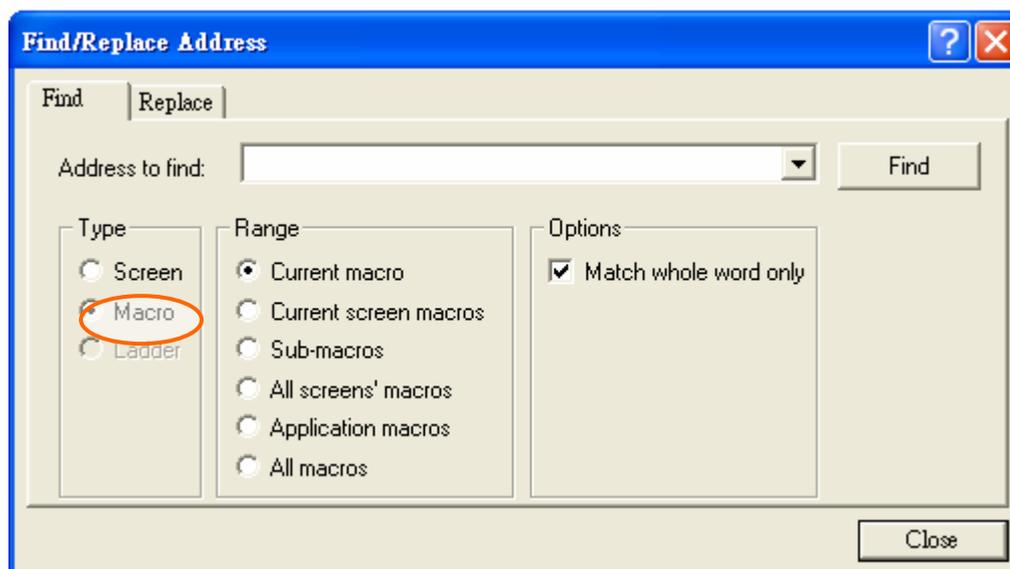


Figure 25. Find [Macro] Address

- [Range] :
 - ◆ [Current macro] : Finds current macro.
 - ◆ [Current screen macros] : Finds the current image/screen macros.
 - ◆ [Sub-macros] : Finds entire sub-macros.
 - ◆ [All screens' macros] : Finds entire image/screen macros.
 - ◆ [Application macros] : Finds three types of macros in [Application] menu.
 - ◆ [All macros] : Finds entire macros.
- [Option] :
 - ◆ [Match whole word only] : The findings match the entry address entirely. If this option is not selected, the initial findings match the entry address including the partial and entire match.

2.3.3. [Decompose Shape]

This function is mainly to decompose the graph created by [Shape] in the [Draw] command and each decomposed graph can be modified and edited. See Figure 26 and Figure 27.

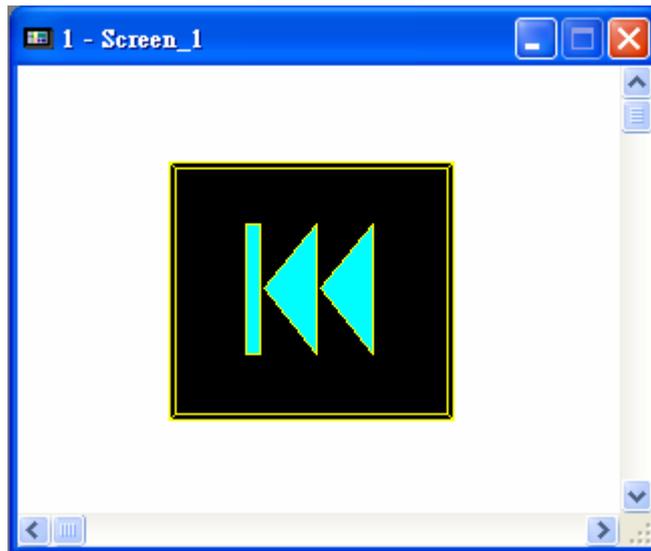


Figure 26. Select Graph in [Draw]/[Shape] for Edit

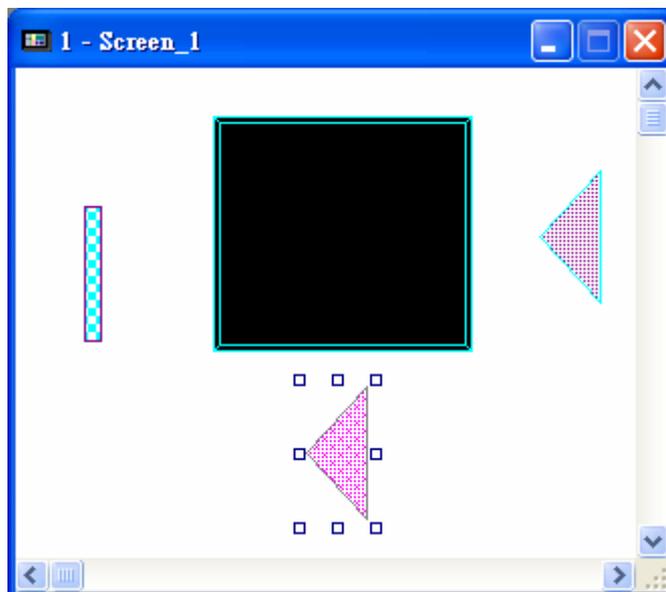


Figure 27. Select [Edit]/[Decompose] to Modify Each Decomposed Object

2.3.4. [Align] and [Make Same Size]

These two functions are mainly to align or make same size the designed objects. (Ex: Indicator, Moving Sign, Message Display, Lines, and so on) The followings are the steps for using these two commands :

1. Press [Shift] and left-click on all objects which be aligned or made same size. See Figure 28.

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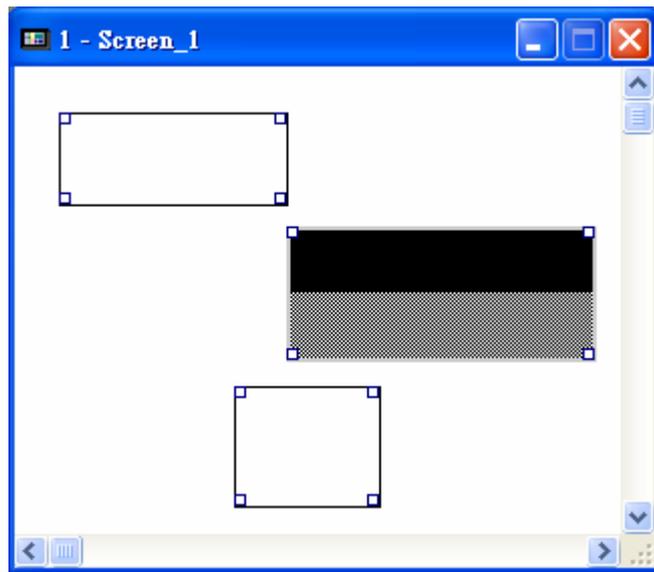


Figure 28. Step 1

2. Left-click on the master object, then four corners of this master object should be shaded. See Figure 29.

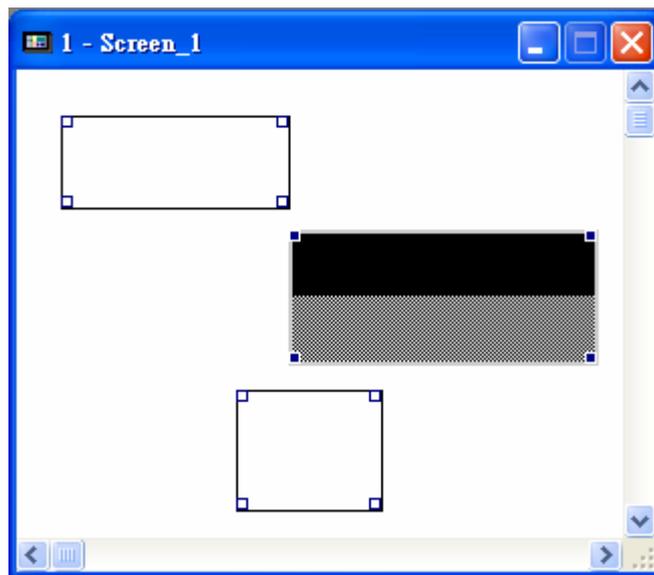


Figure 29. Step 2

3. Select the command in [Align] or [Make Same Size] to make the other objects align or make same size with the 'master' object. See Figure 30.

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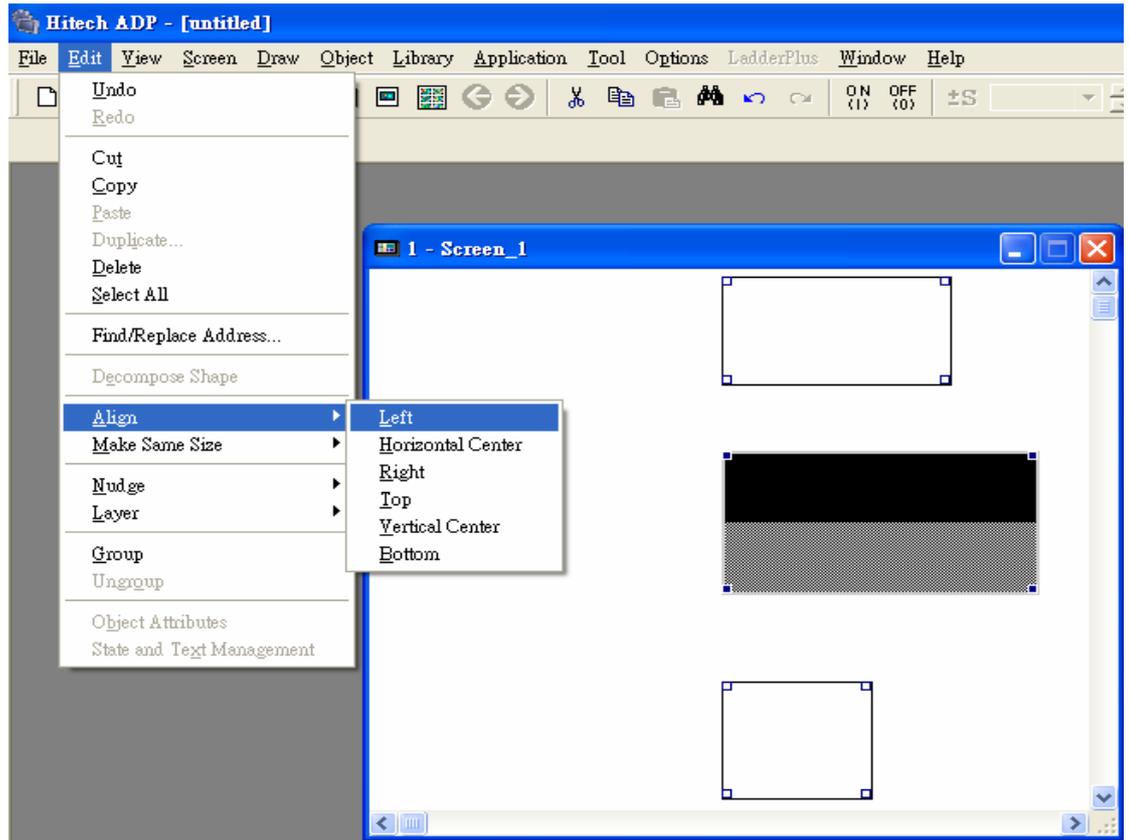


Figure 30. Step 3

2.3.5. [Nudge] and [Layer]

[Nudge]: Choose the objects for slight shift and adjustment toward appointed direction.

[Align]: If there are more than two objects, users can move the objects up-down layer. See Figure 31; Figure 32.

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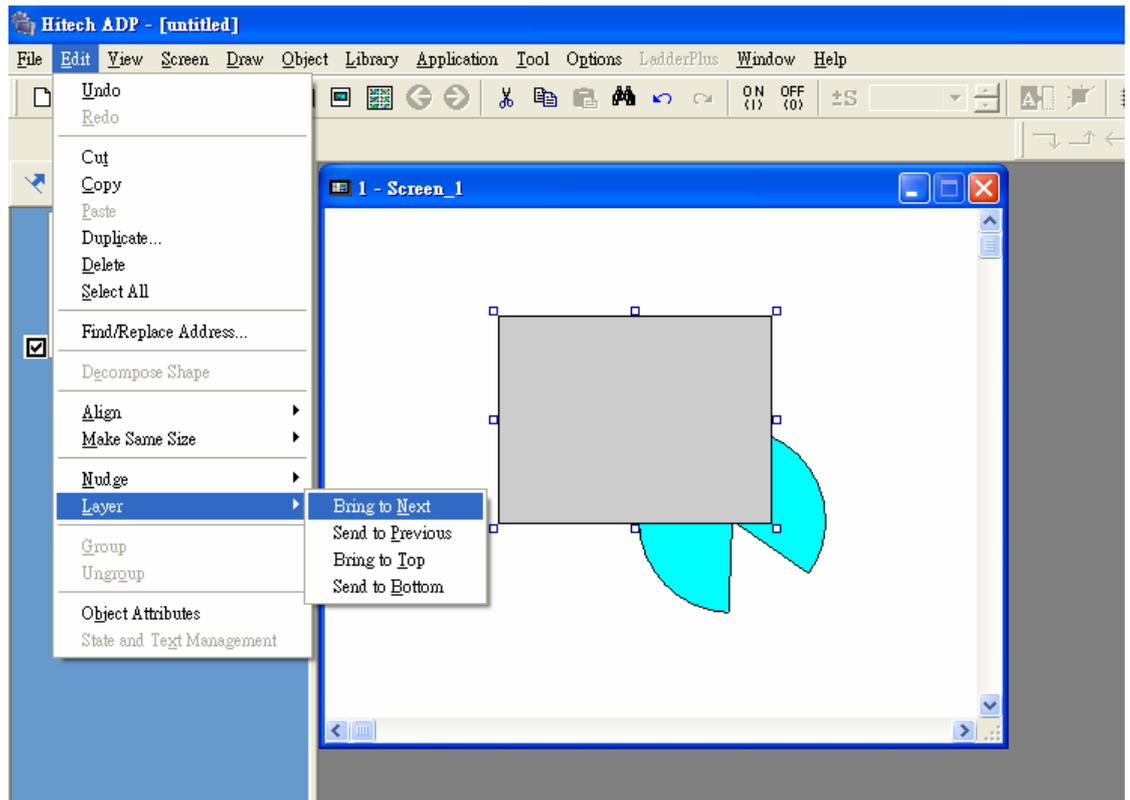


Figure 31. [Layer]/[Bring to Next] Command Makes Rectangle Graph Top

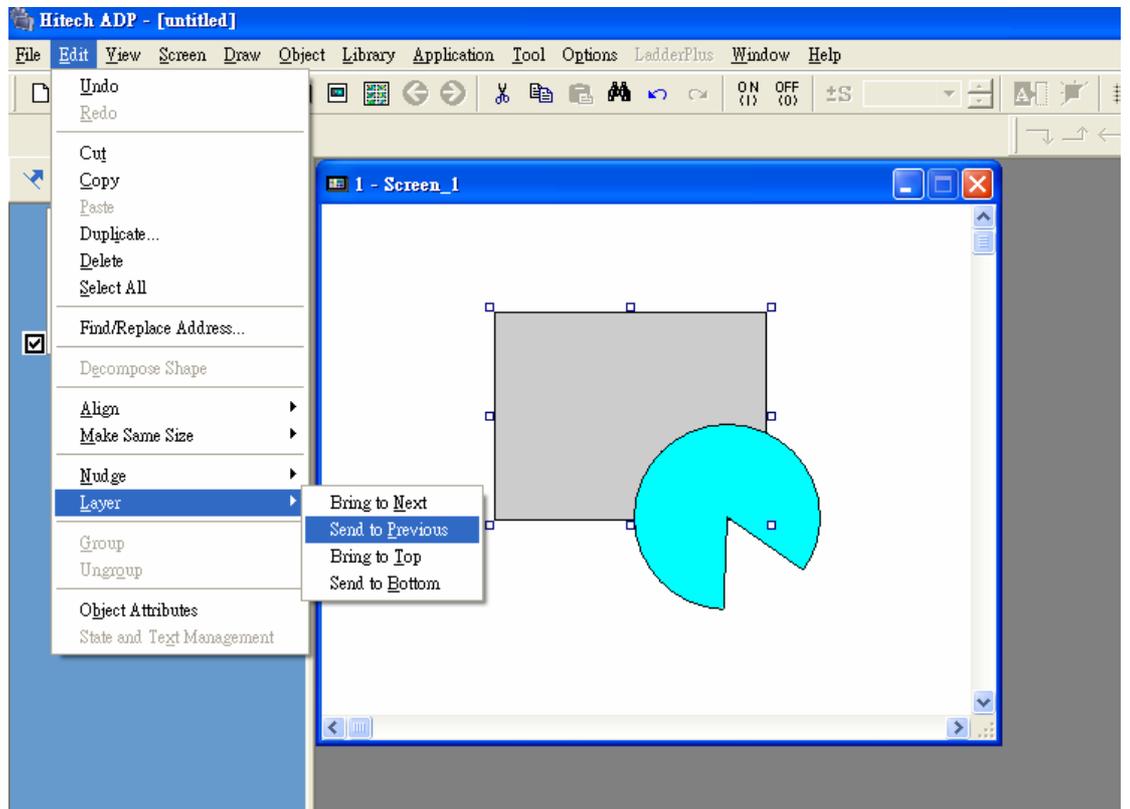


Figure 32. [Layer]/[Send to Previous] Makes the Rectangle Graph Bottom

2.3.6. [Group] 及 [Ungroup]

If there are more than two graphs or objects in the screen for edit; frame (Shift + Left-click) all of objects which be moved and then select [Group]. All of the framed objects will be move to appointed position together as a single unit. See Figure 33.

[Ungroup] is to upgroup the selected group of objects.

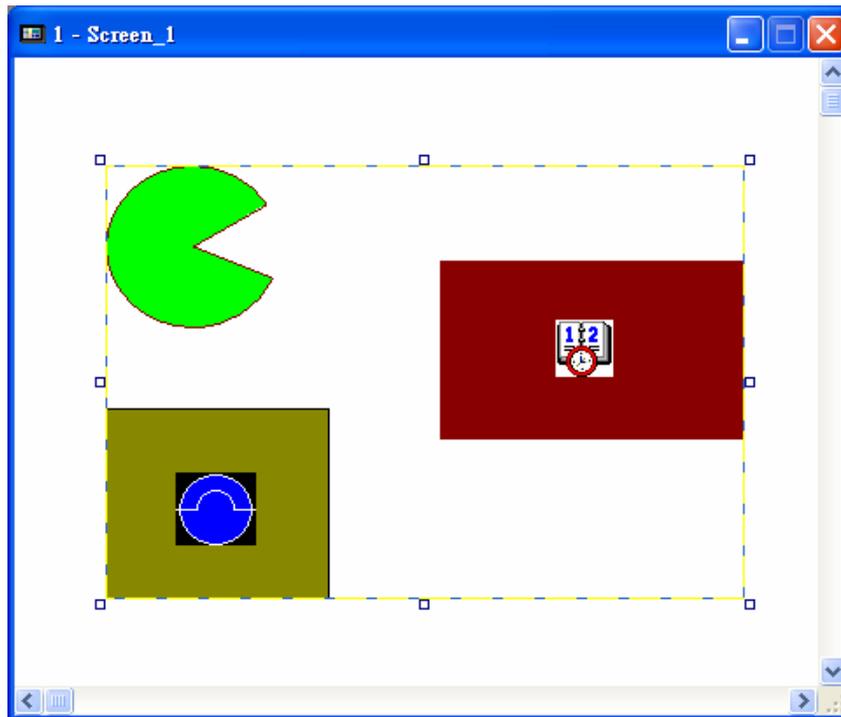


Figure 33. Select [Edit]/[Group] to Move the Selected Objects Together

2.3.7. [Object Attributes]

User can edit the content of the objects or modify data location and formats associated with PLC.

Note that different objects (ex: Push Button, Indicator, Moving Sign, Message Display, and so on) have their own object attributes. See Figure 34 and Figure 35.

Left-click on the object and then select [Edit]/[Object Attributes], the dialog box will be displayed on the screen; or double left-click on the objects directly as well. For the properties which are not explained in this section, please refer to the section [2.7 Object](#).

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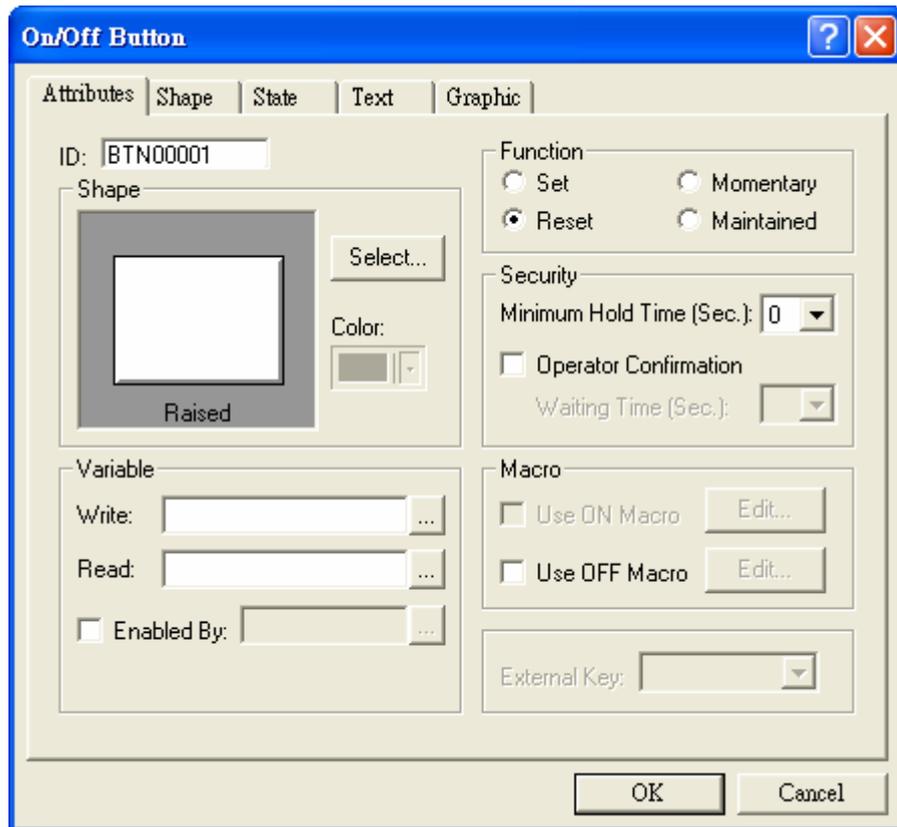


Figure 34. The [ON/Off Button] Object Attributes Dialog Box

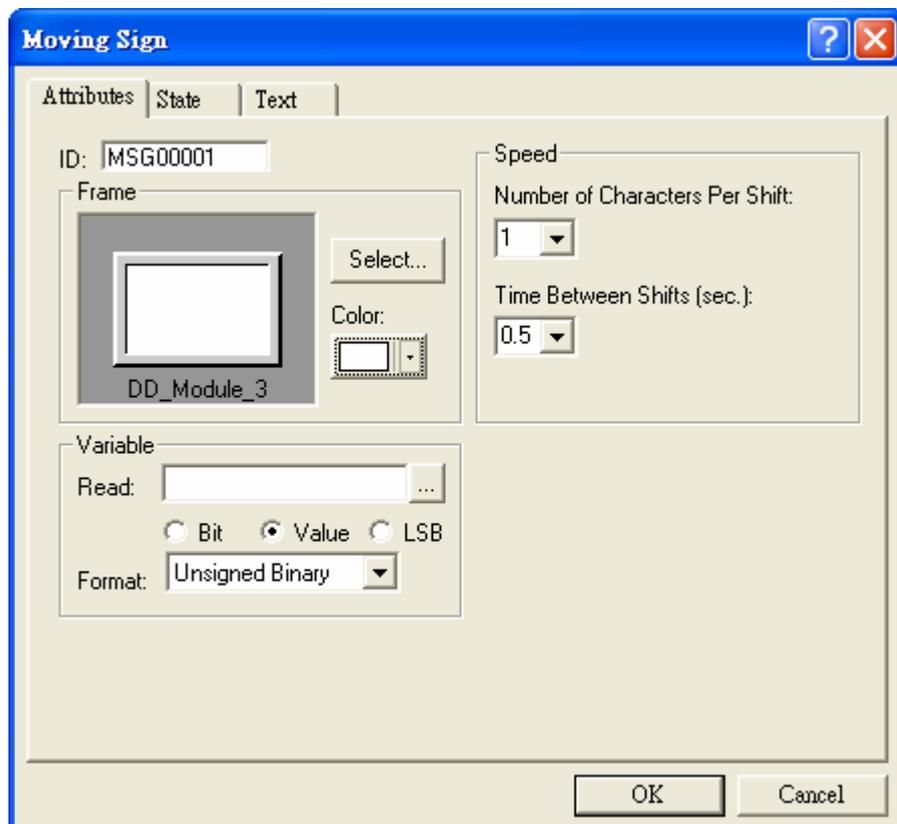
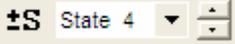


Figure 35. The [Moving Sign] Object Attributes Dialog Box

2.3.8. [State/Text Management] 

The main purposes of the [State/Text Management] include editing text, color, type revealed in designed object. Simultaneously, this object also supply users with easier operation such as the functions of copy, modify, line feed, and so on. See Figure 36.

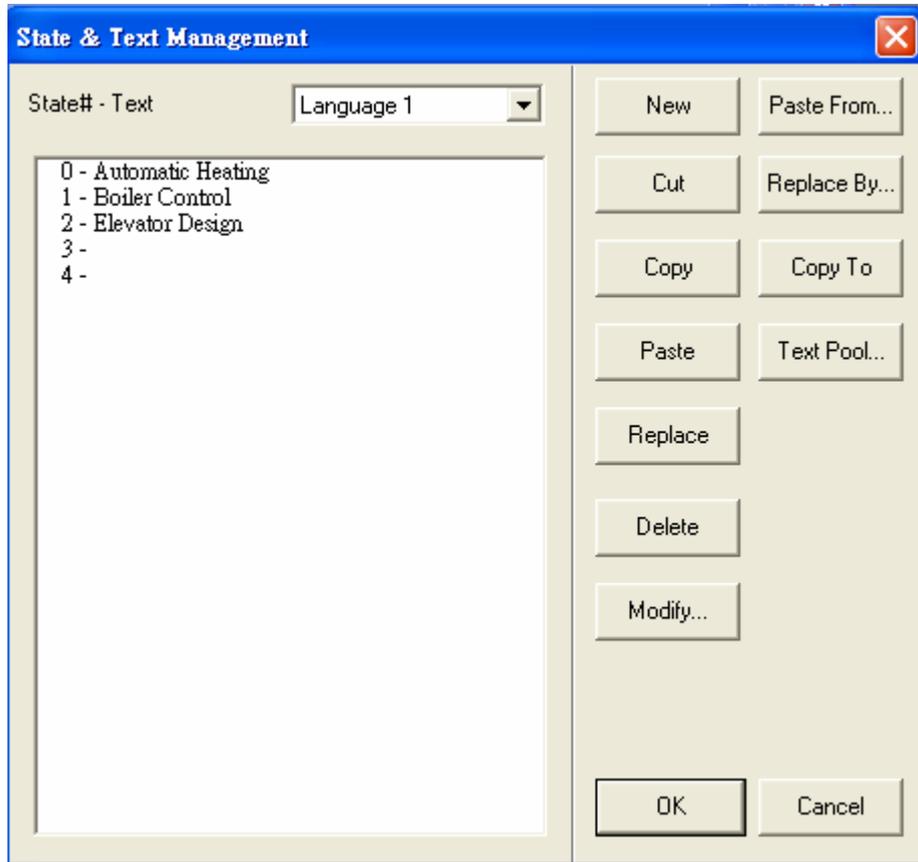


Figure 36. The [State/Text Management] Dialog Box

2.3.9. Focal Mark Style

As select [Focal Mark Style], there are five types for selection: [None], [Still Lines],[Circulating Lines],[Circulating Dots],[Swaying Dots]. See Figure 37.

This function is not limited by any application images or files, it will modify edit environment in ADP.

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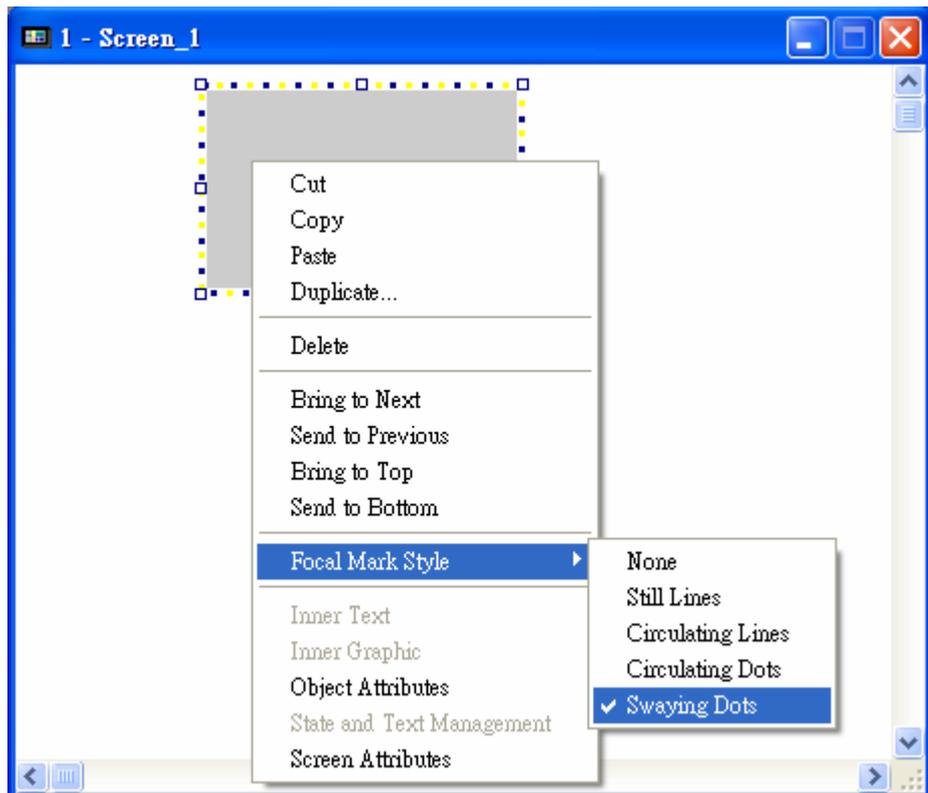


Figure 37. The [Focal Mark Style] list

Figure 38 is an illustration of objects with focal mark:

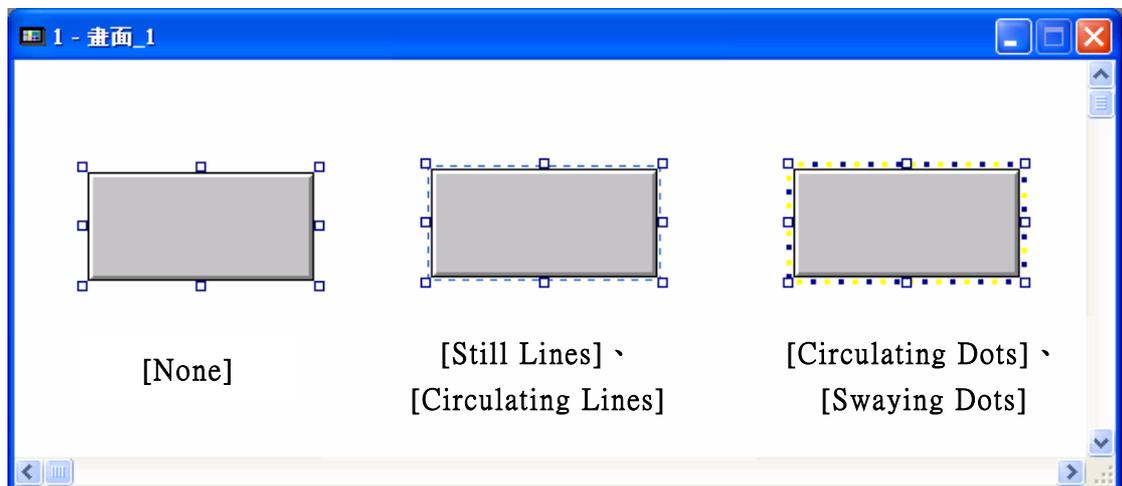


Figure 38. An Illustration of objects with focal mark

2.3.10. Common Attributes

This function is easier to edit objects simultaneously with common attributes. User can modify attributes of objects which are in a screen at a time.

First, select the objects to be edited at a time. The dialog box of

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[Focal Mark Style] will be displayed on the screen by double-click on one of objects. See Figure 39.

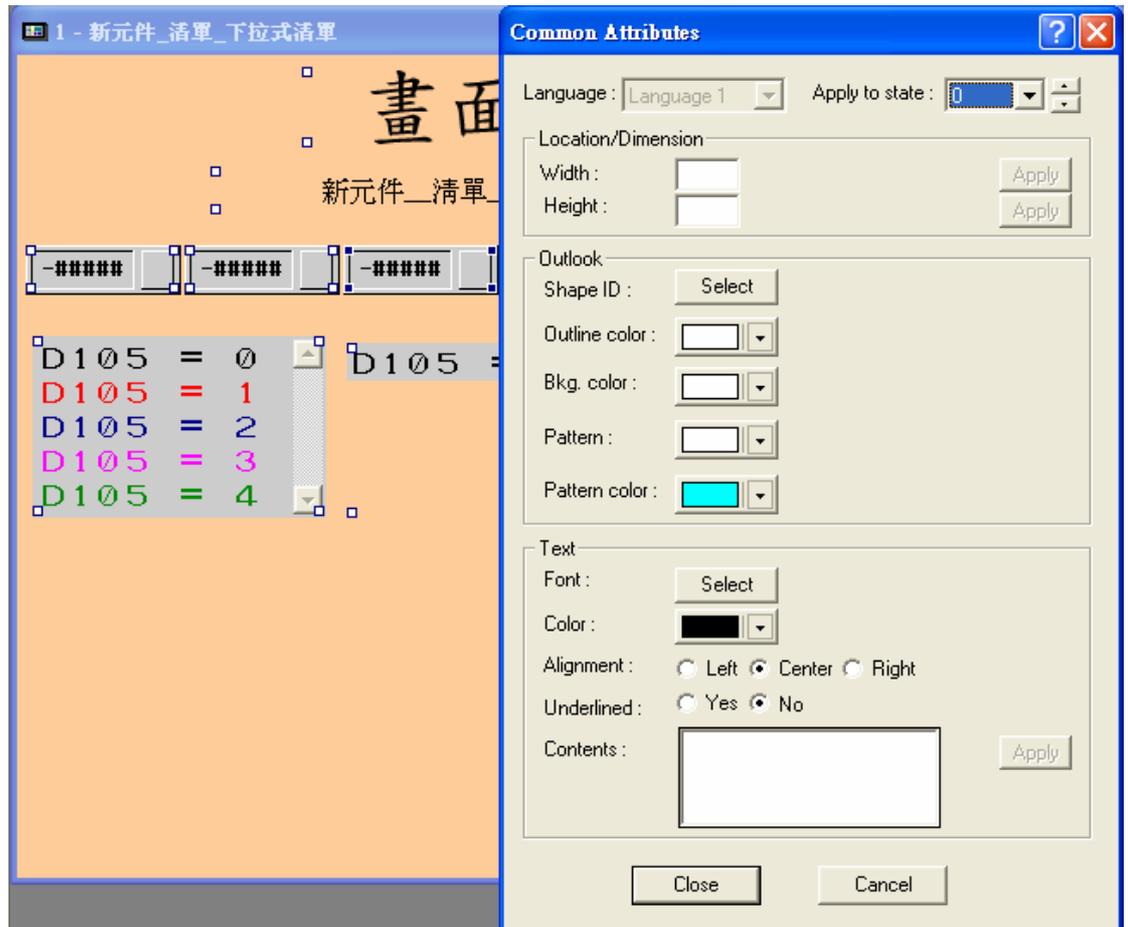


Figure 39. Open [Common Attributes] Dialog Box

User can edit the common attributes of selected objects such as location/dimension, outlook, and text. See Figure 40.

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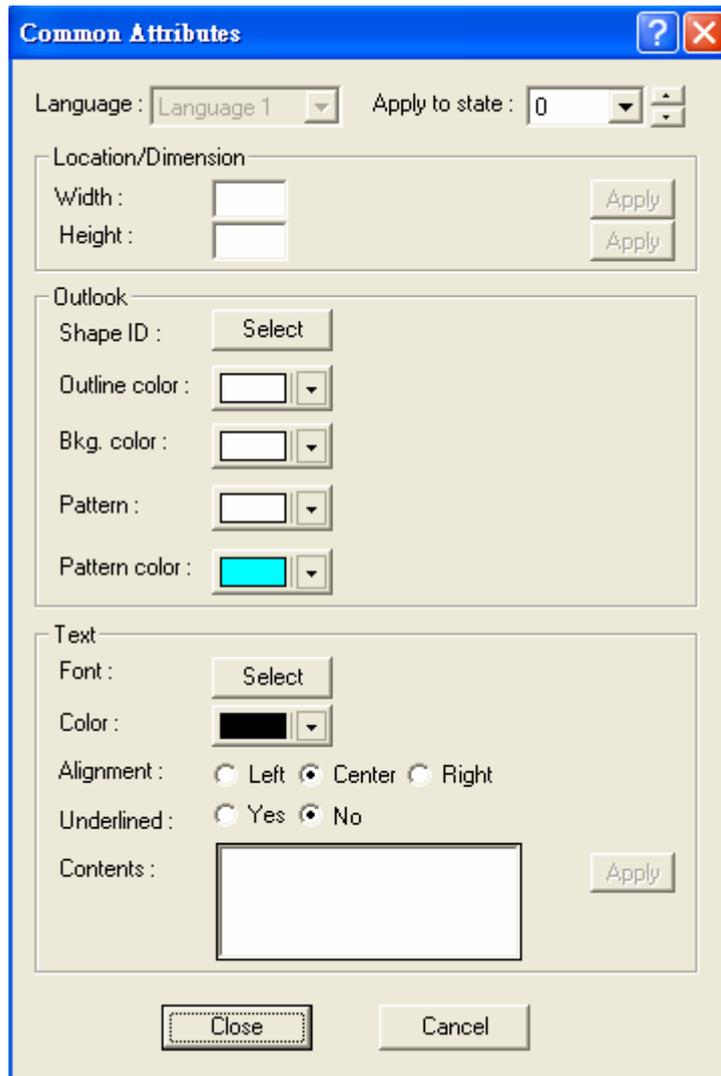


Figure 40. The [Common Attributes] Dialog Box

Option:

- [Language] : Specify language of the selected objects to reveal.
- [Apply to State] : Specify the state of the selected objects. User can edit different states in this list.
- [Location/Dimension] Block : Specify the width and height of the objects. Press [Apply] button to modify.
- [Outlook] Block : Specify the outlook of selected objects.

[Shape ID] : Specify the shape of different objects. While press [Select] button, the dialog box will be appeared on the screen as Figure 41. While the selection have made, the dialog box will be appeared on the screen as Figure 42. Then, a user can select next objectes to design.

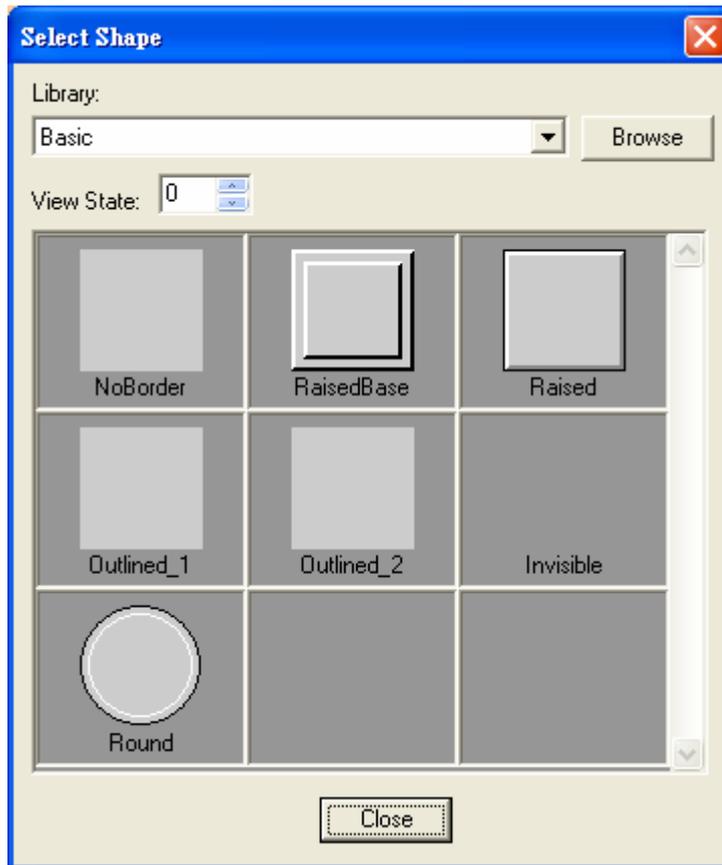


Figure 41. Specify the Shape of Object

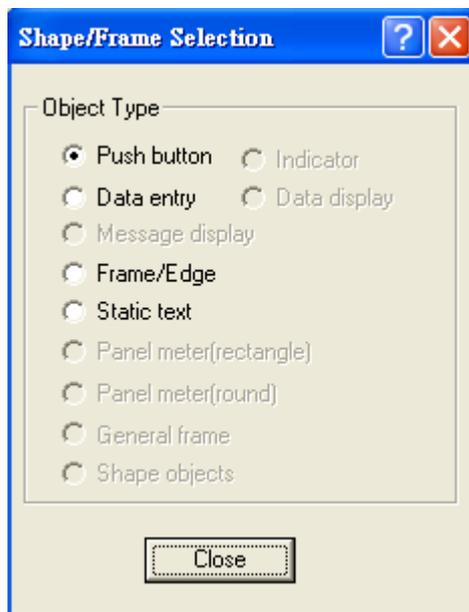


Figure 42. Select Objects to Be Designed

- ◆ [Outline Color] : Specify the outline color of all the selected objects.
- ◆ [Background Color] : Specify the background color of all the selected objects.
- ◆ [Pattern] : Specify the pattern of all selected objects which can

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be set.

- ◆ [Pattern Color] : Specify the pattern color of all selected objects which can be set.
- [Text] Block :
 - ◆ [Font] : Specify the font of the text to different objects. While select [Selection] button, the dialog box will be appeared as Figure 43. User can specify the font of text to different types of objects. Remember to press [Apply] button for set up.

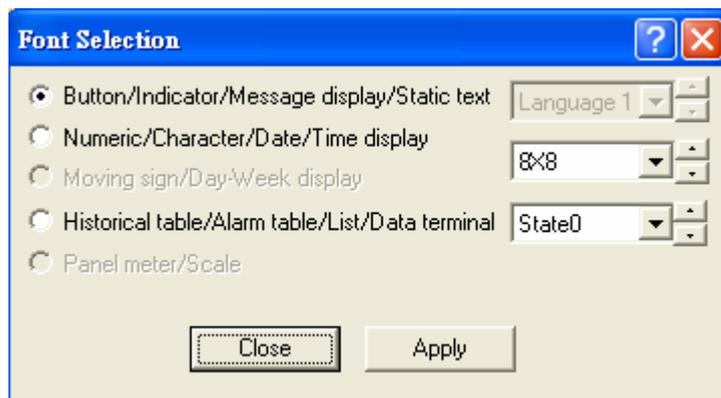


Figure 43. Specify the Font of the Text to Objects

- ◆ [Color] : Specify the color of the text to all selected objects.
- ◆ [Alignment] : Specify the alignment type of the text to all selected objects.
- ◆ [Underlined] : Specify the text of all selected objects underlined or not.
- ◆ [Contents] : Specify the contents of the text to all selected
- ◆ objects. Remember to press [Apply] for set up.

2.4. View Menu

The main purposes of the [View] menu include the managing functions of “whole screen”, “whole screen with I/O labels”, “five language selections”, “zoom in/out” and “eight kinds of toolbars”.

2.4.1. [Whole Screen] and [Whole Screen With I/O Lables]

[Whole Screen]: To view the whole screen of all edited objects with whole screen. User can return to previous view by left-click.

[Whole Screen With I/O Lables]: To view the whole screen with dynamic objects with write/read addresses on the top of left side displayed. User can return to the previous view by left-click. See Figure 44.

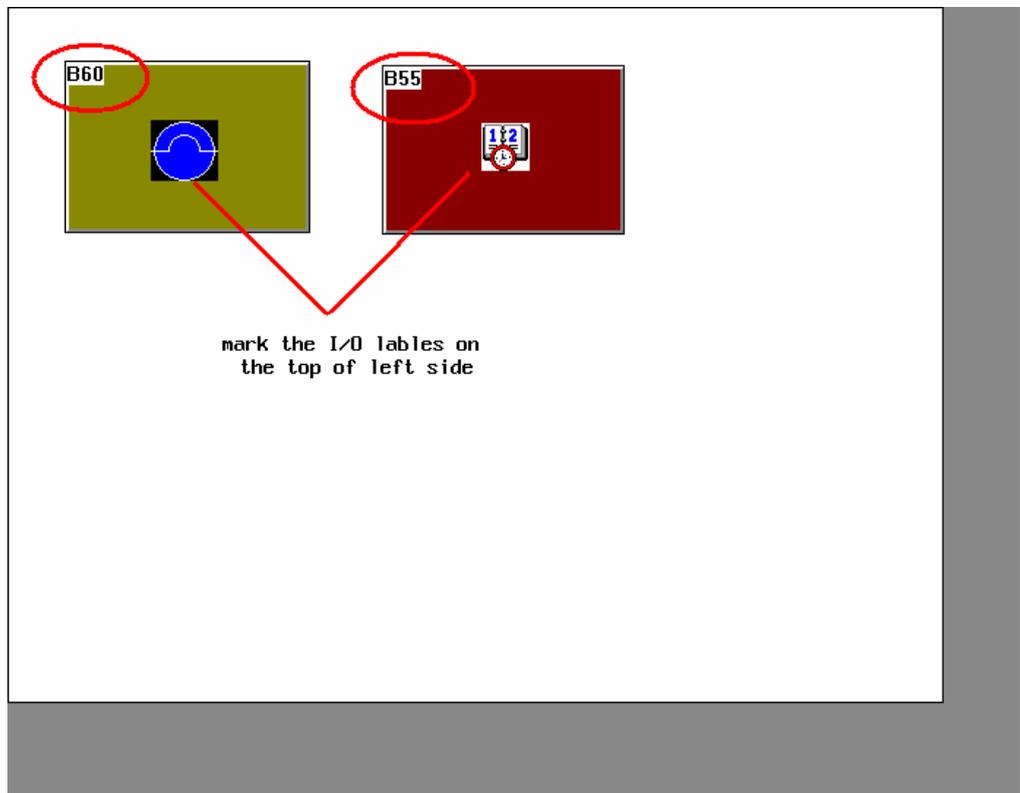


Figure 44. The Displayed Image of [Whole Screen With I/O Lables]

2.4.2. [Language 1-5]

There are five languages for user to switch ,please follow the steps below to setup [Language] command :

1. Select [Application]/[Workstation Setup]. The [Application Properties] dialog box will appear on the screen. See Figure 45.
2. On the [General] tab, check the [Multi-lingual Support] box to start setup. See Figure 45.

[Number of Languages]: Specify the number of languages to application program needed, there are five languages for selection.

[Select Language]: Specify the languages for use.

[Startup Language]: Specify the startup language to display on the screen open. User can select on the [View] menu directly for language switch of designed screen later.

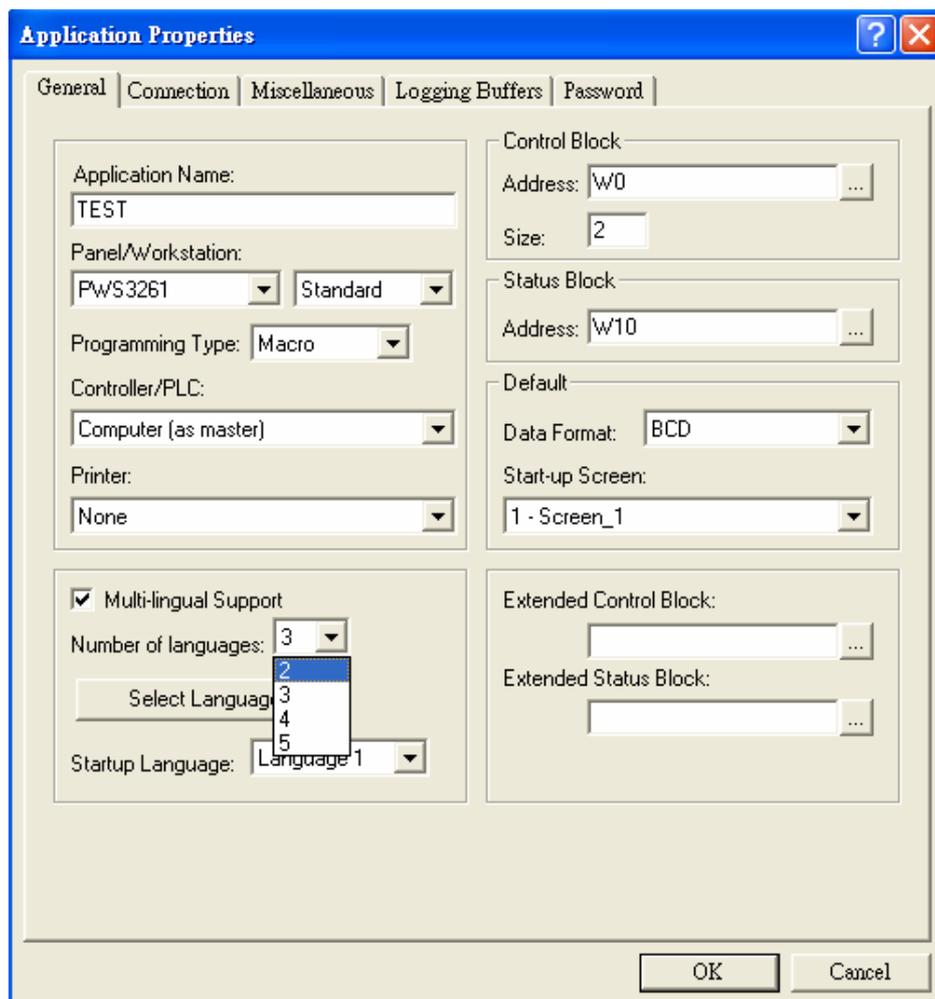


Figure 45. The [Application Properties] Dialog Box

2.4.3. [Zoom In], [Normal] and [Zoom Out]

[Zoom in]: To enlarge the image size by percentage selected 150%, 175%, 200%, 250%.

[Normal]: To adjust the image size to actual size of the screen.

[Zoom Out]: To narrow the image size by percentage selected 75%, 50%, 25%.

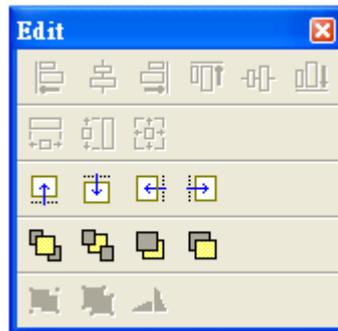
2.4.4. Toolbar

There are eight kinds of toolbars on the [View] menu. A User can decide to display the toolbars for quick-operation or not. The toolbars are shown as the following :

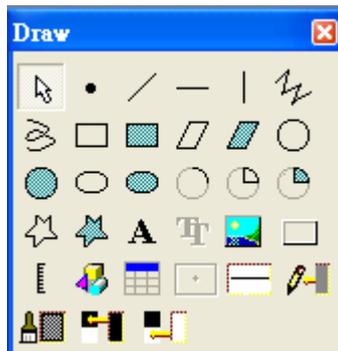
[Standard Toolbar]:



[Edit Toolbar]:



[Draw Toolbar]:



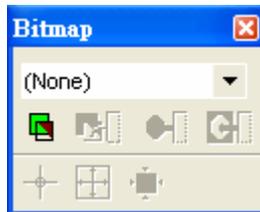
[Basic Object
Toolbar]:



[Text Toolbar]:



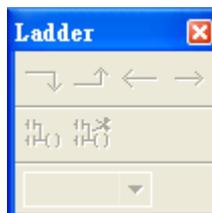
[Bitmap Tool-
bar]:



[Monitor
Toolbar]:



[Ladder
Toolbar]:



2.5. Screen Menu

The main purposes of [Screen] menu are to name, number, edit and manage screens. The following sections will explain these commands in details.

2.5.1. [New Screen]

Select to create a new screen.

In the [Name] blank, enter name for a new screen. Also, in the [Number] blank, enter screen number. See Figure 46.



Figure 46. The dialog box of [Create New Screen]

2.5.2. [Screen Manager]

The functions of the [Screen Manager] command are to display all of the application files in detail view or thumbnail view convenient a user to search, modify, edit, and so on. Select [Screen]/[Screen Manager] or click  directly, the whole screen of [Screen Manager] will be displayed in the middle of window or minimized in left-side, See Figure 48.

In [Screen Manager] windows, click the no. or name to display the selected screen. If a user wants to open the image, just click the left key of mouse twice.

2.5.2.1. Icons in [Screen Manager]

[Screen Manager] icons provide functions of new screen, screen properties, edit, and management convenient for a user to operation. The following will explain those icons; See below:

2. Instructions

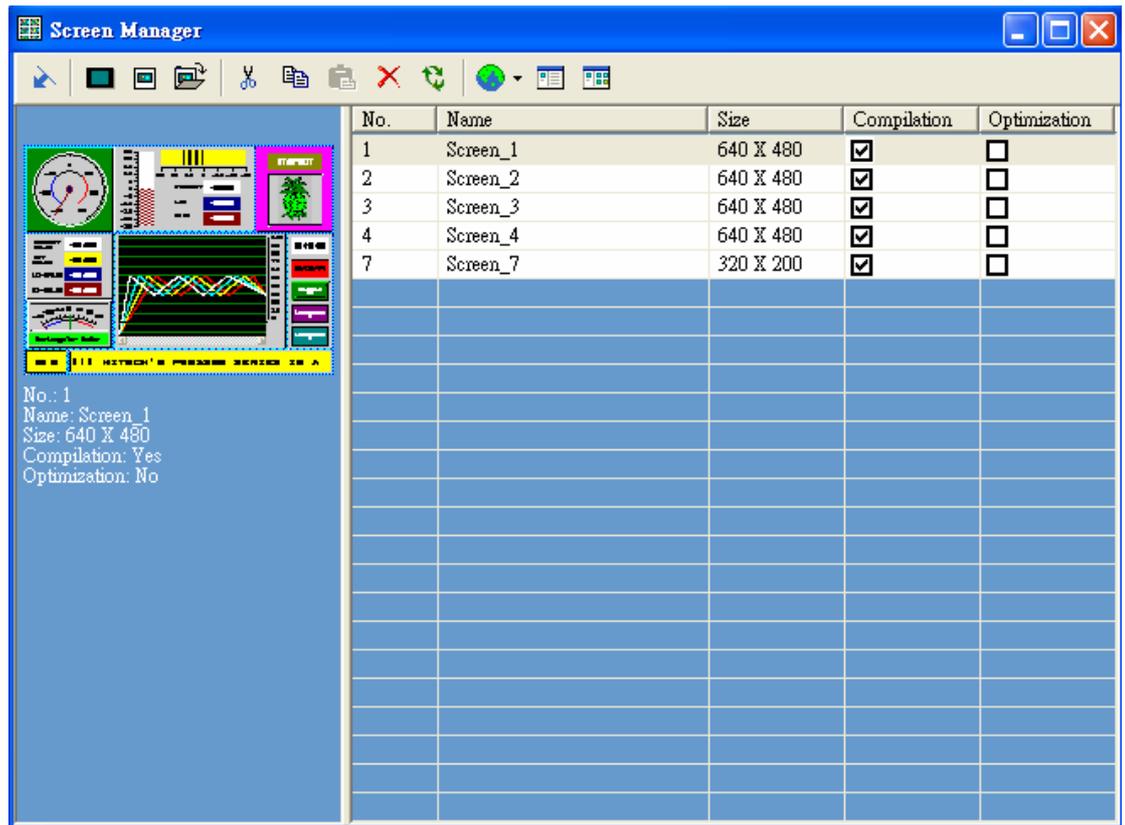
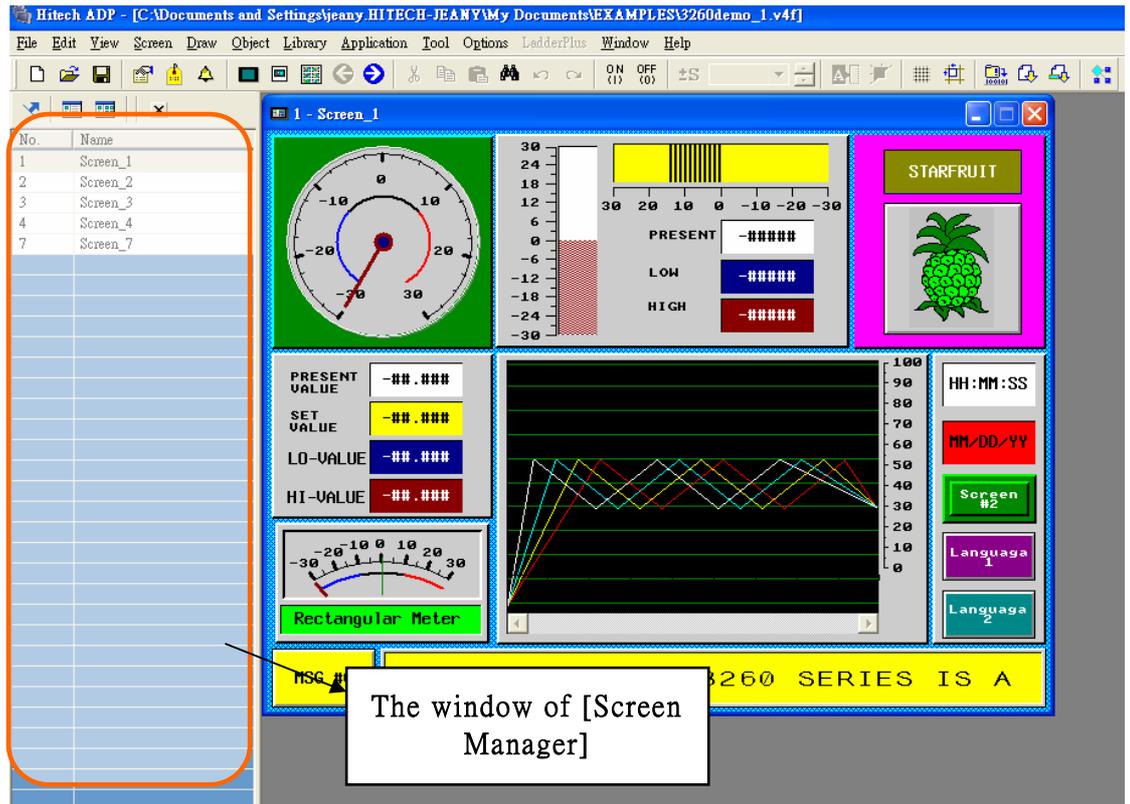


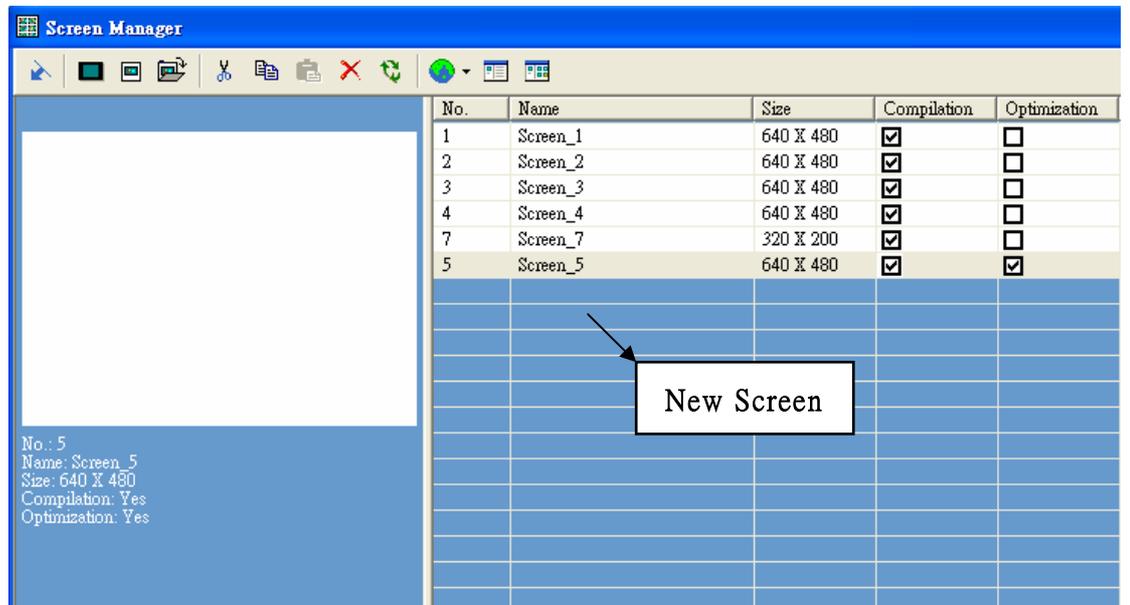
Figure 47. [Screen Manager]

-  [Dock]: The window of [Screen Manager] will be minimized in the left side, See below. In the window of [Dock], the icons are simplified to four below in the [Screen Manager]:
 -  [Undock] is to return the window of [Screen Manager] to whole screen in the middle side;
 -  [Close Screen Manager] is to close the window of [Screen Manager];
 -  [Detail View] and
 -  [Thumbnail View] are different ways to display the screen data.

2. Instructions



-  [New Screen]: To open a new screen with [No.] and [Name]. A new screen will be appeared as below.

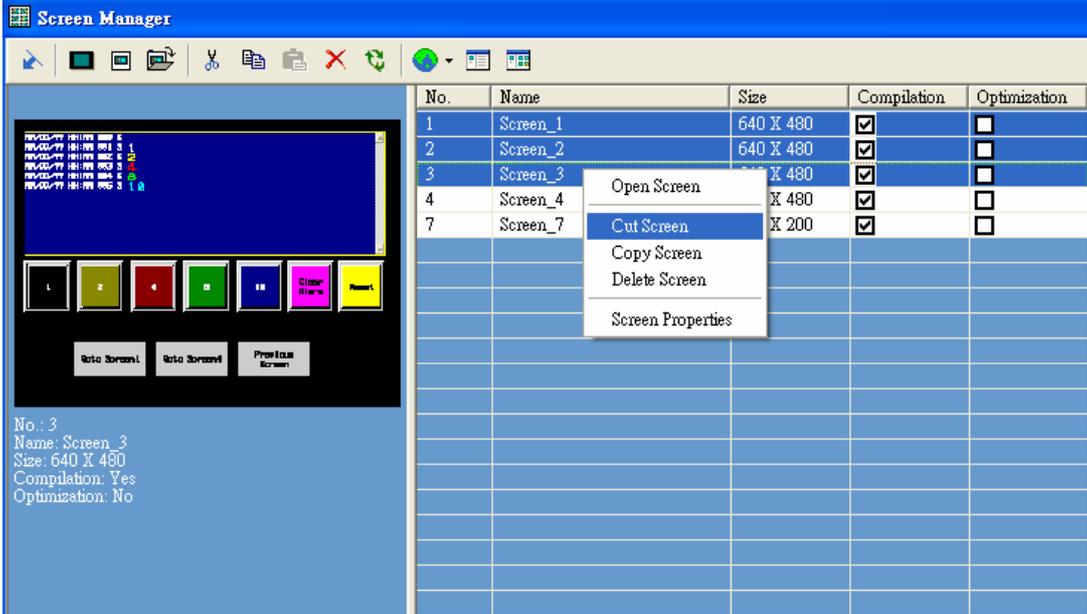


-  [Screen Properties]: To specify the screen properties in the dialog box of [Screen Properties]; please refer to [Section 2.5.8. \[Properties\]](#) for the complete details.

2. Instructions

-  [Open Screen]: To open and display the selected images and the window of [Screen Manager] will be minimized to the bottom. A User can open the selected image by double-click as well.

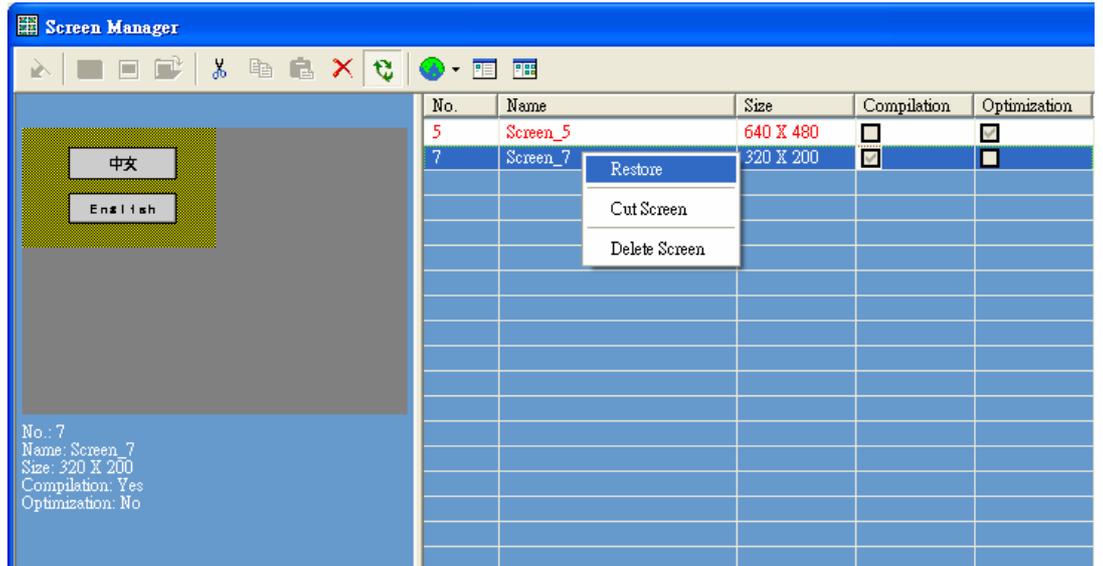
-  [Cut Screen],  [Copy Screen],  [Paste Screen],  [Delete Screen]: To edit the selected screens. Moreover, a user can get the pop-up menu by right-click for the selections of edit operation. Press Left-click + Ctrl key to edit several screens together; See below.



| No. | Name | Size | Compilation | Optimization |
|-----|----------|-----------|-------------------------------------|--------------------------|
| 1 | Screen_1 | 640 X 480 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2 | Screen_2 | 640 X 480 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3 | Screen_3 | X 480 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4 | Screen_4 | X 480 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7 | Screen_7 | X 200 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

-  [View Recycle Bin]: To list all of the deleted screens marked with red color. Right-click on the screen list; and then select [Restore] from the displayed list, See below. Re-click  can return to the previous window of the [Screen Manager].

2. Instructions



-  [Select Language]: To specify the language displayed in the screen, see below.

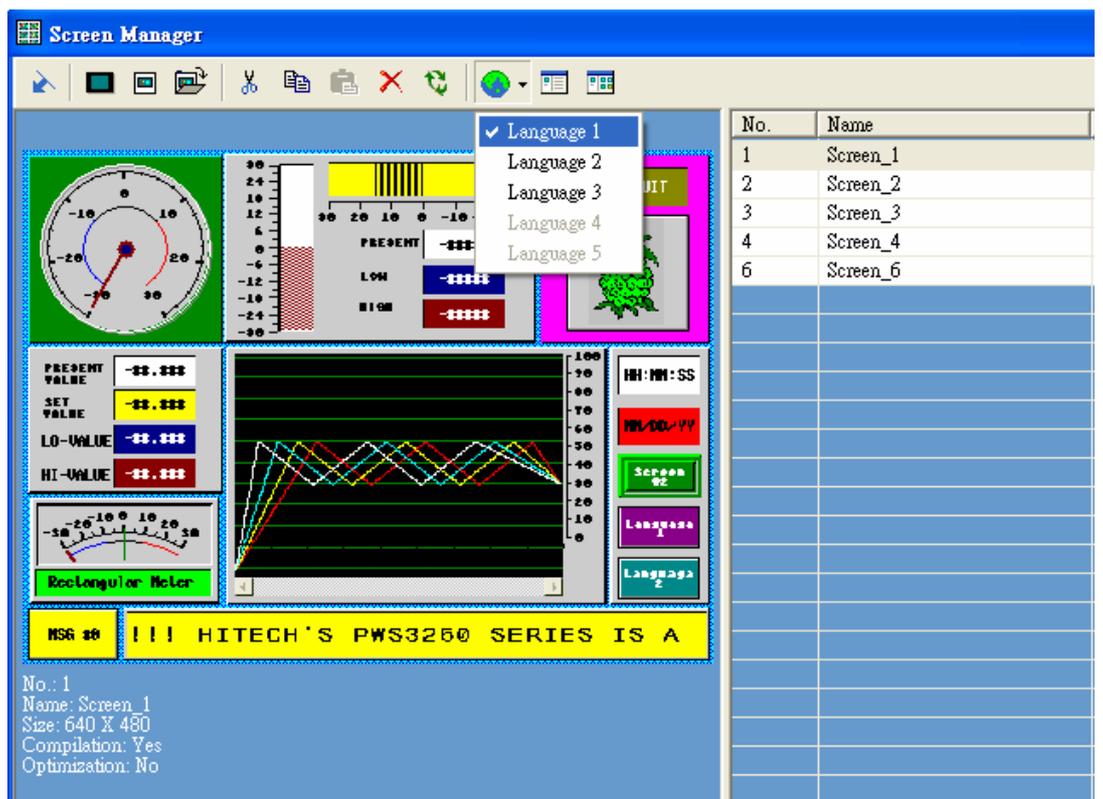


Figure 48. Screen displayed by “Language 1”(English)

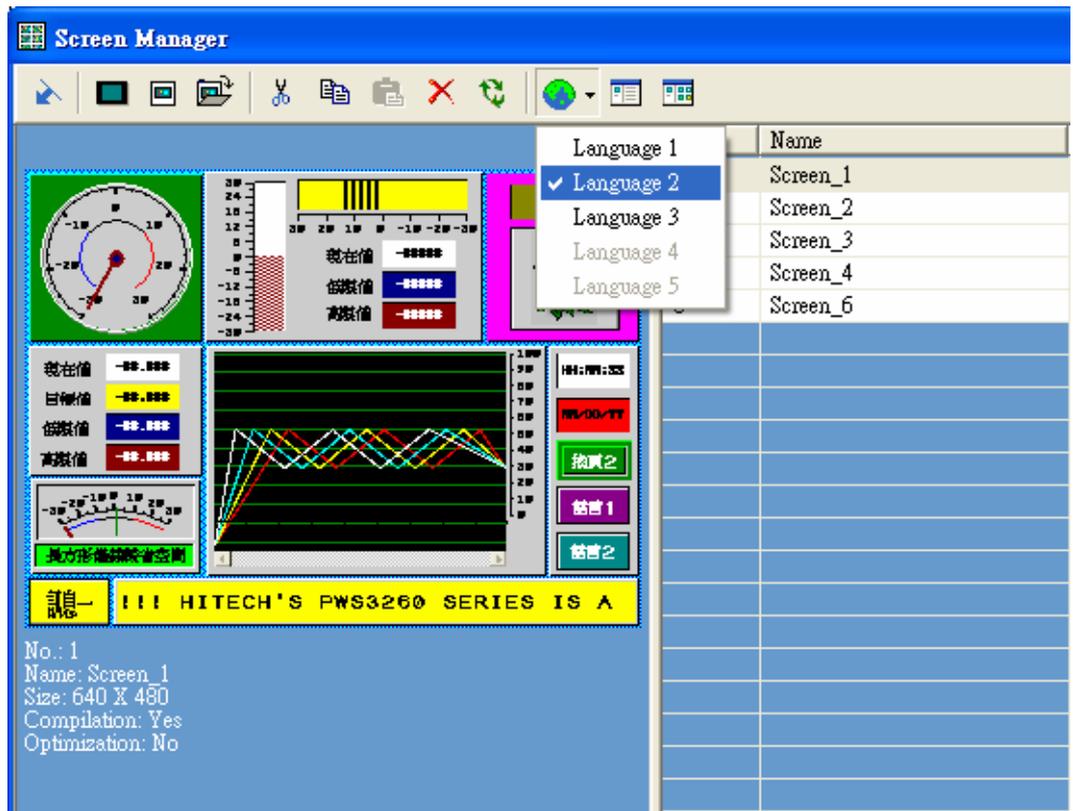
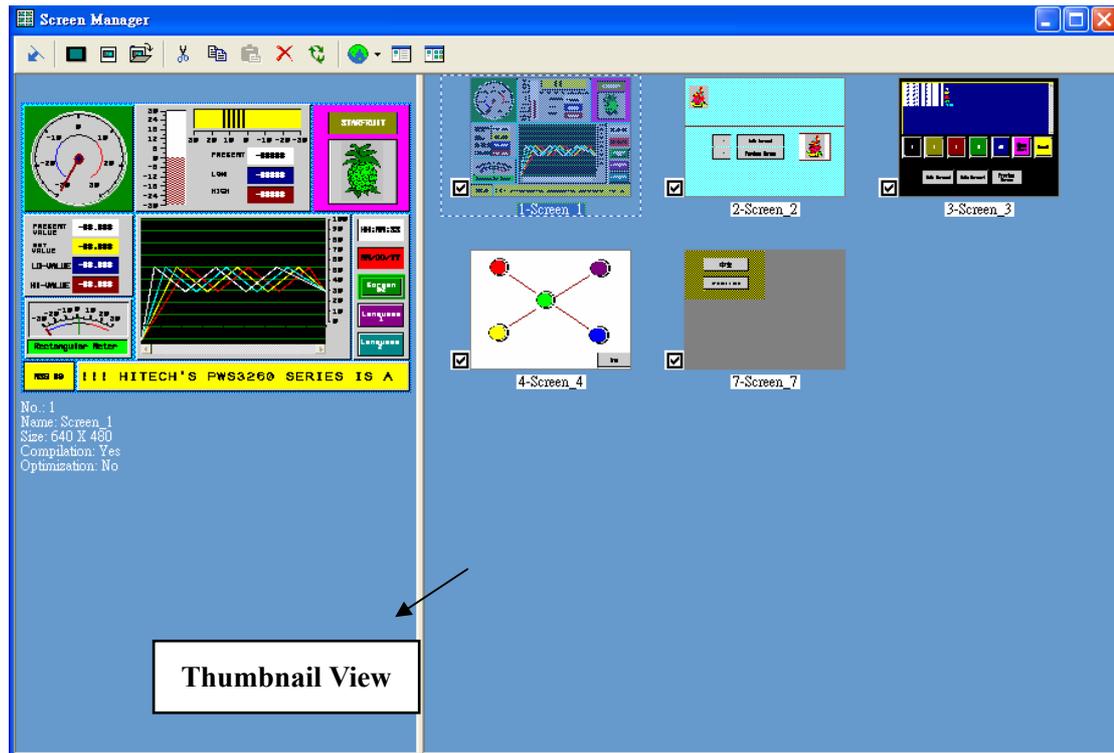


Figure 49. Screen displayed by “Language 2” (Traditional Chinese)

-  [Detail View]: To view the detail data of screens in list. See Figure 50.
-  [Thumbnail View]: To view all of the screens in thumbnail; See below.

2. Instructions



2.5.2.2. Screen Table

On the [Screen Manager], select the [Detail View] button. The detailed data will be listed in the table including five columns: [No.], [Name], [Size], [Compilation] and [Optimization]. While click the headline, the data will be listed in increased or decreased order such as numeral order, dimensional order, and so on. See Figure 50.

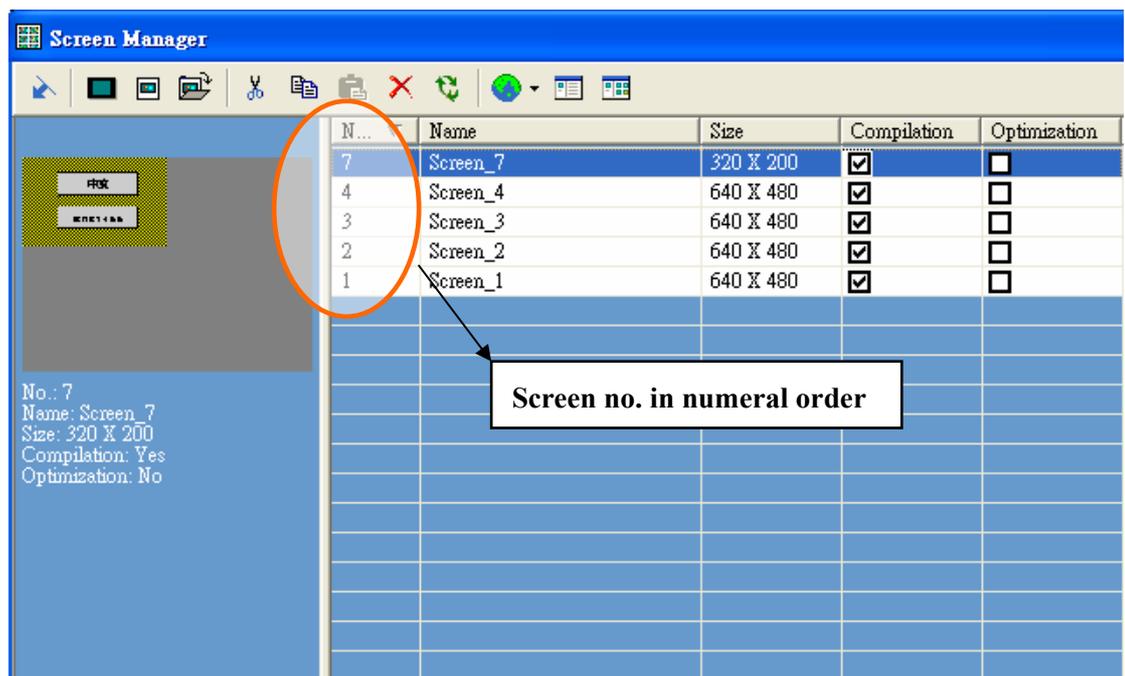


Figure 50. [No.] in numeral order

2. Instructions

[Screen Manager] also can help a user manage and edit the screen objects with convenience and efficiency. If the data in these columns should be modified, a user can click  [Screen Properties] on the toolbar and modify the the screen properties in the displayed dialog box. (Or click right key of the mouse for the [Screen Properties] selection) See Figure 51; See Figure 52, See Figure 53.

Take notice of [Compilation] and [Optimization] columns, a user can decide to check [Compilation] or not; or setup in the dialog box of [Screen Properties] as well, See Figure 53. A user can decide to check [Optimization] or not to perform the block optimized while compilation; or setup in the dialog box of [Screen Properties]. See Figure 53.

For the dialog box of [Screen Properties], please refer to [Section 2.5.8 \[Screen Properties\]](#) for the complete details.

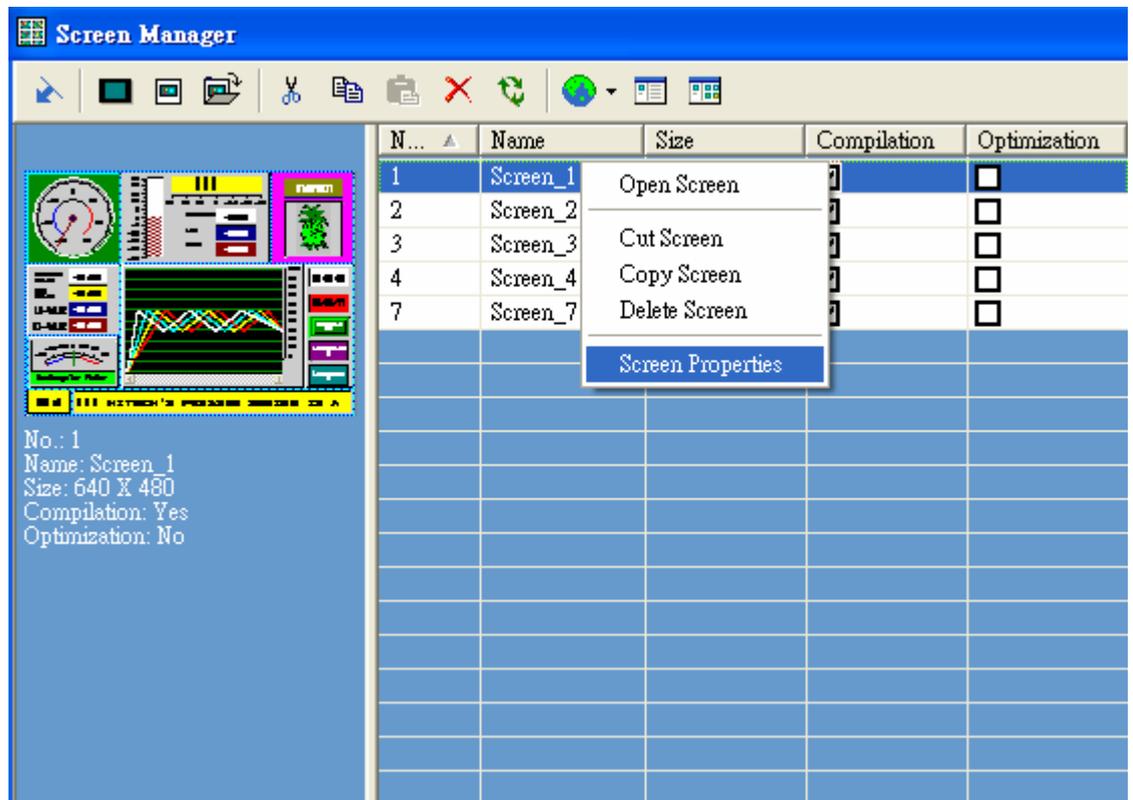


Figure 51. Select [Screen Properties]

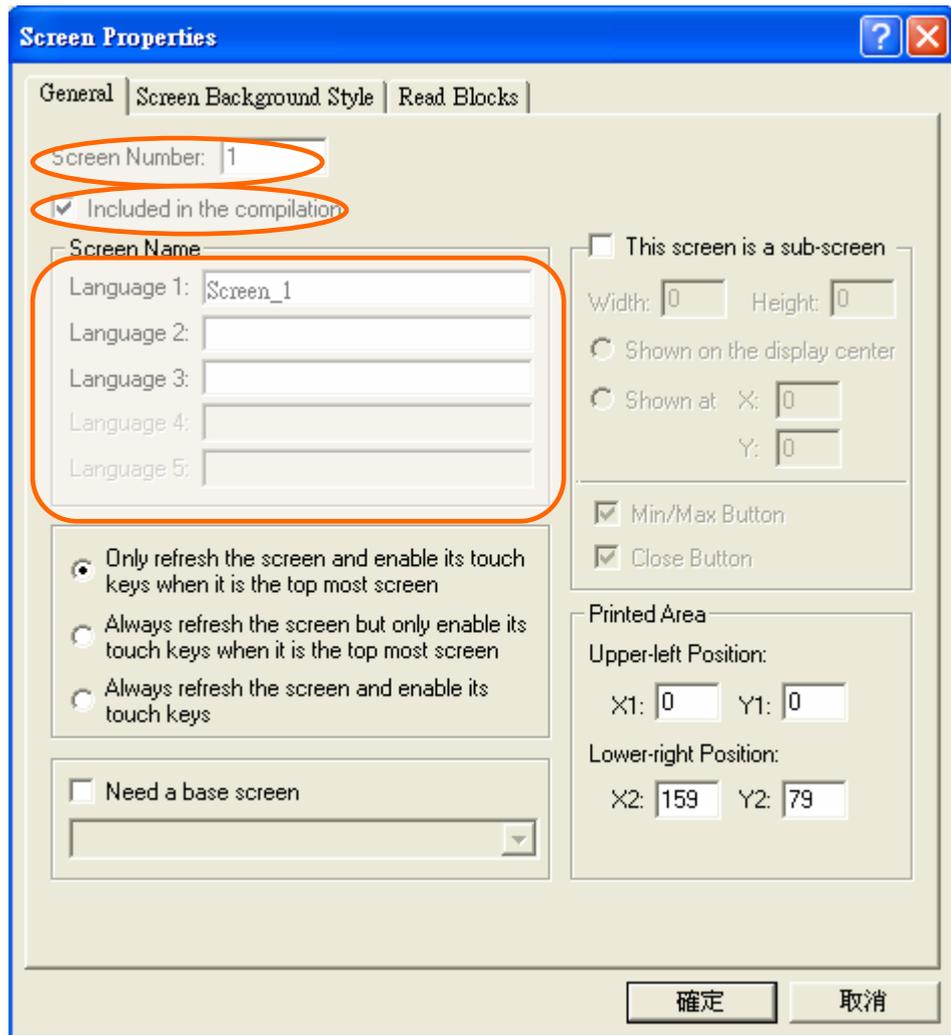


Figure 52. Modify the screen properties

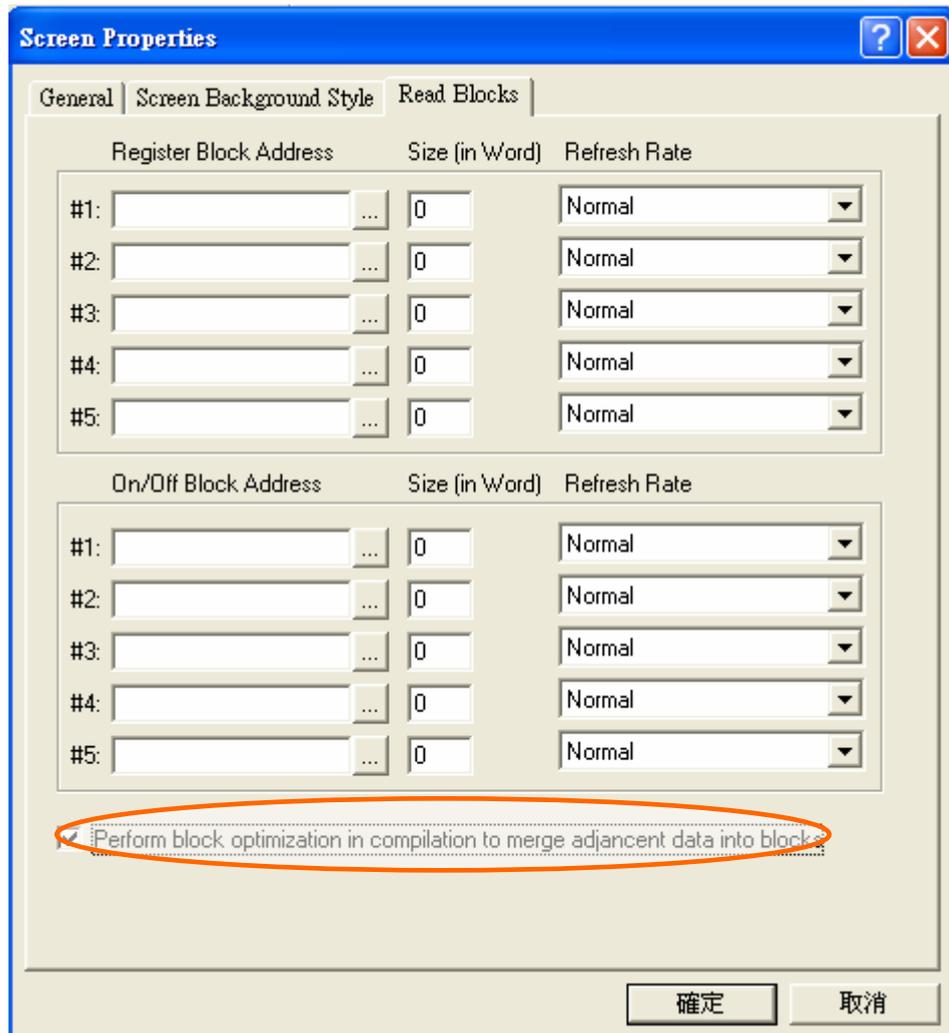


Figure 53. Modify the screen properties

2.5.3. [Close Screen]

Close the current existing screen.

2.5.4. [Cut Current Screen], [Copy Current Screen] and [Delete Current Screen]

[Cut Current Screen]: Select this command to cut the executive screen and then paste it on others.

[Copy Current Screen]: Select this command to copy the executive screen.

[Delete Current Screen]: Select this command to delete the executive screen.

2.5.5. [Cut Screen], [Copy Screen] and [Delete Screen]

Note that these three commands are only applicable on [Screen Manager] which is minimized to the right side of the window.

[Cut Screen]: Select this command to cut the selected screens and then paste them on others.

[Copy Screen]: Select this command to copy the selected screens.

[Delete Screen]: Select this command to delete the selected screens.

2.5.6. [Paste Screen]

Paste the screens which are cut and copied.

2.5.7. [OPEN Macro] , [CLOSE Macro] and [CYCLIC Macro]

These three Macros enable Workstation to execute data initialization, display control, and internal register or contact initialization. Once select these commands, the workstation will display the edit screen. See Figure 54.

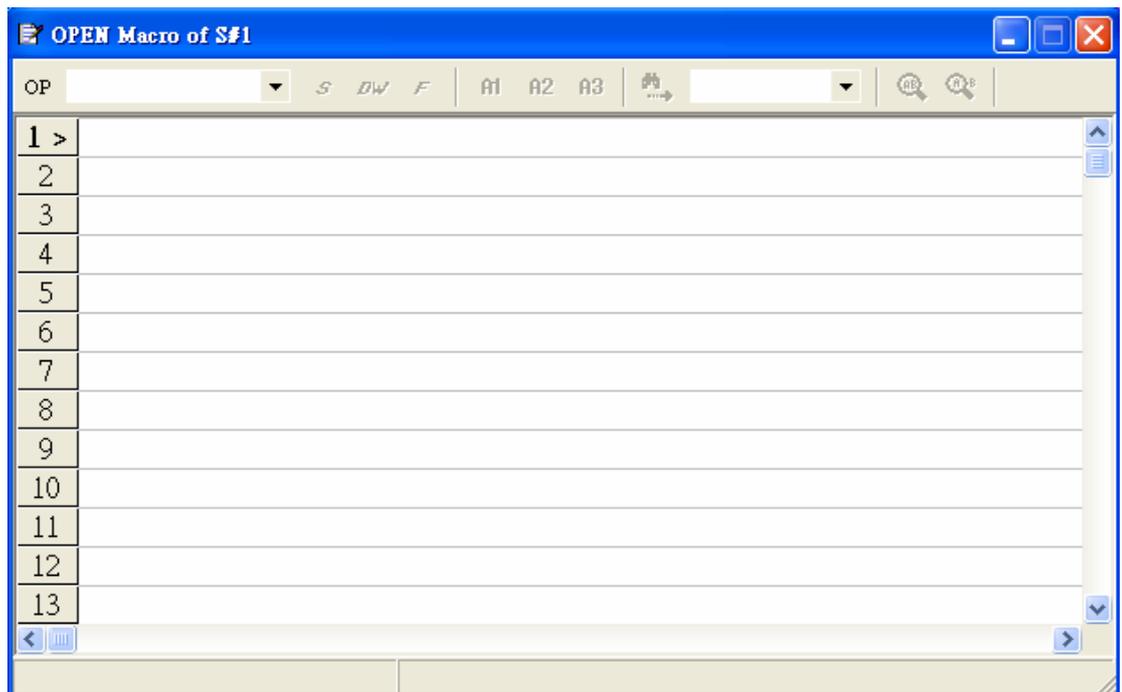


Figure 54. The [OPEN Macro] Edit Screen

[OPEN Macro]: OPEN Macro is executed when the screen is commanded to be opened. A screen is not displayed until the OPEN Macro is executed completely. There is one OPEN Macro in one screen.

[CLOSE Macro]: CLOSE Macro is executed when the screen is commanded to be closed. A screen is not erased until the CLOSE

2. Instructions

Macro is executed completely. There is one CLOSE Macro in one screen.

[CYCLIC Macro]: CYCLIC Macro is executed cyclically when the screen is displayed. The Workstation stops executing the Macro when it encounters an End command or reaches the end of the macro.

Please refer to [Chapter 8 Macro](#) for complete details.

2.5.8. [Screen Properties]

The function of [Screen Properties] command is to display the properties of current screen including [General], [Screen Background Style] and [Read Block] tabs. See Figure 55.

2.5.8.1. [General] Tab

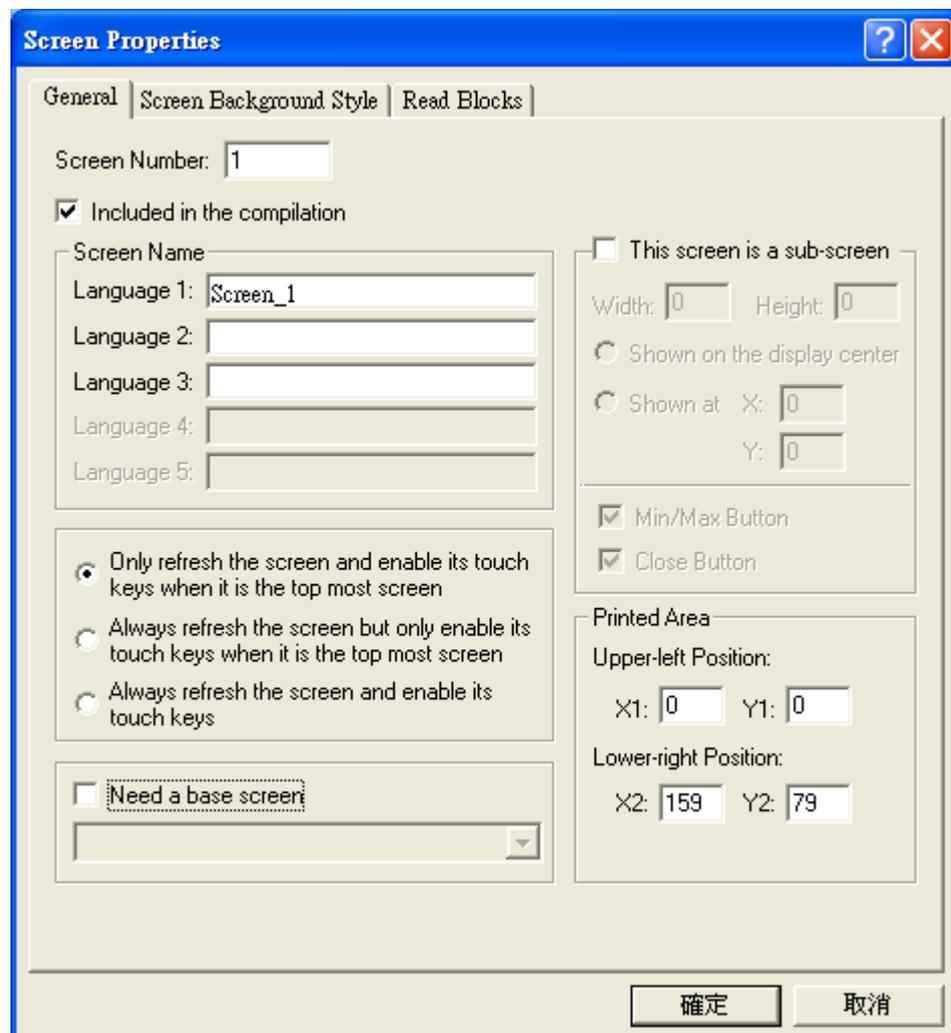


Figure 55. The [Screen Properties] Dialog Box

- [Screen Number]: Specify the number of the current screen.

2. Instructions

- [Included in the compilation]: Check this option to compile the selected screen or not. This feature is convenient screen editing but unnecessary to a draft screen.
- [Screen Name]: Enter name for a current screen.
- [Screen Update and Key function]: Specify the types of screen update.
- [Need a base screen]: Check this option for a base screen. A base screen can be the background of various screens.
- [This screen is a sub-screen]: Check this option to display the selected screen as a sub-screen. A user can design the width, height, location and buttons of a sub-screen in this block. (The maximum width=180; height=160).

For the steps of a sub-screen design, please refer to [Section 2.5.8.5 Sub-screen](#).

- [Printed Area]: Specify the area to print. Note that this feature is not applicable on some models without PRINTER PORT.
- [Slide-out Menu]: Specify the slide-out menu of the screen.

2.5.8.2. [Screen Background Style] Tab

I. Filled With Pattern

Select [Pattern], the tab will be shown as below:

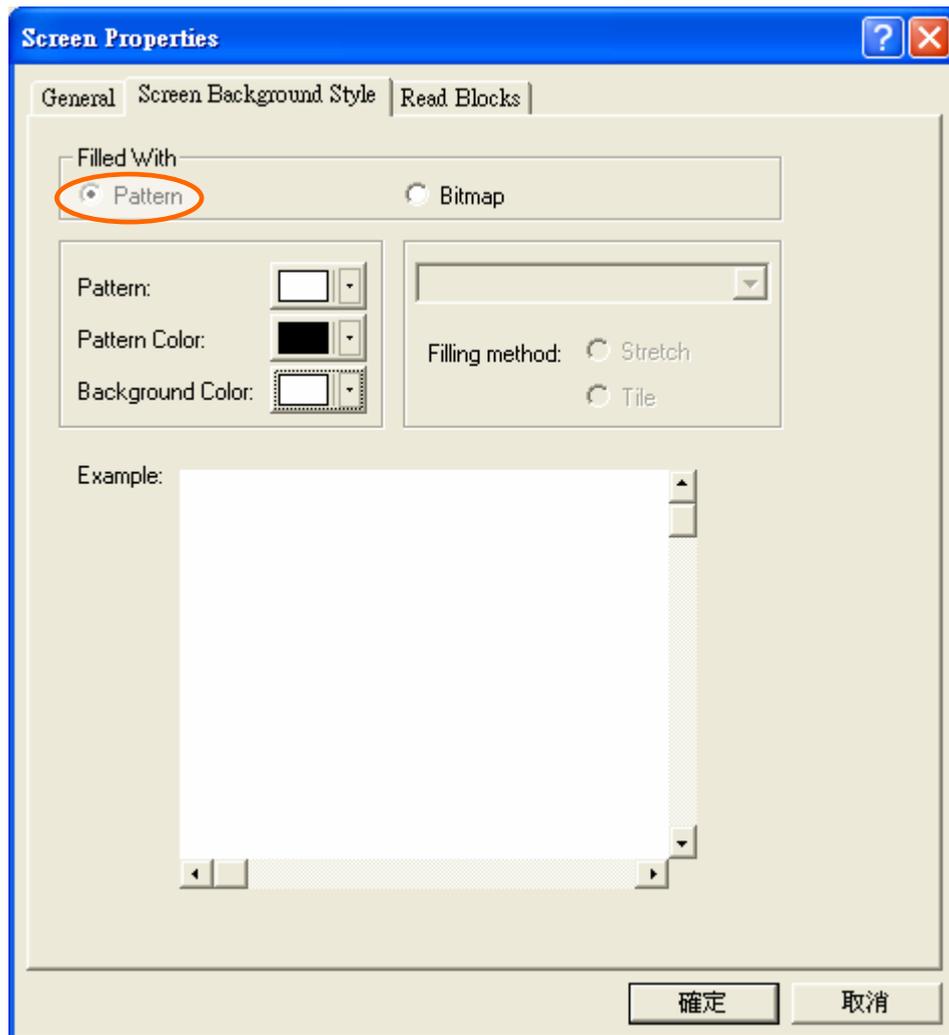


Figure 56. The [Screen Background Style] Tab – Pattern

- [Pattern] : Select the pattern of screen background
- [Pattern Color] : Select the color of the selected pattern.
- [Background Color] : Select the background color.

II. Filled With Bitmap

Select [Bitmap], the tab will be shown as below:

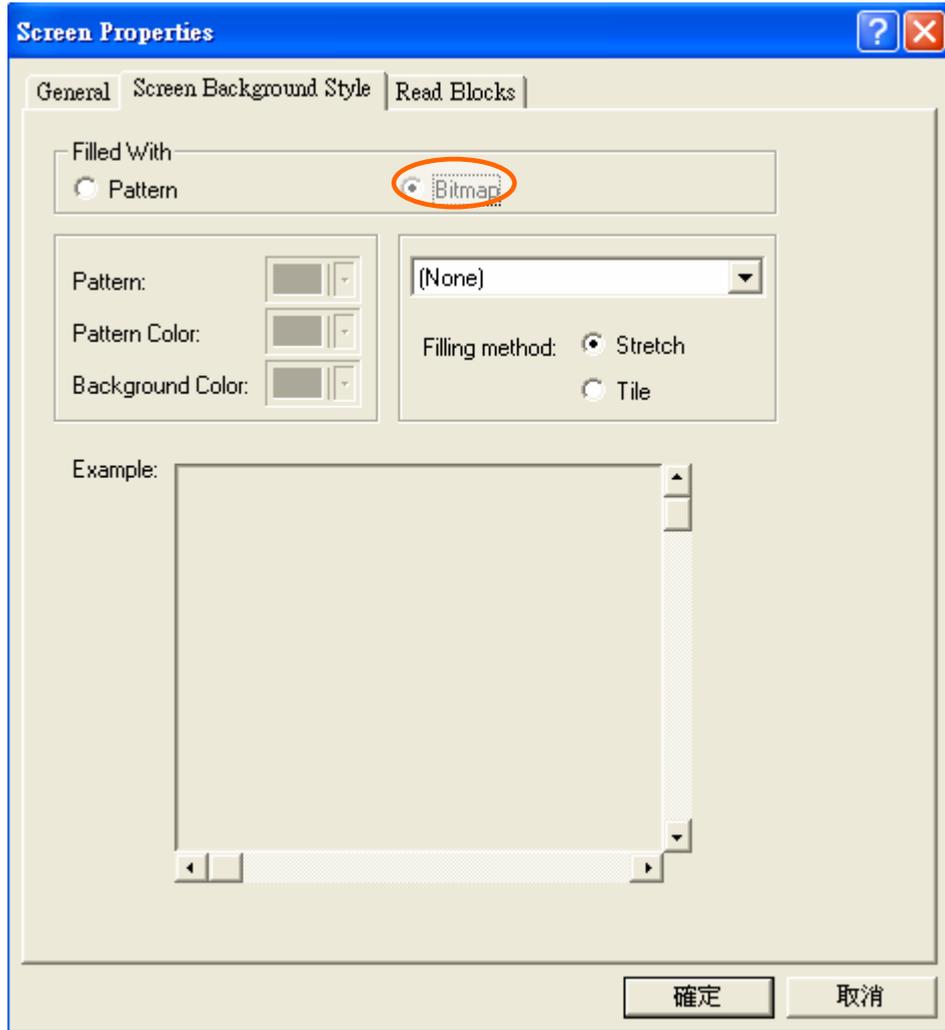
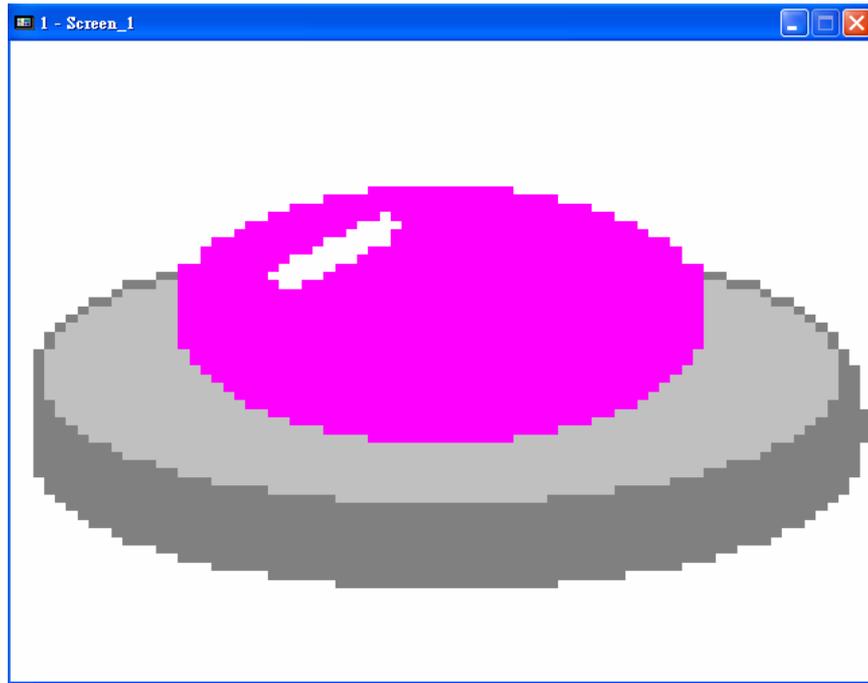


Figure 57. The [Screen Background Style] Tab – Bitmap

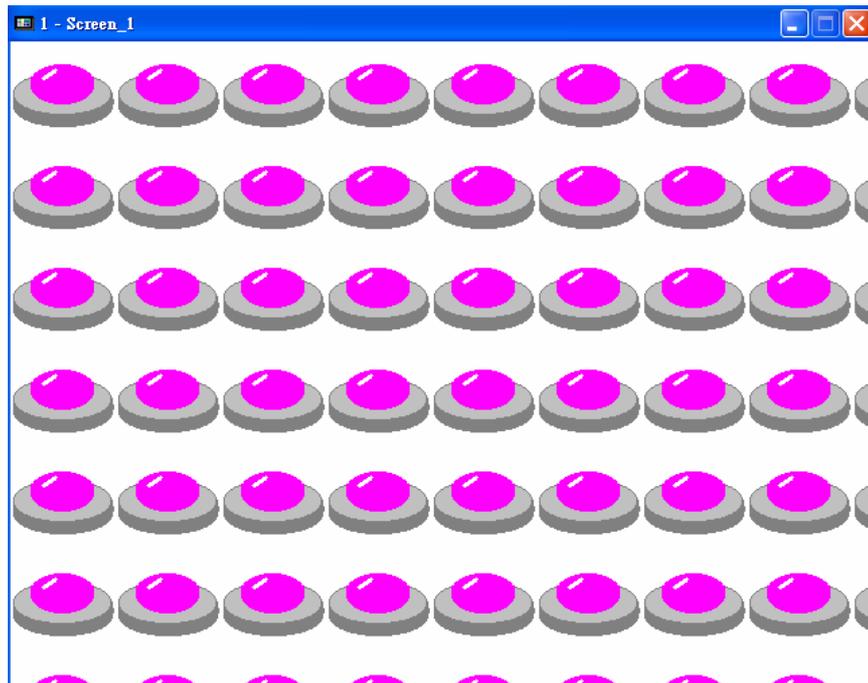
Select the bitmap from drop-down list, there are two filling methods:

- [Stretch] : To display the bitmap entirely on a whole screen. Select this option; the bitmap could be enlarged to match the designed screen. See below.

2. Instructions



- [Tile] : To display the duplicate bitmaps ranked on the designed screen. Each bitmap keeps original size. See below.



2.5.8.3. [Read Block] Tab

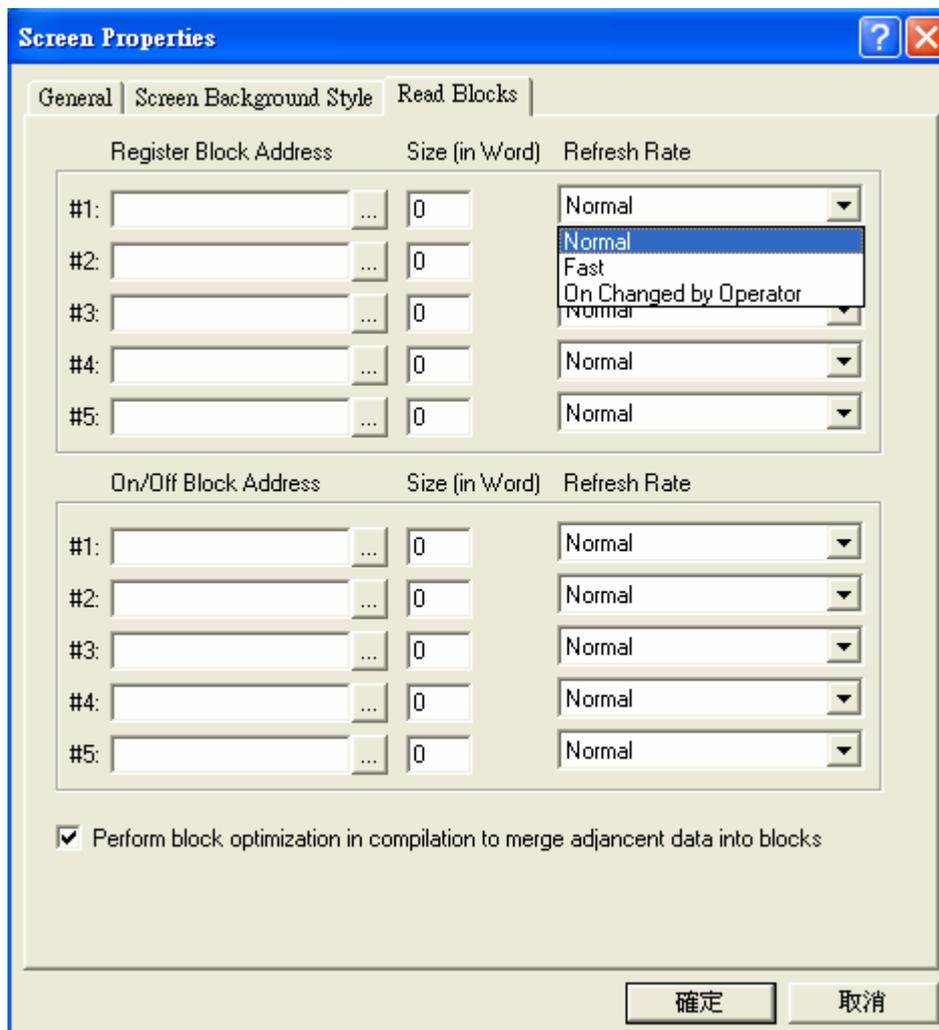


Figure 58. The [Read Block] Tab

The function of [Read Block] tab is to specify register block address, on/off block address, size (in word) and refresh rate.

- [Register Block Address]: Specify the register block address in accord with PLC. A screen can be specified five register addresses at most.
- [On/Off Block Address]: Specify the On/Off block address. A screen can be specified five register addresses at most.
- [Size]: Specify the size of block.
- [Refresh Rate]: Provide “Normal”, “Fast” and “On Unchanged by Operator” for selection.
 - ◆ “Normal”: Read data in normal speed of PLC.

2. Instructions

- ◆ “Fast”: Read data in double-quick of “Normal” speed. Subject to the same time, “Fast” be two-times more than “Normal” in reading data.
- ◆ “On Unchanged by Operator”: Enable users to change the value on HMI but unchange the value in PLC
- Optimization: Check this option to merge adjacent data into block. Note that the data address of PLC is recommended to continuity as to well communication with PLC.

2.5.8.4. [Auxiliary Key] Tab

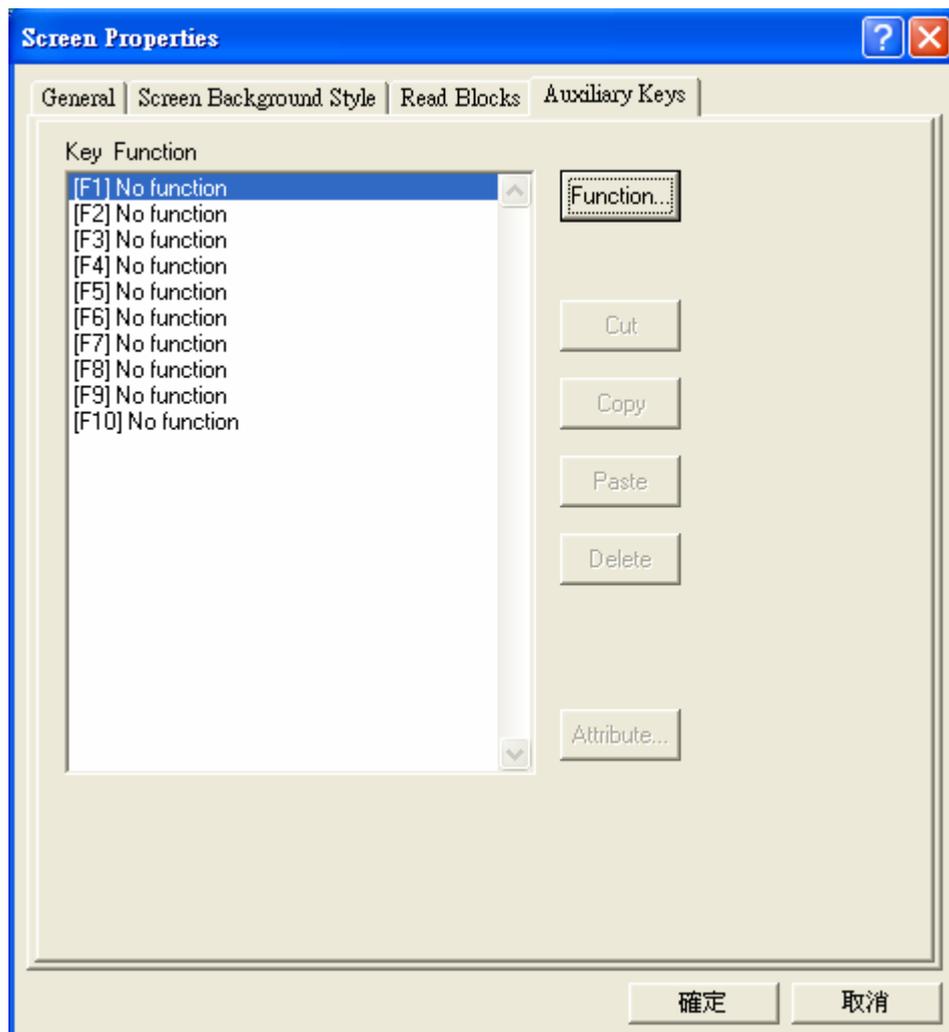


Figure 59. The [Auxiliary Keys] Tab

The main function of [Auxiliary Keys] is to design the attributes of external button. The buttons defined in [Auxiliary Keys] tab is only available for the current screen. If a user defines “F1” key as screen ‘5’ to screen ‘1’, this feature is only available on screen ‘5’.

Press [Function] key, the function assignment dialog box will be appeared in windows. See Figure 60.

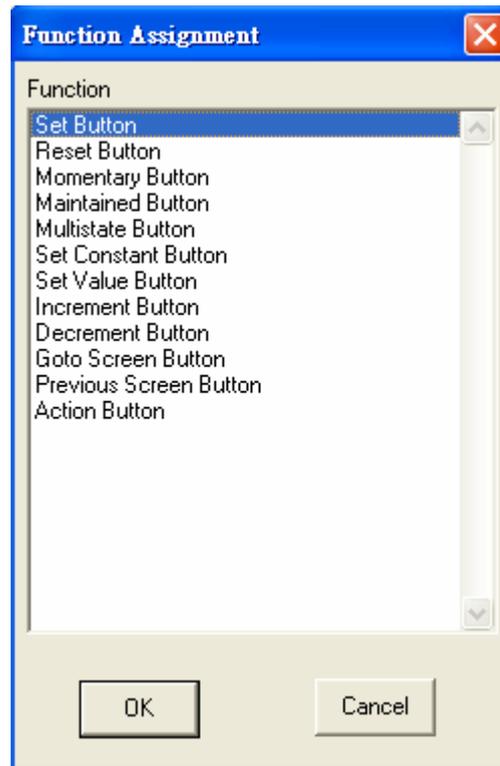


Figure 60. The [Function Assignment] Dialog Box

Select [Application]/[Common Keys] to define the auxiliary keys which are available on all of screens. Please refer to [Section 2.9.4. \[Common Keys\]](#).

Note that this function is not applicable on all HMI models; please refer to [Appendix A. - Table of the ADP 6.0 Features and the HMI Models](#).

2.5.8.5. Sub-screen

A sub-screen is a screen that is smaller than the usual screen. The Workstation displays a sub-screen in the center of the screen without destroying the existing display and adds a raised frame to it automatically.

The following are the steps to create a **sub-screen**:

1. Create a new screen; enter the screen name and number.
2. Open the [Screen Properties] dialog box and check the [This screen is a sub-screen] box.
3. Enter the width and height of the sub-screen.
4. Specify the position of sub-screen display (shown on the display center or appointed specific position). See below.

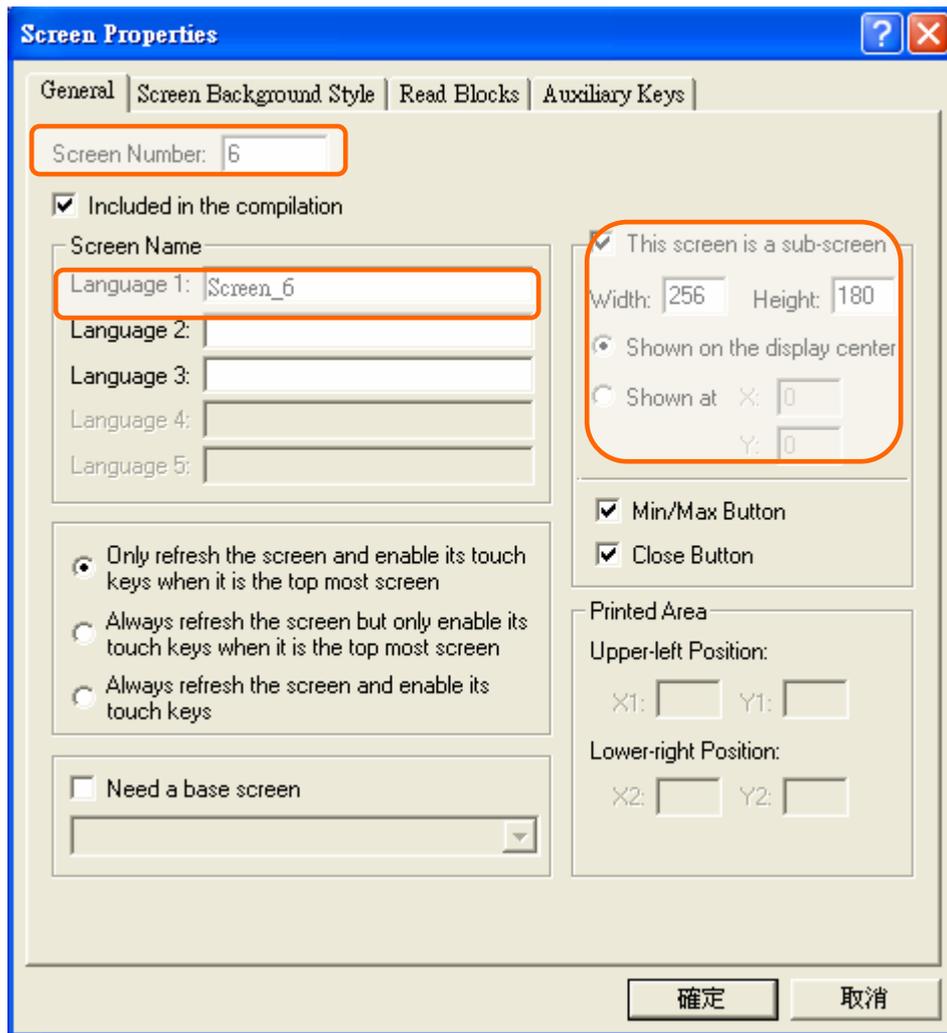


Figure 61. Modify the attributes of sub-screen

5. After press [Enter], the screen will be minimized to specified size. See below.

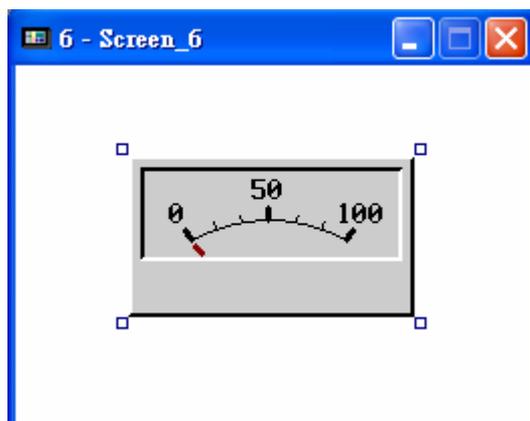


Figure 62. Sub-screen

2.5.8.6. Base Screen

A base screen is a screen which may be used as a template for a many different screens. Once edit a base screen, all of the same base screens in application will be changed at the same time.

The following are the steps to create a **base screen**:

6. Create a base screen first. See below.

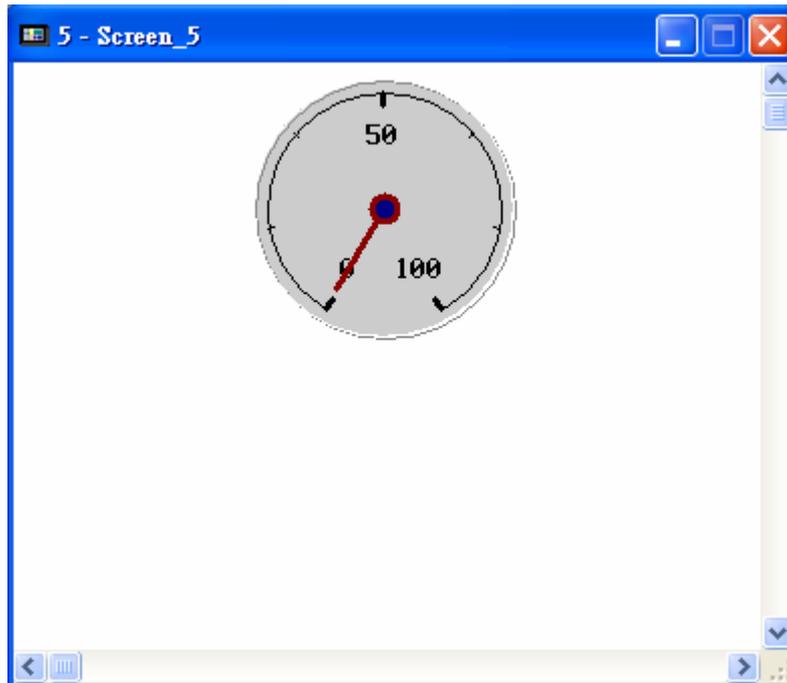


Figure 63. Base Screen

7. Select [Screen]/[[Properties] to create a new screen (screen-6). Then check the [Need a Base Screen] box and specify a base screen (screen-5) in the [Screen Properties] dialog box. See below.

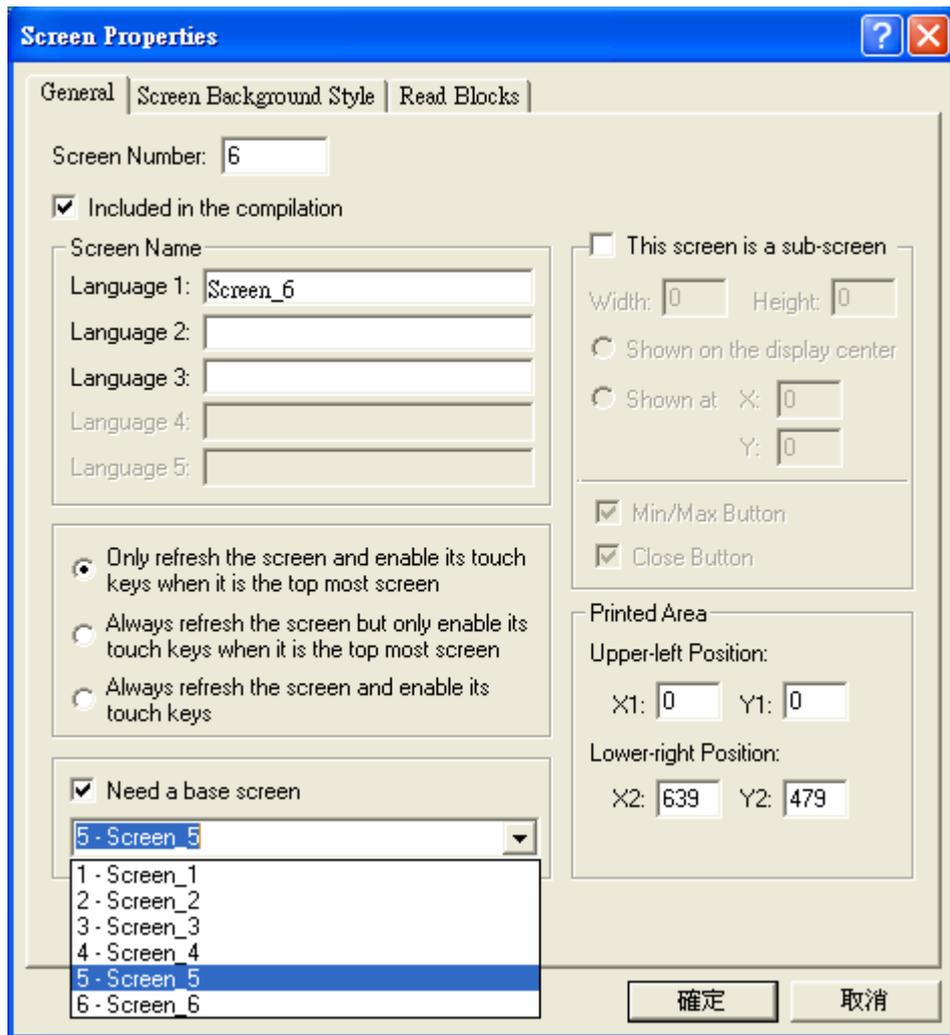


Figure 64. Specify a base screen

8. Specify a base screen (screen-5) displayed on the current screen (screen-6). See below.

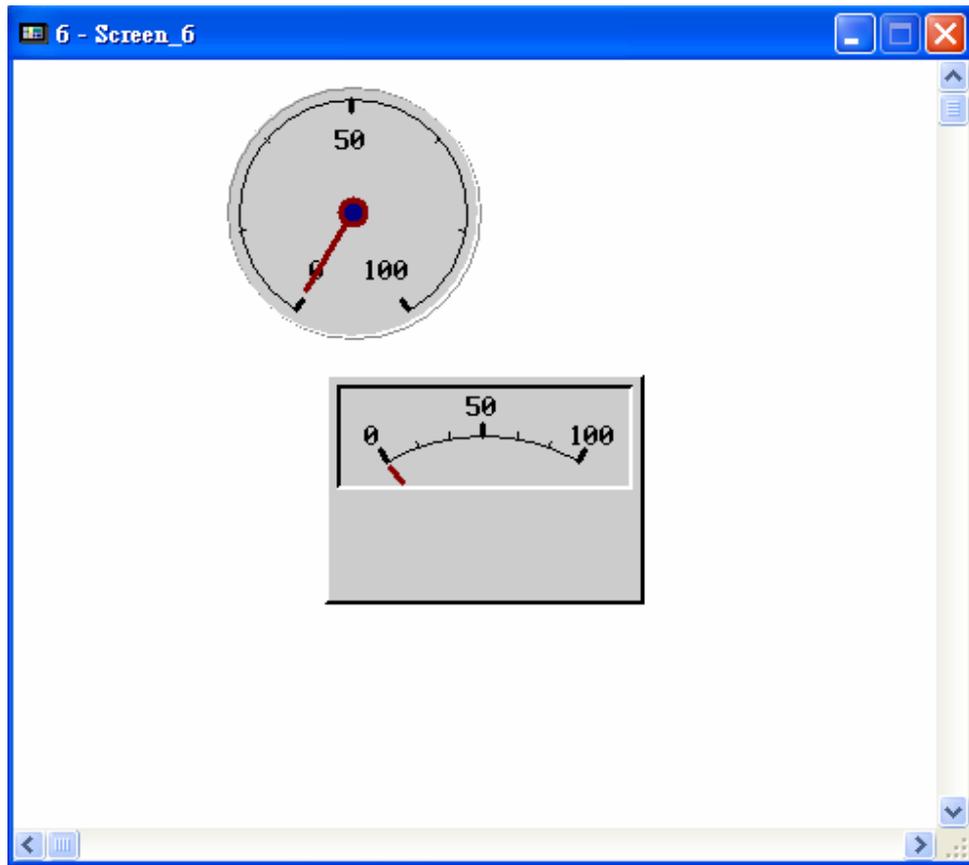


Figure 65. Base screen displayed on current screen

2.6. Draw Menu

To strengthen the display of your designed objects, it is often to draw a rectangle, a line or a scale to label its data. This will help users to read and take note of the data.

The function of geometric shapes is only the static shapes irrelative to PLC dynamic data.

| Geometric Shape | Button | Function | Section |
|---------------------|---|--|--|
| Dot |  | draw a dot | 2.6.1.1. [Dot] |
| Line |  | draw a line | 2.6.1.2. [Line],[Horizontal Line] and [Vertical Line] |
| Horizontal Line |  | draw a horizontal line | 2.6.1.2. [Line],[Horizontal Line] and [Vertical Line] |
| Vertical |  | draw a vertical line | 2.6.1.2. [Line],[Horizontal Line] and [Vertical Line] |
| Connected Lines |  | connect the lines with mouse movement | 2.6.1.3. [Connected Lines] and [Free Form] |
| Free Form |  | connected lines and curves with mouse movement | 2.6.1.3. [Connected Lines] and [Free Form] |
| Rectangle |  | draw a rectangle | 2.6.1.4. [Rectangle] and [Solid Rectangle] |
| Solid Rectangle |  | draw a solid rectangle | 2.6.1.4. [Rectangle] and [Solid Rectangle] |
| Parallelogram |  | draw a parallelogram | 2.6.1.5. [Parallelogram] and [Solid Parallelogram] |
| Solid Parallelogram |  | draw a solid parallelogram | 2.6.1.5. [Parallelogram] and [Solid Parallelogram] |
| Circle |  | draw a circle | 2.6.1.6. [Circle],[Solid Circle],[Ellipse] and [Solid Ellipse] |
| Solid Circle |  | draw a solid circle | 2.6.1.6. [Circle],[Solid Circle],[Ellipse] and [Solid Ellipse] |
| Ellipse |  | draw a ellipse | 2.6.1.6. [Circle],[Solid Circle],[Ellipse] and [Solid Ellipse] |
| Solid Ellipse |  | draw a solid ellipse | 2.6.1.6. [Circle],[Solid Circle],[Ellipse] and [Solid Ellipse] |

2. Instructions

| | | | |
|----------------|---|---|--|
| | | | Ellipse |
| Acr |  | draw a acr | 2.6.1.7. [Acr],[Pie] and [Solid Pie] |
| Pie |  | draw a pie | 2.6.1.7. [Acr],[Pie] and [Solid Pie] |
| Solid Pie |  | draw a solid pie | 2.6.1.7. [Acr],[Pie] and [Solid Pie] |
| Polygon |  | draw a polygon | 2.6.1.8. [Polygon] and [Solid Polygon] |
| Solid Polygon |  | draw a solid polygon | 2.6.1.8. [Polygon] and [Solid Polygon] |
| Text |  | static text display and design | 2.6.2.1. [Static Text] |
| True Type Text |  | similar with static text (only applicable on Softpanel) | 2.6.2.2. [True Type Text] |
| Bitmap |  | display the bitmap | 2.6.2.3. [Bitmap] |
| Frame/Edge |  | draw a frame/edge | 2.6.3.1. [Frame/Edge] |
| Scale |  | draw a scale | 2.6.3.2. [Scale] |
| Table |  | draw a table | 2.6.3.3. [Table] |
| Shape |  | display the shape | 2.6.4. [Shape] |

The following sections are to explain the objects with the same attributes.

2.6.1. Geometric Shape

Geometric shapes includes [Dot],[Line],[Horizontal Line],[Vertical Line],[Connected Lines],[Free Form],[Rectangle],[Solid Rectangle],[Parallelogram],[Solid Parallelogram],[Circle],[Solid Circle],[Ellipse],[Solid Ellipse],[Arc],[Pie],[Solid Pie],[Polygon] and [Solid Polygon].

Double-click on the object or click right key for the option [Object Attributes]. The dialog box which is correspondant with the object will be appeared. See Figure 66.

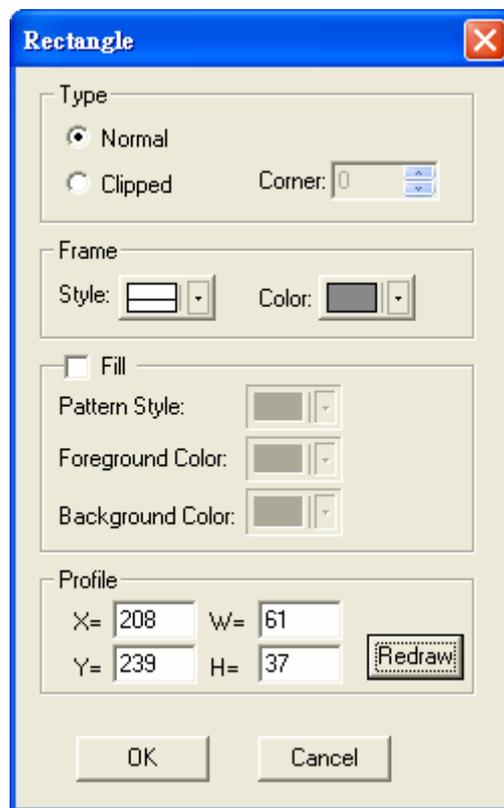


Figure 66. The [Rectangle] Dialog Box

2.6.1.1. [Dot]

A user can specify [Type], [Color] and [Frame] in the dot dialog box. See Figure 67.

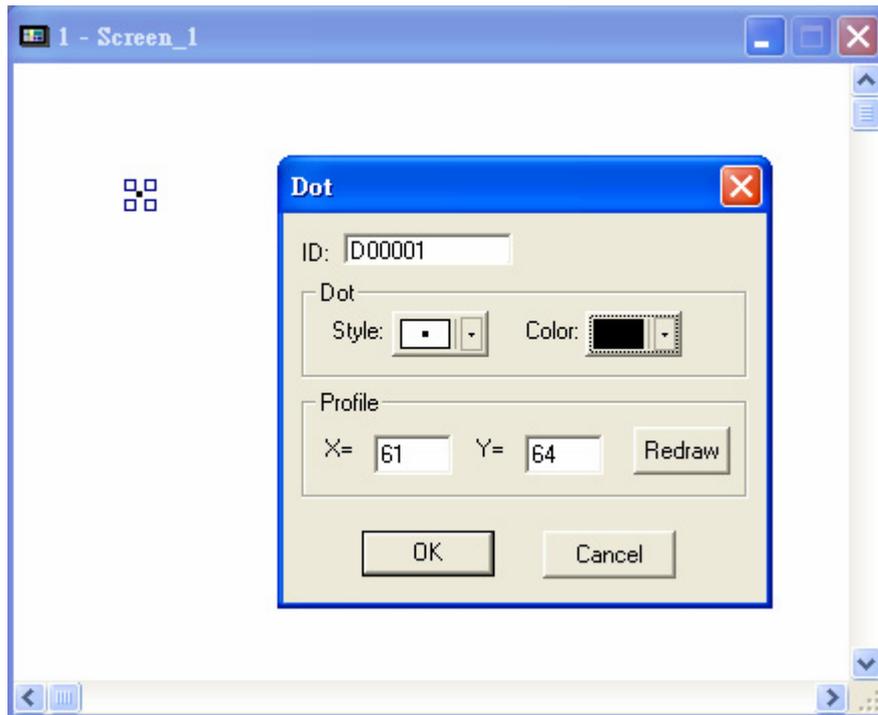


Figure 67. Draw a Dot

2.6.1.2. [Line],[Horizontal Line] and [Vertical Line]

Figure 68 is an illustration of [Line], [Horizontal Line] and [Vertical Line].

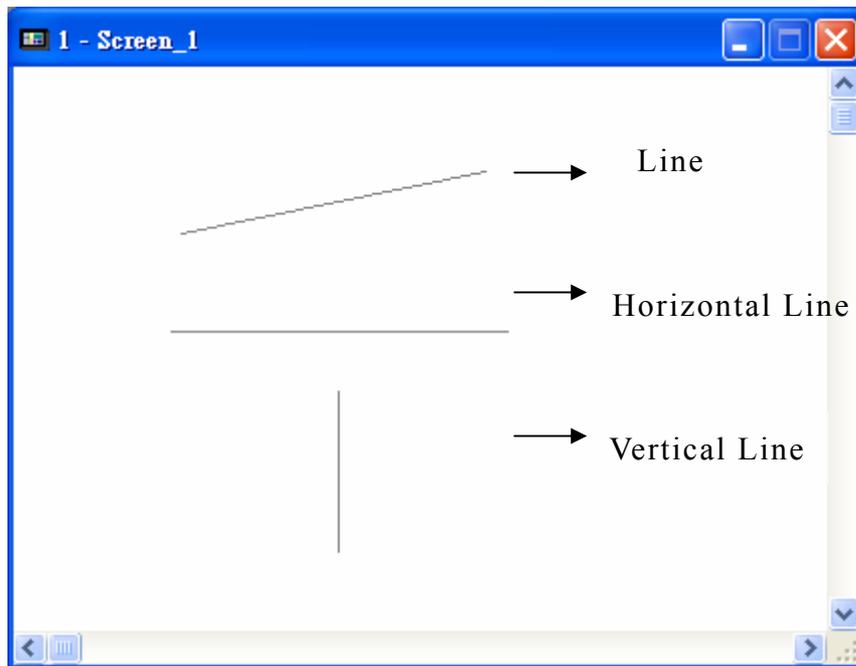


Figure 68. Line, Horizontal Line and Vertical Line

A user can specify the [Type], [Color], [Arrows], [Style] in the line, horizontal line and vertical line dialog box. See Figure 69.

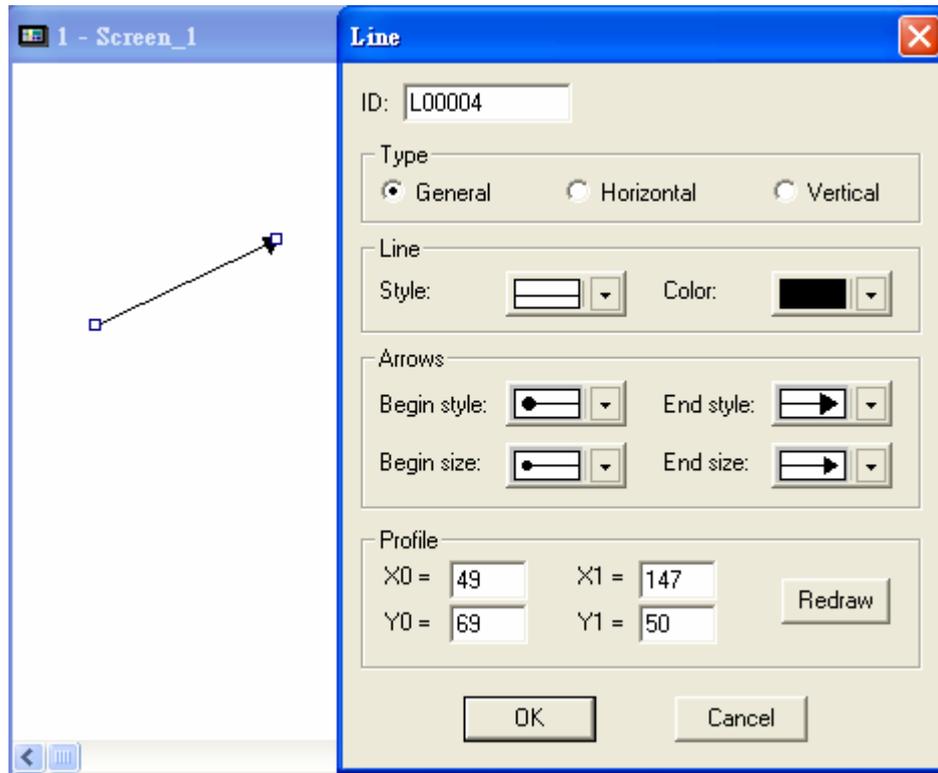


Figure 69. Draw a Line with Arrows

2.6.1.3. [Connected Lines] and [Free Form]

[Connected Lines] is to connect lines with the movement of the mouse cursor. If a user presses left mouse button once then moves cursor elsewhere on screen, a straight line will be drawn between the two points. This will continue until a user clicks right key of mouse.

[Free Form] is to connect the lines and curves by holding down left mouse button while scrolling mouse the cursor follows mouse movement. This will continue until a user clicks right key of mouse

2. Instructions

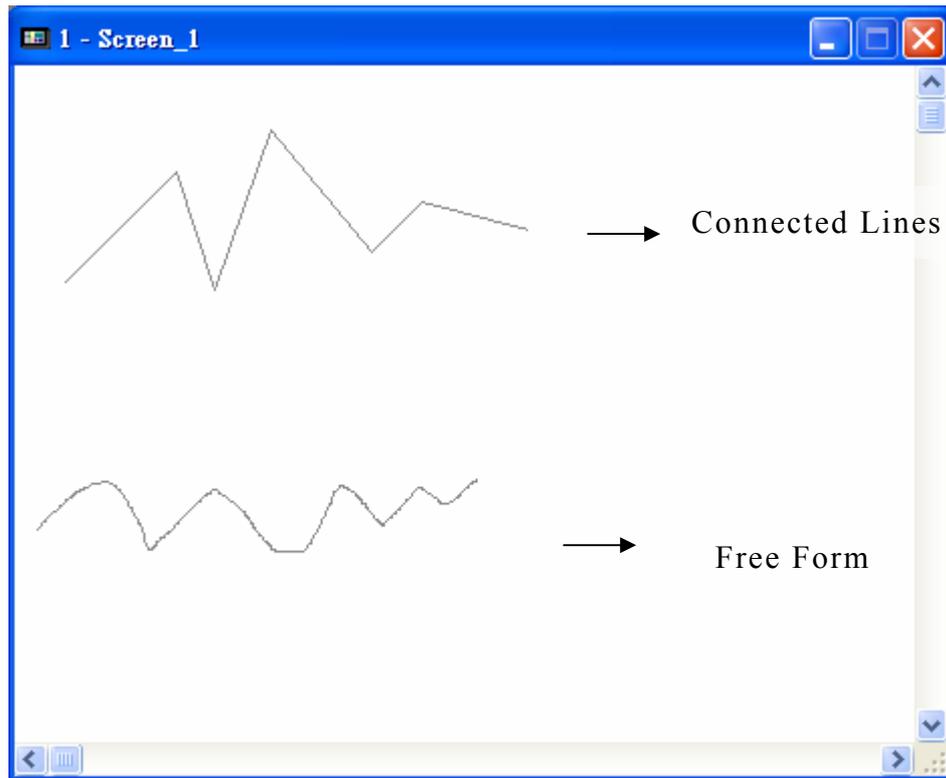


Figure 70. Connected Lines and Free Form

A user can specify [Style], [Color], [Arrows] and [Profile] in connected lines and free form dialog box. See Figure 71.

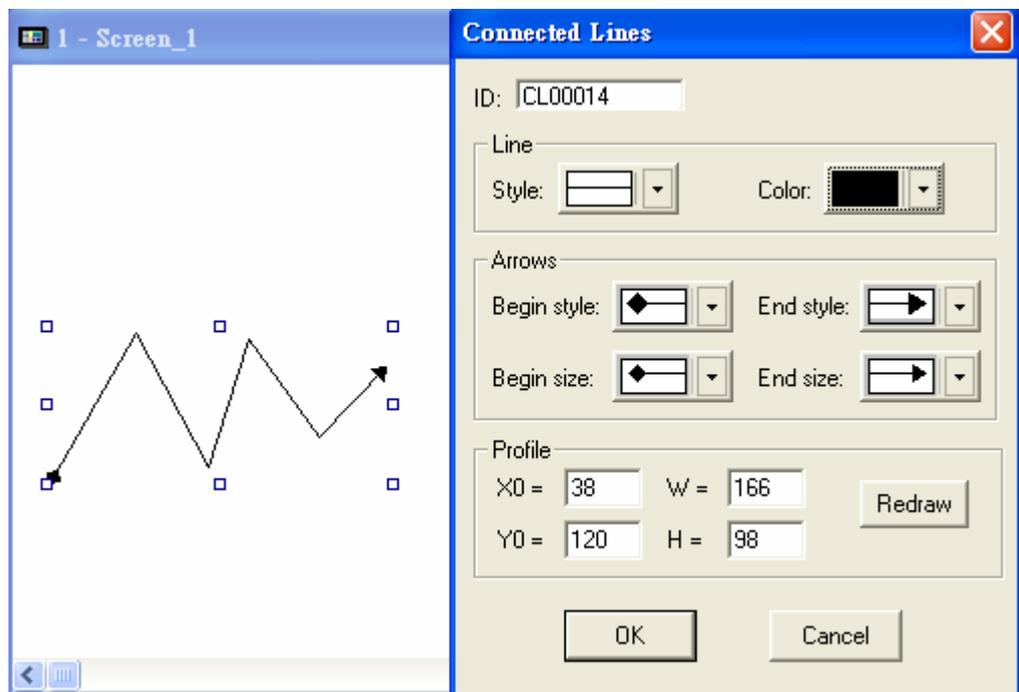


Figure 71. Draw Connected Lines with Arrows

2.6.1.4. [Rectangle] and [Solid Rectangle]

Figure 72 is an illustration of rectangle and solid rectangle.

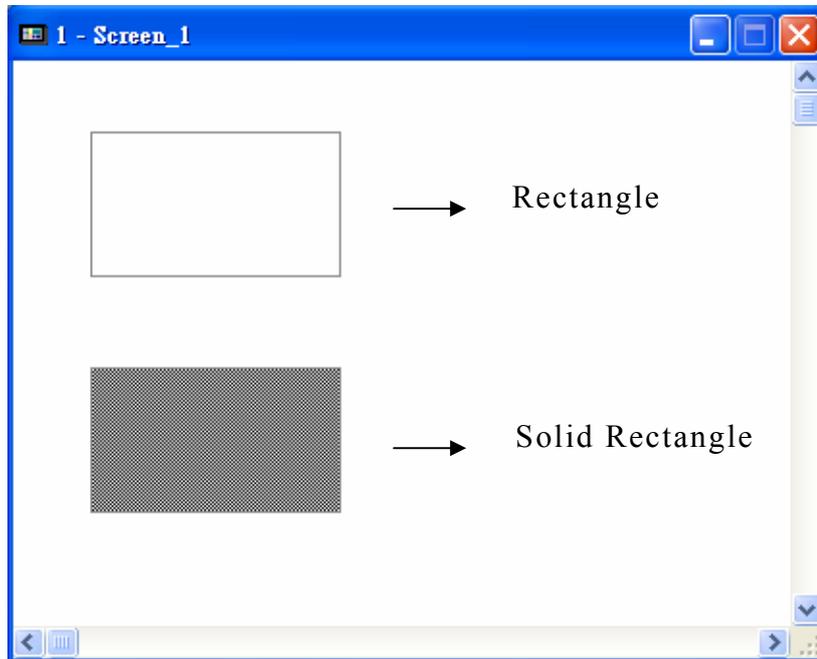


Figure 72. Rectangle and Solid Rectangle

A user can specify [Style], [Frame], and [Profile] in the rectangle dialog box. Figure 73 is a rectangle which is clipped with specified [corner].

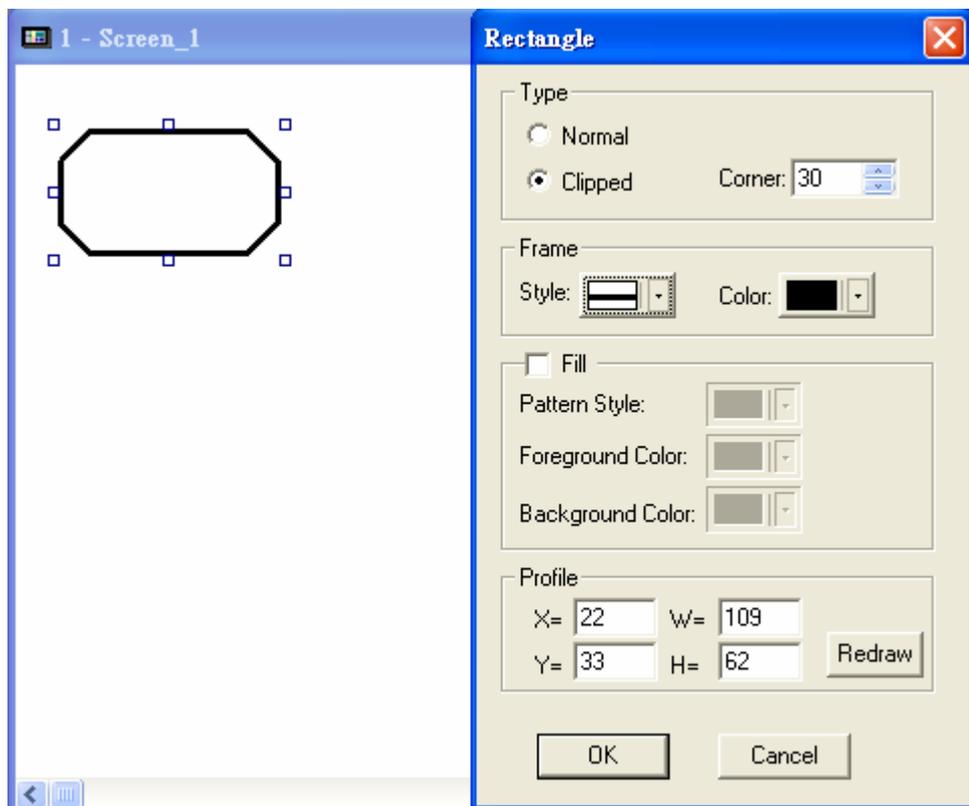


Figure 73. Draw a Clipped Rectangle

2.6.1.5. [Parallelogram] and [Solid Parallelogram]

[Parallelogram] is to draw a paeallelogram by holding down left mouse button to draw one side. This side will continue until a user click left key of the mouse. Then, drag this side to configure a rectangle until a user click right key of mouse. See Figure 74.

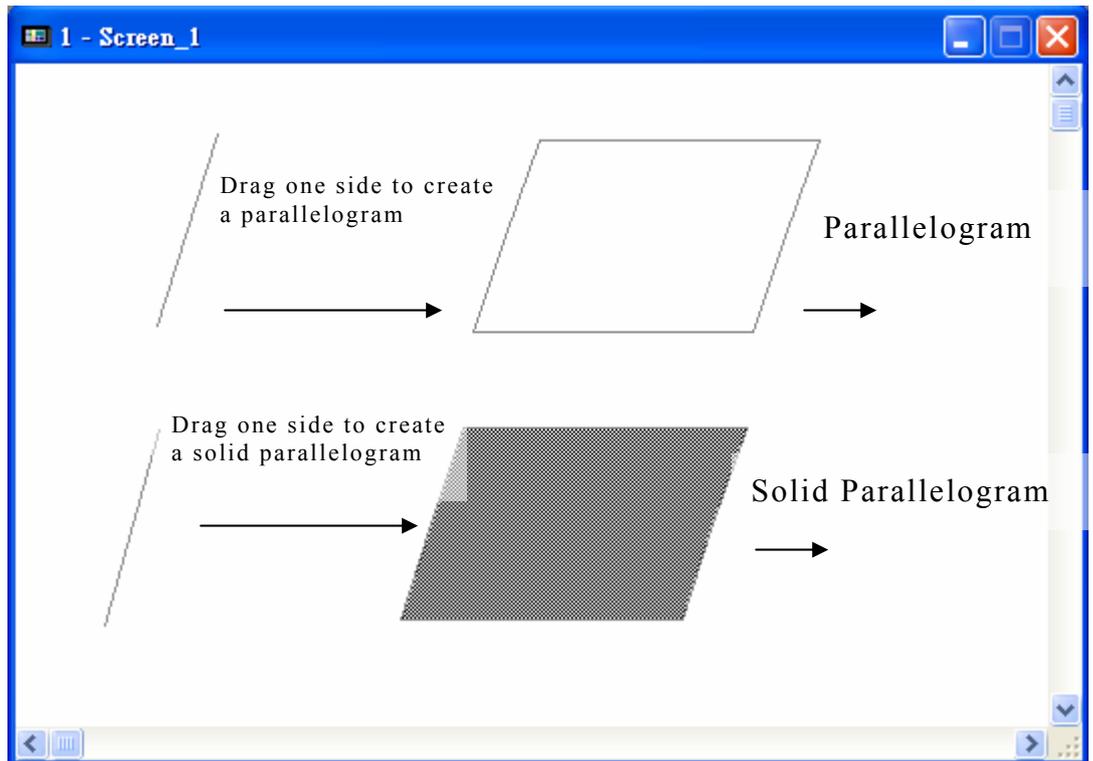


Figure 74. Draw a Parallelogram

A user can specify the attributes of rectangle in [Border] and [Profile]; and specify the attributes of solid rectangle in [Border], [Fill] and [Profile]. See Figure 75.

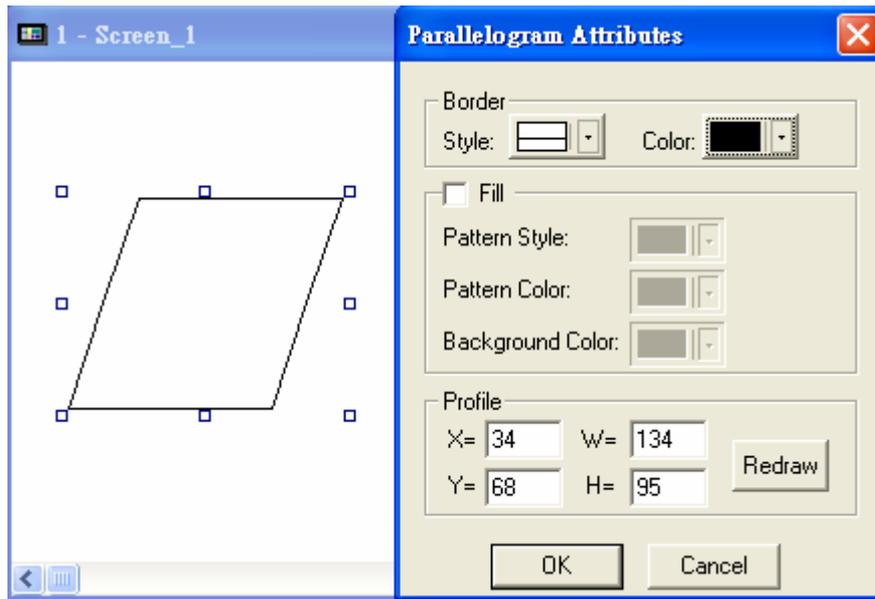


Figure 75. Draw a Parallelogram

2.6.1.6. [Circle],[Solid Circle],[Ellipse] and [Solid Ellipse]

Figure 76 is an illustration of a circle and an ellipse.

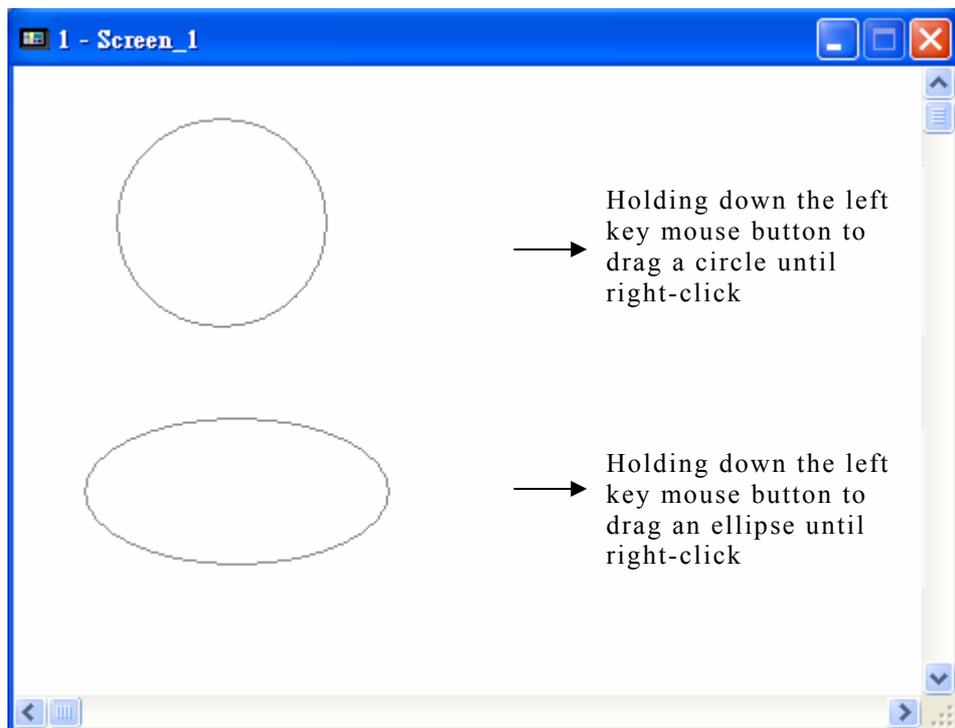


Figure 76. Draw a Circle and Ellipse

A user can specify the attributes of circle in [Border] and [Profile]; and specify the attributes of ellipse in [Border], [Fill] and [Profile]. See Figure 77.

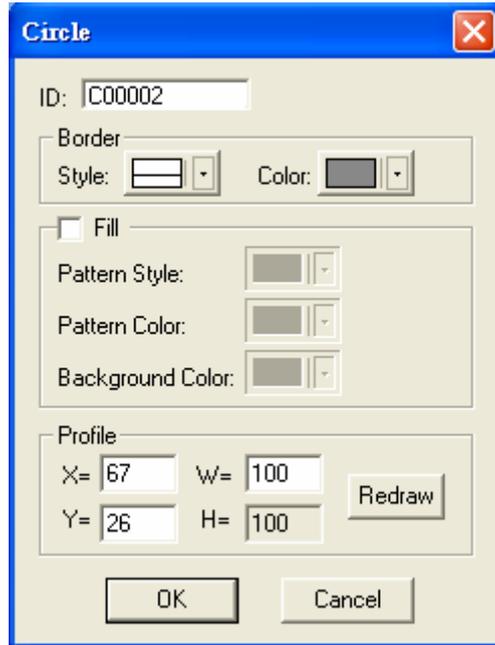


Figure 77. The [Circle] dialog box

2.6.1.7. [Acr]、[Pie] and [Solid Pie]

[Acr] is to draw a circle by holding down left mouse button. This will continue until configure desired size by right-click. Left-click for a radius display, a user can drag radius to configure a desired acr until re-click left key. See Figure 78. A user can adjust the width and height to configure an acr of an ellipse. See Figure 79.

The way to draw a pie and a solid pie is similar to [Acr]. The difference of a pie from an acr is two lines connected between the two-side of an acr and center. See Figure 79.

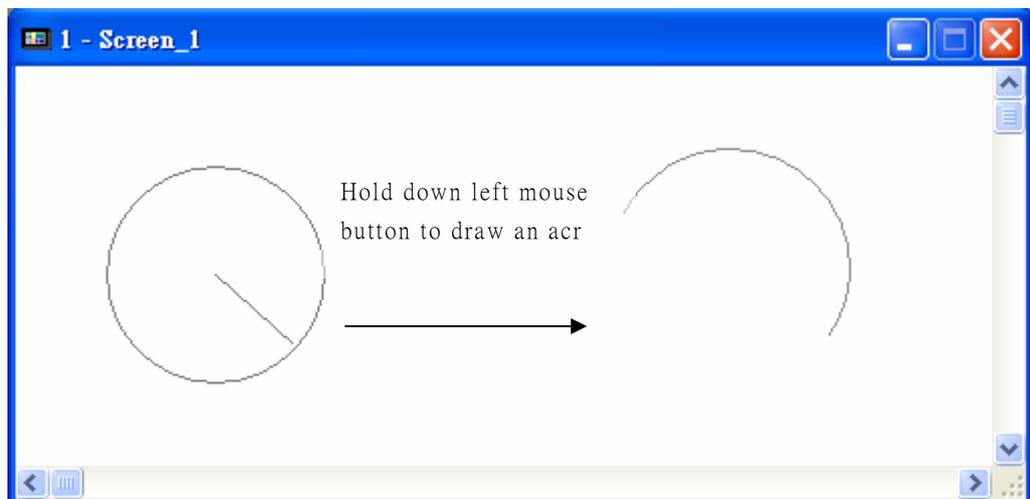


Figure 78. Draw a Acr

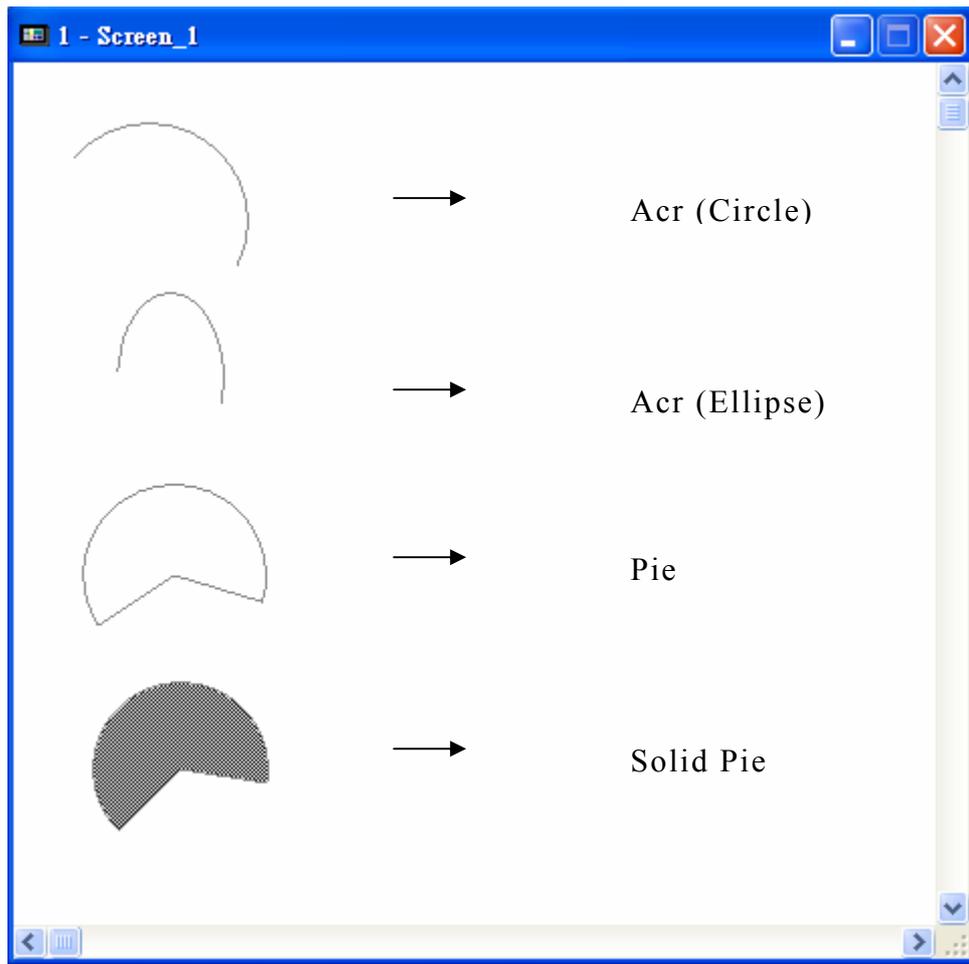


Figure 79. Acr, Pie and Solid Pie

The acr, pie and solid pie dialog box are the same; See Figure 80. Check [Arc] box to draw an arc; Check [Fill] box to draw a solid arc and specify [Pattern] there; Check [Arc] box and adjust the width and height in [Profile] to configure an arc of ellipse.

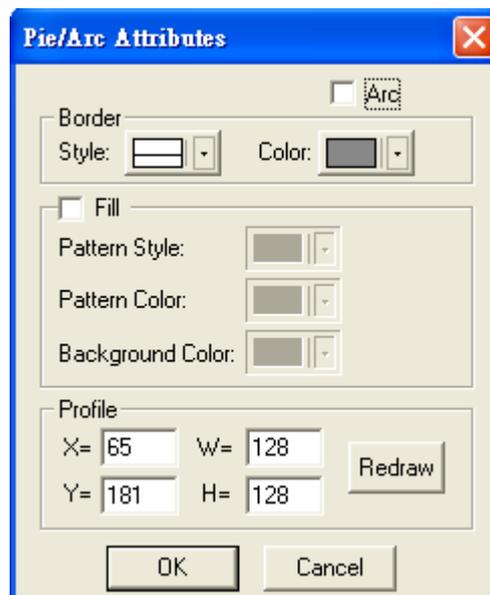


Figure 80. The [Pie/Arc Attributes] Dialog Box

2.6.1.8. [Polygon] and [Solid Polygon]

[Polygon] is to draw sides of a polygon with the movement of the mouse cursor and connect the lines between the starting point and the terminal point with shortest distance; See Figure 80. The way to draw a polygon is dragging the mouse cursor until left-click on the turning point and right-click to be a polygon.

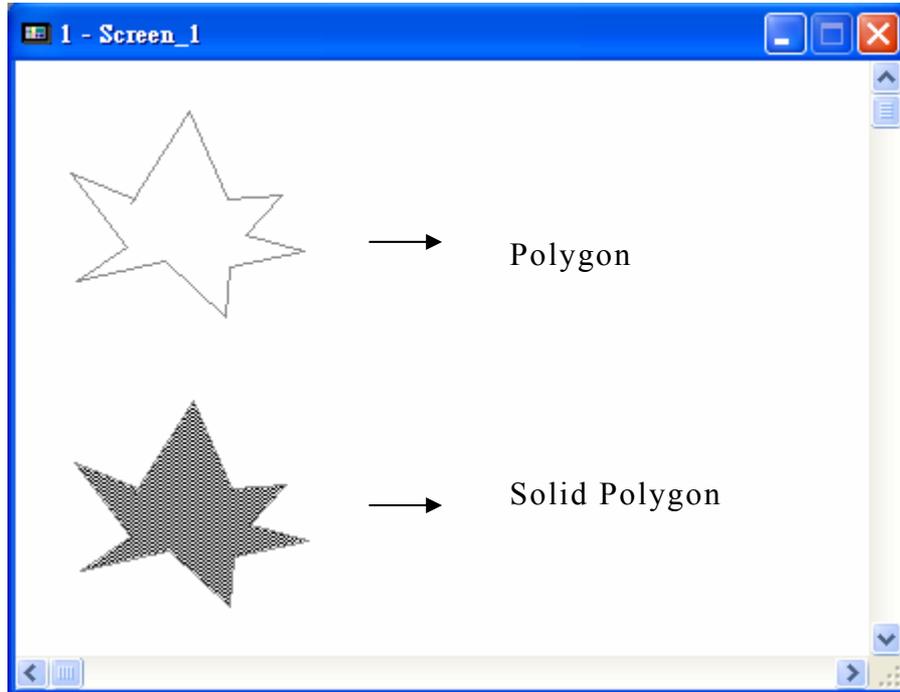


Figure 81. Polygon and Solid Polygon

A user can specify the attributes of polygon in [Border] and [Profile] and the attributes of solid polygon in [Border], [Fill] and [Profile]. See Figure 81.

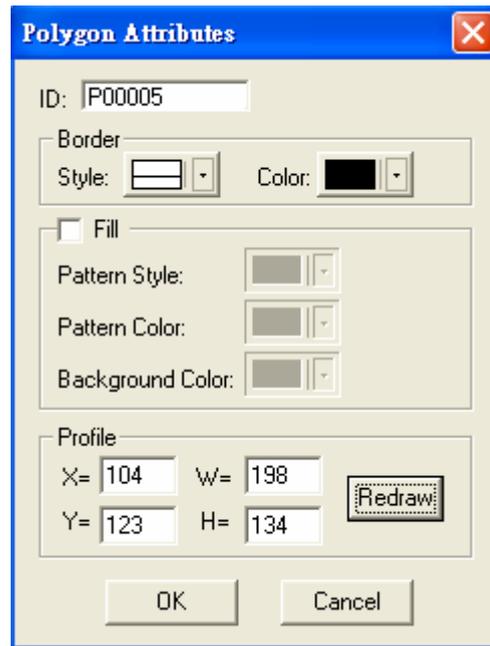


Figure 82. The [Polygon Attributes] Dialog box

2.6.2. [Static Text] , [True Type Text] and [Bitmap]

2.6.2.1. [Static Text]

The [Static Text] provides users with the choices of text, font, color, reading order, alignment and frame/edge. Double-click on the object, the [Static Text] dialog box as in Figure 82 will be appeared on the screen.

- [Text] Tab: Enter text on the [Text] block. There are sixteen types of fonts in all for users to specify as Figure 82. A user can specify the font, sixteen types in all. For the properties which are not explained in this section, please refer to the Section [Font Library].
- [Frame/Edge] Tab: Click [Select] button to specify the style of frame/edge as Figure 83.

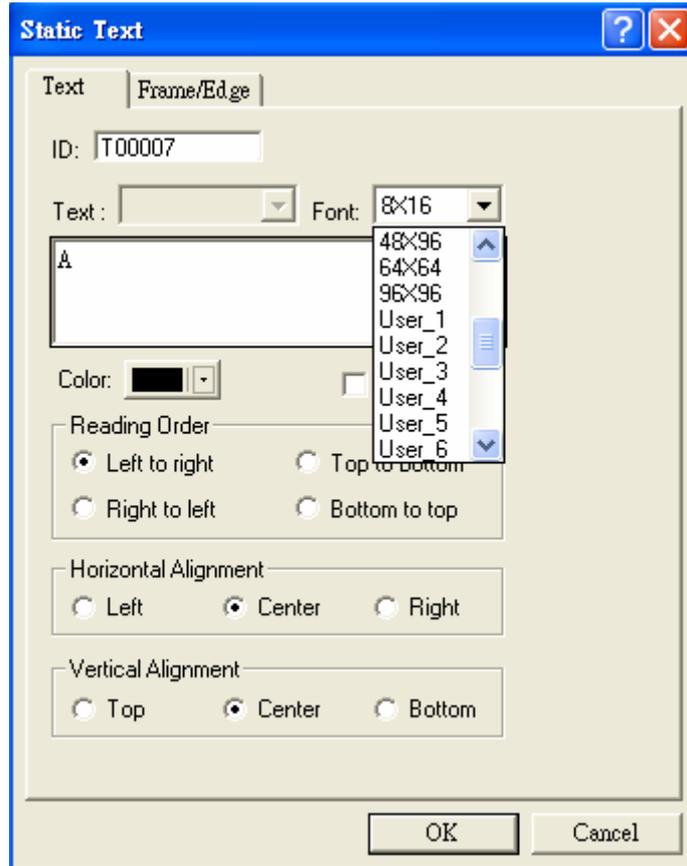


Figure 83. The [Static Text] Dialog Box

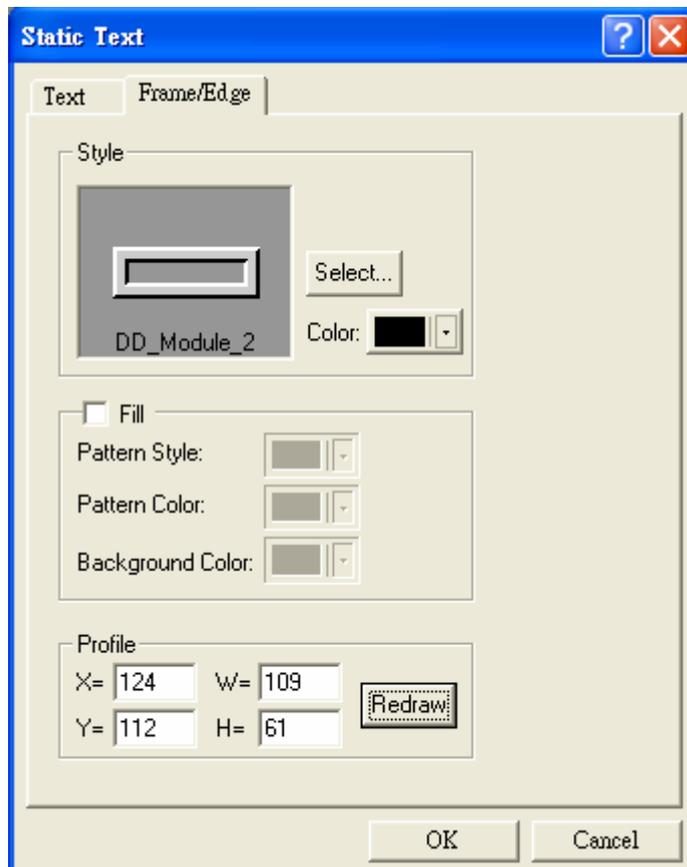


Figure 84. The [Frame/Edge] Tab

2.6.2.2. [True Type Text]

The functions of [True Type Text] and [Static Text] are similar only applicable on SoftPanel.

2.6.2.3. [Bitmap]

The purpose of [Bitmap] is to provide graphes for selection as the figure below. Double-click on the object; a user can select the bitmap form the drop-down list in the [Static Graphic] dialog box.

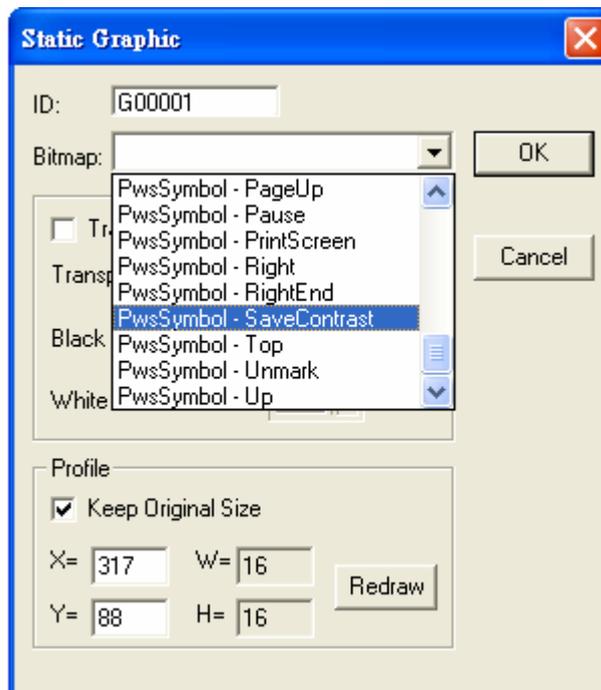


Figure 85. The [Static Graphic] Dialog Box

2.6.3. [Frame/Edge] , [Scale]  and [Table] 

2.6.3.1. [Frame/Edge]

[Frame/Edge] provides style, pattern style, background and color for selection. See Figure 86.

Note that there is flow chart style for selection; See Figure 86.

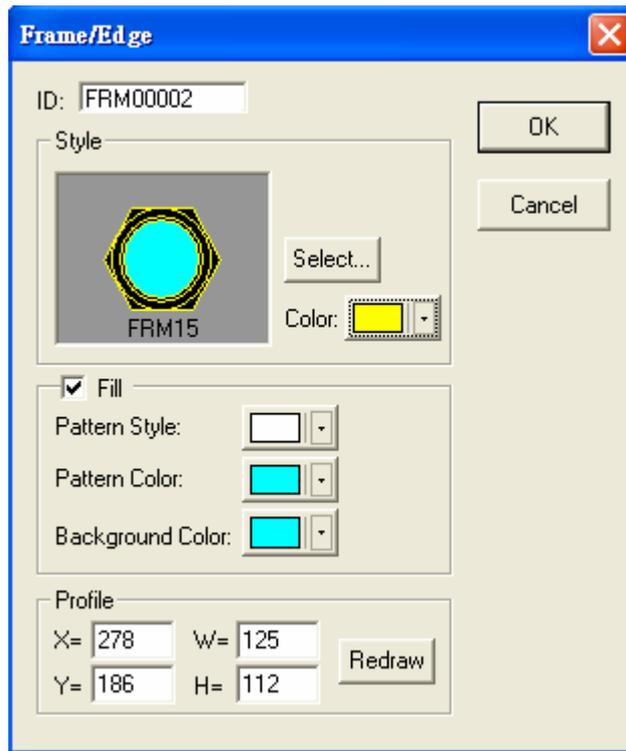


Figure 86. The [Frame/Edge] Dialog Box

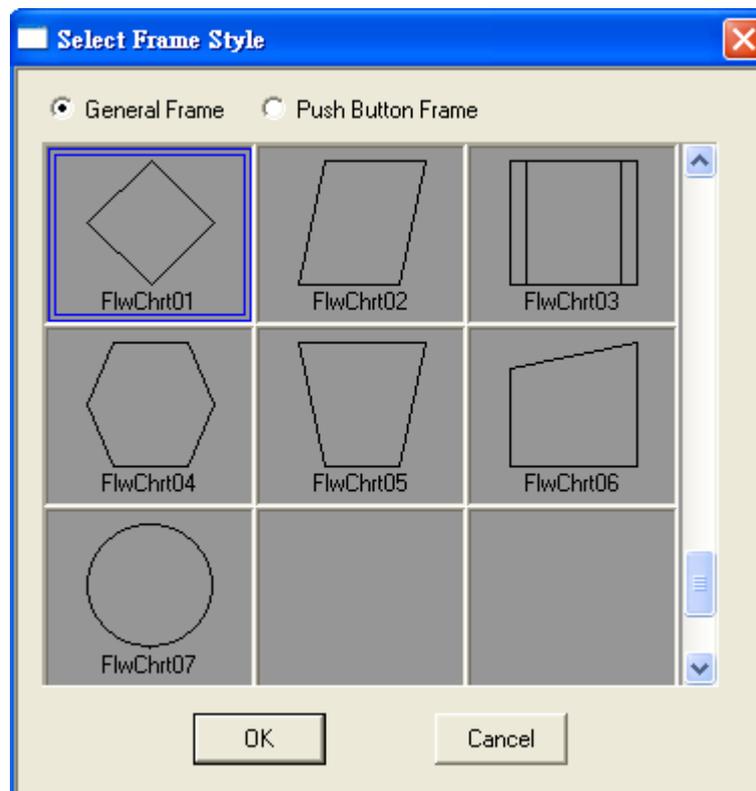
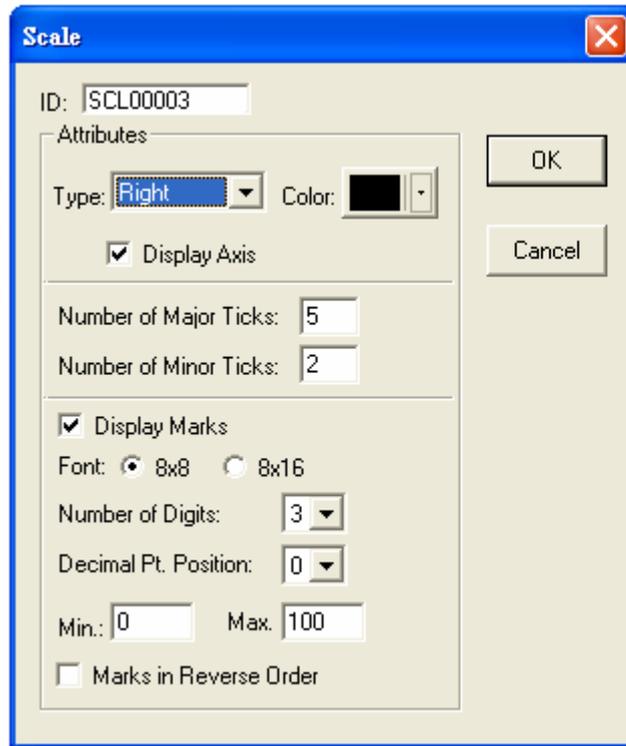


Figure 87. Select Frame Style

2.6.3.2. [Scale]

[Scale] provides left, right, up, down direction, color, number of ticks and display marks as below.



2 minor ticks

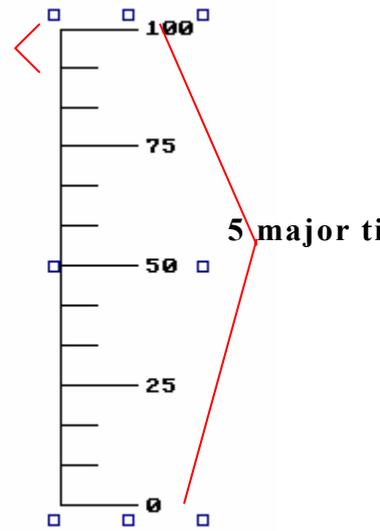


Figure 88. The [Scale] Dialog Box

2.6.3.3. [Table]

The function of [Table] is to create a table as below.

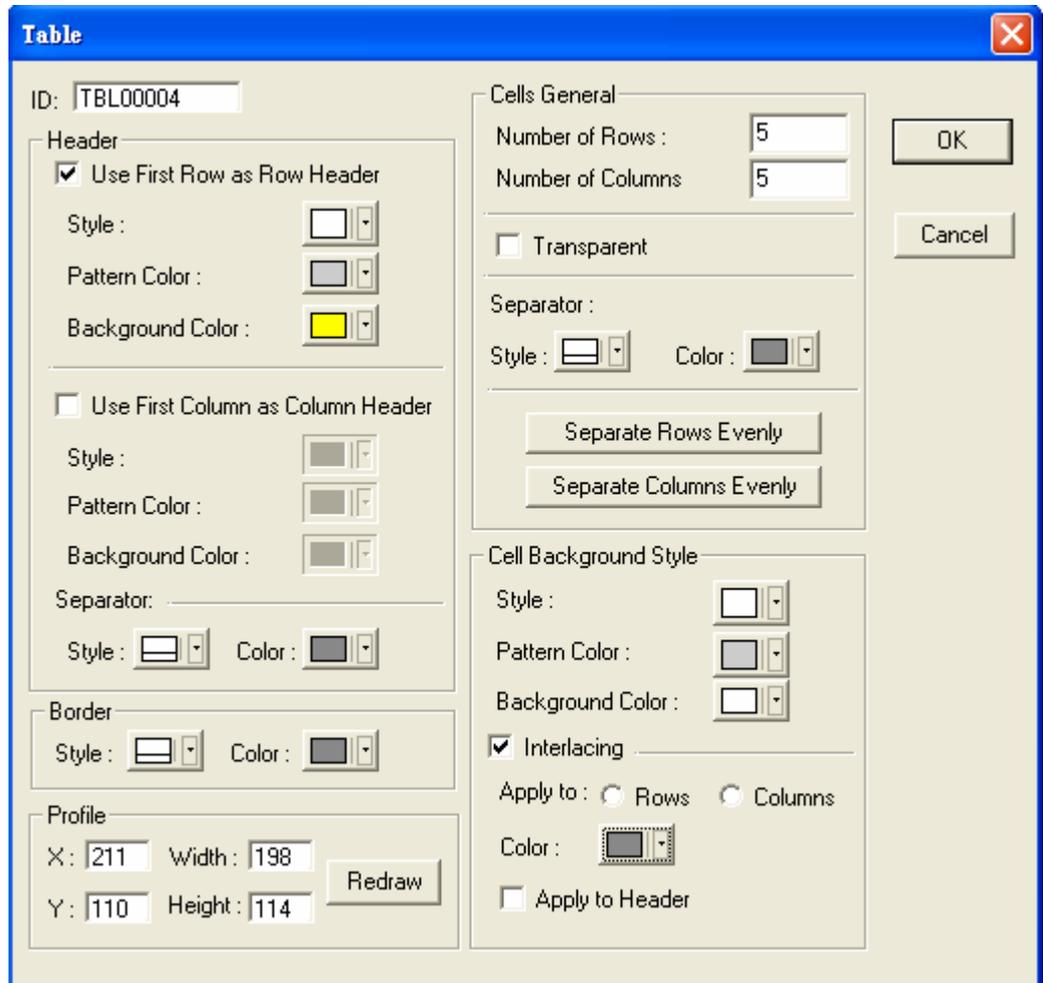


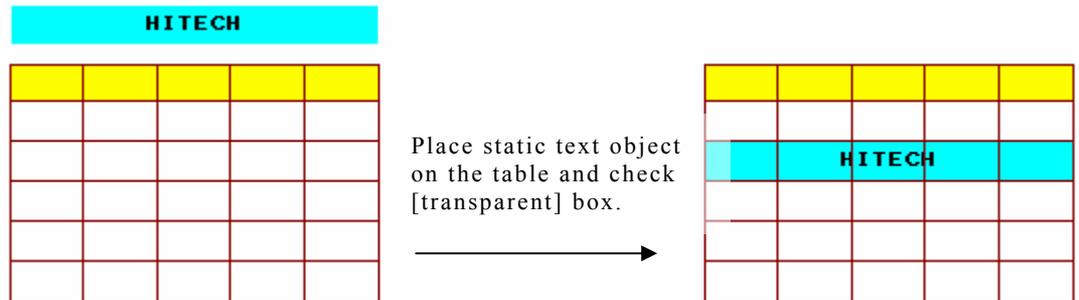
Figure 89. The [Table] Dialog Box

- [Use First Row as Row Header] : Specify the pattern style and color of row header.
- [Use First Column as Column Header] : Specify the pattern style and color of column header.
- [Border] : Specify the style and color of border.
- [Profile] : Specify the location and size of a table.
- [Cells General] : Specify number of rows/columns, and style.

2. Instructions

- [Transparent] : Display other object(s) in the table but remember to place the table up.

Example : Static Text  and Table as below.



- [Interlacing] : Interlace rows or columns; See below. (Only applicable on distransparent table)

Figure 90. [Interlacing]

- [Apply to Header] : Interlace applied to header; See below. (Only applicable on distransparent table)

Figure 91. [Apply to Header]

2.6.4. [Shape] 

[Shape] provides graphics for selection; Double-click on the object, a user can press [select] for the shape library in the [Shape] dialog box as below.

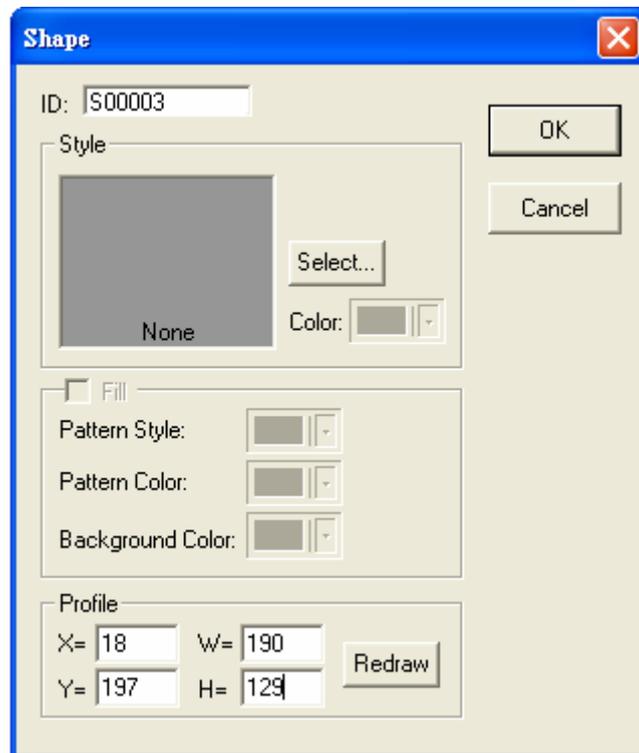


Figure 92. The [Shape] Dialog Box

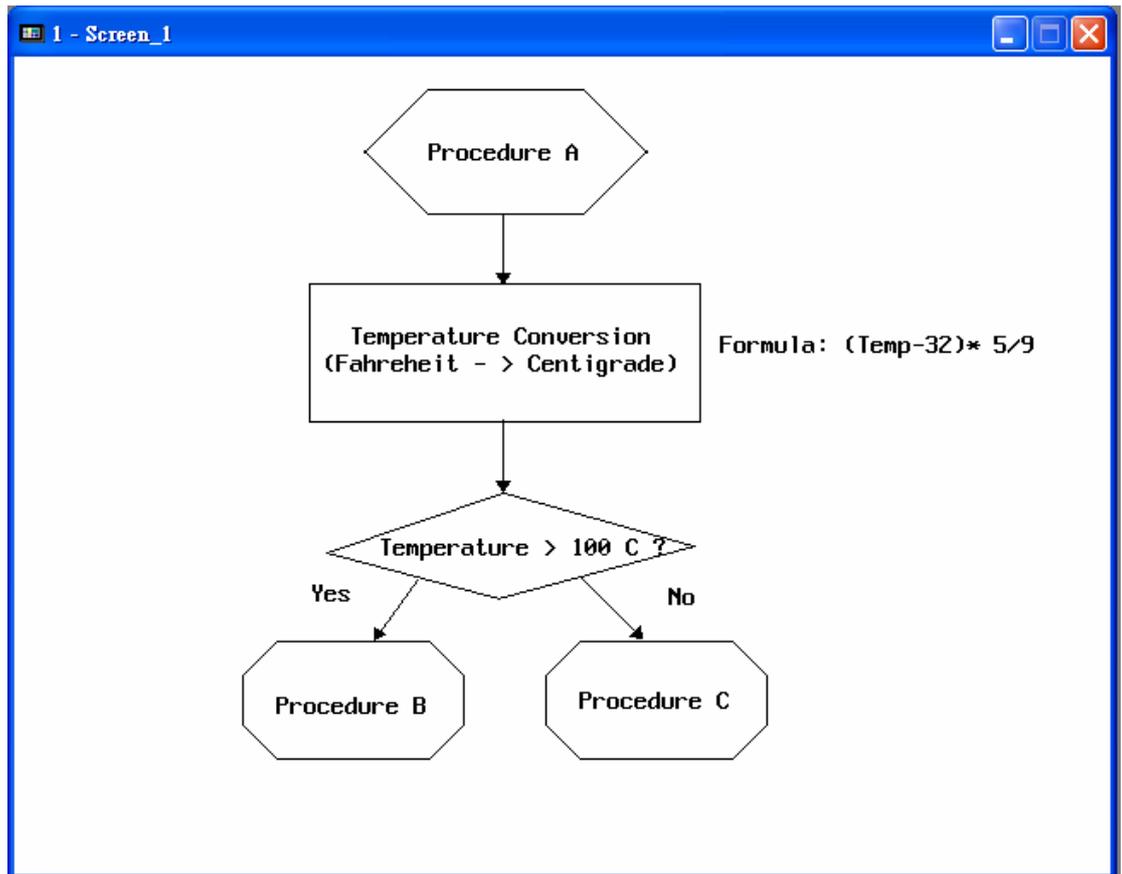
2.6.5. Flow Chart

Flow chart is one of the applications in [Draw] to lines, geometric graphics and frame/edge editing. A user can illustrate an applied flow chart clearly to facilitate the operation.

Example:

Convert the boiler temperature in procedure A into centigrade ($^{\circ}\text{C}$). Once the temperature $> 100^{\circ}\text{C}$, it will enter procedure B; once the temperature $\leq 100^{\circ}\text{C}$ will enter procedure C. The following flow chart is made up of polygon, rectangle, lines with arrows and static text:

2. Instructions



2.7. Object Menu

I. Introduction

A screen object is an item placed on the screen to perform a particular function. Each object has its unique user configurable properties and the object allows to be set to perform exactly the method desired.

Objects are divided into four categories: (1) related to screen button and dynamic data; (2) irrelative to screen button but related to dynamic data; (3) related to PLC dynamic data and Workstation memory buffer zone; and (4) related to application. See Figure 93.

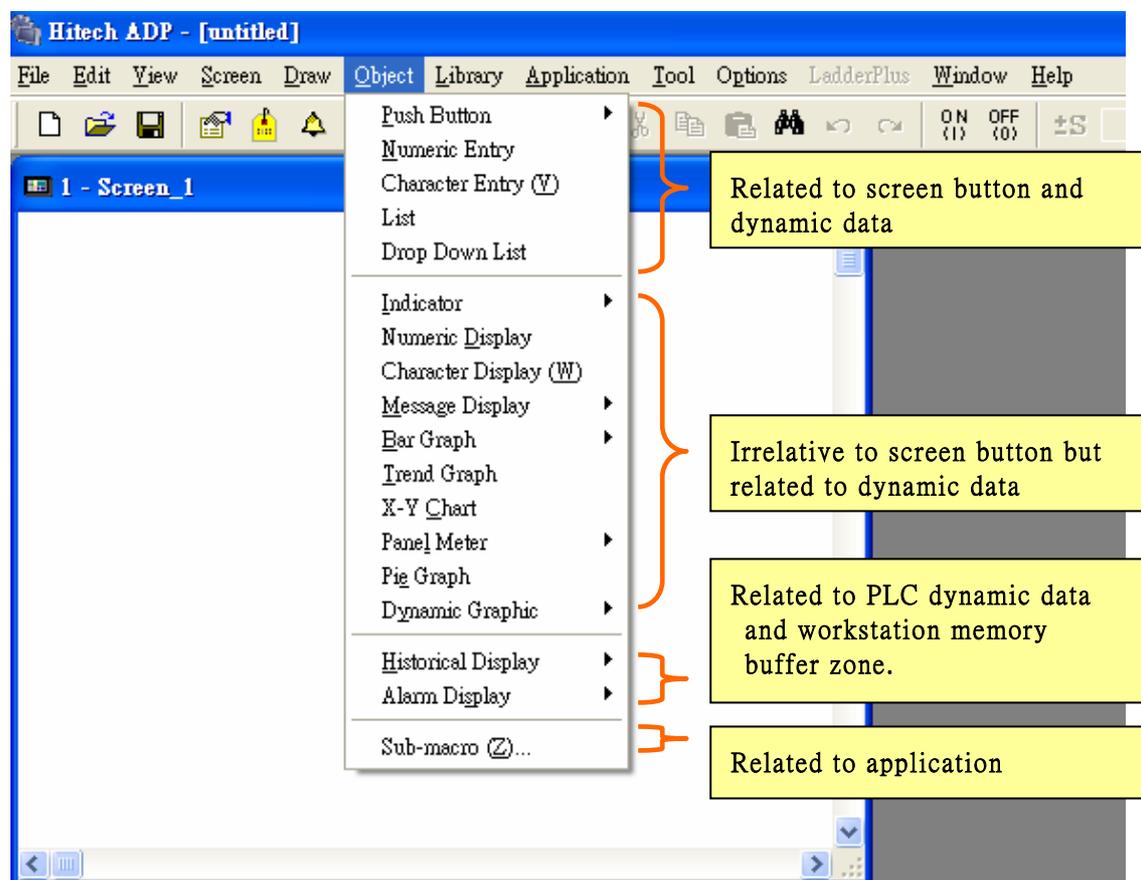


Figure 93. The [Object] Commands List

Four Categories of objects:

1. Related to screen button and dynamic data: [Push Button],[Numeric Entry],[Character Entry]....etc.

There are 13 sub-commands in [Push Button] list; See Figure 94.

2. Instructions

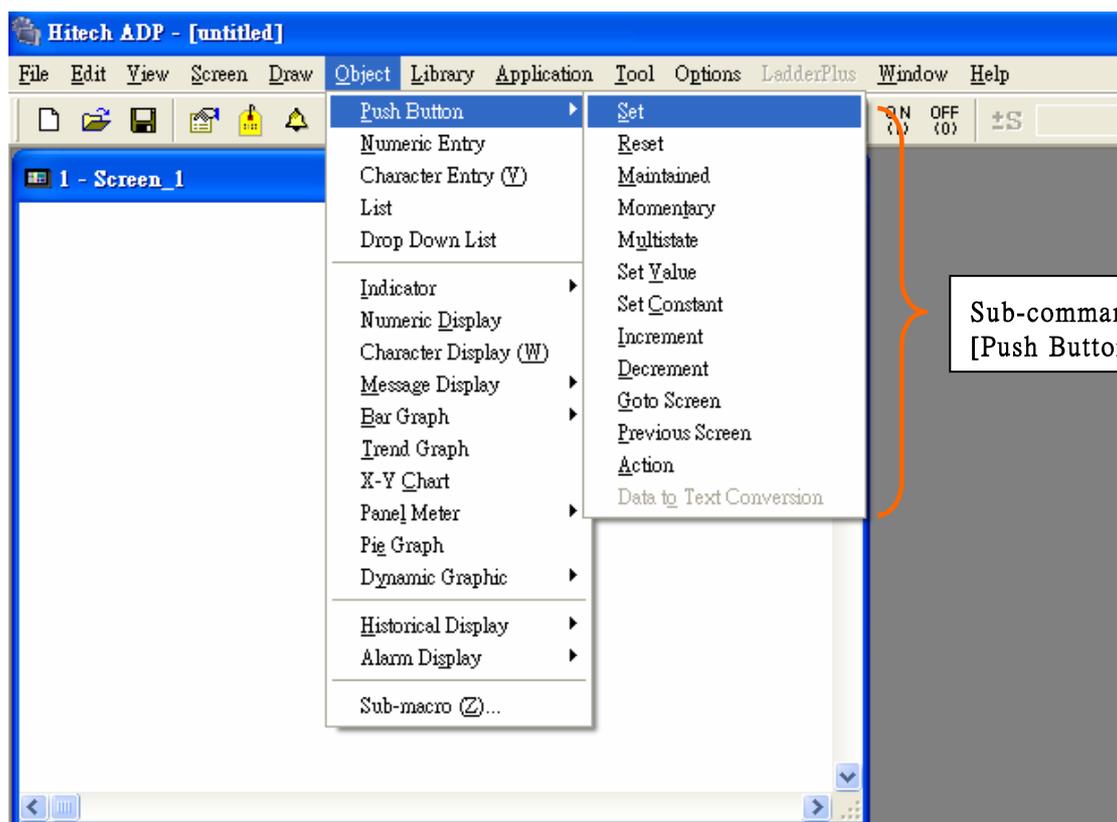


Figure 94. The sub-commands in [Push Button] list

2. Irrelative to screen button but related to dynamic data : [Indicator],[Numeric Display],[Character Display],[Message Display],[Bar Graph],[Trend Graph],[X-Y Chart],[Panel Meter],[Pie Graph],and [Dynamic Graphic].
3. Related to PLC dynamic data and Workstation memory buffer zone: [Historical Display] and [Alarm Display].
4. Related to application: Data contents are connected with whole system. One of the contents is modified such as text display or PLC data format, the other objects with the same application will be changed simultaneously as [Sub-macro].

II. Create Object

A user can select object type from the [Object] menu to edit. There are some objects with sub-commands list as Figure 94. Furthermore, [Basic Objects] toolbar provides part of objects for the editing as well; See Figure 95.

2. Instructions

In ADP software, each object has its corresponding dialog box. For example, there is the [On/Off Button] dialog box in [Set Button] object; there is the [Numeric Entry] dialog box in [Numeric Entry] object.

The following will explain the common properties of most objects; concerning some specific properties will be explained later. The following are five tabs in object properties.

1. [Attributes] Tab: To specify the major properties. Each object has its attributes that define the operation; See Figure 97.

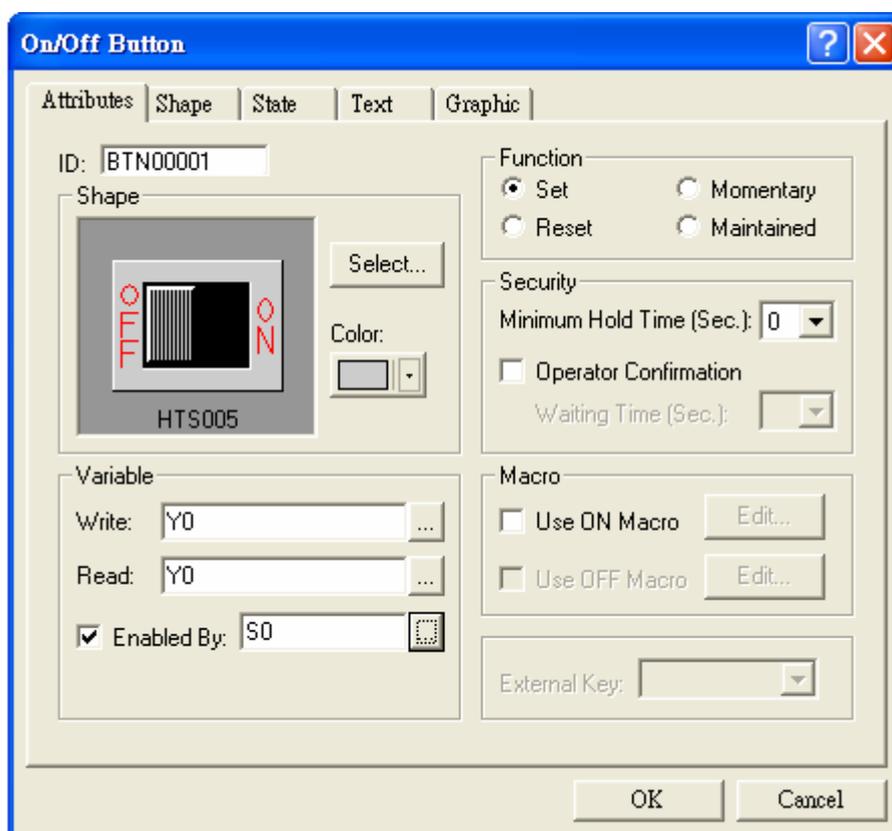


Figure 97. The [On/Off Button] Dialog Box

- [Shape] Block:
 - ◆ [Select]: Specify shape from library.
 - ◆ [Color]: Specify the color of selected shape.
- [Variable] Block:
 - ◆ [Write]: Write to the specified PLC register.
 - ◆ [Read]: Read the value from the specified PLC register. If the location is not specified, then the HMI reads from the [Write] location.

2. Instructions

- ◆ [Enabled By]: Specify the PLC register to ON button. This is inapplicable on OFF state labeled ; See Figure 98. This is only applicable on ON state; See Figure 99. (This feature is only applicable on objects with input text/numeric or specific state.)

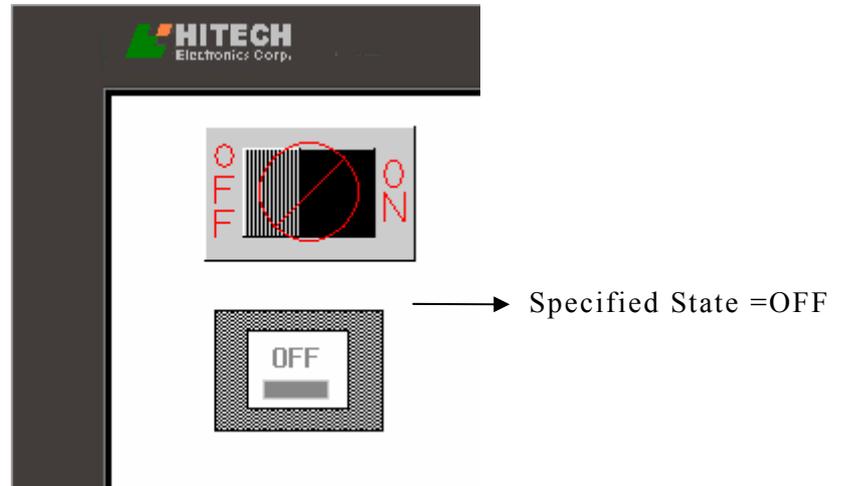


Figure 98. Specified State =OFF, inapplicable object with label 

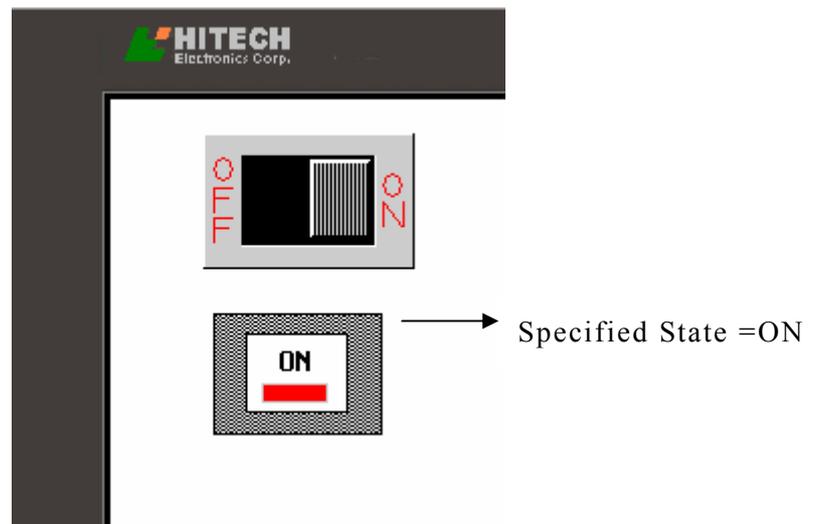


Figure 99. Specified State =ON

2. [Shape] Tab: Specify the shape style of a selected object as Figure 100.

2. Instructions

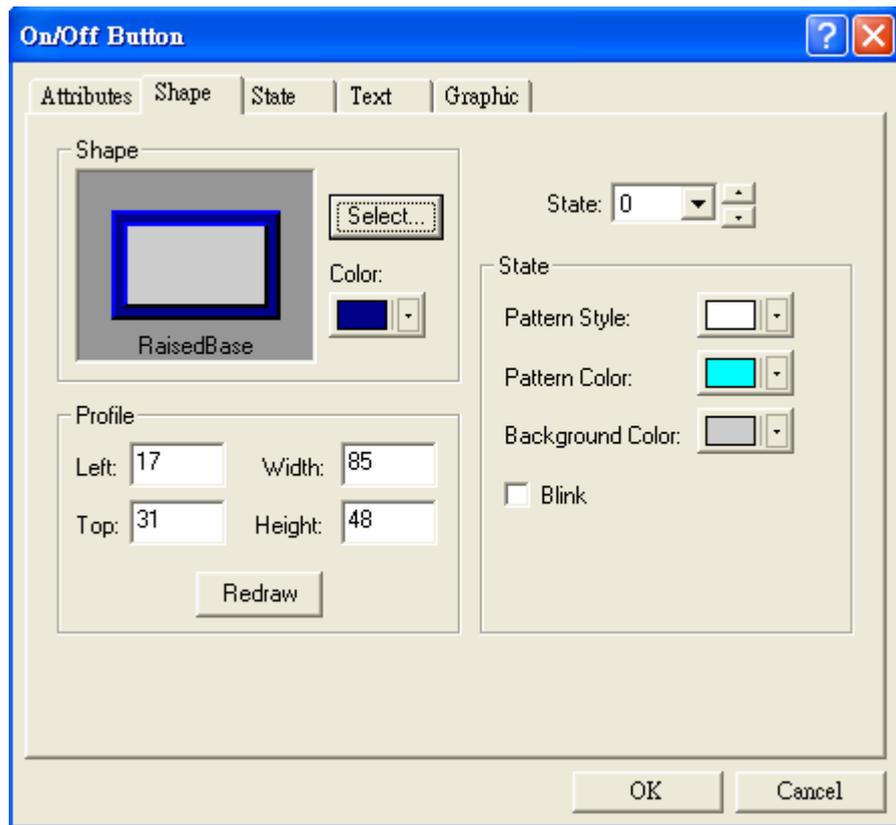


Figure 100. The [Shape] Tab

- [Shape] Block:
 - ◆ [Select]: Select shape from library.
 - ◆ [Color]: Specify the color of the shape.
 - [Profile] Block: Specify the location, width and height of the object.
 - [State] Block: Specify the object design to corresponding state.
 - ◆ [Pattern Style]: Specify the pattern style for the object.
 - ◆ [Pattern Color]: Specify the color of the pattern for the object.
 - ◆ [Bkg. Color]: Specify the background color of the object.
 - ◆ [Blink]: Check the object with blink or not.
3. [State] Tab: Specify [New]/[Copy]/[Delete] state to the object as Figure 101.

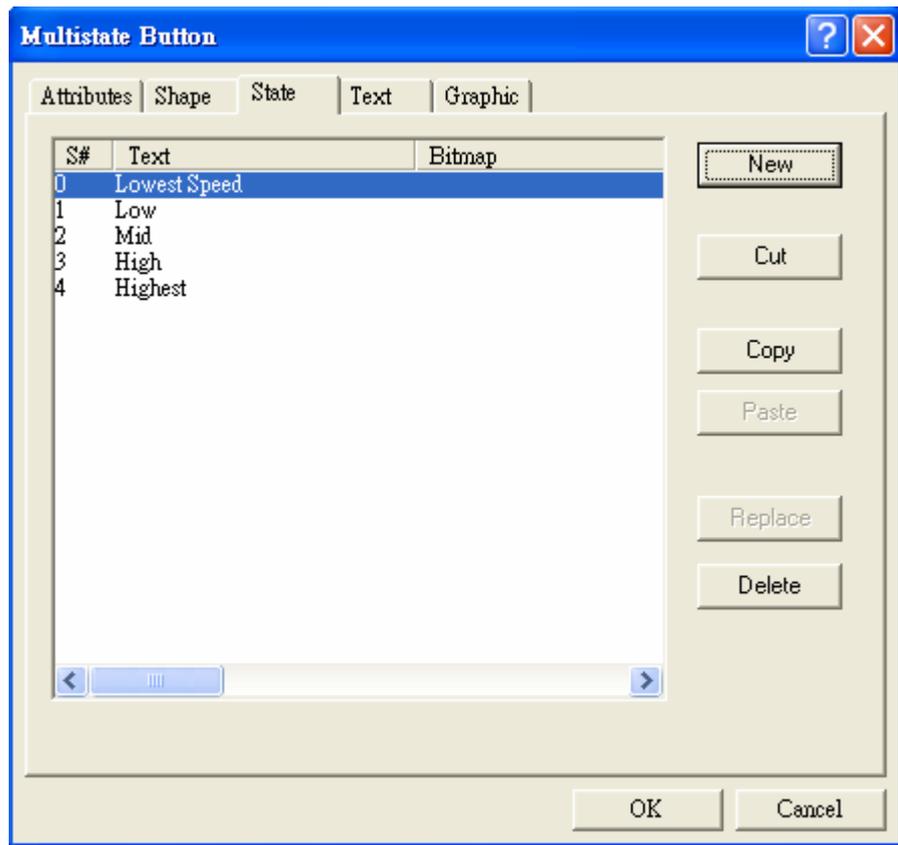


Figure 101. The [State] Tab

- [New]: Add new state to the object.
 - [Cut]: Cut the specified state in the clipboard.
 - [Copy]: Copy the specified state of the object and keep the original state.
 - [Paste]: Paste the state from the clipboard.
 - [Replace]: Replace the current specified state from the clipboard.
 - [Delete]: Delete the current specified state.
4. [Text] Tab: Specify [Font],[Underlined],[Color],[Bkg. Color] and [Blink] as Figure 102.

2. Instructions

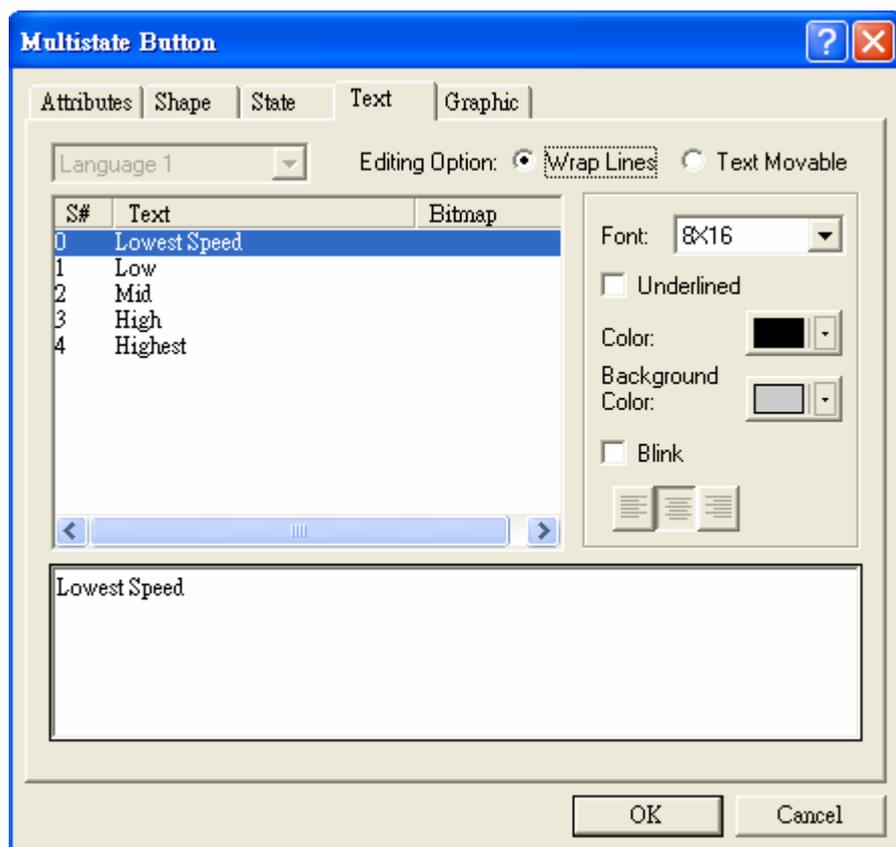


Figure 102. The [Text] Tab

- [Editing Option]:
 - ◆ [Wrap Lines]: When the length of the text is longer than the width of the button, it will be wrapped lines.
 - ◆ [Text Movable]: When the length of the text is longer than the width of the button, it won't be wrapped lines. Click the text object on the selected object, the text will be surrounded with the handlebars for drag.
 - [Font]: Specify the size of the font.(be greater than "16X16")
 - [Underlined]: Check the text with underlined.
 - [Color]: Specify the color of the text.
 - [Bkg. Color]: Specify the background color of the text.
 - [Blink]: Check the text with blink.
 - : Align the text "Left/Center/Right"
5. [Graphic] Tab: Specify bitmap style, color...etc for each state as Figure 103.

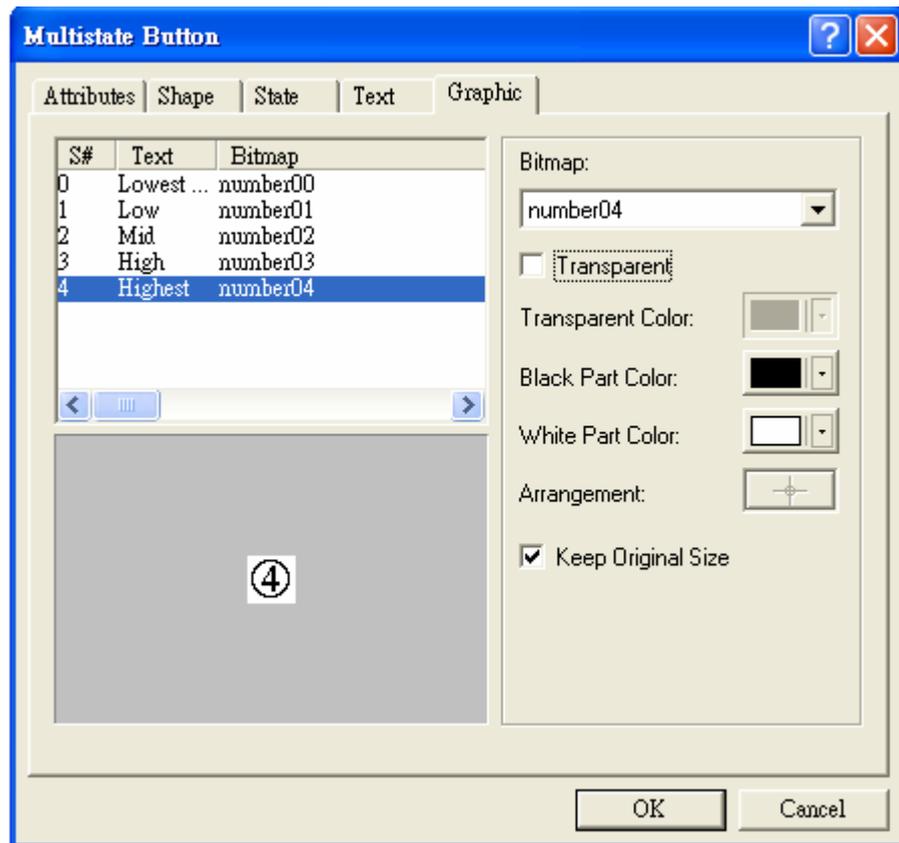


Figure 103. The [Graphic] Tab

- [Bitmap]: Specify the bitmap to display.
- [Transparent]: Check the bitmap with transparent.
- [Transparent Color]: Specify the color of the bitmap with transparent.
- [Black Part Color]: Replace the black part color.(only applicable on monochrome)
- [White Part Color]: Replace the white part color.(only applicable on monochrome)
- [Arrangement]: Arrange the moveable bitmap to previous location.
- [Keep Original Size]: Keep the bitmap original size.

The following sections will talk each basic object.

2. Instructions

2.7.1. [Basic Objects]

There are 13 buttons in sub-command list on the [Push Button]. The following are these objects' table:

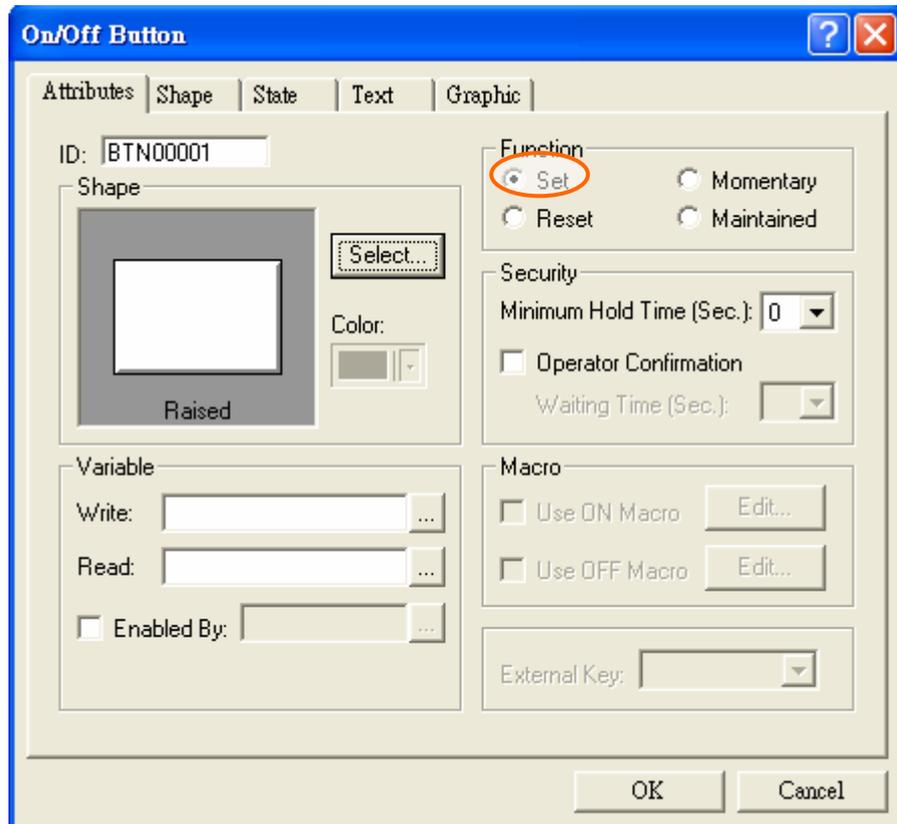
| Basic objects | Icon | Function |
|--------------------------------|---|---|
| Set Button |  | Press to set the contact as ON, release or re-click still be ON. |
| Reset Button |  | Press to set the contact as OFF, release or re-click still be OFF. |
| Maintained Button |  | Press to set the contact as ON, release still be on; re-click be OFF. |
| Momentary Button |  | Press to set the contact as ON; release be OFF. |
| Multistate Button |  | Press to change a register to the next (previous) state of a referenced register. S0⇒S1⇒S2⇒S3⇒S4⇒S0 (a straightforward cycle) or S0⇒S4⇒S3⇒S2⇒S1⇒S0 (a reverse cycle). |
| Set Value Button |  | Press to a numeric keypad display. Press ENTER button to write a numeric entry to corresponding PLC register. |
| Set Constant Button |  | Press to write a constant to a register. |
| Increment/Decrement Button |  | Press to write the value obtained by adding/subtracting a constant to/from the corresponding register value corresponding PLC register. |
| Goto Screen Button |  | Press to change the current screen to the specified screen. |
| Previous Screen Button |  | Press to change the current screen to the previous screen. |
| Action Button |  | Please refer to Section 2.7.1.12. [Action Button] . |
| Data to Text Conversion Button |  | Convert logging buffer, recipe, alarm history and alarm frequency to *.PRN file readed by EXCEL, WORD, WORDPAD and so on. |

2.7.1.1. [Set Button]

I. Function

When pressed, Workstaion sets the PLC corresponding bit location to be ON. A [Set] button will still be ON whenever pressed or released

II. Properties



- [Function] Block : Select [Set] to create a [Set Button]
- [Security] Block :
 - ◆ [Minimum Hold Time (Sec.)]: Specify how long to activate the button's function; There are 0~10 (Sec.) for selection.
 - ◆ [Operator Confirmation]: If any changes have been made, the dialog box will appear on the screen to ask a user to confirm the desired operation. There are 5~60 (Sec.) waiting time for selection.
- [Macro] Block : Check the [Use ON Macro] for a [Set Button]. When pressed [Edit] button, the [ON Macro] dialog box will appear as in Figure 104 on the screen. For the properties which are not explained in this section, please refer to the [Chapter 8 Macro](#).
 - ◆ [Use ON Macro]: When pressed the [Set Button], Workstation will run the program which is designed in ON macro. This feature is to data control, screen display, PLC register, bits initialized and so on.

2. Instructions

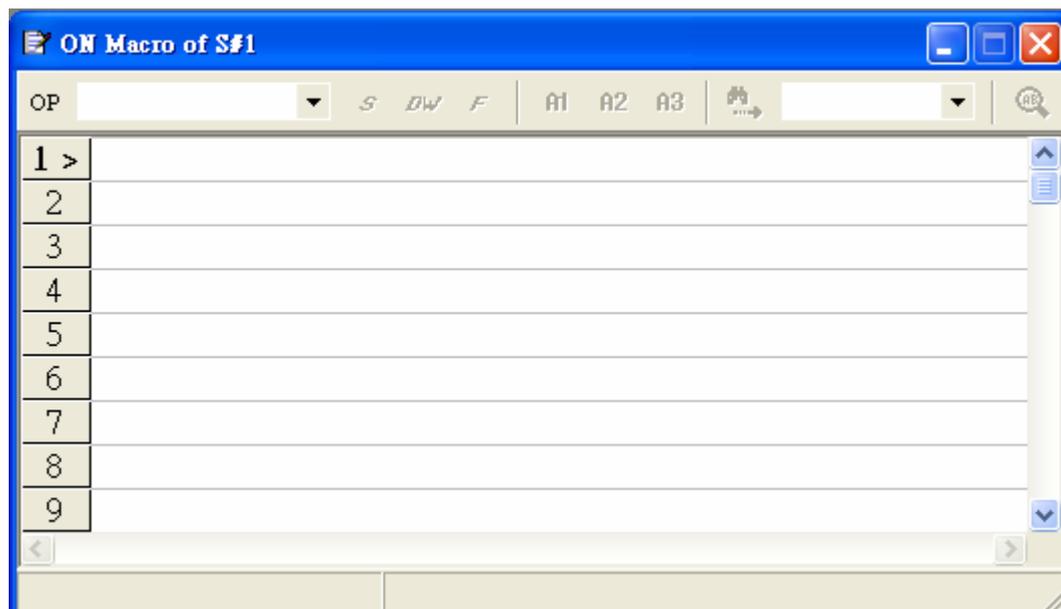


Figure 104. The [ON Macro] Edit Window

- [External Key] : To set the external key and definite the key function F1~F9, this feature is only applicable on PWS500.

For the properties which are not explained in this section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

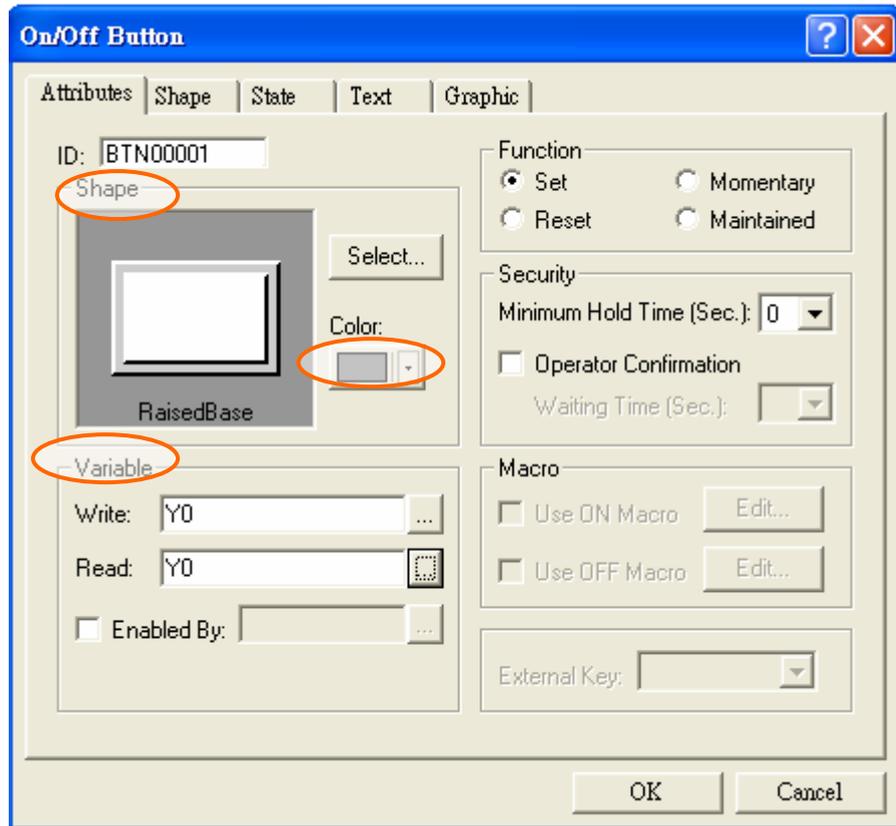
III. Example

To design a [Set] button as shown in the following :

1. Shape : Select “Raised”.
2. [Write] : Specify the PLC register “Y0” to write in.
[Read] : Specify “Y0”. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)

To design a [On/Off] button on the [Attributes] tab as shown below:

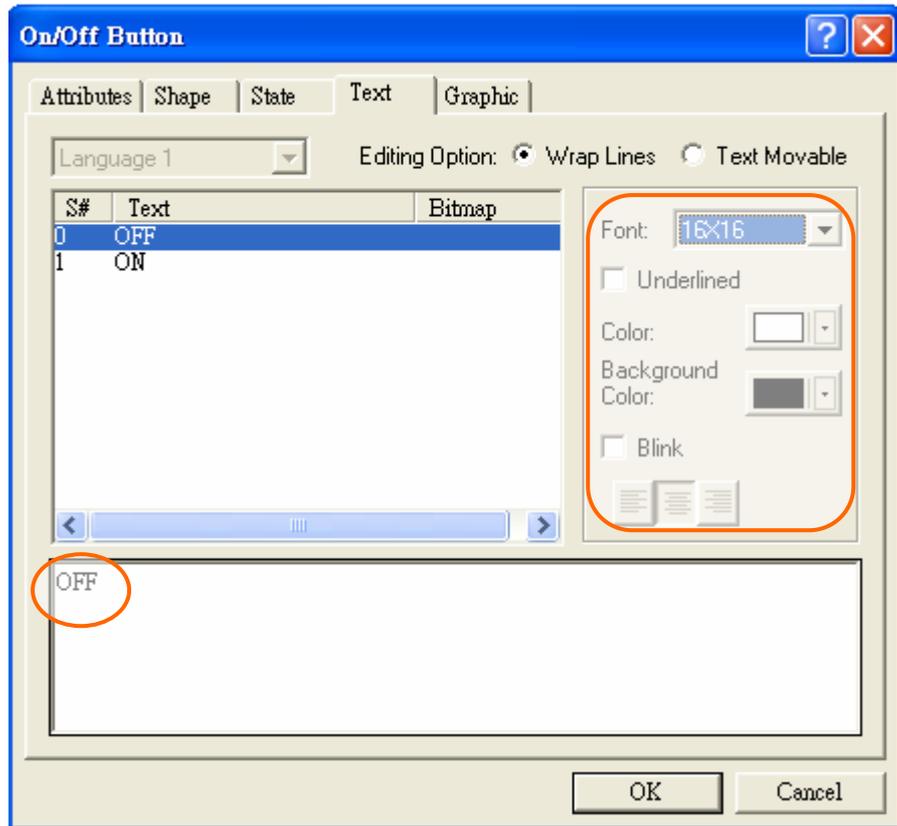
2. Instructions



3. Enter text "OFF" in state 0 (OFF); the font is "16x16", the color is "White" and the bkg. color is "Black".
4. Enter text "ON" in state 1 (ON); the font is "24x24", the color is "Black" and the bkg. color is "White".

To design a [On/Off] button on the [Attributes] tab as shown below:

2. Instructions



Above-mentioned steps will create a [ON] button. The bkg. color is “White” and the text is “ON” in state 1; the bkg. color is “Black” and the text is “OFF” in state 0. See Figure 105.

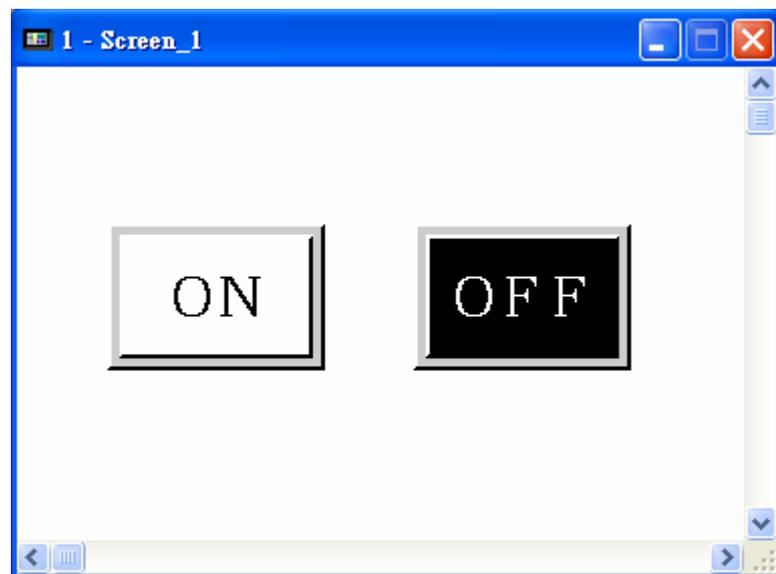
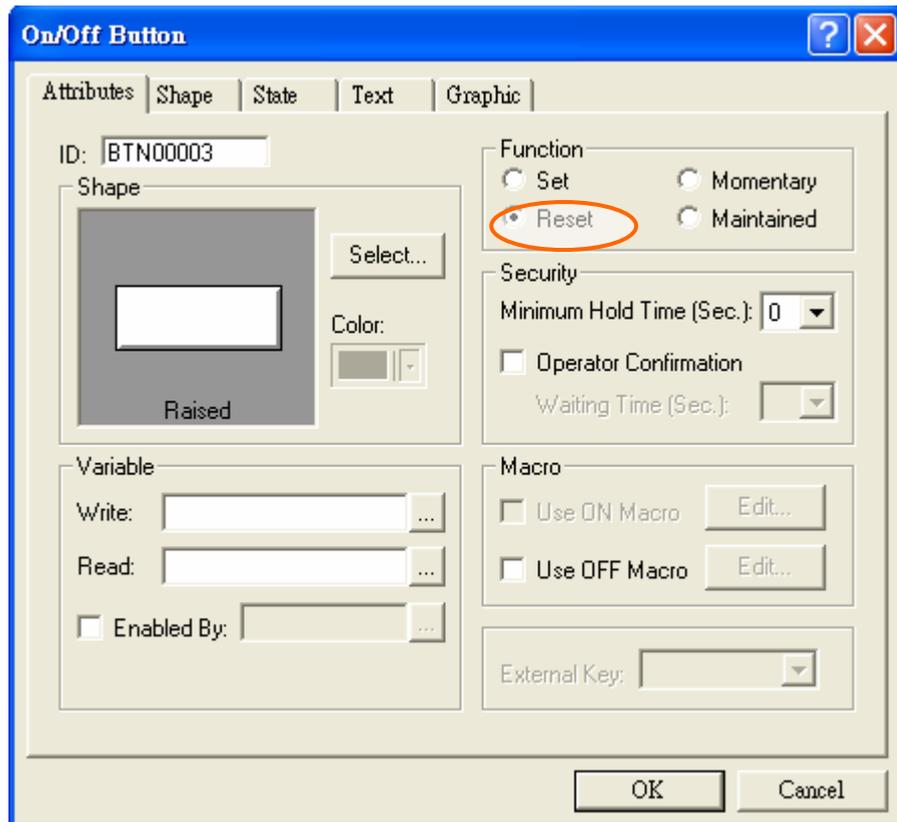


Figure 105. Left-side button displays [ON] in state 1; Right-side button displays [OFF] in state 0

2.7.1.2. [Reset OFF] OFF

I. Function

The command is contrary to an [ON] button. A [Reset] button sets a bit-location to OFF whenever pressed or released.

II. Properties

- [Function] Block : Select [Reset] to create a [OFF] button.

All other properties are the same as [Set Button], please refer to [2.7.1.1. \[Set Button\]](#).

III. Example

To design two state displays as a [ON] button simultaneously; please refer to the [Section 2.7.1.1. \[Set Button\]](#).

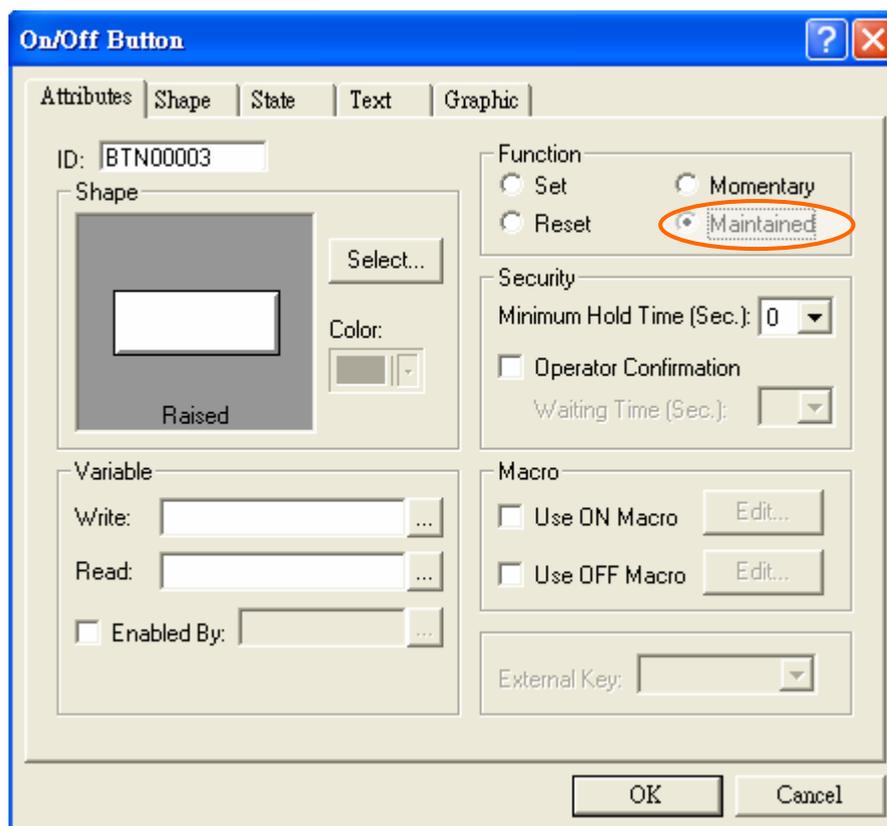
2. Instructions

2.7.1.3. [Maintained Button]

I. Function

This function is to change the button states by press. Press to be ON and release still be ON until re-click to be OFF.

II. Properties



- [Function] Block : Select [Maintained] to create a [Maintained] button.
- [Macro] Block : There are [User ON Macro] and [User OFF Macro] options for [Maintained Button]. For the properties which are not explained in this section, please refer to the [Chapter 8 Macro](#).

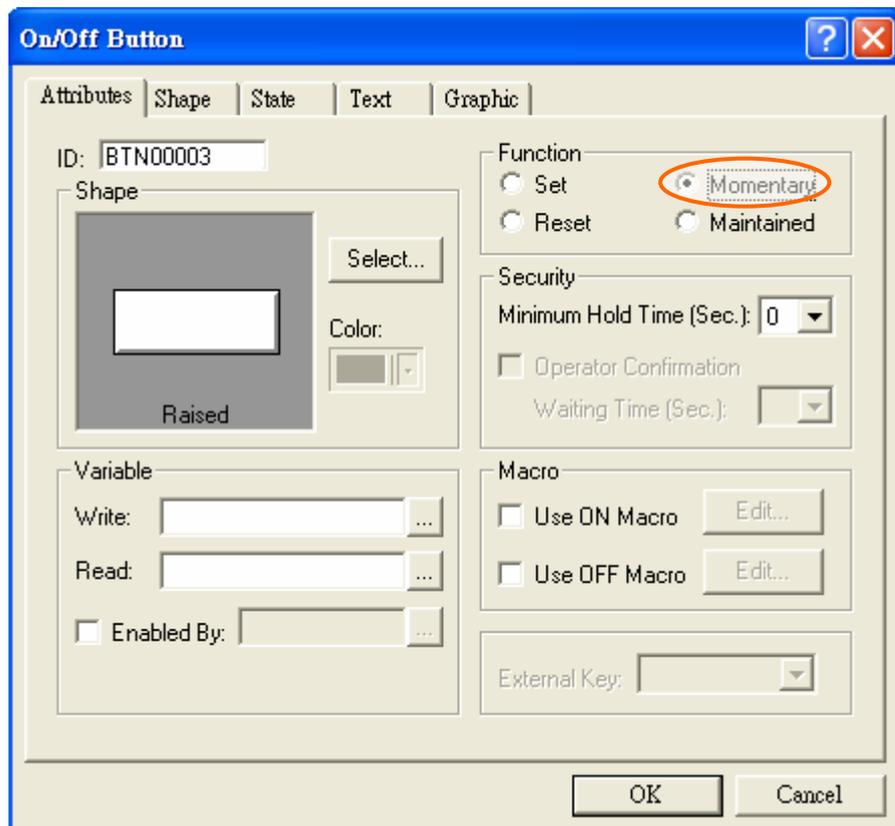
Other properties are the same as [Set Button], please refer to the [2.7.1.1. \[Set Button\]](#).

III. Example

To design two states as a [ON] button; please refer to [2.7.1.1. \[Set Button\]](#).

2.7.1.4. [Momentary Button] **I. Function**

The function of this command is to changes the state by press and release. Once the button is pressed, the bit-location is ON; Release to be OFF.

II. Properties

- [Function] Block : Select [Momentary] to create a [Momentary] button.
- [Macro] Block : There are [Use ON Macro] and [Use OFF macro] options for [Momentary Button]. For the properties which are not explained in this section, please refer to the [Chapter 8 Macro](#).

To design two states as a [ON] button simultaneously; please refer to [2.7.1.1. \[Set Button\]](#).

2. Instructions



Notice that this command does not provide [Use ON Macro] and [Use OFF Macro].

I

II. Example

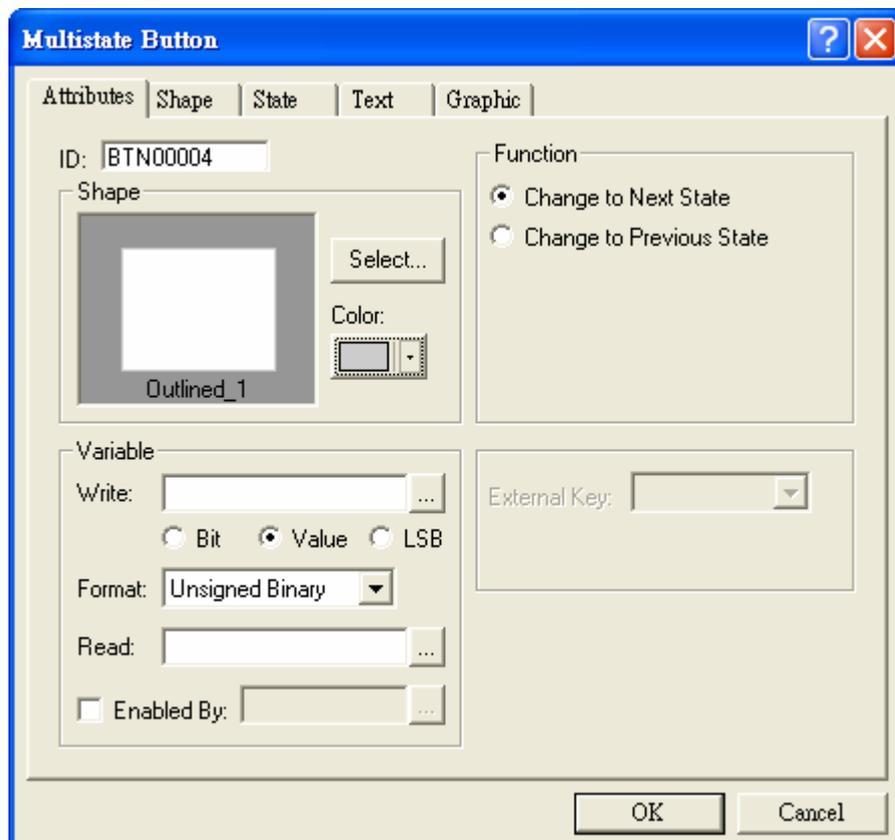
To design two states as a [ON] button simultaneously; please refer to [2.7.1.1. \[Set Button\]](#).

2.7.1.5. [Multistate Button]

I. Function

Once the button is pressed, Workstation will write the command to a correspondent PLC bit-location or register. The option [Change to Next State] is to change states in straightforward cycle ($S0 \Rightarrow S1 \Rightarrow S2 \Rightarrow S3 \Rightarrow S4 \Rightarrow S0$); the option [Change to Previous State] is to change states in reverse cycle ($S0 \Rightarrow S4 \Rightarrow S3 \Rightarrow S2 \Rightarrow S1 \Rightarrow S0$).

II. Properties



- [Variable] Block :

2. Instructions

- ◆ [Write]: Write the specified command to a correspondent PLC bit-location and register.
 - [Bit]: Only two states. (Enable a user to enter multi-stated text but only two states can be displayed on Workstation)
 - [Value]: 256 (0-255) states in all, 0 represents state 0; 1 represents state 1...etc.
 - [LSB]: 16 states in all represented by bit. The Workstation takes the bit number of the least bit that is on as the state number.
- ◆ [Format]: Only applicable on [Value] option. There are [BCD], [Signed Binary], and [Unsigned Binary] options.
- ◆ [Read]: Specify a register/bit location to read in; if the location is not specified, then the HMI reads from the [Write] location.
- [Function] Block :
 - ◆ [Change to Next State]: Change the [Write] location to its next state in straightforward cycle $S0 \Rightarrow S1 \Rightarrow S2 \Rightarrow S3 \Rightarrow S4 \Rightarrow S0$.
 - ◆ [Change to Previous State]: Change the [Write] location to its previous state in reverse cycle $S0 \Rightarrow S4 \Rightarrow S3 \Rightarrow S2 \Rightarrow S1 \Rightarrow S0$.

Note that the number of states can be edited in [State] tab.

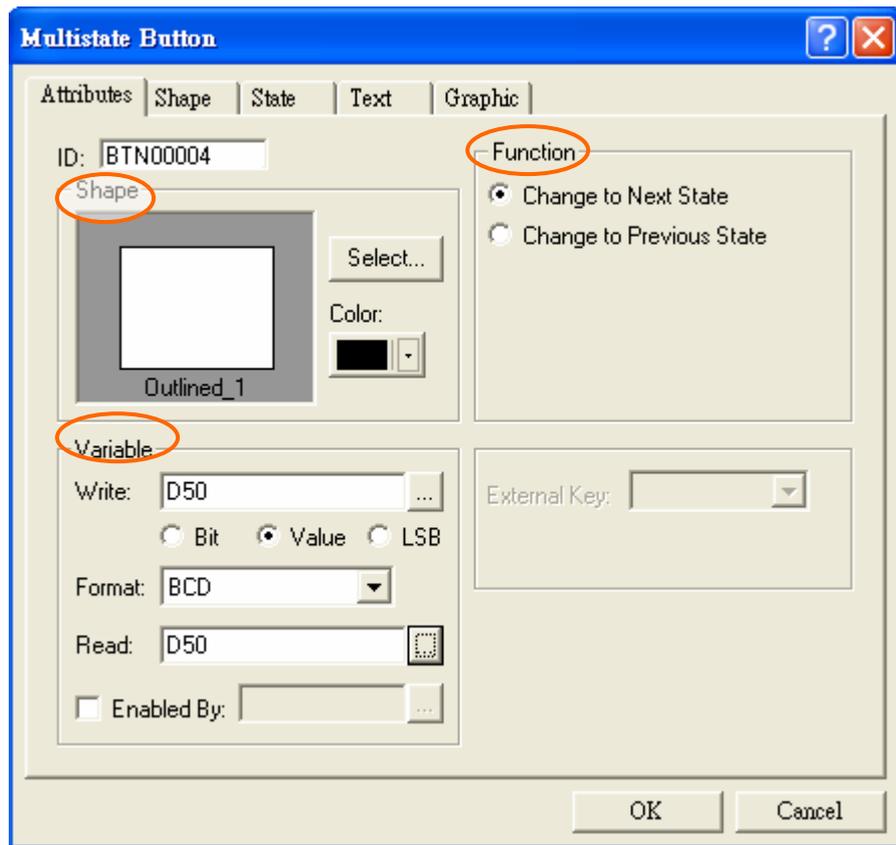
For other properties which are not explained in this section, please refer to the [Section 2.7. III Object Specify Object properties](#).

III. Example

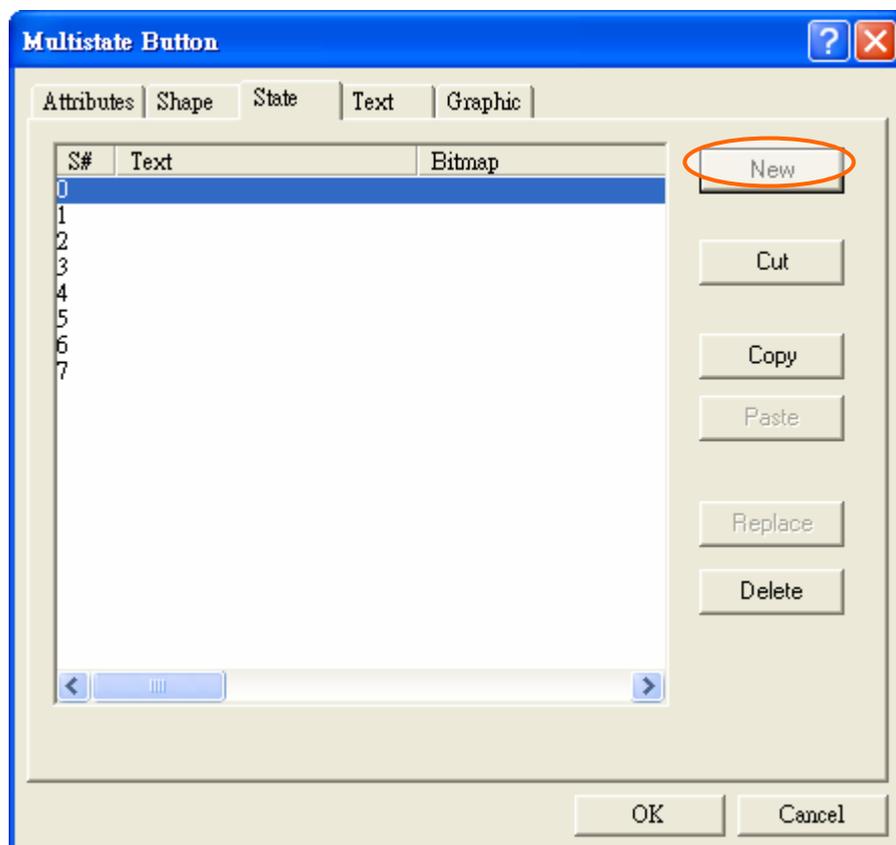
To design a [Multistate] button as the following:

1. [Write] : Specify the PLC register “D50” to write in.
[Read] : Specify as “D50”. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)
2. The format is [Value].
3. The [Function] is [Change to Previous State].
4. Shape : Select “Outlined _1” and the color is black.

2. Instructions

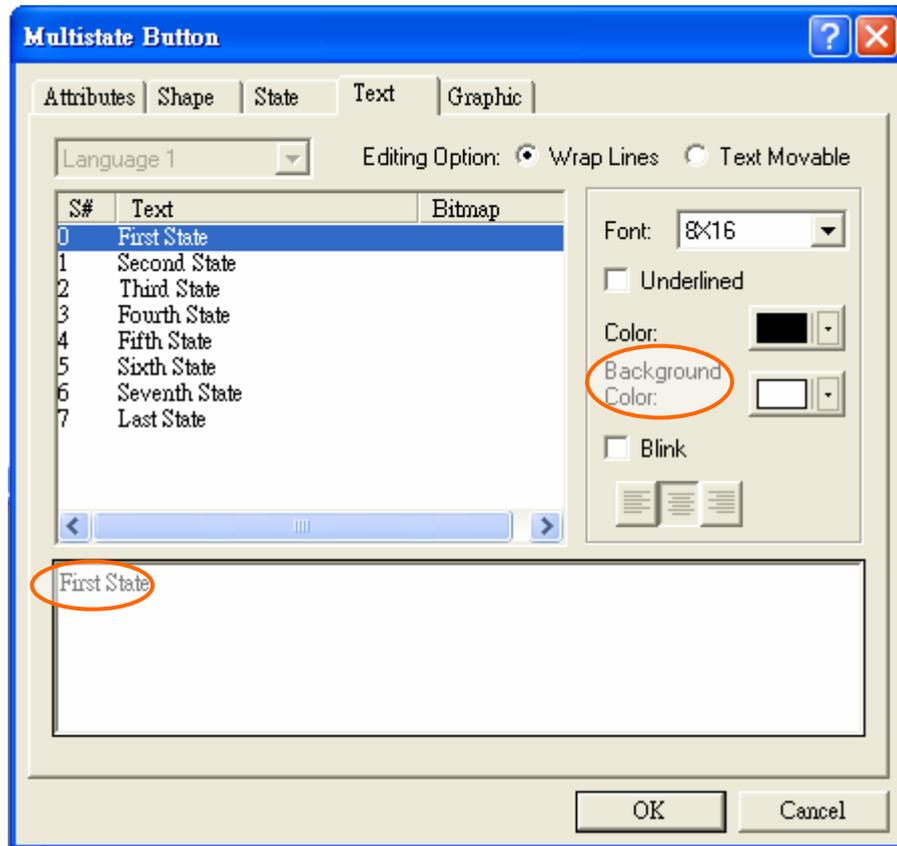


5. Add 8 states in [State] tab.



2. Instructions

6. Enter the correspondent words on the [Text] tab and specify the text display.



Above-mentioned steps will create a [Multistate Button]. The button displays “First State” in state 1; the button displays “Second State” in state 1...etc. See Figure 106.

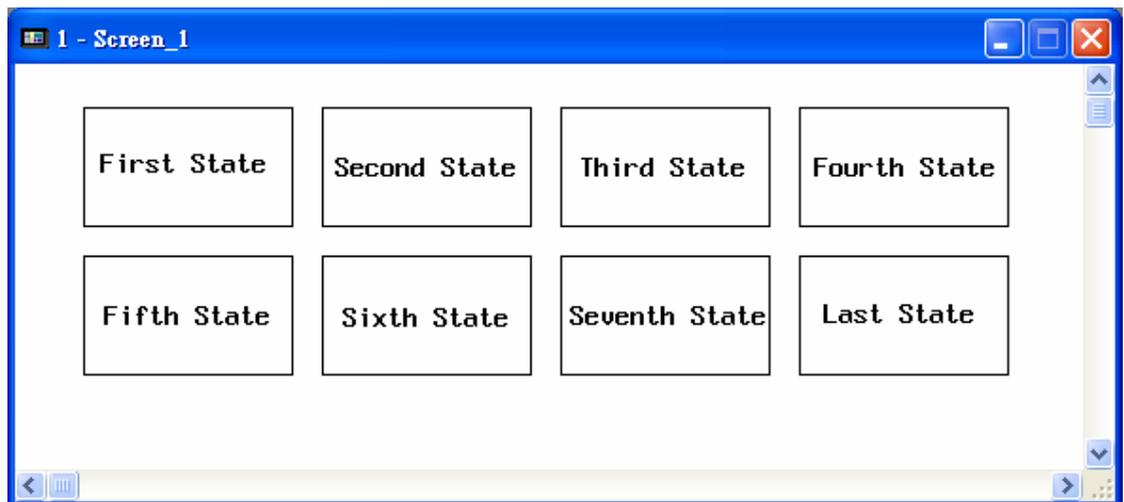


Figure 106. The 8 states in [Multistate Button]

2. Instructions

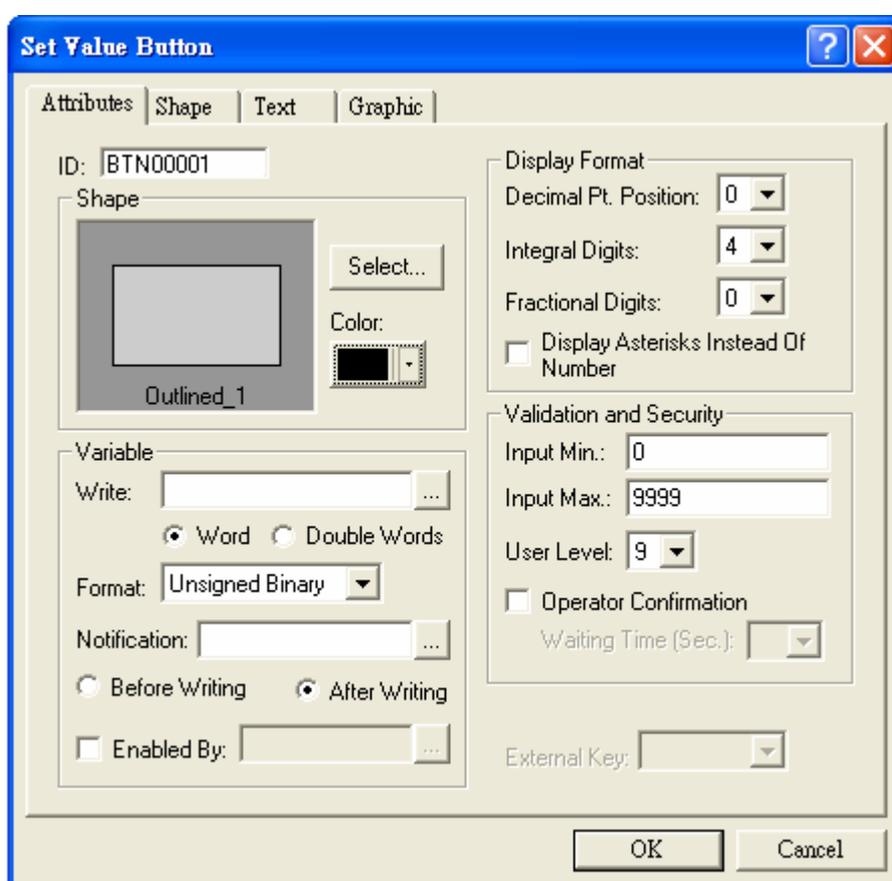
2.7.1.6. [Set Value Button]

I. Function

The function of this command is for numeric entry. When pressed, the Workstation displays a numeric keypad on the screen. When pressed [ENT], the Workstation will store the input value to the correspondent PLC register.

Note that the correspondent PLC value is not applicable on [Set Value Button].

II. Properties



- [Variable] Block:
 - ◆ [Word] : The entered value is a 16-bit data; the maximum 65,535.
 - ◆ [Double Word] : The entered value is a 32-bit data; the maximum is 4,294,967,295.
 - ◆ [Format] : There are “BCD”, “Signed Binary”, “Unsigned Binary” and “Hexadecimal” options.
 - ◆ [Notification] : Specify a register/bit location to be notified;

the HMI will set the bit to be ON.

- [Before Writing]: The HMI sets the Notification to be ON when the numeric keypad appears and sets the location to be OFF when the numeric keypad disappear.
 - [After Writing]: The Workstation sets the [Notification] location to be ON after writing the input value to the [Write] location.
- [Display Format] Block:
 - ◆ [Decimal Pt. Position] : Specify the number of digits after the integral part of the number.(The maximum is based on the specified format)
 - ◆ [Integral Digits] : The number of the integral part in a number.
 - ◆ [Fractional Digits] : The number of decimal digits.
 - ◆ [Display Asterisk Instead of Number] : Display asterisk instead of input value for security.
 - [Validation and Security] Block:
 - ◆ [Input Min] : Set the minimum input value. (Less than the minimum input value will be warned and rejected.)
 - ◆ [Input Max] : Set the maximum input value. (Greater than the maximum will be warned and rejected.)
 - ◆ [User Level] : There are 9 levels, the order is 1 > 2 ... > 8 > 9.
 - ◆ [Operation Confirmation] : When enter the value, the dialog box should appear on the screen to ask for the User's confirmation; the longest waiting time is 5~60 (Sec.).

For other properties which are not explained in this section, please refer to the [Section 2.7. III Object Specify Object Properties](#).

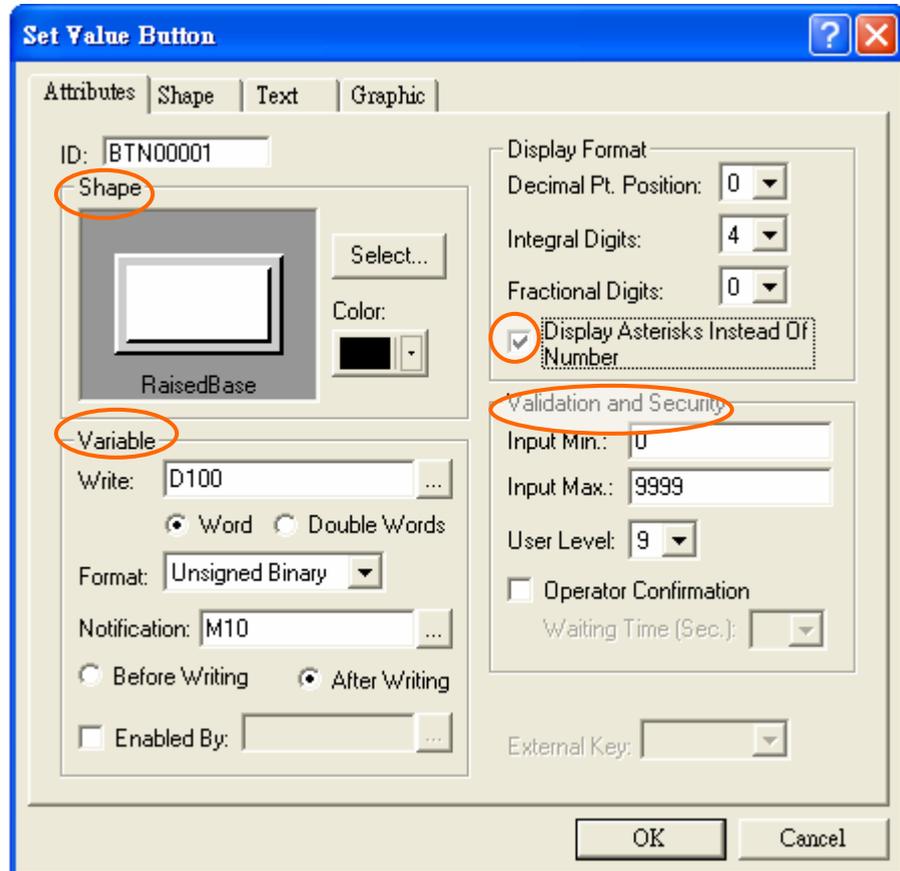
III. Example

To design a [Set Value] button as the following:

1. Shape : Select "Raised Base" ◦
2. [Write] : Specify the PLC register "D100" to write in.
[Notification] : Specify "M10". (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)
3. The Numeric Entry is [Word].
4. Specify the [Notification] location to be ON after writing the input value to the [Write] location.

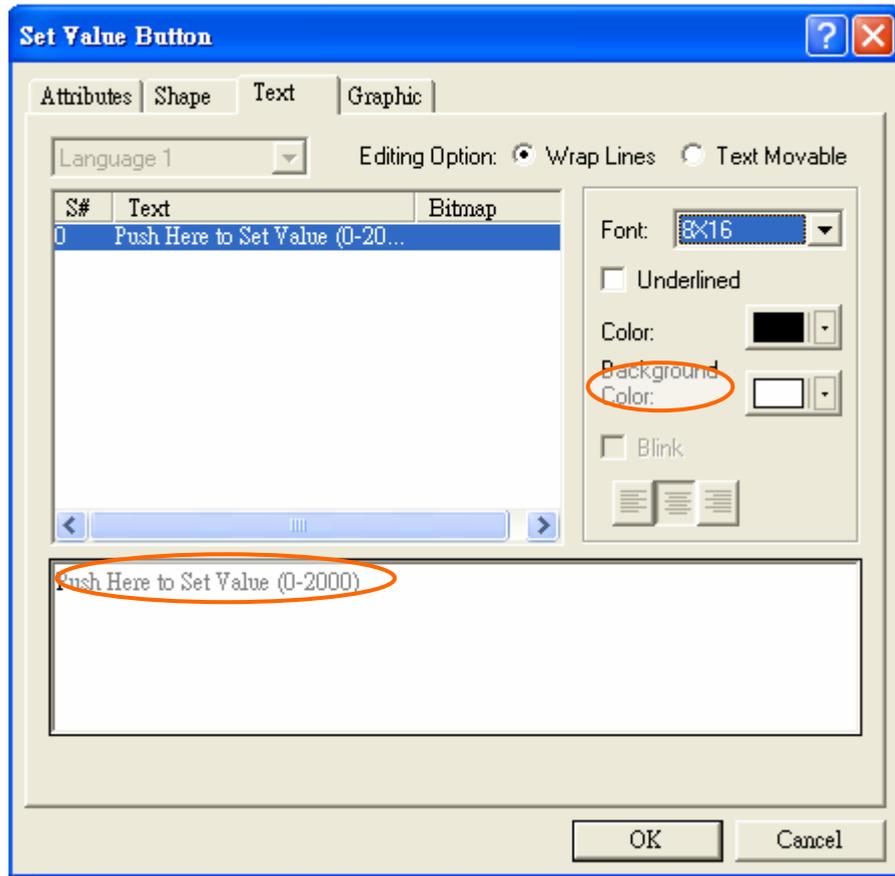
2. Instructions

5. The numeric display is [Display Asterisks Instead of Number] on the numeric keypad.
6. The input min. is '0', the input max. is '2000'.
7. After numeric entry, it's needed operator confirmation.



8. Enter the desired text on the [Text] tab and the bkg. color is white.

2. Instructions



Above-mentioned steps will create a [Set Value] Button. When pressed this button, the numeric keypad will display on the screen. After numeric entry, the input value can not display on a [Set Value] button directly. Therefore, a user can design the other object [Numeric Display] to display the input value; See Figure 107.

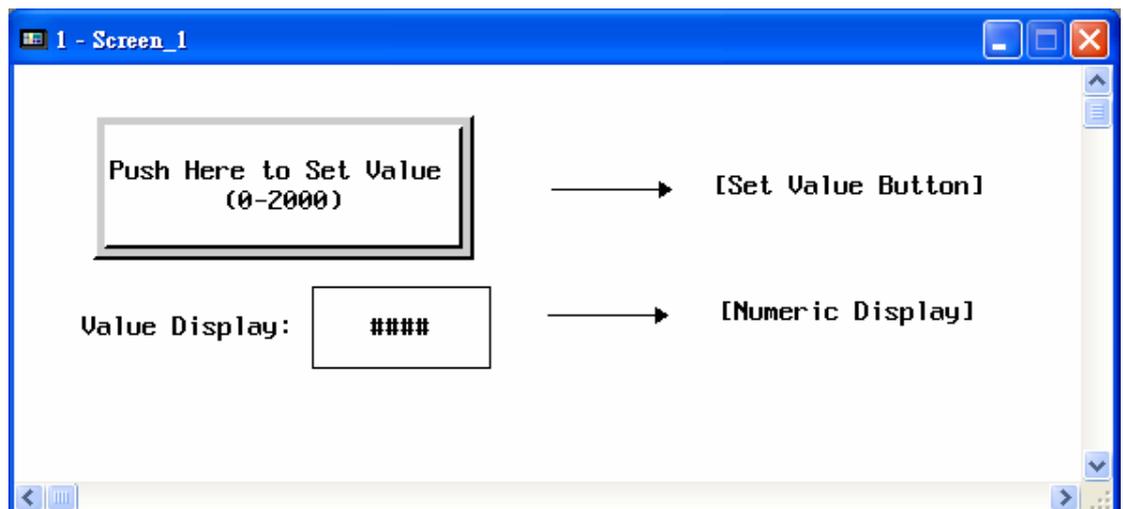


Figure 107. The [Set Value] Button and [Numeric Display] object

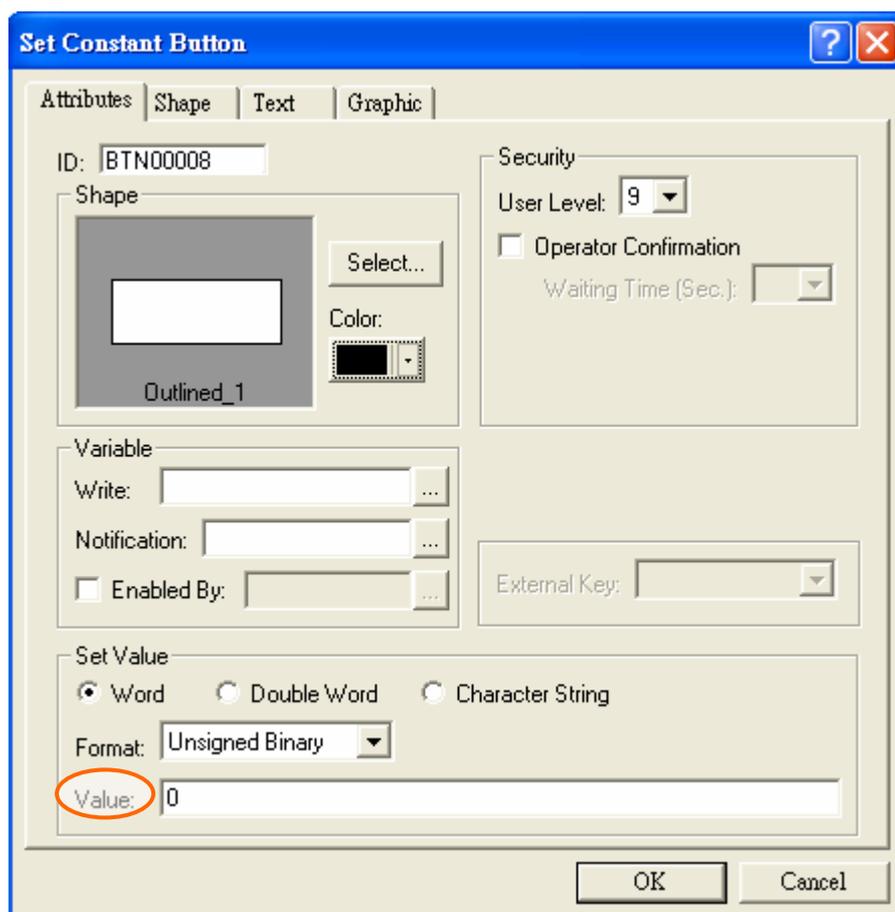
2. Instructions

2.7.1.7. [Set Constant Button] 123

I. Function

When pressed this button, the Workstation will write a constant to the correspondant PLC register. The numeric keypad will not display on the screen due to the constant have been set in PLC.

II. Properties



- [Value] : Specify the constant value here.

For other properties which are not explained in this section, please refer to the [Section 2.7.1.6. \[Set Value Button\]](#) and the [Section 2.7. Object III Specify Object Properties.](#)

III. Example

Here takes the glass list as example. When press one of these buttons, the Workstation will write the specified constant value to the correspondant PLC register. In this example, “4mm glasses” represents the contant value “400”, “5mm glasses” represents the constant value “500”...etc. See Figure 108.

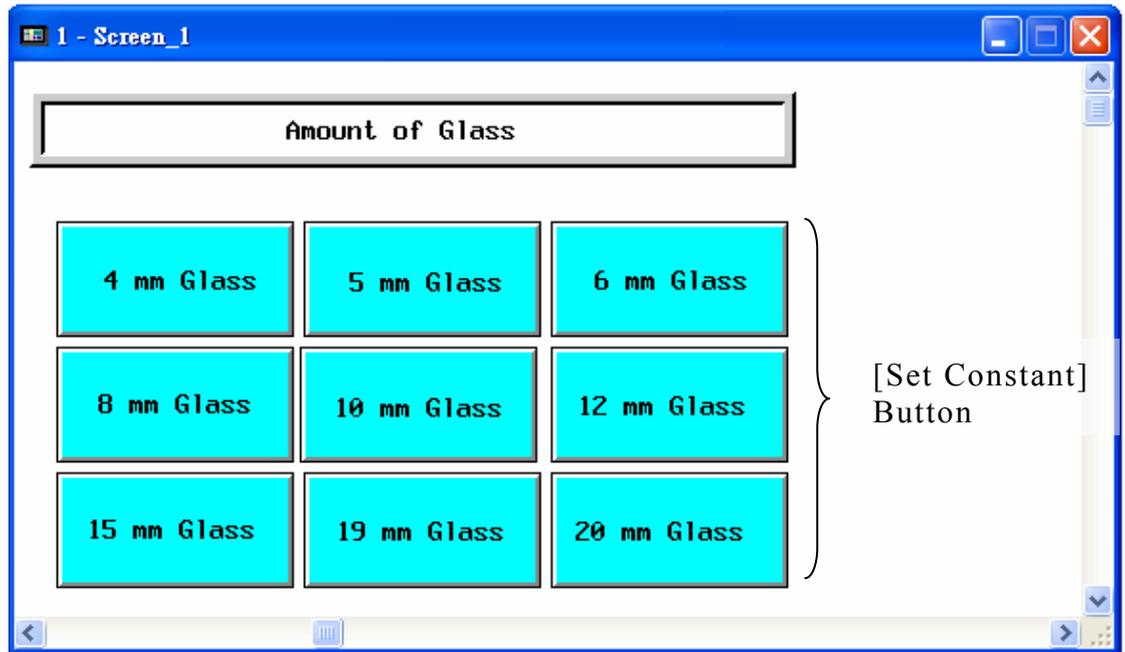
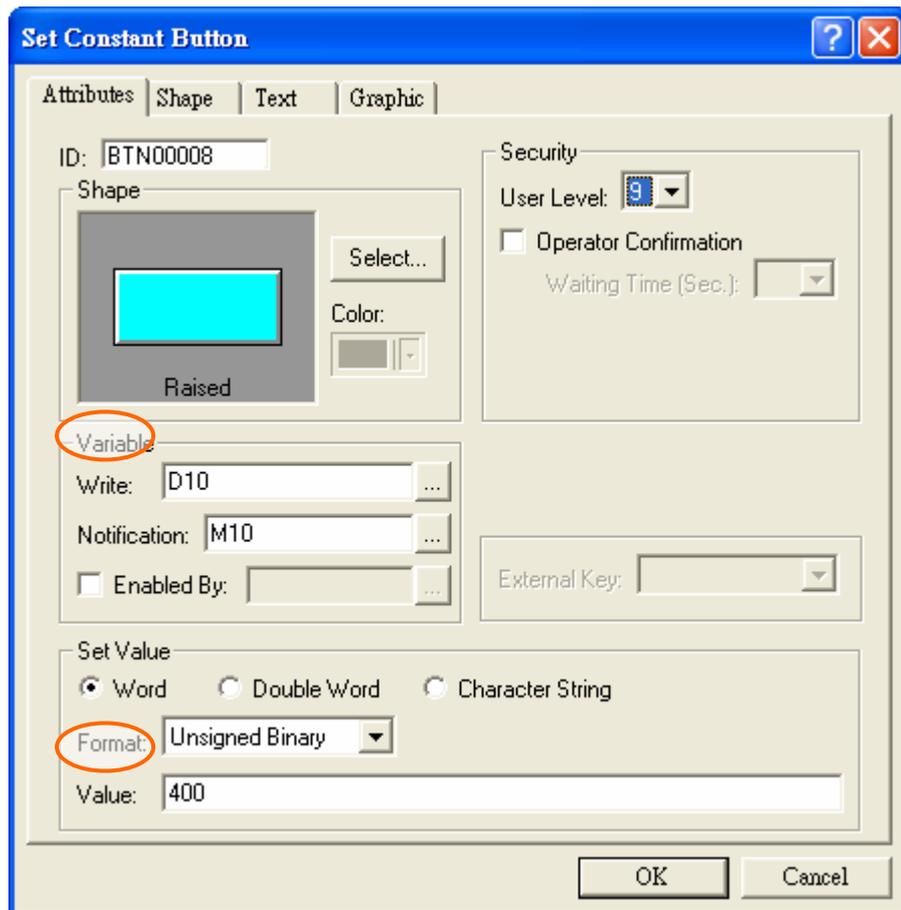


Figure 108. The Example of [Set Constant] Buttons- glass list

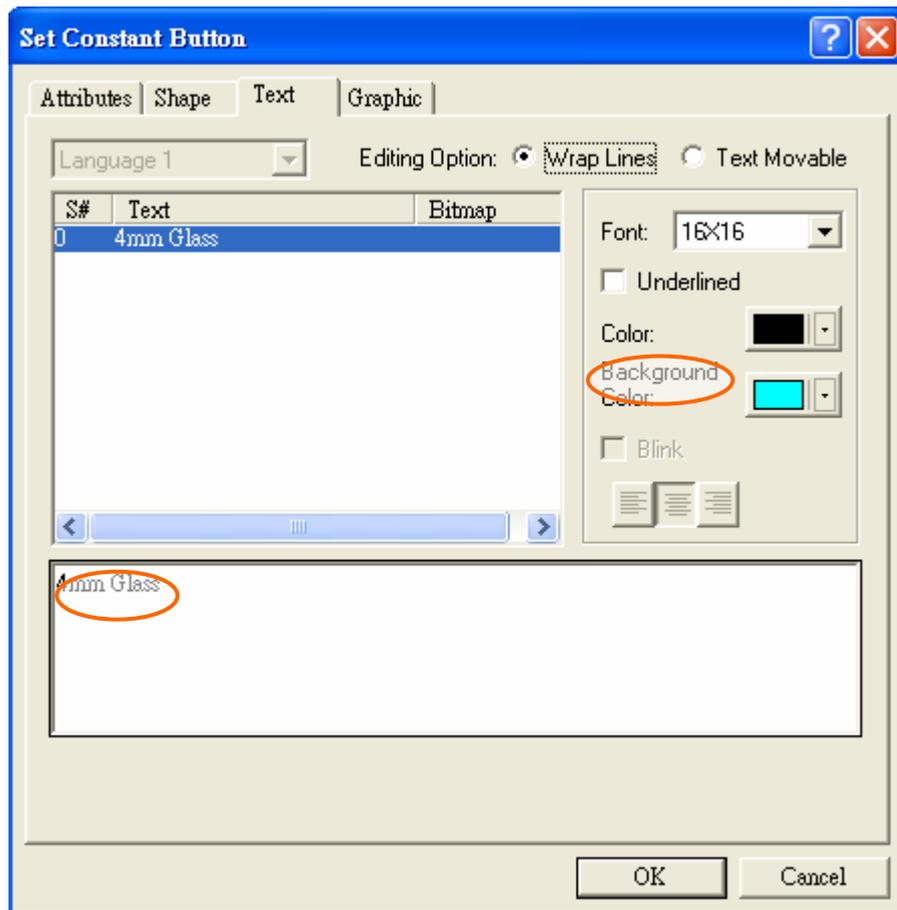
The properties of [Set Constant] buttons above (ex. “4 mm Glass”):

1. [Write] : Specify the PLC register “D10”. [Notification] : Specify “M10”. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)
2. The numeric entry is [Word].
3. Specify the constant value “400” to a “4 mm Glass” button.

2. Instructions



4. Enter the desired text on the [Text] tab and the bkg. color is green.



Above-mentioned steps will create a “4mm glasses” button. When pressed, the Workstation will store the constant value “400” to the register “D10”.

Following the same steps to design other glass buttons but the constant value should be reset.

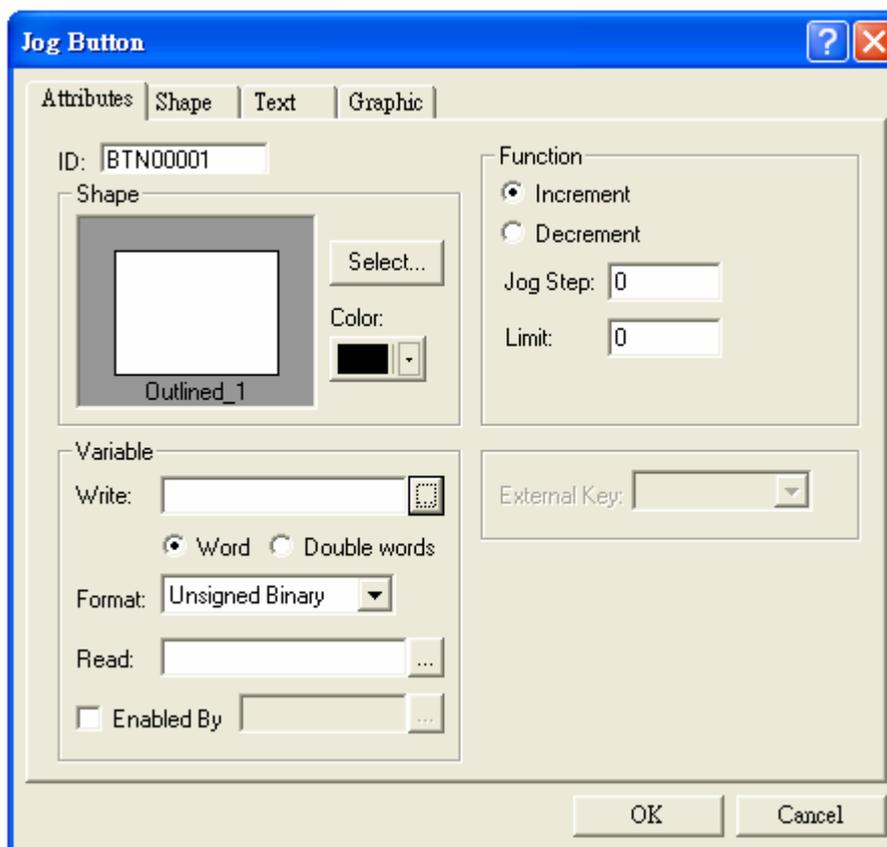
2.7.1.8. [Increment Button]

I. Function

When pressed, the Workstation reads the constant variable stored in the PLC register. Then the value obtained by adding the specified constant will be written in the correspondent PLC register.

II. Properties

2. Instructions



- [Function] Block:
 - ◆ [Increment] : Select [Increment] to create an [Increment] button; one press increases a specified constant.
 - ◆ [Jog Step] : The [Increment] button is to add the specified constant by a press.
 - ◆ [Limit] : Specify the **maximum** written in a register if the button is an Increment Button.

For other properties which are not explained in this section, please refer to the [Section 2.7.1.6. \[Set Value Button\]](#) and [the Section 2.7. Object III Specify Object Properties.](#)

III. Example

Figure 109 is an illustration of an [Increment] button. Once pressed the [Increment] key, the increased value stored in the PLC register will be displayed in bar graph. ([Bar Graph] is an object used to display the dynamic data in ADP)

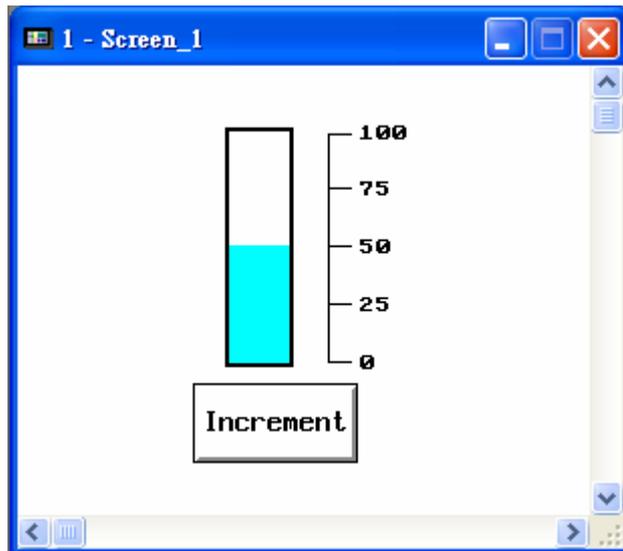
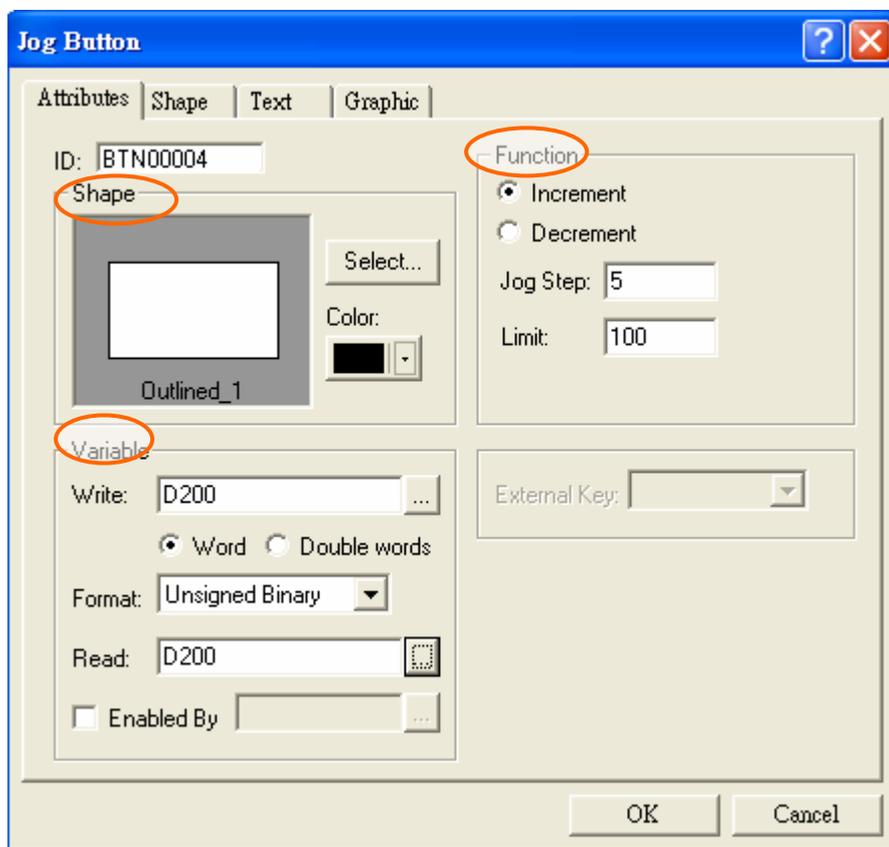


Figure 109. An Illustration of an [Increment] Button

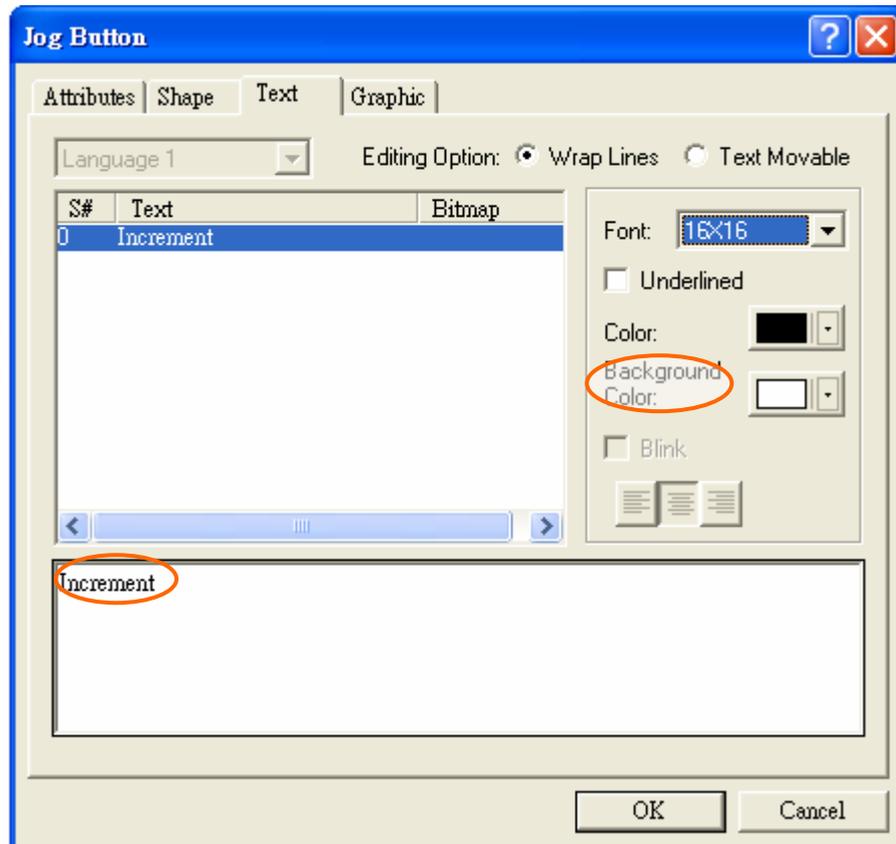
The properties of an [Increment] button above:

5. [Write] : Specify the PLC register “D200” to write in.
[Notification] : Specify as “D200”. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)
6. Shape : Select “Outlined_1” ◦
7. The jog step is ‘5’, the limit is ‘100’.



2. Instructions

8. Enter the desired text on the [Text] tab and the bkg. color is “White”.



The following is an illustration of an [Increment] button.

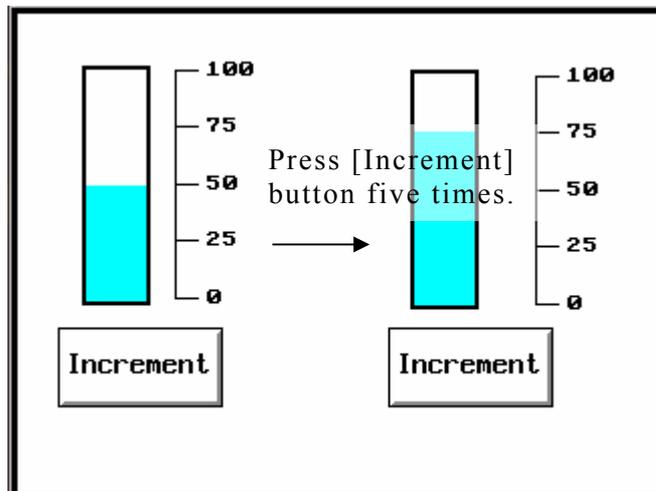


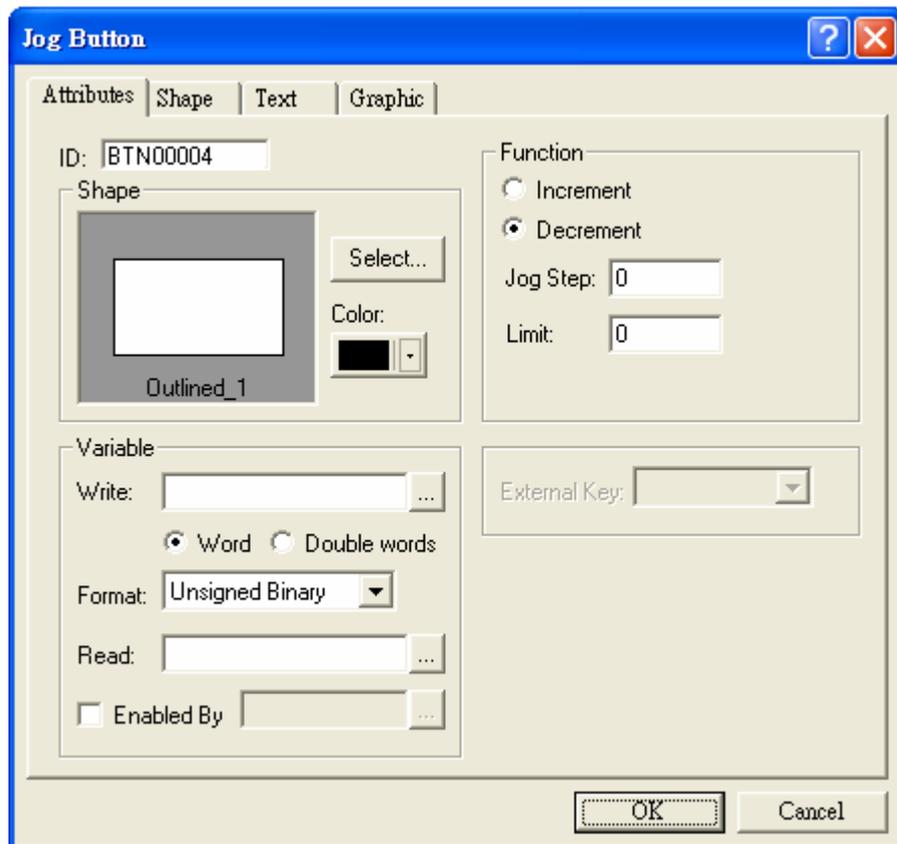
Figure 110. Press button five times to add '25' to the PLC constant

2.7.1.9. [Decrement]

I. Function

When pressed, the Workstation reads the constant variable stored in the PLC register. Then the value obtained by subtracting the specified constant will be written in the correspondent PLC register.

II. Properties



- [Function] Block:
 - ◆ [Decrement] : Select [Decrement] to create a [Decrement] button. One press is to one subtraction.
 - ◆ [Jog Step] : Specify the constant of jog step to subtract for a [Decreased] Button.
 - ◆ [Limit] : Specify the minimum limit to a register for a [Decreased] button.

For more properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

Figure 111 is an illustration of a [Decrement] button. When pressed the [Decrement] button, the subtracted constant value stored in a PLC

2. Instructions

register will be displayed in a bar graph. ([Bar Graph] is an object used to display the dynamic data in ADP)

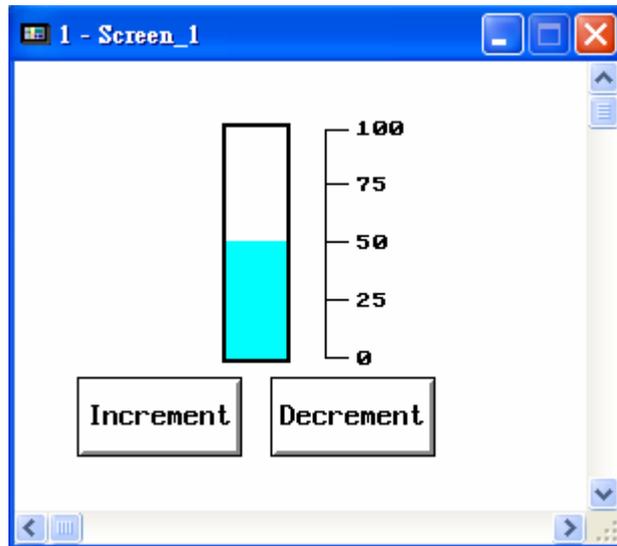
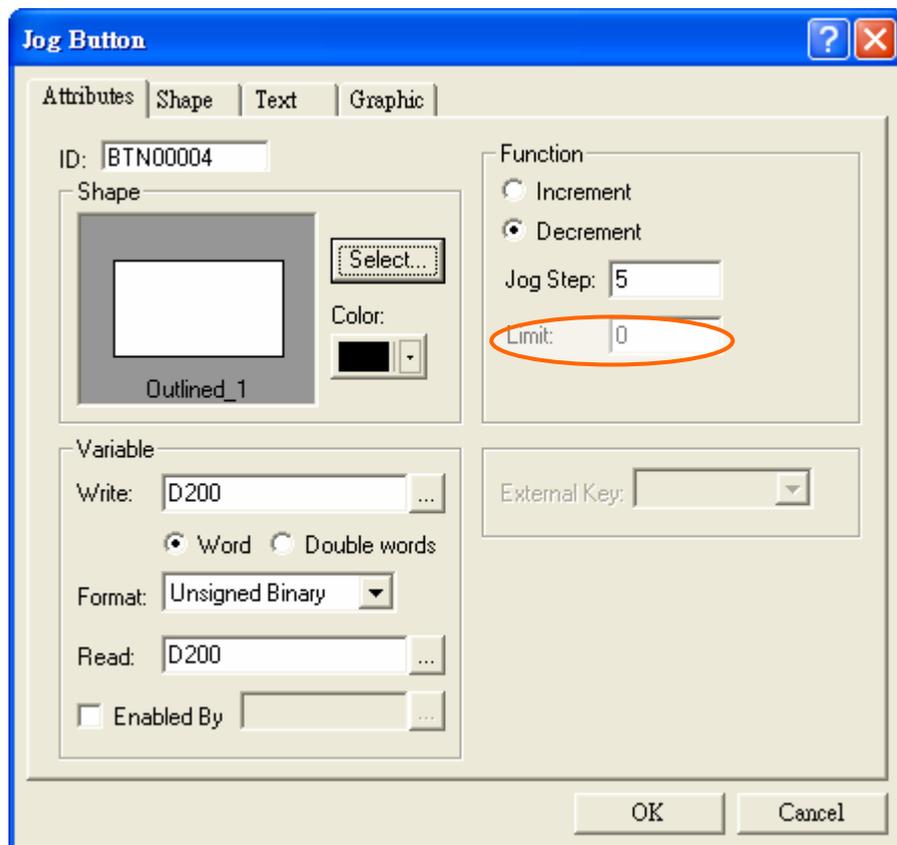


Figure 111. An illustration of the [Increment]/[Decrement] button

The steps to design a [Decrement] button are the same as [Section 2.7.1.8. \[Decrement Button\] III. Example](#), remember to change the limit to '0'.



The following is an illustration for the [Decrement Button].

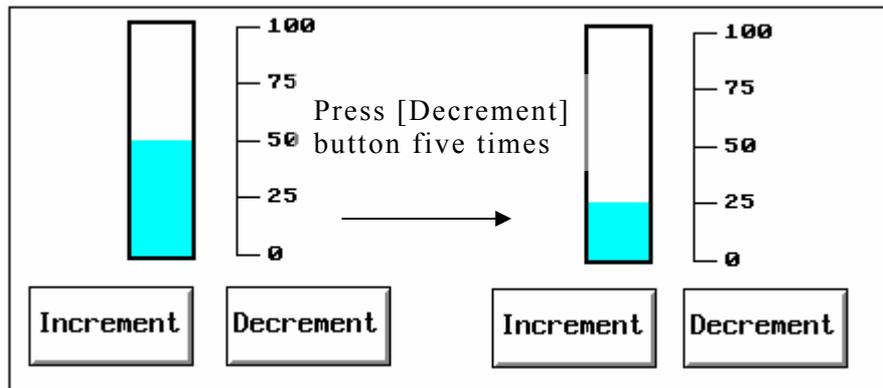


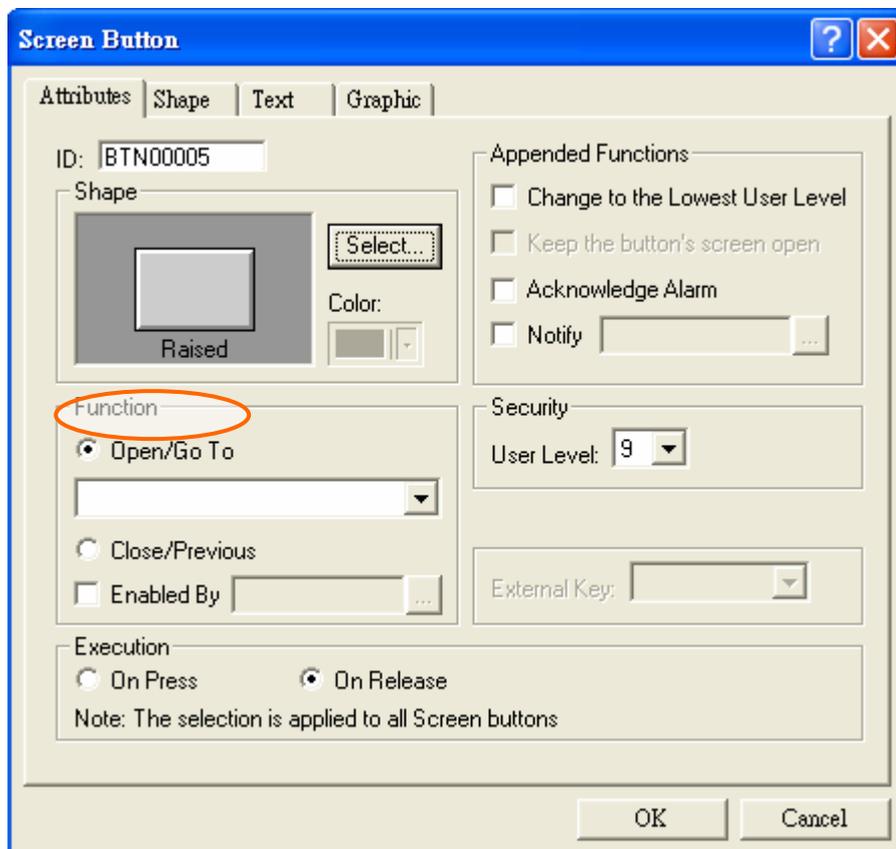
Figure 112. Press [Decrement] button five times to subtract '25' to the PLC constant

2.7.1.10. [Goto Screen Button] 

I. Function

When pressed, the Workstaion will change the current screen to the specified screen.

II. Properties



2. Instructions

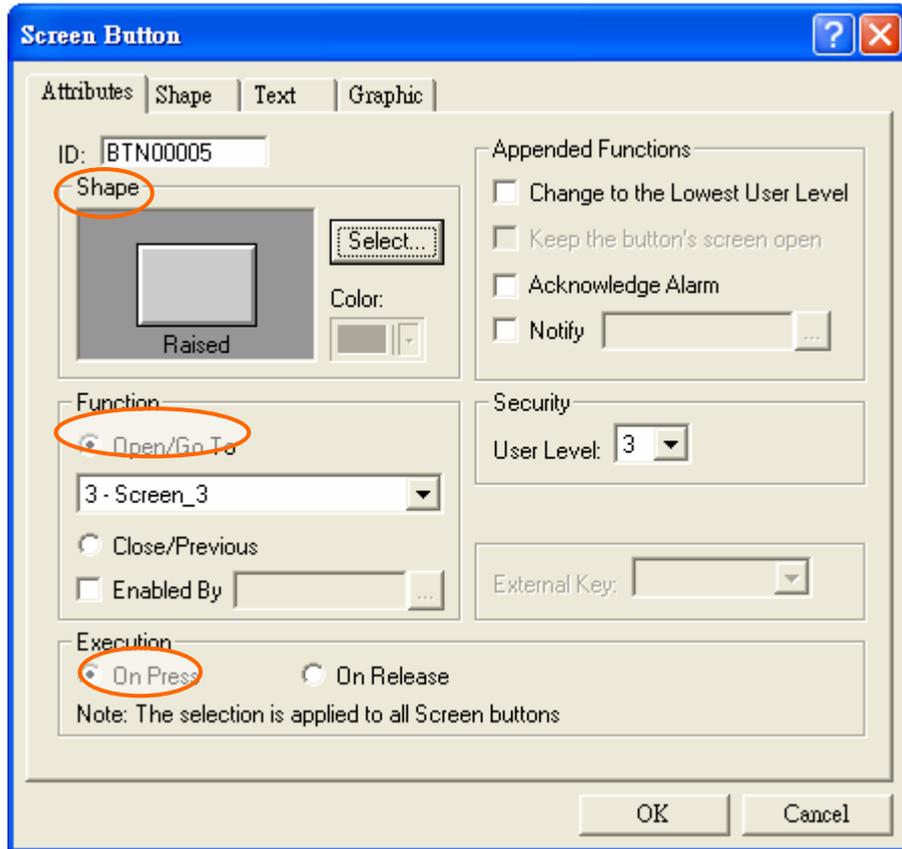
- [Function] Block:
 - ◆ [Open/Go To] : Check this option to create a [Open/Go To] button. A user can specify the screen to change from the drop-down list.
 - ◆ [Enabled By] : Only change the screen when the PLC register is **ON**.
- [Execution] Block:
 - ◆ [On Press] : Execute the command when pressed.
 - ◆ [On Release] : Execute the command when released.
- [Appended Functions] Block:
 - ◆ [Change to the Lowest User Level] : Set the current user level as the lowest level (User Level 9).
 - ◆ [Keep the Button's Screen Open] : Keep the button's screen up on the screen.(only applicable on sub-screen in xx60 series)
 - ◆ [Acknowledge Alarm] : Acknowledges the current active alarm when pressed.
 - ◆ [Notify] : Specify a bit-location to notify after press.
- [Security] Block:
 - ◆ [User Level] : 9 levels in all, the levels are 1 > 2 ... > 8 > 9.

For other properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

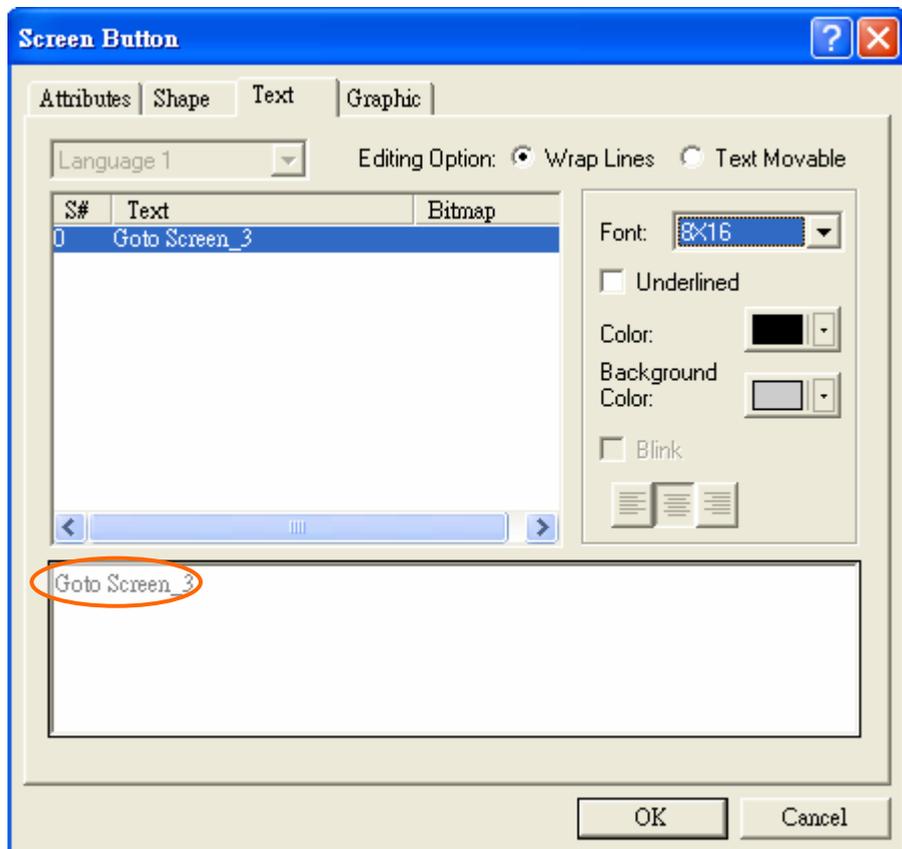
III. Example

To design a [Goto Screen] button as the following :

1. Shape : Select "Raised".
2. Press this button to change to "Screen_3".
3. The command is executed when pressed.



4. Enter the desired text on the [Text] tab.



2. Instructions

Figure 113 is an illustration of the [Goto Screen] button.

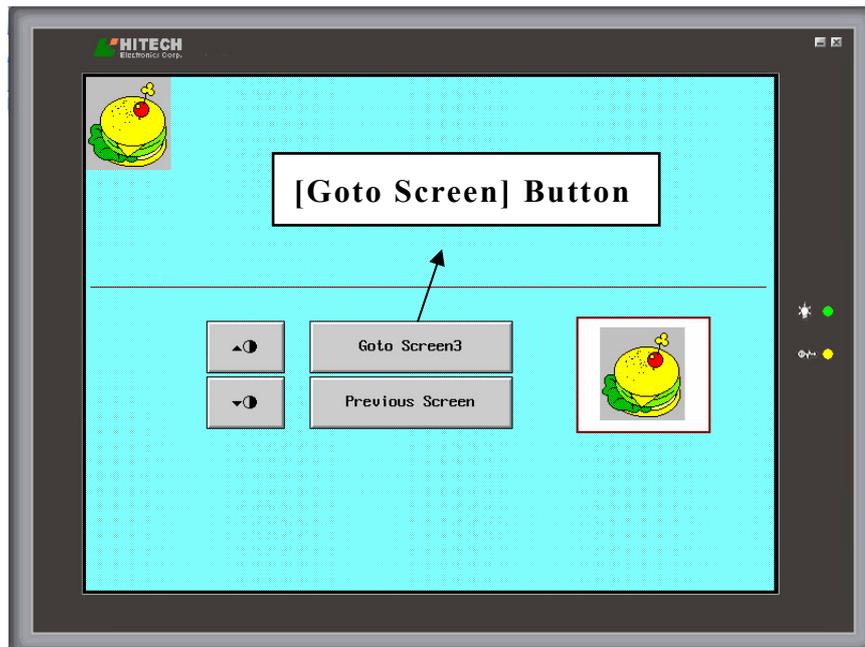


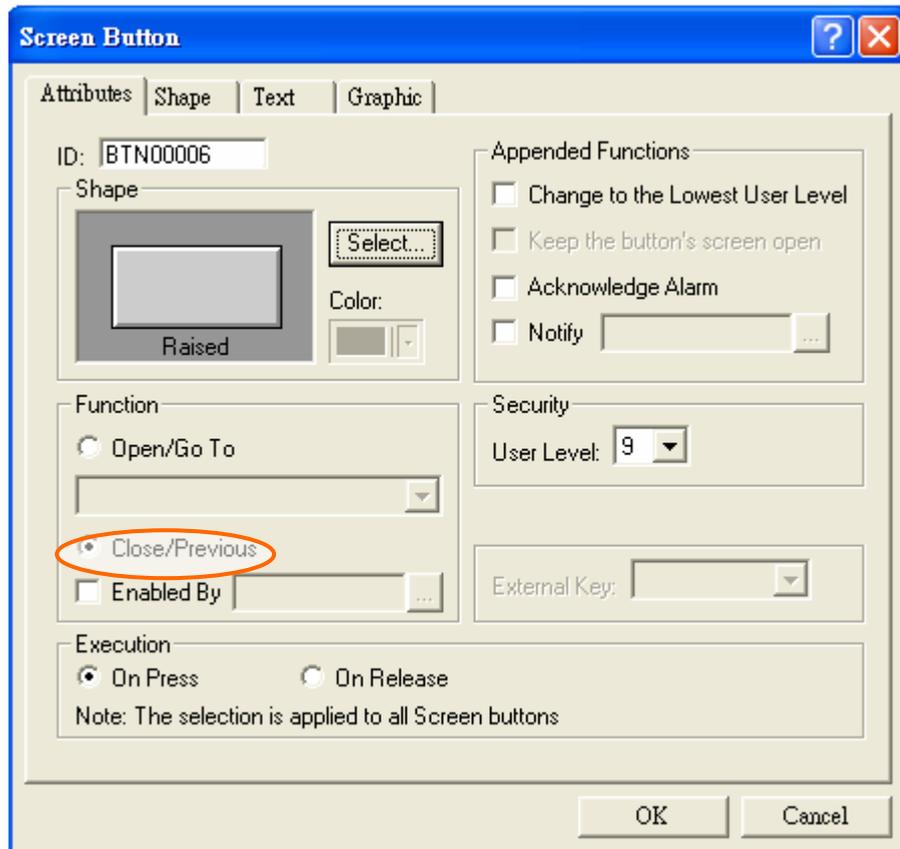
Figure 113. An illustration of a [Goto Screen] Button

2.7.1.11. [Previous Screen Button]

I. Function

When pressed this button, the Workstation will change the current to previous screen.

II. Properties



- [Function] Block:
 - ◆ [Close/Previous] : Select [Close/Previous] to create a [Close/Previous] button.

For other properties which are not explained in this Section, please refer to the [Section 2.7.1.10. \[Goto Screen Buttons\]](#) and [Section 2.7. Object III Specify Object Properties.](#)

III. Example

The steps to design a [Close/Previous] button are the same as the [Section 2.7.1.10. \[Goto Screen Button\] III. Example](#). **Remember to check the [Close/Previous] option.**

Figure 114 is an illustration of a [Close/Previous] button.

2. Instructions

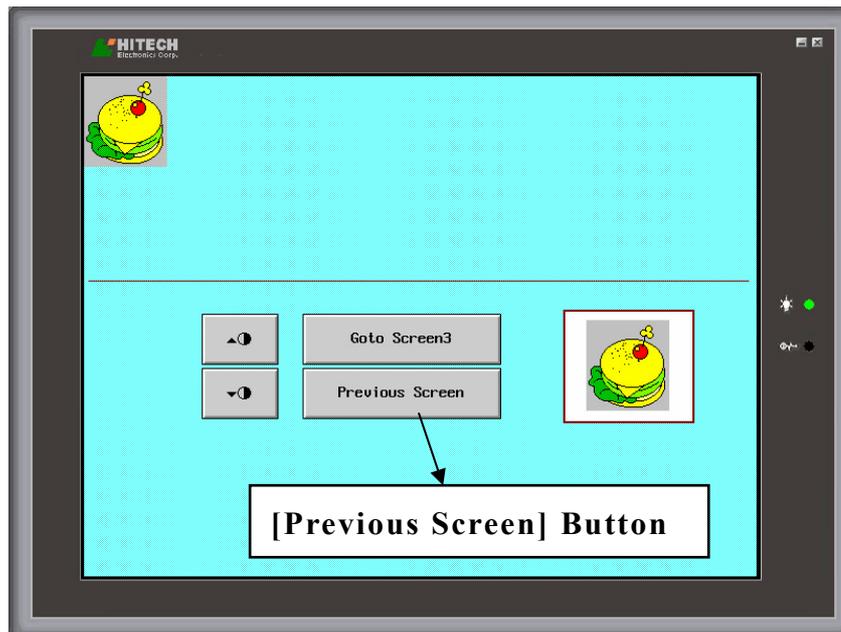


Figure 114. An Example of the [Previous Screen] Button

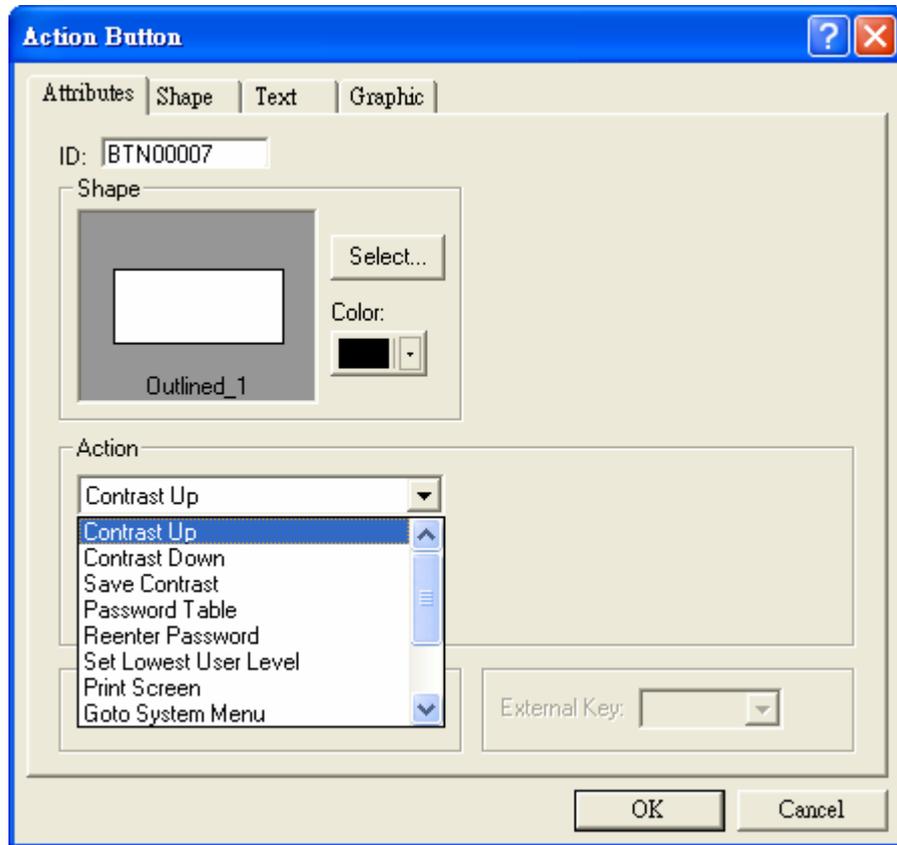
2.7.1.12. [Action Button]

I. Function

An Action button performs a built-in function.

II. Properties

1. To use the action buttons below in PWS models:

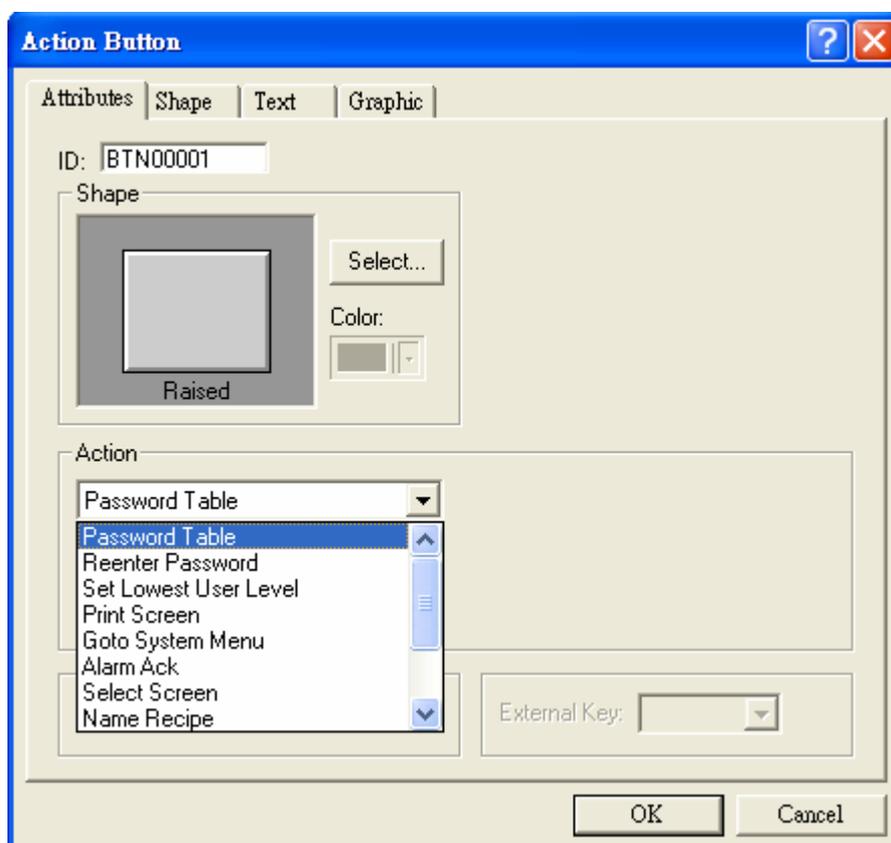


- [Action] Block:
 - ◆ “Contrast Up”: Increase the contrast or brightness of the display.
 - ◆ “Contrast Down”: Decrease the contrast or brightness of the display.
 - ◆ “Save contrast”: Save the setting of contrast or brightness.
 - ◆ “Password Table”: Display the password table.
 - ◆ “Reenter Password”: Display the password table to reenter.
 - ◆ “Set Lowest User Level”: Change to the lowest user level = 9.
 - ◆ “Print Screen”: Print the specified region (HARDCOPY) of current screen.
 - ◆ “Goto System Menu”: Change to the system menu.
 - ◆ “Turn off Backlight”: Turn off the backlight.
 - ◆ “Alarm Ack”: Acknowledge the current active alarm to keep going on.
 - ◆ “Set Time & Date”: Set the time and date.
 - ◆ Select Language #1~#5: Display the screen by the specified language, 5 languages for selection.

2. Instructions

These features are not applicable on all HMI models; please refer to the [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#).

2. To use the action buttons below in SoftPanel:



- [Action] Block:
 - ◆ “Password Table”: Display the password table on SoftPanel.
 - ◆ “Reenter Password”: Display the password table to reenter on SoftPanel.
 - ◆ “Set Lowest User Level”: Change to the lowest user level = 9 on SoftPanel.
 - ◆ “Print Screen”: Print the specified region (HARDCOPY) of current screen on SoftPanel.
 - ◆ “Goto System Menu”: Change to the system menu on SoftPanel.
 - ◆ “Alarm Ack”: Acknowledge the current active alarm to keep going on SoftPanel.
 - ◆ “Select Screen”: Select the screen to change from the dialog box when pressed on SoftPanel.
 - ◆ “Name Recipe”: Name the recipe which data and number have been specified from the dialog box when pressed on SoftPanel, Chinese/English is allowable.

2. Instructions

- ◆ “Select Recipe”: Enter the recipe which data and number have been specified from the dialog box for search when pressed on SoftPanel. This object is used to great number of recipes; Chinese/English is allowable.
- ◆ “Print Report”: Print the edited report which report format is recipe, logging buffer and alarm...etc on SoftPanel.
- ◆ “Run Application”: Run the application based on the specified route when pressed on SoftPanel.
- ◆ Select Language #1~#5: Display the screen by the specified language, 5 languages for selection.

These features are not applicable on all HMI models; please refer to the [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#).

For other properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

Figure 115 is an illustration of [Action] buttons. When press the button, the contrast of the display will be changed.

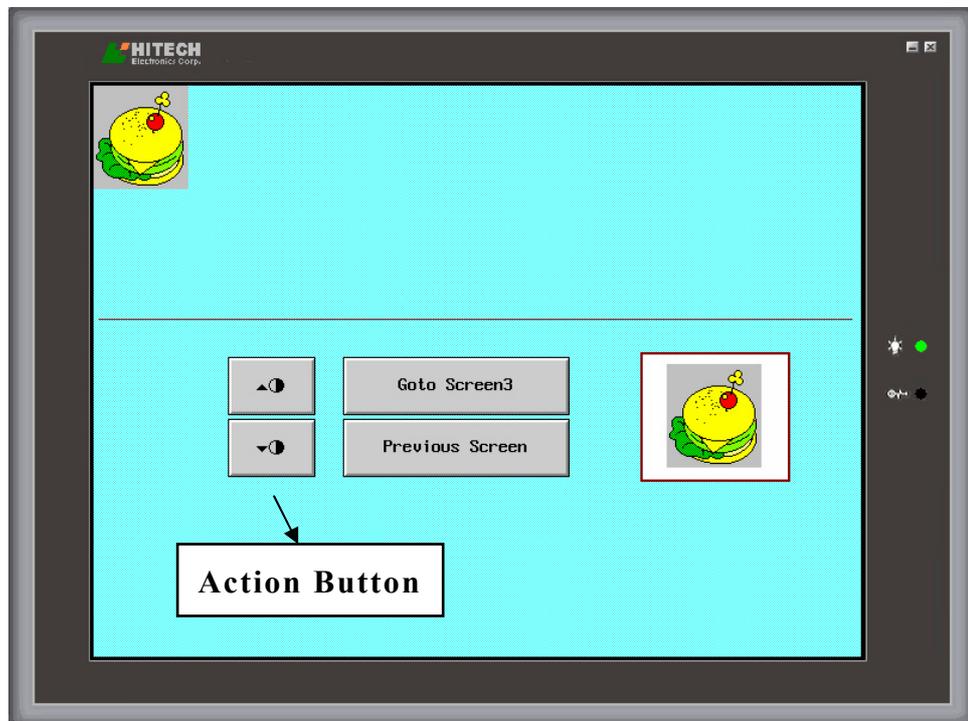


Figure 115. An Illustration of [Action] buttons

To design a [Action] Button as below :

1. The [Action] is “Contrast Up”. See Figure 116.

2. Instructions

2. The Bitmap is “PwsSymbol – ContrastUp”. See Figure 117.

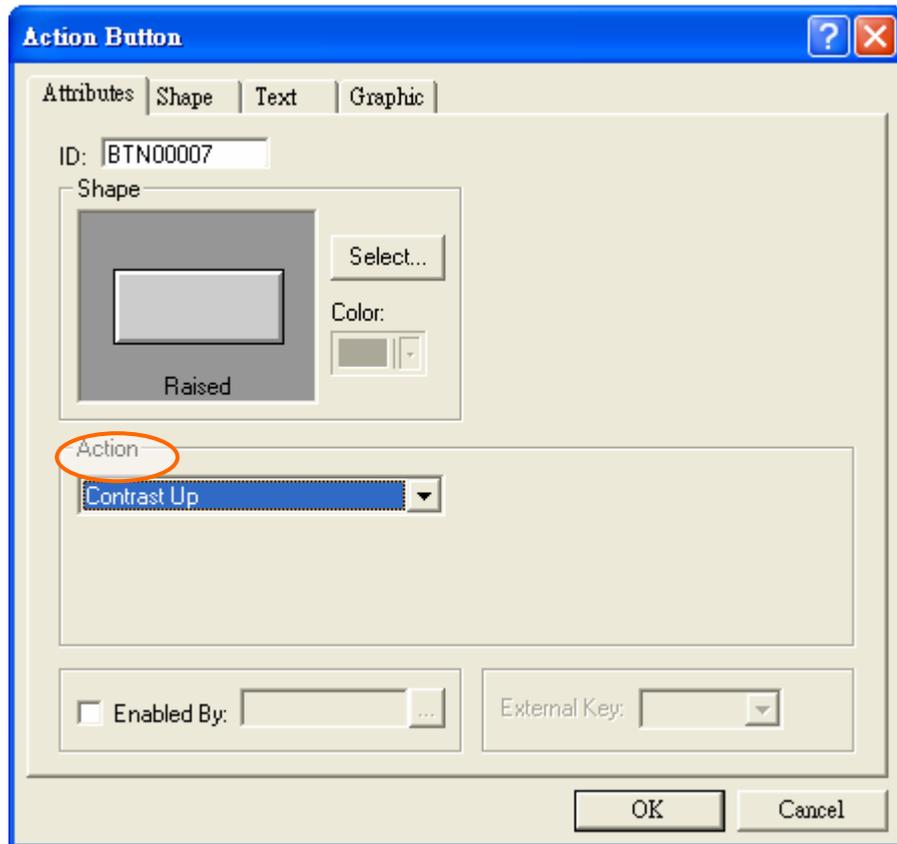


Figure 116. Select [Contrast Up] in [Action]

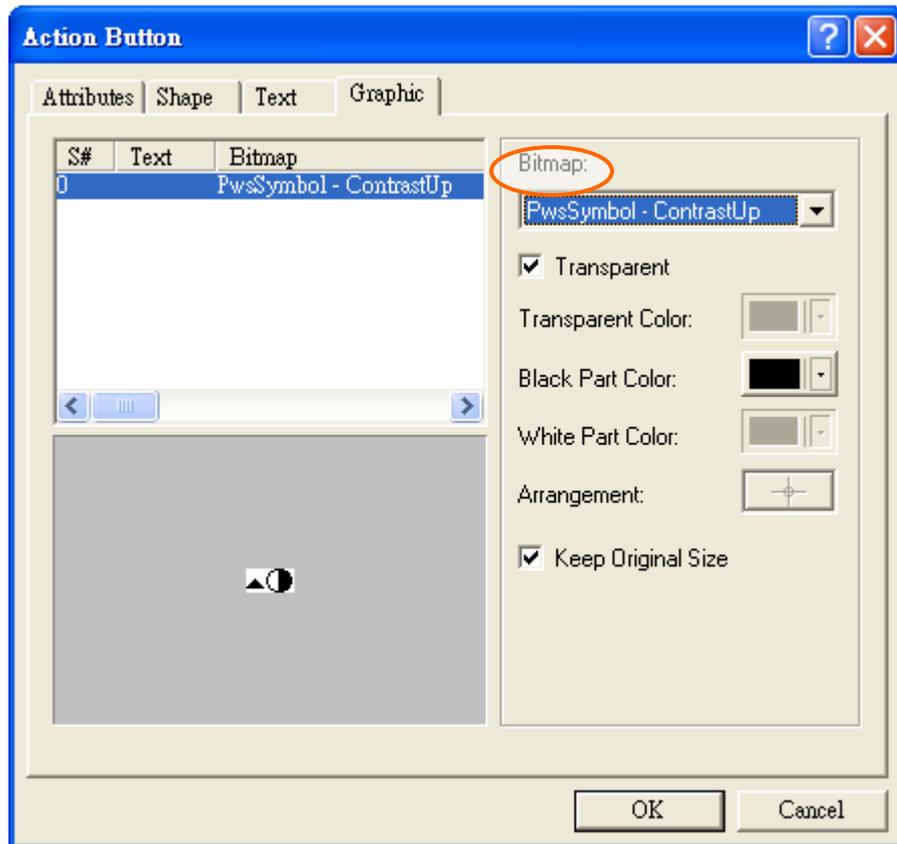


Figure 117. Select bitmap to an [Action] Button

2.7.1.13. [Data Text Conversion Button]

I. Function

This Feature is only applicable on SoftPanel. This command is to convert the data such as logging buffer, recipes, alarm history buffer, alarm frequency buffer to the text file saved as *.PRN file. Then, it can be readed in text software (ex. Excel, Word, Notpad, and so on.)

II. Properties

2. Instructions

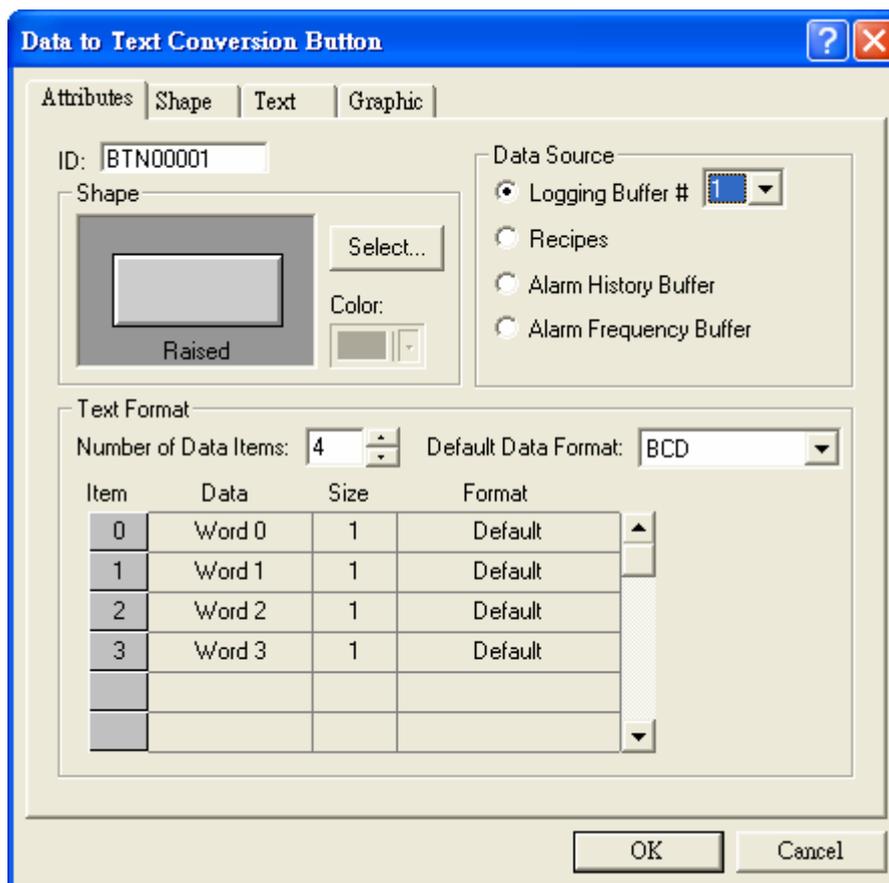


Figure 118. The [Data to Text Conversion Button] Dialog Box

- [Data Source] Block : Convert [Logging Buffrt], [Recipes], [Alarm History Buffer] and [Alarm Frequency Buffer] to text file.
- [Text Format] Block :
 - ◆ [Number of Data Item] : Sepcify the number of items to be converted to text file; the maxmum is 32 items.
 - ◆ [Default Data Format] : [BCD], [Signed BIN] and [Unsigned BIN].
 - ◆ Text Format Table : Click one of cells to select the format from the drop-down list.

For other properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

—. Button Design

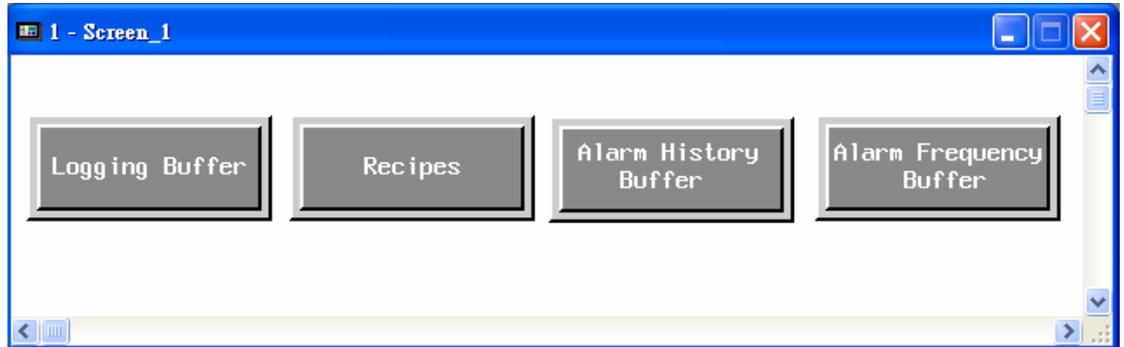
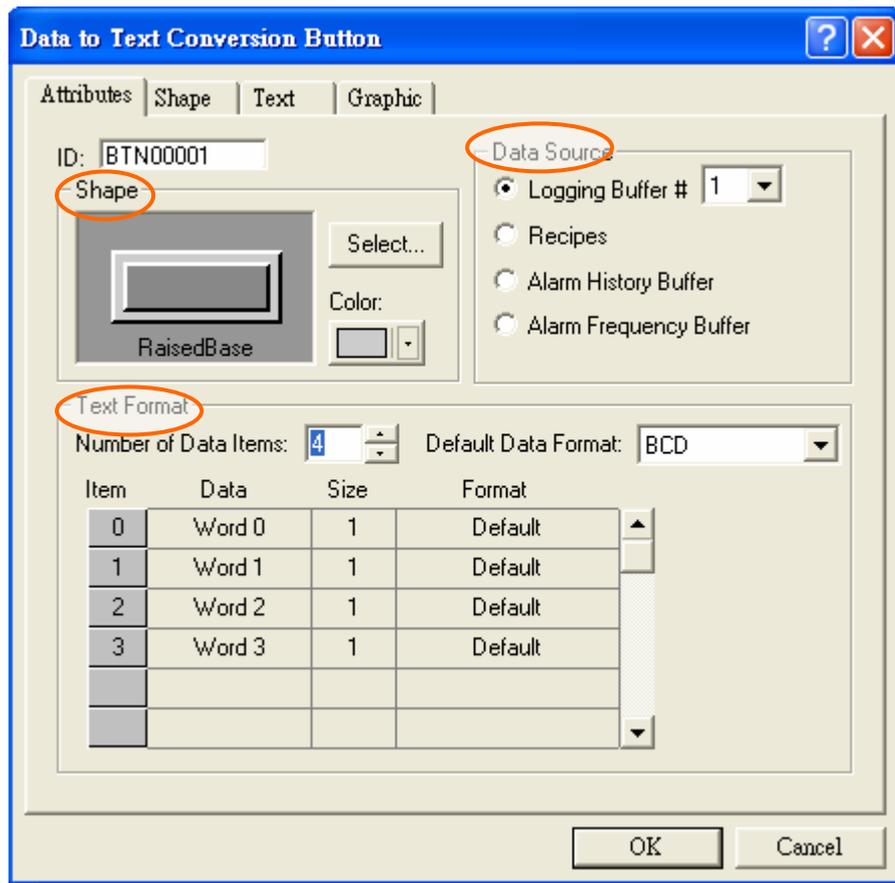


Figure 119. An Illustration of the [Data to Text Conversion Button]

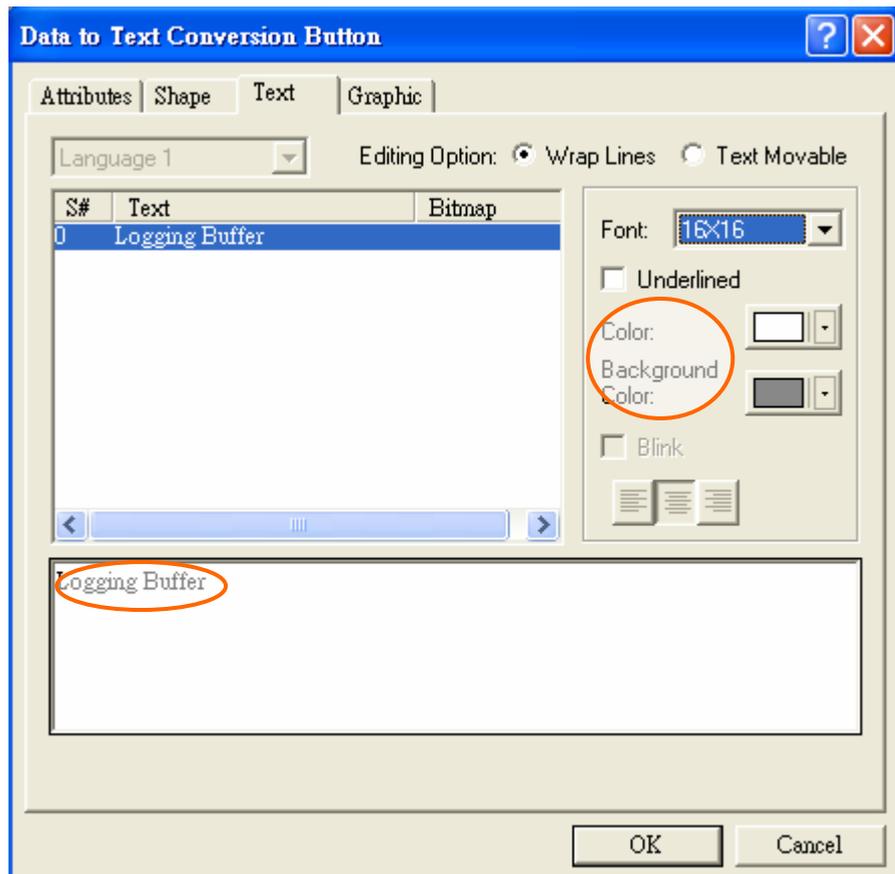
To design [Data to Text Conversion Button] buttons as Figure 109; See below :

1. Shape : Select “Raised Base”.
2. [Data Source] is [Logging Buffer].
3. [Number of Data Items] is 4; [Default Data Format] is “BCD”.

2. Instructions



4. Enter the desired text on the [Text] tab; the text color is 'White' and the bkg. color is 'Gray'.



The steps to design the other [Data to Text Conversion Button] are the same (ex. [Recipes], [Alarm History Buffer] and [Alarm Frequency Buffer]) but remember to change the option in [Data Source].

二. Steps

1. Execute the *.SP2 file which is designed in ADP on Soft-Panel.
2. Select the correspondent [Data to Text Conversion] button (ex. [Logging Buffer],[Recipes]...etc) to specified data. Then, the dialog box will ask for enter the file name (*.PRN) to save. See Figure 120.

2. Instructions

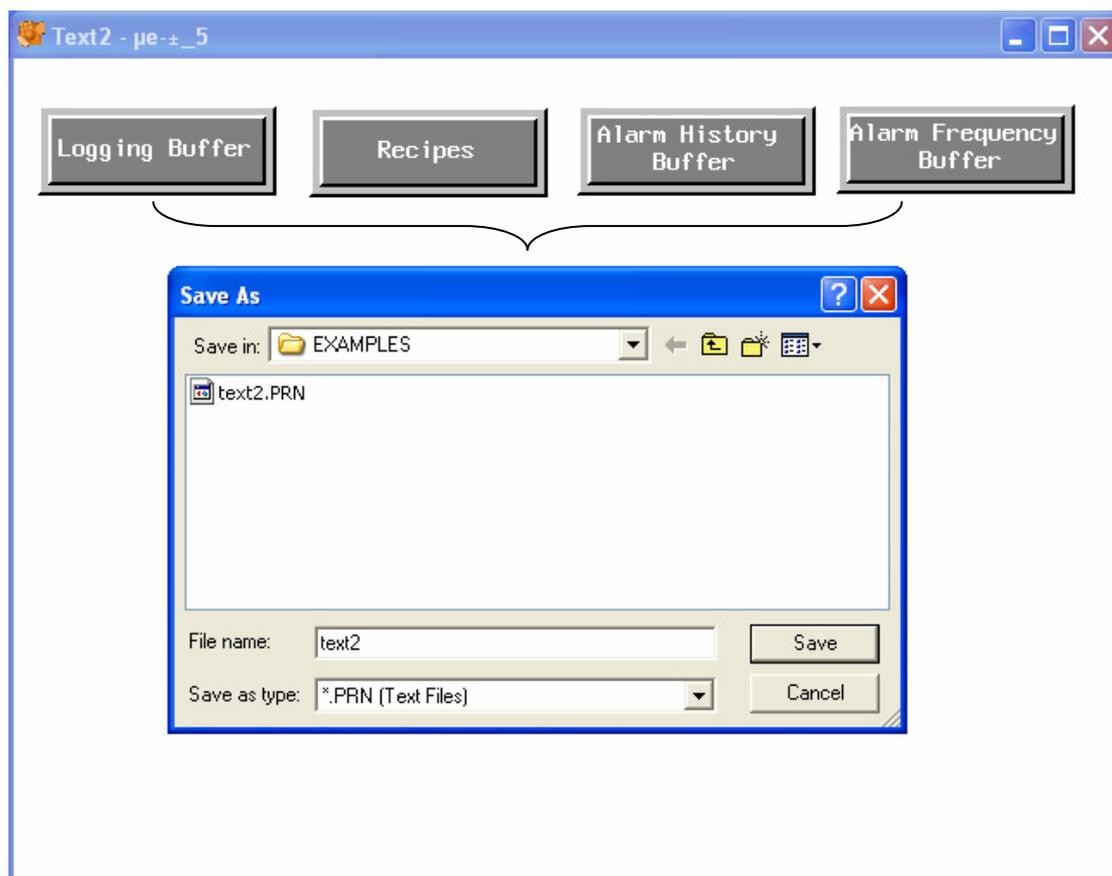
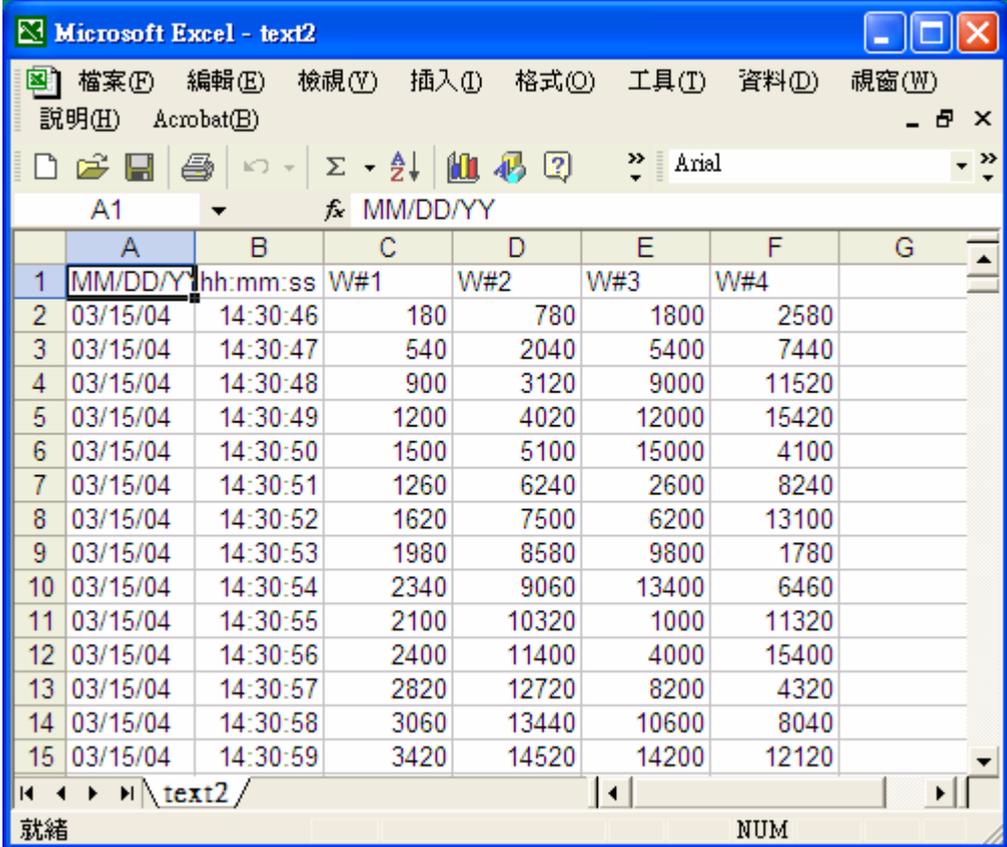


Figure 120. Execute the [Data to Text Conversion] Button

3. Open the converted file in the text software (ex. Word, Excel...etc) to read. See Figure 121.

2. Instructions



The screenshot shows a Microsoft Excel window titled "Microsoft Excel - text2". The menu bar includes options like 檔案(F), 編輯(E), 檢視(V), 插入(I), 格式(O), 工具(T), 資料(D), 視窗(W), 說明(H), and Acrobat(B). The toolbar contains icons for file operations and calculations. The active cell is A1, containing the formula =MM/DD/YY. The spreadsheet displays a table with 15 rows and 7 columns (A-G). The data in the table is as follows:

| | A | B | C | D | E | F | G |
|----|----------|----------|------|-------|-------|-------|---|
| 1 | MM/DD/YY | hh:mm:ss | W#1 | W#2 | W#3 | W#4 | |
| 2 | 03/15/04 | 14:30:46 | 180 | 780 | 1800 | 2580 | |
| 3 | 03/15/04 | 14:30:47 | 540 | 2040 | 5400 | 7440 | |
| 4 | 03/15/04 | 14:30:48 | 900 | 3120 | 9000 | 11520 | |
| 5 | 03/15/04 | 14:30:49 | 1200 | 4020 | 12000 | 15420 | |
| 6 | 03/15/04 | 14:30:50 | 1500 | 5100 | 15000 | 4100 | |
| 7 | 03/15/04 | 14:30:51 | 1260 | 6240 | 2600 | 8240 | |
| 8 | 03/15/04 | 14:30:52 | 1620 | 7500 | 6200 | 13100 | |
| 9 | 03/15/04 | 14:30:53 | 1980 | 8580 | 9800 | 1780 | |
| 10 | 03/15/04 | 14:30:54 | 2340 | 9060 | 13400 | 6460 | |
| 11 | 03/15/04 | 14:30:55 | 2100 | 10320 | 1000 | 11320 | |
| 12 | 03/15/04 | 14:30:56 | 2400 | 11400 | 4000 | 15400 | |
| 13 | 03/15/04 | 14:30:57 | 2820 | 12720 | 8200 | 4320 | |
| 14 | 03/15/04 | 14:30:58 | 3060 | 13440 | 10600 | 8040 | |
| 15 | 03/15/04 | 14:30:59 | 3420 | 14520 | 14200 | 12120 | |

The status bar at the bottom shows the file path "\text2\" and the text "就緒" (Ready) on the left and "NUM" on the right.

Figure 121. Open the converted file (*.PRN) in Excel

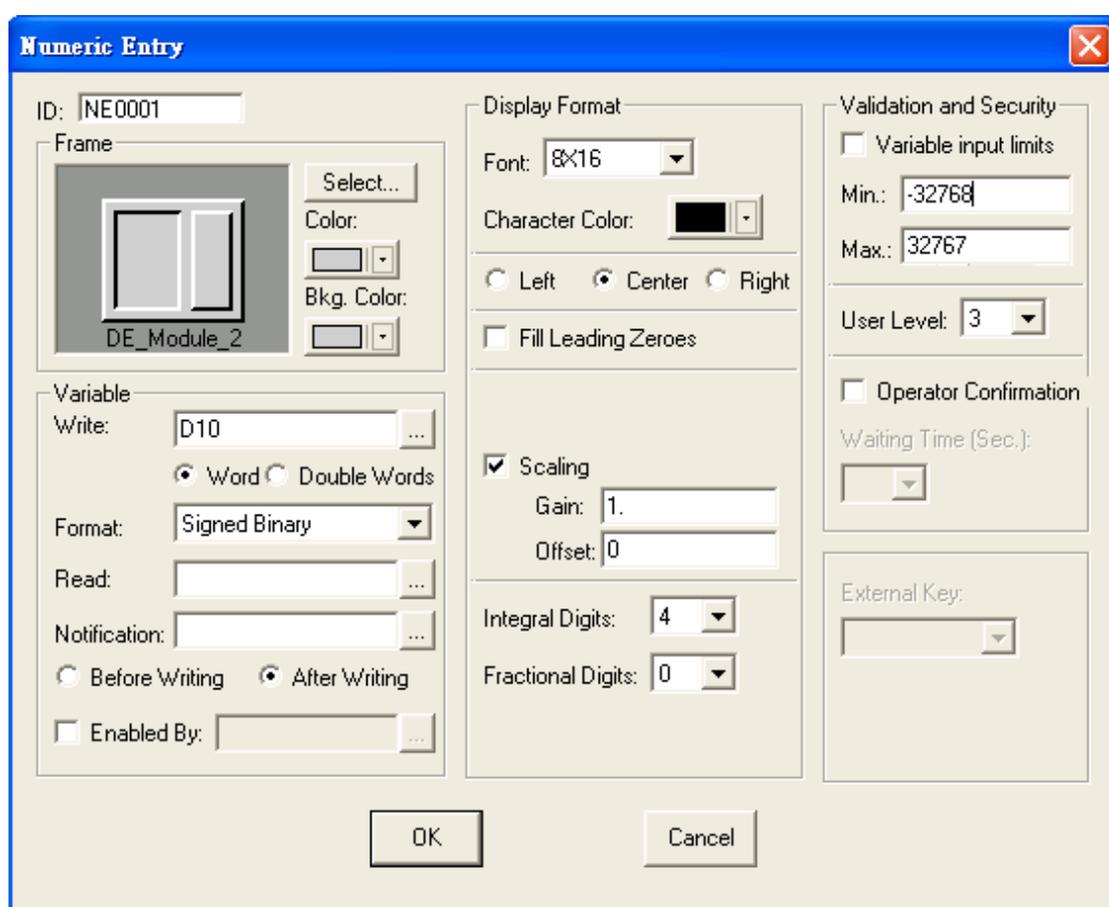
2. Instructions

2.7.2. [Numeric Entry]

I. Function

Once the button is pressed, a numeric keypad will be displayed on the screen. Enter a value and then press the [ENT] on the keypad. The HMI will then write the input value to the specified PLC register. The functions of this button are to provide users with a numeric input and its display.

II. Properties



The screenshot shows the 'Numeric Entry' configuration dialog box. The 'ID' field is set to 'NE0001'. The 'Frame' section shows a preview of the numeric keypad labeled 'DE_Module_2'. The 'Variable' section has 'Write' set to 'D10', 'Format' set to 'Signed Binary', and 'Read' set to an empty field. The 'Display Format' section has 'Font' set to '8x16', 'Character Color' set to black, and 'Center' alignment selected. The 'Validation and Security' section has 'Min.' set to '-32768', 'Max.' set to '32767', and 'User Level' set to '3'. There are also checkboxes for 'Fill Leading Zeros', 'Scaling', 'Operator Confirmation', and 'Enabled By'. The 'External Key' field is empty. The dialog has 'OK' and 'Cancel' buttons at the bottom.

- [Variable] Block :
 - ◆ [Format] : There are “BCD”, “Signed Binary”, “Unsigned Binary”, “Hexadecimal”, “32-bit Floating-point” and “Octal”.
 - ◆ [Notification] : Specify a register/bit location to be notified; the HMI will set the bit to be ON.
 - [Before Writing]: The HMI sets the Notification location to be ON when the numeric keypad appears and sets the location to be OFF when the numeric pad disappears.

2. Instructions

- [After Writing]: The Workstation sets the [Notification] location to be ON after writing the input value to the [Write] location.
- [Display Format] Block :
 - ◆ [Fill Leading Zero] : Select this option to fill leading zeros; for example, “5902.1” is displayed as “005902.1”.
 - ◆ [Decimal Pt. Position] : Specify the number of digits after the integral part of the number. There are 0~10 digits for choice.
 - ◆ [Fractional Digits] : The number of decimal digits.
(Fractional Digits + Integral Digits or Decimal Pt. Position ≤ the maximum number of digits.)
 - ◆ [Integral Digits] : The number of the integral part in a number.
(Fractional Digits + Integral Digits or Decimal Pt. Position ≤ the maximum number of digits.)
 - ◆ [Scaling] : The formula is $Y = aX + b$ (Note that this only the formats “Signed Binary”, “Unsigned Binary” and “32-bit Floating-point” support this option.)
 - [Gain] : $Y = aX$, where X = the value stored in PLC and Y = HMI displayed value.
 - [Offset] : If the initial value is not zero, then set the [Offset].
- [Validation and Security] Checking box :
 - ◆ [Variable Input Limits] : Set the input limits as variable. The minimum is stored in the bit following the [Write] location; the maximum is stored in the bit following the minimum input value. For example, if the [Write] location is “D10”, then the minimum is stored in “D11”; the maximum is stored in “D12”.
 - ◆ [Min] : Set the minimum input value. (Less than the minimum input value will be warned and rejected.)
 - ◆ [Max] : Set the maximum input value. (Greater than the maximum will be warned and rejected.)

| Address | X | X+1 | X+2 |
|----------|-------|-----|-----|
| | Write | Min | Max |
| Example: | D10 | D11 | D12 |

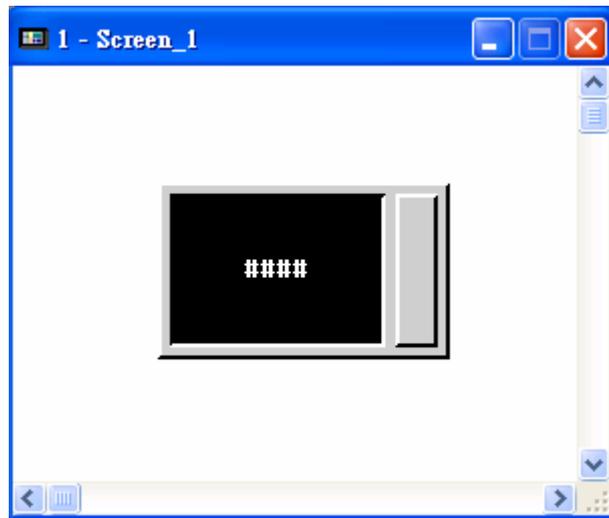
For the properties which are not explained in this section, please refer to the [Section 2.7.1.6. \[Set Constant Value\]](#) and the [Section 2.7. Object III Specify Object properties.](#)

2. Instructions

III. Example

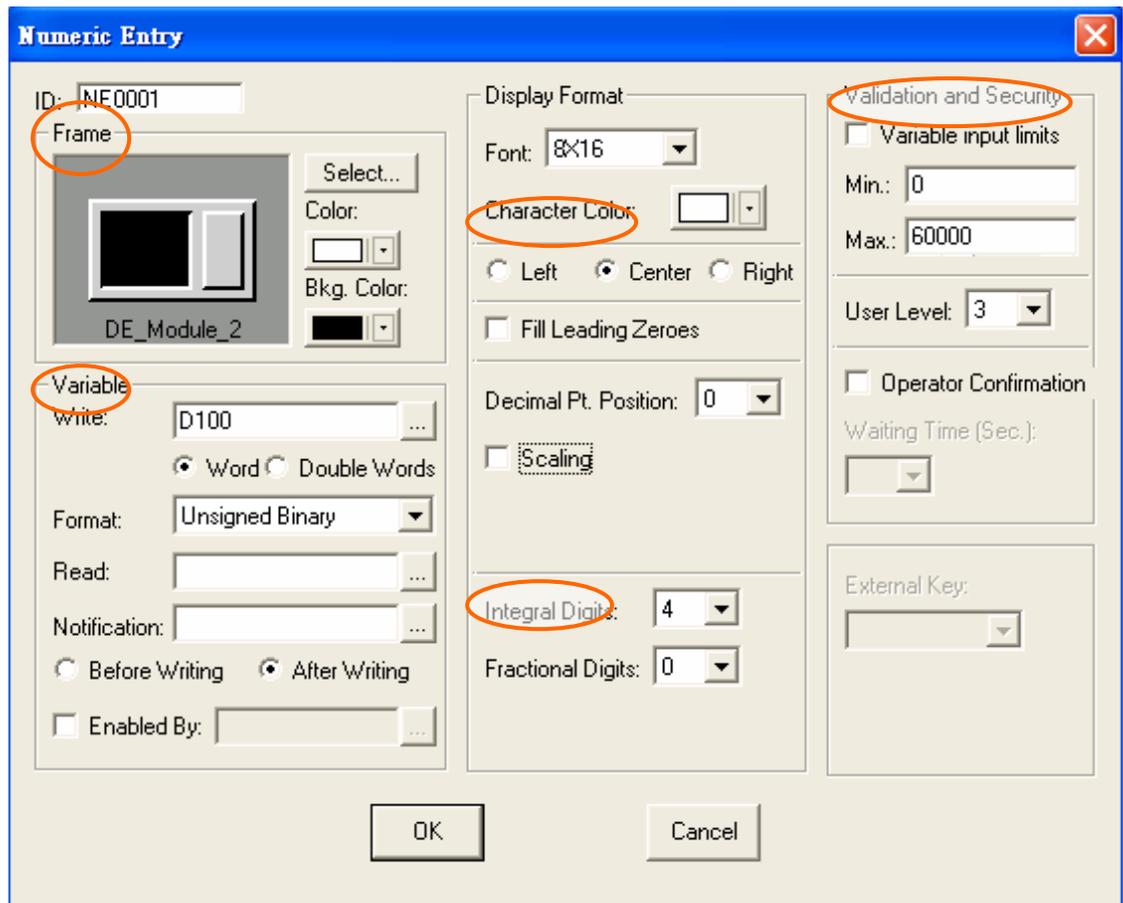
—. A Basic Numeric Entry Button

The following are the steps to create a [Numeric Entry] button :



1. Frame Style: Select “DE_Module_2”; and the background color is “Black”; the character color is “White”.
2. [Write] : Specify the PLC register “D100” to store the value.
(The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)
3. [Format] is “Unsigned Binary”.
4. Allow 4 integral digits in a number.
5. The minimum of an input value is “0” and the maximum of an input value is “60000.”

2. Instructions



The steps above will create a [Numeric Entry] button. Once the button is pressed, a numeric keypad will be displayed on the screen. After entering a value, the HMI will show the input value on the button.

Users can also design a [Numeric Display] object to display the value stored in the PLC. Therefore, for this basic numeric entry button, if one enters “10” on the HMI, then both of the [Numeric Entry] button and the [Numeric Display] object will show “10.” See Figure 122.

2. Instructions

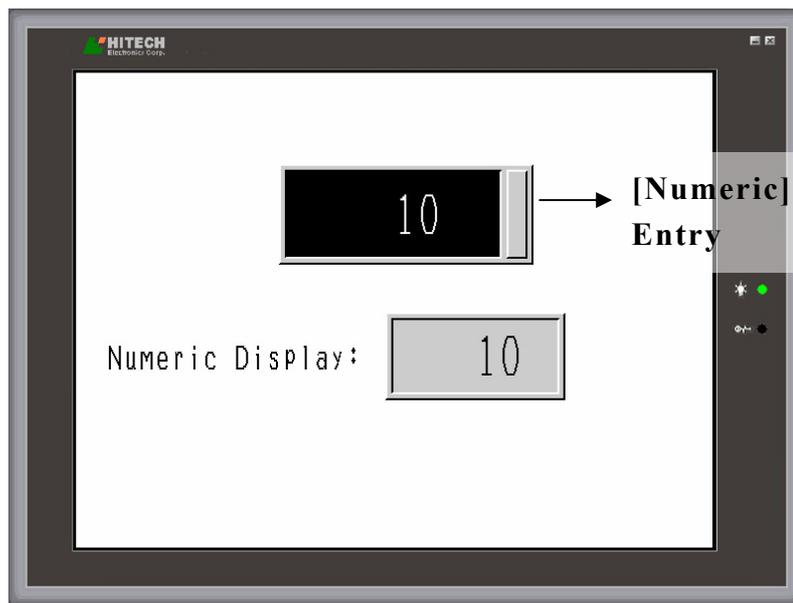


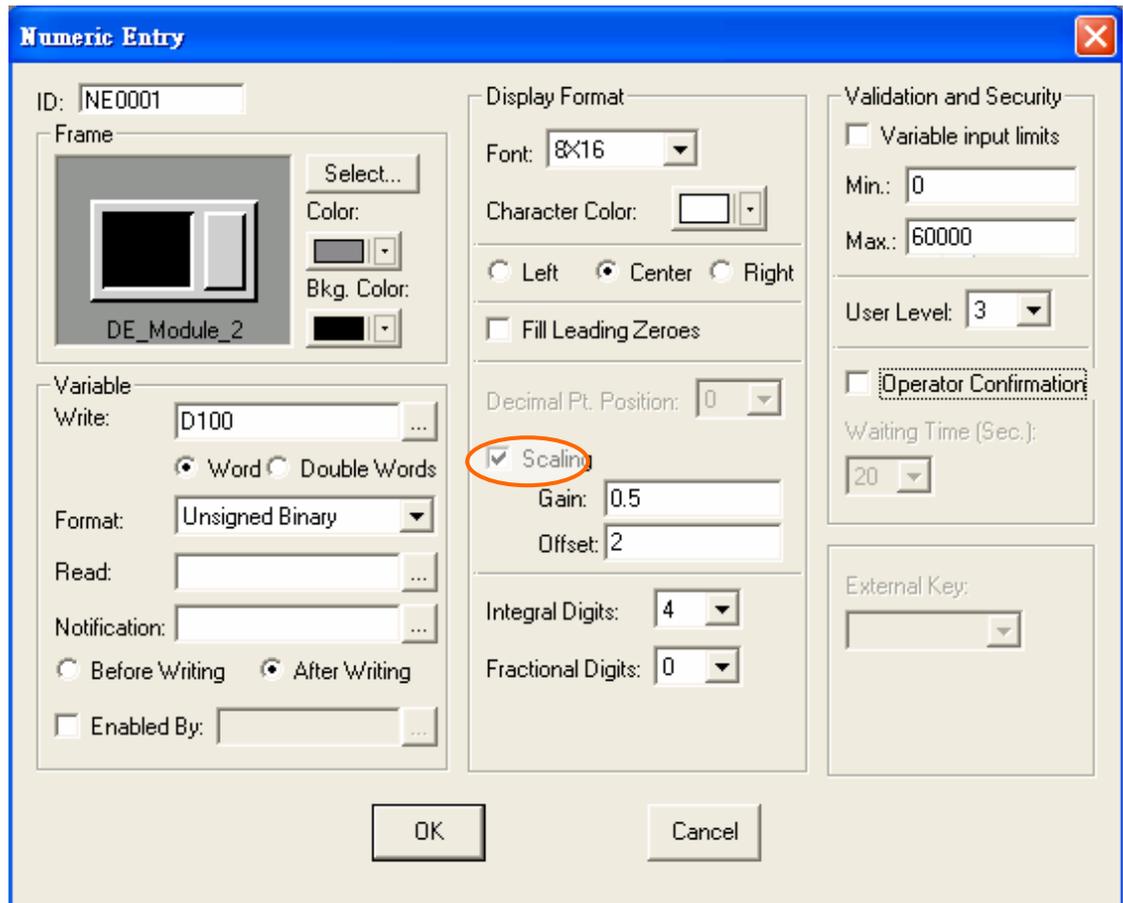
Figure 122. A basic [Numeric Entry] button and a [Numeric Display] object

二. A Numeric Entry Button with the Scaling Feature

To design a [Numeric Entry] button with the [Scaling] feature, [Gain] = 0.5; [Offset] = 2:

All other properties are the same as the example above.

2. Instructions



This example will create a [Numeric Entry] button with the [Scaling] feature. After entering a value, the HMI will show the input value on the button. Users can also design a [Numeric Display] button to display the value stored in the PLC. Therefore, for this example of the button with the [Scaling] feature, if one enters “10” on the HMI, then the [Numeric Entry] button will show “10” and the [Numeric Display] object will show “16.” See Figure 123.

($Y = aX + b$: X is the value stored in the PLC, Y is the input value on an HMI; where $a=0.5$ and $b=2$ here)

2. Instructions

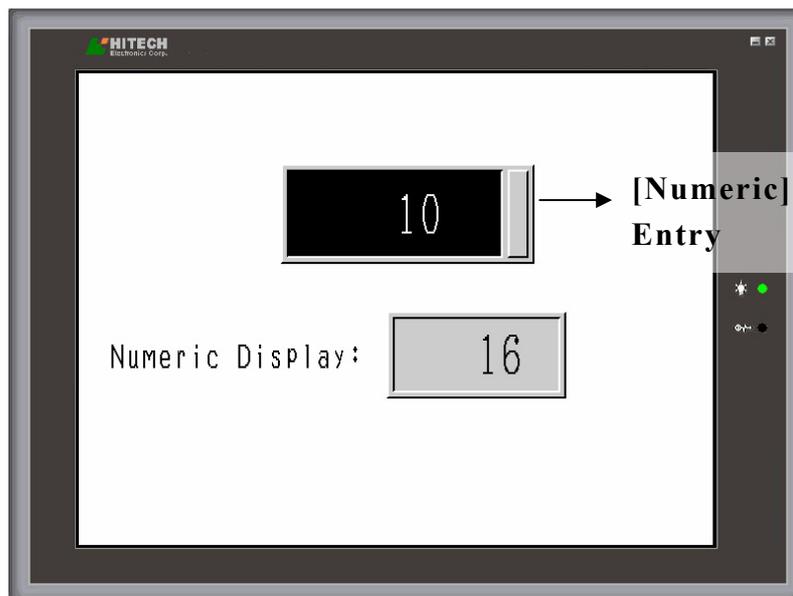


Figure 123. A [Numeric Entry] button with [Scaling] feature and a [Numeric Display] button

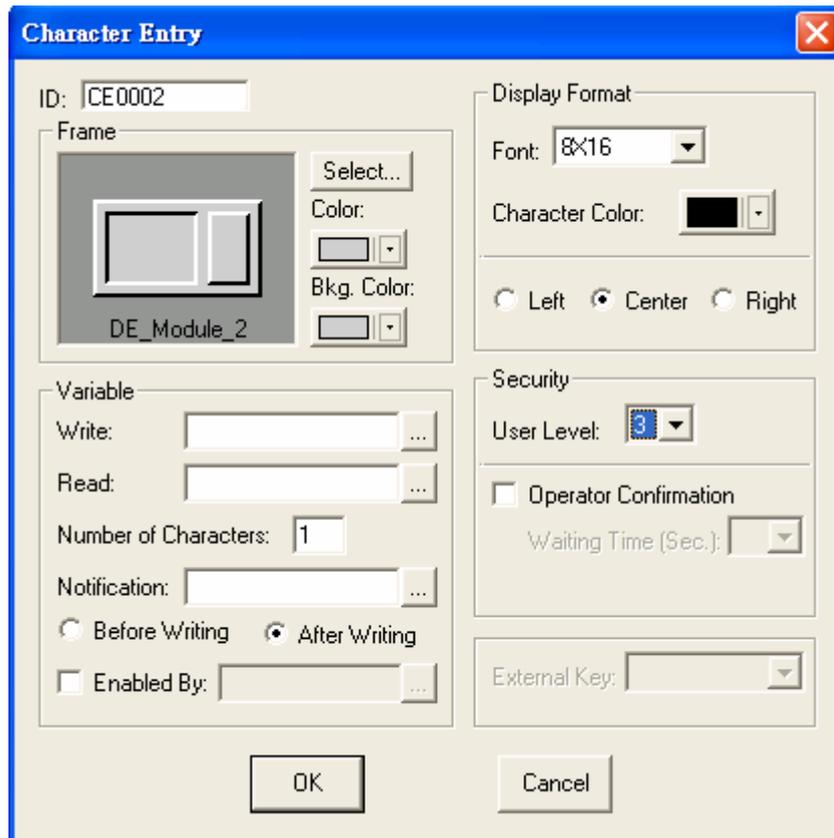
2.7.3. [Character Entry]

I. Function

Once the button is pressed, an alphabetic keypad will be displayed on the screen. Enter character(s) and then press the [ENT] on the keypad. The HMI will then write the input entry in ASCII to the specified PLC register. The functions of this button are to provide users with an alphabetic input and its display.

The object is not applicable on all HMI models; please refer to [Appendix A. - Table of the ADP 6.0 Features and the HMI Models](#) for the complete details.

II. Properties



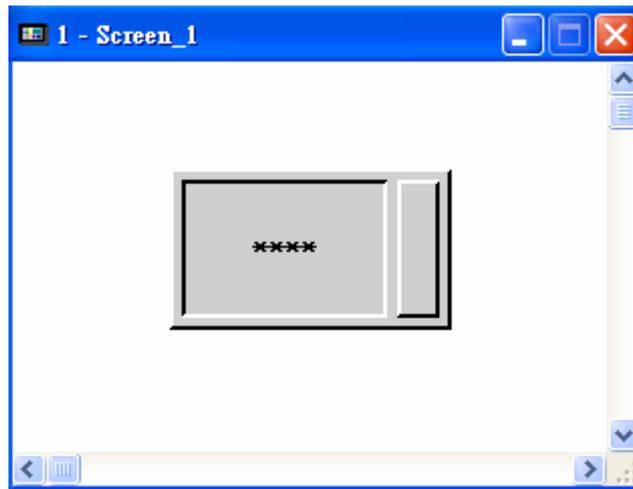
- [Variable] Block :
 - ◆ [Number of Characters] : The number of characters; the maximum is “28.” (2 words in ASCII = 1 Word in a PLC register)

For the properties which are not explained in this section, please refer to the [Section 2.7.1.6. \[Set Value Button\]](#) and the [Section 2.7. Object III Specify Object Properties.](#)

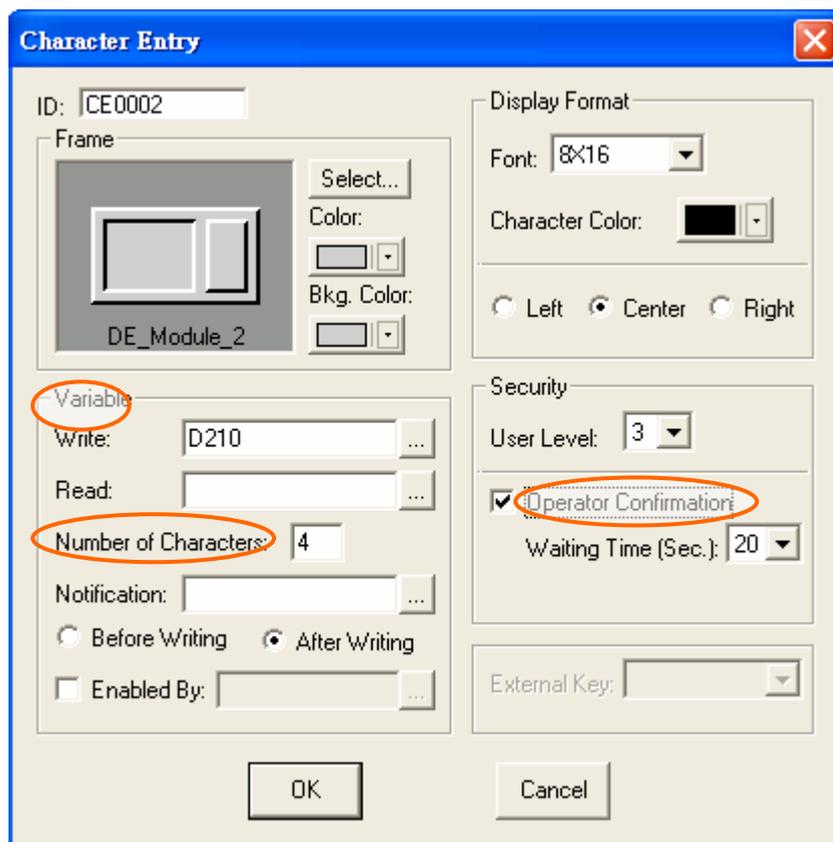
III. Example

The following are the steps to create a [Character Entry] button :

2. Instructions



1. [Write] : Specify the PLC register “D210” to store the input value. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N)
2. The [Number of Characters] is “4”.
3. The [Waiting Time (Sec.)] is “20” seconds.



The steps above will create a [Character Entry] button. Once the button is pressed, an alphabetic keypad will be displayed on the screen. After entering the characters, press the [ENT] on the keypad. Then a dialog

box should appear on the screen to ask for the user's confirmation. See Figure 124.

Note that press the [ALT] key for the keypad shift.

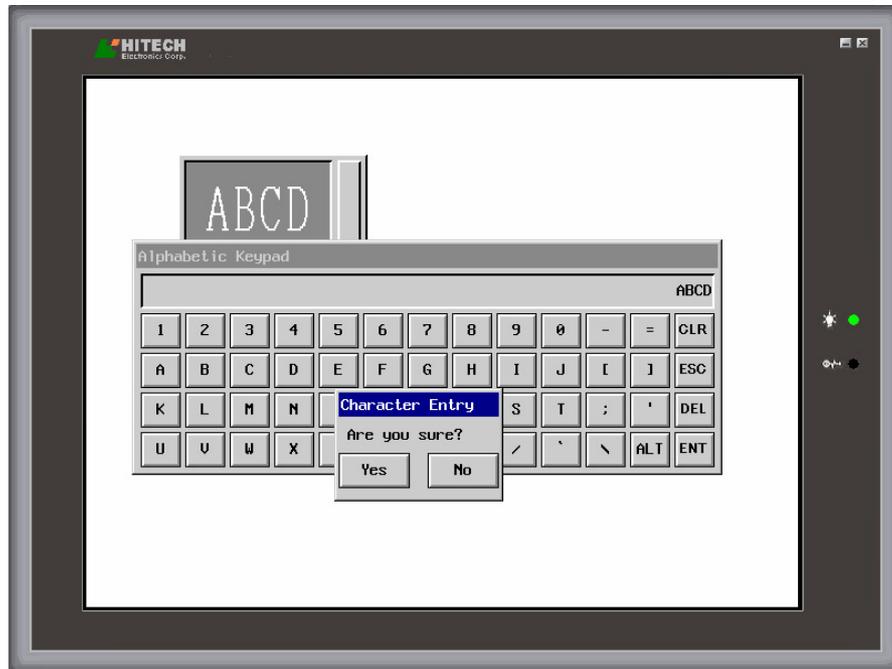


Figure 124. The [Character Entry] button

2.7.4. [List]

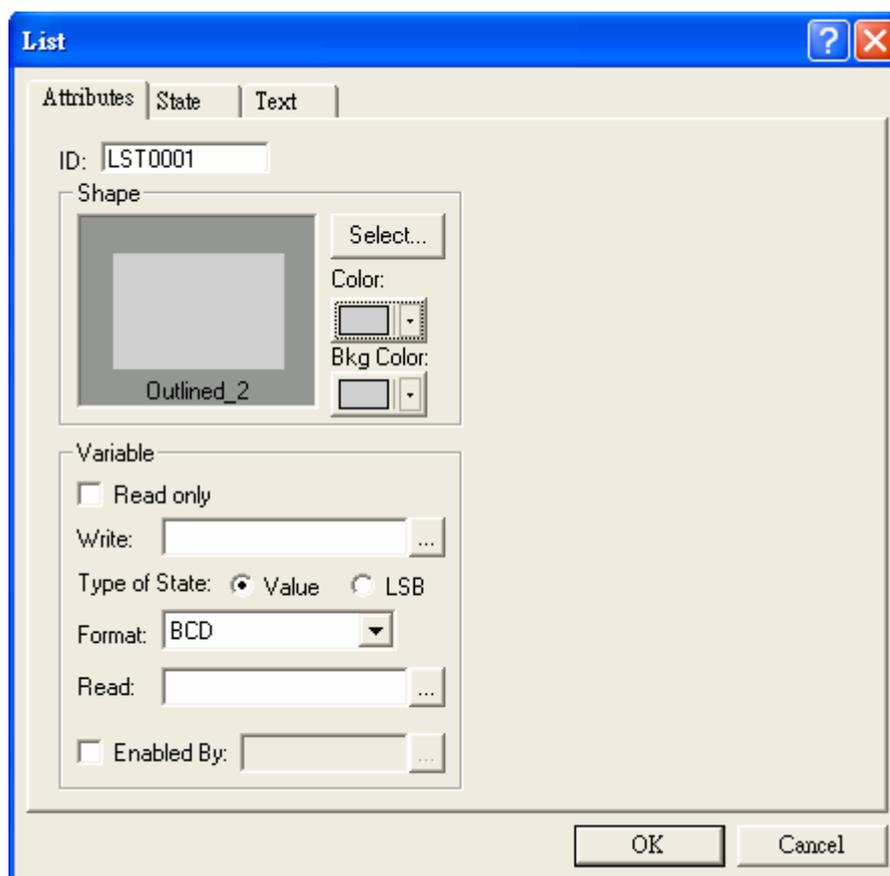
I. Function

Each item in the [List] object is correspondant to desinated register value in PLC. The first item represents the register value as “0”. The second item represents the register value as “1”, and so on. When user chooses one of the items in the list, the Workstation will store the correspondant value in PLC register.

The corresponding item will be highlighted in a [List] object. Furthermore, a user can change the value of a PLC register by making a selection from a [List] object. This object is not applicable on all HMI models; please refer to the [Section Appendix A. – Table of the ADP 6.0 Features and the HMI Models.](#)

II. Properties

2. Instructions



- [Variable] Block :
 - ◆ [Read Only]: For the purpose of display. Users are not able to make a selection from the list.
 - ◆ [Write]: Writes the value to the specified PLC register.
 - ◆ [Type of State]:
 - [Value]: There are 256 states (0-255). The value of “0” represents state 0; the value of “1” represents state 1, and so on.
 - [LSB]: There are 16 states. If more than 2 bits are to be ON, the PLC register will store the value of the lower bit.
 - ◆ [Format]: This is only applicable when [Value] option is selected. There are three selections “BCD”, “Signed Binary”, and “Unsigned Binary”.
 - ◆ [Read]: Reads the value from the specified PLC register. If the location is not specified, then the HMI reads from the [Write] location.

For the properties which are not explained in this section, please refer to the Section [2.7. Object III Specify Object Properties](#).

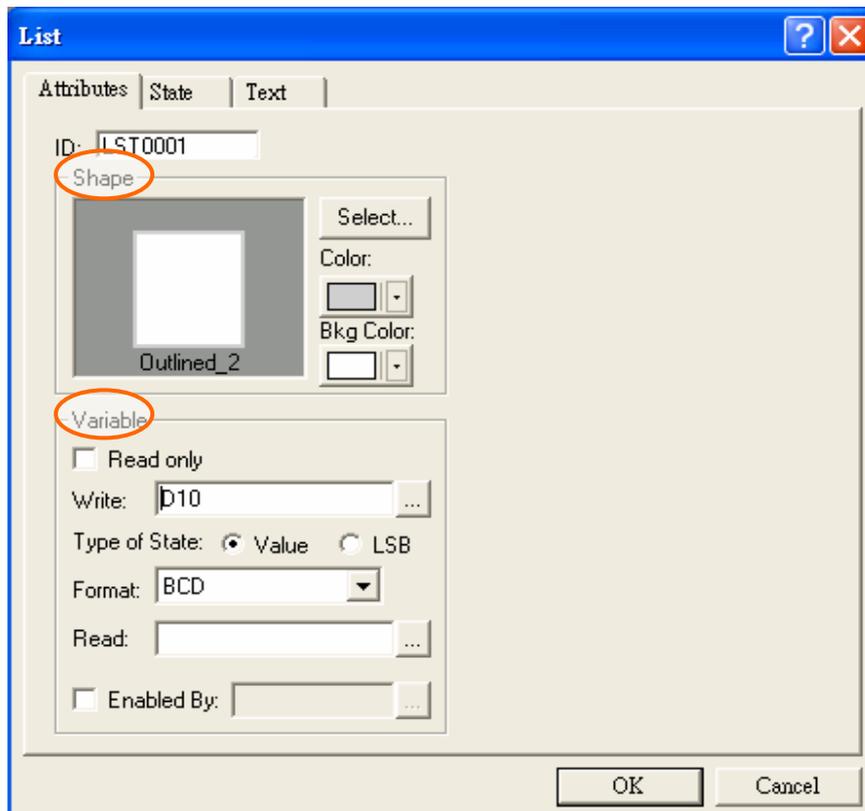
III. Example

2. Instructions

The following are the steps to create a [List] object :

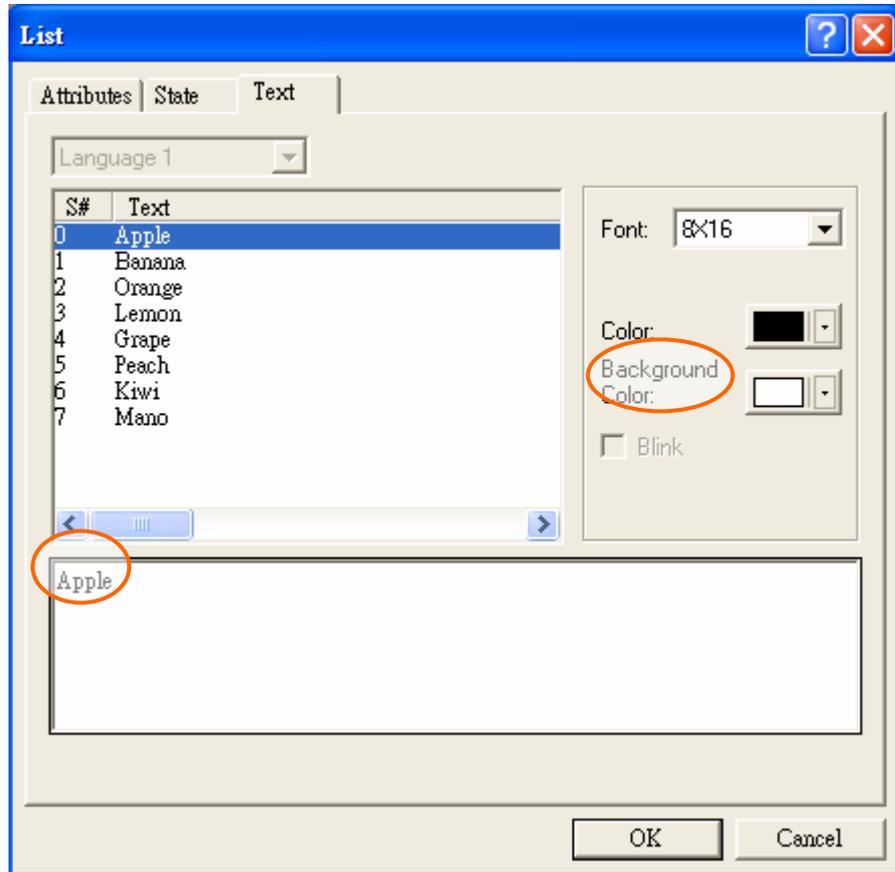


1. Shape : Select “Outlined_2”; and the background color is “White”.
2. [Write] : Specify the PLC register “D10” to store the value.(The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N)
3. The [Type of State] is “Value”.
4. The [Format] is “BCD”.



2. Instructions

5. On the [State] tab, add new states. There are 8 states in this object.
6. On the [Text] tab, enter the text and set up the format of the display.



The steps above will create a [List] object. When a user selects an item from the [List] object, the HMI will write the value associated with the item to the specified PLC register. Therefore, if the item “Peach” is selected, then the value of the PLC register will be “5.”

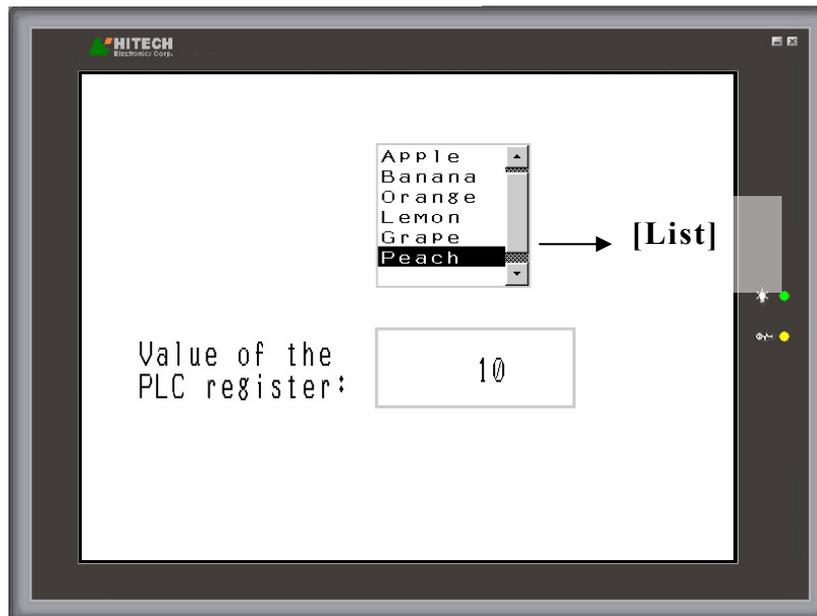


Figure 125. The [List] object and the display of the PLC register value of the item

2.7.5. [Drop Down List]

I. Function

Each of the items in a [Drop Down List] object also corresponds to a value of a PLC register. Therefore, for a [Drop Down List] object, the value associated with the displayed item is the current value of the PLC register.

Click the object to display the list. The object will then drop down a list of items which a user can choose from. Furthermore, a user can change the value of a PLC register by making a selection from a [Drop Down List] object. Once a selection is made from the object, the list will be disappeared. This object is not applicable on all HMI models, please refer to [Appendix A.- Table of the ADP 6.0 Feature and the HMI models](#) for the complete details.

II. Properties

The properties of the [Drop Down List] object are similar to those for the [List] object, please refer to the [Section 2.7.4. \[List\]](#) and [the Section 2.7. Object III Specify Object Properties.](#)

III. Example

The steps to create a [Drop Down List] object are similar to those for a [List] object. Please refer to the [Section 2.7.4. \[List\] III. Example](#) for

2. Instructions

the complete details. Remember to adjust the length of a list accordingly so that a user is able to display all items of the list.

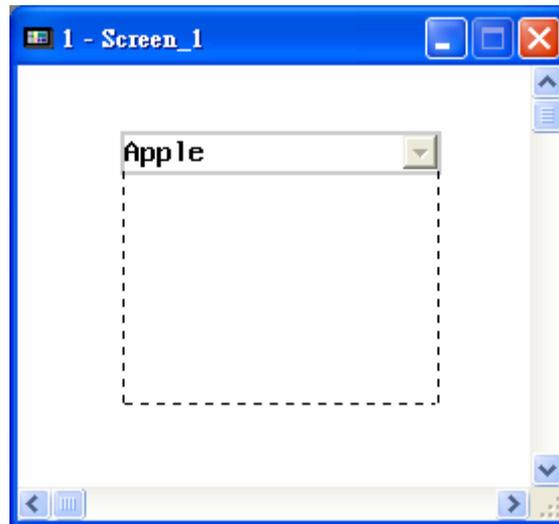


Figure 126 is an example of a [Drop Down List] object on the HMI. Click the object to display the list. The object will then drop down a list of items which a user can choose from. When a user selects an item from the list, the HMI will write the value associated with the item to the PLC register. Therefore, if the item “Peach” is selected, then the value of the PLC register will be “5.”

Notice that once a selection is made from the object, the list will be disappeared.

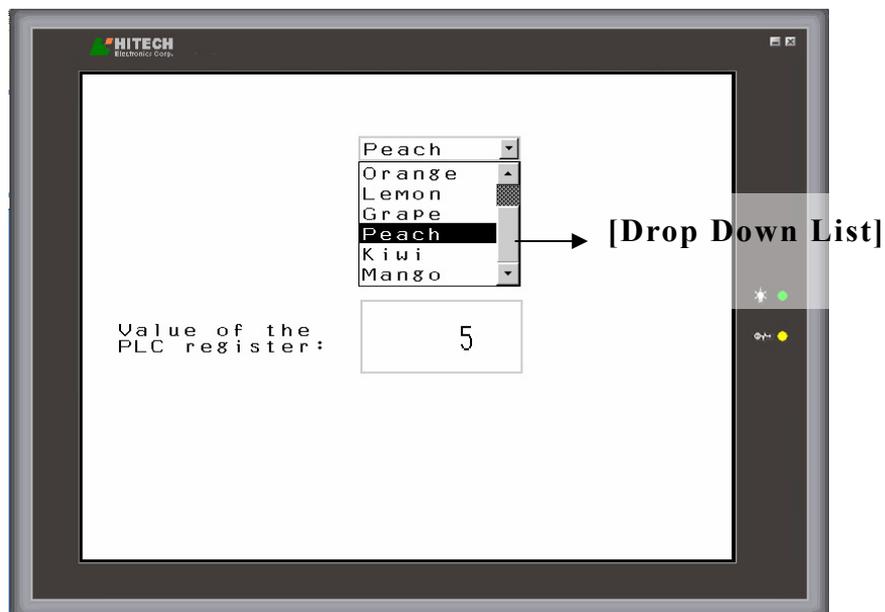


Figure 126. The [Drop Down List] object and the display of the register value of the item

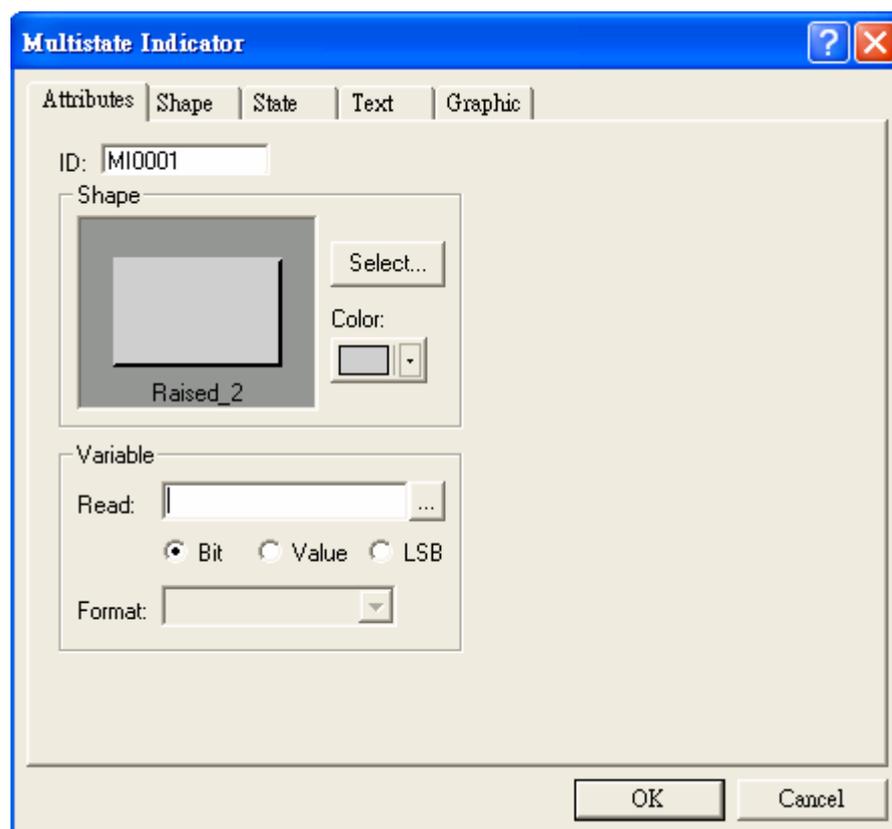
2.7.6. [Indicator]

2.7.6.1. [Multistate Indicator] **I. Function**

[Multistate Indicator] is to indicate which state it is with text and /or a graphic. Therefore, as the HMI reads the contact status or the register value from the PLC, it can automatically display the corresponding designed content on the HMI screen according to the indicator.

The following are the number of the states:

1. [Bit]: The maximum number of the states is “2”;
2. [Value]: The maximum number of the states is “256”;
3. [LSB]: The maximum number of the states is “16”.

II. Properties

- [Variable] Block:
 - ◆ [Read]: Specify the register/bit location.
 - [Bit]: Two states in all. (User can input more than two states but the object only displays two states on HMI.)

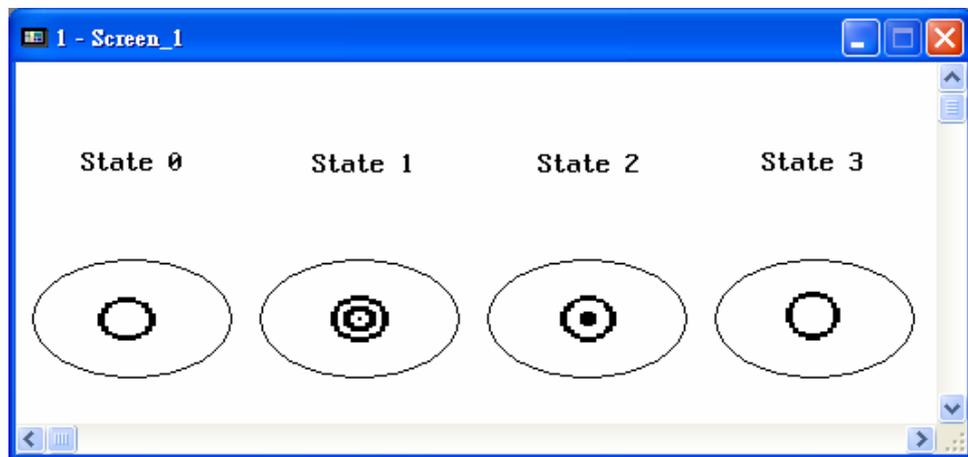
2. Instructions

- [Value]: 256 states (0-255) in all ; value 0 represents state 0; value 1 represents state 1; value 2 represents state 2, and so on.
- [LSB]: 16 states in all ; the Workstation takes the bit number of the least bit that is on as the state number.
- ◆ [Format]: Specify the data format. There are three options: [BCD], [Signed Binary], and [Unsigned Binary].

For the properties which are not explained in this section, please refer to the section [2.7. Object Menu III Specify object properties](#) .

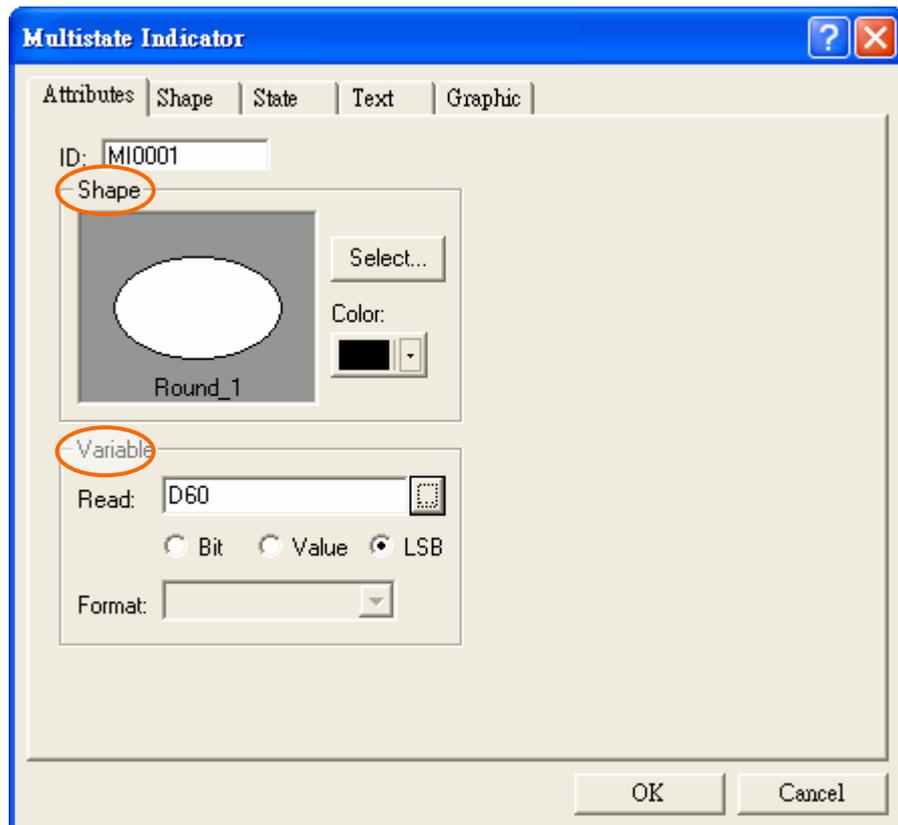
III. Example

The following are the steps to create an [Multistate Indicator] object :

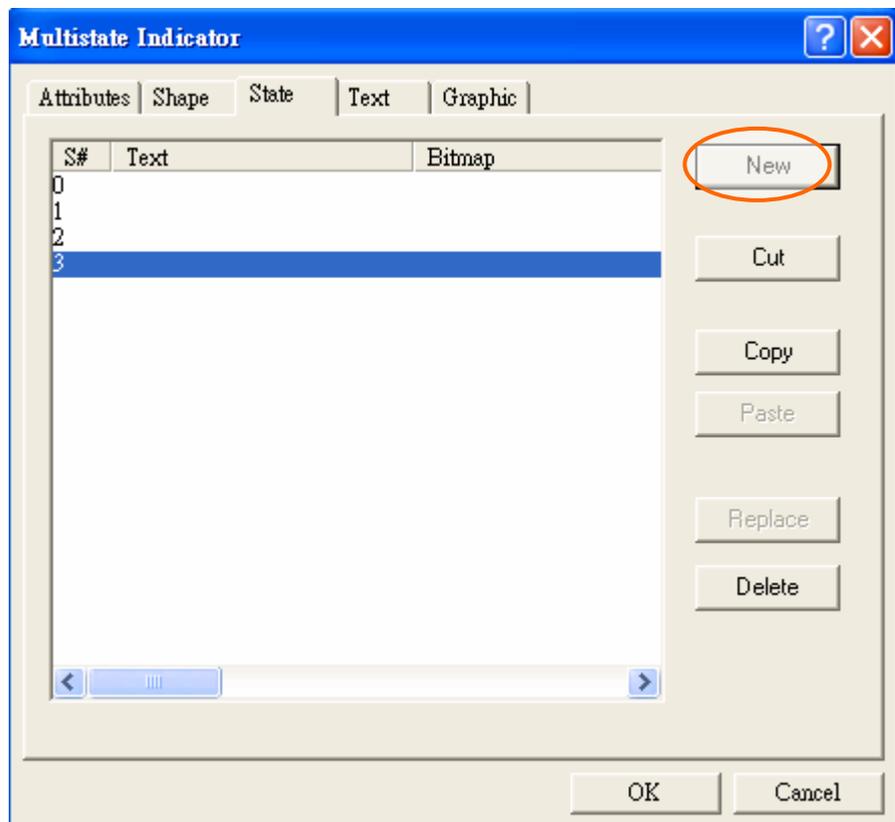


1. [Read] : Specify the PLC register “D60” to read from. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N)
2. The [Format] is “LSB”.
3. Select “Round_1” ; and the boder color is “Black” .

2. Instructions

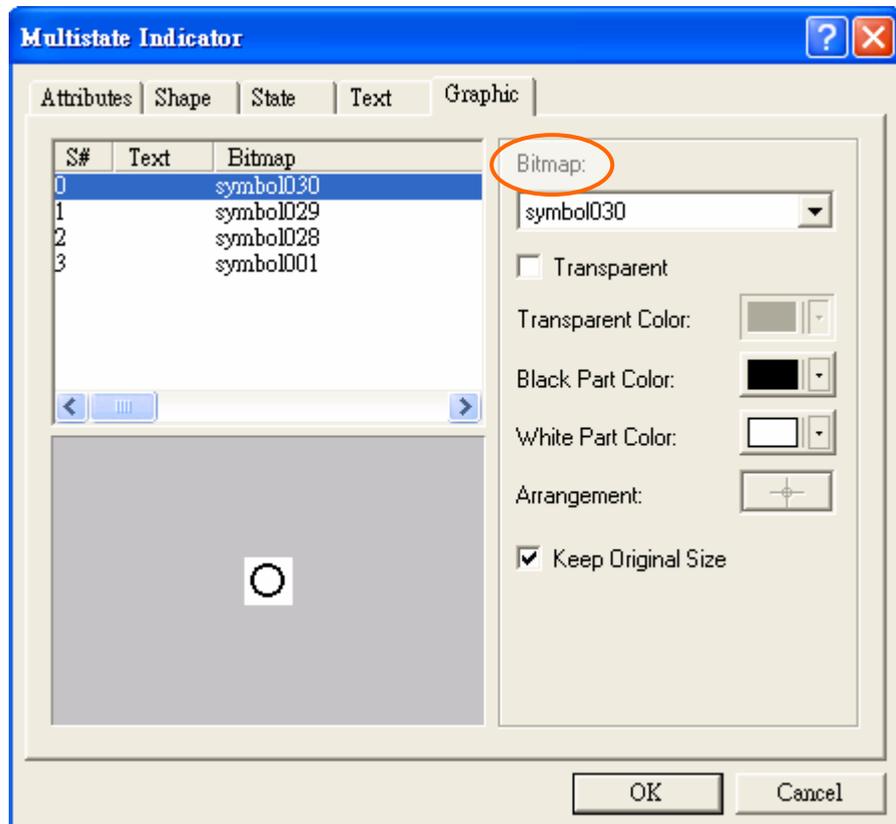


4. On the [State] tab, add new states. There are 4 states in this object.

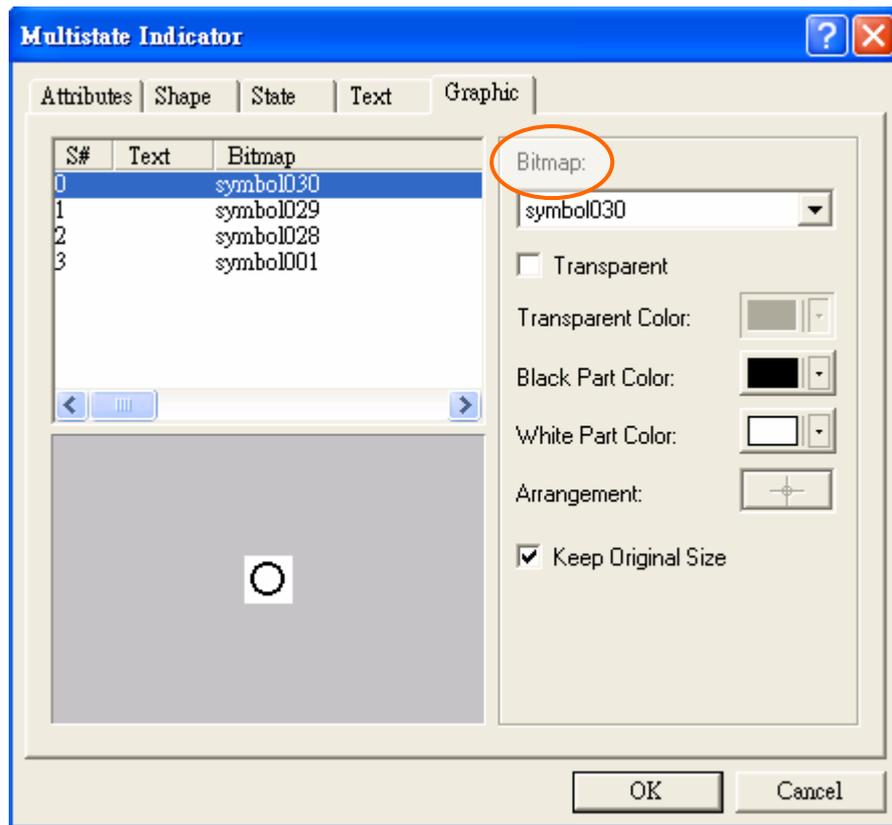


2. Instructions

5. Select bitmap on [Graphic] tab. This example does not display text but graphics. (These graphics are in “SYMBOLS.GBF” library)



6. The [Background Color] is “White” on the [Text] tab.



The above-mentioned steps will create a [Multistate Indicator] object. In this example, the [Numeric Entry] buttons are designed for the numeric entry written in the PLC register. The [Multistate Indicator] objects will display the corresponding states according to the register value. See Figure 127.

Therefore, for this example of the object, if one enters “1” on the HMI, then [Multistate Indicator] object will show “State 0”; if one enters “4”, the object will show “State 2” ; if one enters “8”, the object will show “State 3” .

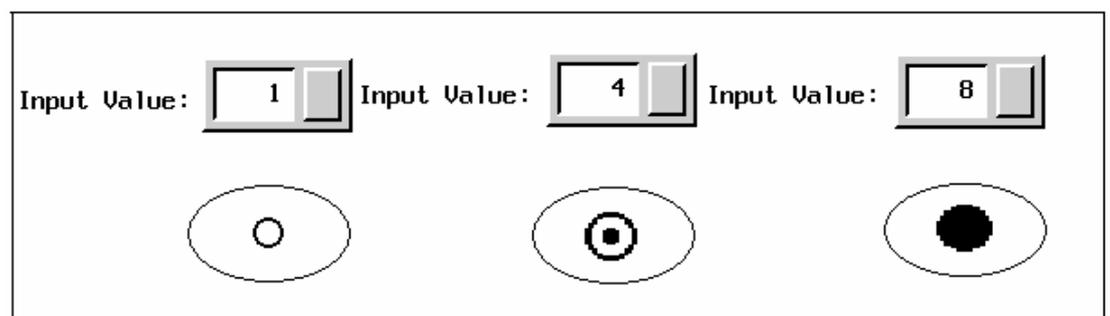


Figure 127. The [Multistate Indicator] object displayed the corresponding graphic

The [format] in this example is “LSB”, please refer to the following table:

2. Instructions

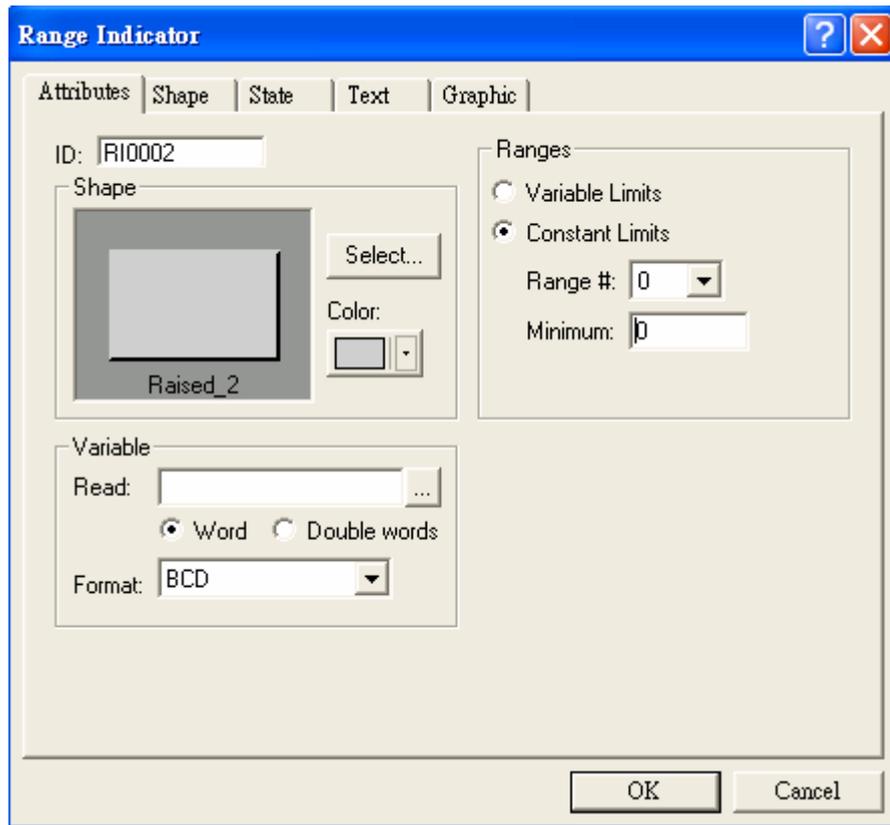
| Numeric Entry (LSB) | Bit State | Multistate Indicator | Graphics |
|---------------------|---------------------------------|----------------------|---|
| 1 | 0 bit is ON; the others are OFF | State 0 |  |
| 2 | 1 bit is ON; the other are OFF | State 1 |  |
| 4 | 2 bit is ON; the other are OFF | State 2 |  |
| 8 | 3 bit is ON; the other are OFF | State 3 |  |

2.7.6.2. [Range Indicator]

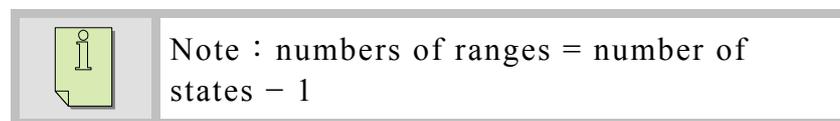
I. Function

A [Range Indicator] displays one of several indicator labels depending on the register value. The HMI reads register values from the PLC and automatically calculates the difference according to the boundary value of current states. Then, the contents of current status are displayed on the HMI screen according to the calculated results.

Read value from PLC → Calculated result → Display the corresponding states



- [Ranges] Block :
 - ◆ [Variable Limits] : Specify the minimum of the ranges are to be read from registers following the read location. If the [Read] address is “Dn”, the minimum of Range#0 is stored in “Dn+1”, the minimum of Range#1 is stored in “Dn+2”, and so on.
 - ◆ [Constant Limits] : The minimum of the ranges is “Constant”.
 - [Range#] : The number of ranges, 15 ranges is the most.
 - [Minimum] : The minimum of ranges.

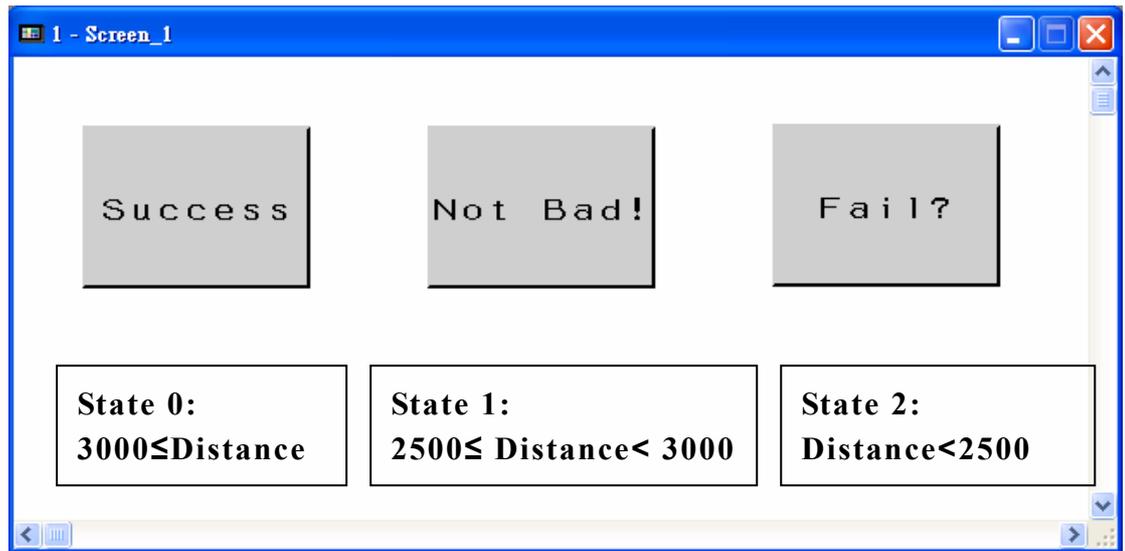


For the properties which are not explained in this section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

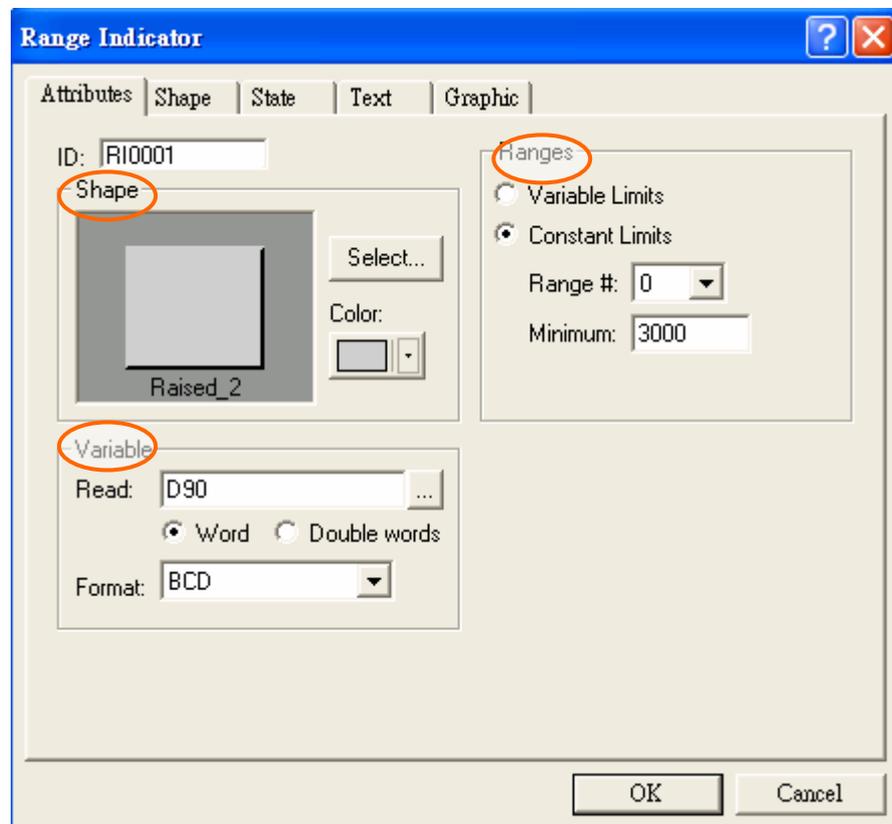
III. Example

The following are the steps to create an [Range Indicator] object :

2. Instructions

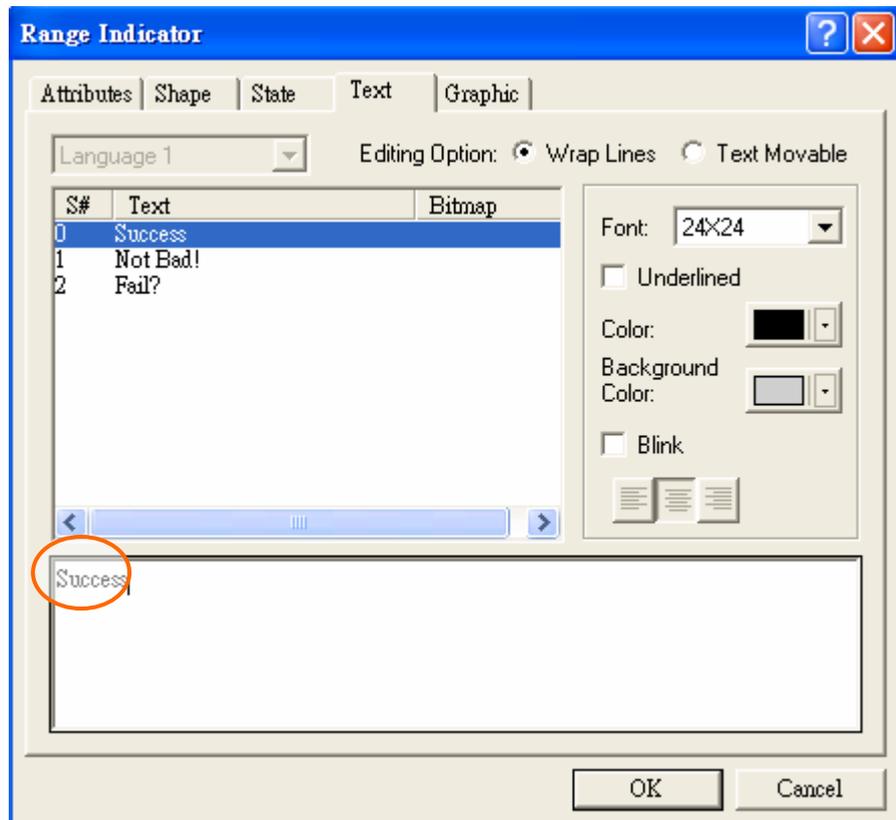


1. [Read] : Specify the PLC register “D90” to read from. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N.)
2. Shape : Select “Raised_2”.
3. The minimum of ranges are constant limits.
4. The minimum of range#0 is “3000”; the minimum of range#1 is “2500”.



2. Instructions

5. On the [State] tab, add new states. This object has 3 states.
6. On the [Text] tab, enter the text to states.



The above-mentioned steps will create a [Range Indicator] object. In this example, a [Numeric Entry] button is to input value in the PLC register; and a [Range Indicator] object is to calculate the result and display its corresponding state associated with the specified range. See Figure 128.

If a user enters the input value “3500”, the correspondant range is range# 0. Therefore, the [Range Indicator] object will show “Success” Object.

2. Instructions

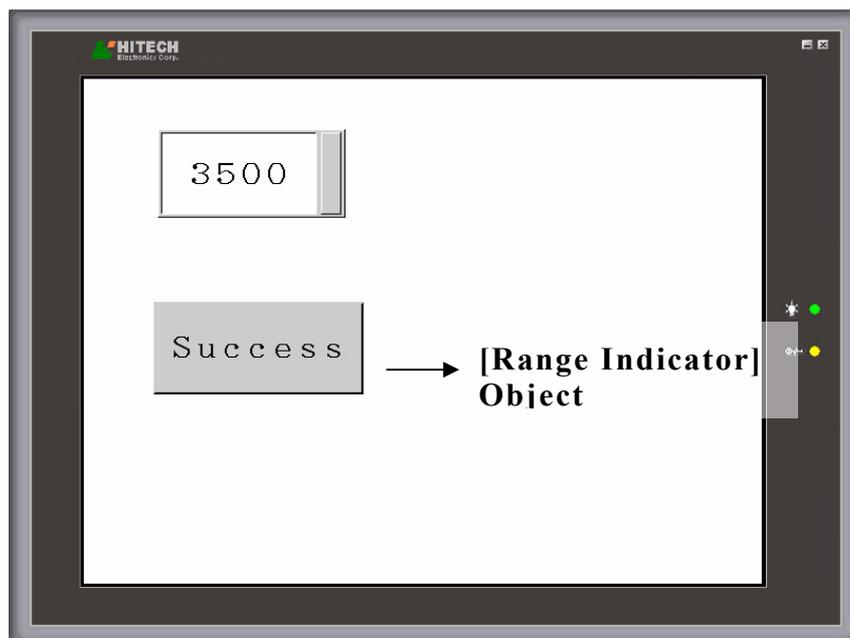


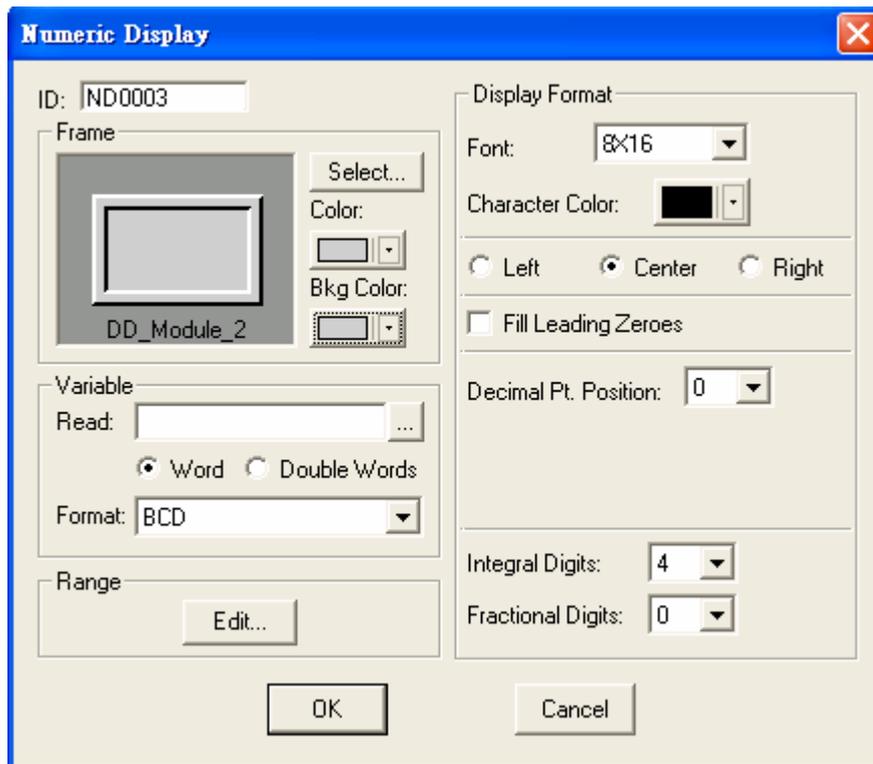
Figure 128. [Range Indicator] object displayed the corresponding state

2.7.7. [Numeric Display]

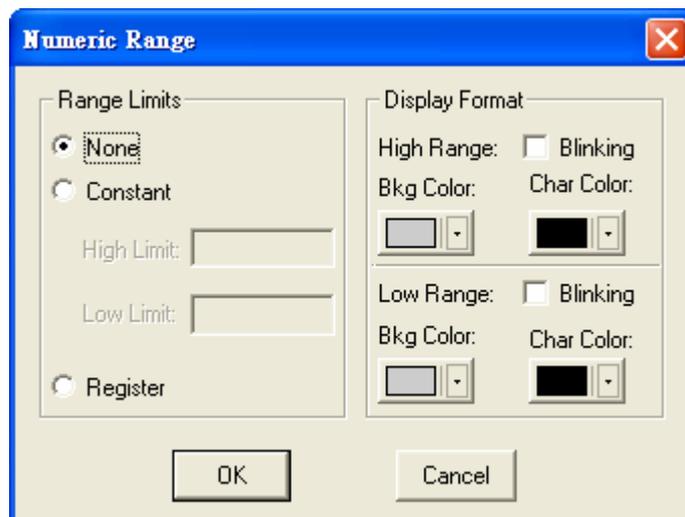
I. Function

The function of the [Numeric Display] object is to display the register value stored in PLC. This object does not support press-button function.

II. Properties



- [Variable] Block :
 - ◆ [Read] : Specify a register/bit location.
 - ◆ [Format] : There are “BCD”, “SignedBinary”, “UnsignedBinary”, “Hexadecimal”, “32-bit Floating-point” and “Octal”.
- [Range] Block :
 - ◆ [Edit] Button : When press this button, the displayed dialog box provides display format with high/low range.



- [None] : None of high/low limit.
- [Constant] : Enter the constant variable of high/low limit.

2. Instructions

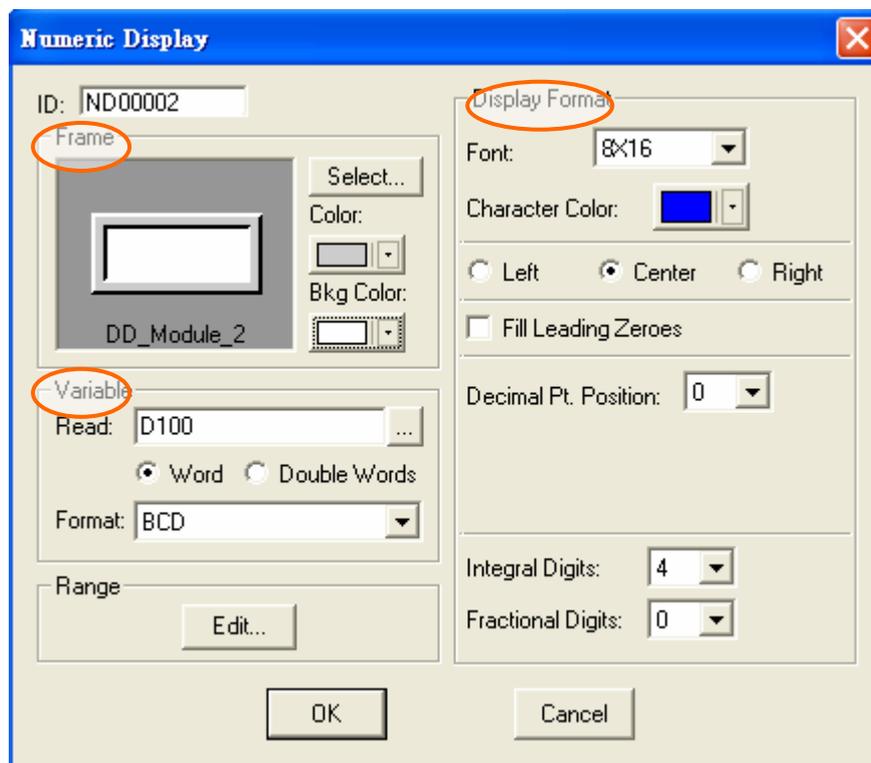
- [Register] : Read high/low limit from register. If the read location is “Dn”, the high limit stored in “Dn+1” and the low limit stored in “Dn+2.
- [Display Format] : Specify the format to display when the variable is equal or more/less than high/low limit.

For the properties which are not explained in this section, please refer to the [Section 2.7.1.6. \[Set Value Button\]](#) and the [Section 2.7. Object III Specify Object Properties.](#)

III. Example

The following are the steps to create an [Numeric Display] object :

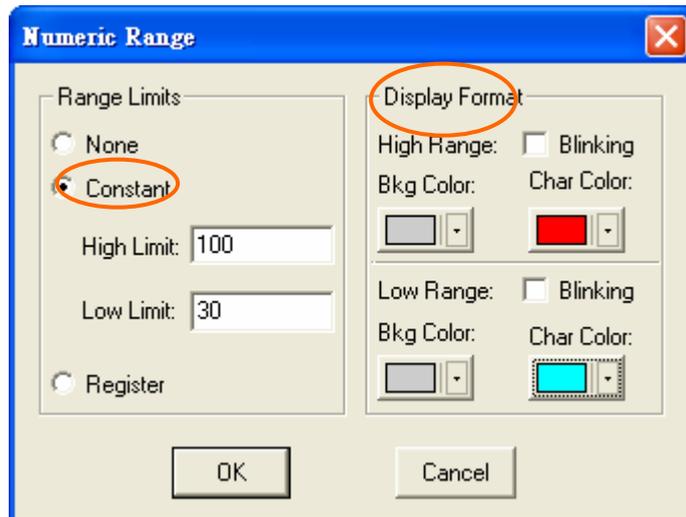
1. [Frame] : Select “DD_Module_2”; and the bkg. color is “White”.
2. [Read] : Read the value from the specified PLC register ‘D100’. (The HMI model is PWS3261 and the PLC model is Mitsubishi FX2N)
3. [Character Color] : The character color is “Blue”.



4. [High Limit]: Specify ‘100’; [Low Limit]: Specify ‘30’.
5. If the variable is equal or less than ‘30’, it would display “Light Blue”; If the variable is equal or more than ‘120’, it

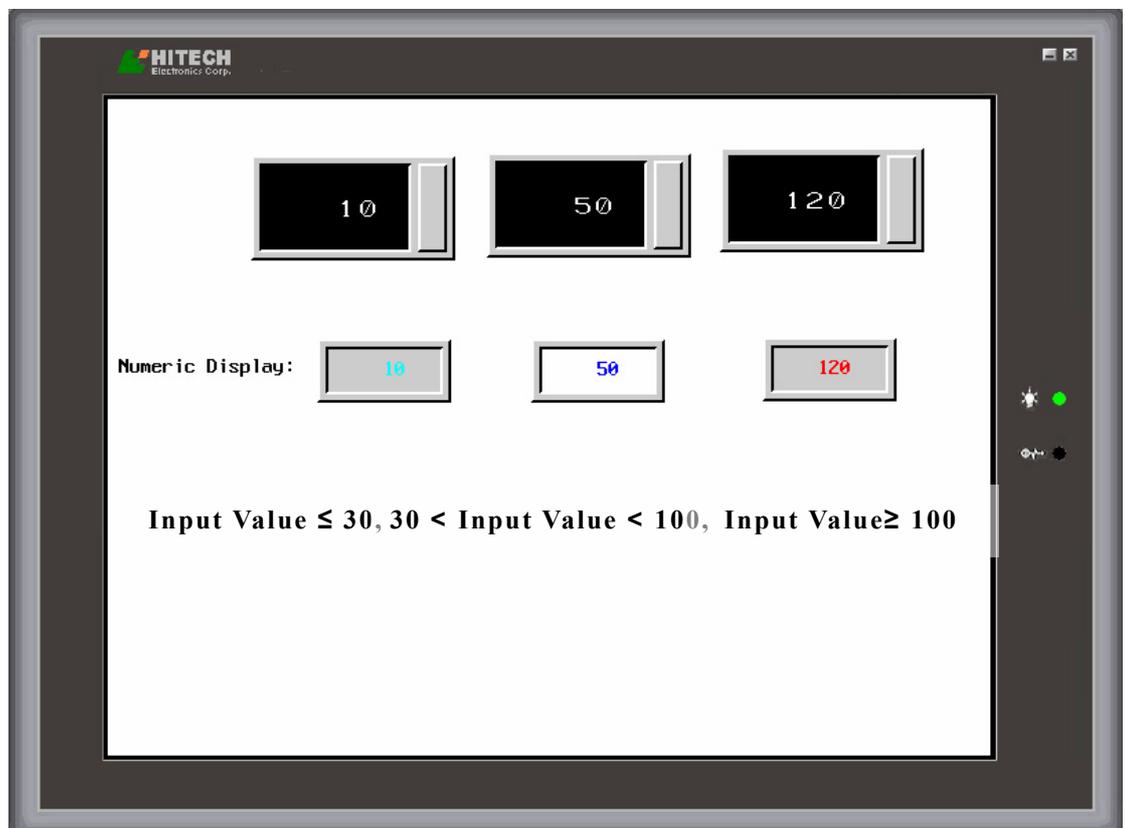
2. Instructions

would display “Red”; If the variable is between ‘30’ and ‘120’, it would display “Blue” as original setting.



Above-mentioned steps will create a [Numeric display] object. In this example, a [Numeric Entry] button is to input value in the PLC register. The variable will display different format on the screen according to its range. See Figure 129.

Therefore, the variable will display “Light Blue” if one enters ‘10’; the variable will display “Blue” if one enters ‘50’; the variable will display “Red” if one enters ‘120’.



2. Instructions

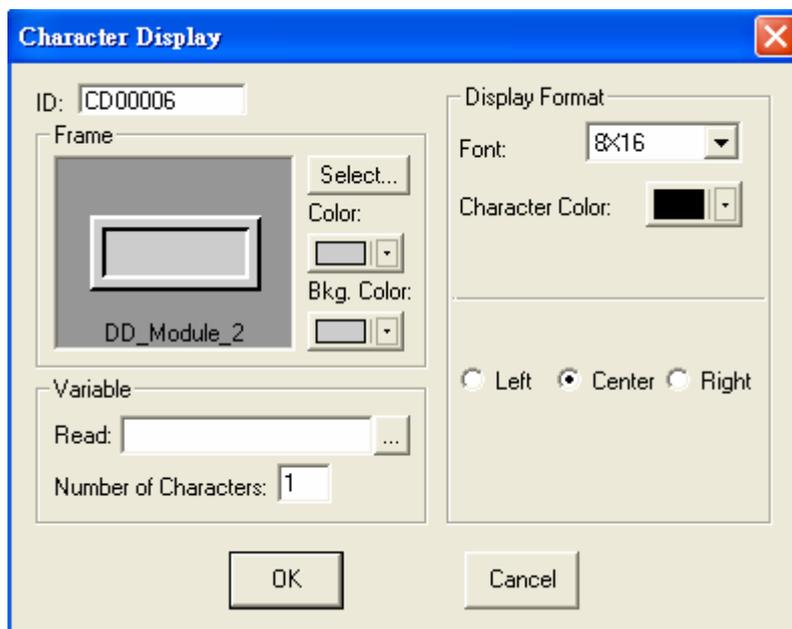
Figure 129. An Illustration of the [Numeric Display] objects

2.7.8. [Character Display]

I. Function

The function of a [Character Display] button is to provide an alphanumeric display for an ASCII variable in the PLC register. Note that it does not support press-button function.

II. Properties

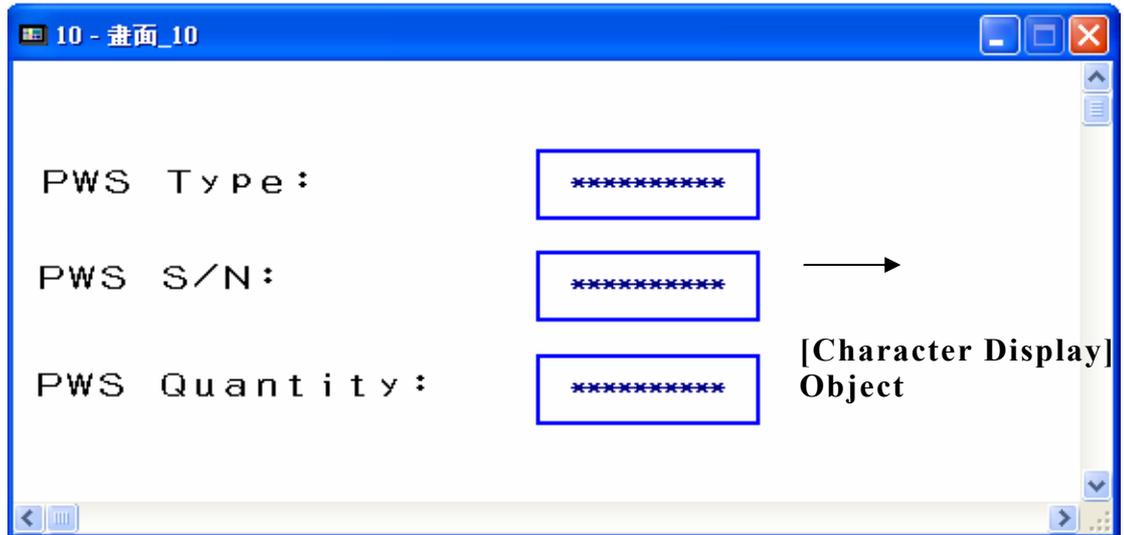


- [Number of Character] : Specify the number of characters to display. It can have up to 28 characters which are limited by the width of the object.

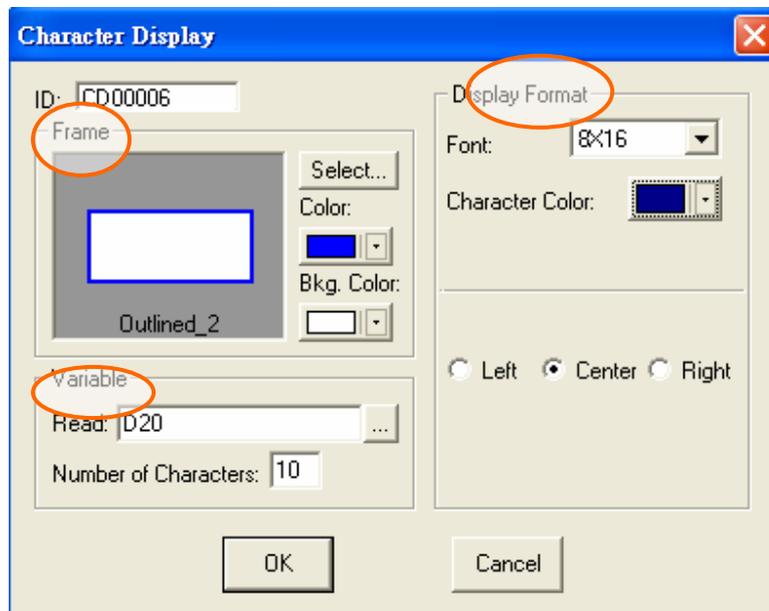
For other properties which are not explained in this Section, please refer to the [2.7. Object III Specify Object Properties](#).

III. Example

The following are the steps to create a [Prestored Message Display] object; this function can be applied in the factory for the product management :



1. [Frame] : Select “Outlined_2”; “Blue” border color and “White” background color.
2. [Read] : Specify “D20”.(The HMI model is PWS3261; the PLC model is Mitsubishi FX2N)
3. [Number of Characters] is 10.
4. The [Character Color] is “Dark Blue”.



2.7.9. [Message Display]

There are six types of Message Display Buttons : [Prestored Message], [Moving Sign], [Data Terminal], [Time Display], [Data Display], [Day-of-Week Display].

Please note that a Message Display Button contains only text; however an Indicator Button can have both text and graphic.

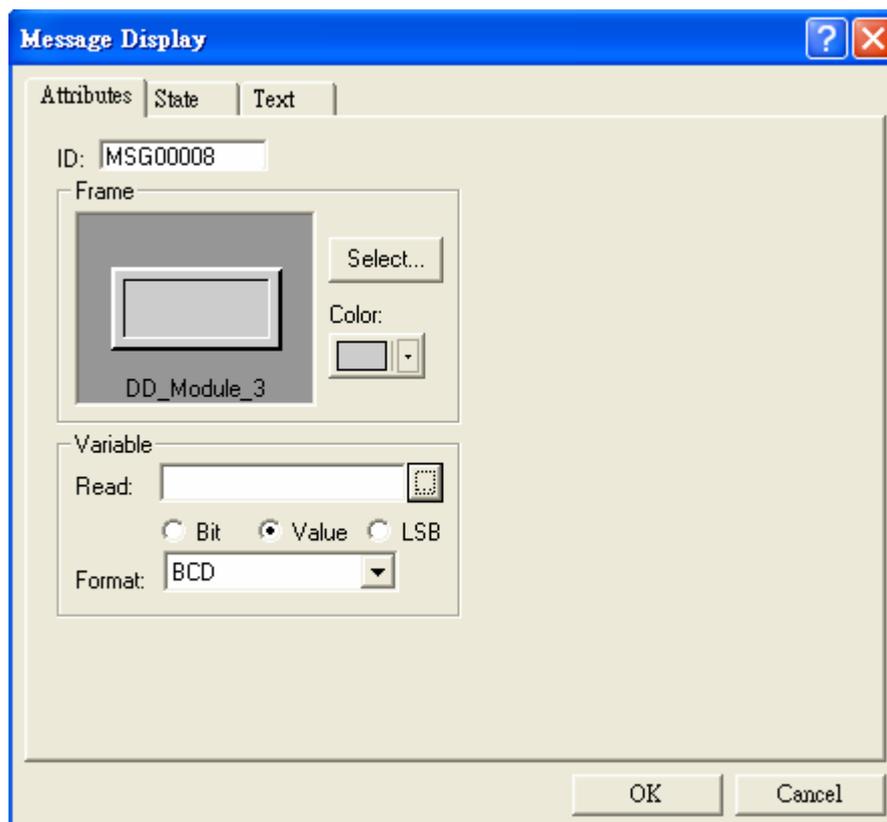
2. Instructions

2.7.9.1. [Prestored Message Display]

I. Function

The HMI reads the contact state (ON/OFF) or the register value from the PLC and automatically displays designed content on the HMI screen according to the state/value.

II. Properties



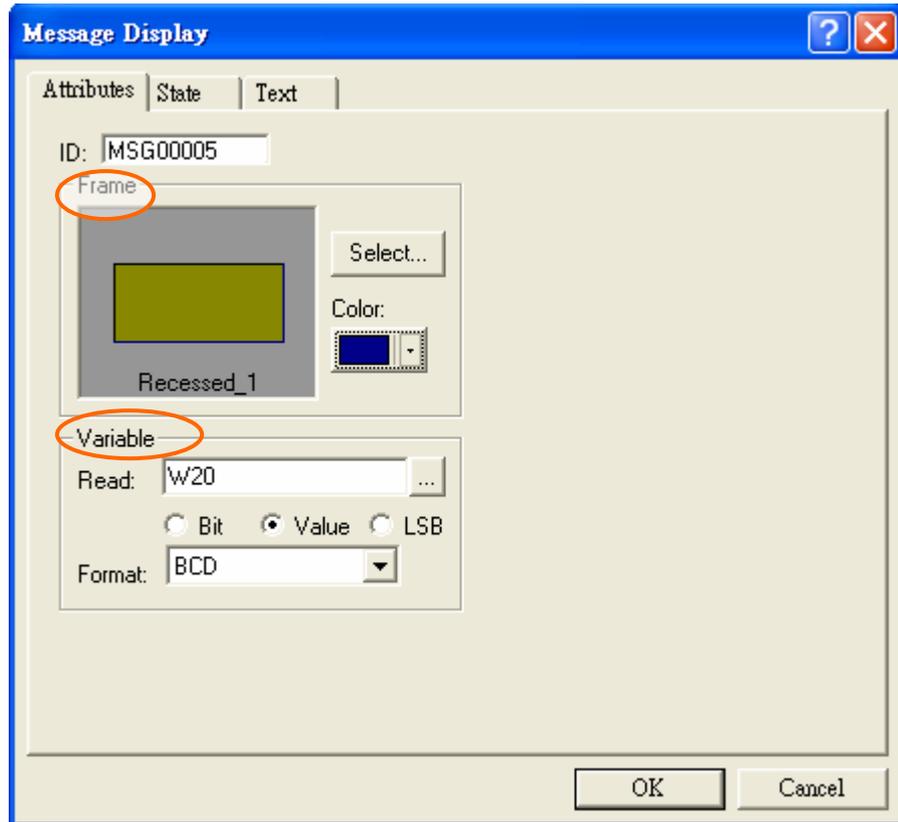
Please refer to the Section [2.7.6.1. \[Multistate Indicator\]](#) for the complete details.

III. Example

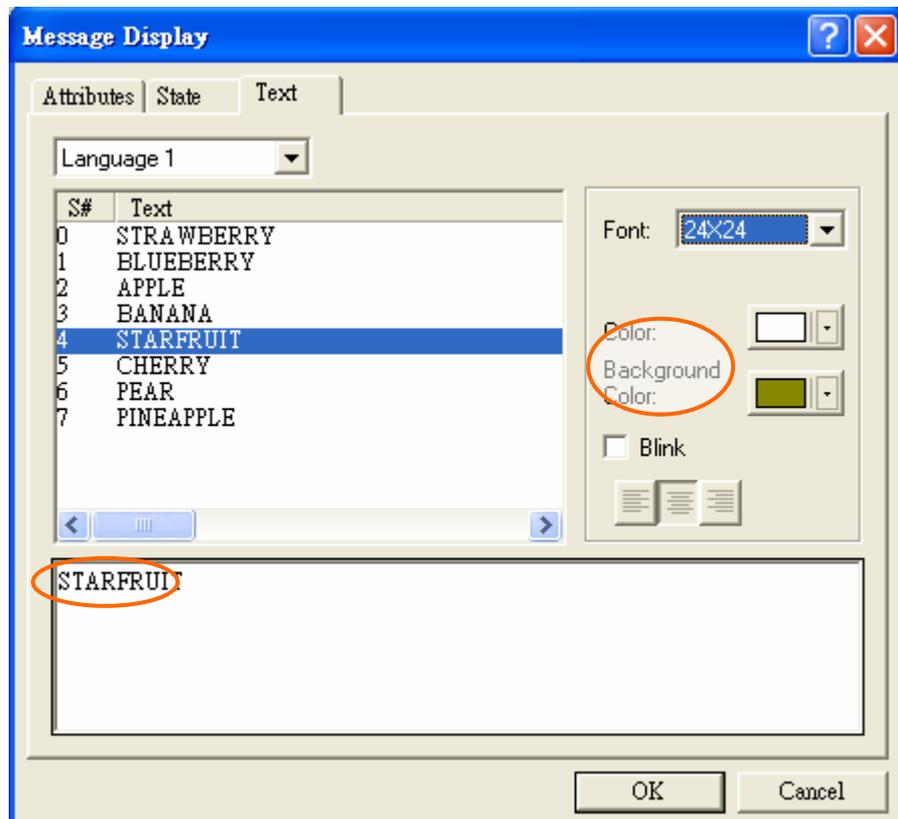
The following are the steps to create a [Prestored Message Display] object:

1. Frame : Select "Recessed_1"; and "Dark Blue" border color.
2. [Read] : Specify "W20".
3. Select [Value] state.

2. Instructions



4. Add new states on [State] tab to configure 8 states.
5. Enter the desired text and specify the format of text on [Text] tab.



2. Instructions

Above-mentioned steps will create a [Prestored Message Display] object. When pressed the [Multistate] button (under the [Prestored Message Display] object) once, the HMI writes the command to PLC for state change. Therefore, once the state is changed, the [Prestored Message Display] will display the corresponding state. See Figure 130.

For instance, once the state is “Blueberry”; the [Prestored Message Display] object will display its corresponding content “Blueberry”. Once the state is “Starfruit”, the [Prestored Message Display] object will display its corresponding content “Starfruit”.

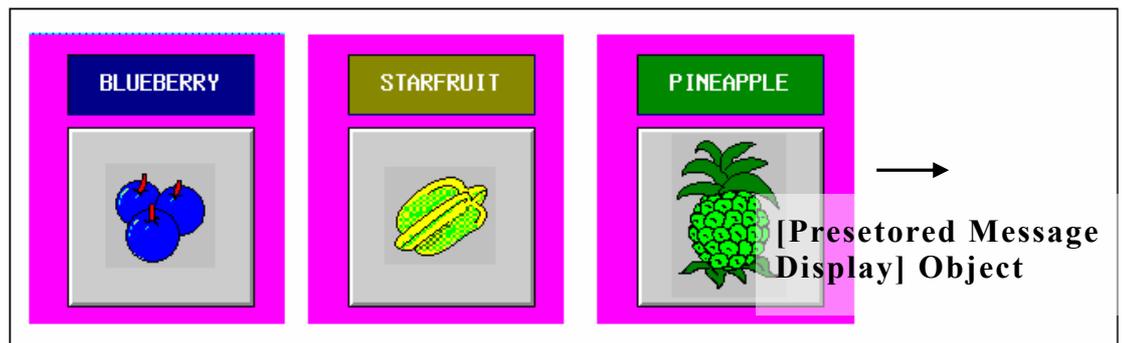


Figure 130. The [Prestored Message Display] Object

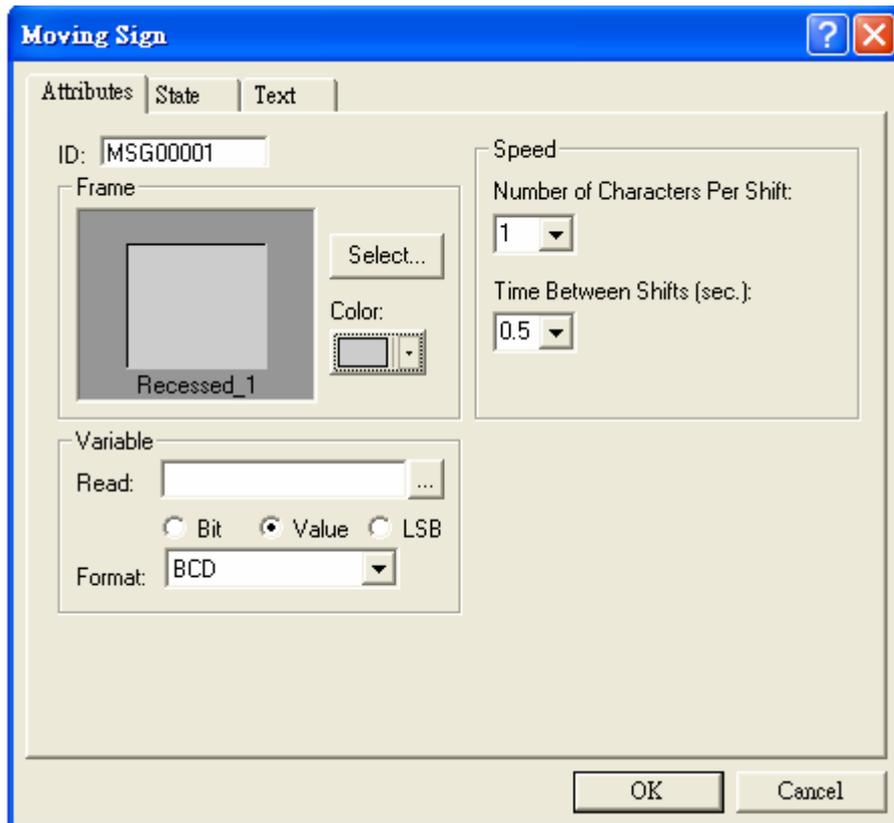
2.7.9.2. [Moving Sign]

I. Function

The [Moving Sign] object display its content one by one from right to left in circle.

When the HMI reads the value from a bit-location (ON/OFF) or register in PLC, the [Moving Sign] object will display its content or message according to the corresponding state on the screen.

II. Properties



- [Speed] Block :
 - ◆ [Number of Characters Per Shift] : Specify the number of characters per shift.
 - ◆ [Time Between Shifts (sec.)] : Specify the time between shifts. The unit is second.

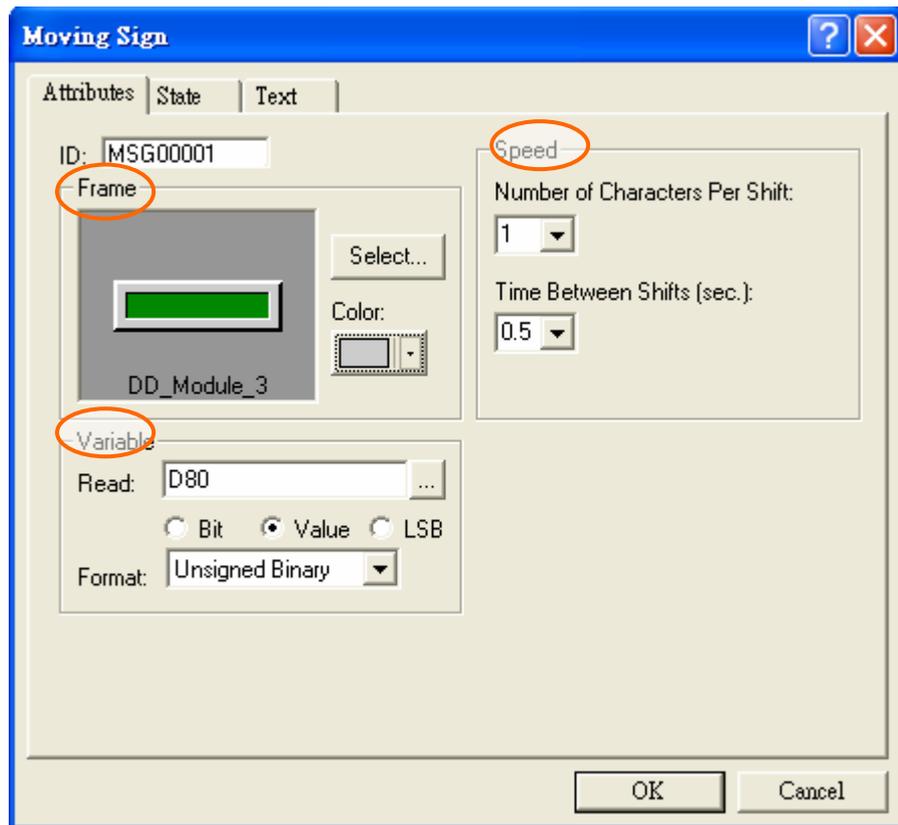
For the properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

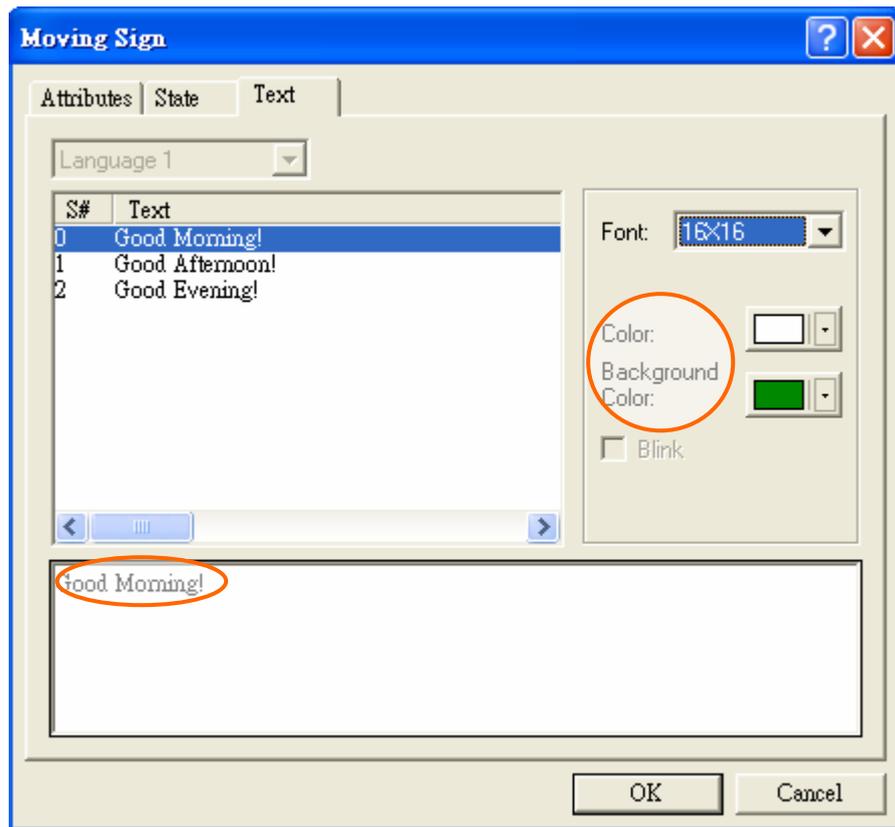
To design a [Moving Sign] object as the following:

1. Frame : Select “DD_Module_3”.
2. [Read] : Specify “D80”. (The HMI model is PWS3261; the PLC model is Mitsubishi FX2N.)
3. Select [Value] to display the variable; the [Format] is “Unsigned Binary”.
4. The number of characters per shift is ‘1’ and the time between shifts is ‘0.5’ seconds.

2. Instructions



5. 3 states in all, the number of states can be modified on [State] tab.
6. Enter the text to its corresponding state on the [Text] tab to display.



Above-mentioned steps will create a [Moving Sign] object. The left [Multistate] button here is designed to write the command to PLC when pressed. Therefore, the [Moving Sign] object will display the corresponding content according the current state. See Figure 131.

For example, if the state is “Morning”, the [Moving Sign] object will display “Good Morning! Good Morning! Good Morning!” The text here is the revolving display, moving per character from right to the left.

2. Instructions

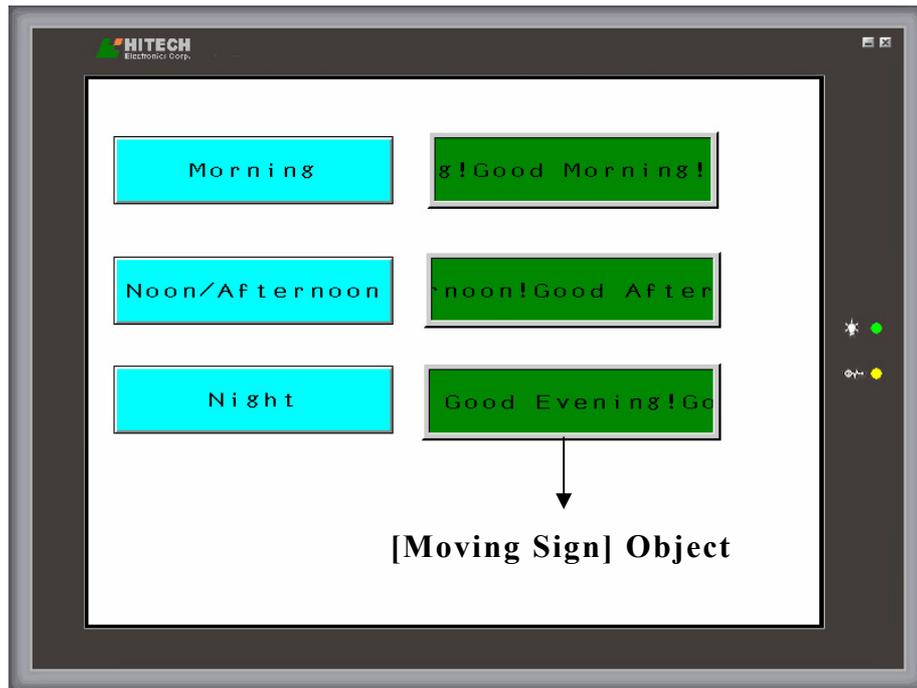


Figure 131. An Illustration of the [Moving Sign] objects

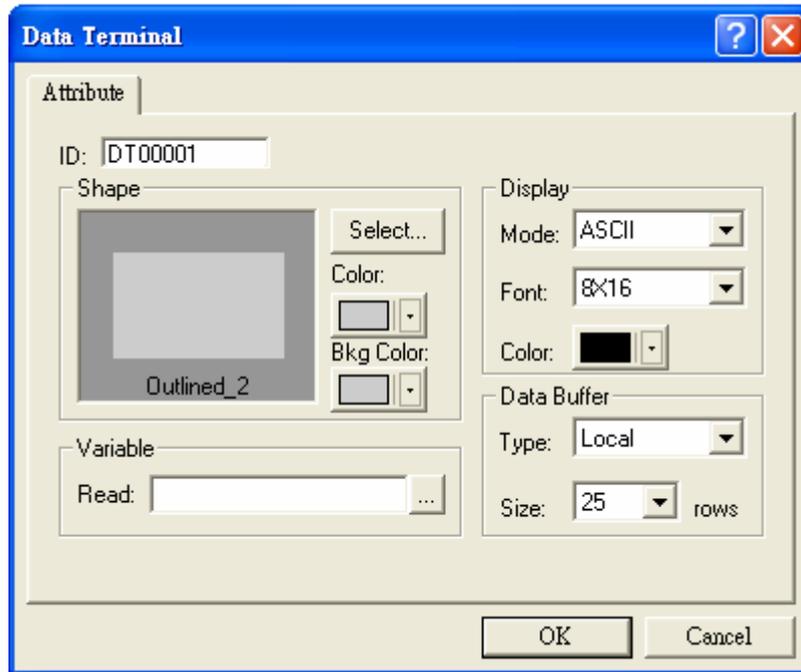
2.7.9.3. [Data Terminal]

I. Function

The function of this object is to simulate ASCII terminal. The Workstation and the terminal can be connected with another specified communication port and the specified communication parameter to the data terminal displayed with ASCII /HEX mode.

Remember to set “ASCII Device” to communicate and specify the communication port. Note that this function is not applicable on all models; please refer to the [Appendix A. - Table of the ADP 6.0 Features and HMI models](#).

II. Properties



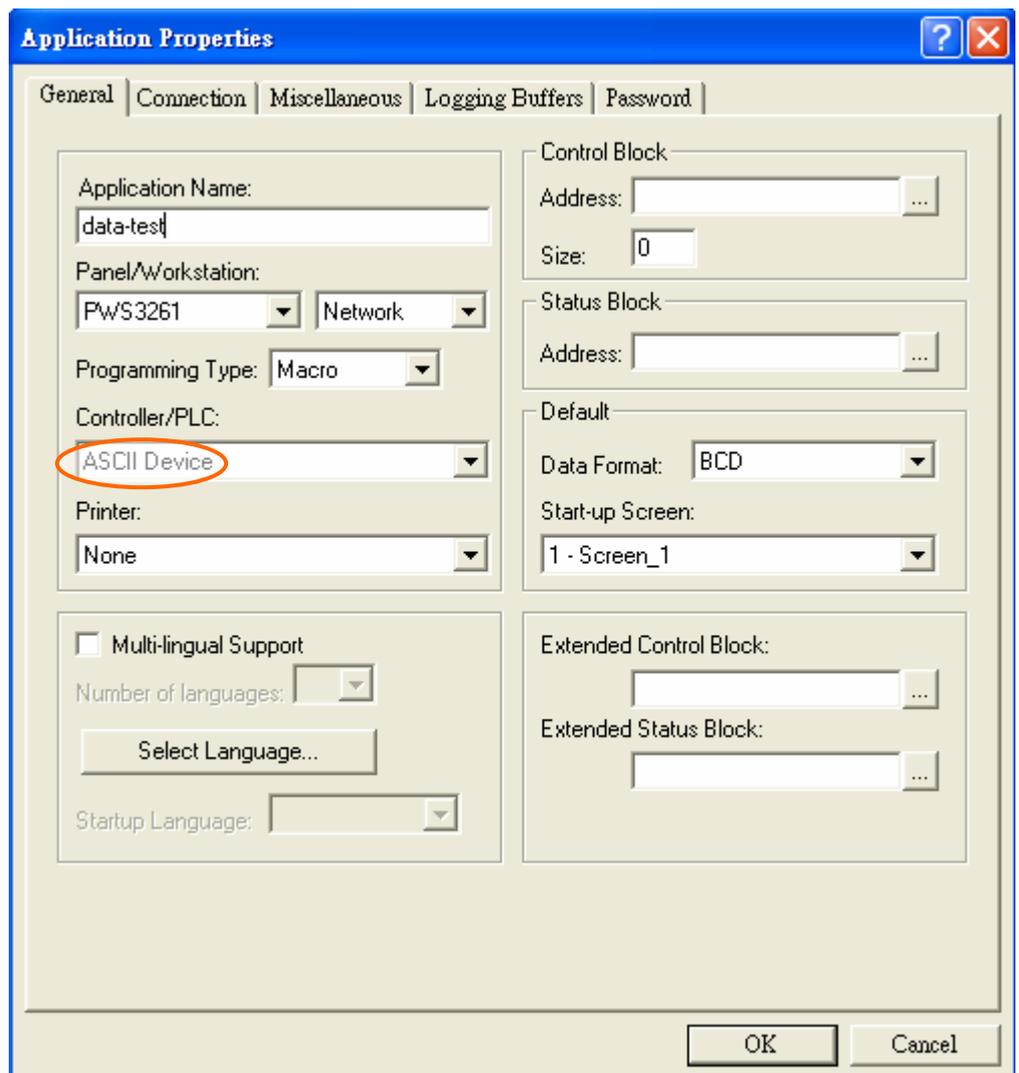
- [Variable] Block:
 - ◆ [Read]: Specify a bit-location to read from. “ASCII Device” provides “RX”, “RXSTS”, “TX” and “TXSTS” contacts.
- [Display] Block:
 - ◆ [Mode]: Display the data terminal in ASCII/HEX mode.
- [Data Buffer] Block:
 - ◆ [Type]:
 - “Local”: Select to display the current terminal data but the last display data is not included when the screen is changed.
 - “Global”: Select to display the terminal data including the last one when the screen is changed.
 - ◆ [Size]: Specify the number of rows in terminal data.

III. Example

The following are the steps to create a [Terminal Data] object:

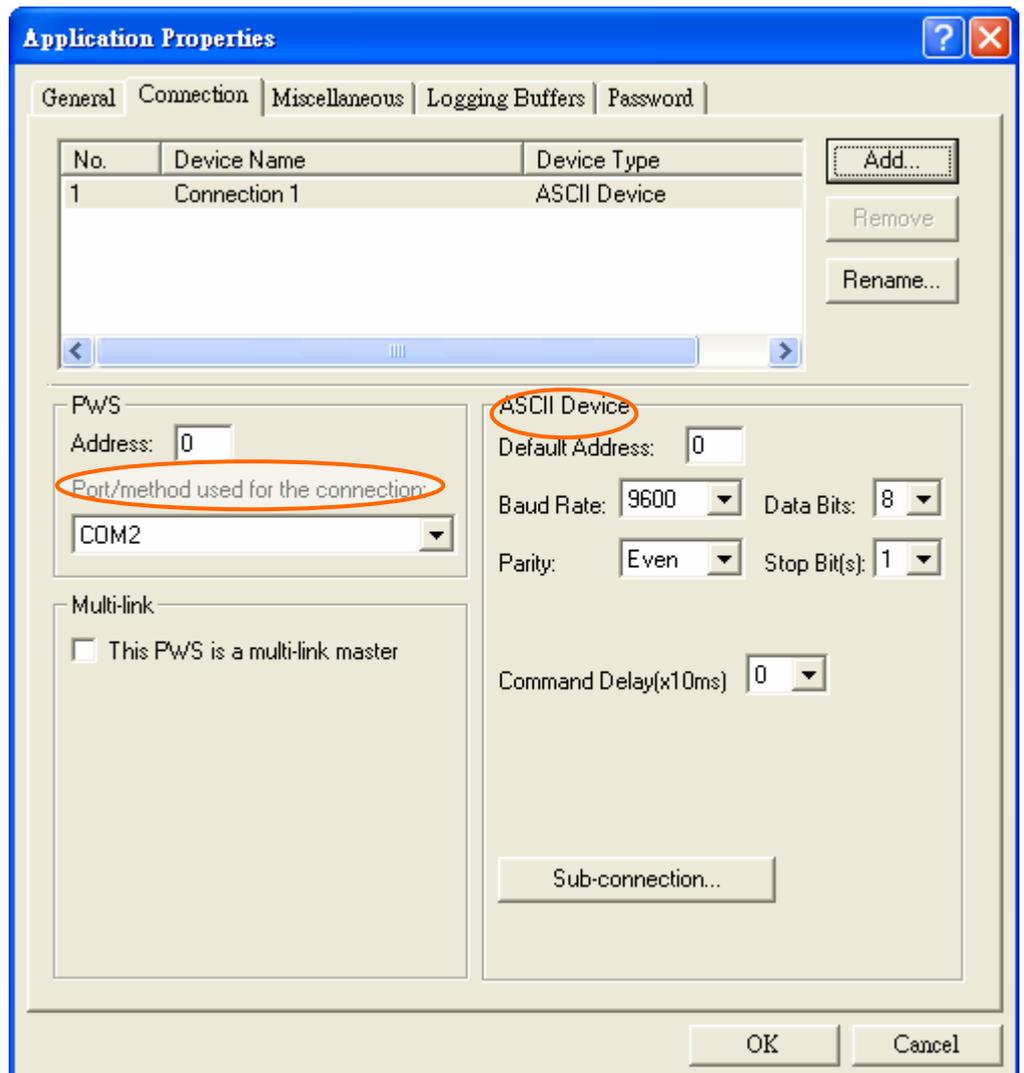
1. Click [Application]/[Workstation Setup] to set “ASCII Device” as Contoller/PLC in the [Application Properties] dialog box.

2. Instructions



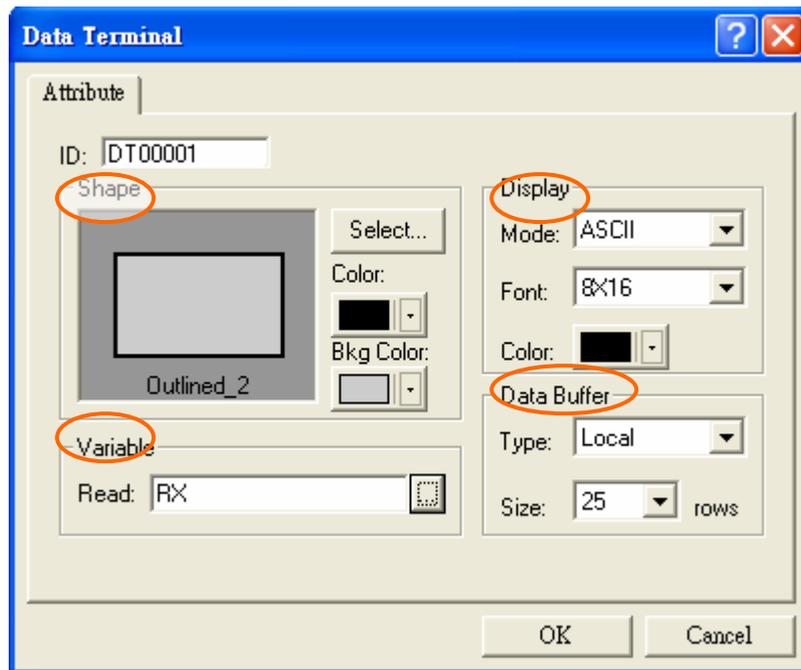
2. Specify the port/method used for the connection on the [Connection] tab.

2. Instructions



3. Shape : Select “Outlined_2”; and the color is “Black”.
4. [Read] : Specify “RX”.(The HMI model is PWS3261N; the Contoller/PLC is ASCII Device)
5. The mode is “ASCII” to display the terminal data.
6. The buffer type is “Local”.

2. Instructions



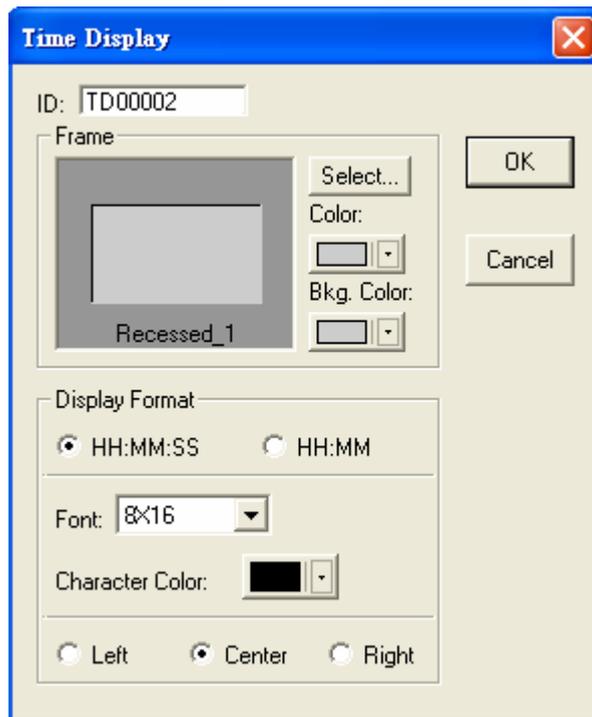
Above-mentioned steps will create a [Data Terminal] object; it displays the terminal data in ASCII model.

2.7.9.4. [Time Display]

I. Function

The HMI reads the time value of the internal REAL TIME CLOCK (RTC) and displays the content directly on the HMI screen. Note that this function is not applicable on all HMI models; please refer to the [Appendix A. - Table of the ADP 6.0 Feature and the HMI Models.](#)

II. Properties



- [Display Format] Block :
 - ◆ [HH:MM:SS]: Display Hour: Minute: Second.
 - ◆ [HH:MM]: Display Hour: Minute.

III. Example

See [Section 2.7.9.5. \[Date Display\] III Example.](#)

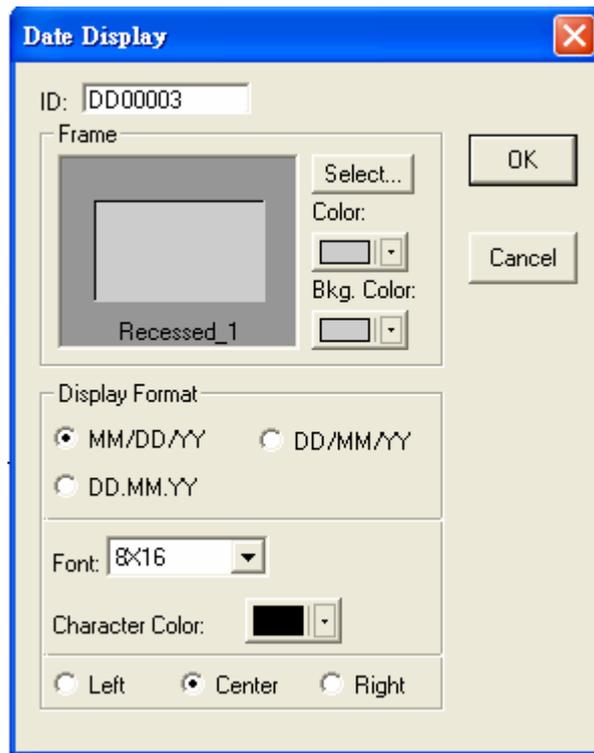
2.7.9.5. [Date Display]

I. Function

The HMI reads the date value of the internal REAL TIME CLOCK (RTC) and displays the content directly on the HMI screen. Note that the function is not applicable on all HMI models; please refer to [Appendix A. - Table of the ADP 6.0 Features and the HMI Models.](#)

II. Properties

2. Instructions



- [Display Format] Block :
 - ◆ [MM/DD/YY]: The format is Month/Date/Year.
 - ◆ [DD/MM/YY]: The format is Date/Month/Year.
 - ◆ [DD.MM.YY]: The format is Date.Month.Year.

III. Example

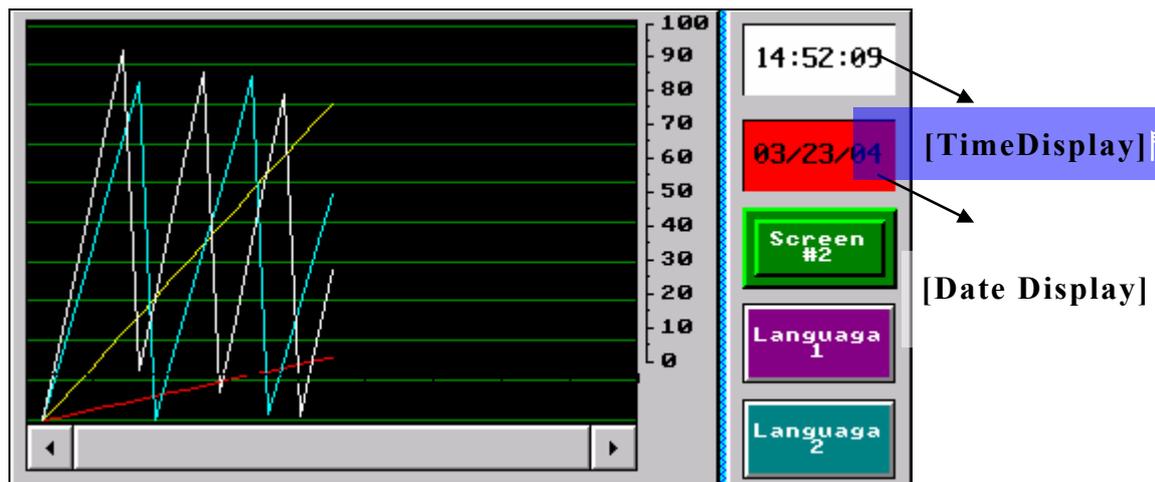


Figure 132. The [Time Display] and [Date Display] Objects

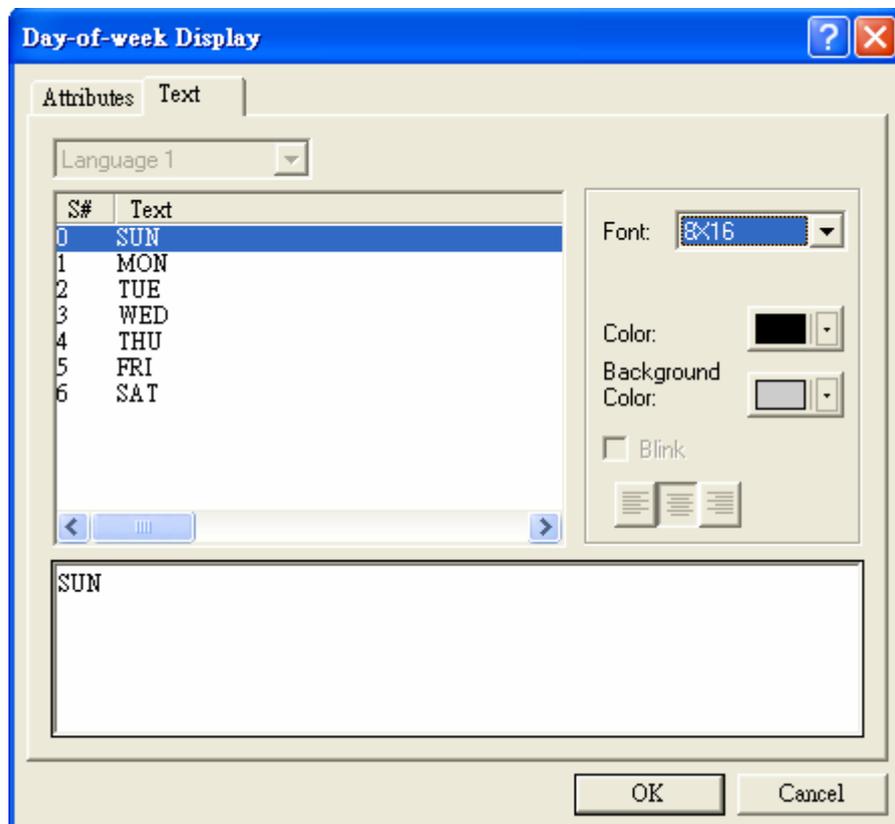
2.7.9.6. [Date of week Display]

I. Function

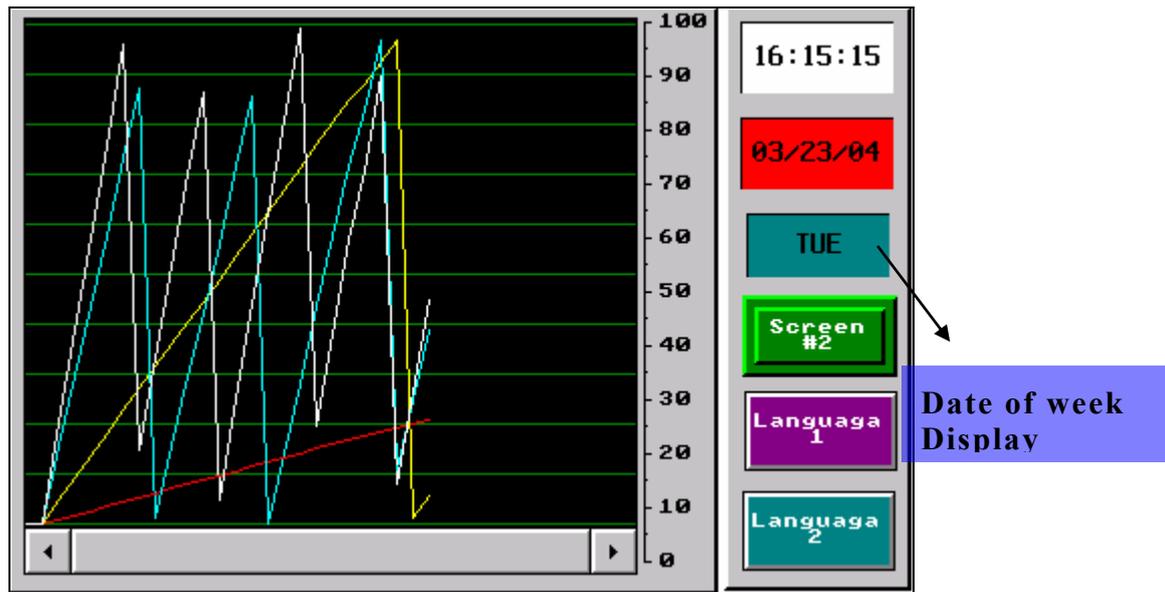
The HMI reads the date of week value from internal REAL TIME CLOCK (RTC) and displays the content directly on the HMI screen. Note that this function is only applicable on all HMI models; please refer the [Appendix A. - Table of the ADP 6.0 Features and the HMI Models](#).

II. Properties

The HMI will display the date of week automatically. The following is the [Text] tab in the [Date of week Display] dialog box.

**III. Example**

2. Instructions



2.7.10. [Bar Graph]

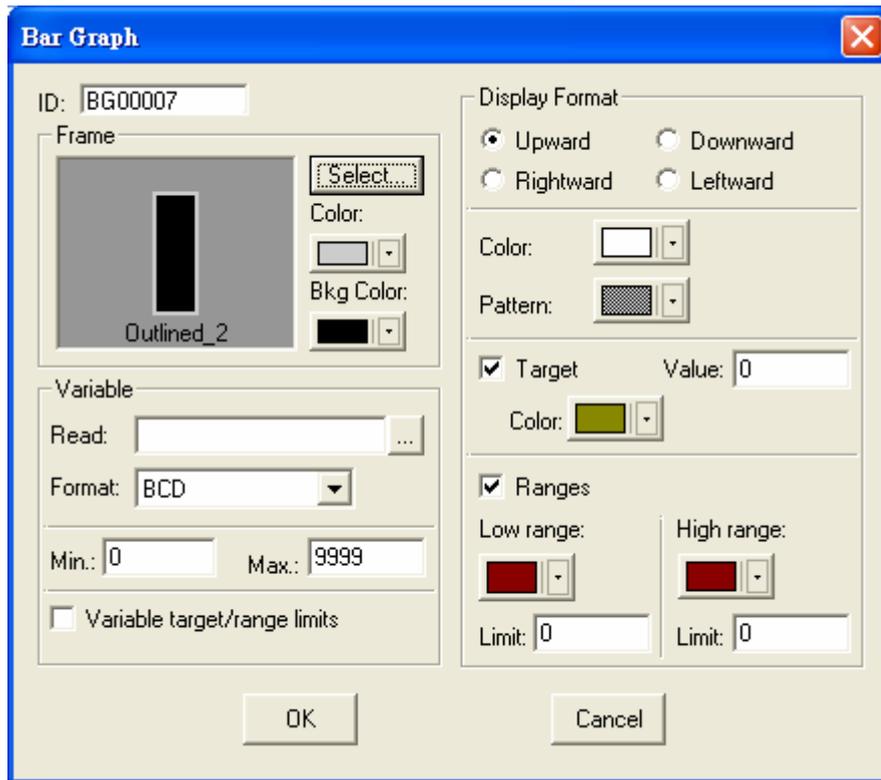
Two types of [Bar Graph] : [Normal] and [Deviation].

2.7.10.1. [Normal]

I. Function

The HMI reads the value of the PLC register and convert the data into a [Bar Graph] and then displays the graph on the HMI.

II. Properties



- [Variable] Block :
 - ◆ [Min.] : Specify the minimum the bar graph can display.
 - ◆ [Max.] : Specify the maximum the bar graph can display.
 - ◆ [Variable target/range limits]: Select this option if the target value and the range limits are read from the PLC.
 - ◆ [Target Variable] stored in a bit-location follows the [Read]. [Low Limit] stored in a bit location follows the [Target Variable]. The [High Limit] stored in a bit location follows the [Low Limit]. For example, if [Read] is “D10”, [Target Variable] is “D11”, [Low Limit] is “D12”, [High Limit] is “D13”.

| Register | X | X+1 | X+2 | X+3 |
|----------|------|-----------------|-----------|------------|
| | Read | Target Variable | Low Limit | High Limit |

Example: D10 D11 D12 D13

- [Display Format] Block :
 - ◆ [Upward],[Downward],[Rightward] and [Leftward] : Select the direction to fill.
 - ◆ [Color] : Specify the color of the bar graph.
 - ◆ [Pattern] : Specify the pattern style to display.
 - ◆ [Target] : Set the target to display.

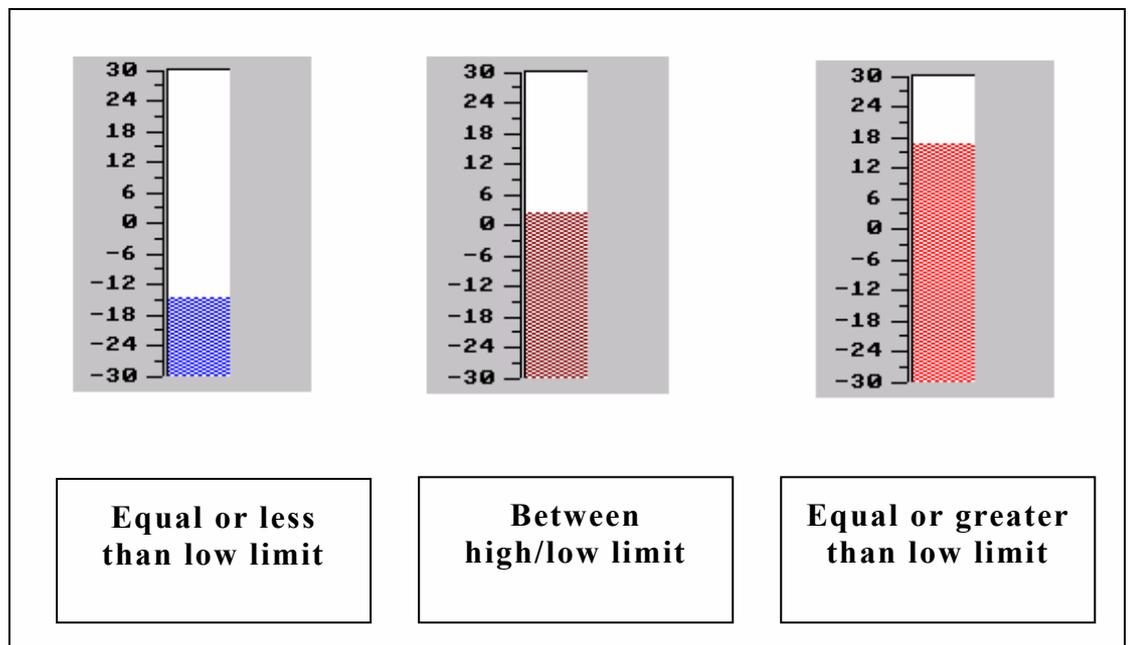
2. Instructions

- [Value] : Specify the constant target value.
- [Color] : Specify the color of target line.
- ◆ [Ranges] : Select this option to fill the graph with a different color when the register value is beyond a normal range.
 - [Low Range] : Specify the color to fill the graph with if the register value is equal to or less than the low range limit.
 - [Limit] : Specify a constant for the low range limit.
 - [High Range] : Specify the color to fill the graph with if the register value is greater than or equal to the high range limit.
 - [Limit] : Specify a constant for the high range limit.

For other properties which are not explained in this Section, please refer to the [Section 2.7. III Object Specify Object Properties](#).

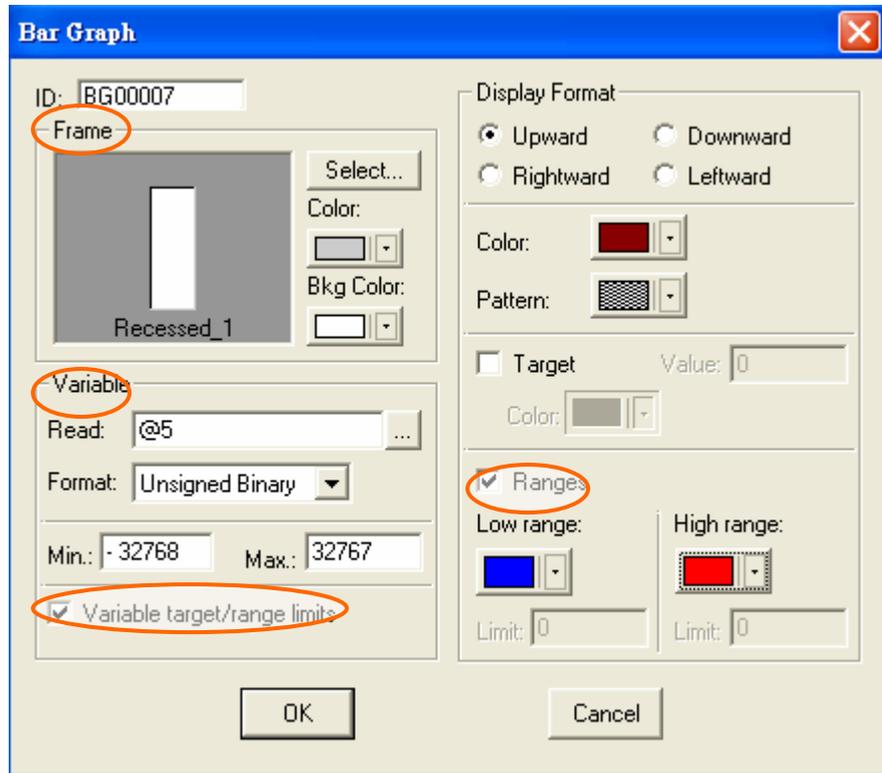
III. Example

The following are the steps to create a [Bar Graph] object:



1. Frame : Select “Recessed_1”; the bkg. color is “White”.
2. [Read] : Specify “@5” (Local Internal Memory).
3. [Format] is “Unsigned Binary”.
4. The minimum is -32,768 and the maximum is 32,767.

5. Check the option [Variable target/range limits].
6. When the register value is equal or less than the low limit, the graph will be filled with “Blue” color; when the register value is equal or greater than the high limit, the graph will be filled with “Red” color.



Above-mentioned steps will create a [Bar Graph] object. The [Numeric Entry] object here is to set the high/low limit and the left of the [Bar Graph] is a scale. The [Low Limit] here is -15000 ; and the [High Limit] is 15000 . See Figure 133.

$\text{Variable} \leq -15000$, the graph is filled with “Blue”; $-15000 < \text{Variable} < 15000$, the graph is filled with “Black”; $\text{Variable} \geq 15000$, the graph is filled with “Red”.

2. Instructions

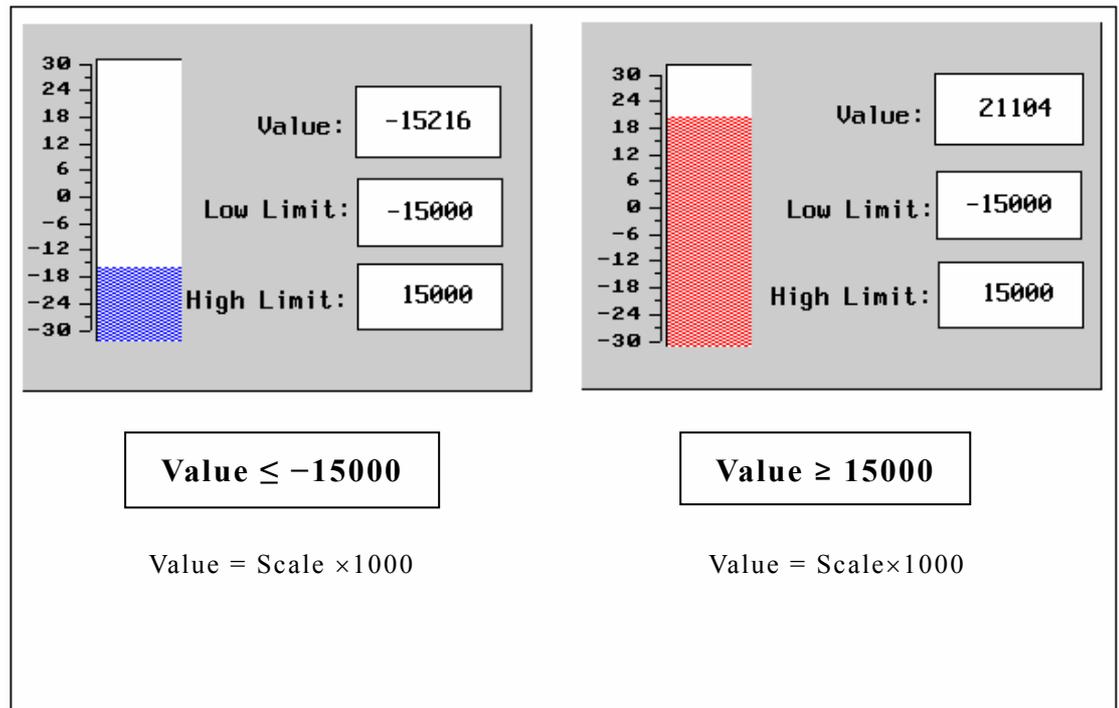


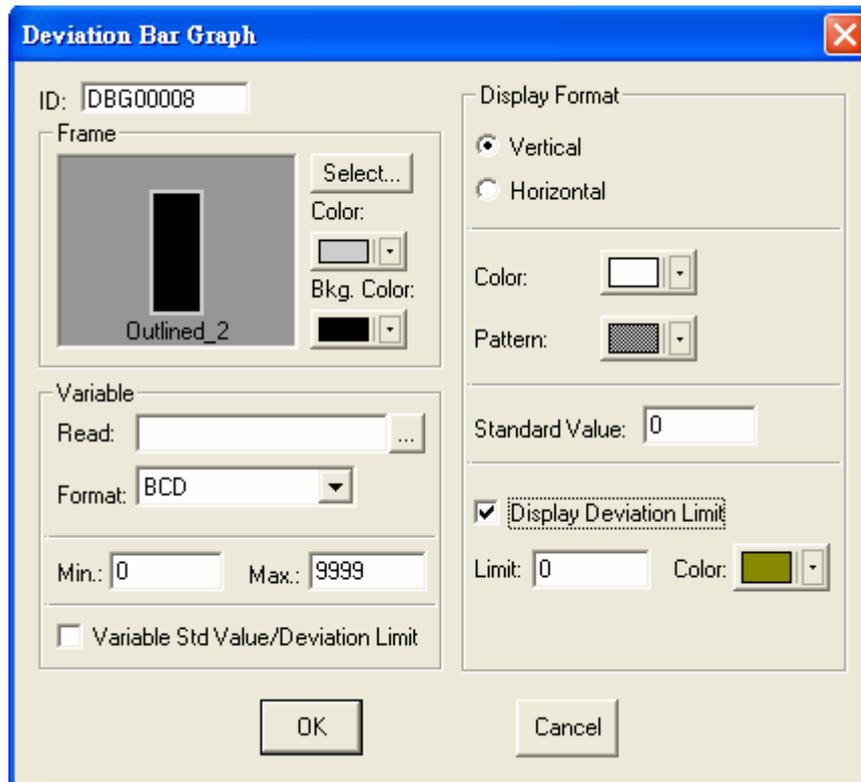
Figure 133. The Example of the [Bar Graph] object

2.7.10.2. [Deviation]

I. Function

The HMI reads the values of the PLC register and compares them with the normal value. Then the HMI converts the difference and presents it on a Bar Graph on the HMI.

II. Properties



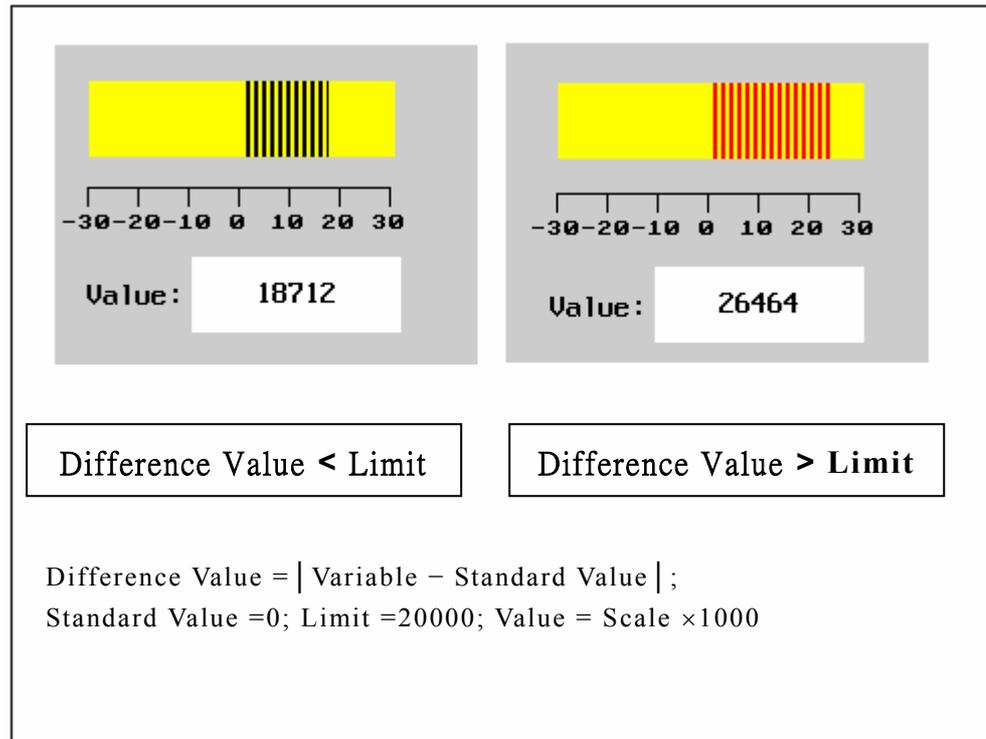
- [Variable] Block :
 - ◆ [Variable Std Value/Deviation Limit] : Select this option if the standard value and deviation limit are read from the PLC. If [Read] address is “D10”, [Standard Value] will be stored in “D11”; [Deviation Limit] will be stored in “D12”.
- [Display Format] Block :
 - ◆ [Vertical],[Horizontal] : Choose the direction for filling a graph.
 - ◆ [Standard Value] : Specify the constant standard value. The standard value will be a datum line on the bar graph.
 - ◆ [Display Deviation Limit] : Select this option to fill the bar graph with selected color when the difference of the register value and the standard value is beyond the limit.
 - [Limit] : Specify the constant limit.
 Difference Value = | Variable – Standard Value |
 - [Color] : Specify the color to fill the graph with when the difference of the register value and the standard value is beyond the limit.

For the properties which are not explained in this Section, please refer to the [Section 2.7.10.1. \[Bar Graph\]](#) and [Section 2.7. Object III Specify Object Properties](#).

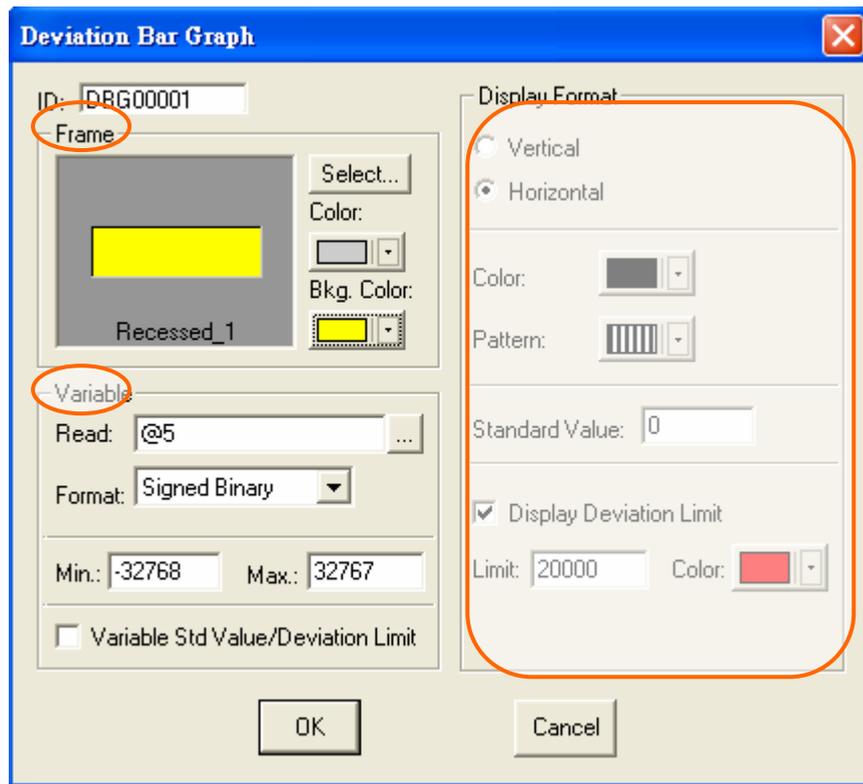
2. Instructions

III. Example

The following are the steps to create a [Deviation] object:



1. Frame : Select “Recessed_1”; and the bkg. color is “Yellow”.
2. [Read] : Specify “@5”. (Local Internal Memory)
3. [Format] is “Signed Binary”.
4. The minimum is -32,768; the maximum is 32,767 on the deviation bar graph.
5. The deviation bar graph is horizontal direction.
6. The datum point is ‘0’ on the deviation bar graph.
7. Specify the ‘Red’ color to fill the graph with when the difference of the register value and the standard value is beyond the limit ‘20000’.



2.7.11. [Trend Graph]

I. Function

The function is to read a series of values from the related PLC register. Then the HMI converts these values and presents it on a Trend Graph on the HMI.

Suppose that the register is “Dn” to read from and three curves in all. The data will be readed as the following format:

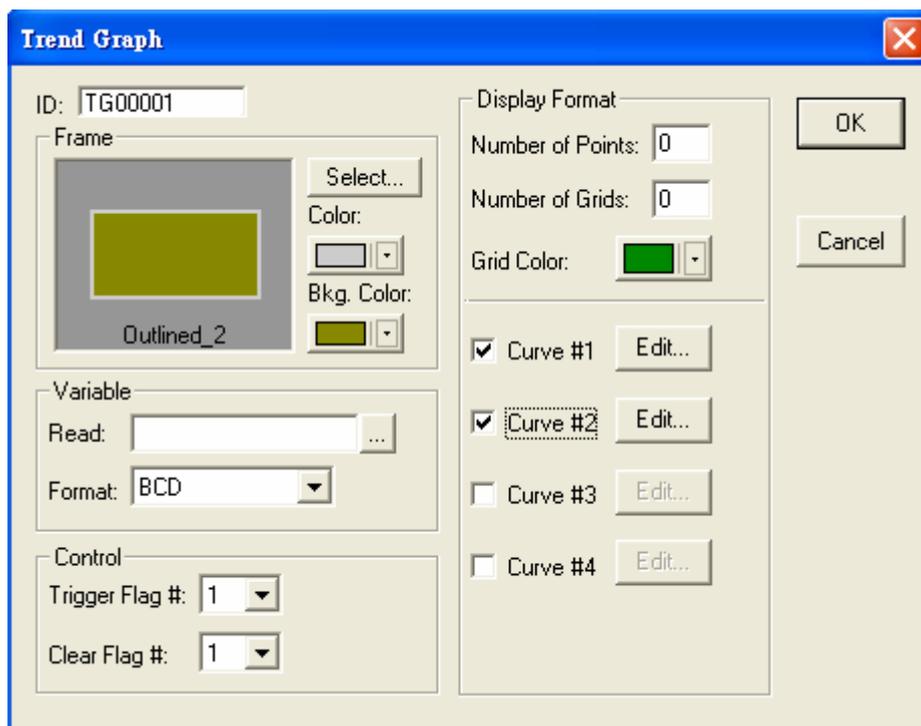
Value in Dn = “m” is the real sampling points;
 Value in Dn+1 is the first point of Y direction on the curve #1;
 Value in Dn+2 is the first point of Y direction on the curve #2;
 Value in Dn+3 is the first point of Y direction on the curve #3;
 Value in Dn+4 is the 2nd point of Y direction on the curve #1;
 Value in Dn+5 is the 2nd point of Y direction on the curve #2;
 Value in Dn+6 is the 2nd point of Y direction on the curve #3;
 :
 :

and so on. The Workstation reads PLC registers from Dn to Dn+3m in total.

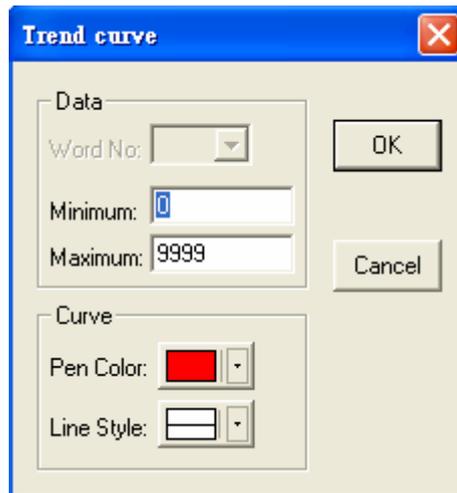
For example, if the value in Dn is $m = 25$ sampling points; the HMI will read data from 76 ($=3 \times 25 + 1$) PLC registers.

II. Properties

2. Instructions



- [Control] Block : To control the trend graph by PLC.
 - ◆ [Trigger Flag #] : The Trigger Flag No.of the tred graph is 12-15 bits in CFR. The HMI reads data from PLC and display the trend graph when the Trigger Flag turns on.
 - ◆ [Clear Flag #] : : The Clear Flag No.of the tred graph is 8-11 bits in CFR. The HMI clears the trend graph when that Clear Flag tuns on.
- [Display Format] Block :
 - ◆ [Number of Points] : Specify the maximal number to diplay on the Y-direction.
 - ◆ [Number of Grids] : Specify the number of evenly spaced horizontal grids to be displayed.
 - ◆ [Grid Color] : Specify the color of the horizontal grids.
 - ◆ [Curve # 1] ~ [Curve # 4] : Provide four curves for edit. When pressed [Edit] button, the dialog box will appear as the following :



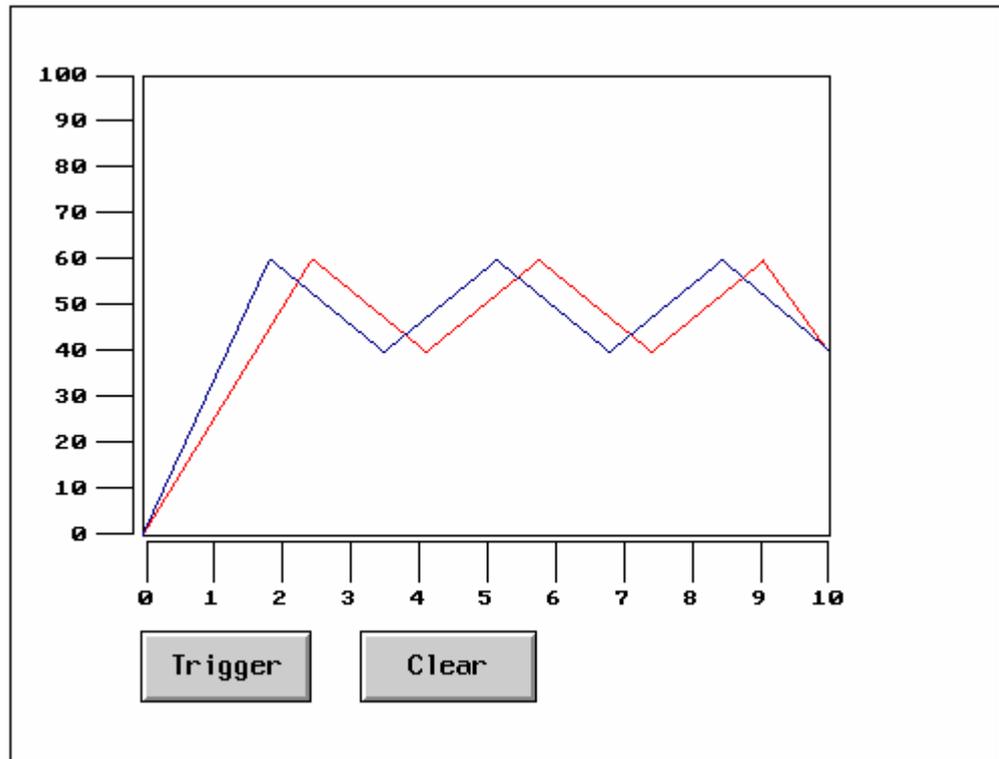
- [Minimum] : Specify the value corresponding to the lowest point on the trend graph. When the data is equal to or less than the [Minimum], the Workstation places the dot at the bottom pixel of the drawing area of the trend graph.
- [Maximum] : Specify the value corresponding to the highest point on the trend graph. When the register is equal to or greater than the [Maximum], the Workstation places the dot at the top pixel of the drawing area of the trend graph.
- [Pen Color] : Specify the color of the trending curve.
- [Line Style] : Specify the line style of the trending curve.

For the properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

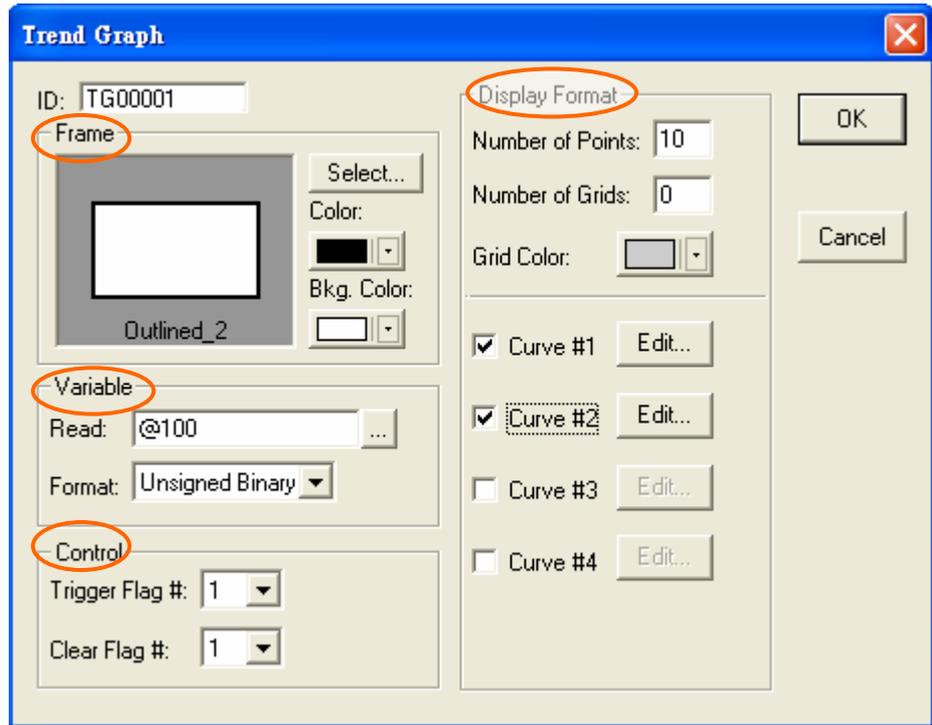
III. Example

The following are the steps to create a [Trend Graph] object:

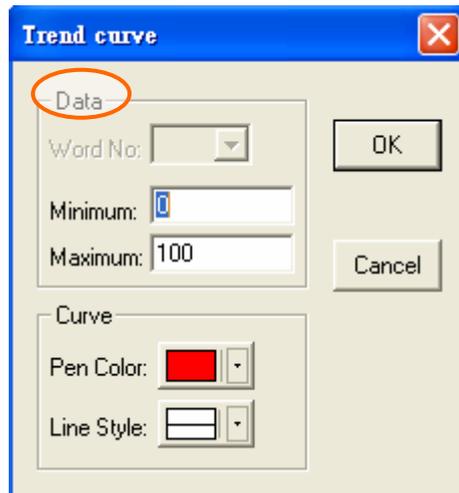
2. Instructions



1. Frame : Select “Outlined_2”; and the bkg. color is “White.
2. [Read] : Specify “@100”. (Local Internal Memory)
3. [Format] is “Unsigned Binary” ◦
4. [Trigger Flag] and [Clear Flag] are #1 ◦
5. Number of Points is 10.



6. The minimum is “0”; and the maximum is 100.



2.7.12. [XY Chart]

I. Function

The Function is to read a series of values from the related PLC register. Then the HMI converts these values and presents it on an X-Y Chart on the HMI.

Suppose that the register is “Dn” to read from; and two curves in all. The data will be readed as the following format:

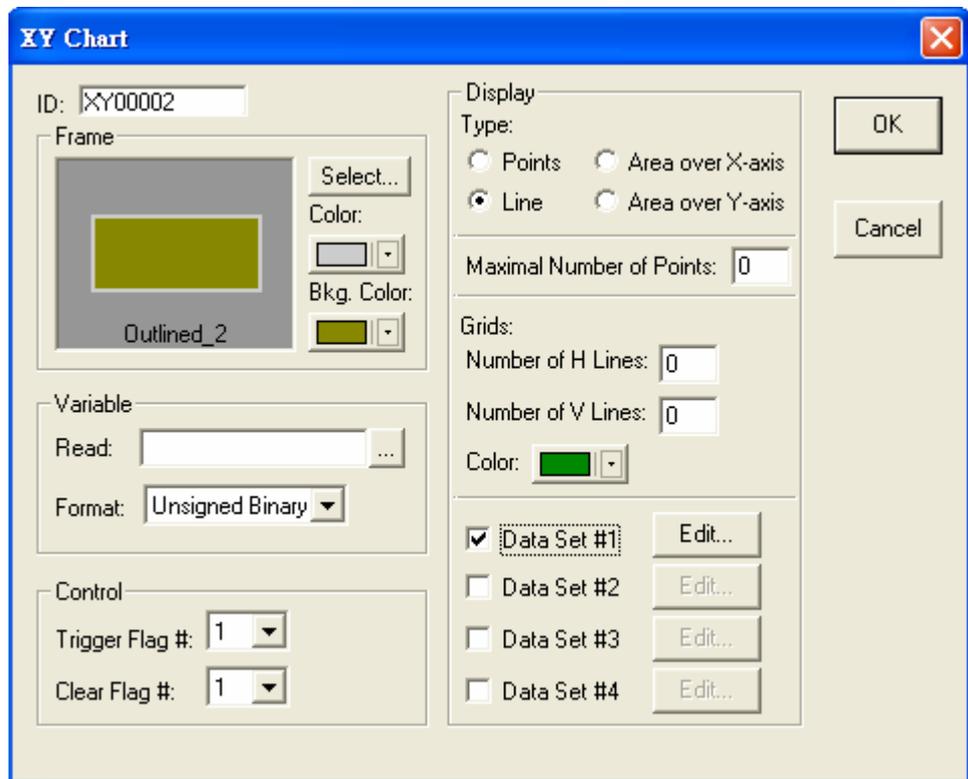
Value in Dn = “m” is the real sampling points;
 Value in Dn+1 is the first point of X-axis on the curve #1;

2. Instructions

Value in Dn+2 is the first point of Y-axis on the curve #1;
Value in Dn+3 is the first point of X-axis on the curve #2;
Value in Dn+4 is the first point of Y-axis on the curve #2;
Value in Dn+5 is the 2nd point of X-axis on the curve #1;
Value in Dn+6 is the 2nd point of Y-axis on the curve #1;
Value in Dn+7 is the 2nd point of X-axis on the curve #2;
Value in Dn+8 is the 2nd point of Y-axis on the curve #2;
:
:
and so on. The Workstation reads PLC registers from Dn to Dn+2m in total.

For example, if the value in Dn is $m = 15$ sampling points; the HMI will read data from 61 ($=2 \times 2 \times 15 + 1$) PLC registers.

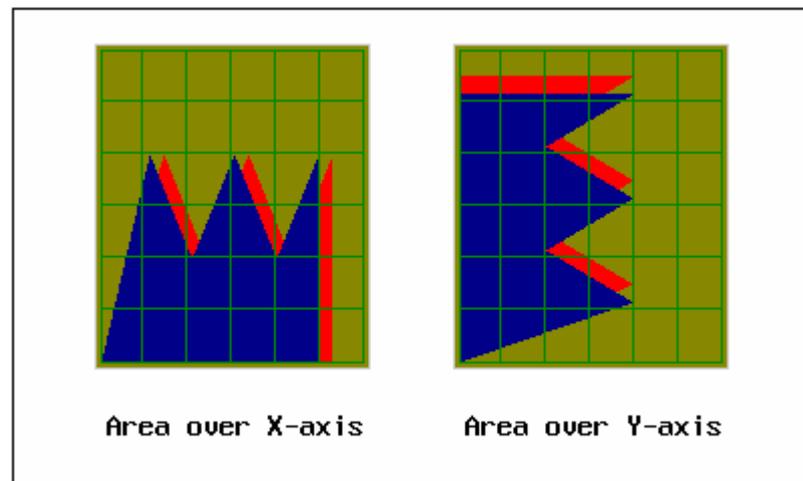
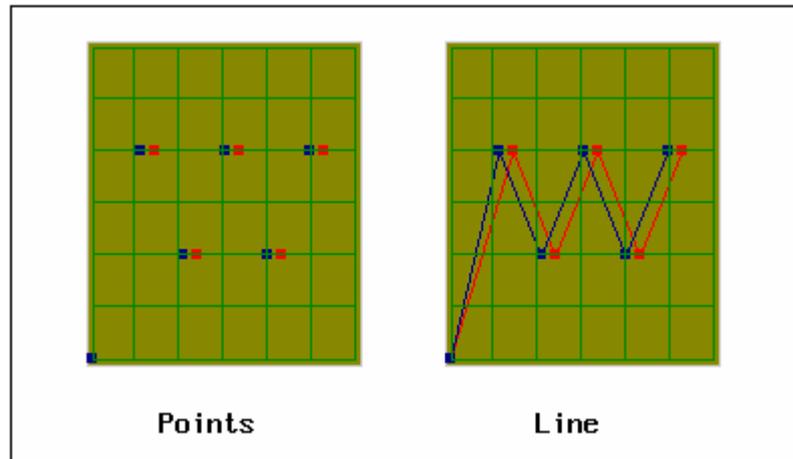
II. Properties



- [Control] Block : To control the trend graph by PLC.
 - ◆ [Trigger Flag #] : The Trigger Flag No.of the tred graph is 12-15 bits in CFR. The HMI reads data from PLC and display the XY chart when the Trigger Flag turns on.
 - ◆ [Clear Flag #] : : The Clear Flag No.of the tred graph is 8-11 bits in CFR. The HMI clears the trend graph when that Clear Flag tuns on.
- [Display] Block :

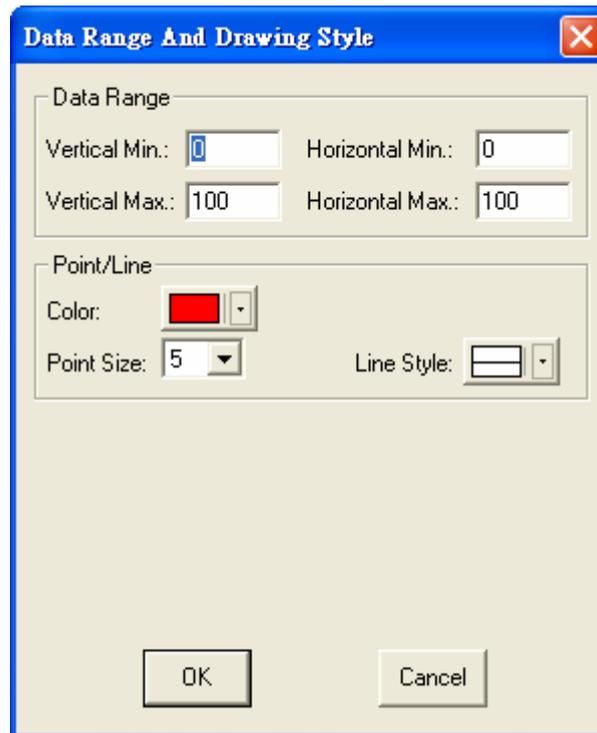
2. Instructions

- ◆ [Points],[Line],[Area over X-axis] and [Area over Y-axis] : See the illustration below.



- ◆ [Maximal Number of Points] : Specify the maximal number of points to display on XY chart.
- ◆ [Number of H Lines] : Specify the number of horizontal lines.
- ◆ [Number of V Lines] : Specify the number of vertical lines.
- ◆ [Color] : Specify the color of the lines.
- ◆ [Curve # 1] ~ [Curve # 4] : Provide four curves for edit. When pressed [Edit] button, the dialog box will appear as the following :
- ◆ [Data Set # 1] ~ [Data Set # 2] : When press [Edit] button, the dialog box will appear as the following :

2. Instructions



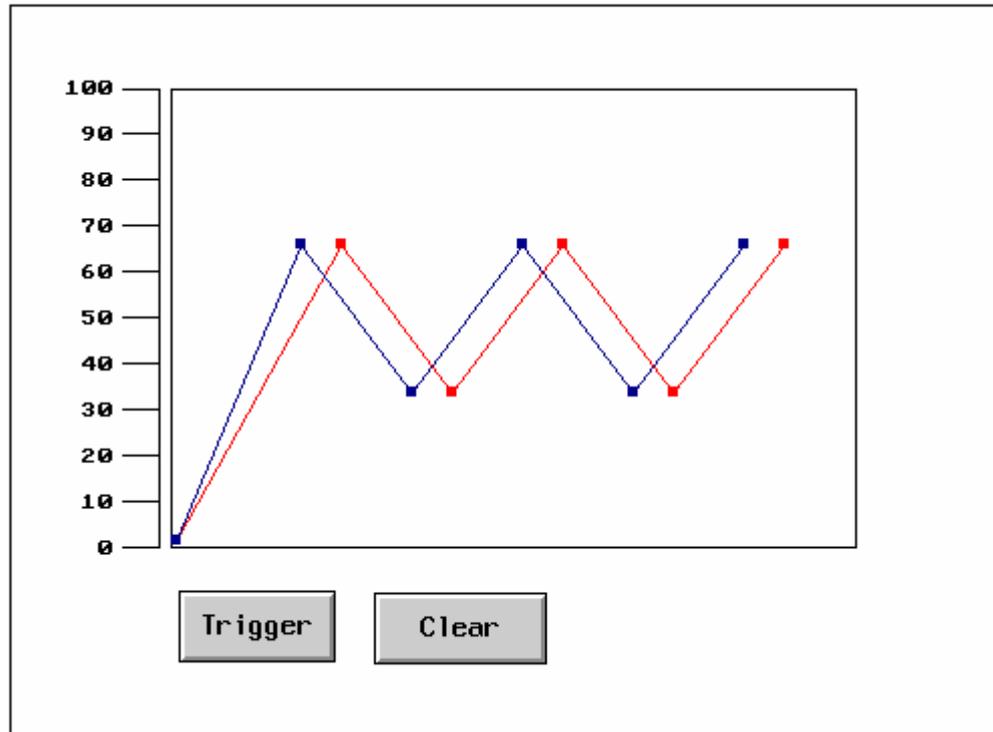
- [Vertical Min.] and [Vertical Max.] : Specify the minimum and maximum value for Y-axis.
- [Horizontal Min.] and [Vertical Max] : Specify the minimum and maximum value for X-axis.
- [Color] : Specify the color for point/line.
- [Point Size] : Specify the size of the point to display.

For other properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

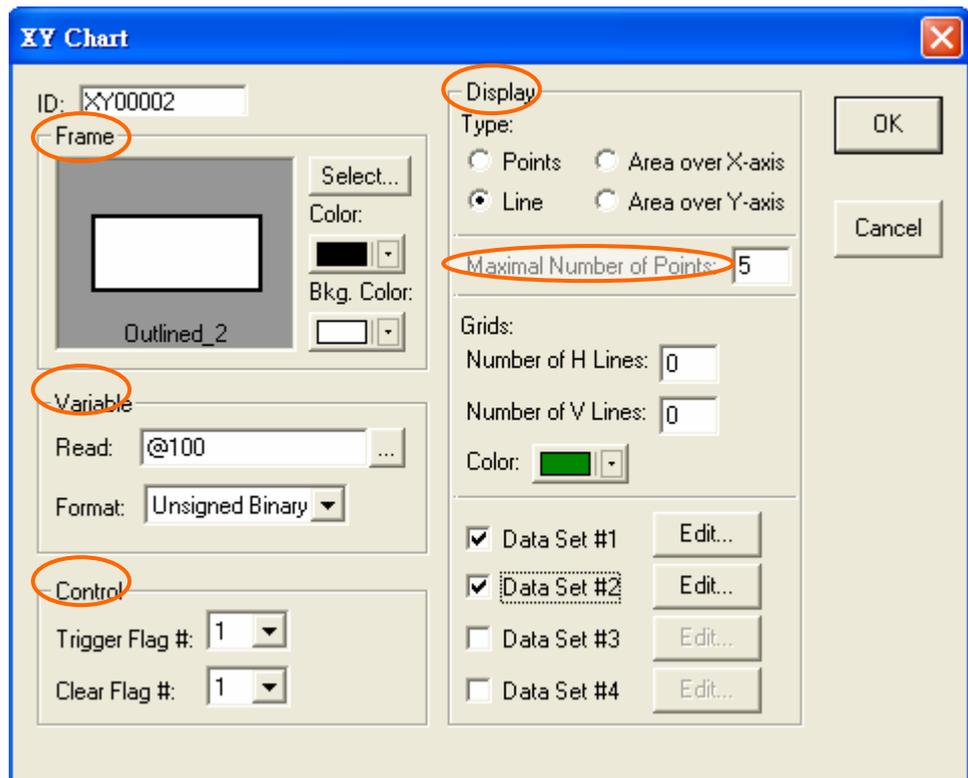
The following are the steps to create a [XY Chart] object:

2. Instructions

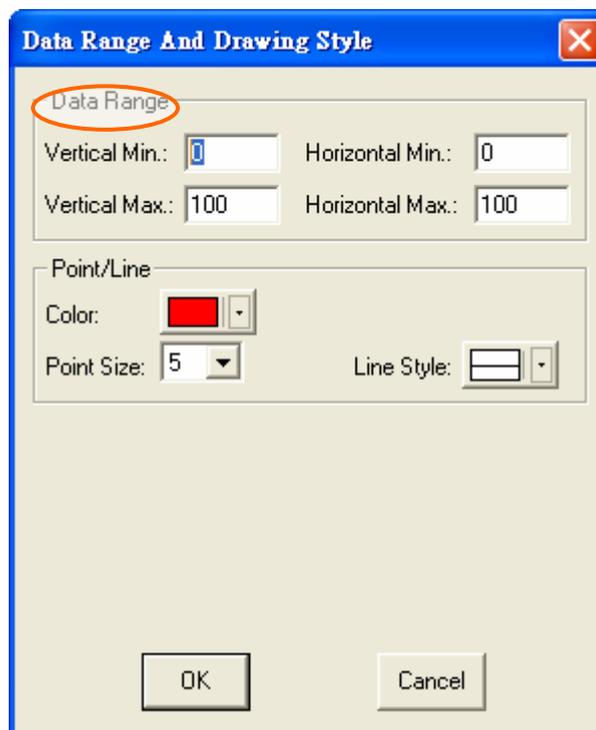


1. Frame : Select “Outlined_2” and the bkg. color is “White”.
2. [Read] : Specify “@100”. (Local Internal Memory)
3. [Format] is “Unsigned Binary”.
4. [Trigger Flag] and [Clear Flag] are # 1.
5. Select “Line” type to display.
6. The maximal number of points is 5.

2. Instructions



7. The vertical and horizontal minimum are "0", the maximum are "100".



2.7.13. [Panel Meter]

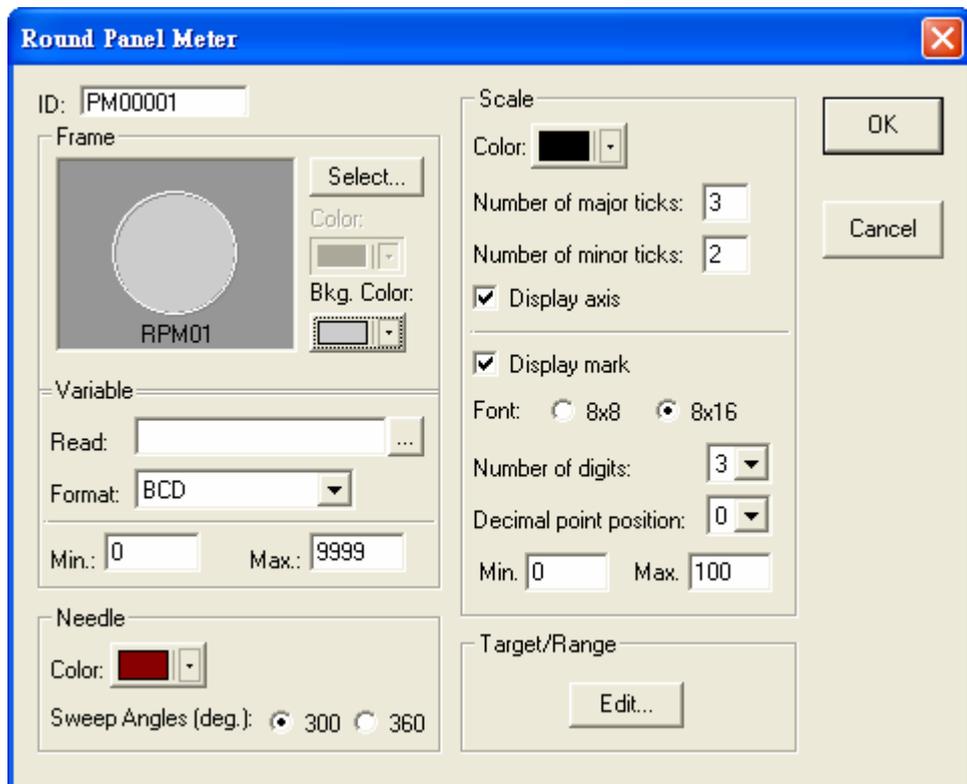
There are two types of panel meters - [Round] and [Rectangular].

2.7.13.1. [Round Panel Meter] 

I. Function

The HMI reads the value from PLC register and reflects the value on the Round Panel Meter object on the screen.

II. Properties

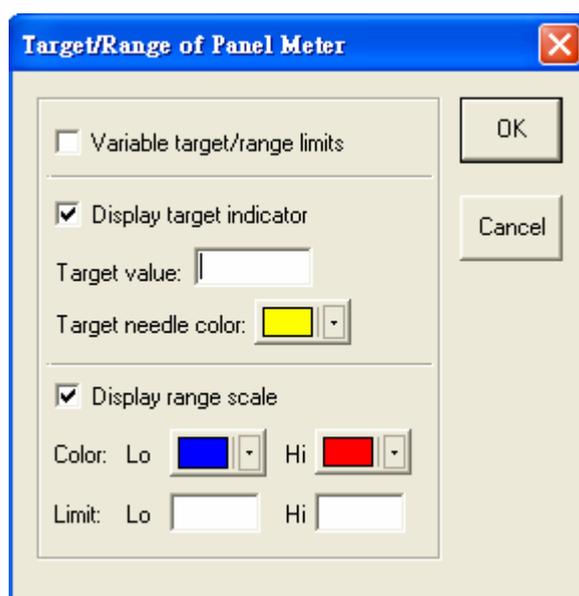


- [Needle] Block :
 - ◆ [Color] : Specify the needle's color.
 - ◆ [Sweep Angles (deg.)] : There are 300 degrees and 360 degrees.
- [Scale] Block : Specify the color and the number of ticks.
 - ◆ Scale
 - [Color] : Specify the color to display the scale.
 - [Number of major ticks] : Specify the number of major ticks on the scale. If the number is less than 2, no ticks are

2. Instructions

displayed.

- [Number of minor] : Specify the number of minor ticks on the scale.
- [Display axis] : Check this option to display an arc as the axis of the scale.
- ◆ [Display mark] : Check this option to display marks on the scale.
 - [Font] : There are “8X8” and “8X16” types.
 - [Number of digits] : Specify the number of digits including precision and scale.
 - [Decimal point position] : Specify the position of the marks digit. If the number is 0, no decimal point is displayed.
 - [Min.] and [Max.] : Specify the minimum and maximum of the marks.
- [Target/Range] Block : Select [Edit] button, its dialog box will appear as the following.



- ◆ [Variable target/range limits] : The target value and the range limits are read from PLC. The “target value” is stored in a bit-lication which is next to the [Read] location. The “low limit” is next to the “target value”. The “low limit” is next to the “high limit”. When the [Read] location is specified “D10”, the “target value” is stored in “D11”; the “low limit” is stored in “D12”; the “high limit” is stored in “D13”.
- ◆ [Display target indicator] : Check this option to display target-indicator.
 - [Target value] : Specify the target value.

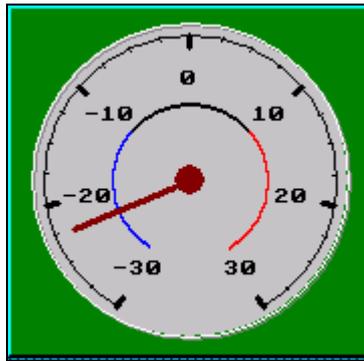
2. Instructions

- [Target needle color] : Specify the color for needle.
- ◆ [Display range scale] : Specify the color of range scale to display.
 - [Low Range Color] and [High Range Color] : Specify the color to display on the scale when the value is less/greater than low/high range.
 - [Low Limit] and [High Limit] : Specify the low limit and high limit constant.

For other properties which are not explained in this Section, please refer to the [2.7. Object III Specify Object Properties](#).

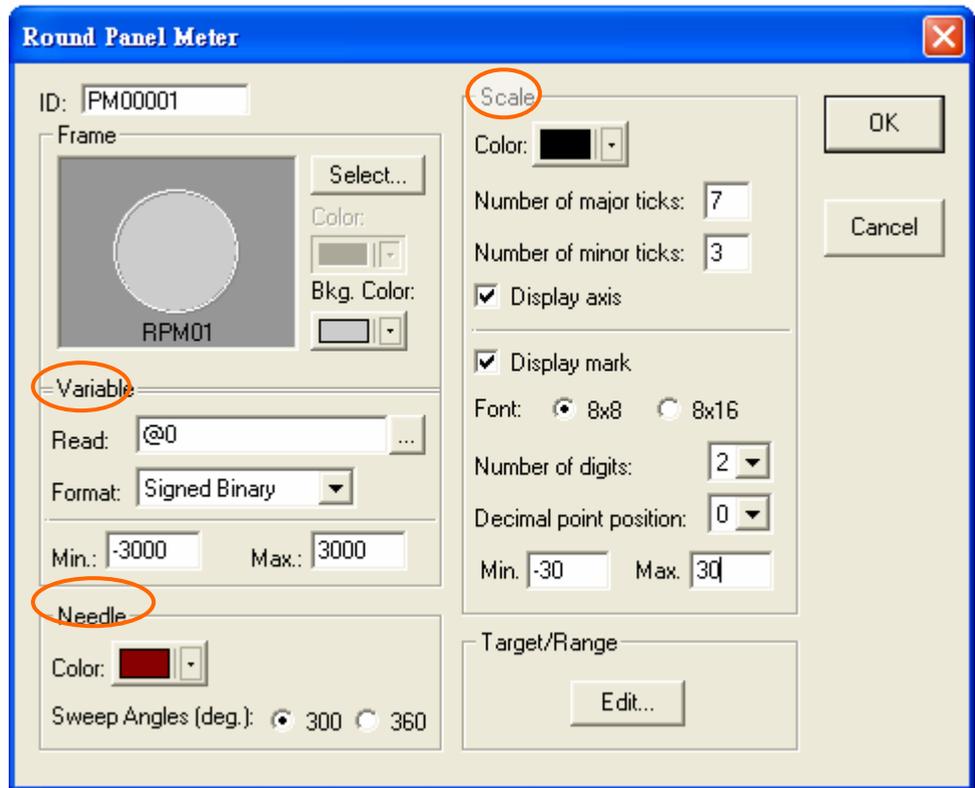
III. Example

The following are the steps to create a [Round Panel Meter] object:

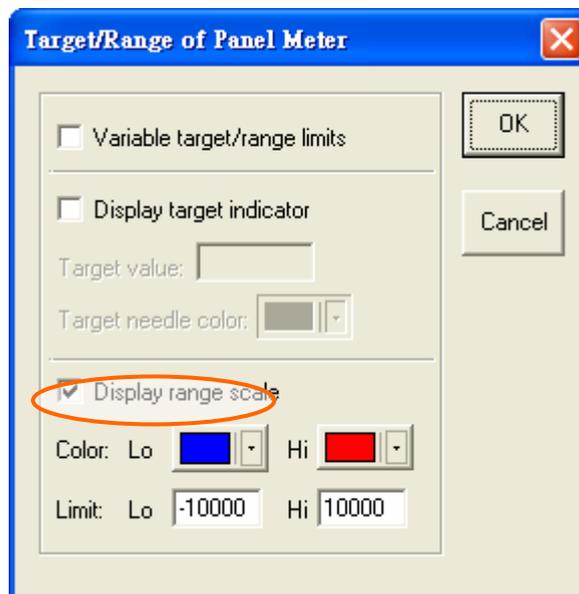


1. [Read] : Specify “@0”. (Local Internal Memory)
2. [Format] is “Signed Binary”.
3. The minimum is -30,000 and the maximum is 30,000.
4. The sweep angle is 300 degrees.
5. The number of major ticks is ‘7’ and the number of minor ticks is ‘3’; the maximum mark is ‘30’ and the minimum number is ‘-30’.

2. Instructions

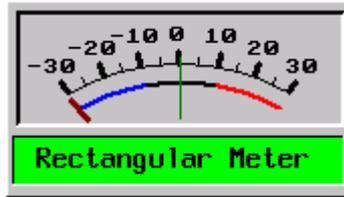


6. The low range limit is '-10000' and the color is "Blue"; the high range limit is '10000' and the color is "Red".



2.7.13.2. [Rectangle Panel Meter]

The properties of [Rectangle Panel Meter] are the same as [Round Panel Meter]; please refer to the [Section 2.7.13.1. \[Round Panel Meter\]](#).

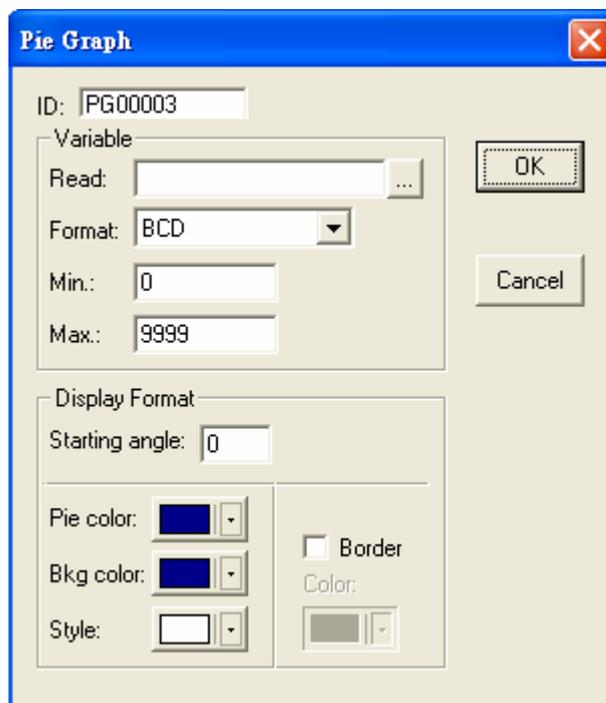


2.7.14. [Pie Graph]

I. Function

The HMI reads the register values in the PLC. Then it converts the values into a 360° pie graph and displays the graph on the HMI screen.

II. Properties



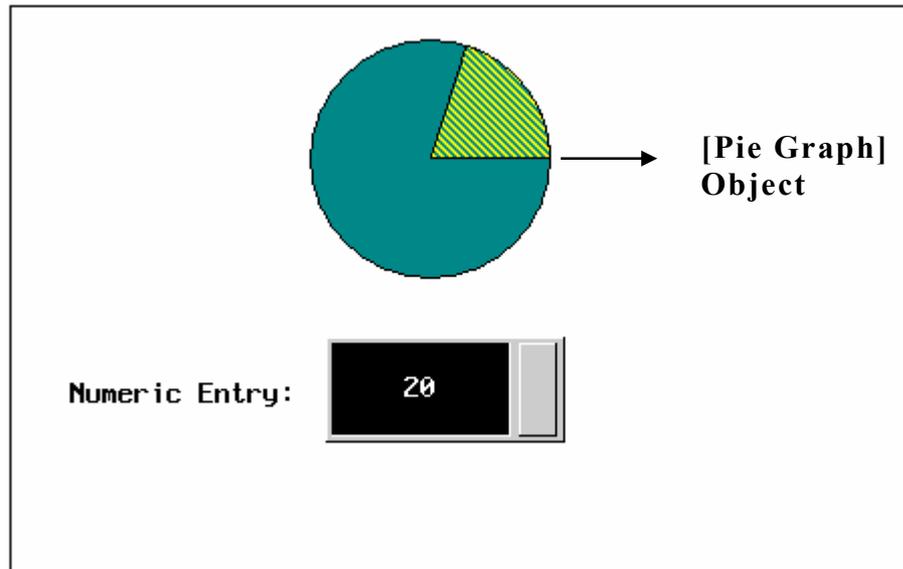
- [Display Format] Block :
 - ◆ [Starting angle] : Specify the original angle of the pie graph.
 - ◆ [Pie color] : Specify the color for filling the pie graph.
 - ◆ [Bkg. color] : Specify the color of the unfilled part of pie graph.
 - ◆ [Style] : Specify the pattern style for filling the pie graph.
 - ◆ [Border] : Check this option to display the pie graph with a border.
 - ◆ [Color] : Specify the border color of the pie graph.

For other properties which are not explained in this Section, please refer to the [Section 2.7.10.1. \[Bar Graph\]](#) and the [Section 2.7. Object Specify III Object Properties.](#)

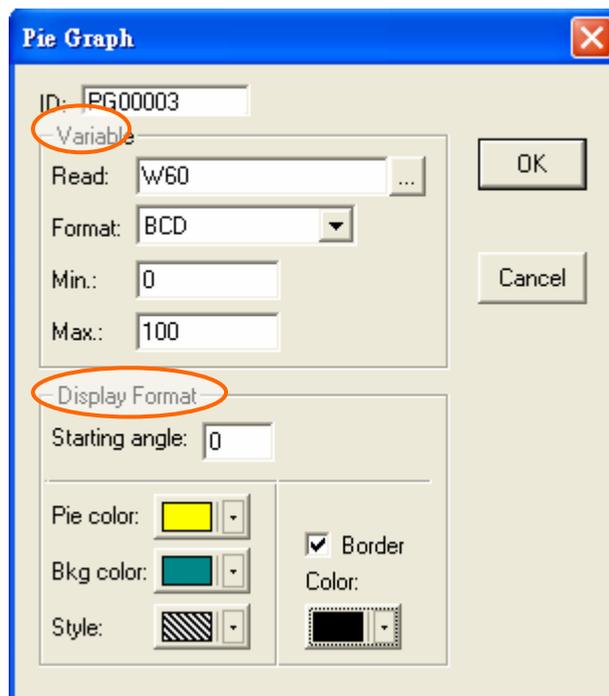
2. Instructions

III. Example

The following are the steps to create a [Pie Graph] object:



1. [Read] : Specify “W60” ◦
2. [Format] is “BCD”.
3. Specify the minimum is ‘0’ and the maximum is ‘100’ which the pie graph can display.
4. The starting angle is ‘0’.
5. Specify the pattern style, pie color, bkg. color and border color.



A Pie object is drawn from (+) X-axis (starting angle = 0). When the input value is '20', the area of the pie is one-fifth of a circle (= 20/100).

2.7.15. [Dynamic Graphic]

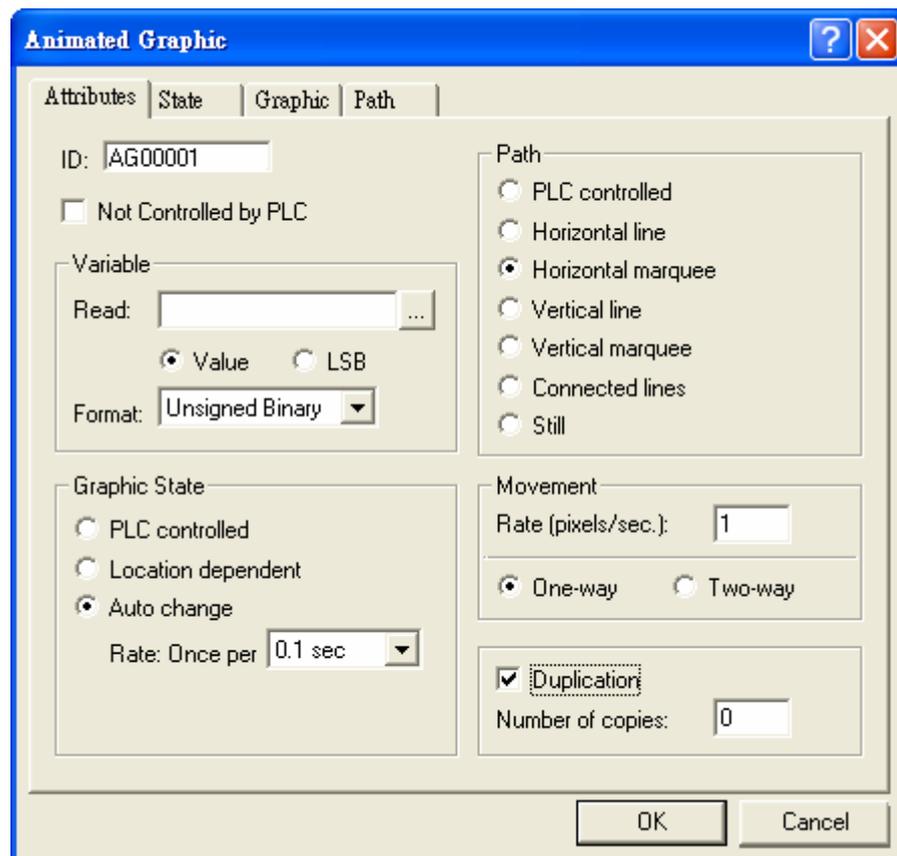
The following are the options in the [Dynamic Graphic] sub-menu: [Animated Graphic], [GIF Graphic], [State Graphic], [Dynamic Circle] and [Dynamic Rectangle].

2.7.15.1. [Animated Graphic]

I. Function

This function enables a user to control a graph includes its position and moving-path to display on the HMI screen over PLC or not. For instance, the PLC can control the graphic movement along X-axis, Y-axis or the display of different graphics.

II. Properties



 [Attributes] Tab

2. Instructions

- [Not Controlled by PLC] : Check this option that the graph is not controlled by PLC.
- [Graphic State] Block :
 - ◆ [PLC controlled] : To display the graphic states controlled by PLC.
 - ◆ [Location dependent] : To display the different state according to the location.
 - ◆ [Auto change] : To change the graphic state automatically.
 - [Rate (Once per)] : Specify the rate to change the graphic state.
- [Path] Block :
 - ◆ [PLC controlled] : Controll the object's movement path by PLC.
 - ◆ [Horizontal line] : To move the object along horizontal line.
 - ◆ [Horizontal marquee] : To move the object along horizontal line with marquee. Check the [Dulplication] option to move the dulplicated graphes along horizontal line.
 - ◆ [Vertical Line] : To move the object along the vertical line.
 - ◆ [Vertical marquee] : To move the object along the vertical line with marquee. Check the [Dulplication] option to move the dulplicated objects along vertical line.
 - ◆ [Connected Lines] : To move the object along the route of the connected lines.
 - *path* : Double-click the left key on the object to display the movement path.
 - *Path Point* : Click right key on the object to to select [Add Path Point] or [Delete Path Point] from the drop-down list for the connected lines setup. Please refer to to select [III. Example](#) for the complete details.

Note that a curve path can be configured with the the various path points.
 - ◆ [Still] : To change the state without movement.
- [Movement] Block :
 - ◆ [Rate (pixels/sec.)] : Specify the rate of the movement.
 - [One-way] : To move the object in one-way.
 - [Two-way] : To move the object in two-way.

2. Instructions

- [Duplicate] : Select this option to move the duplicate objects with marquee; and the number of copies can be specified as well.

For the properties which are not explained in this Section, please refer to the [Section 2.7. III Object Specify Object Properties](#).



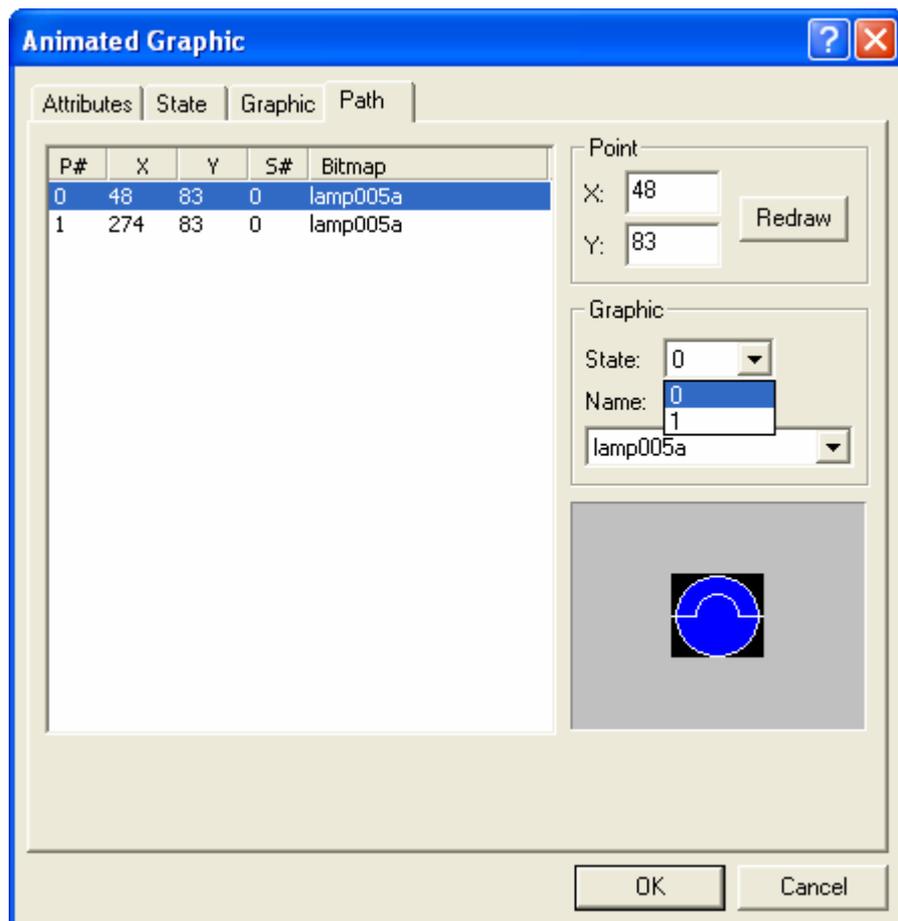
[State] and [Text] Tab

Please refer to the [Section 2.7. Object III Specify Object Properties](#) for the complete details.



[Path] Tab

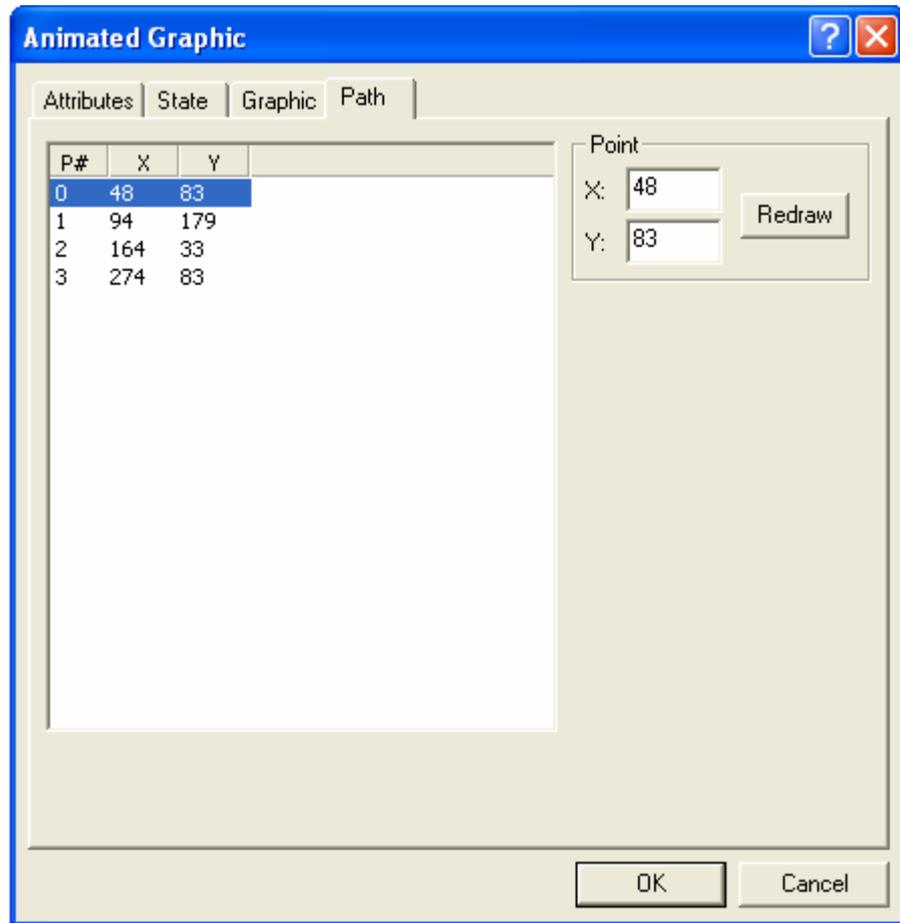
- 一. **The [Graphic State] is [Location dependent]** : On the [Path] tab, this feature enables a user to specify the graphic states to be changed according to different location. For instance, the point # 0 displays the graphic state in state # 0; the point # 1 displays the graphic state in state # 1. See below.



- 二. **The [Graphic State] is [Auto Change]** : On the [Path] tab, the object changes state along the specified path. A user can setup the

2. Instructions

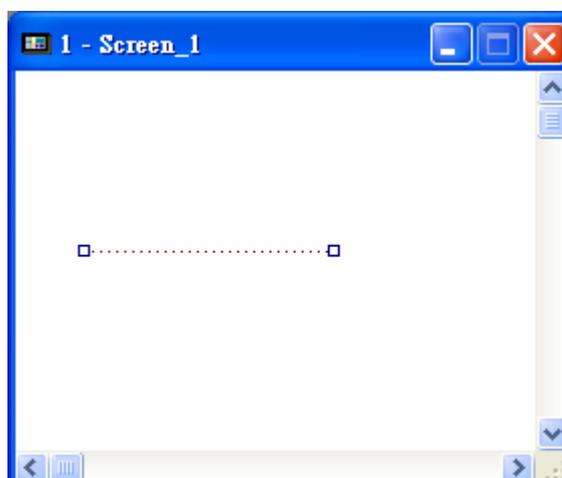
starting point and the ending point of path which is displayed on this tab.



III. Example

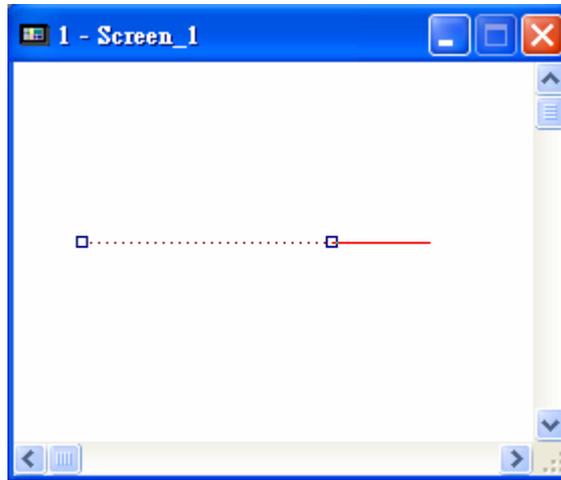
— To design a horizontal/vertical line as path :

Step 1 : Double-click left key on the object to display the movement path.

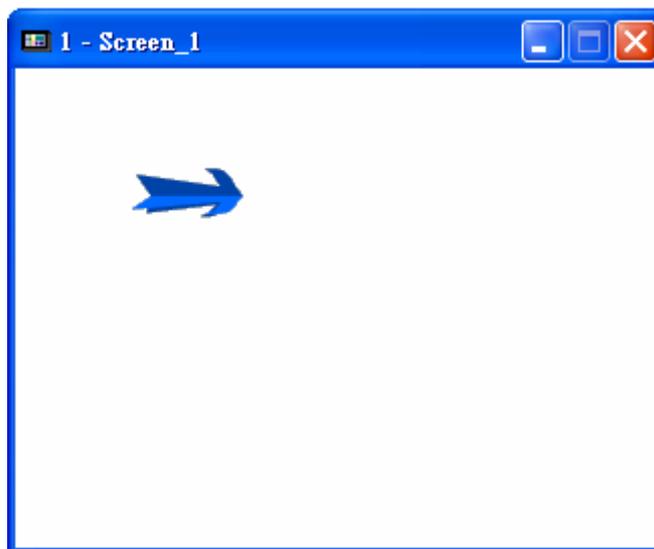


2. Instructions

Step 2 : Move the cursor on the point (icon is '□'), then press leftkey to draw the movement path. The revised path should be marked with red line. See below.



Step 3 : Click left-key elsewhere on the screen to display the object graphic.

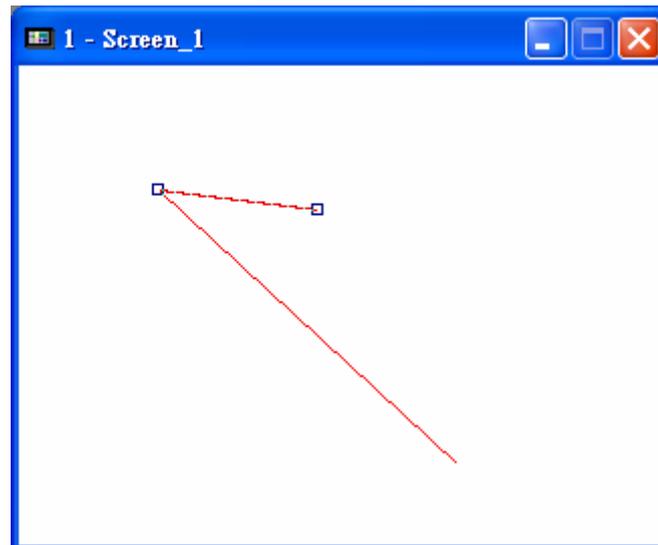


二. To design connected lines as path :

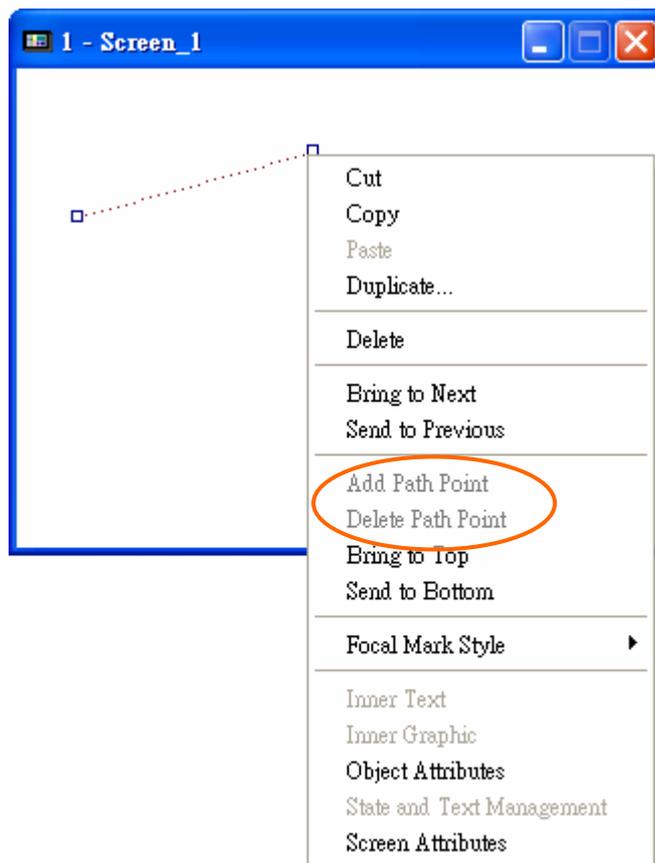
Step 1 : Double-click left key on the object to display the movement path.

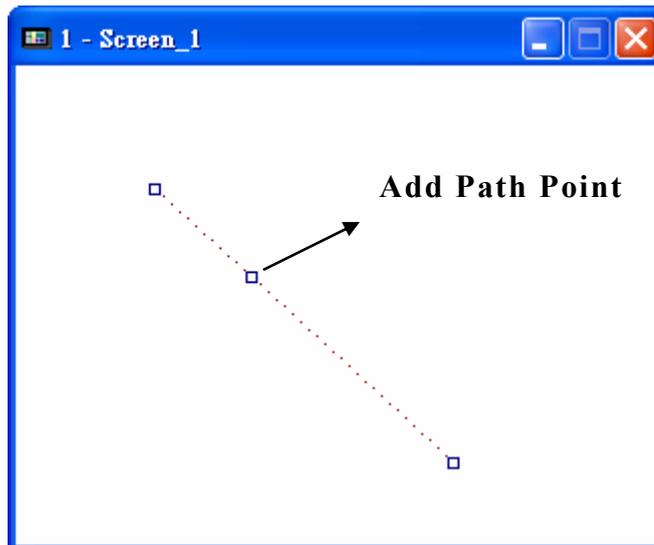
Step 2 : Press left-key on the point of connected lines (icon is '□') to draw the movement path. The revised path should be marked with red line. See below.

2. Instructions

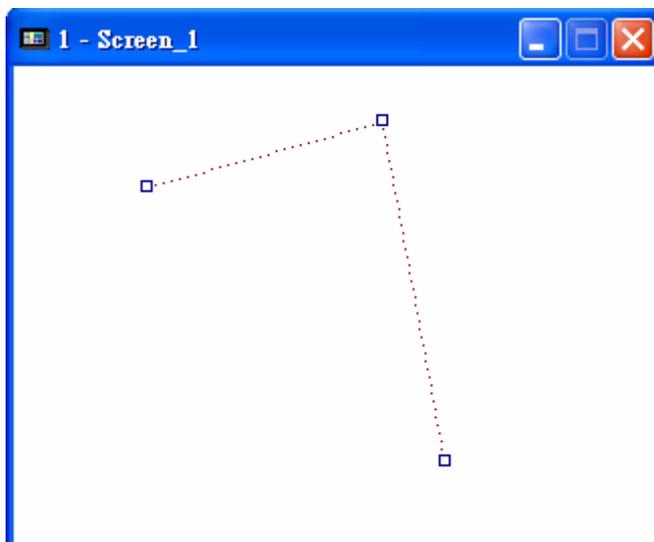
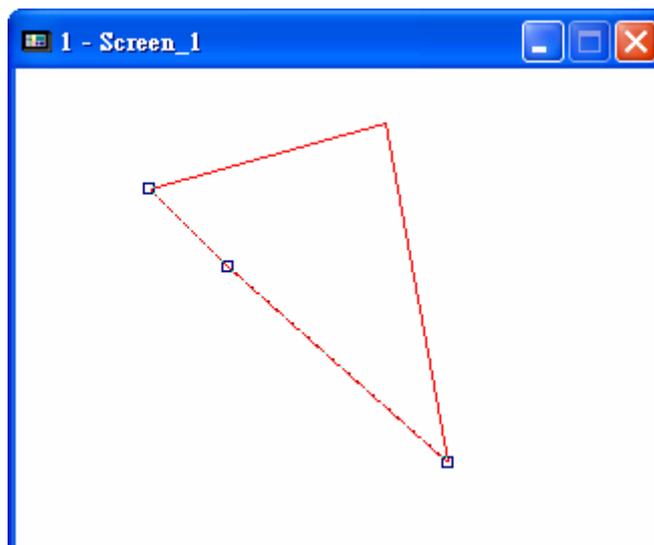


Step 3 : Move the cursor to any one of points and press right key to select [Add Path Point] or [Delete Path Point] from the drop-down list. See below.





Step 4 : Simultaneously, the way to edit a new path is to press left key on the added path point to drag movement path which is marked with red lines. See below.



2. Instructions

Figure 134 is to display the [Animated Graphic] object which is moving along the specified [Connected Lines] path.

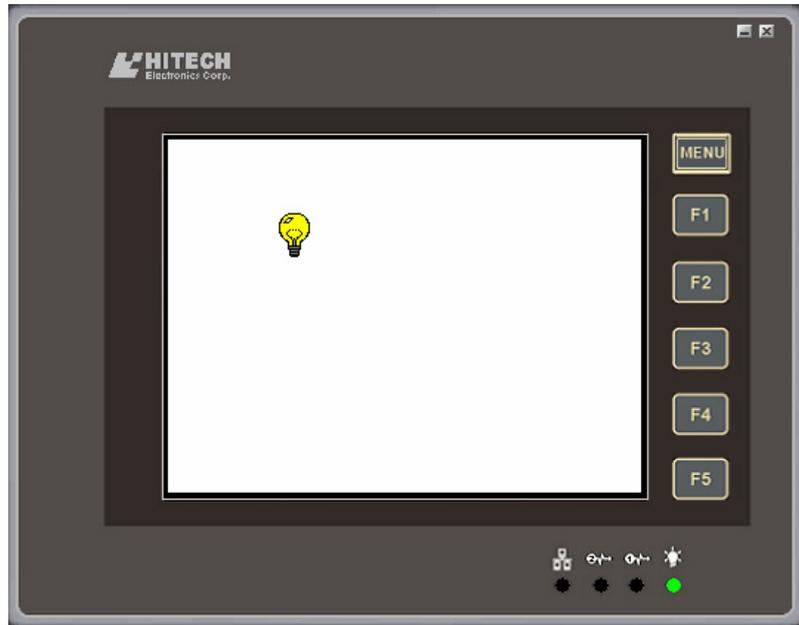
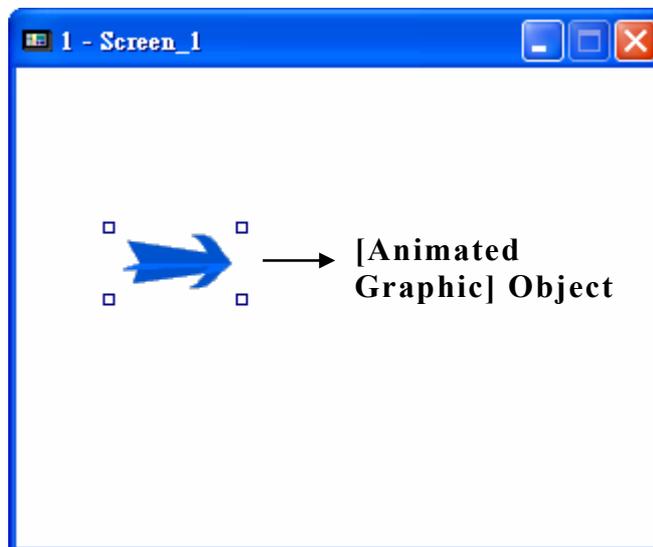


Figure 134. Moving along the [Connected Lines] path

IV. Example

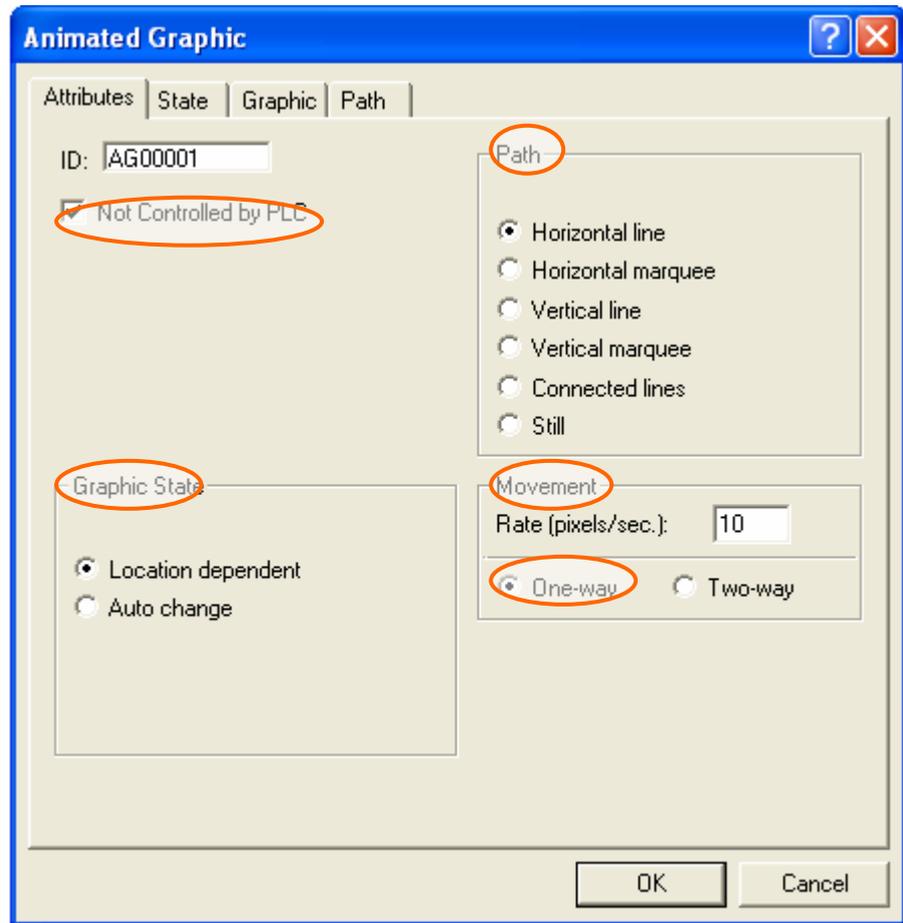
—. Not Controlled by PLC, One-way, Horizontal Line



1. Check the option [Not Controlled by PLC].
2. The graphic state is [Location dependent].
3. The path is [Horizontal line].

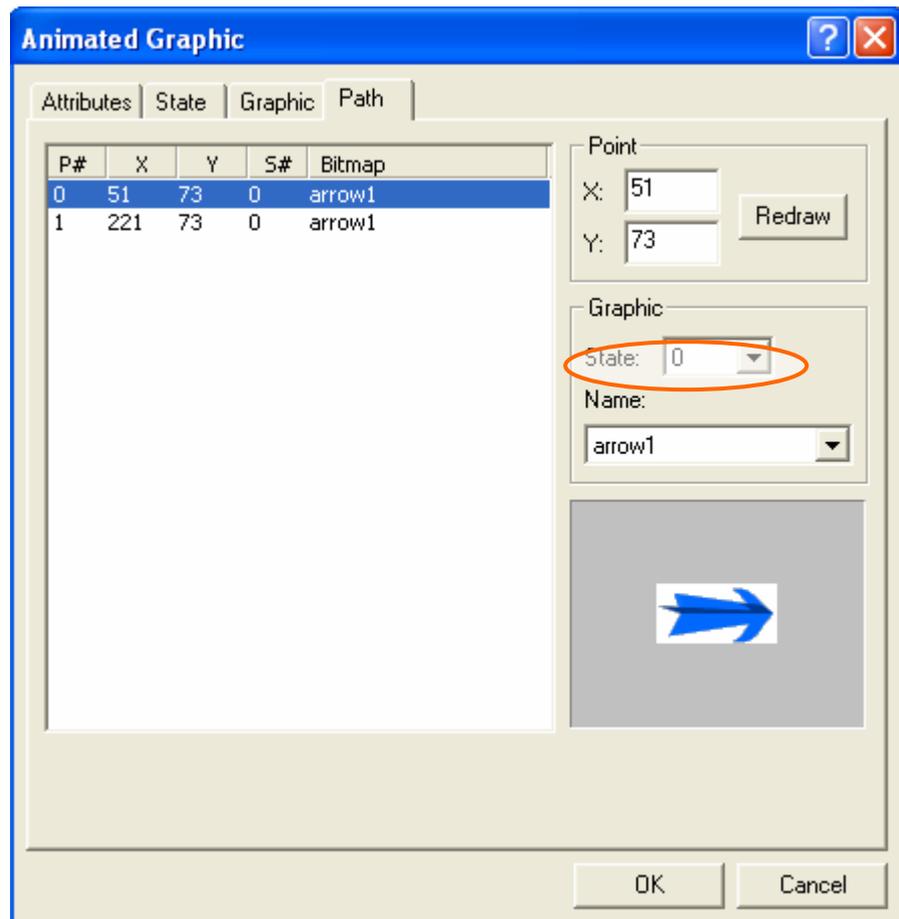
2. Instructions

- The movement rate is '10' pixels/sec. and the direction is [One-way].



- This object is one state; and the graphic is "arrow 1".

2. Instructions



Therefore, this animated graphic is not controlled by PLC and moving along horizontal line at 10 pixels/sec. in one-way; the graphics both are “arrow 1”. See Figure 135.

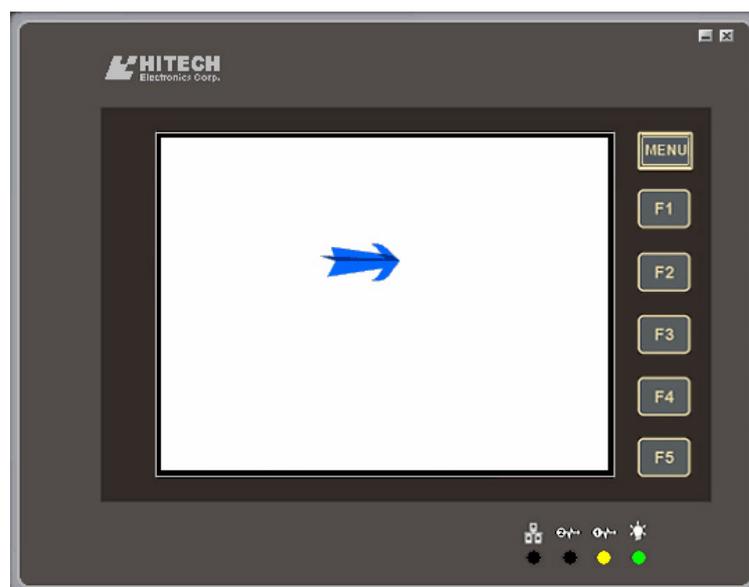
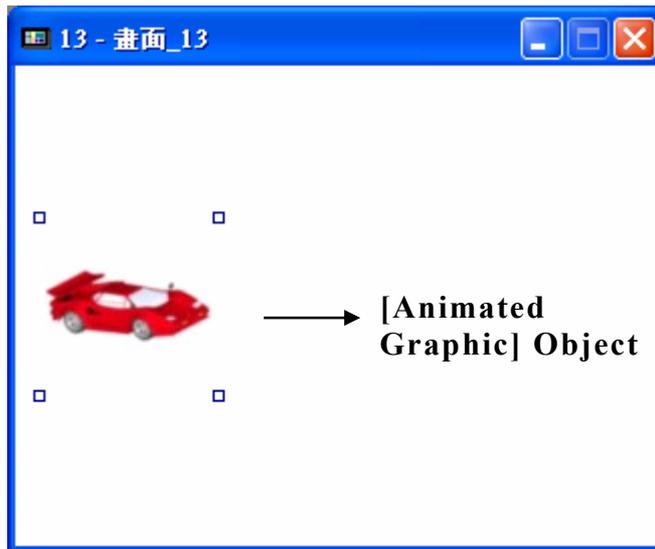


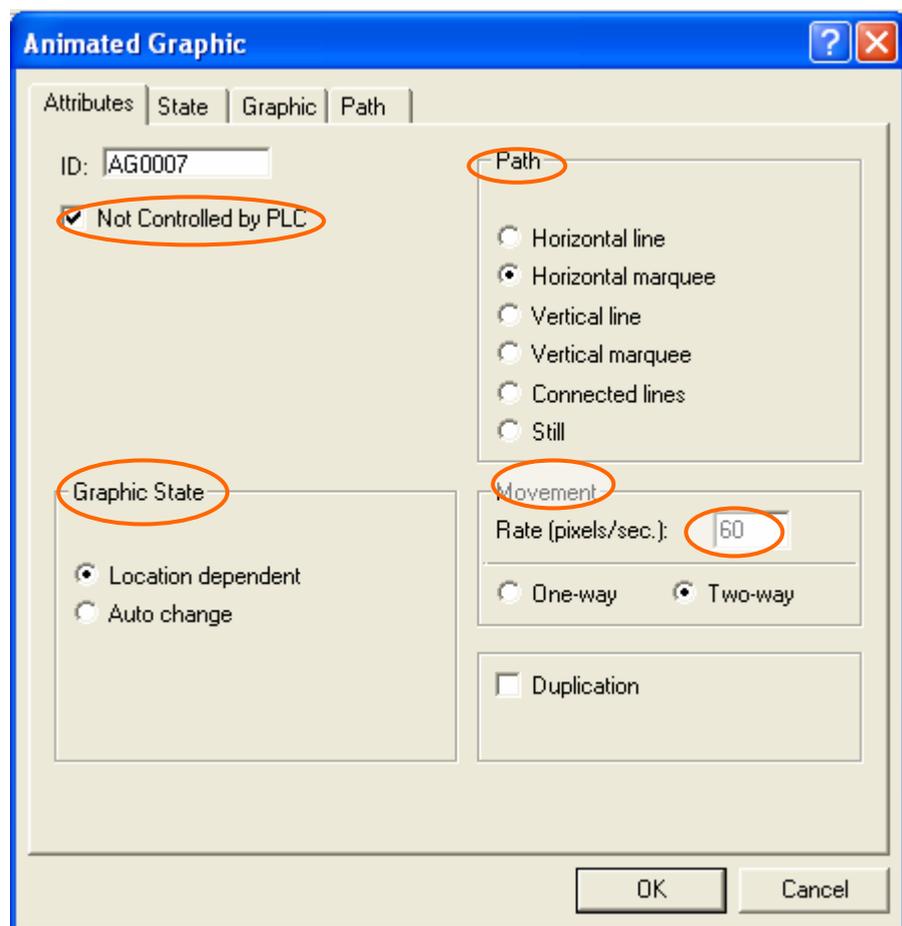
Figure 135. Moving along [Horizontal line]

二. Not Controlled by PLC, Two-way, Horizontal Marquee

2. Instructions

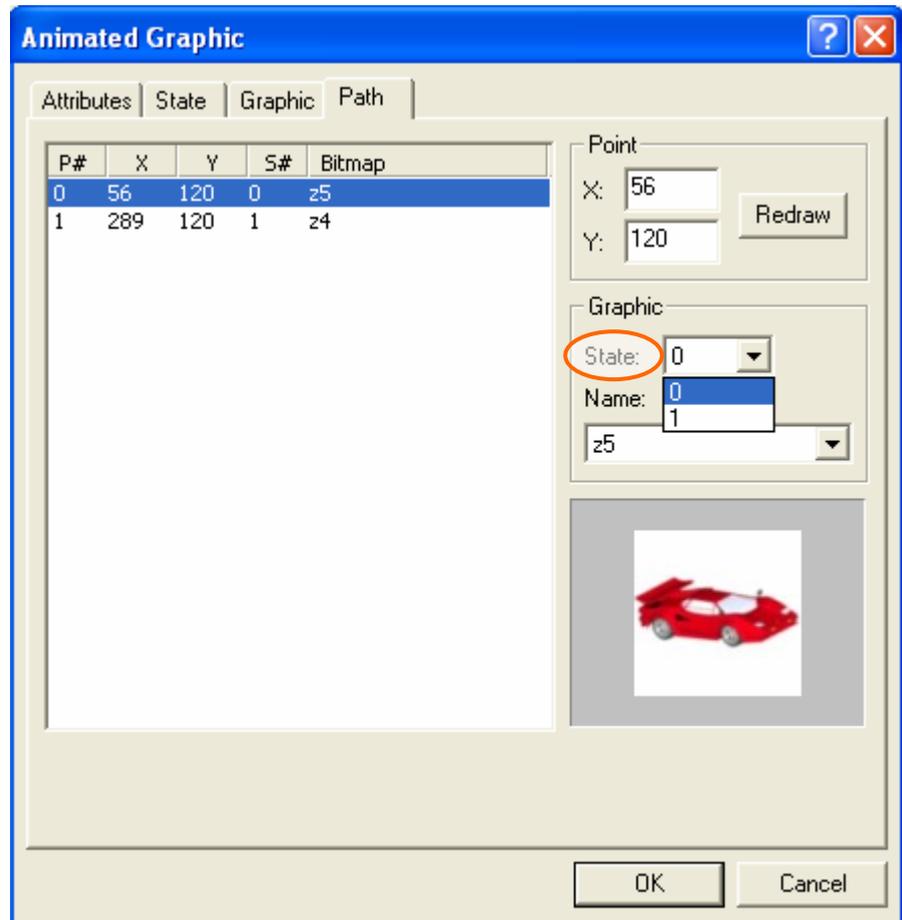


1. Check the option [Not Controlled by PLC].
2. The graphic state is [Location dependent].
3. The path is [Horizontal marquee].
4. The movement rate is 60 pixels/sec. and the direction is [Two-way].



2. Instructions

- The graphic state is location dependent, so it should setup two states.



Therefore, this object is not controlled by PLC and moving along horizontal marquee at 60 pixels/sec. This object will move to and fro when it comes to the ending point. See Figure 136 and Figure 137.

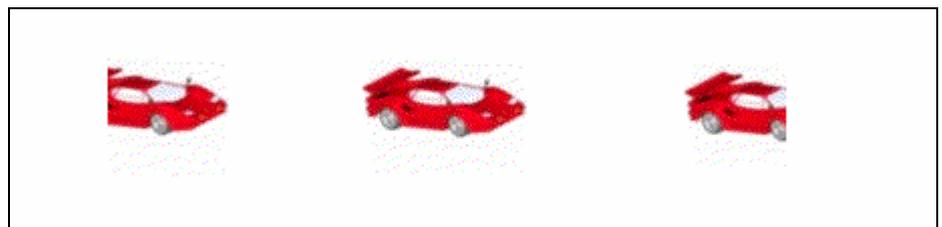


Figure 136. Moving to the right side along horizontal marquee

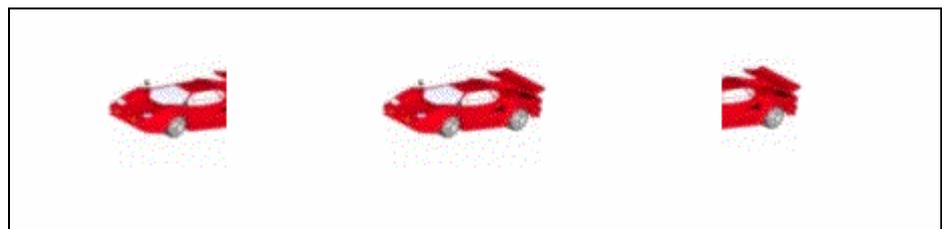
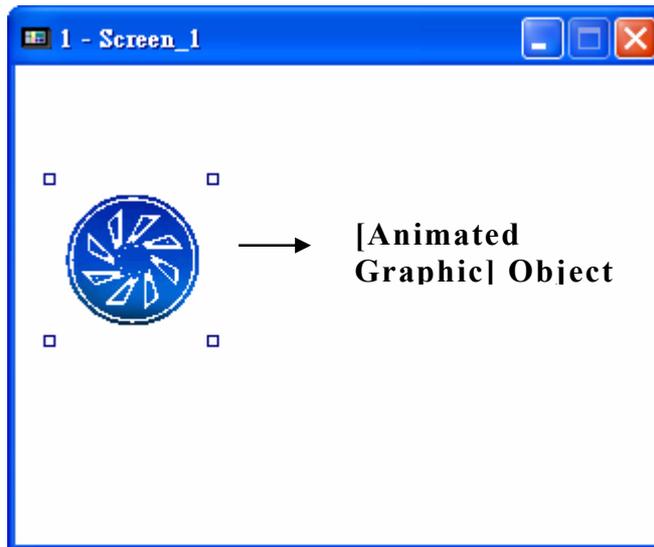


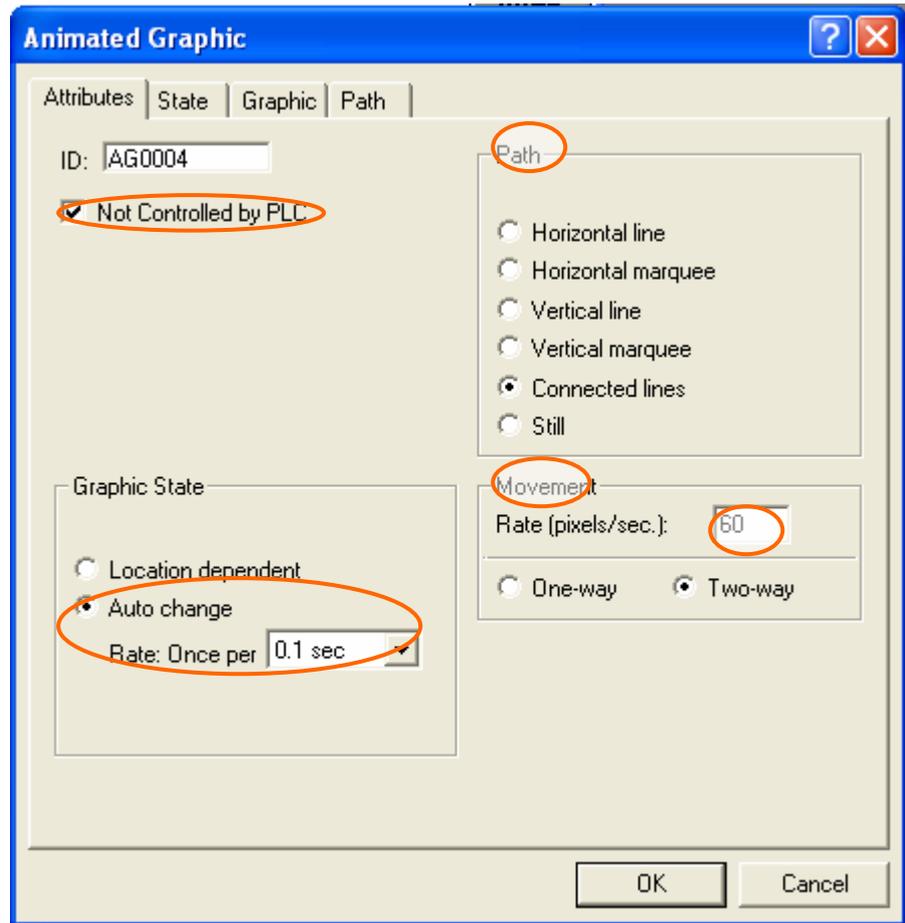
Figure 137. Moving to the left side along horizontal marquee

≡. Not Controlled by PLC, Auto Change, Connected Line

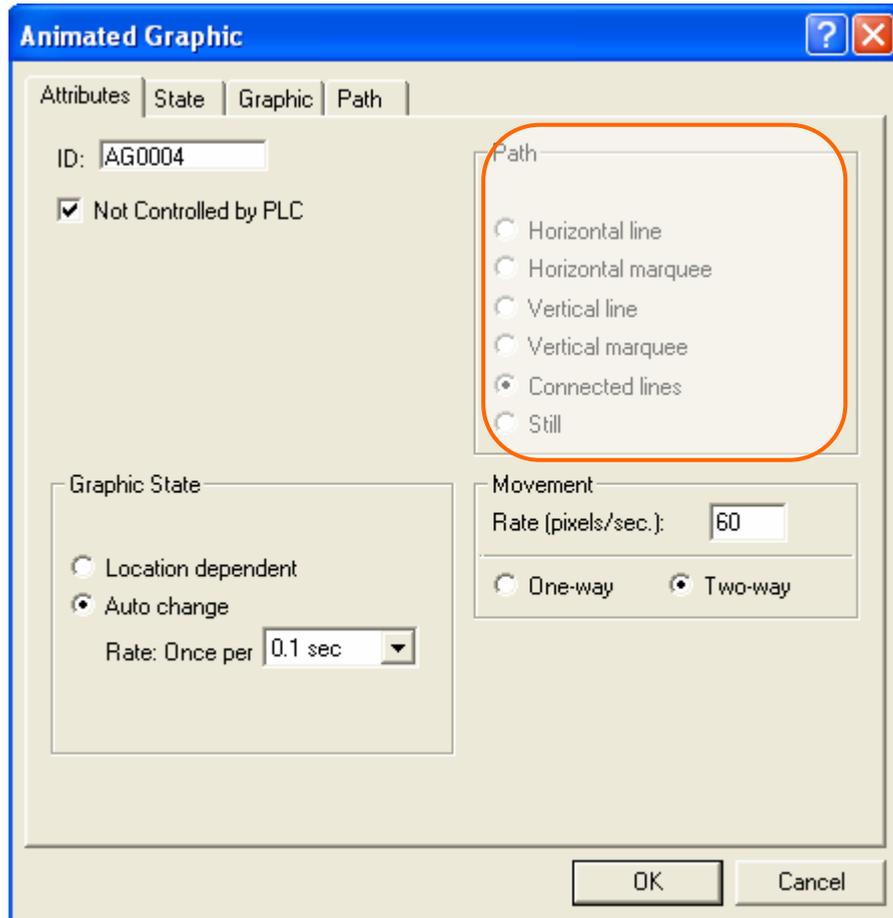


1. Check the option [Not Controlled by PLC].
2. The graphic state is [Auto change] and the [Rate] is "0.1 sec".
3. The path is [Connected line].
4. The movement rate is 60 pixels/sec.; the direction is [Two-way].

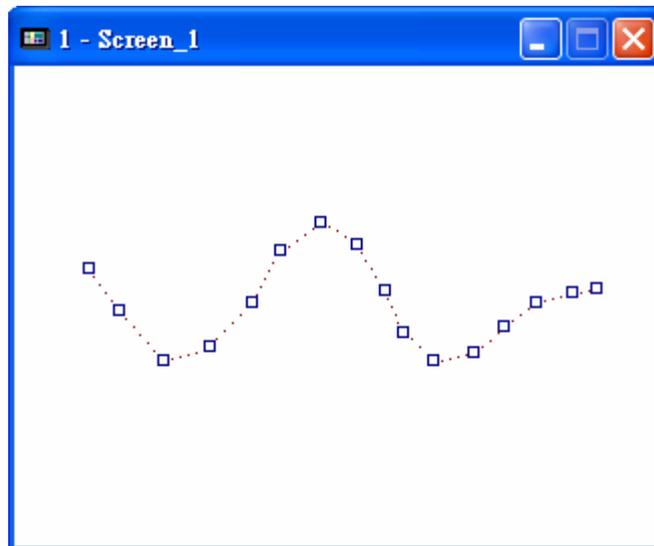
2. Instructions



5. Setup 8 graphic for auto change. The example takes 8 wheels with different angle to cause rolling image when the graphic state is changed automatically.



6. Add more points to make the movement path look smoother.



Therefore, this animated graphic object is not controlled by PLC and moving at 60 pixels/sec. along the curve to and fro. The graphic state is auto change to display rolling effect. See Figure 138.

2. Instructions

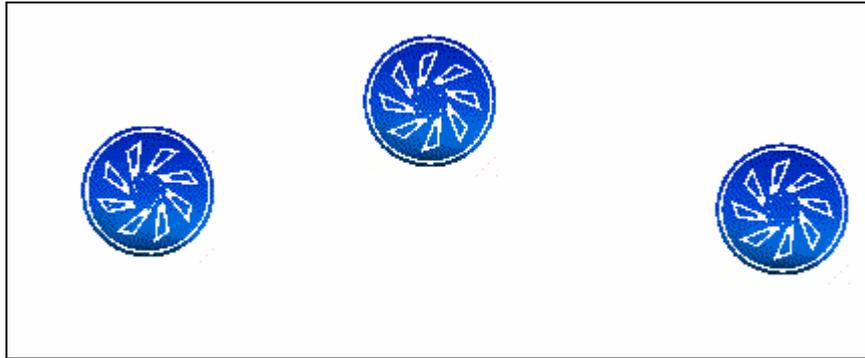


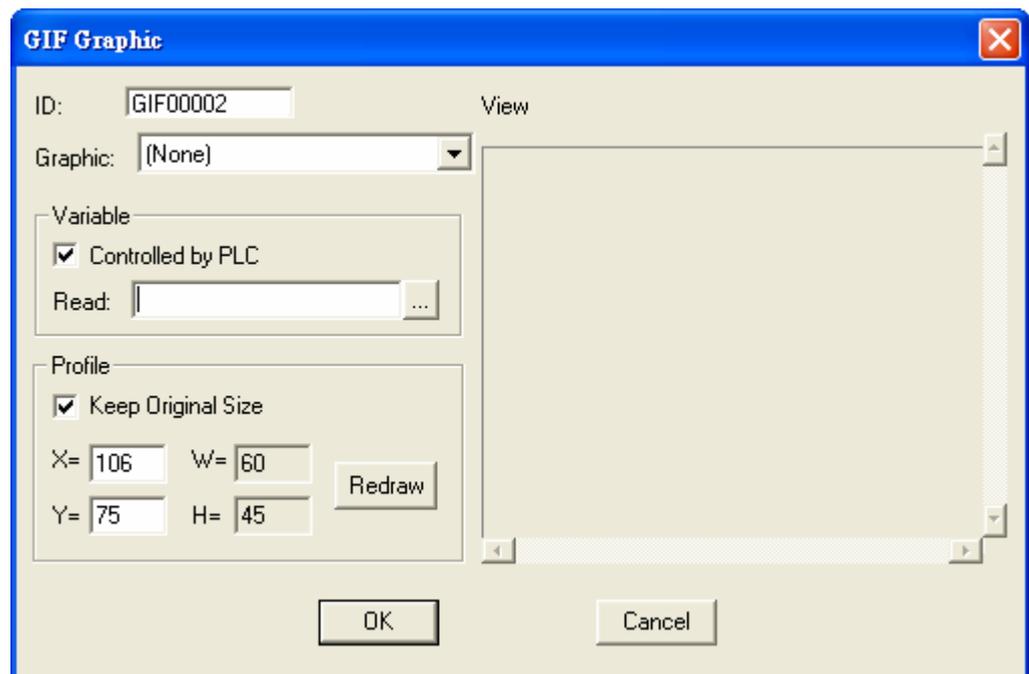
Figure 138. Moving along the curve with auto change in two-way

2.7.15.2. [GIF Graphic]

I. Function

This feature is to display the GIF graphic controlled by PLC or not.

II. Properties

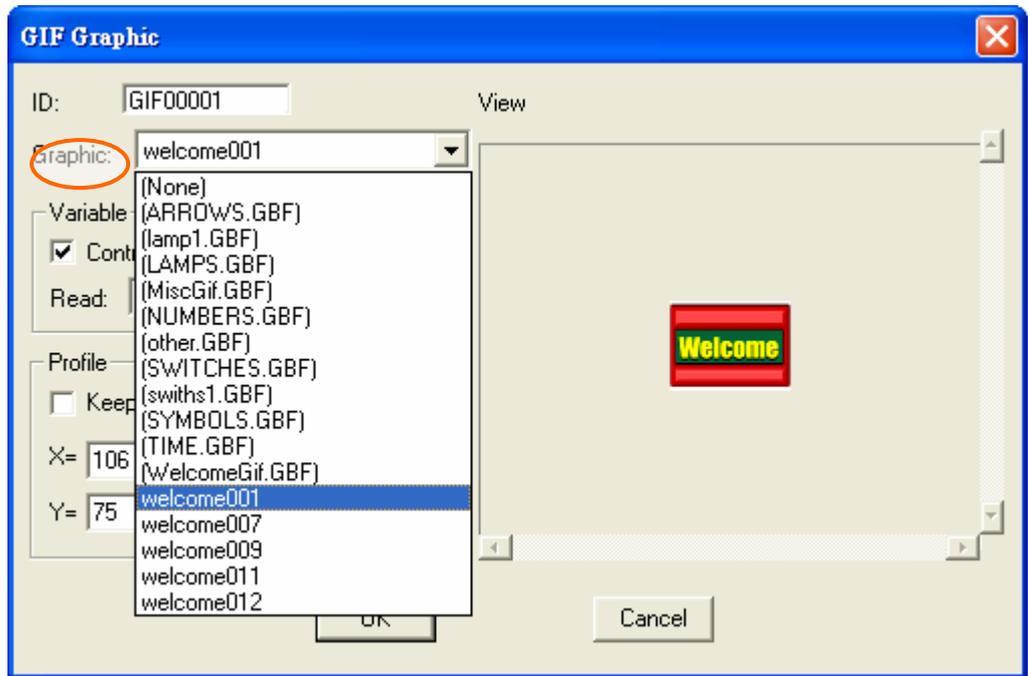


- [Graphic] : Select the graphic to display from the drop-down list, the graphic will appear on the [View] block.
- [Profile] Block : Modify the location and size of objects.

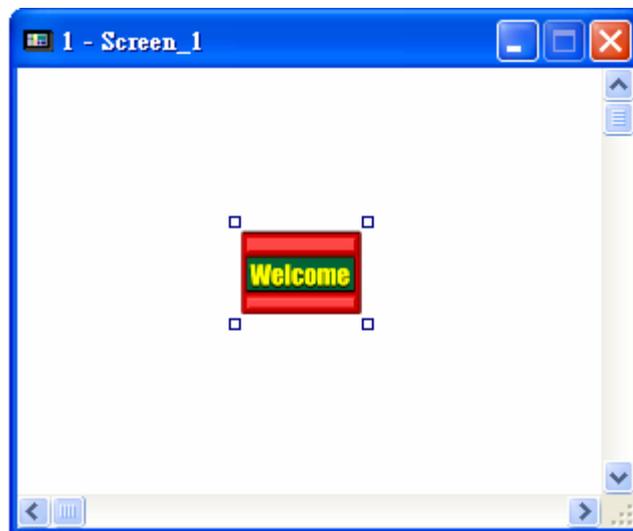
For the properties which are not explained in this Section, please refer to the Section [2.7. Object III Specify Object Properties](#).

III. Example

To design a [GIF Graphic] object as the following:



Select a GIF graphic from the [Graphic] drop-down list; specify the PLC register to read from (if check the option [Controlled by PLC]) and modify its profile. The specified GIF graphic will appear on the object as below.



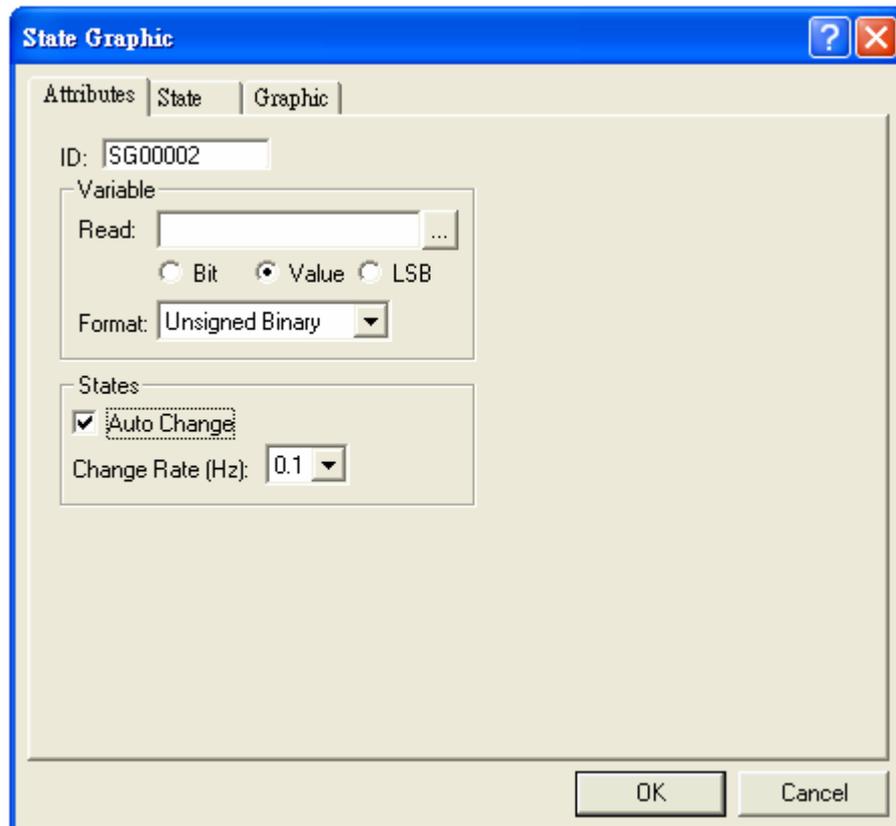
2.7.15.3. [State Graphic]

I. Function

This object is to display one of several bitmaps depending on the state of PLC register constantly.

2. Instructions

II. Properties

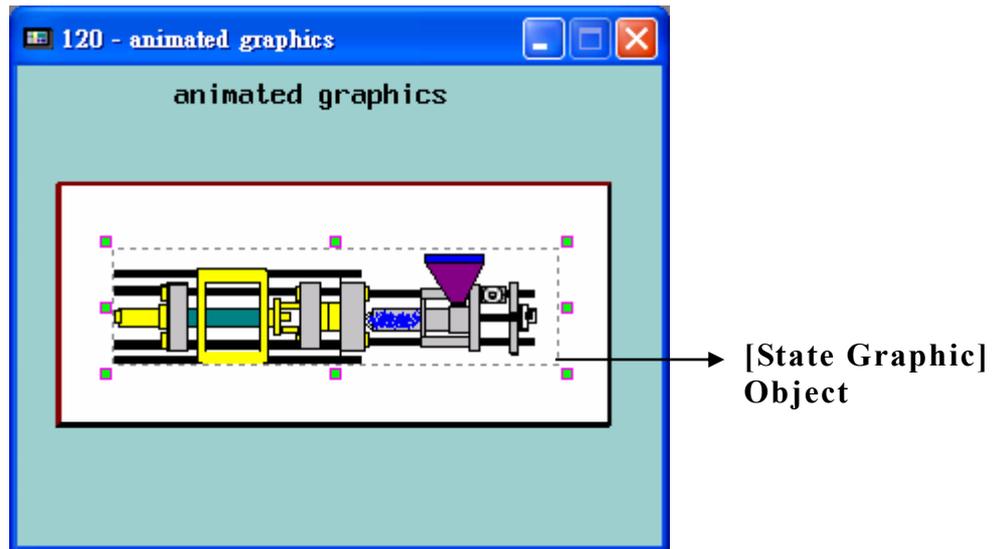


- [States] Block :
 - ◆ [Auto Change] : Check this option to change the graphic automatically.
 - [Change Rate (Hz)] : Specify the rate to change.

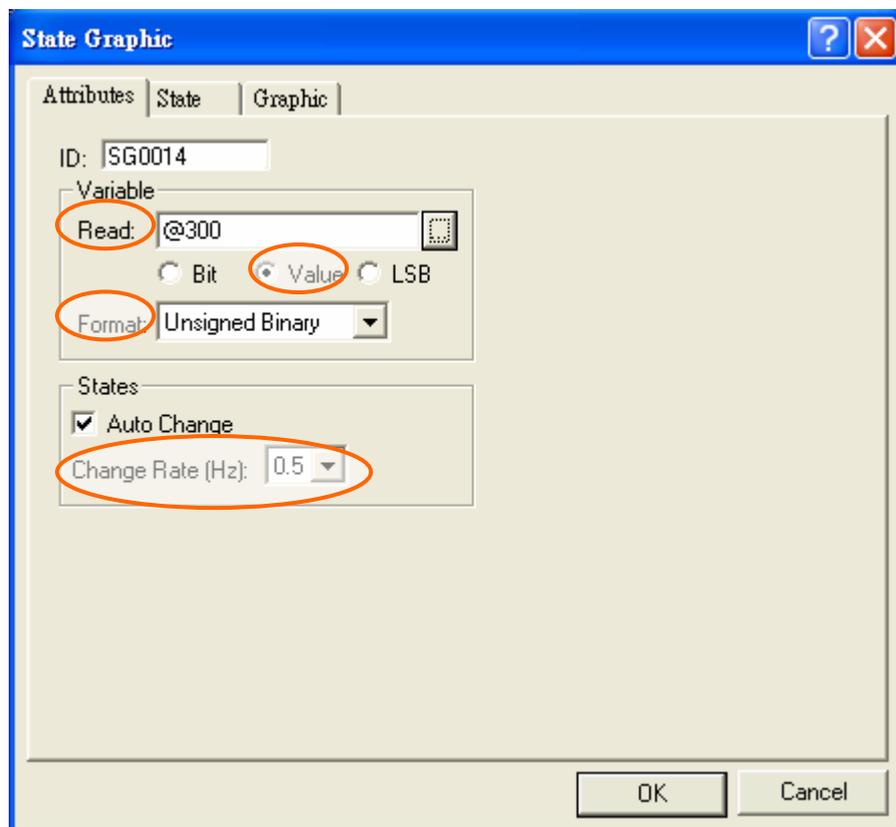
For the properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

2. Instructions

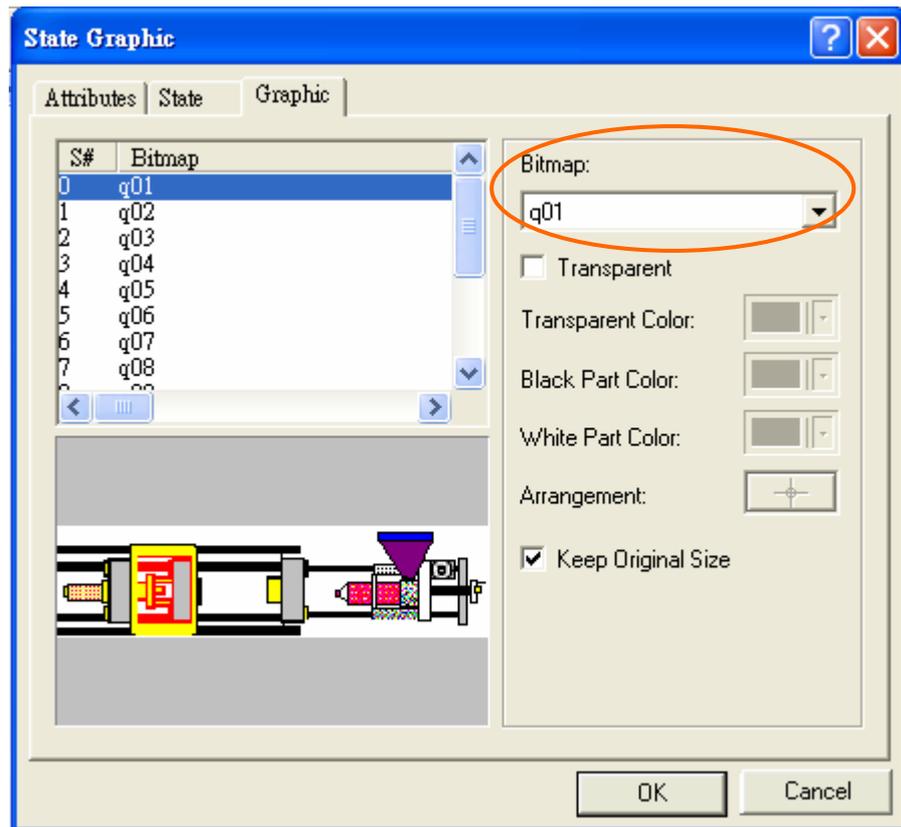


1. [Read] : Specify “@300”. (Local Internal Memory)
2. Select [Value] to display.
3. [Format] is “Unsigned Binary”.
4. Check the option [Auto Change]; [Change Rate (Hz)] is “0.5 sec”.



5. 14 states in all. Add states on the [State] tab and select specific graphic to display on the [Graphic] tab.

2. Instructions



Therefore, the object changes its state per 0.5 sec controlled by PLC repeatedly. And a pumping effect will be generated in the HMI screen. Figure 139 displays the graphics corresponding state 0~2.

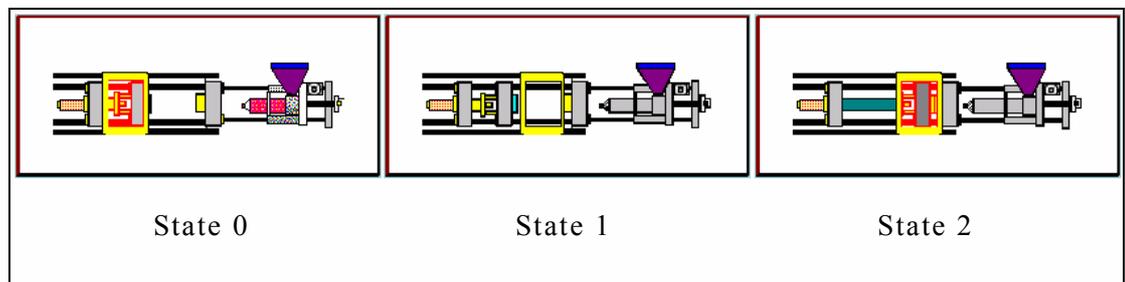


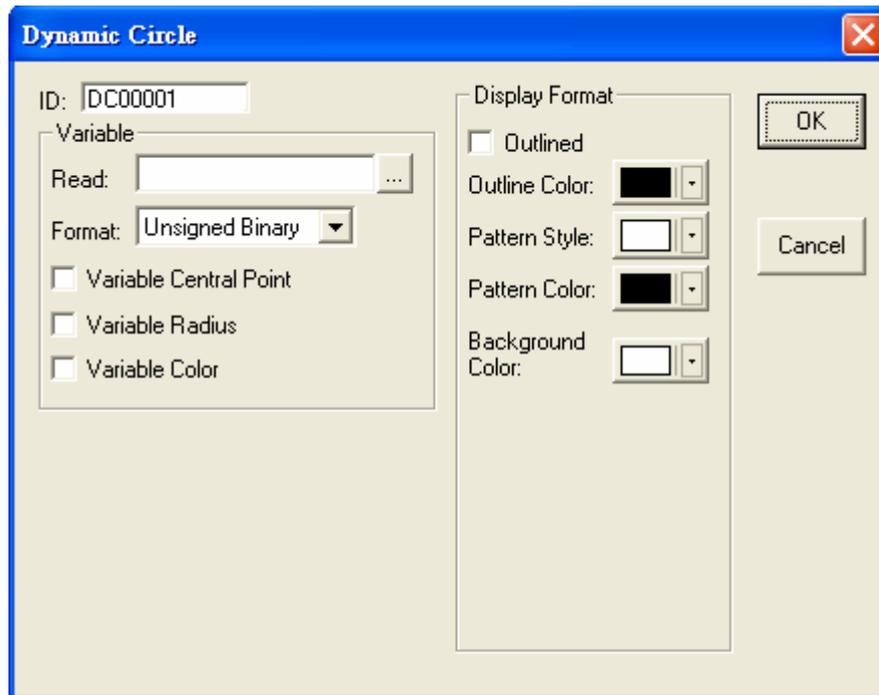
Figure 139. The object displays auto change (ex. state 0~2)

2.7.15.4. [Dynamic Circles]

I. Function

A [Dynamic Circles] object is to change its position, radius and color according its controlling registers.

II. Properties



- [Variable] Block:
 - ◆ [Variable Central Point]: The position of central point is controlled by PLC.
 - ◆ [Variable Radius]: The length of radius is controlled by PLC.
 - ◆ [Variable Color]: The color of the object is controlled by PLC.
- [Display Format] Block: Specify the format of the object to display.

For the properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#) .

III. Example

Suppose that dynamic circle's central point, radius and color are controlled by PLC. The [Read] address is "D430".

The HMI can read four datum once at most, and the [Read] address here are D430, D431, D432 and D433. The following is the table of PLC address and graphic properties.

2. Instructions

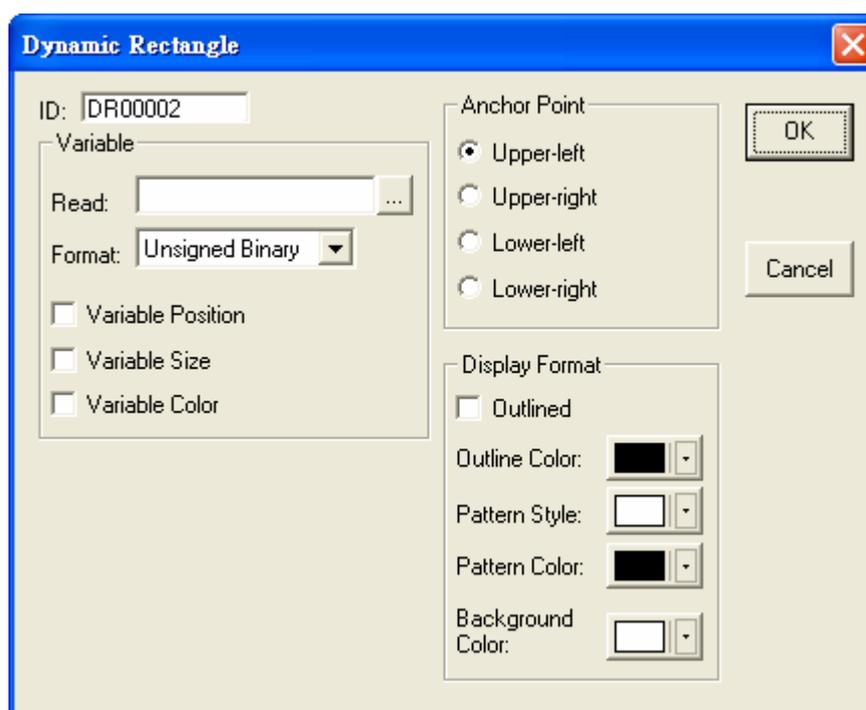
| | | | | | | |
|---|--|--|---|--|---|--|
| Re-central point Re-radius Fix Color | Re-central point Re-radius Fix Color | Re-central point Re-radius Re-coloring | Fix Central Point Re-radius Fix Color | Re-central Point Re-radius Fix Color | Re-central point Fix Radius Fix Color | Fix Central Point Fix Radius Re-coloring |
| Dn= Radius Dn+1= X Dn+2= Y Dn+3= Color | Dn= Radius Dn+1= X Dn+2= Y | Dn= Radius Dn+1= Color | Dn= Radius | Dn= X Dn+1= Y Dn+2= Color | Dn= X Dn+1= Y | Dn= Color |

2.7.15.5. [Dynamic Rectangle]

I. Function

A [Dynamic Rectangle] object is to change its position, radius and color according its controlling registers.

II. Properties



- [Variable] Block:
 - ◆ [Variable Position]: The position of the object is controlled by PLC.
 - ◆ [Variable Size]: The length of the object is controlled by PLC.
 - ◆ [Variable Color]: The color of the object is controlled by PLC.
- [Anchor Point]: Specify the anchor point for the dynamic rectangle whose position is variable and size is fixed.

2. Instructions

- [Display Format] Block: Specify the format of the dynamic rectangle to display.

For the properties which are not explained in this Section, please refer to the [Section 2.7. Object III Specify Object Properties](#).

III. Example

Suppose that the position, size and color are variable which is controlled by PLC. The [Read] address is “D420”.

The HMI reads five data from PLC once at most. The [Read] addresses here are D420, D421, D422, D423 and D424. The following is the table of PLC address and graphic properties.

| | | | | | | |
|--------------|--------------|--------------|--------------|-------------|-------------|--------------|
| Re-positione | Re-position | Fix Position | Fix Color | Re-position | Re-position | Fix Position |
| Re-size | Re-size | Re-size | Re-size | Fix Size | Fix Size | Fix Size |
| Re-coloring | Fix Color | Re-coloring | Re-coloring | Re-coloring | Fix Color | Fix Color |
| D420= Width | D420= Width | D420= Width | D420= Width | D420= X | D420=X | D420= Color |
| D421= Height | D421= Height | D421= Height | D421= Height | D421= Y | D421=Y | |
| D422= X | D422= X | D422= Color | | D422= Color | | |
| D423= Y | D423= Y | | | | | |
| D424= Color | | | | | | |

2.7.16. [Historical Display]

The [Historical Display] drop-down list includes the followings : [History Trend Graph], [Historical Data Table] and [Historical Event Table].

The [Historical Display] datum are stored in **logging buffers**, a user should assign its area and size first. Logging buffer is to store the sampling datum in HMI battery backup RAM.

Note that this feature is not applicable on all HMI models; please refer to [Appendix A.- Table of the ADP 6.0 Features and HMI Models](#).

2. Instructions

Logging Buffer:

Select the [Logging Buffers] tab from [Application]/ [Workstation Setup]. Its dialog box will appear as the following.

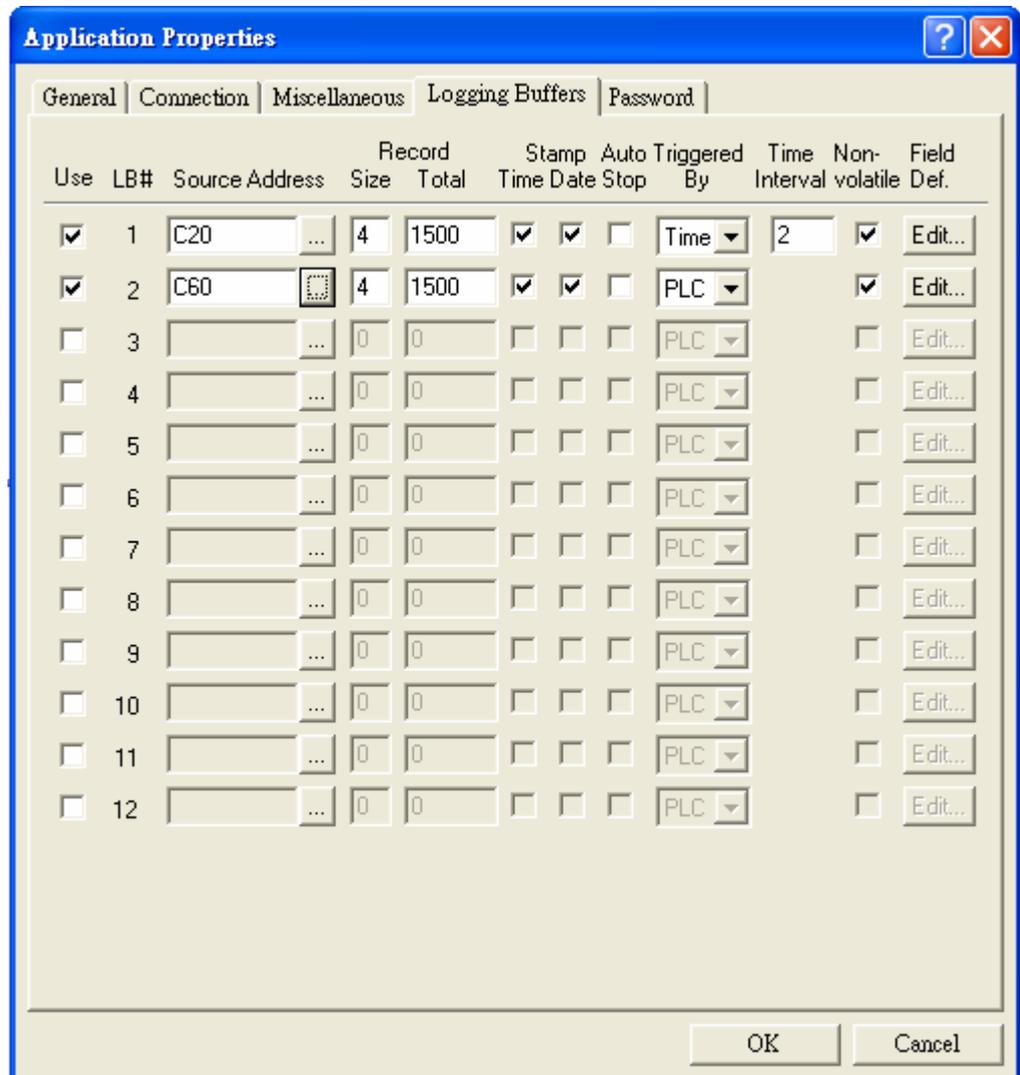


Figure 140. The [Logging Buffers] Tab

1. [Source Address] : Specify the starting address to read from, e.g. “C20” is starting address of a block of PLC registers from which the logging buffer reads from. See Figure 140.
2. [Size] : Specify the size of a record to read form at a time, e.g. [Size] = “4” represents 4 Words = C20 , C21 , C22 , C23.
3. [Total] : Specify the total to store in, e.g. “1500” represents that the HMI reads 4 Words each time sampling 1500 times in total.

2. Instructions

4. [Time]/[Date] : Check this box to record the [Time]/[Data] while sampling.
5. [Auto Stop] : Check this box to stop sampling when it reaches the specified total = 1,500. If the option is not selected, the 1st data will be overwritten when the 1501st data records is readed.
6. [Triggered By] : Select “Timer” to trigger period on fixed time or select PLC to be triggered by PLC. If select PLC for triggered by, it's triggered by the specified corresponding bit-locations Dn+2, Dn+3 and Dn+4.
7. [Time Interval] : Specify how often the logging buffer gets one record of data from Timer. (Unit: sec.)

After completing the setup on [Logging Buffers] tab , a user can create three types of [Historical Display] objects :

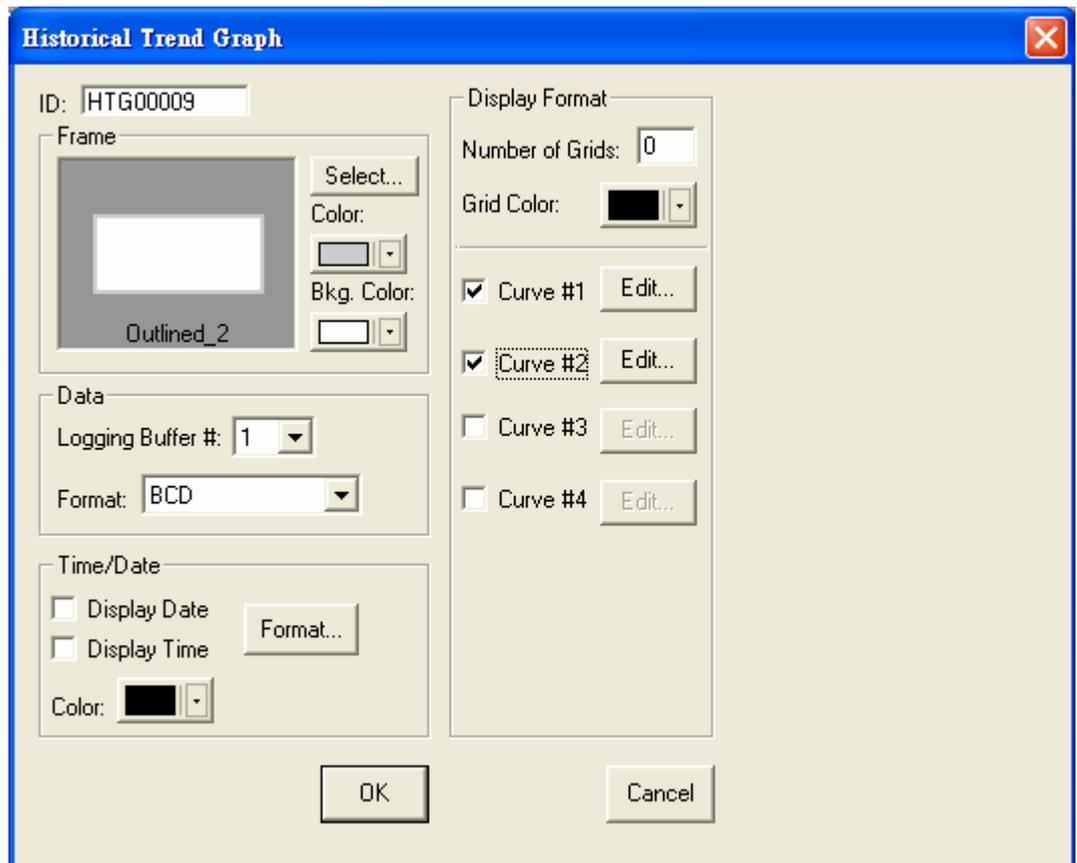
2.7.16.1. [Historical Trend Graph]

I. Function

The HMI may have a fixed sampling period or the PLC may as well initiate a data read from the specified registers and then store the data in the logging buffers in the HMI memory. After a period of sampling, the data then is converted to continuous curve(s) and displayed on HMI.

II. Properties

2. Instructions



- [Data] Block :
 - ◆ [Logging Buffer #] : Specify the number of the logging buffer where the historical data is stored, numbered 1 to 12.
 - ◆ [Format] : “BCD”, “Signed Binary” and “Unsigned Binary”.
- [Time/Date] Block :
 - ◆ [Display Date] and [Display Time] : Check this box (es) to display date and time; click [Format] button to setup. (This feature is inapplicable on PWS700)
 - ◆ [Color] : Specify the color of characters to be displayed.
- [Display Format] Block :
 - ◆ [Number of Grids] : Specify how many evenly spaced horizontal lines shall be displayed.
 - ◆ [Grid Color] : Specify the color of the horizontal grids.
 - ◆ [Curve #1-#4] : There are four curves to be selected. If click [Edit] button, its dialog box will appear as the following.

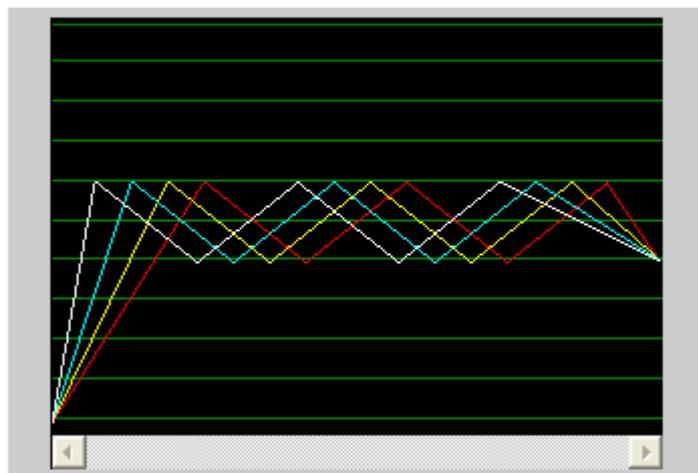
2. Instructions



- [Word No] : Specify the number of the words to display on the historic trending curve.
- [Minimum] and [Maximum] : Specify the value corresponding to the lowest and highest point on the historical trending curve.
- [Pen Color] : Specify the color to draw the trending curve.
- [Line Style] : Specify the line style of the trending curve.

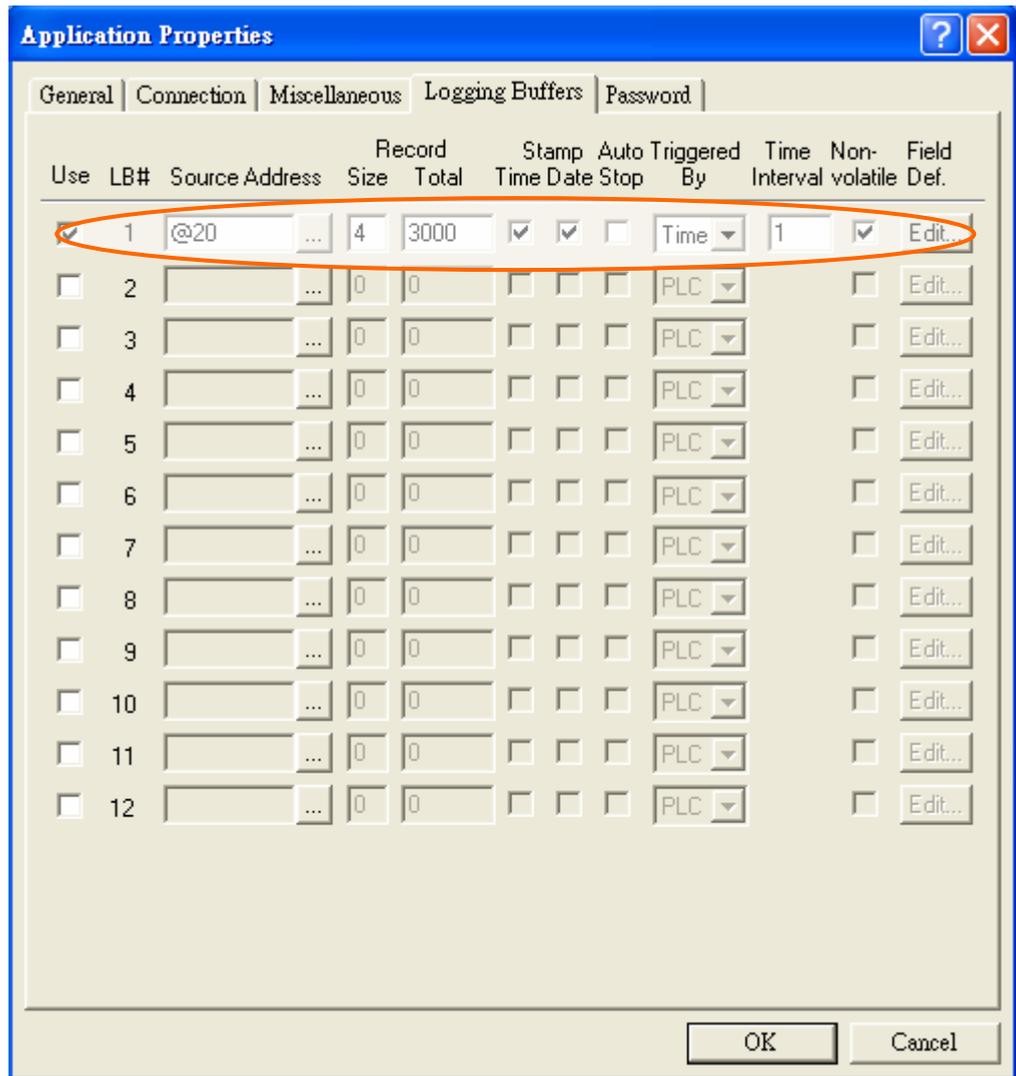
III. Example

To design a [Historical Trending Graph] as the following :



To use [Historical Trend Graph]; first assign its corresponding logging buffers size and area. A user must setup the properties e.g. source address, size, total on the [Logging Buffers] tab in [Application]/[Workstation Setup]. After setup, the [Historical Trending Buffer] object can read the data stored in the memory.

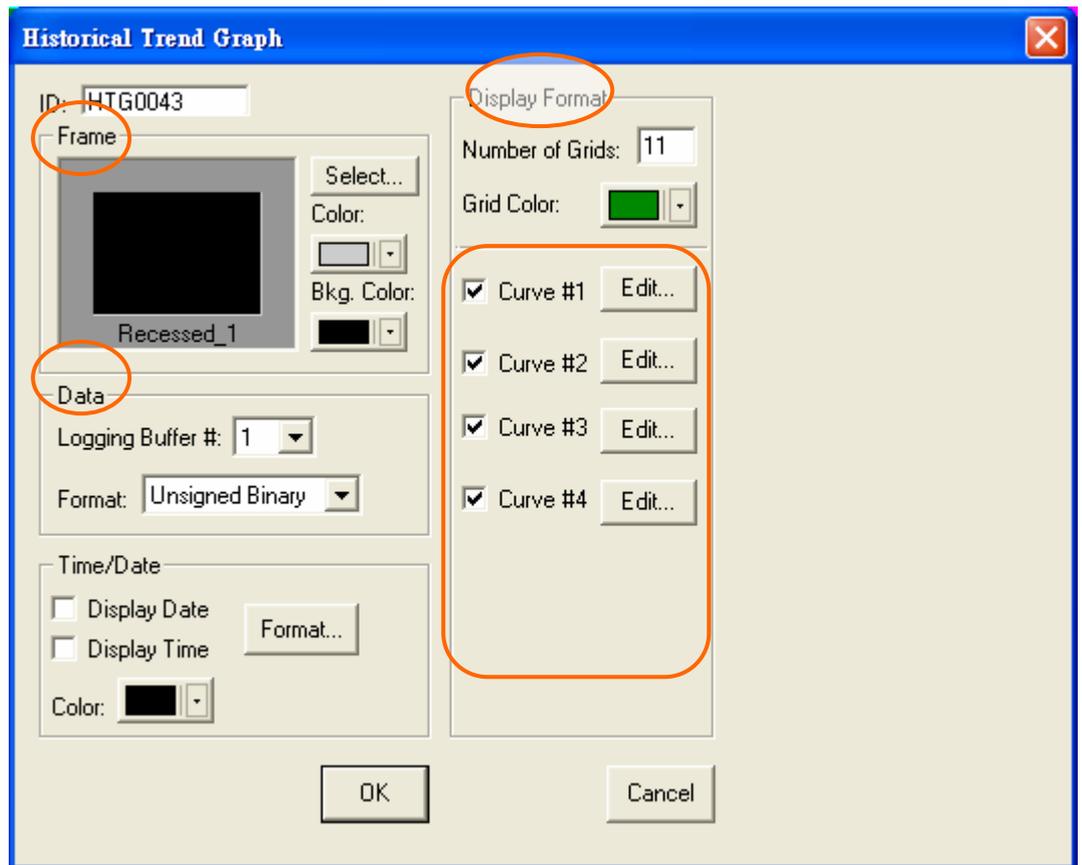
2. Instructions



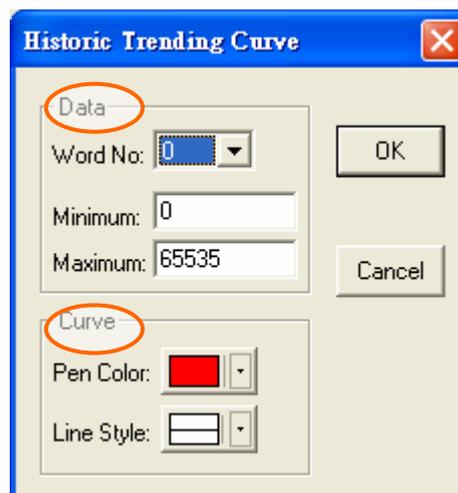
Steps to create a [Historical Trending Graph] object as the following :

1. Frame : Select "Recessed_1" ; Bkg. color : Black.
2. Read the data form the logging buffer #1.
3. [Format] is "Unsigned Binary".
4. The number of grids is '11' and the grid color is "Green".

2. Instructions



5. Check four curves to display; curve #1 displays the data record stored in the word "0". Curve #2 displays the data record stored in the word "1"...etc. See below.
6. The minimum value is "0"; the maximum value is "65535"; and specify the different color to each curve.



The steps above will create a [Historical Trending Graph] object. The four curves display the data stored in logging buffer #1 on the object which has 11 grids on it. See Figure 141.

2. Instructions

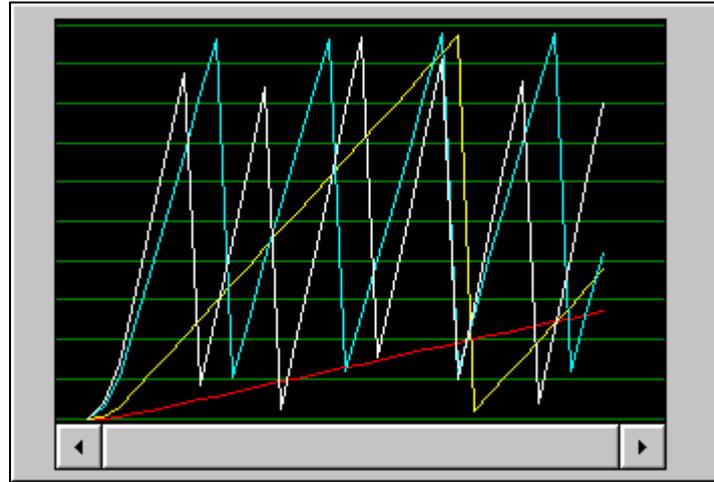


Figure 141. The [Historical Trending Graph] object

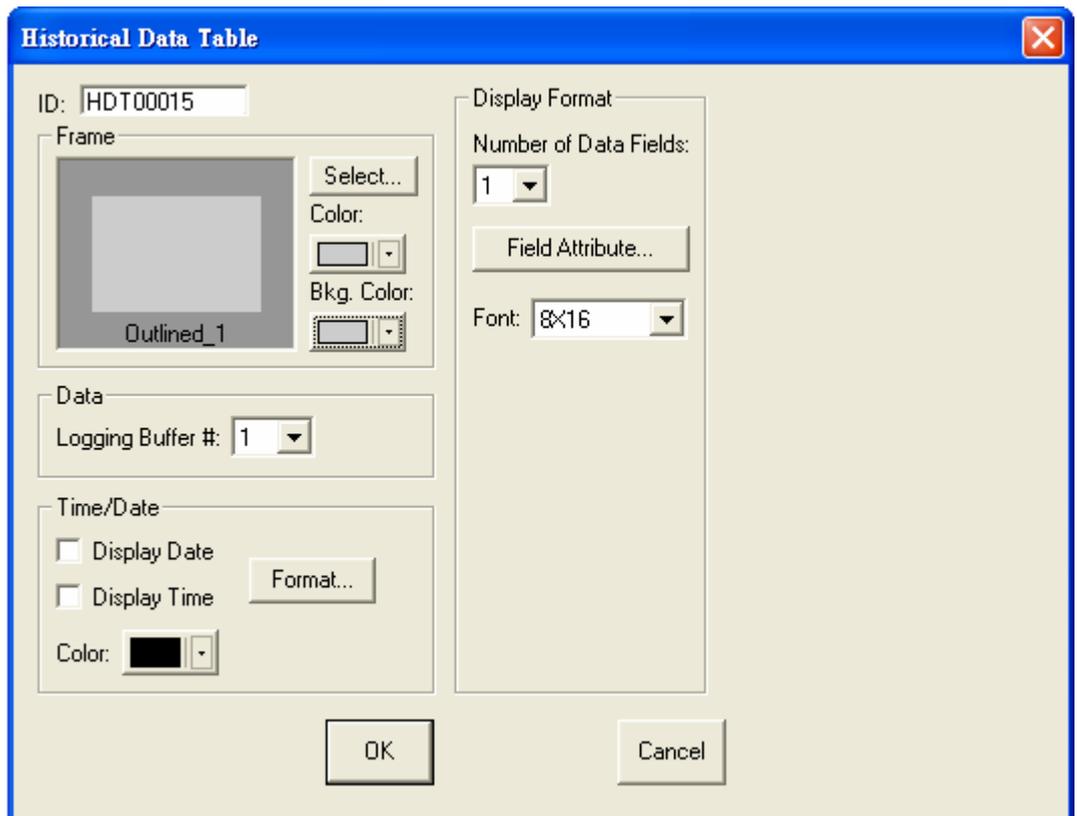
2.7.16.2. [Historical Data Table]

I. Function

The HMI may have a fixed sampling period or the PLC may as well initiate a data read from the specified registers and then store the data in the logging buffers in the HMI memory. After a period of sampling, the data then is converted to numeric data table and displayed on HMI.

II. Properties

2. Instructions



- [Display Format] Block :
 - ◆ [Number of Data Field] : Specify how many data fields to display; it is up to 10 data fields.
 - ◆ [Field Attribute] button , its dialog box will appear as the following :

2. Instructions

| Field No. | Starting Position | Word No. | Data Size | Data Format | Display Color | Leading Zero | Decimal Pt. Position | Int. Digits | Frac. Digits |
|-----------|-------------------|----------|-----------|-------------|---------------|--------------------------|----------------------|-------------|--------------|
| 1 | 0 | 0 | 1 | BCD | Black | <input type="checkbox"/> | 0 | 4 | 0 |
| 2 | | | | | | <input type="checkbox"/> | | | |
| 3 | | | | | | <input type="checkbox"/> | | | |
| 4 | | | | | | <input type="checkbox"/> | | | |
| 5 | | | | | | <input type="checkbox"/> | | | |
| 6 | | | | | | <input type="checkbox"/> | | | |
| 7 | | | | | | <input type="checkbox"/> | | | |
| 8 | | | | | | <input type="checkbox"/> | | | |
| 9 | | | | | | <input type="checkbox"/> | | | |
| 10 | | | | | | <input type="checkbox"/> | | | |

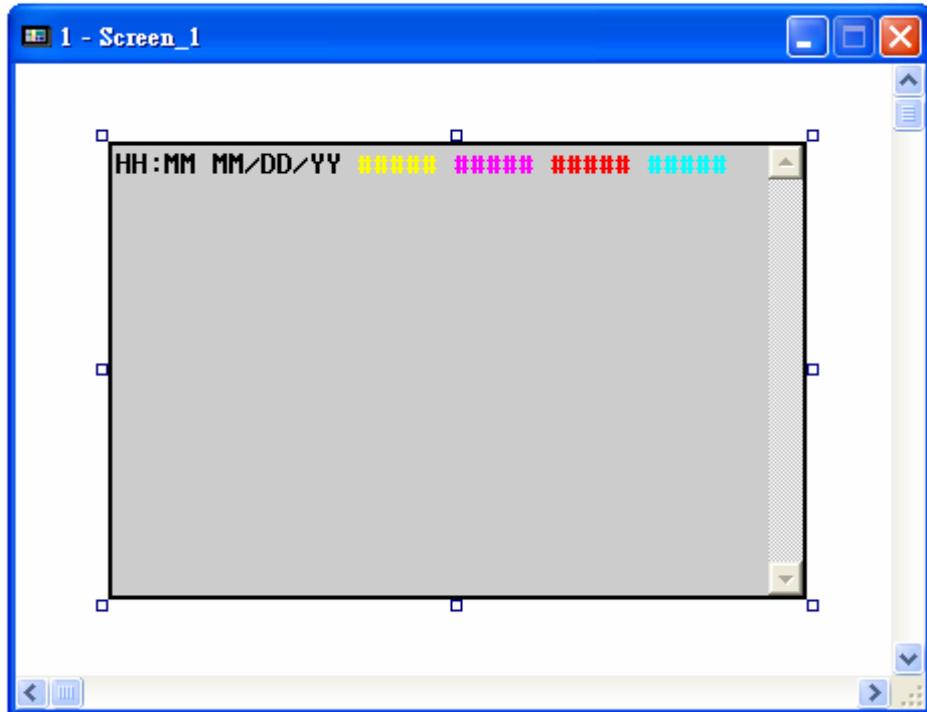
- [Starting Position] : Specify the position of a data field to display. Note that if the starting position is 0 for field No.1; the time will display in field no.1, the date will display in field no.2 and the first data field will display in field no.3. If there is no time/date displayed, the first data field will be displayed in field no.1.
- [Word No.] : There are 0~31 numbers of character can be specified.
- [Data Size] : “1” represents one-word ; “2” represents double-word.
- [Data Format] : There are four options [BCD], [Signed Binary], [Unsigned Binary] and [Hexadecimal].
- [Display Color] : Specify the character color of a data field.
- [Leading Zeros] : Check this box to display leading zeros.
- [Decimal Pt. Position] : Specify how many number of digits following the decimal point.
- [Int. Digits] : Specify how many digits to the left of the decimal point.
- [Frac. Digits] : Specify how many digits to the right of the

decimal point.

For the properties which are not explained in this Section, please refer to the [Section 2.7.16.1 \[Historical Trending Graph\]](#).

III. Example

To design a [Historical Data Table] object as the following :

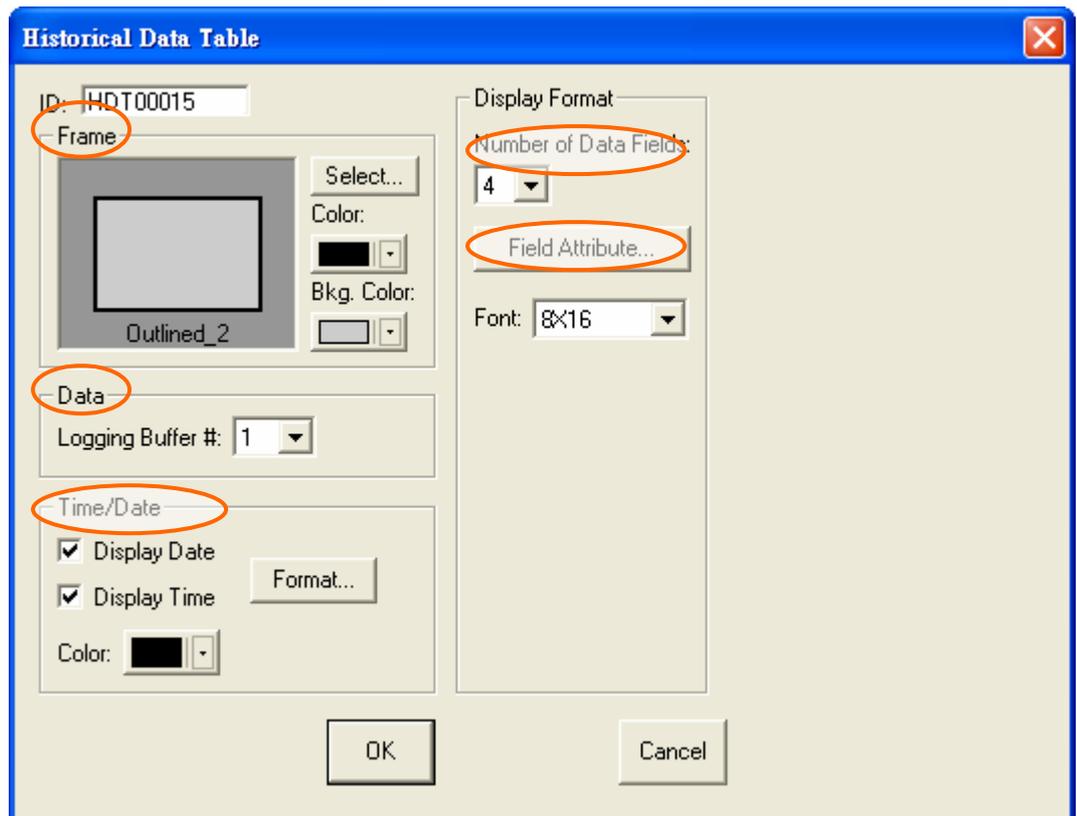


Suppose that there is historical data stored in logging buffer #1.

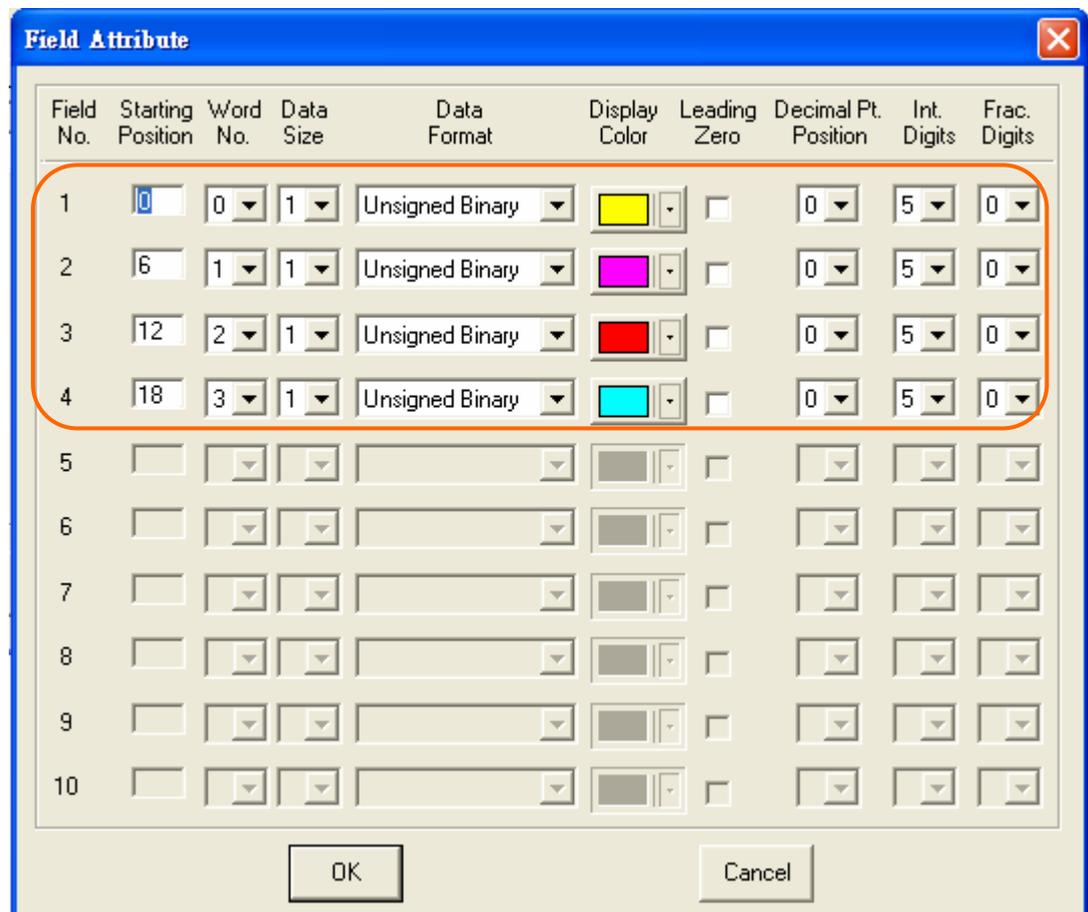
The object's properties as the following :

1. Frame : Select "Outlined_2" ; the color is "Black".
2. Read the historical data from logging buffer #1.
3. Display date and time in data table.
4. The number of data field is "4".

2. Instructions

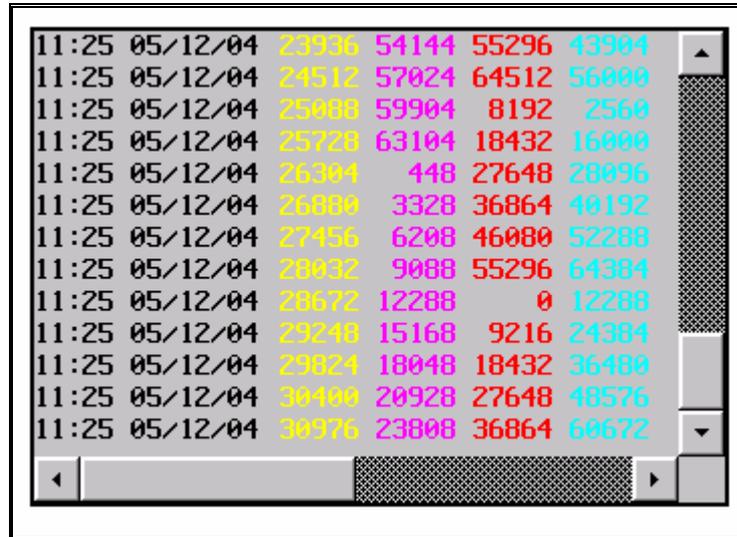


5. The properties in four fields as the following :



2. Instructions

The steps above will create a [Historical Data Table] object. The HMI will read the historical data recorded in logging buffers #1 and display its content on the screen. See Figure 142.



| | | | | | |
|-------|----------|-------|-------|-------|-------|
| 11:25 | 05/12/04 | 23936 | 54144 | 55296 | 43904 |
| 11:25 | 05/12/04 | 24512 | 57024 | 64512 | 56000 |
| 11:25 | 05/12/04 | 25088 | 59904 | 8192 | 2560 |
| 11:25 | 05/12/04 | 25728 | 63104 | 18432 | 16000 |
| 11:25 | 05/12/04 | 26304 | 448 | 27648 | 28096 |
| 11:25 | 05/12/04 | 26880 | 3328 | 36864 | 40192 |
| 11:25 | 05/12/04 | 27456 | 6208 | 46080 | 52288 |
| 11:25 | 05/12/04 | 28032 | 9088 | 55296 | 64384 |
| 11:25 | 05/12/04 | 28672 | 12288 | 0 | 12288 |
| 11:25 | 05/12/04 | 29248 | 15168 | 9216 | 24384 |
| 11:25 | 05/12/04 | 29824 | 18048 | 18432 | 36480 |
| 11:25 | 05/12/04 | 30400 | 20928 | 27648 | 48576 |
| 11:25 | 05/12/04 | 30976 | 23808 | 36864 | 60672 |

Figure 142. The [Historical Data Table] object

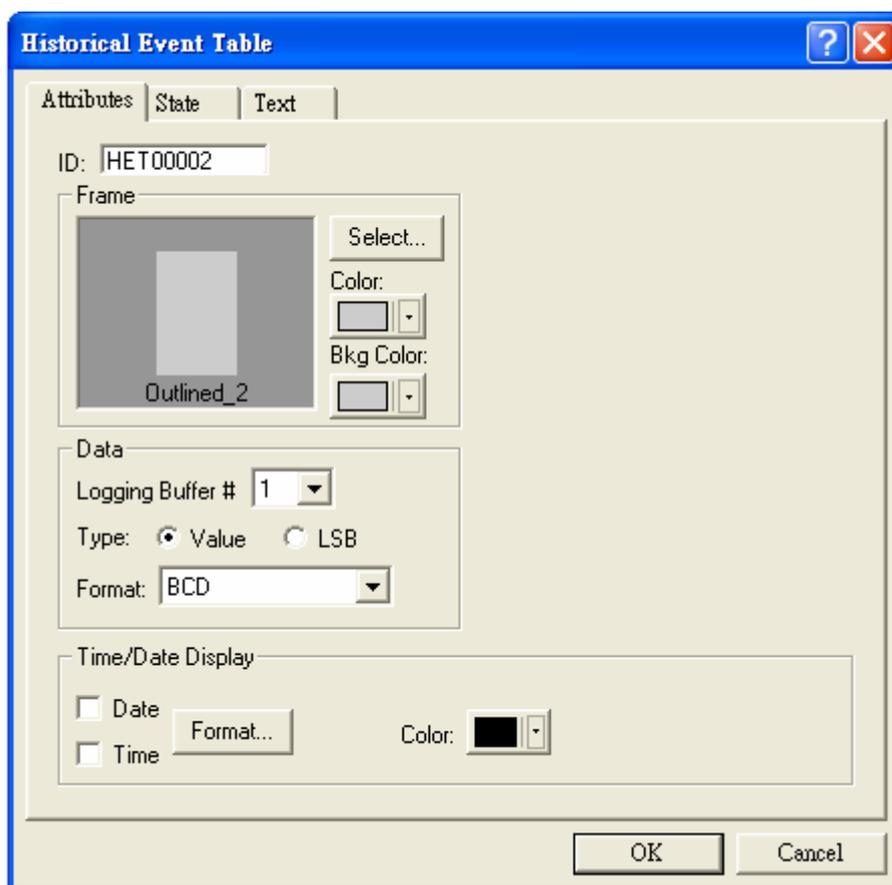
2.7.16.3. [Historical Event Table]

I. Function

The HMI may set a fixed sampling period or the PLC may as well initiate a data read from the specified registers or the related bits in LSB. Thereafter, the data is converted into pre-defined message text(s) and then displays line-by-line on the HMI.

II. Properties

2. Instructions



- [Data] Block :
 - ◆ [Logging Buffer #] : Specify the number of the logging buffer where the historical data is stored, numbered 1 to 12.
 - ◆ [Type] :
 - [Value]: 256 states in all (0-255), 0 represents state 0; 1 represents state 1...etc.
 - [LSB]: 16 states in all, the HMI takes the bit number of the least bit that is ON as the state number.
 - ◆ [Format]: Only applicable on [Value], there are [BCD], [Signed Binary], [Unsigned Binary], [Signed Binary] three options.

For the properties which are not explained in this Section, please refer to [Section 2.7.16.1. \[Historical Trend Graph\]](#) and [Section 2.7. Object III Specify Object Properties.](#)

2.7.17. [Alarm Display]

There are four types of [Alarm Display] in its sub-menu : [Alarm History], [Active Alarm List],[Alarm Frequency Table] and [Alarm Marquee].

2. Instructions

To use objects above, a user must set up the address of alarm block and its parameters. The HMI reads the value stored in PLC and displays its corresponding messages, it's up to 512 messages can be set.

Note that this feature is only applicable on some models, please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#).

Alarm Setup:

Select [Application]/[Alarm Setup], its dialog box will appear as the following. See Figure 143.

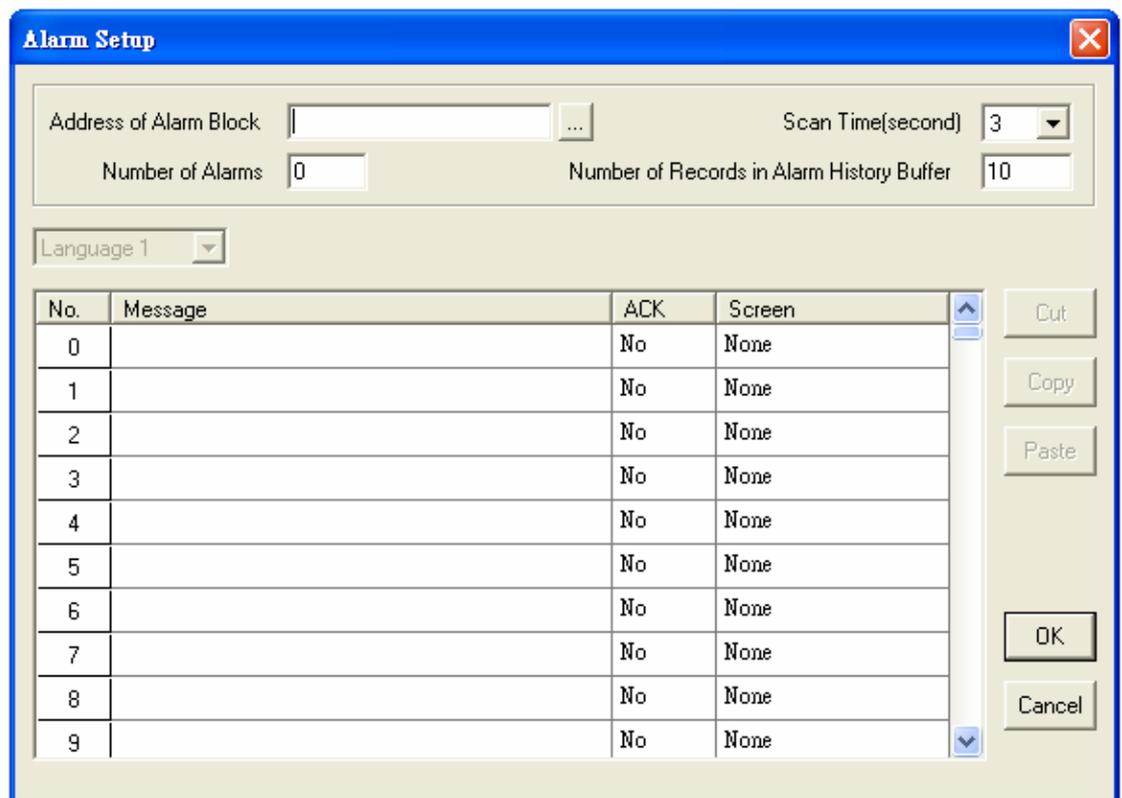


Figure 143. The [Alarm Setup] Dialog Box

- [Address of Alarm] : To use a bit (LSB) as a corresponding alarm address. If D130 is the starting position and the number of alarm is set 160; the HMI will monitor 160 bits = 10 words and this corresponds to D130, D131, and D132.....D139. When bit D130 turns on, the HMI will sample and record an alarm message. It's up to 512 alarm messages can be set.
- [Number of Alarms] : Specify the number of alarms.
- [Scan Time(Second)] : Specify the sampling time to monitor the PLC data, 1~10 second(s).

2. Instructions

- [Number of Records in Alarm History] : Specify the maximum number of event stored in the alarm buffer. For example 100 means the 101st alarm event happens the 1st alarm message will be overwritten.
- Table :
 - ◆ [Message] Column : Enter the text to the alarm message. The format can be modified in its dialog box.
 - ◆ [ACK] Column : Acknowledge the message which has received to conceal the alarm.
 - ◆ [Screen] Colum : Specify the screen to display when the alarm occurs.

After the setup completed, there are four types of [Alarm Display] objects below :

2.7.17.1. [Alarm History Table]

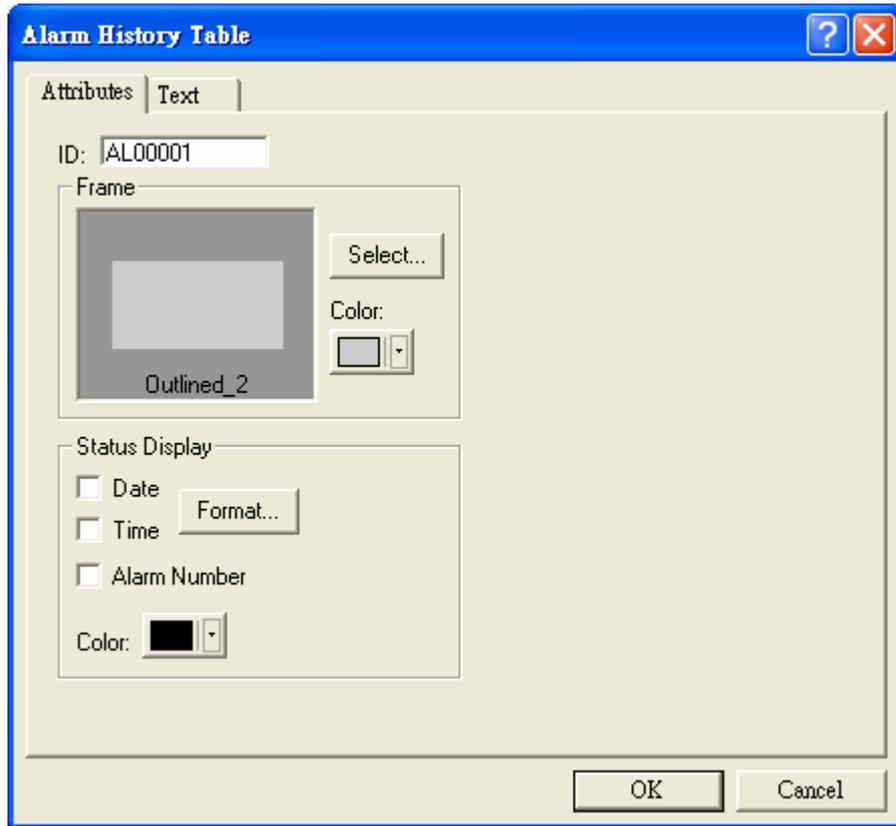
I. Function

The HMI reads the reference bits in the PLC with fixed period and then activates the corresponding alarm messages. Thereafter, this command enables the HMI to show its alarm history in the sequence as an [Alarm History Table].

II. Properties



[Attributes] Tab

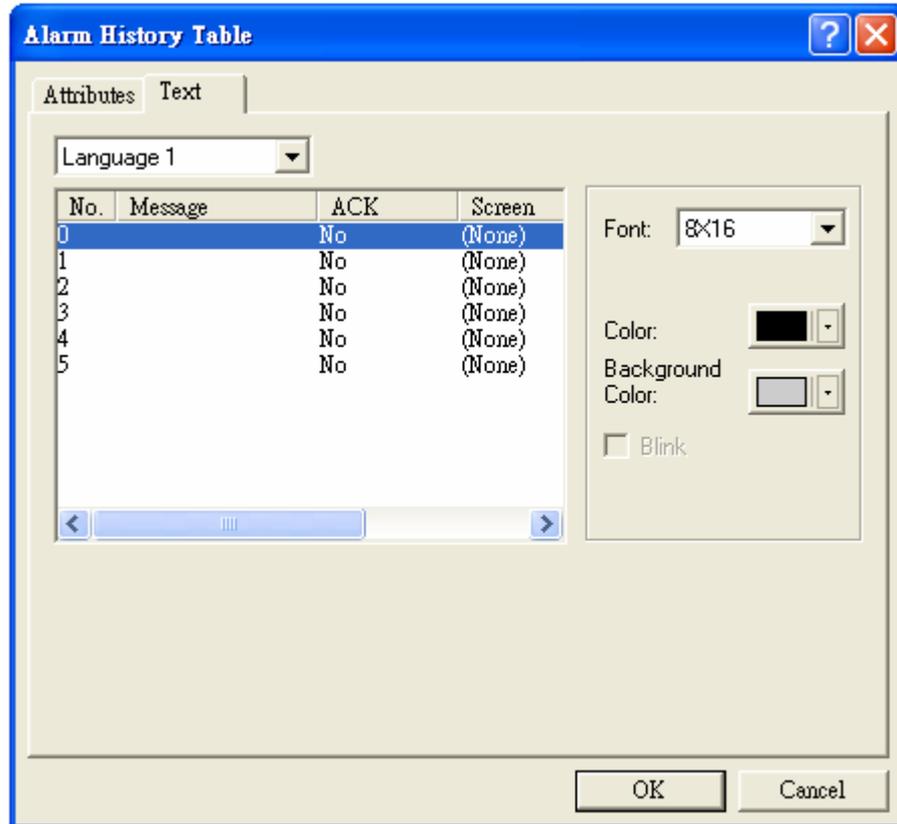


- [Status Display] Block :
 - ◆ [Date] and [Time] : Check this box to display the date and time and select the [Format] button to specify its format.
 - ◆ [Alarm Number] : Check this box to display alarm number.
 - ◆ [Color] : Specify the color of the message.



[Text] Tab

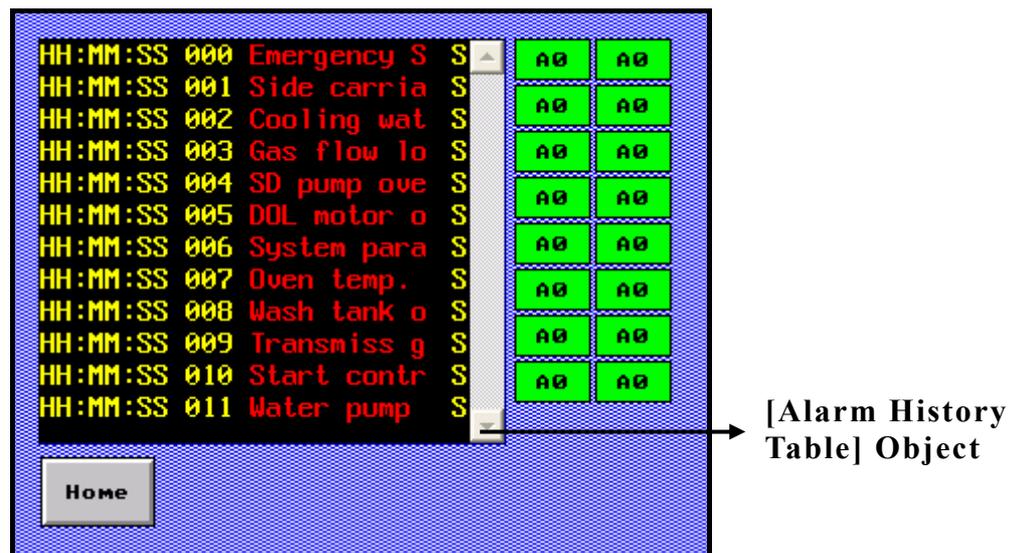
2. Instructions



On this tab, it enables a user to setup the [Font], [Color] and [Bkg. Color] for alarm messages.

III. Example

To design an [Alarm History Table] object as the following :



—. Alarm Setup :

2. Instructions

1. Select [Application]/[[Alarm Setup], its dialog box will appear as in Figure 144.
2. Specify [Alarm of Alarm Block] “@230” and ‘16’ alarms; the maximum number of records is limited to ‘100’.
3. The scan time is set ‘1’ second to sample the PLC data.
4. Enter the text in message block, select if acknowledge the alarm and screen to display.

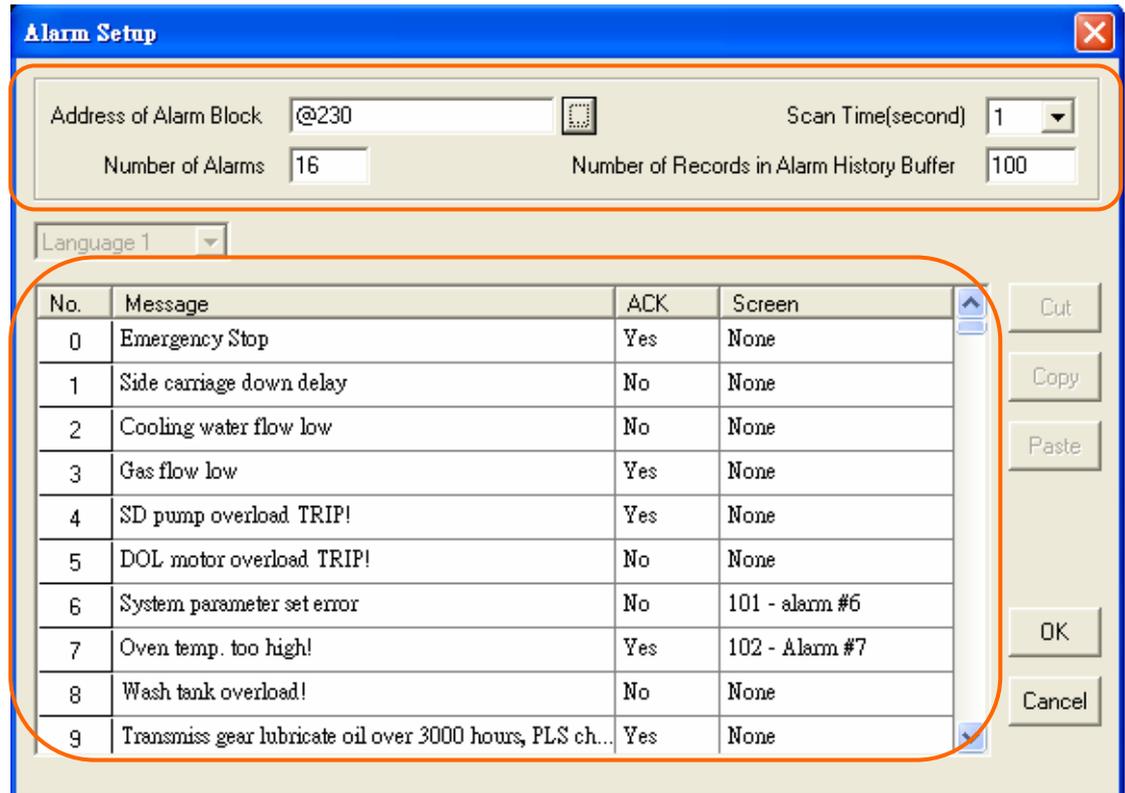
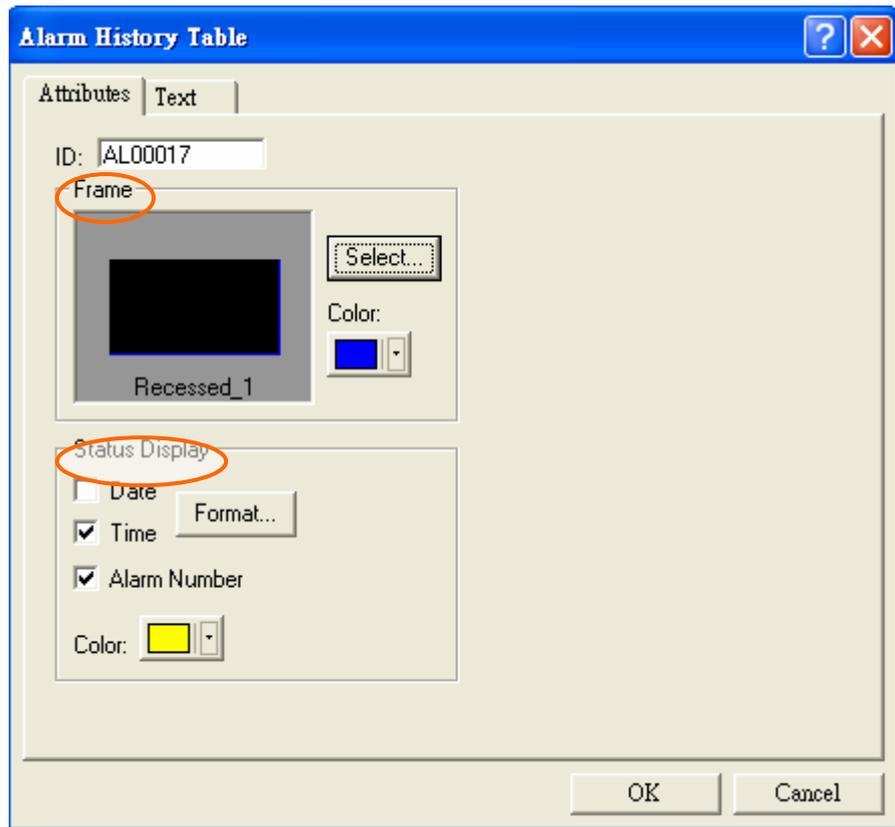


Figure 144. An Illustration of [Alarm Setup] dialog box

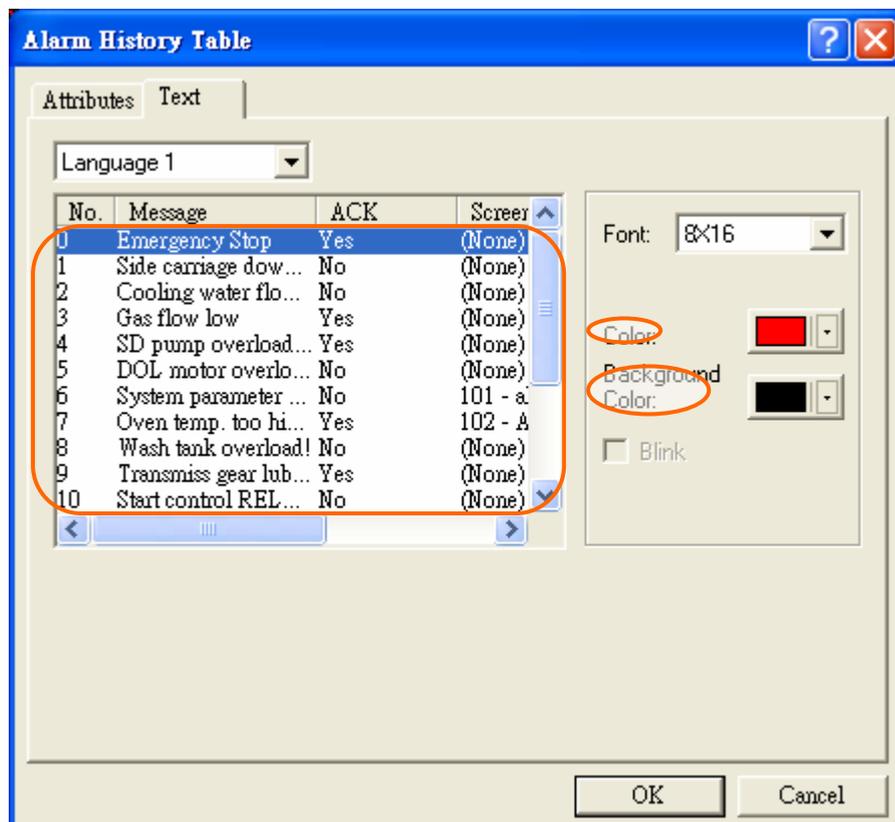
二. Setup the properties :

1. Frame : Select “Recessed_1” ; Color : Blue.
2. Display time and alarm number state; the color is “yellow”.

2. Instructions



- Note that the message, ack, screen which set in the [Alarm Setup] dialog box will show on the [Text] tab.
- The message color is “red”; the bkg. color is “black”.



2. Instructions

The steps above will create a [Alarm History Table] object; See Figure 145. This example uses 16 On/Off buttons to send the alarm message. The HMI will read the reference bits in the PLC at fixed period; then convert the data into its corresponding messages in sequence and display on the screen.

Note that the alarm state “A” represents activate; “C” represents clear.

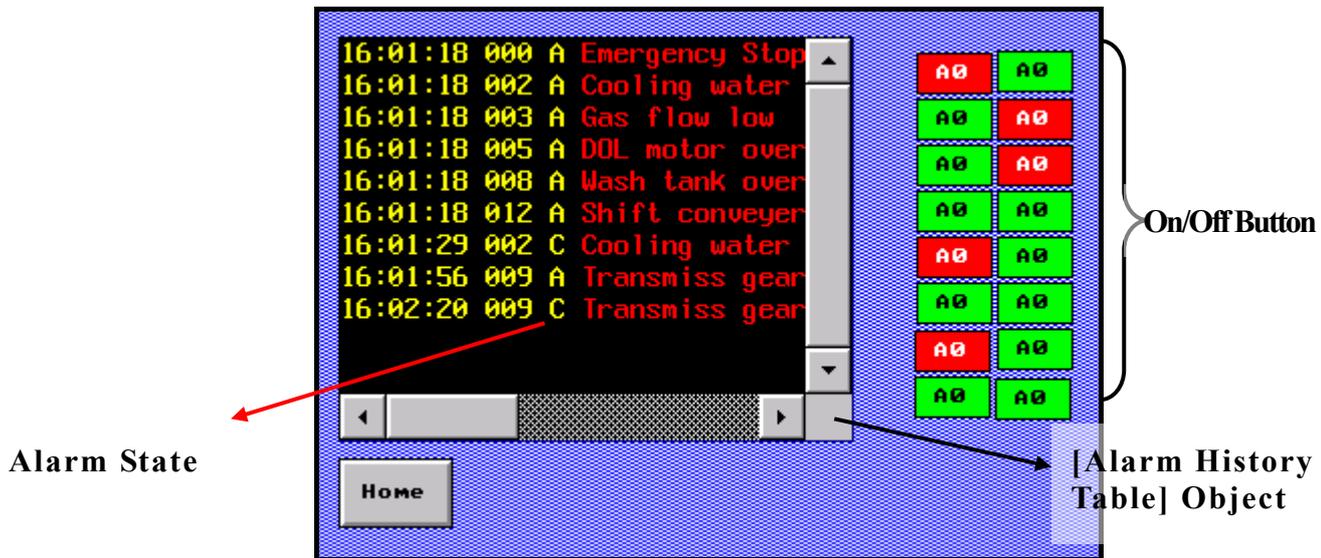


Figure 145. The [Alarm History Table] object

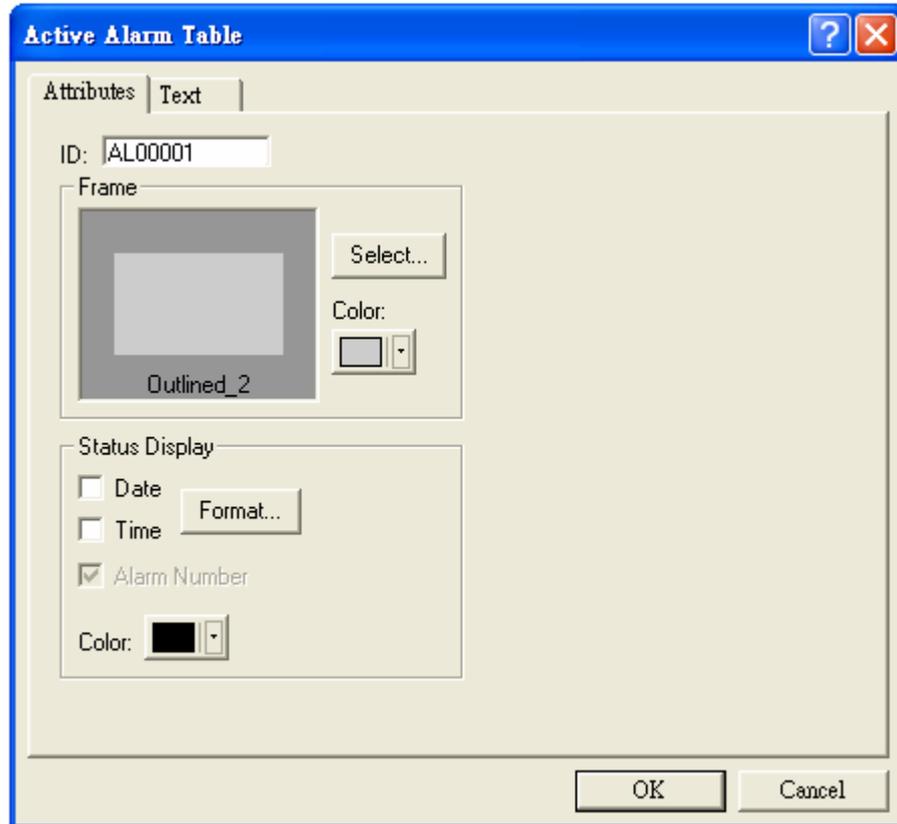
2.7.17.2. [Active Alarm List]

I. Function

The HMI displays only the active alarms that its reference bit in PLC = ON and sort the data according to the order of the state number.

II. Properties

2. Instructions



All the properties are the same as [Alarm History Table] object, please refer to [Section 2.7.17.1. \[Alarm History Table\]](#).

III. Example

The steps to create an [Active Alarm Table] object are the same as an [Alarm History Table] object. A user must complete the alarm setup first, and then specify its properties. Please refer to [Section 2.7.17.1. \[Alarm History Table\]](#).



Figure 146. The [Active Alarm Table] Object

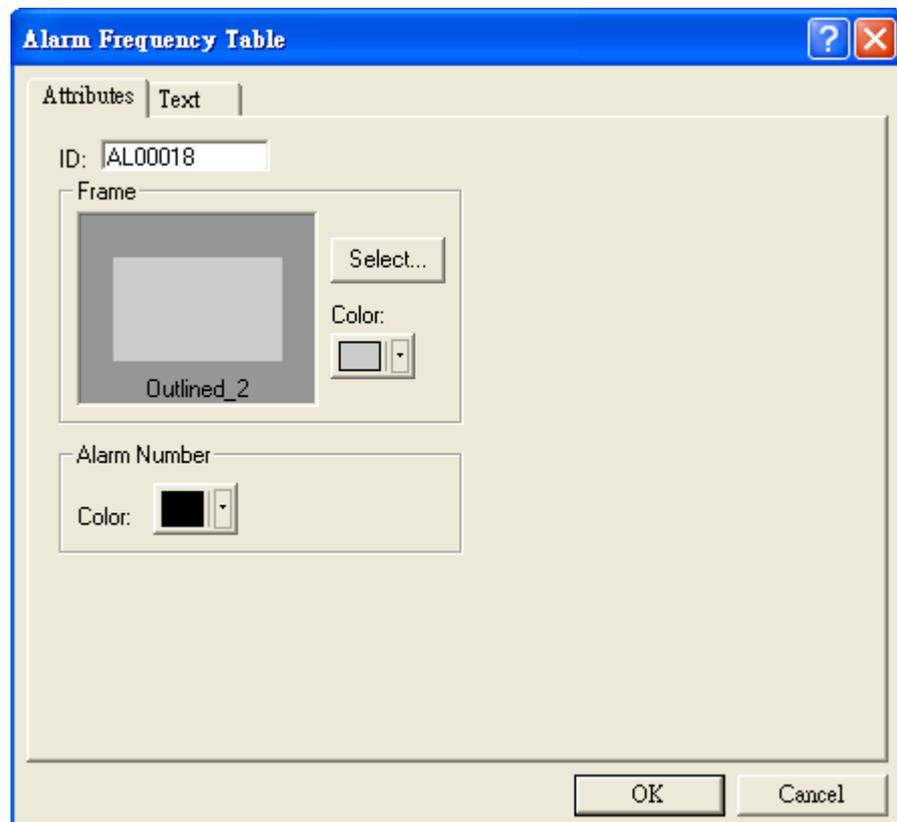
The steps above will create a [Active Alarm Table] object as in Figure 146. This example also uses 16 On/Off button to start the alarm messages. The HMI displays only the active alarms that its reference bit in PLC = ON and sort the data according to the order of the state number.

2.7.17.3. [Alarm Frequency Table]

I. Function

The HMI summarizes the number of occurrence of each alarm which be monitored and display on the screen.

II. Properties



The properties are the same as [Alarm Frequency Table] object, please refer to [Section 2.7.17.1. \[Alarm History Table\]](#).

III. Example

The steps to create an [Alarm Frequency Table] object are the same as an [Alarm History Table] object. A user must complete the alarm setup

2. Instructions

first, and then specify its properties; please refer to [Section 2.7.17.1. \[Alarm History Table\]](#).



Figure 147. The [Alarm Frequency Table] Object

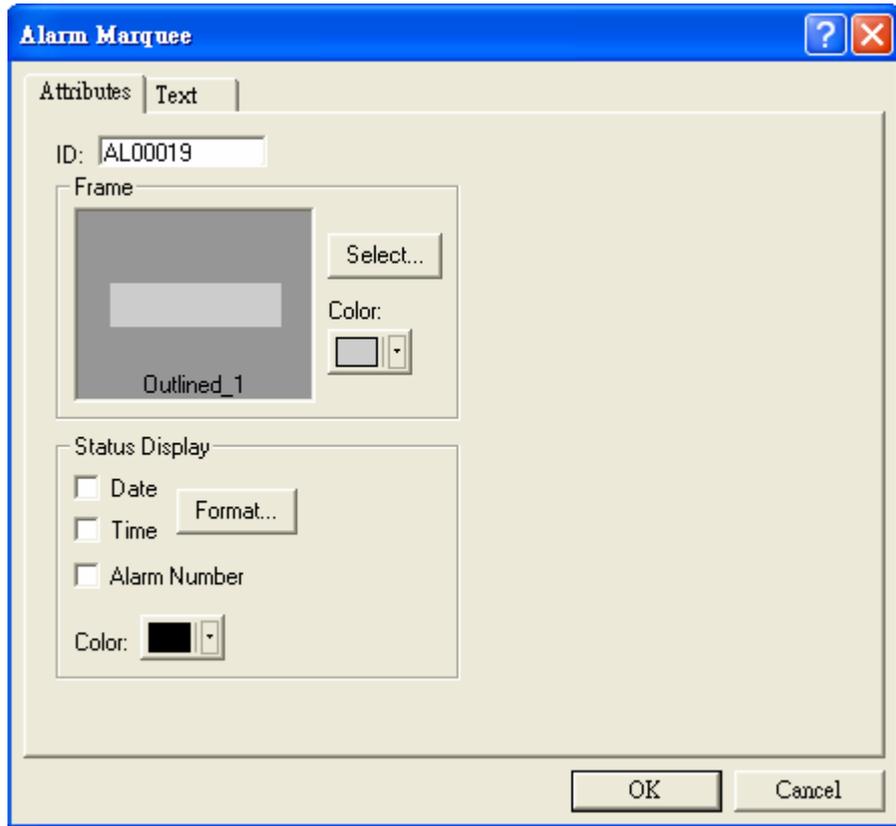
The steps above will create a [Alarm Frequency Table] object as in Figure 147. This example also uses 16 On/Off button to start the alarm message. The HMI will display the number of occurrence of each alarm on the screen.

2.7.17.4. [Alarm Marquee]

I. Function

The HMI displays alarm messages of the active alarms as a moving sign.

II. Properties



The properties are the same as [Alarm History Table] object, please refer to [Section 2.7.17.1. \[Alarm History Table\]](#).

III. Example

The steps to create an [Alarm Marquee] object are the same as an [Alarm History table] object. A user must complete the alarm setup first, and then specify its properties; please refer to [Section 2.7.17.1. \[Alarm History Table\]](#).



Figure 148. The [Alarm Marquee] Object

The steps above will create an [Alarm Marquee] object as in Figure 148. This example also uses 16 On/Off buttons to start the alarm

2. Instructions

message. The HMI displays the message of active alarms as a continual moving sign on the screen.

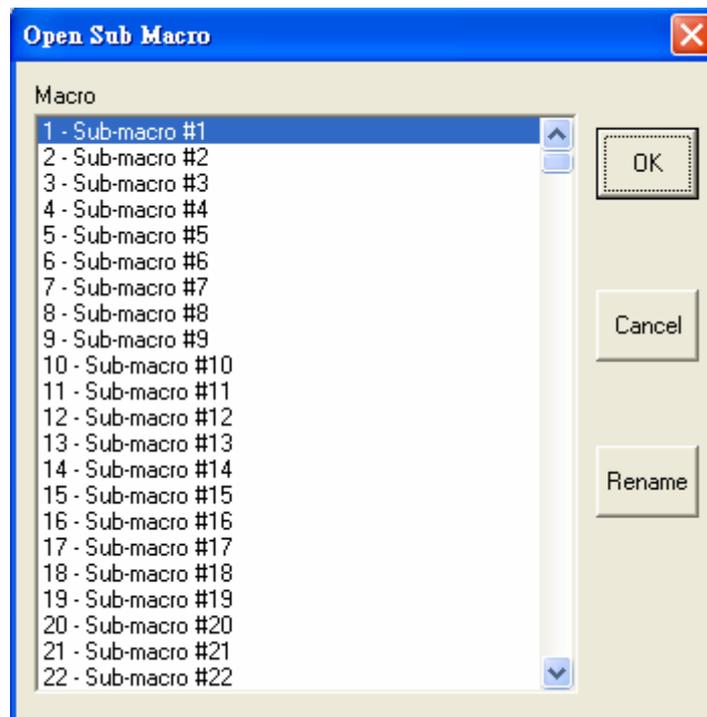
2.7.18. Sub-macro

I. Function

[Sub-macro] is the macro's sub-application. The main function is to call commands directly. Some common functions or operation commands which are used frequently can be edited and saved in [Sub-macro] for call commands.

II. Properties

There are 512 options in [Sub-macro], please refer to [Chapter 8 Macro](#) for the complete details.



III. Example

2. Instructions

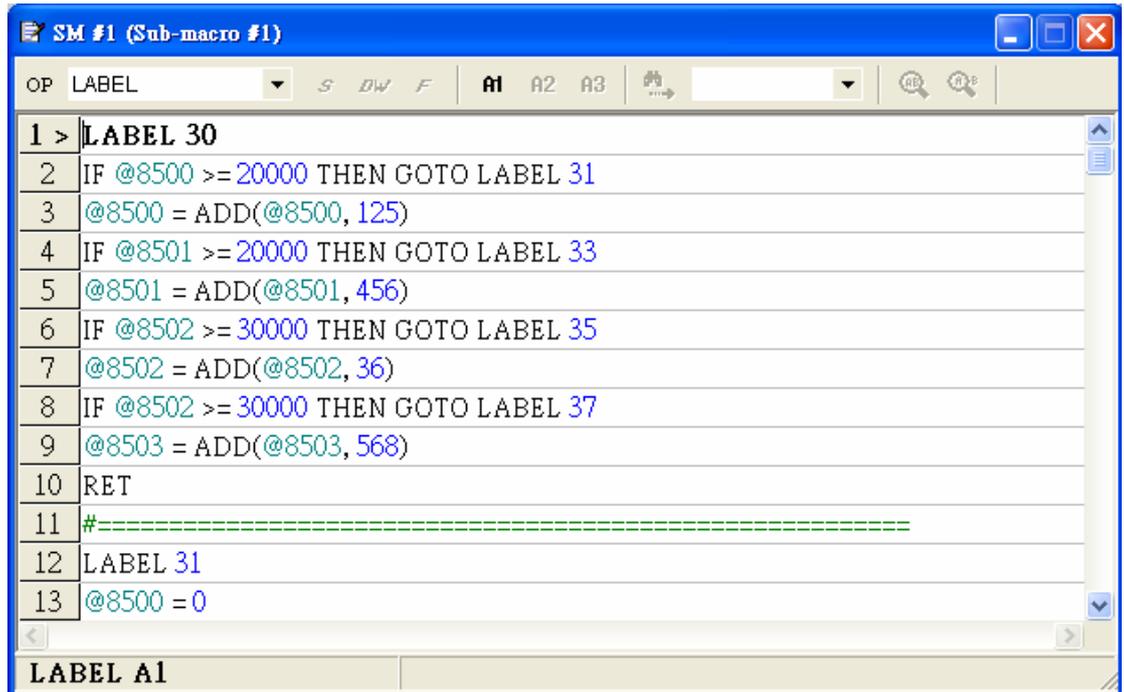


Figure 149. An example of the [Sub-screen] edit screen

2. Instructions

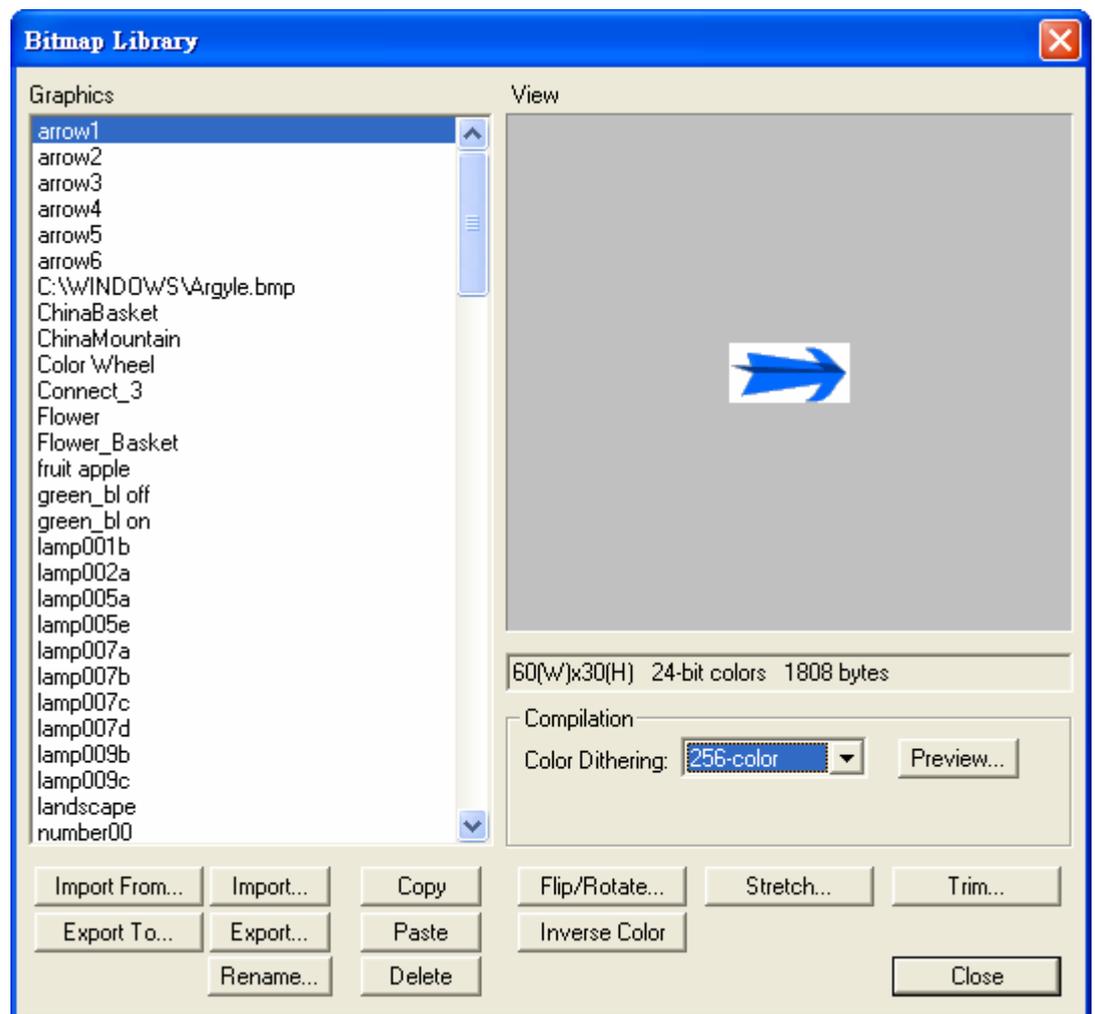
2.8. Library

There are five commands in [Library] menu : They are [Bitmap Library], [Save as Shape], [Shape Library Manager] and [Text Pool]. The main function is to edit, import and export the bitmaps, shapes, fonts or text pool.

2.8.1. [Bitmap Library]

[Bitmap Library] is mainly to import, export and edit the bitmaps.

Select [Library]/[Bitmap Library], the dialog box will be as the following.

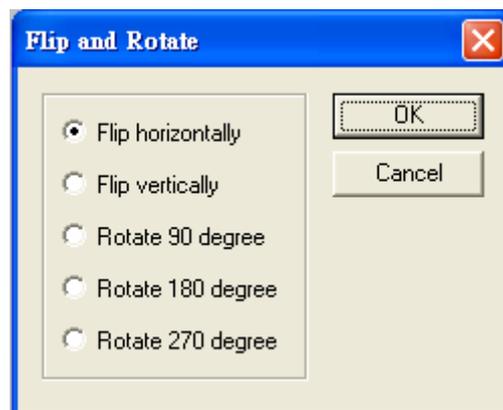


- [Graphics] : List all of the graphics for selection.
- [View] : Display the specified graphic to view.
- [Compilation] Block :
 - ◆ [Color Dithering] : Process the graphic (16-bit, 24-bit or JPEG) to display the image vividly as the original one on the screen.

2. Instructions

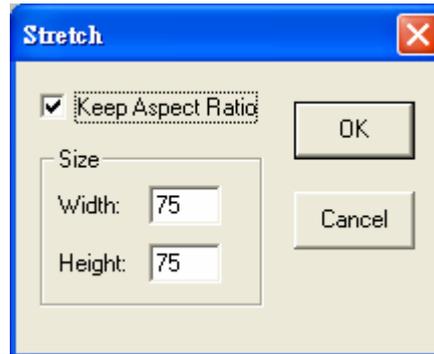
There are [8-color],[16-color] and [256-color] options, The higher color is selected , the higher contrast of the figure will be displayed.

- [Import from] : Allows user to import bitmap(s) from a selected library *.GBF or *.GIF graphics.
- [Export to] : Allows user to export bitmap(s) to a selected library *.GBF.
- [Import] : Import the graphic into bitmap library from computer. The importable formats of graphics include Bitmap Image (*.BMP), Jpeg Image Files (*.JPG), AutoCad Files (*.DWG), AutoCad Files (*.DXF), PWS bit mapped graphic (*.BMG) and GIF Files (*.GIF).
- [Export] : Export the graphic stored in bitmap library to computer.
- [Rename] : Modify the name of the graphic.
- [Copy] : Select to export selected bitmap to the clipboard.
- [Paste] : Select to import a bitmap from the clipboard. When pressed, a dialog box will appear and ask name for the imported graphic.
- [Delete] : Select to delete selected bitmap.
- [Flip and Rotate] : Allow a user to change a bitmap's orientation. When pressed, the dialog box will appear and flip or rotate degree options are available as the following.



- [Inverse Color] : Invert a bitmap's colors.
- [Stretch] : Adjust the width and height of a bitmap.

2. Instructions



- [Trim] : Allows user to cut unused area around a bitmap.



2.8.2. [Font Library]

[Font Library] supports all windows fonts; it enables a user to define up to 16 types. A user can define the fonts of their own choice to design a more attractive interface. See below.



Select [Library]/[Font Library], its dialog box will be as in Figure 150 shown on the screen.

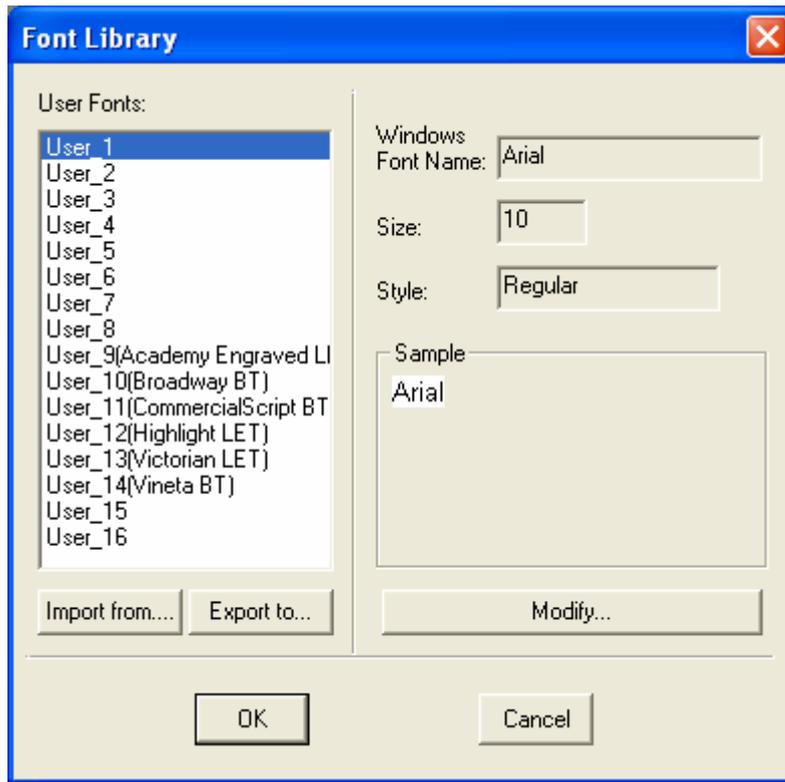
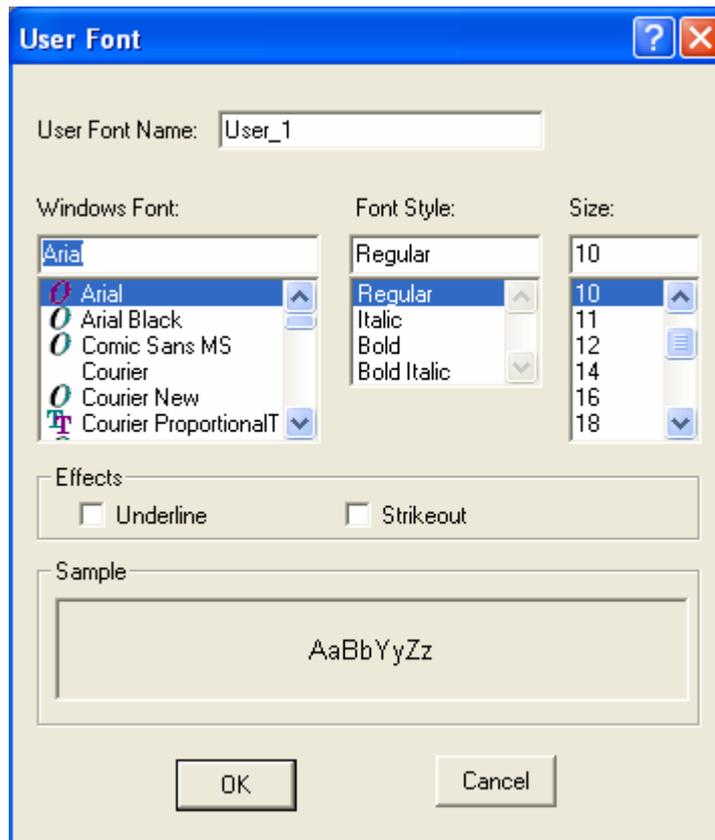


Figure 150. The [Font Library] Dialog Box

- [Import from] : Select to import fonts into font library.
- [Export to] : Select to export fonts to font library.
- [Modify] : Modify the format of selected font. When pressed, the ddailog box will appear as the following.

2. Instructions



2.8.3. [Save as Shape]

This command allows the user to save shape(s) to a file. A shape must be selected before the user can save the shape. Multiple shapes may be selected simultaneously.

The function of [Save as Shape] is to save the basic objects (ex. Line, Rectangle, Ellipse, Circle, Polygon, Pie, Freeform, Arc, Scale...etc) or multiple shapes in [Library]. See Figure 151.

Select [Library]/[Save as Shape], the dialog box will be as the following. A user can select the library from the drop-down list to save and name for shape in [Shape Name] block.

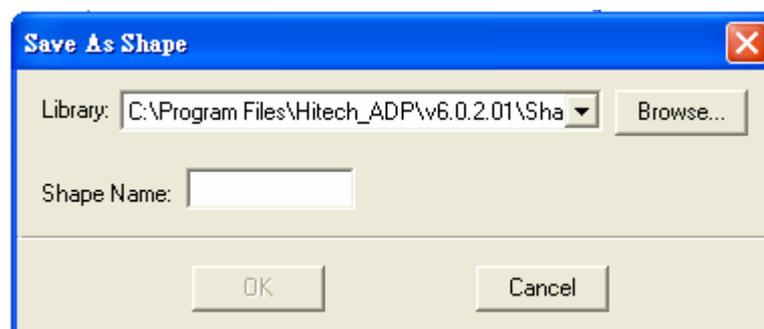


Figure 151. The [Save as Shape] Dialog Box

2.8.4. [Shape Library Manager]

The function of [Shape Library Manager] is mainly to build a entire attributes management.

Select [Library]/[Shape Library Manager], the dialog box will be as the following. See Figure 152.

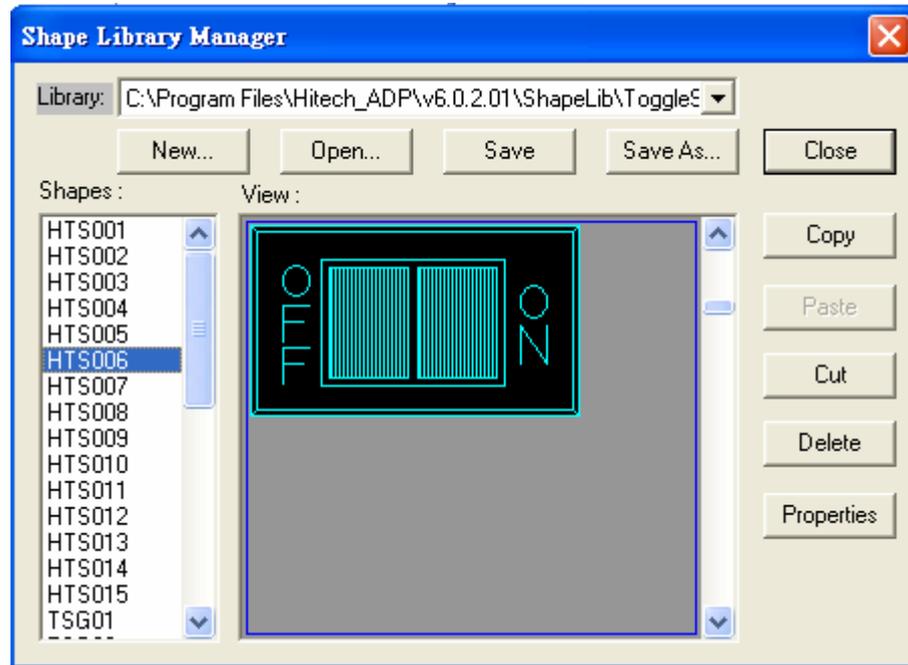
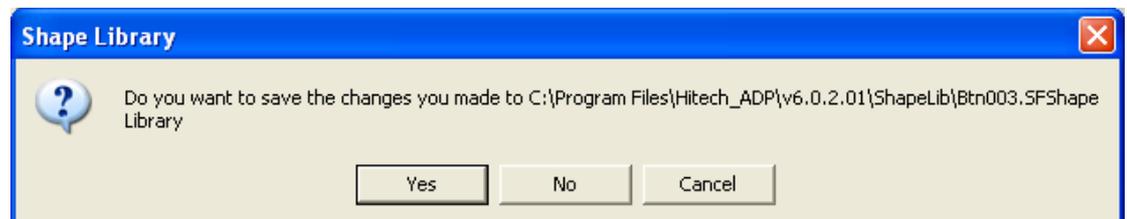


Figure 152. The [Shape Library Manager] Dialog Box

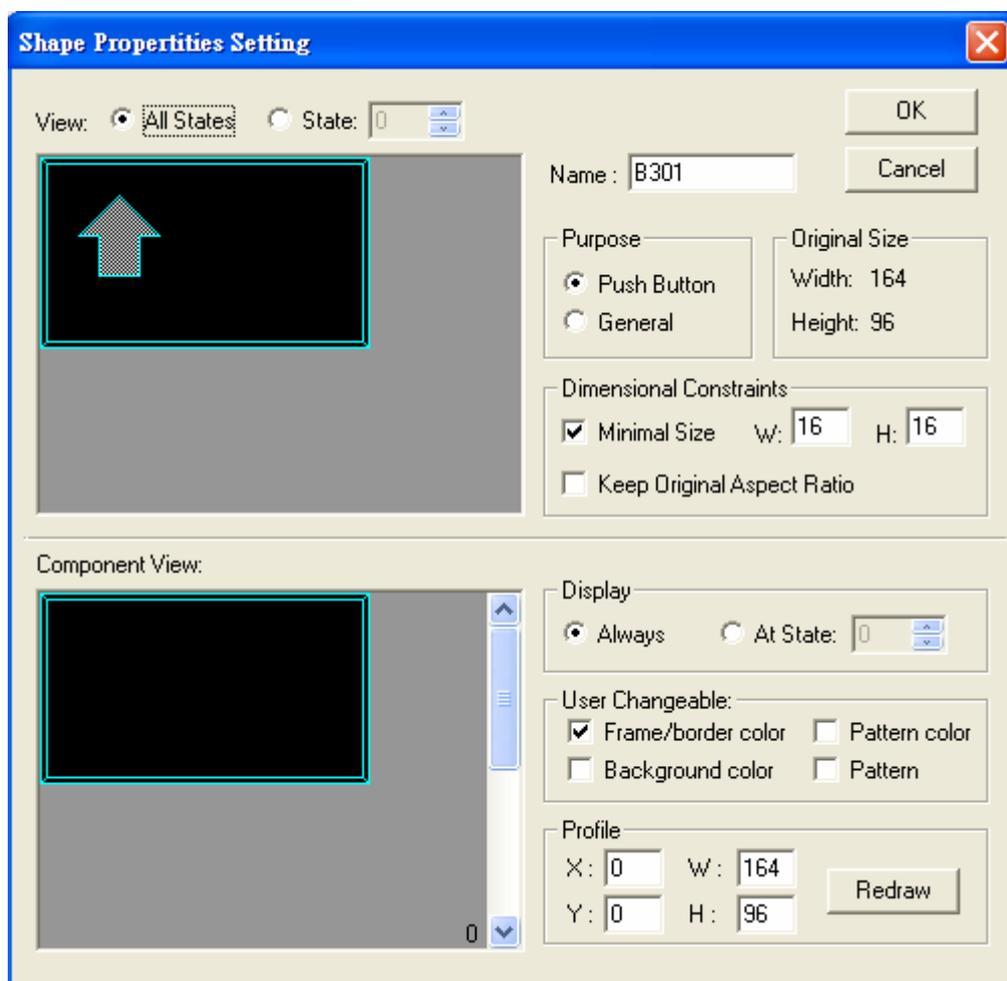
- [New] : Create a new shape library.
- [Open] : Open an existing shape library.
- [Save]: Saves the active shape library to a file.
- [Save As]: Allows user to choose which file to save to.
- [Close]: Select to close the [Shape Library Manager]. If the changes have not been saved, the dialog box will ask for save



- [Copy]: Copy selected shape to clipboard.
- [Paste]: Import the shape from the clipboard.
- [Cut]: Moves selected shape to clipboard.

2. Instructions

- [Delete]: Deletes selected shape.
- [Properties]: Click to display the properties of the selected shape. See the following figure.



- ◆ [View] : Display the shape to view.
 - [All States] : Select to view all states of selected shape.
 - [State] option : Select to view individual states of selected shape.
- ◆ [Name] : Specify the name of selected shape.
- ◆ [Purpose] : The function of the selected shape, there are [Push Button] and [General] options.
- ◆ [Original Size] : Display the width and height of original shape.
- ◆ [Minimal Size] : Specify the minimal width and height of selected shape.
- ◆ [Keep Original Aspect Ratio] : Select this option to keep the the size of shape in original ratio.
- ◆ [Display] : Show the shape used in States, there are [Always]

and [At State] options.

- ◆ [User Changeable] : Select changeable shape to change its properties including frame/border color, background color, pattern color and pattern.
- ◆ [Profile] : Specify the position of the component object and display the specified view here.

2.8.5. [Text Pool]

The function of [Text Pool] is mainly to manage and edit the texts used in application file commonly.

Select [Library]/[Text Pool], the dialog box enables a user to edit and manage the texts. See Figure 153.

Step:

1. Enter the desired texts in the [Text Pool] dialog box to save in. See below.

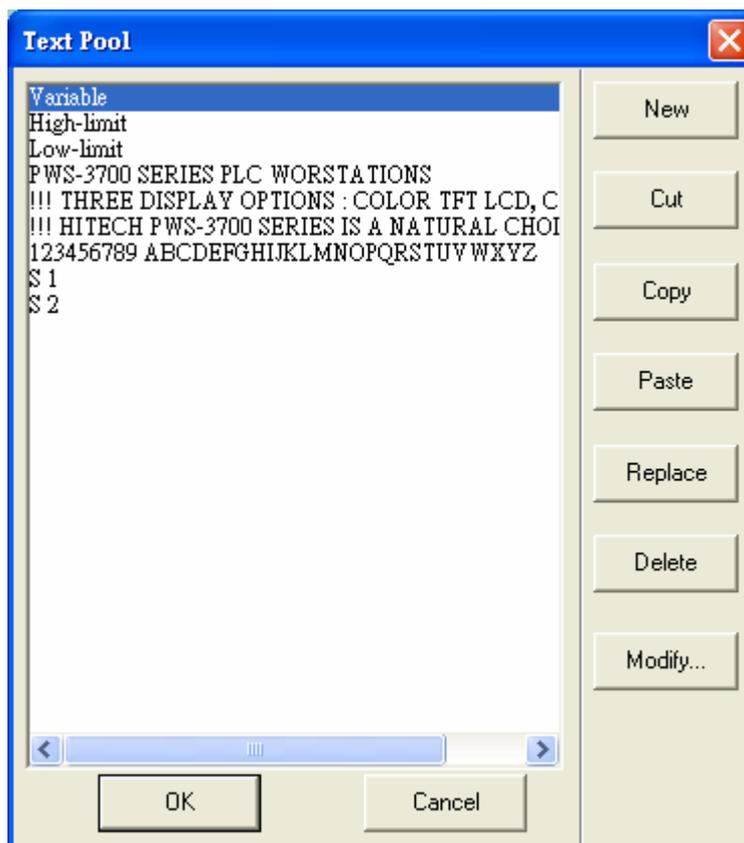


Figure 153. The [Text Pool] Dialog Box

2. **Click the object to edit an object which has texts as in [Text Pool], then select [Edit]/[State and Text Management].** See below.

2. Instructions

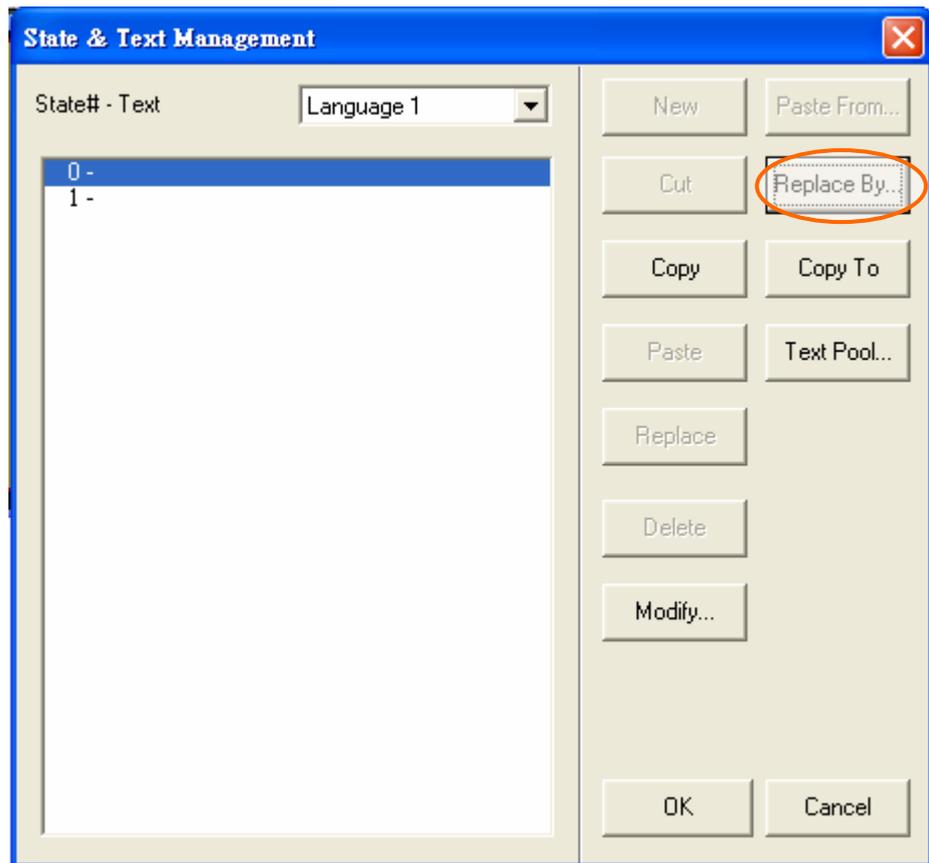
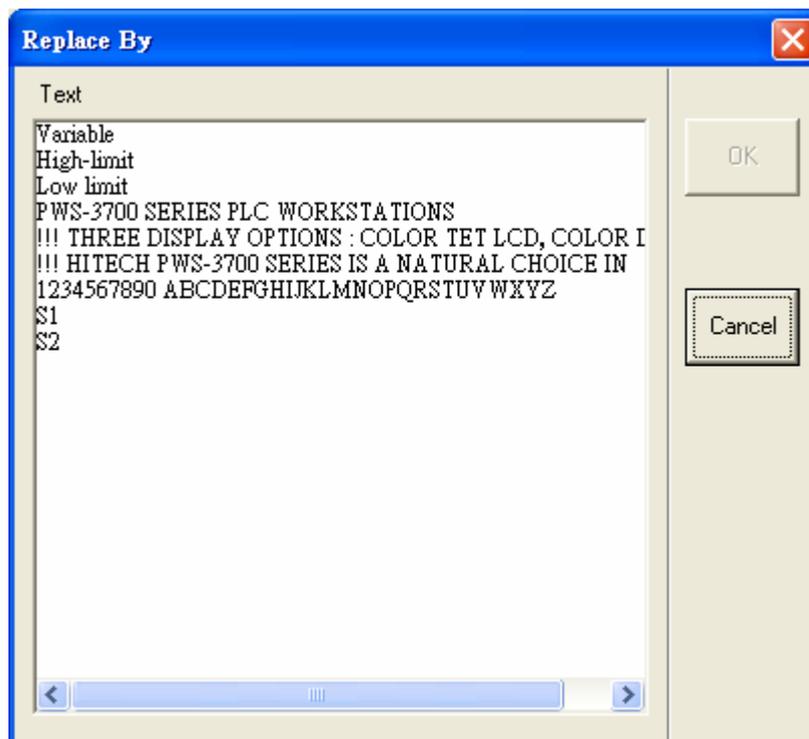


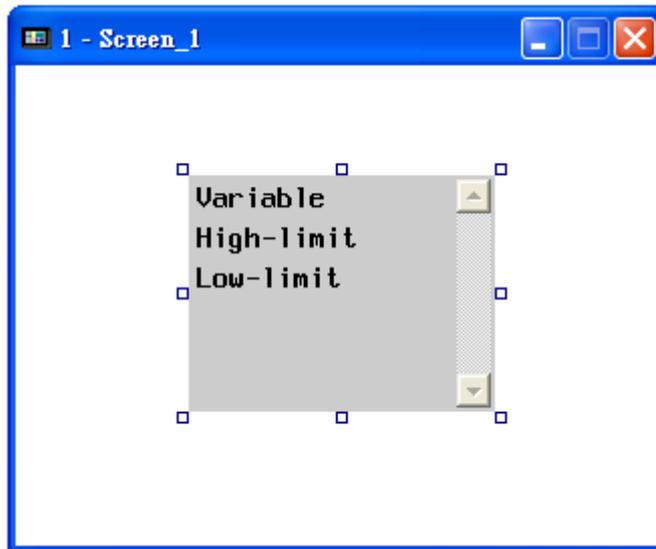
Figure 154. The [State & Text Management] Dialog Box

3. In [State & Text Management] dialog box, select [Replace By] to edit. A user can select the desired text which edited in [Text Pool] to display.



2. Instructions

4. The following [List] object displays the text which edited in [Text Pool].



2.9. Application

The [Application] menu is a general management area for the Workstation and the software. One can set up the parameters of the configuration for the Workstation such as PLC type, Workstation type, logging buffers and alarm setup. In addition, Compile and Download are also available in this menu.

Select [Application], the menu will be as in Figure 155,

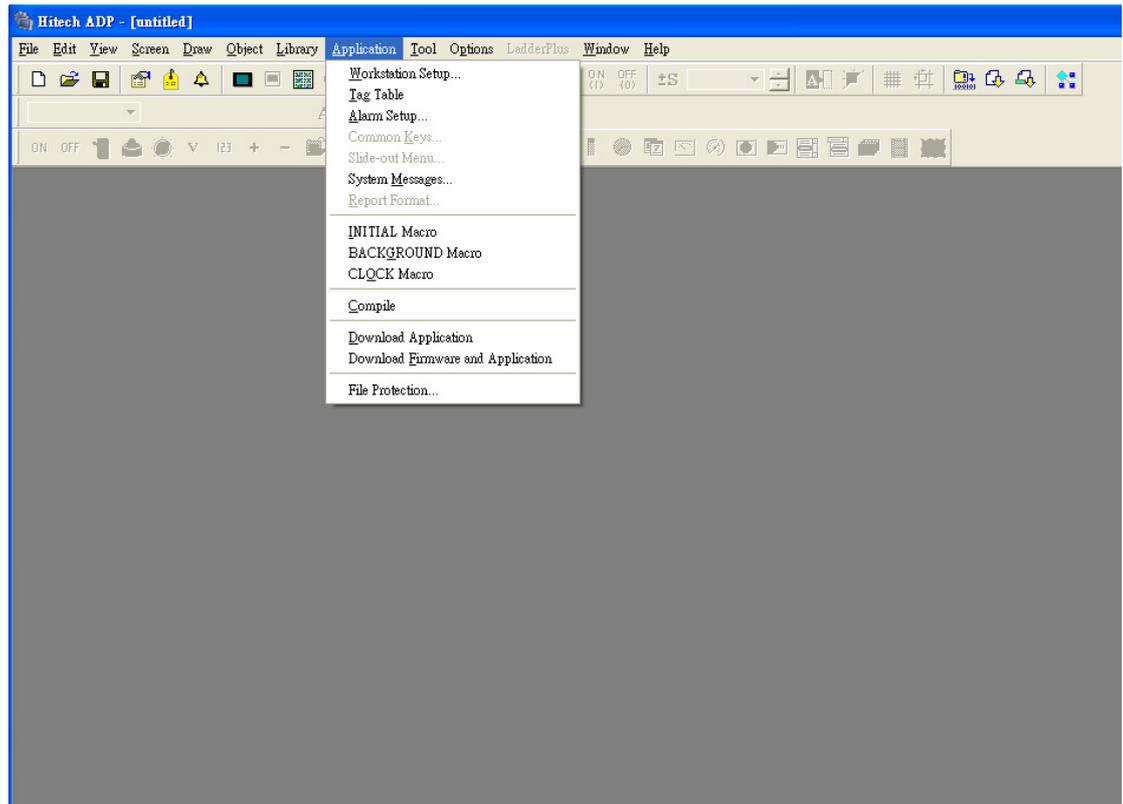


Figure 155. The [Application] Menu

2.9.1. [Workstation Setup]

[Workstation Setup] is to set up the parameters of the Workstation.

Select [Application]/[Workstation Setup], its dialog box will be as in Figure 156.

2. Instructions

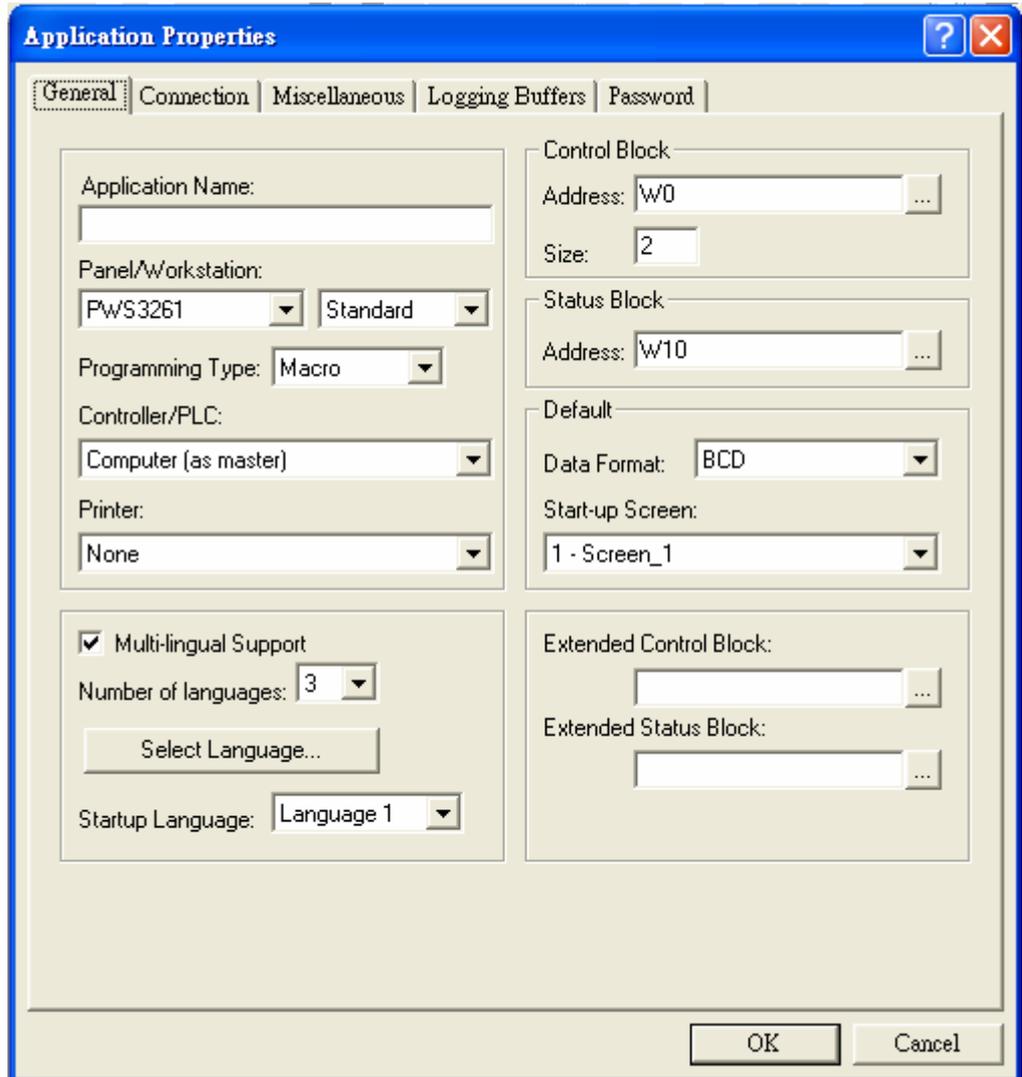


Figure 156. The [Application Properties] Dialog Box

2.9.1.1. [General] Tab

On the [General] tab, a user can set up panel/Workstation, controller/PLC, startup language and screen, and control block and status block. See Figure 156.

- [Application Name]: Enter the name of the application.
- [Panel/Workstation Type]: Specify the model of Workstation. Note the resolution, size and color while selecting.
- [Programming Type] : Select [Macro] or [Standard].
- [Controller/PLC Type]: Specifies the type of PLC the Workstation will communicate with. ADP 6.0 later, the “ModBus TCP/IP Device” option is available.

- [Printer Type]: Specifies the type of printer the Workstation will print to.
- [Multi-lingual Support]: Check the option to support multi-lingual and specify the startup language. It supports up to 5 languages including “Arabic”, “Chinese Simplified”, “Chinese Traditional”, “Cyrillic”, “English”, “Greek”, “Japanese”, “Korean”, “Thai”, “Turkish”, and “Western European”. Please refer to [2.4.2. \[Language 1\] ~ \[Language 5\]](#) for setup. With this option enabled, you can maintain only one application file for a machine that can support up to 5 languages.
- [Control Block] : Specify the PLC address to control and size, the minimum size is 2 Words, the maximum size is 32 Words (The maximum size is 6 for recipe). The control block enables the PLC to control actions on the Workstation such as change screen, print, send recipes....etc. Please refer to [Chapter 4. Control & Status Block](#) for complete details.
- [Status Block] : Specify the starting address for Status Block; the fixed size is 10 Words. The Status Block provides the communication between the Workstation and the PLC. The HMI will write a continuous block of data in. Please refer to [Chapter 4. Control & Status Block](#).
- [Data Format] : Specify the data format to read in.
- [Start-up Screen] : Specify the screen to display once the power is ON.

2.9.1.2. [Connection] Tab

On the [Connection] Tab, it enables a user to add or delete device to connect with and set up the address, connection method or IP. See Figure 157.

2. Instructions

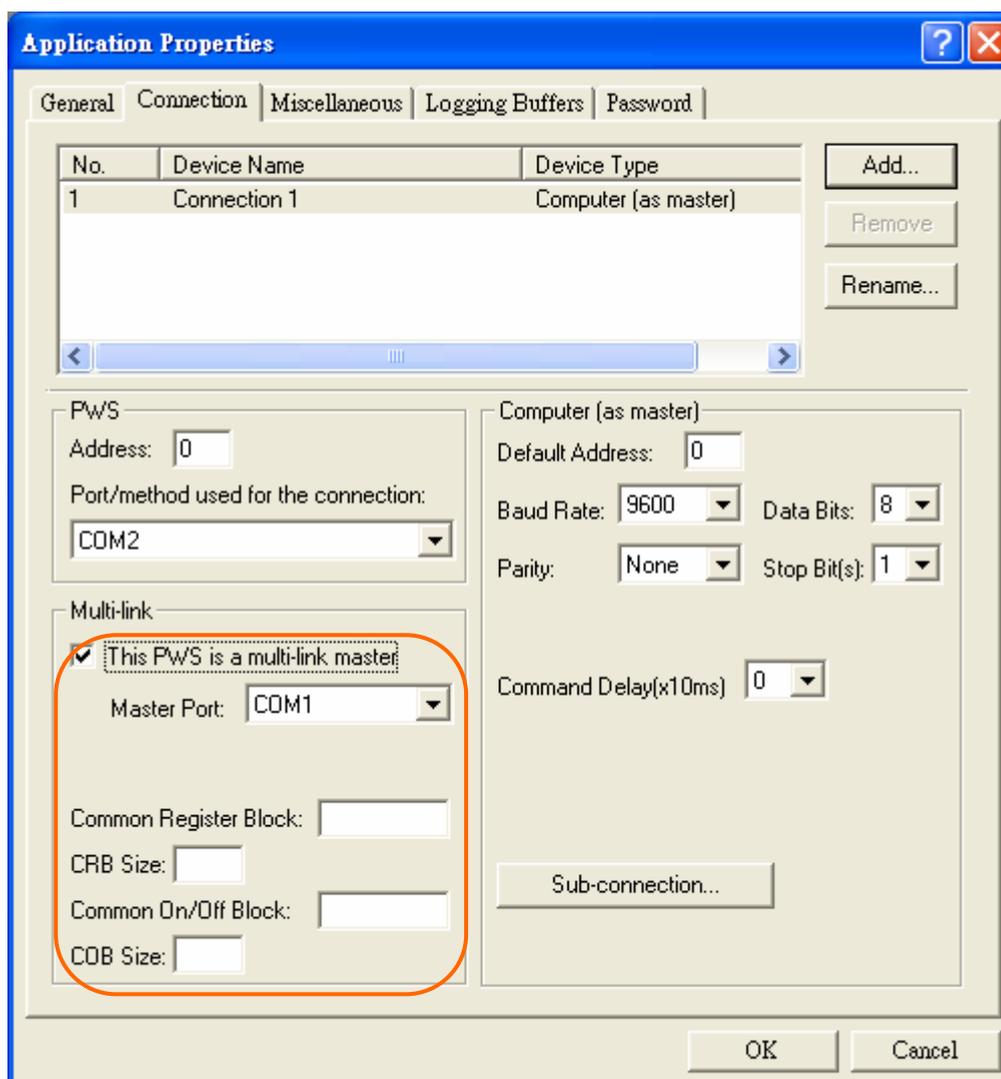


Figure 157. The [Connection] Tab (Multi-link)

- [Add] : Add new device(s) to connect with including Multi-link- select PLC type to connect with. For the steps or methods related to setup, please refer to [Chapter 5. Multi-link](#).
- [Remove] : Remove the connected device, the no. 1 can be removed.
- [Rename] : Modify the device name and type but the device type cannot be modified in No. 1. To modify the device type in No. 1, a user must change it on the [General] tab.
- [PWS] Block :
 - ◆ [Address] : Set up the station of Workstation. Once the multi-link is made, the address can be repeated and the range is 0~255.
 - ◆ [Port/method used for the connection] : Specify the port and method to connect with PLC or other HMI models including

2. Instructions

“COM1”, “COM2”, “Ethernet(Cross-link)”, “COM1”(Multi-link slave) and “COM2” (Multi-link slave) and Ethernet (Multi-link slave).

The HMIs made multi-link (one master; multi-slave); See Figure 157 :

Note that this feature is only applicable on some models, please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#).

- [Multi-link] Block : Specify a PLC to connect with HMIs.
 - ◆ [This PWS is a multi-link master] : Check this option to specify the PWS as a master.
 - ◆ [Master Port] : Specify the port which connects master with slaves including “COM1”, “COM2” and “Ethernet”.
 - ◆ [Common Register Block (CRB)] : Specify the Starting location for the “CRB” which master and slaves use.
 - ◆ [CRB Size] : Specify the size of “CRB”.
 - ◆ [Common On/Off Block (COB)] : Specify the starting location for “COB”.
 - ◆ [COB Size] : Specify the size of “COB”.

The HMIs made Cross-link (all masters); See Figure 158.

Note that this feature is only applicable on some models; please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#).

2. Instructions

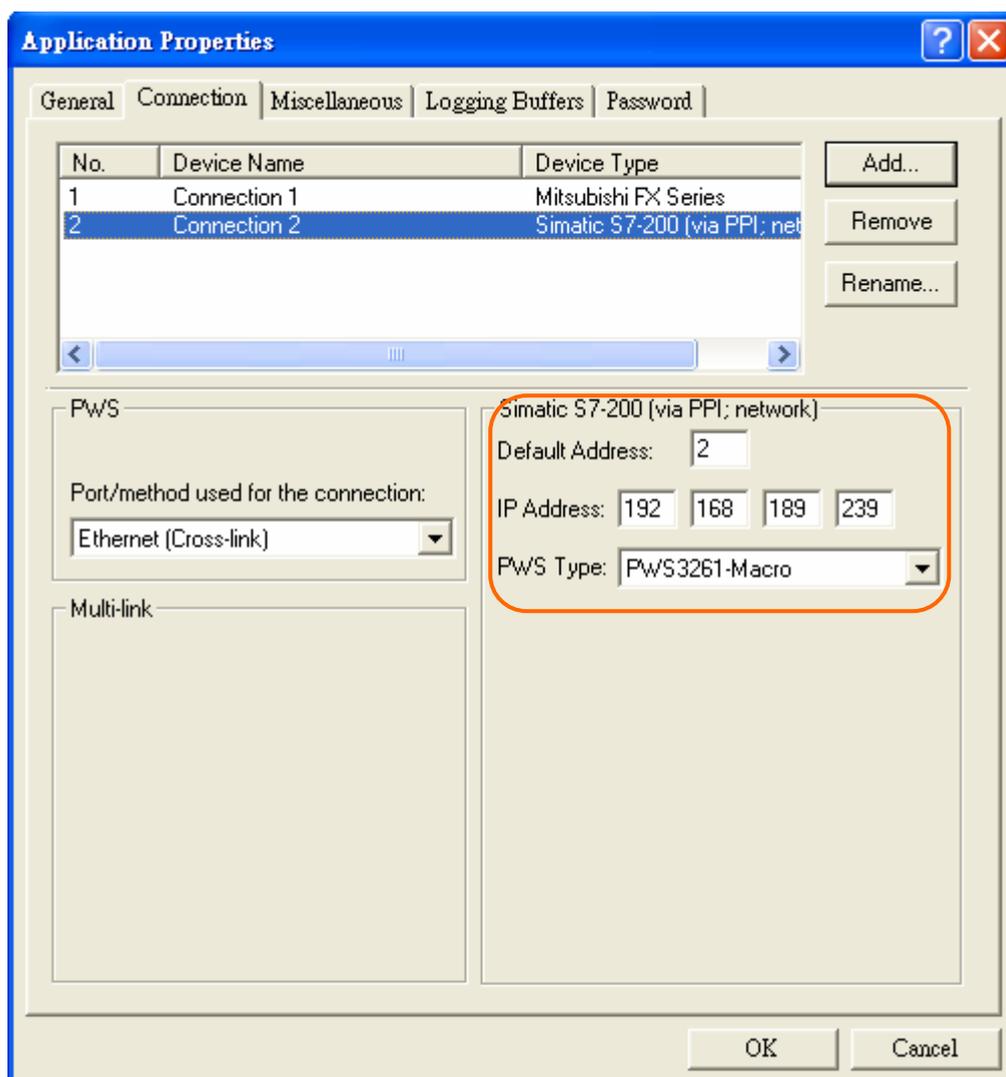


Figure 158. The [Connection] Tab (Cross-link)

Figure 158 takes “Simatic S7-200 (via PPI; 1-to-1)” as example.

- [IP Address] : Specify the IP address of other HMI. The specified HMI connects with PLC through other HMI.
- [PWS Type] : Specify the model to connect with PLC. (other HMI).

For the setup of Multi-link and Cross-link, please refer to [Chapter 6. Ethernet Connection](#).

Note that the transmission parameters for the HMI and the PLC must be identical as they are linked together. After the PLC model specified, the ADP will set up as the PLC default, but a user must if its setup is identical with the PLC

For the setup of each PLC, please refer to thier PLC manual or [Ch 9. Communication between PLC and PWS](#).

2.9.1.3. [Miscellaneous] Tab

On [Miscellaneous] tab, it enables a user to set up recipe function and write time and data to PLC. See Figure 159.

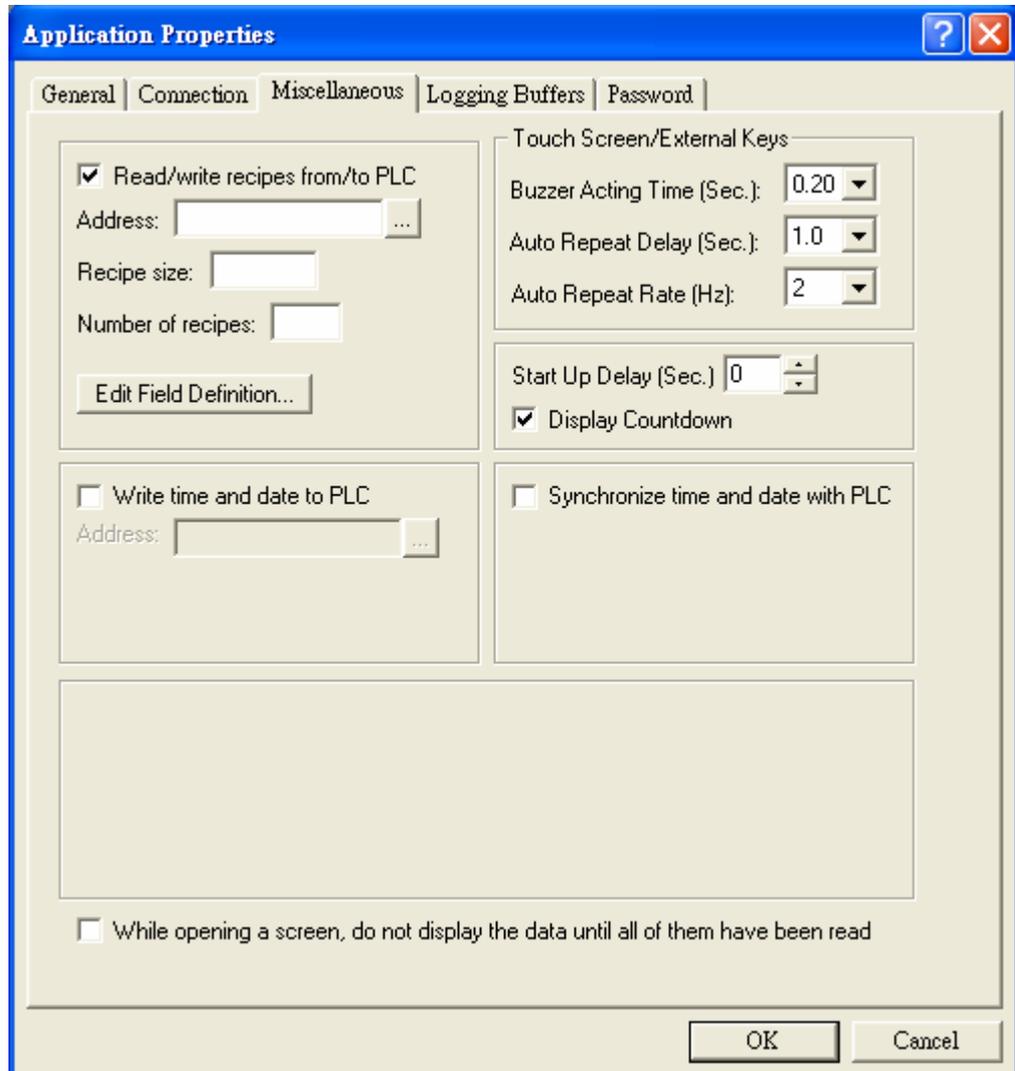


Figure 159. The [Miscellaneous] Tab

- Recipe Block : Specify the memory of recipe data, please refer to [Chapter 3. Recipe](#) and [Section 4.3. Recipe Register Block](#). Note that this feature is only applicable on some models; please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI models](#).
- [Write time and date to PLC]: Select this option to enable the Workstation to write time and date to the RTC in the PLC. Please refer to [Section 4.4. Time Block](#).
- [Touch Screen/External Keys] Block : Specify the format of buffer.

2. Instructions

- [Start up Delay (Sec.)] Block : Specify the length of time before the screen start up.

2.9.1.4. [Logging Buffers] Tab

Logging Buffer Block is to collect data from battery backup RAM. It is a contiguous data block and there are twelve buffers available. Note that this feature is only applicable on some models; please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#) .

When design a [Historical Display] object, a user must set up the logging buffer's area and size first. See Figure 160. Concerning the steps to set up and data read from, please refer to [Section 2.7.16. \[Historical Display\]](#).

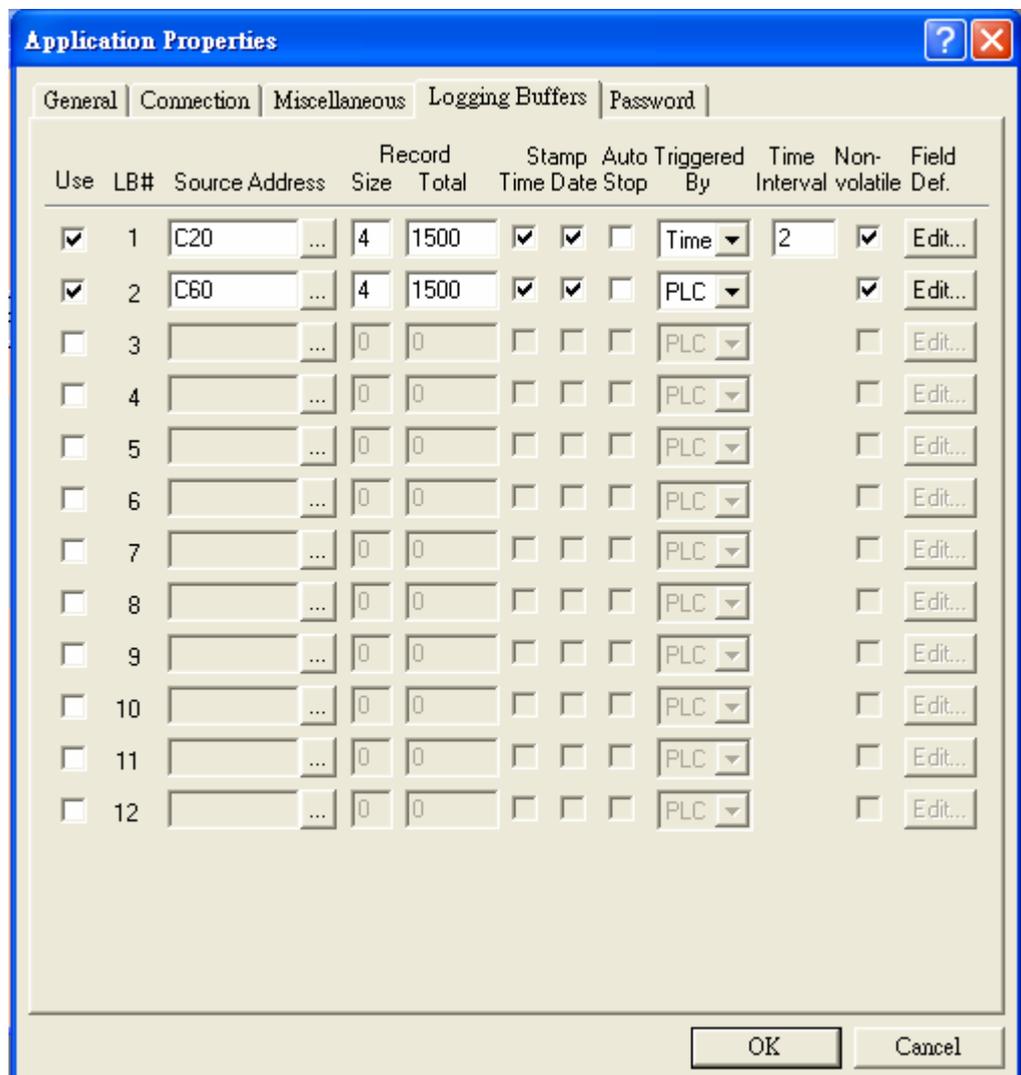


Figure 160. The [Logging Buffer] Tab

2. Instructions

- [Source Address] : Specify the starting address of a block of registers in the PLC from which the Logging Buffer reads data. Here the source address is specified “C20” as in Figure 160.
- [Size] : Specify the size of a record. [Size] = “4” represents 4 Words = C20 , C21 , C22 , C23.
- [Total]: Specify the maximum number of records a Logging Buffer can have; The total “1500” represents reading 4 Words at a time and reading 1500 times.
- [Time]/[Date] : Select this option to record [Time]/[Date] while sampling.
- [Auto Stop] : The logging buffer stops collecting data after its buffer is full if this option is selected. Otherwise, when the 1,501 data records reads the 1st data will be overwritten.
- [Trigger By] : Select “Timer” to collect data at a fixed period or select “PLC” to trigger. If the “PLC” is selected, the trigger is controlled by corresponding bit-location “Dn+2”, “Dn+3 and Dn+4.
- [Time Interval] : Specify how often the Logging Buffer reads one record of data from the PLC (Unit: sec.) when the “Timer” is selected.

2.9.1.5. [Password] Tab

When a user wants to copy the screen or upload the application to ADP, the HMI will ask for the password.

2. Instructions

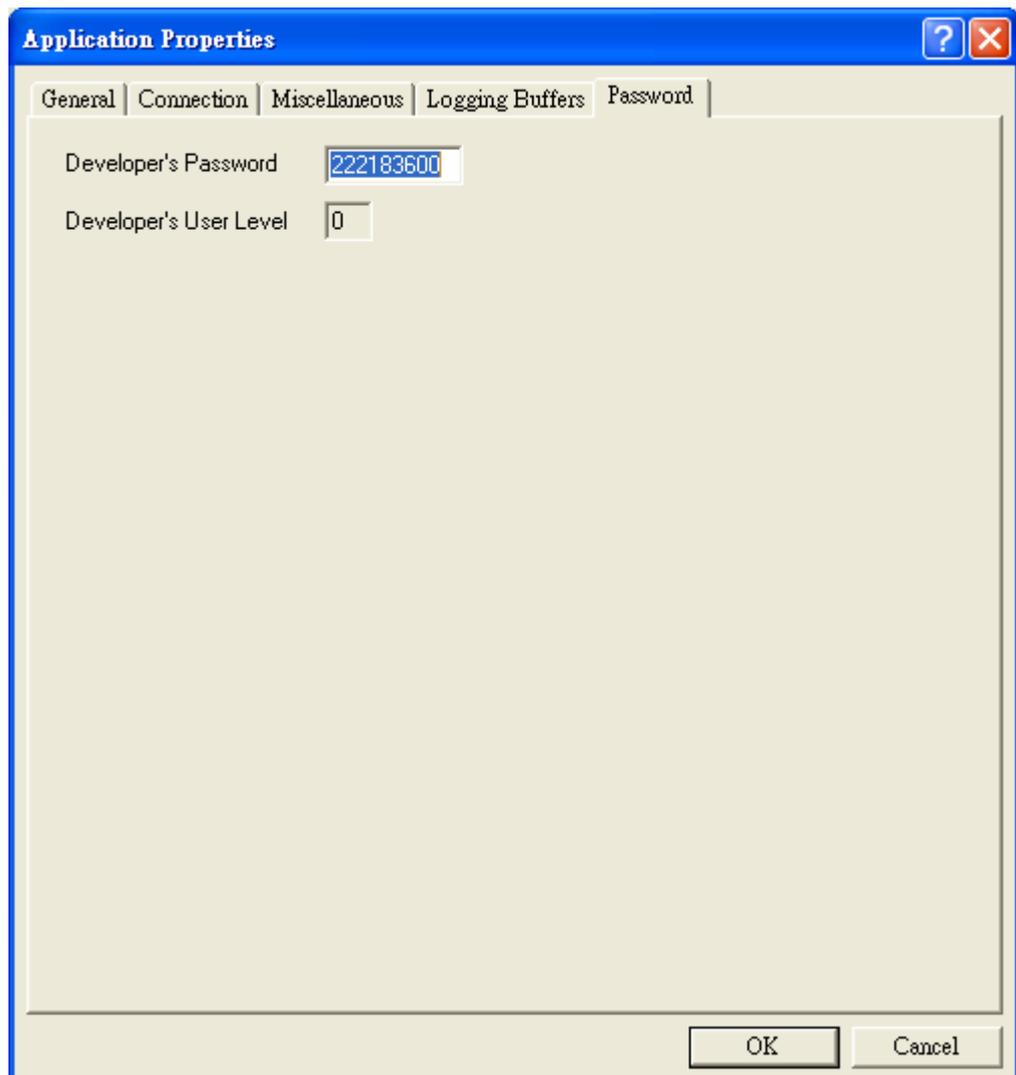


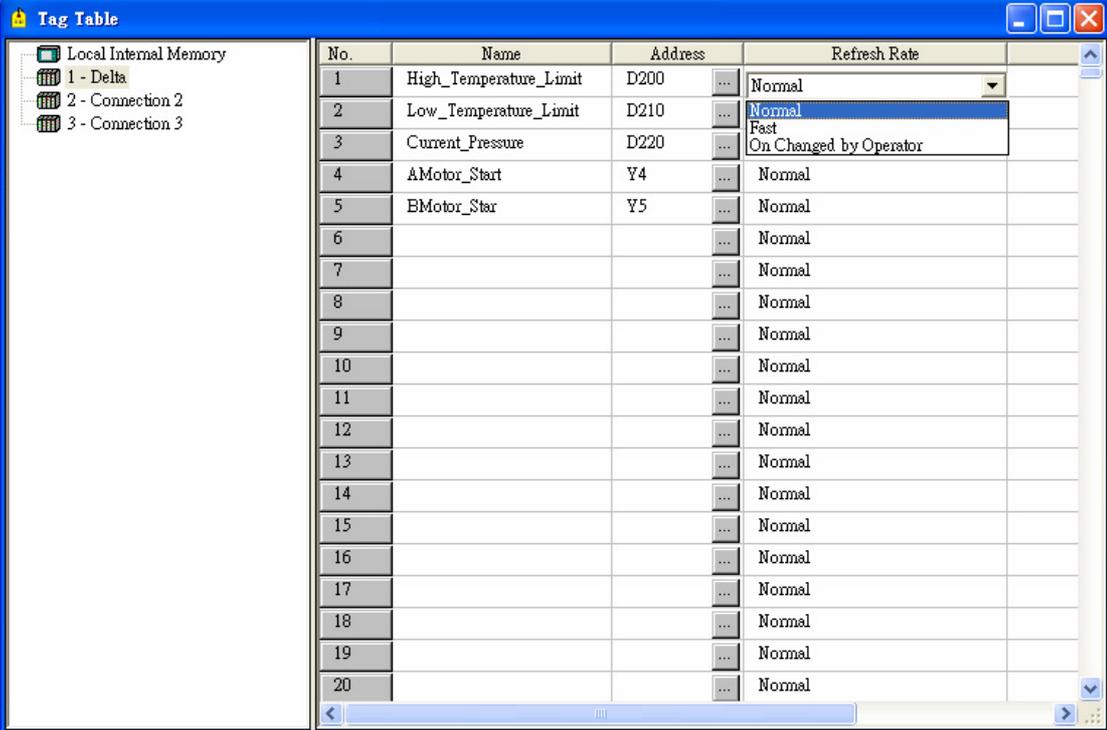
Figure 161. The [Password] Tab

2.9.2. [Tag Table]

[Tag Table] enables a user to name for the PLC address and specify the refresh rate. See Figure 162.

Select [Application]/[Tag Table], the edit window will be as the following.

2. Instructions



| No. | Name | Address | Refresh Rate |
|-----|------------------------|---------|--------------|
| 1 | High_Temperature_Limit | D200 | Normal |
| 2 | Low_Temperature_Limit | D210 | Normal |
| 3 | Current_Pressure | D220 | Normal |
| 4 | AMotor_Start | Y4 | Normal |
| 5 | BMotor_Star | Y5 | Normal |
| 6 | | | Normal |
| 7 | | | Normal |
| 8 | | | Normal |
| 9 | | | Normal |
| 10 | | | Normal |
| 11 | | | Normal |
| 12 | | | Normal |
| 13 | | | Normal |
| 14 | | | Normal |
| 15 | | | Normal |
| 16 | | | Normal |
| 17 | | | Normal |
| 18 | | | Normal |
| 19 | | | Normal |
| 20 | | | Normal |

Figure 162. The [Tag Table] window

2.9.3. [Alarm Setup]

To use [Historical Display] object, a user must set up its address and parameters first. Then the HMI will display the corresponding messages after reading the PLC value, it is up to 512 messages can be specified. See Figure 163. For the alarm setup, please refer to [Section 2.7.17. \[Historical Display\]](#).

Select [Application]/[Alarm Setup], its edit window will be as the following.

2. Instructions

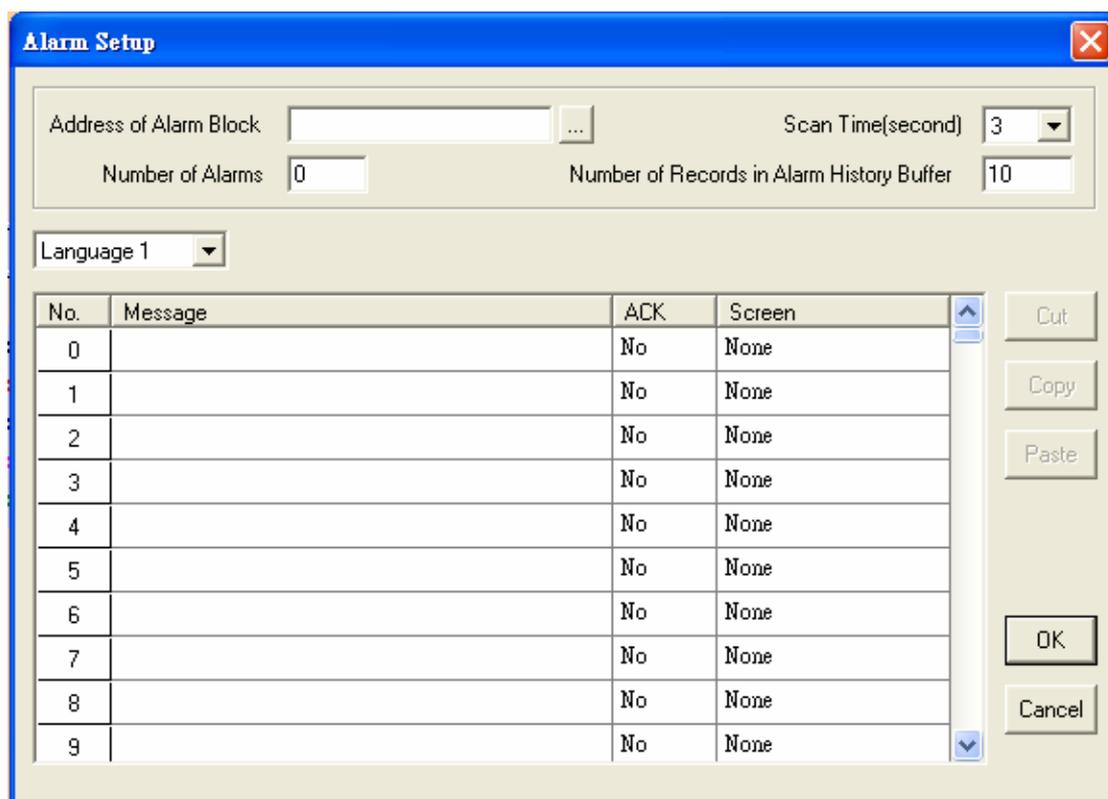


Figure 163. The [Alarm Setup] window

- [Address of Alarm Block] : Display the data with LSB format. If “D130” is the starting address, the HMI monitors 160 bits =10 words, the corresponding addresses are D130,D131.....D139. When D130 No.0=ON, the HMI will sample and record the alarm data. There are up to 512 messages available.
- [Number of Alarm] : Specify the number of alarm to display.
- [Scan Time(Second)] : Specify the period to sample the PLC data which is monitored by HMI, 1 to 10 second(s) is available.
- [Number of Records in Alarm History Buffer] : Specify the number of records can be saved in alarm history buffer. For example 100 means when the 101st alarm event happened, the 1st alarm message will be overwritten.
- Table :
 - ◆ [Message] Column : Enter the text to the alarm message. The format can be modified in its dialog box.
 - ◆ [ACK] Column : Acknowledge the message which has received to conceal the alarm.
 - ◆ [Screen] Column : Specify the screen to display when the alarm occurs.

2.9.4. [Commom Keys]

[Commom Keys] is to edit the properties of external keys. The feature is commom whatever the screen is. For example, if “K00” means go to the 1st page, press “K00” will go to the 1st page in each screen.

Select [Application]/[Commom Keys], the edit window enables a user to set up its function. Figure 164 displays all the commom keys which can be specified in PWS6600.

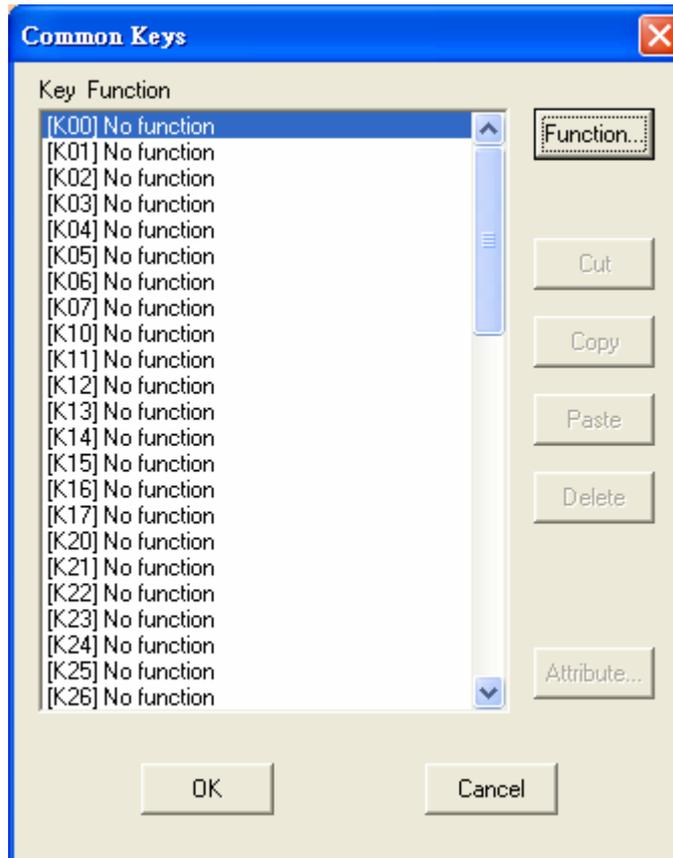


Figure 164. The [Commom Keys] Edit Window (HMI model PWS6600)

When pressed the [Function] key, the window will display the functions to specify. See Figure 165.

2. Instructions

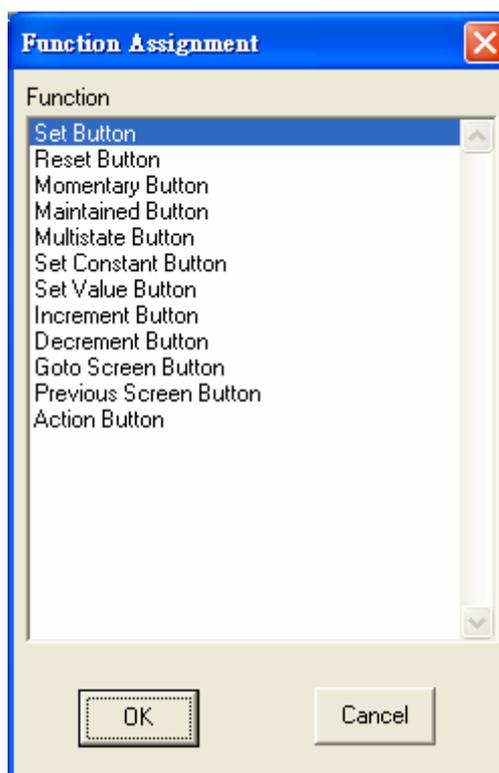


Figure 165. Specify the Function

If a user wants to define the feature just applicable on current screen, select [Screen]/[[Properties] to set up on the [Auxiliary Keys] tab. Please refer to [Section 2.5.8.4. \[Auxiliary Keys\]](#) for the complete details.

Note that this feature is only applicable on some models, please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#). For the connection, please refer to [Appendix A. - External keys' Connection \(Network&Enhanced\)](#).

2.9.5. [Slide-out Menu]

The function of [Slide-out Menu] is to operate the functional keys conveniently on HMI. (ex. [Set Button],[Reset Button],[Momentary Button].....etc.) In PWS6600 series, a user can define 5 functional keys. When pressed [Menu] button, the HMI will display the slide-out menu with specified functional keys. See Figure 166.

Note that this feature is only applicable on some models, please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI models](#).

Besides, the number of the functional keys is depending on the selected model.

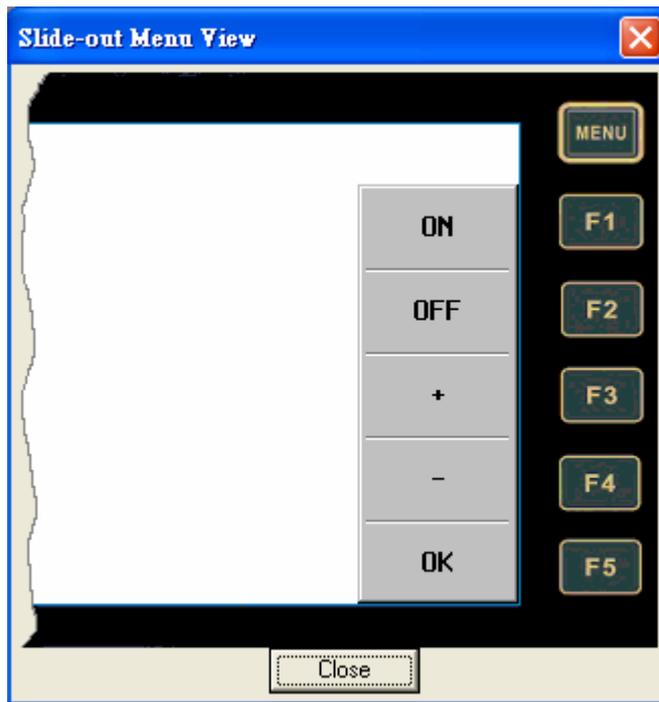
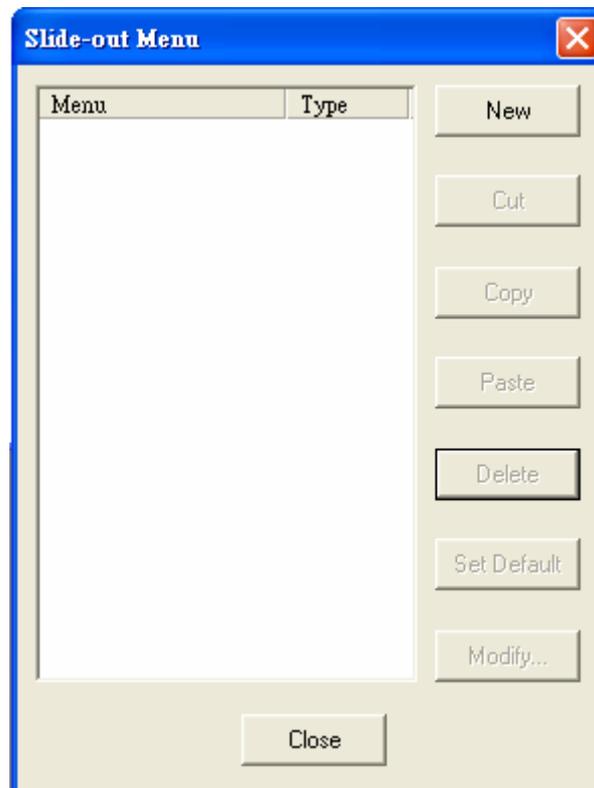


Figure 166. The [Slide-out Menu] Object

Select [Application]/[Slide-out Menu], its edit window will be as the following.



When pressed [New] button, the edit window will be as in Figure 167.

2. Instructions

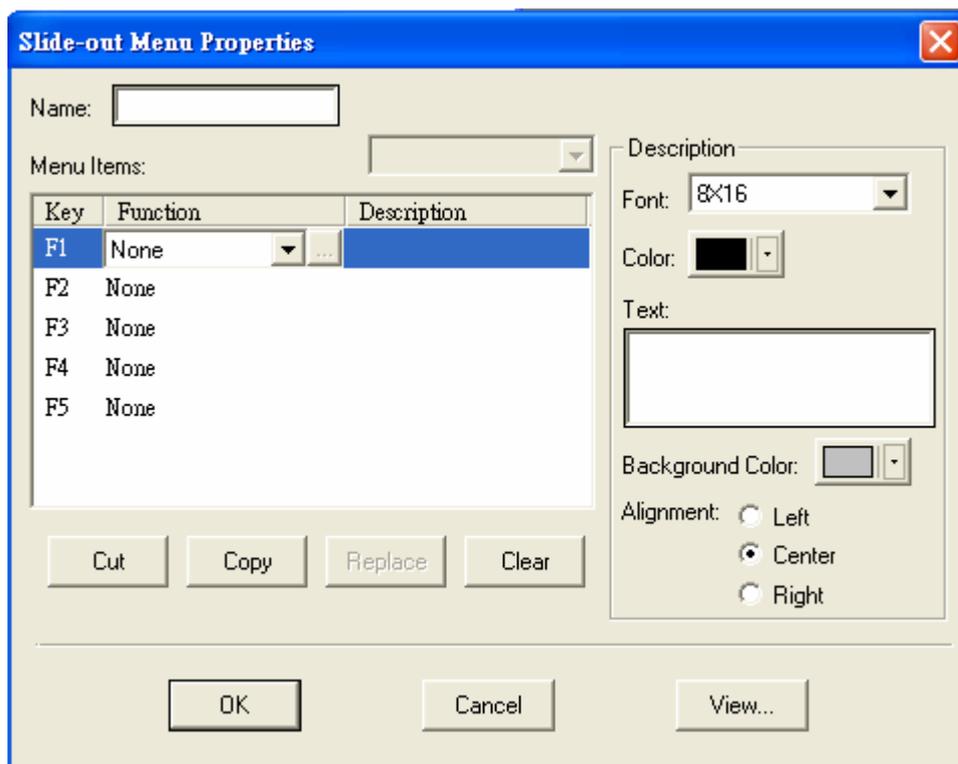
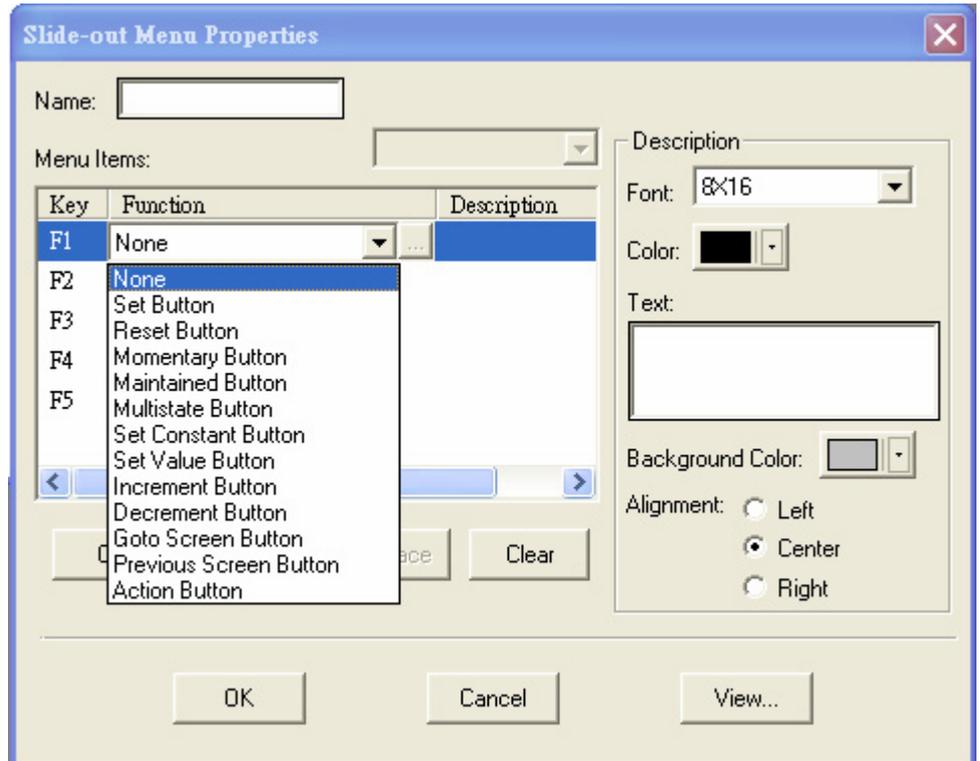


Figure 167. Setup [Slide-out Menu]

- [Name] : Enter the name for slide-out menu.
- [Function] Block :
 - ◆ [Select] : Press  key to specify the functional key from the drop-down list.



- ◆ [Cut],[Copy],[Replace],[Clear] : To cut, copy, replace, and clear the button’s content.
- [Description] Block : Enter the name for the button in the [Text] block.
- [View] Key : Press the key to view the designed menu as in Figure 166.

2.9.6. [System Message]

[System Message] is to edit the message for HMI system. When the option [Operator Confirmation] is selected, executing the object will display its system message. For example, the system message “Are you sure?” will display after the numeric entry. See Figure 168.

2. Instructions

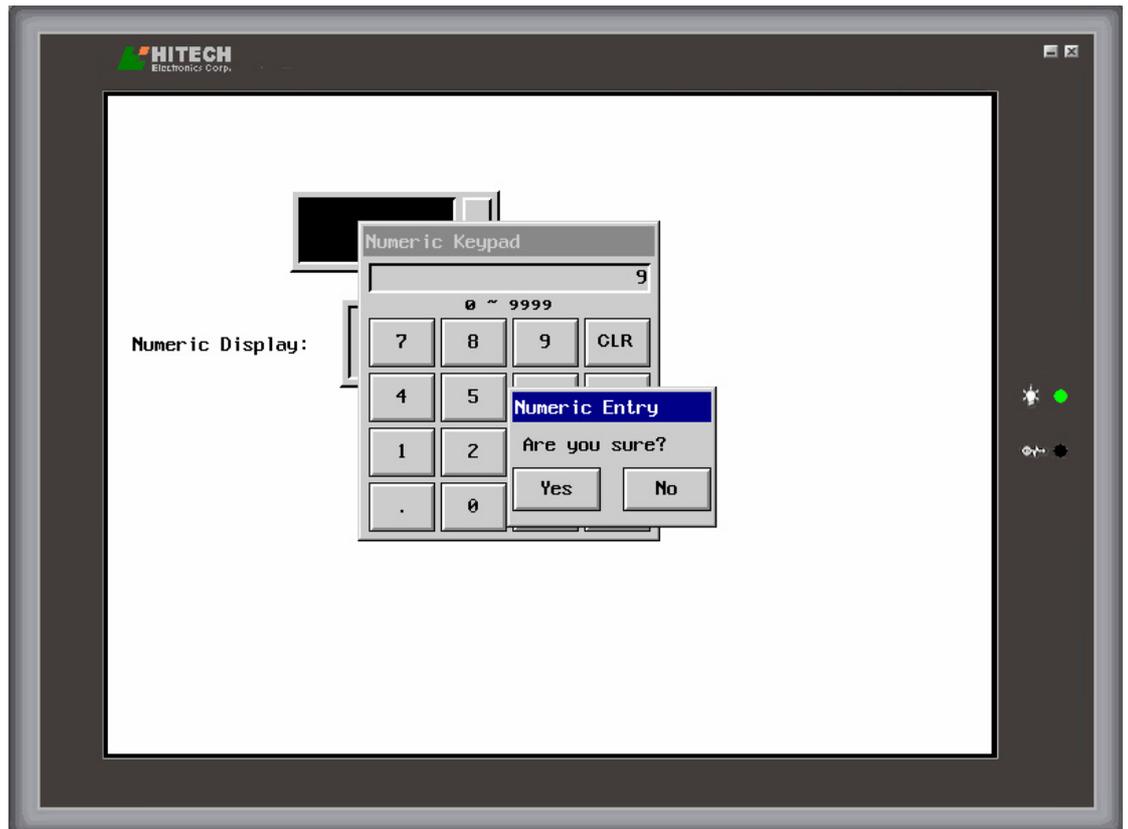
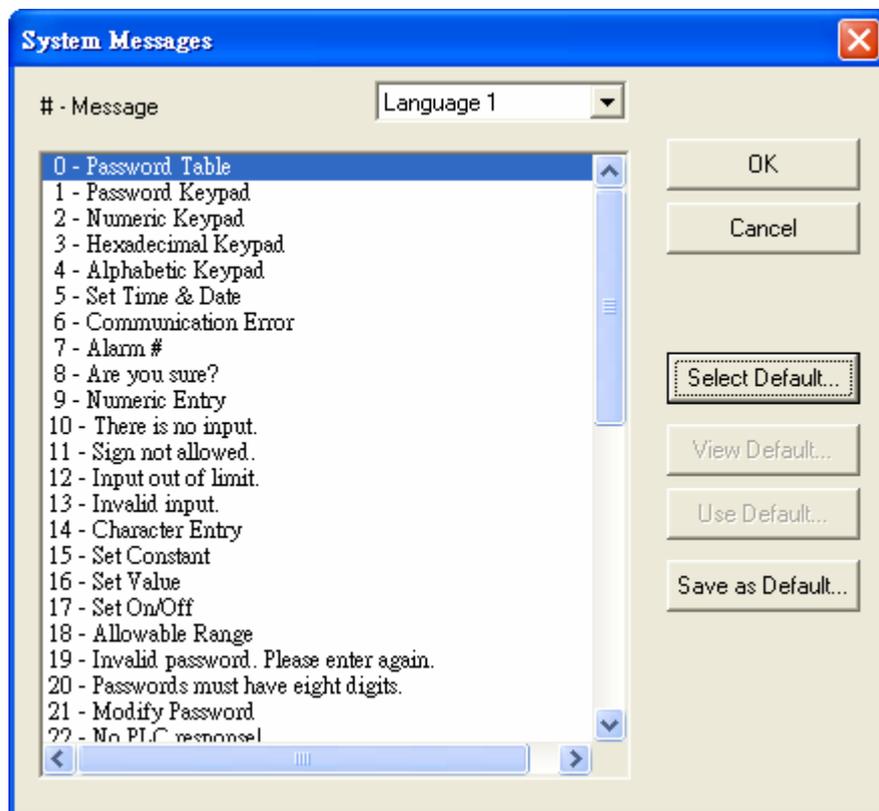


Figure 168. An example of [System Message]

Select [Application]/[System Message], the edit window will be as the following. See Figure 169.



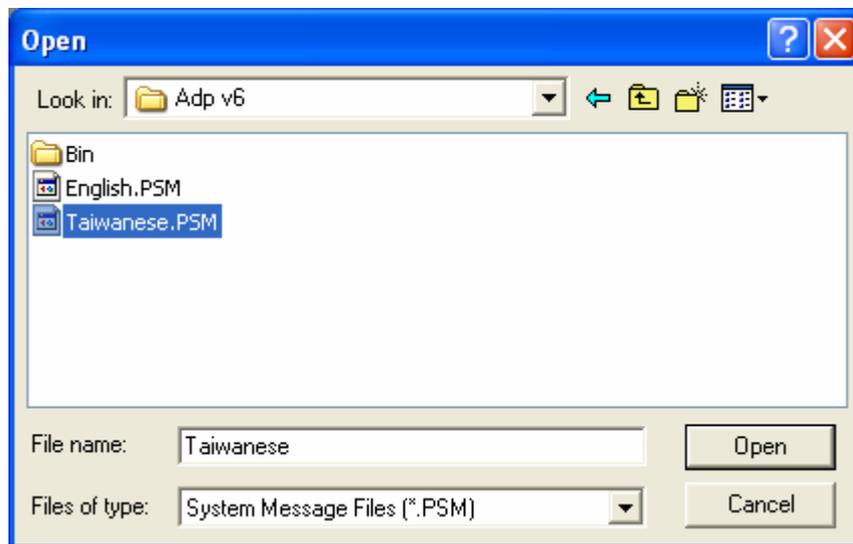
2. Instructions

Figure 169. The [System Messages] Edit Window

Double-click on the message block; the message can be modified in its dialog box as the following.



Press [Select Default]; select the default file from the dialog box as the following.



Select [View Default] to view the content of default message. Select [Use Default] to use the specified default message. See Figure 170 (The default message is Chinese).

[Save as Default] button is to save the system messages as default file (*.PSM).

2. Instructions

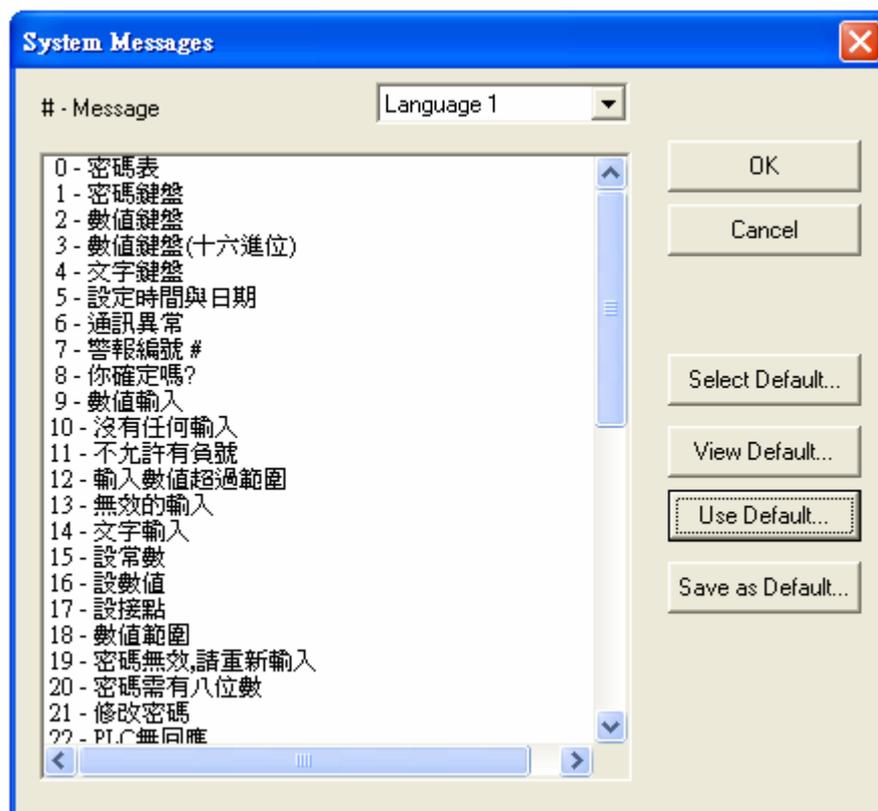


Figure 170. Update System Messages

[System Message] means the message from HMI system itself. The default message will be used in general usage. If the message need to be changed, please comply with the definition of default message.

2.9.7. [Report Format List]

This command is only applicable on SoftPanel; please refer to SoftPanel for the complete details.

2.9.8. Macros

When select Macro command, the Macro edit window will display on the screen. See Figure 171. Macro enables the Workstation to excute a number of task including folw control, data transfer, conversion, counter, system service instructions, etc. Using Macro not only can communicate to the PLC but also connect to other device. This feature provides an efficient integration system as well as an economical structure in hardware application. Besides, Using Macro can also significantly save the program size and optimize the efficiency in PLC.

Please refer to [Chapter 8. Macros](#) for the complete details.

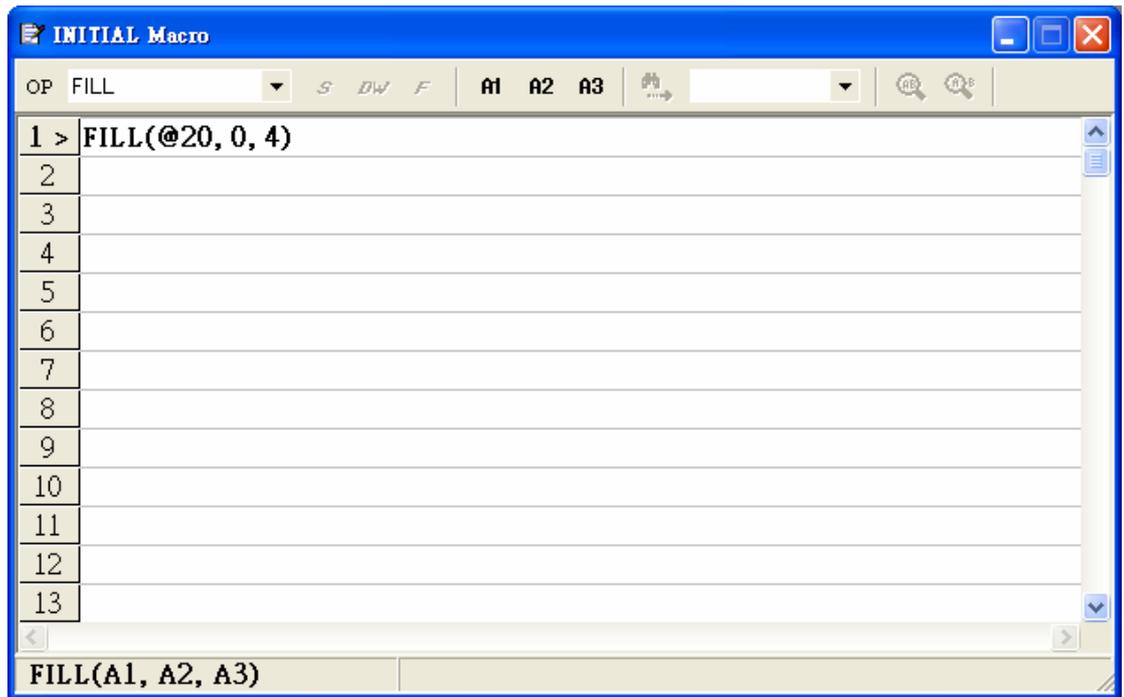


Figure 171. The Initial Macro Edit Window

2.9.8.1. [INITIAL Macro]

When the first time the HMI run the application(It menas the first time to execute the application after power off), this command is only executed once. The purpose of INITIAL Macro is data initialization and communication parameters declaration....etc.

2.9.8.2. [BACKGROUND Macro]

When the HMI run the application, the command will be executed cyclically. The maximam 30 lines of Macro commands can be executed once. Whatever ths screen is, the Macro commands will be executed. The purpose of BACKGOUND Macro is communication control, Data conversion....etc.

2.9.8.3. [CLOCK Macro]

When the HMI runs the application, the entire Macro will be executed once every 500ms. The purpose of CLOCK Macro is screen control, bit setting, command control, data transfer...etc.

2.9.9. [Compile]

The [Compile] button is used to test the application if any errors happen before the application is excuted. After the errors modified, then the application can be excuted.

2. Instructions

Select [Application]/[Compile], the dialog box as in Figure 172 will appear as the following. Note that Figure 172 an error found in the application. After ADP 6.0 later, this function will provide detailed error message(s).

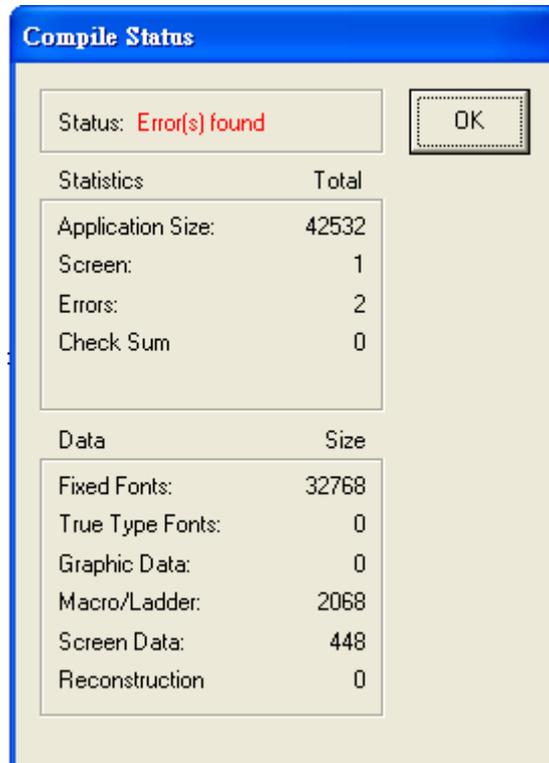


Figure 172. The [Compile Status] Dialog Box

After [OK] button pressed, its dialog box as in Figure 173 will be on the screen. A user can double-click on the error message, the object or macro screen will appear on the screen. Alternatively, a user can check [Open dialog box automatically] box, then they will appear on the screen automatically.

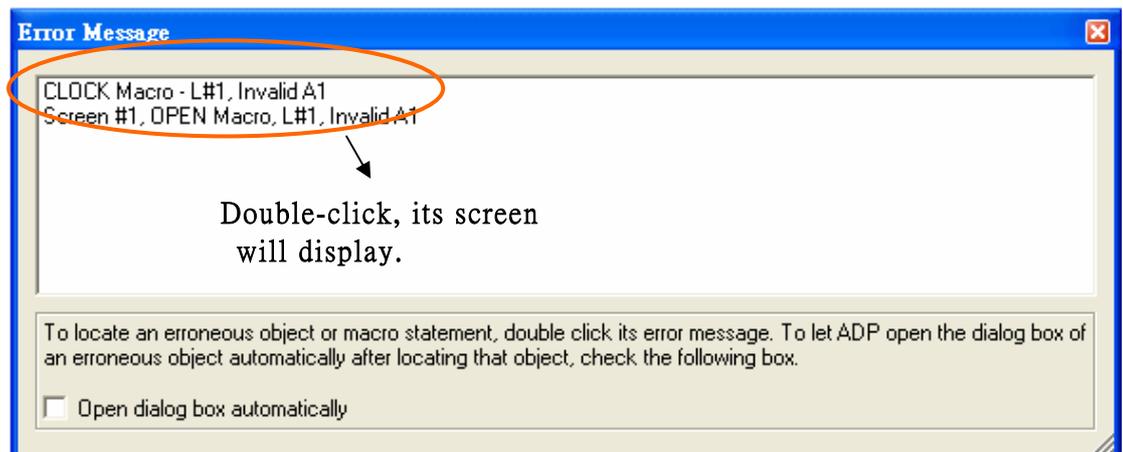
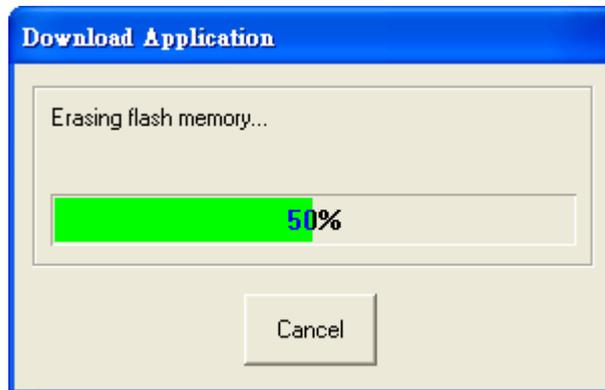


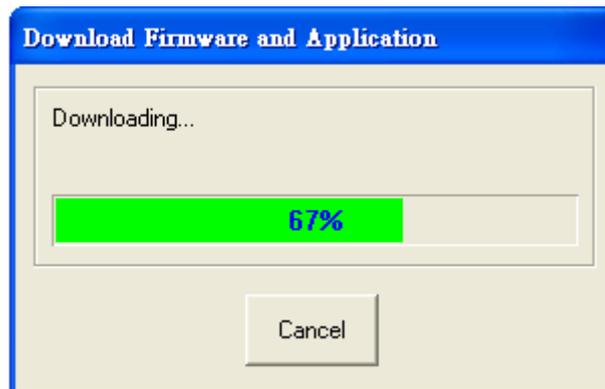
Figure 173. The [Error Message] Dialog Box

2.9.10. [Download Application]  and [Download Firmware and Application] 

[Download Application] is used to download the update application and screen to HMI. See below.



[Download Firmware and Application] is to download the firmware and application to HMI, the first time download the application must select this application. See below.



If the model of the connected PWS unit is not the model required, its message box will appear on the screen as the following. Besides, remember to excute [Compile] before download.



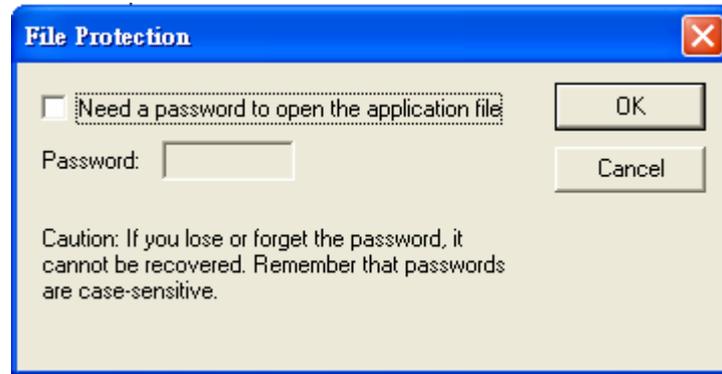
2.9.11. [File Protection]

[File Protection] is to protect the application; a user must enter the password to open the application file.

2. Instructions

Select [Application]/[File Protection], the dialog box will be as the following.

Note that this command is totally different from [Section 2.9.1.5 \[Password\] Tab](#). This password is used to protect the application file from modifying by those unathirized users. However, the password in [Section 2.9.1.5. \[Password\] Tab](#) is a security against copy and upload.



2.10. Tool

[Tool] is to manage, simulate the application and edit recipe. There are four options : [Cross Reference],[Off-line Simulation],[On-line Simulation] and [View/Edit Recipe].

2.10.1. [Cross Reference]

The [Cross Reference] helps a user to consult the Screen, Serial No., Address and Macro-in use quickly. See Figure 174.

In the [Cross Reference] window, select the icon to sort serial No., screen or address in numerical or alphabetical order. The right table will list its object and properties. The preview window below will display the selected object .Click on a heading of a column in the table (ex. [Serial No.],[Name]....etc.) to sort the properties in ascending or descending order. See Figure 174 .

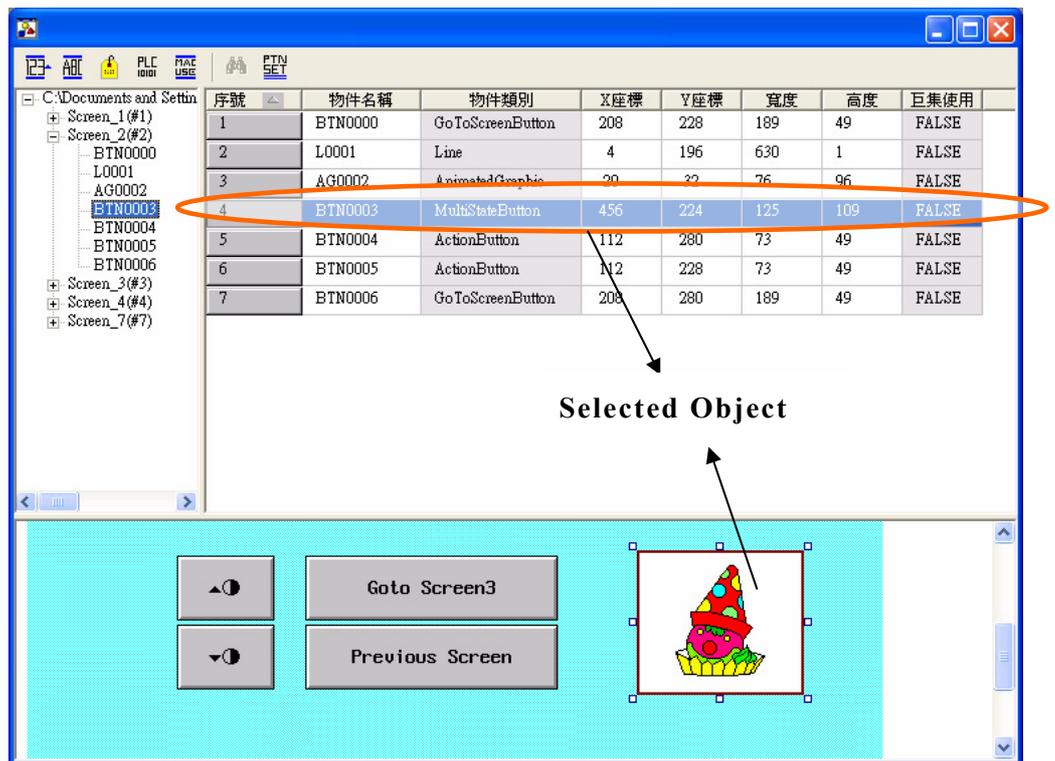
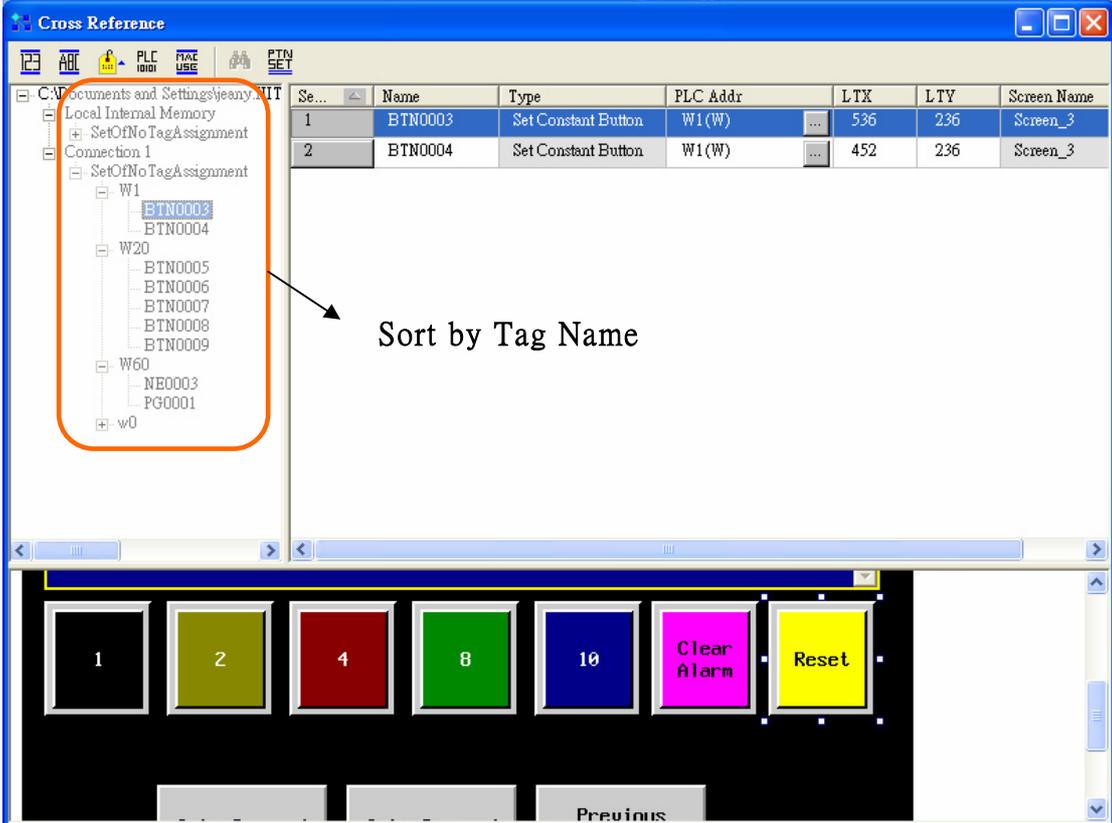


Figure 174. The [Cross Reference] window 

2. Instructions

Icons Introduction:

- : Select this icon to sort by screen number.
- : Select this icon to sort by name.
- : Select this icon to sort by tag name.

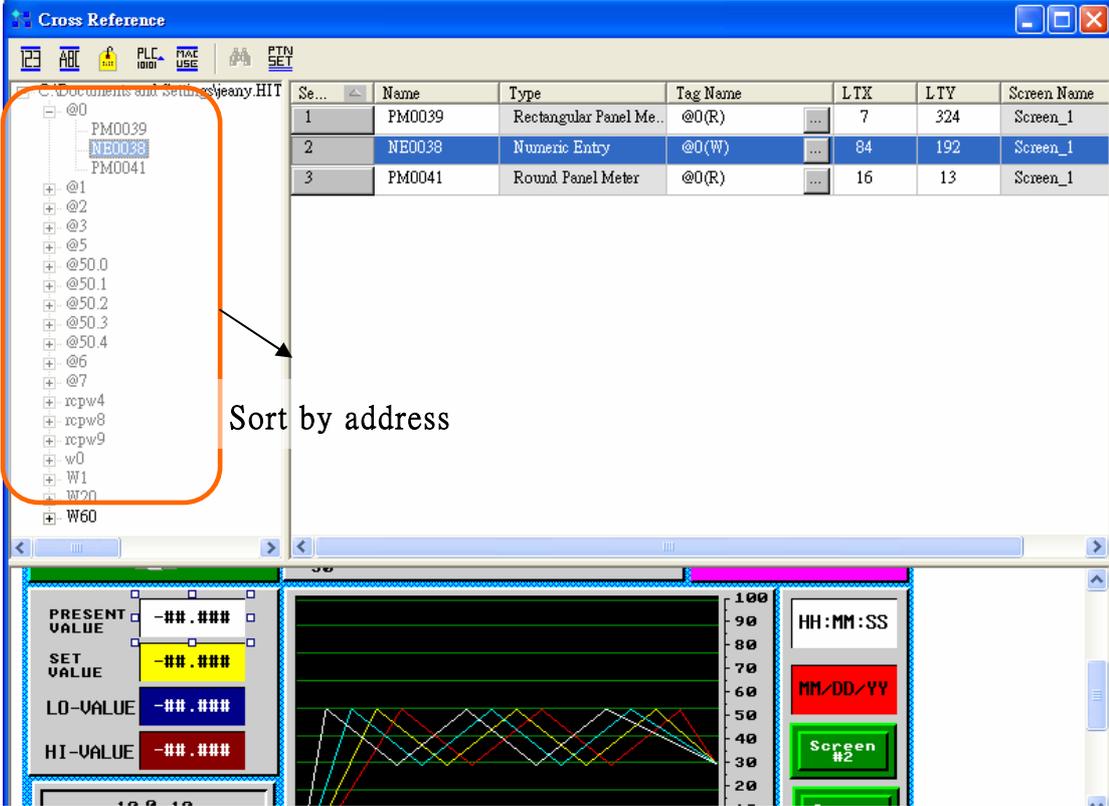


Sort by Tag Name

| Se... | Name | Type | PLC Addr | LTX | LTY | Screen Name | |
|-------|---------|---------------------|----------|-----|-----|-------------|----------|
| 1 | BTN0003 | Set Constant Button | W1(W) | ... | 536 | 236 | Screen_3 |
| 2 | BTN0004 | Set Constant Button | W1(W) | ... | 452 | 236 | Screen_3 |

2. Instructions

- : Select this icon to sort by PLC address. The property is sort by address in ascending order; click the address to list the object.



Sort by address

| Se... | Name | Type | Tag Name | LTX | LTY | Screen Name |
|-------|--------|------------------------|----------|-----|-----|-------------|
| 1 | PM0039 | Rectangular Panel Me.. | @0(R) | 7 | 324 | Screen_1 |
| 2 | NE0038 | Numeric Entry | @0(W) | 84 | 192 | Screen_1 |
| 3 | PM0041 | Round Panel Meter | @0(R) | 16 | 13 | Screen_1 |

- : Select this icon to sort by Macro-in use Objects.
- : Select this icon to sort by search pattern, this feature is only applicable on search PLC address or tag name.
- : Set the desired pattern for search. Select [by PLC Addr] or [by Tag Name], [Exact match] or [Partical match] options to search. See Figure 175. If the search pattern is “W”, and select [Partical match]. The cross refrence will display the objects which PLC addresss has “W”- “W0”, “W1”, “W20”, “W60”. See Figure 176.

2. Instructions

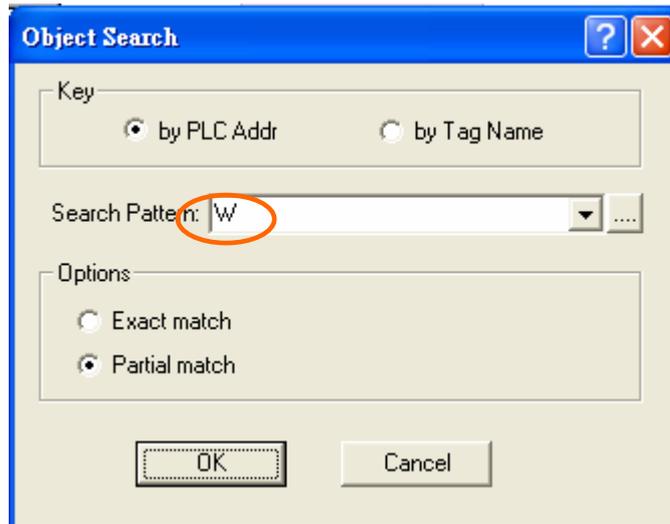


Figure 175. Specify the search pattern

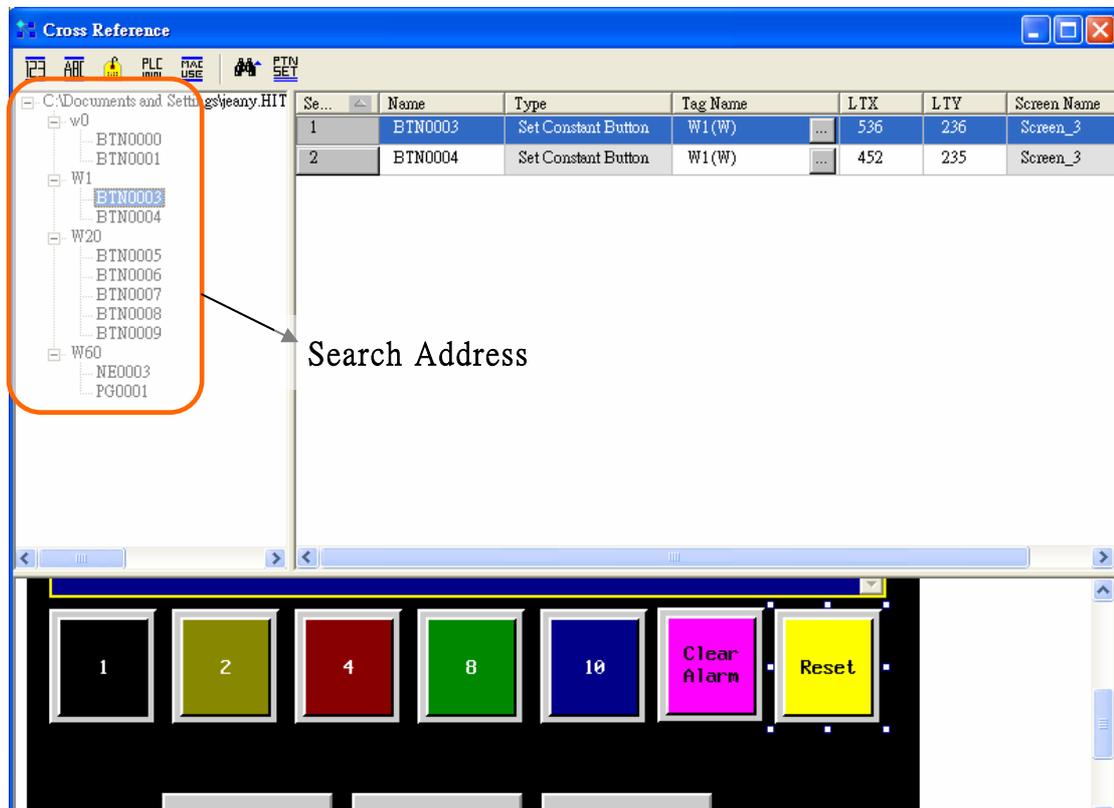


Figure 176. Display the search address

2.10.2. [Off-line Simulation] and [On-line Simulation]

ADP supports two types of simulation. One is [Off-line Simulation], the other is [On-line Simulation]. They both offer a user the simulation for HMI in the PC. *Note that the application must compile before simulation.*

2. Instructions

[Off-line Simulation] is applicable on all PLCs which ADP offers but [On-line Simulation] is only applicable on some PLCs.

2.10.2.1. [Off-line Simulation]

By using [Offline Simulation], the result can be seen in the PC which is the same operation mode between HMI and PLC. For example, PWS6300 Off-line Simulation will display its operation mode. See Figure 177. PWS6600 Off-line Simulation will display its operation mode as in Figure 178 and the external keys will display as well. See Figure 179.

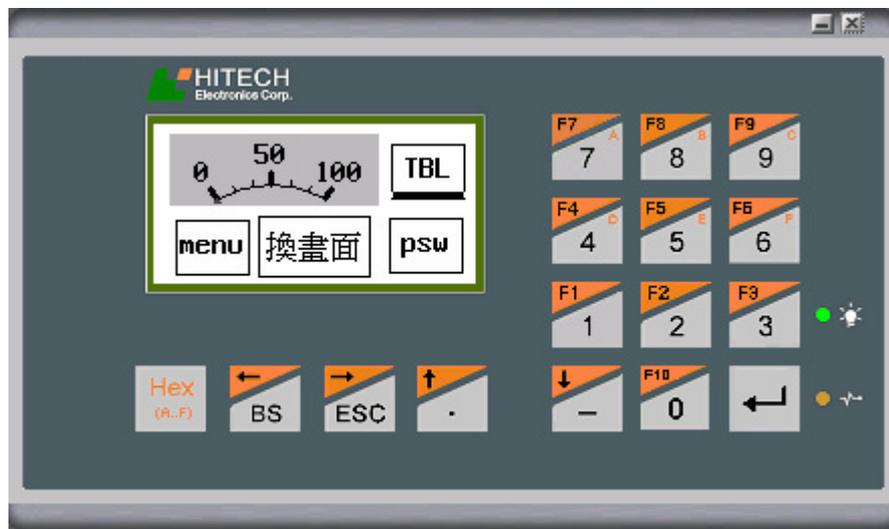


Figure 177. PWS6300 Off-line Simulation

2. Instructions

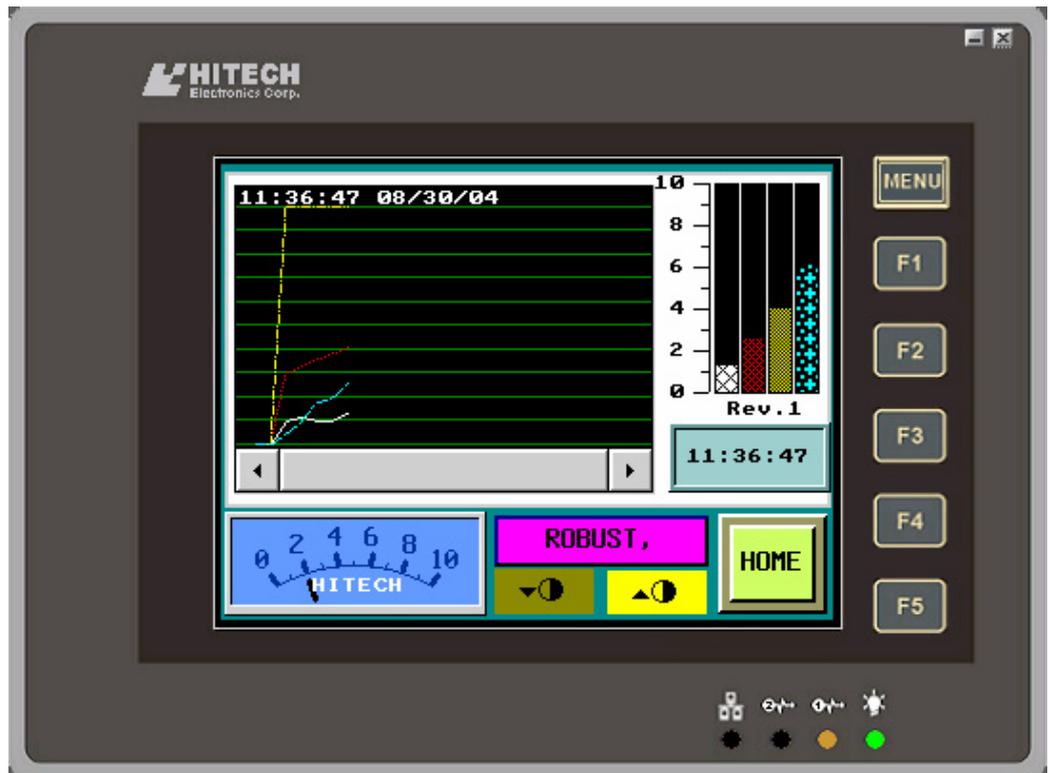


Figure 178. PWS6600 Off-line Simulation

| PWS-6600 External Keys | | | | | | | |
|------------------------|-----|-----|-----|-----|-----|-----|-----|
| K00 | K10 | K20 | K30 | K40 | K50 | K60 | K70 |
| K01 | K11 | K21 | K31 | K41 | K51 | K61 | K71 |
| K02 | K12 | K22 | K32 | K42 | K52 | K62 | K72 |
| K03 | K13 | K23 | K33 | K43 | K53 | K63 | K73 |
| K04 | K14 | K24 | K34 | K44 | K54 | K64 | K74 |
| K05 | K15 | K25 | K35 | K45 | K55 | K65 | K75 |
| K06 | K16 | K26 | K36 | K46 | K56 | K66 | K76 |
| K07 | K17 | K27 | K37 | K47 | K57 | K67 | K77 |

Figure 179. PWS6600 External Keys

This function is without communicating with PLC, the following are the convenience :

1. Before purchase, a user can simulate operation and recognize the HMI functions sufficiently.
2. Before download, a user can simulate in the PC to test the application including the screen change, buttons' function and display....etc.
3. Before the completion of the PLC program, the HMI application can be present to the customer.

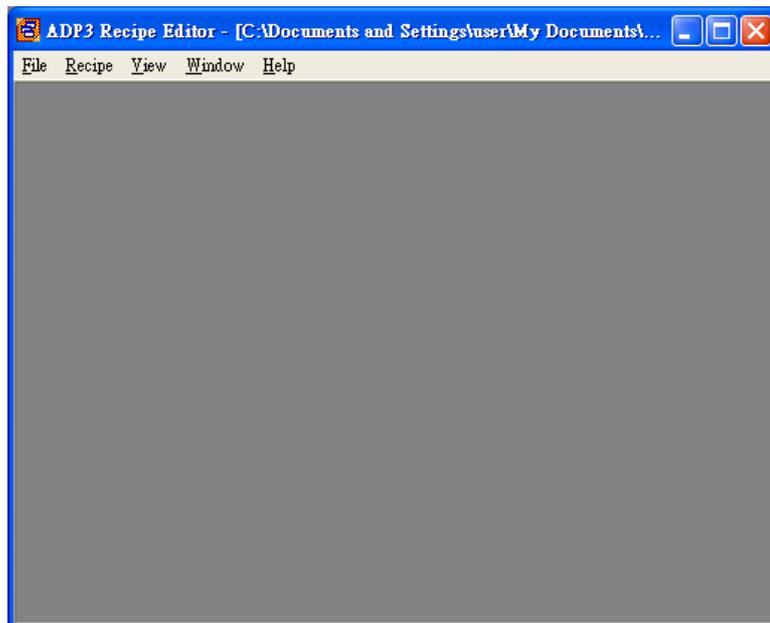
2.10.2.2. [On-line Simulation]

ADP offers user [On-line Simulation] for the connection between PC and PLC communication ports. If there is only one RS232C serial port in PC, then user need to add another adapter for transferring the signal from RS232C to RS422 or RS485 in order to connect with the RS422 or RS485 port in PLC. Notice that the communication time between ADP and PLC is 60 mins. If you need to connect again, please close the ADP and restart it. If you want to remove this limitation, you need to install the licensed Software and a PLC adapter which has the function of RS-232C/422/485 and anti-noise (3000 volt).

For the development of the newest software, you may contact the nearby dealer or visit website <http://www.hitechsite.com> to understand recently tendency.

2.10.3. [View/Edit Recipes]

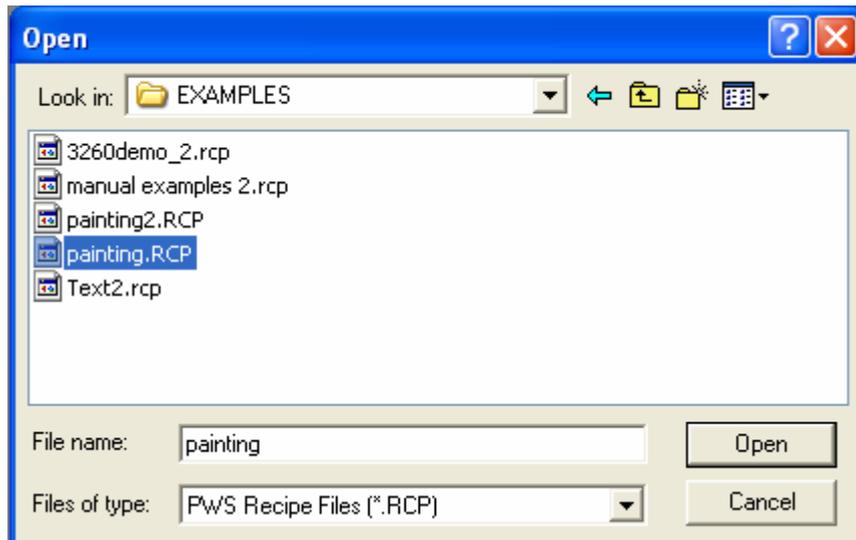
Select [Tool]/[View/Edit Recipes], the recipe editor window will be as the following :



Note that the recipe must upload the file from HMI to PC and saved the file, the data size and total of recipe can not be modified. Note that this feature is only applicable on some models; please refer to [Appendix A. - Table of the ADP 6.0 Features and HMI Models](#). For the setup steps, please refer to [Section 2.9. \[Application\]](#) and [Chapter 3. Recipe](#).

Select [File]/ [Open] to open the selected recipe file (ex. “painting.RCP”); See below. Note that the recipe file is *.RCP.

2. Instructions



Open the recipe files, then select [Recipe]/[Open Recipe]; its dialog box will be as the following and input the recipe number to the open recipe.



The recipe displays its number on the screen for a user to edit. See Figure 180.

2. Instructions

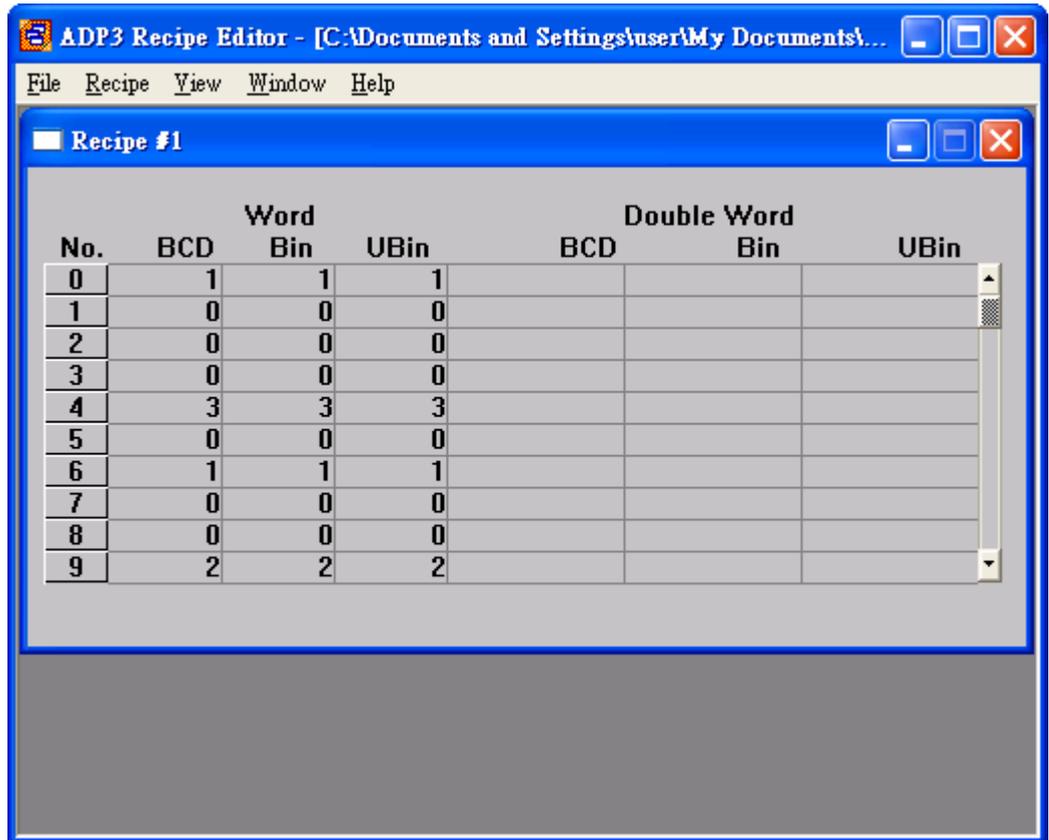
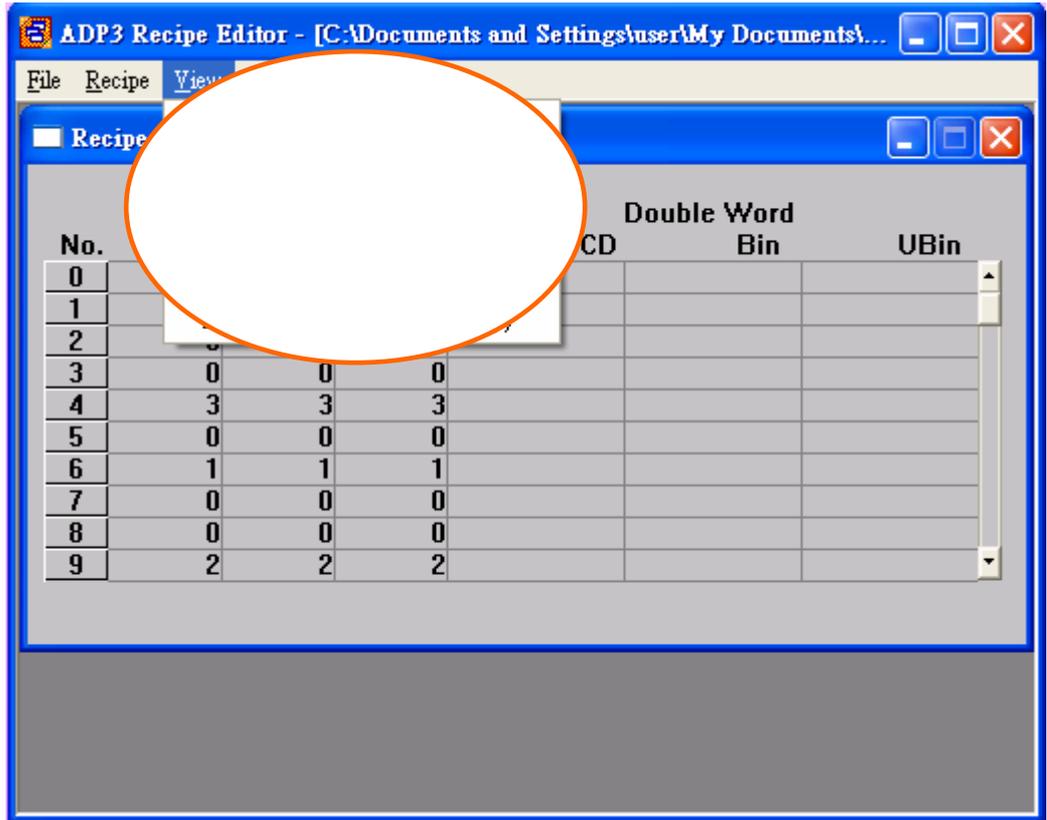


Figure 180. Edit Recipe #1

The function of recipe editor is the same as common edit tool; it includes open, save, print, view the recipe file and window arrangement. The following figure displays various formats to view the recipe data.

2. Instructions



2.11. Options

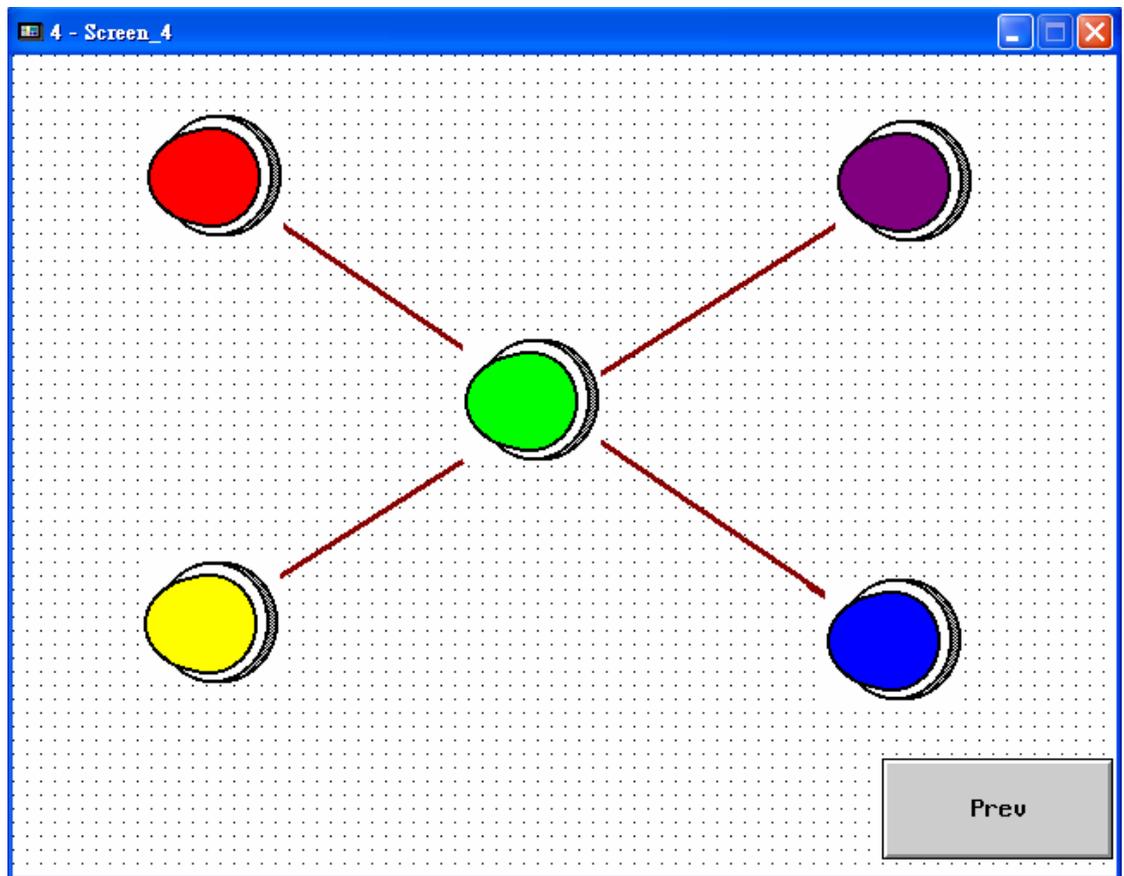
[Options] is offer a user options for edit and tansmission.

2.11.1. [Snap to Grid]

If a user selects [Snap to Grid] on the edit screen, the edit objects will align (See [Section 2.11.2. \[Display Grid\]](#)) the nearby grid. This command is convenient for a user to align objects.

2.11.2. [Display Grid]

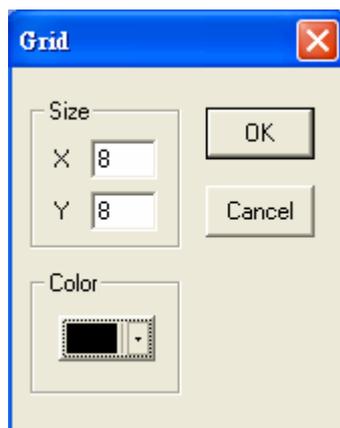
If select this option, the edit screen will display the grid to align conveniently. See below.



2.11.3. [Grid Attributes]

Select this option; a user can specify the grid size in its dialog box as the following. The bigger grid size is, the longer the distance between point and point will be.

2. Instructions



2.11.4. [Transmission Setup]

Select [Options]/ [Transmission Setup], it dialog box will be as the following. See Figure 181. A user can specify the download/upload port and baud rate between PC and HMI. The PC port options are “Ethernet”, “COM1”.... “COM16” and “USB”, “115200” baud rate is recommended.

Notice that the communication parameter setting is different from the [Connection] tab's setting in [Application]/[Workstation Setup] . The former is the setting between PC and HMI, the latter is the setting between HMI and PLC.

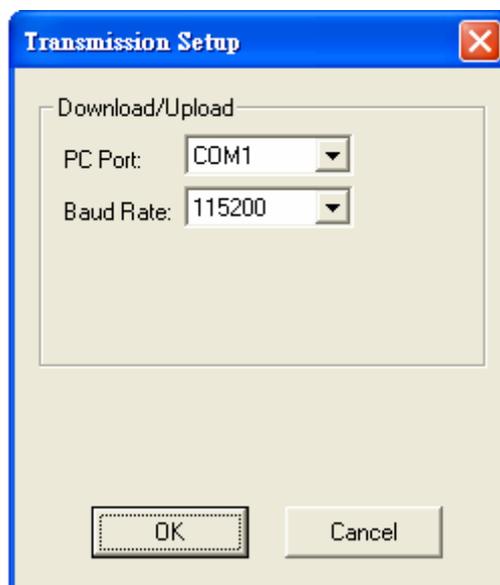
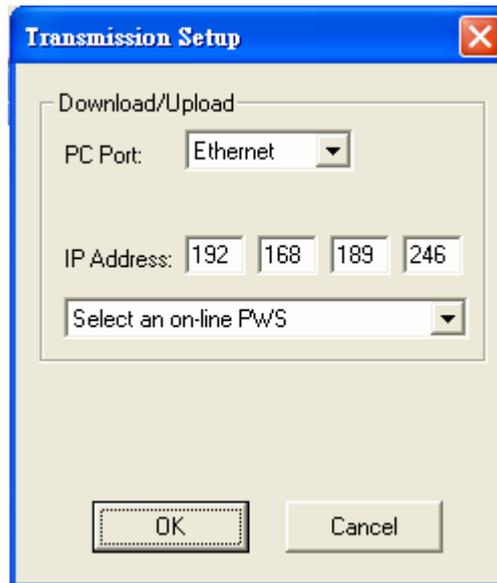


Figure 181. The [Transmission] Dialog Box

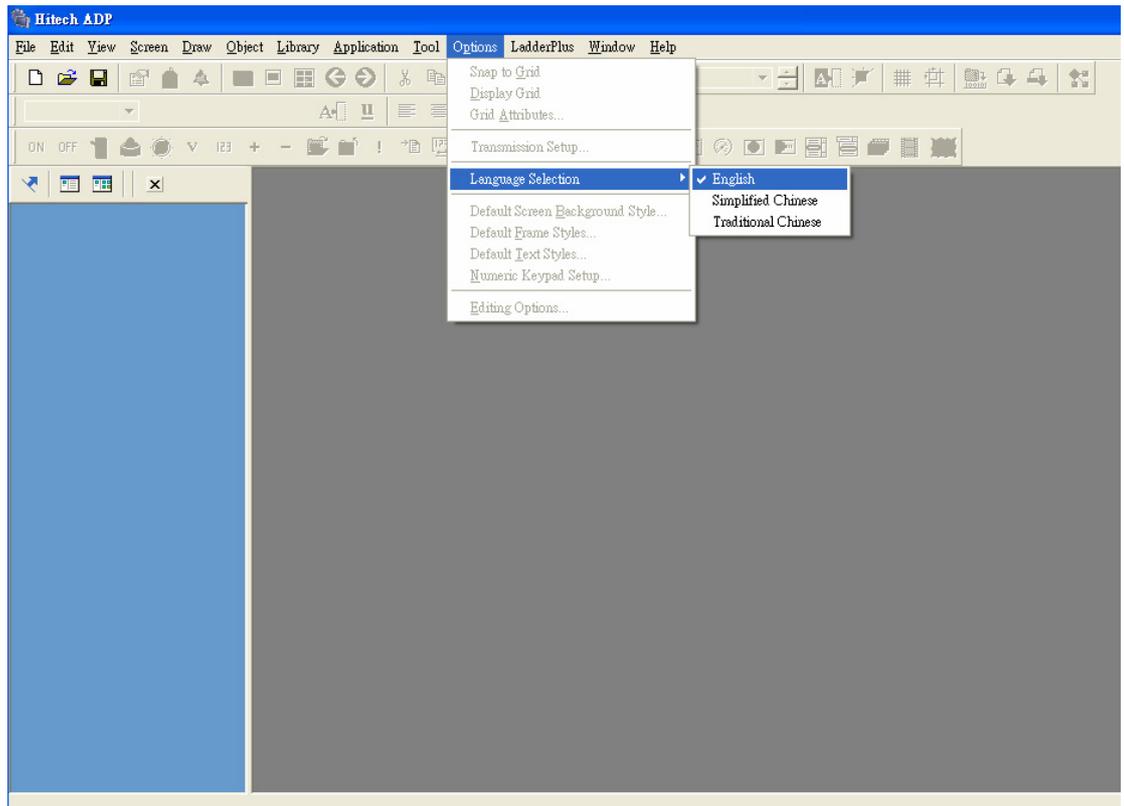
If [PC Port] is “Ethernet”, a user needs to input PC address or select from the drop-down list. See below.

2. Instructions



2.11.5. [Language Selection]

Select [Options]/[Language Selection], it will display three language options for the operation environment : They are English, Simplified Chinese and Traditional Chinese.



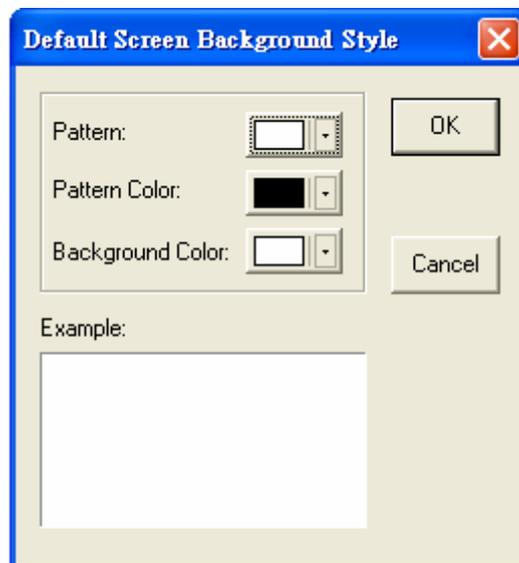
Select the language to convert; the message box will be as the following. You should exit the application first to let the new language selection take effect. Do you want to the new language selection?

2. Instructions



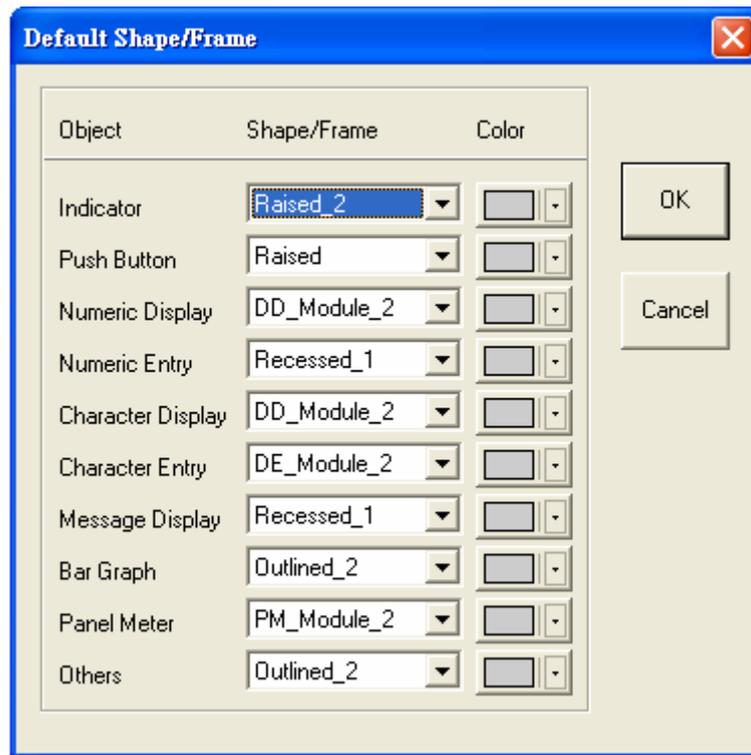
2.11.6. [Default Screen Background Style]

Select [Options]/[Default Screen Background Style], the dialog box will be as the following. A user can specify the pattern, its color and background color for all screens. The default setting will display in all screens except for the screen with special edit.



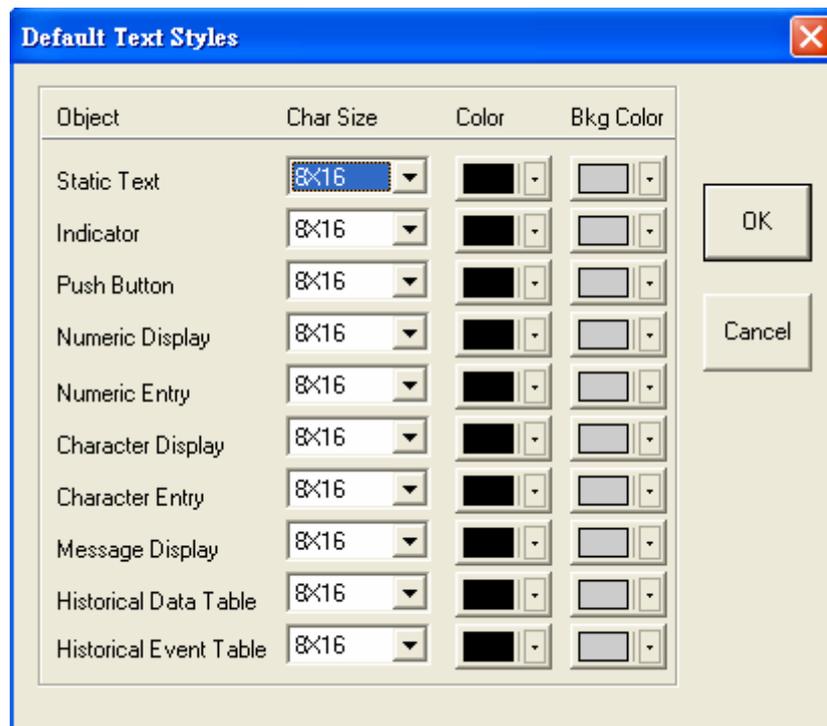
2.11.7. [Default Frame Style]

Select [Options]/[Default Frame Style], its dialog box will be as the following on the screen. A user can specify the different object types with their own Shape/Frame. Then those objects will display with specified Shape/Frame on the screen.



2.11.8. [Default Text Style]

Select [Options]/[Default Text Style], a user can specify Char Size, Color, and Bkg. Color for each type of object. Those objects will display their setting on the screen.

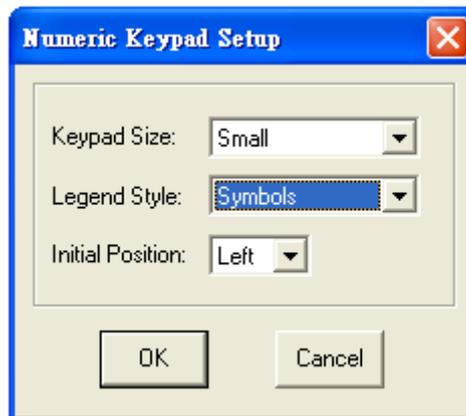


2. Instructions

2.11.9. [Numeric Keypad Setup]

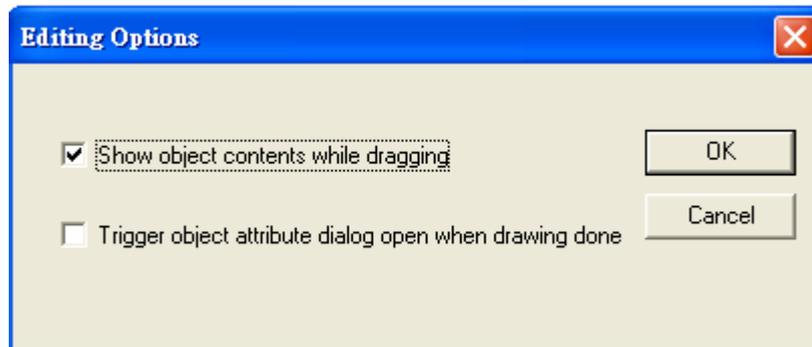
Select [Options]/[Numeric Keypad Setup], its dialog box will be as the following on the screen. A user can setup the numeric keypad on the screen. (ex. press [Numeric Entry] object to display the keypad.)

The keypad style as below : Small/Large; Symbols/Chinese Characters; Left/Right.



2.11.10. [Editing Options]

Select [Options]/[Editing Options], the dialog box will be as the following on the screen. A user can setup the edit environment here.



2.12. Window

There are [Cascade],[Tile],[Close All] options in [Window] menu and list all open screens.

[Tile] is used to copy and contrast with the screens.

[Close All] is to close all open screens once; the screen will not be saved. The application is not closed.

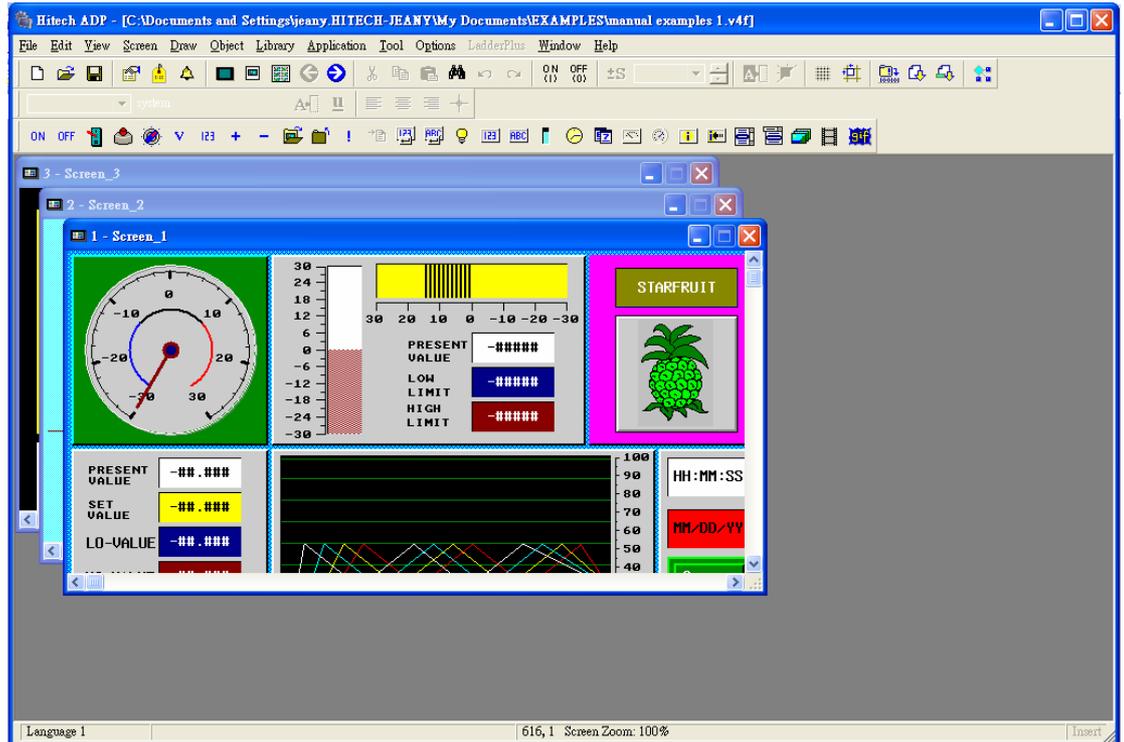


Figure 182. [Cascade]

2. Instructions

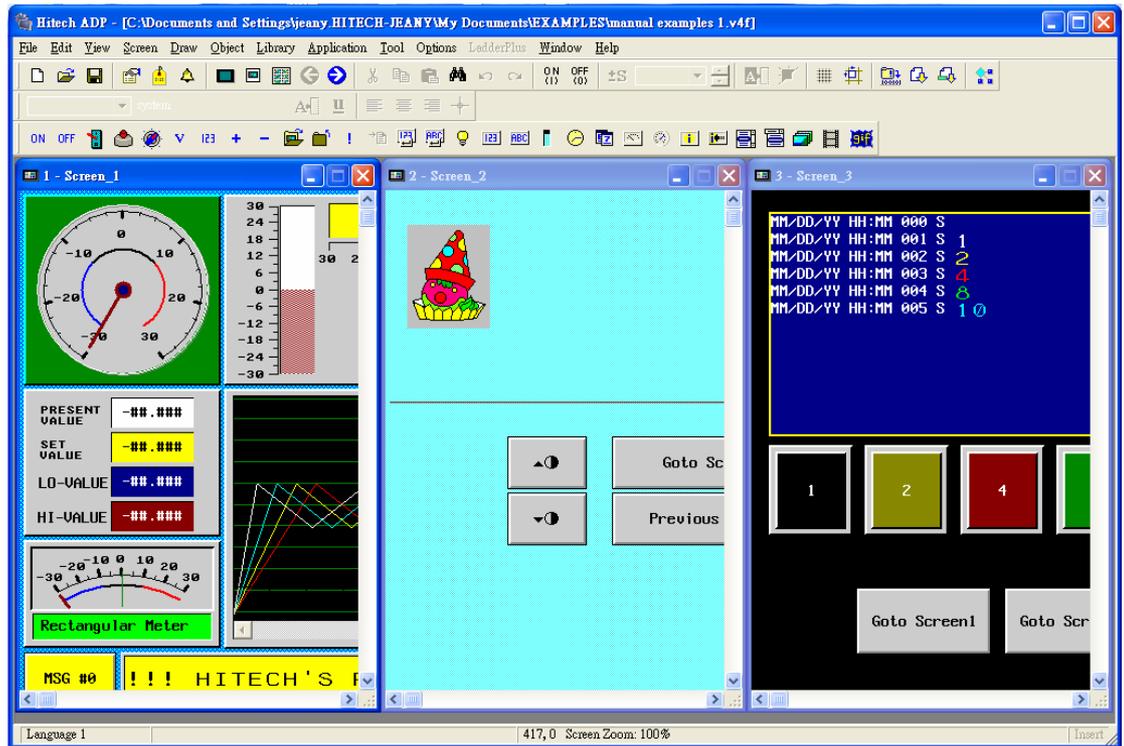


Figure 183. [Tile]

2.13. Help

[Help] offers users for the complete details and instruction about specific topics. There are [Macro],[Ladderplus] and [About] options in [Help] menu.

2.13.1. [Macro]

Select [Help]/[Macro], the dialog box will be as the following. See Figure 184. A user can consult macro functions here.



Figure 184. Macros

2.13.2. [Ladderplus]

Select [Help]/[Ladderplus], the dialog box will be as the following. See Figure 185. A user can consult the ladder reference for functions and commands.

2. Instructions

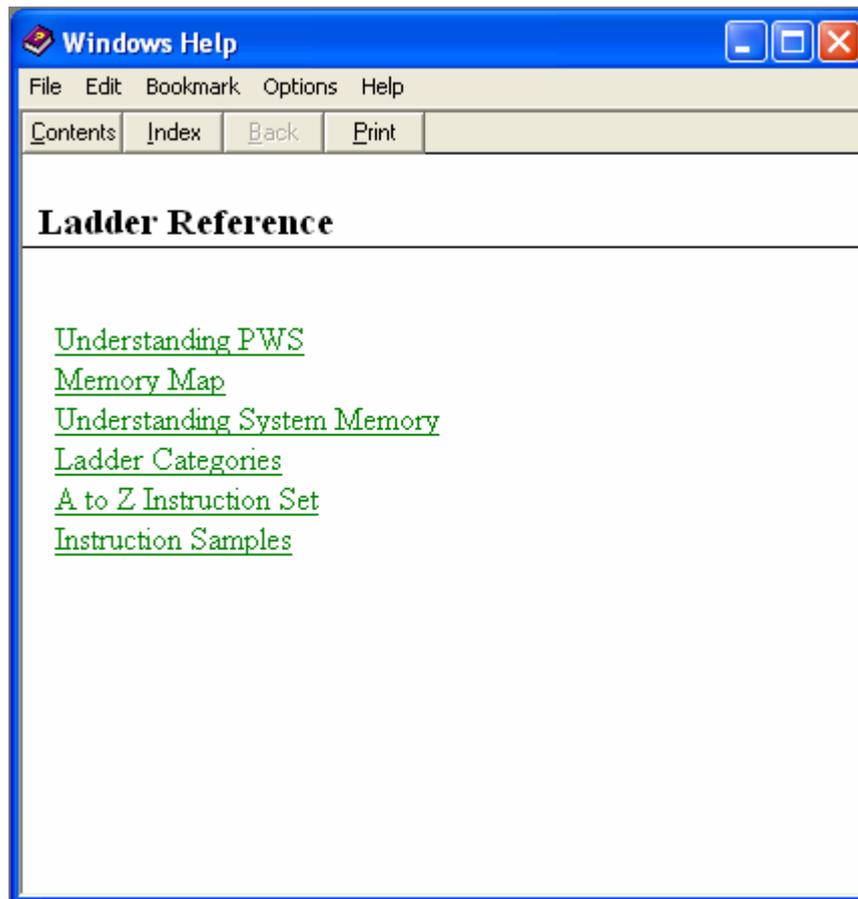


Figure 185. Ladder Reference

2.13.3. [About]

Select [Help]/[About], check the version of ADP. See below.

2. Instructions

