



DIAScreen Software User Manual

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Related Documents

Document Name	Document ID
DIInstaller User Manual	DIAS-Manual-0005-EN
DIADesigner User Manual	DIAS-Manual-0003-EN
DOPSoft User Manual	DELTA_IAHMI_DOPSOFT_UM
DIADesigner-AX	DIAS-Manual-0014-EN

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Chapter 1: Overview

1.1 DIASudio Integrated Engineering Software

The DIASudio is an all-in-one integrated engineering platform, on which users can efficiently develop machinery systems, from product selection, programming, to exporting.

It simplifies the process, and helps to save time and cost for building machinery systems.



Figure 1 - 1: DIASudio Features

1.1.1 Key Software

The DIASudio comprises of 6 key software:

- **DIASelector**: quick, easy, smart selection tool.
- **DIADesigner**: Integrated development & engineering software.
- **DIAScreen**: Intuitive visualization software.
- **DIAStaller**: System installation & update management.
- **COMMGR**: Communication management.
- **DIADesigner-AX**: Motion development and engineering software.

The DIASudio supports efficient and flexible data transmission between software. It also facilitates for tag sharing between software.

1.2 DIAScreen Overview

The DIAScreen application is a part of DIASstudio software suite. DIAScreen allows user to configure Delta DOP series, TP series and AX-Series HMIs.

The features including:

- Tag sharing with DIADesigner & DIADesigner-AX
- User-friendly editing interface, versatile 3D image library
- Smooth display for meters and other elements
- Faster software download speed
- Improved the output results clearly
- Multi-lingual support with Traditional Chinese, Simplified Chinese and English
- Supports Recipe and Macros
- Ability to set passwords and levels

1.3 Operating Environment

The following table provides the specifications for the DIAScreen operating environment:

Item	System Requirement
Operating System	Windows 7 / 8.1 / 10 Server 2012 R2 32/64 bits
CPU	Intel Celeron 540 1.8GHz (min.) , Intel Core i5 M520 2.4 GHz (min.)
Memory	2GB or above (recommend to use 4GB or above)
Hard Disk Drive	10GB or above
Monitor	Resolution: 1024 x 768 Pixels, 1920 x 1080 Pixels
Keyboard/Mouse	General Keyboard Mouse or Windows compatible device
Printer	Printer with Windows driver (optional for printing of project content)

Item	System Requirement	
USB	Used in Connection with the device	According to the communication interface provided by the device
Ethernet	Used in Connection with the device	
Software	Need to install Microsoft.Net Framework 4.6.2	

1.4 List of Supported Models

DIAScreen supports the following HMI:

Series	Description
AX series	AX-8 series controller soft-HMI
DOP-100 series	Touch-sensitive high-color HMI interface
DOP-H Series (Handheld)	Handheld high-color HMI interface
DXMC series	Motion controller with integrated HMI interface
IMP series	Motion control development platform integrating HMI interface
TP All series	Text-based HMI interface

NOTE:

- DIAScreen supports AX-8 series soft-HMI planning function, please refer to AX-8 series operation manual and DOPSoft operation manual.*
- DIAScreen supports DOP-100 series and DOP-H series HMI planning function, please refer to HMI product operation manual and DOPSoft operation manual.*
- DIAScreen supports DXMC series HMI planning function, please refer to DXMC-P product operation manual and DOPSoft operation manual.*

The following chapters will take the TP series as an example to introduce the DIAScreen function.

Chapter 2: Installation and General Operation

2.1 Install, Uninstall and Update DIAScreen

Ensure that the host computer follows the minimum criteria mentioned in [1.3 Operating Environment](#) and DIAInstaller is operating normally on it.

DIAInstaller is a resident program that manages various software of DIAStudio. Users can download, install and update the DIAStudio software in DIAInstaller, and all processes are executed in the background without affecting other operations of the user.

DIAStudio software download and installation tools: <https://diastudio.deltaww.com/>

Refer to the software download and installation manual to complete the software installation.

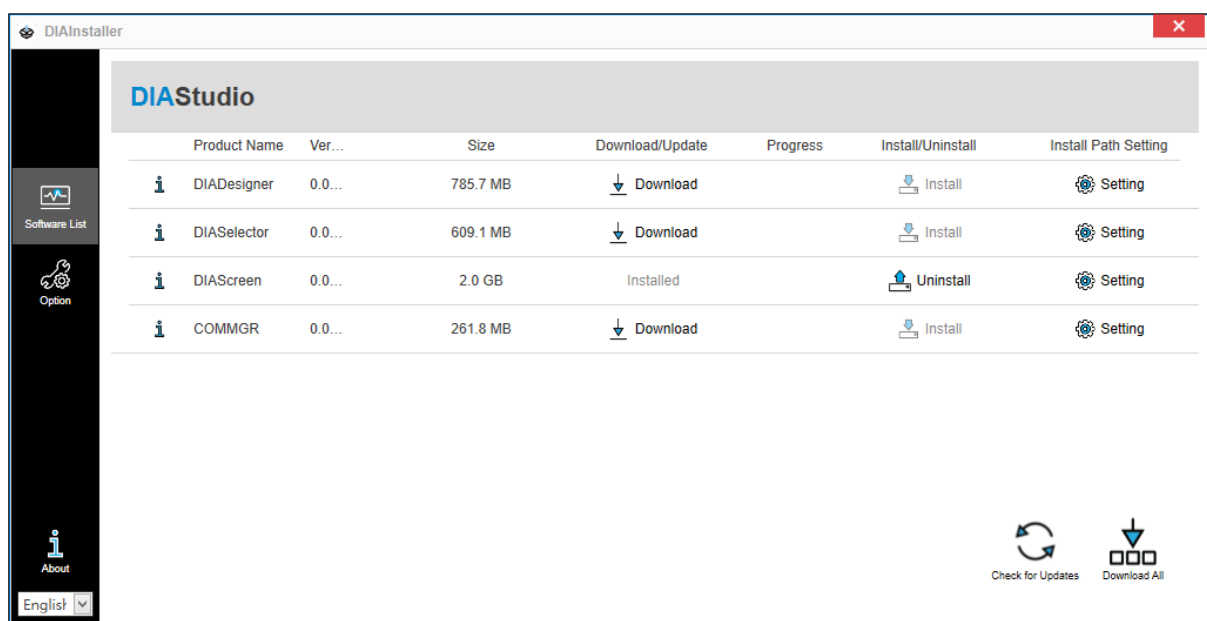


Figure 2 - 1: DIAInstaller

2.2 Startup DIAScreen

Launch **DIAScreen** by double-clicking on the desktop shortcut icon as shown in the following figure.



Figure 2 - 2: DIAScreen shortcut

DIAScreen application opens, as shown in the following figure.

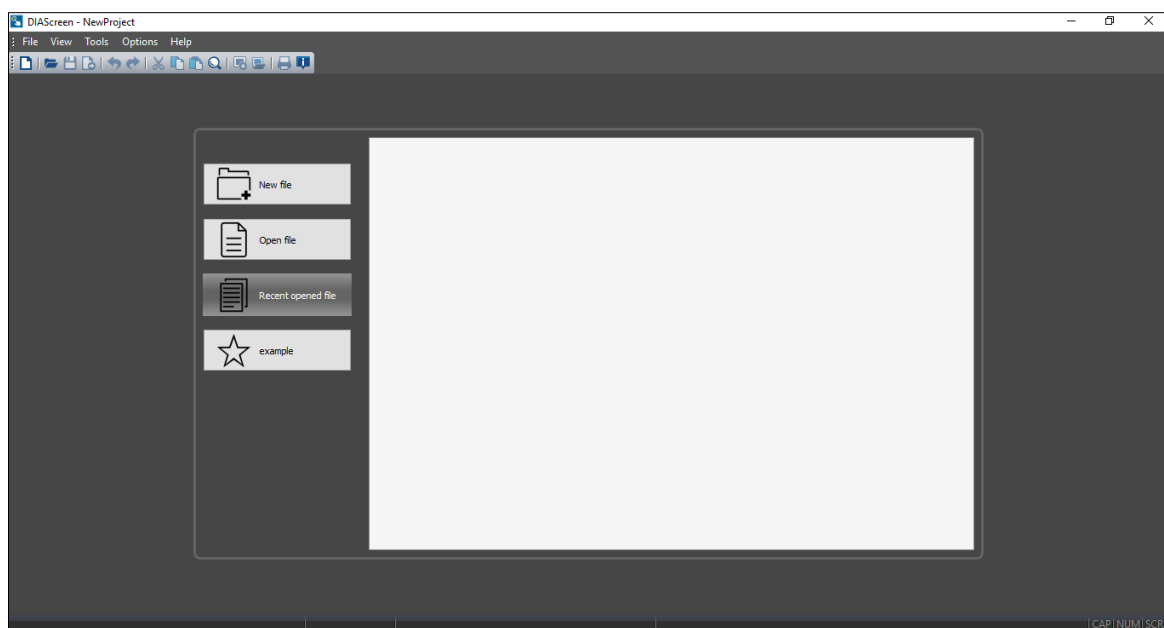



Figure 2 - 3: DIAScreen on launch

Follow these steps to create a new TP series project:

1. Click **File** > **New** in the Menu bar, **Ctrl+N** in keyboard or

Click the  icon from the **Standard** toolbar

Result: The **Project Wizard** window displays as shown in the following figure.

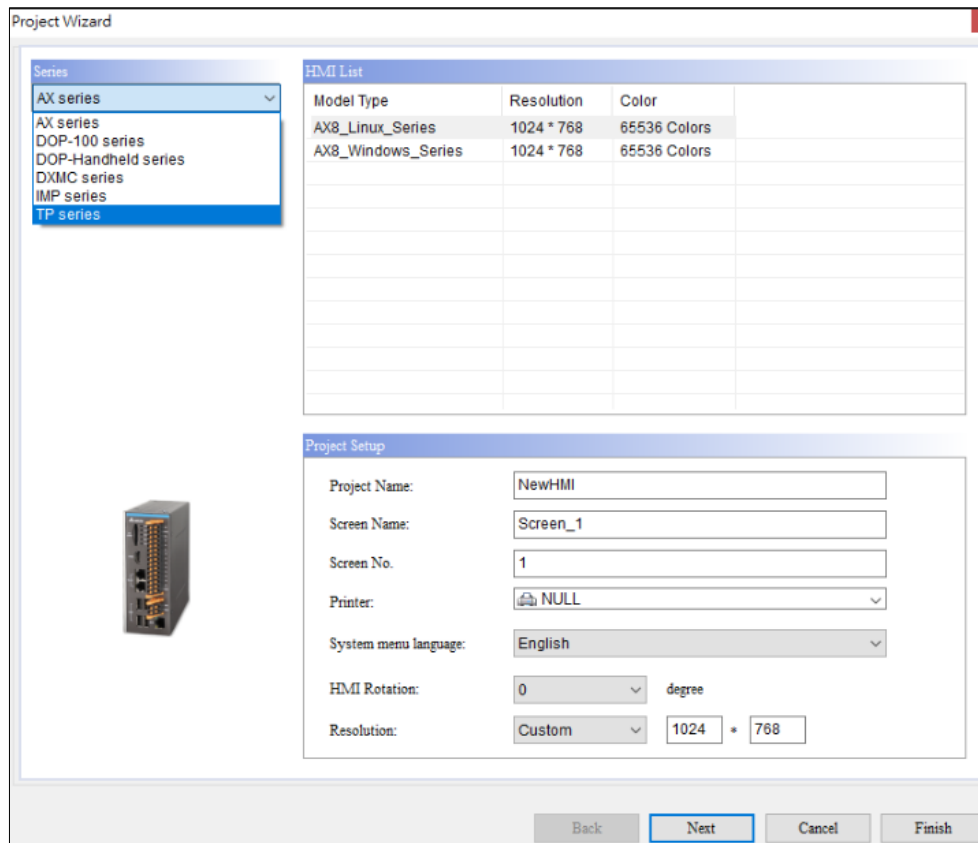


Figure 2 - 4: Project Wizard

The following table describes the three main sections of the **Project Wizard** window:

HMI Series	Description
Series	Select AX/DOP-100/DOP-H(Handheld)/DXMC/IMP/TP series
HMI List	Select TP model type
Project Setup	Enter a project name and select the target device

- When selecting a **TP series** model type, the **Project Wizard** window displays the options as shown in the following figure.

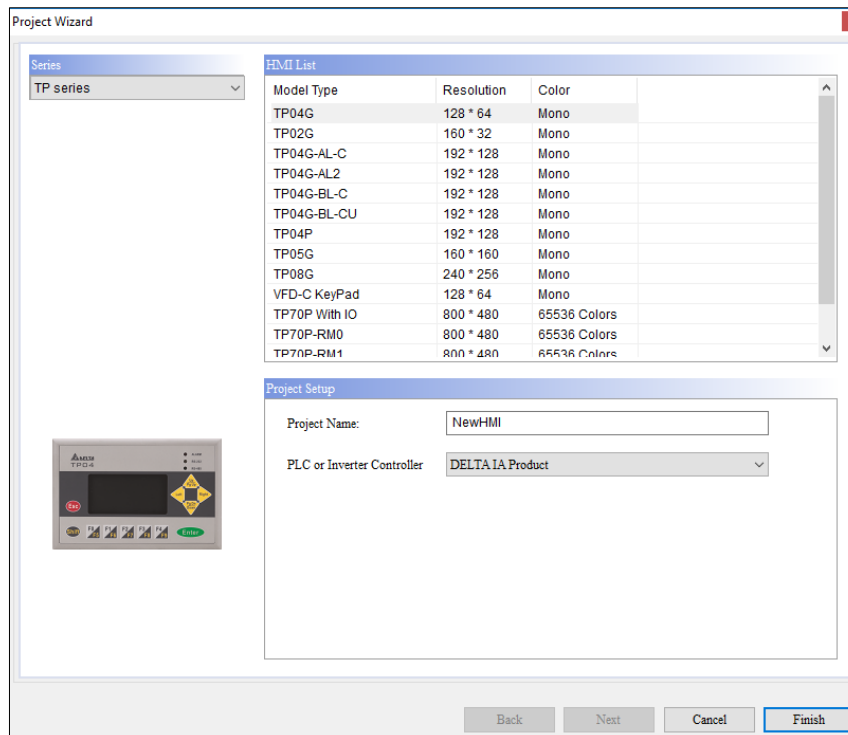


Figure 2 - 5: Project Wizard - TP Series

3. Select the TP series model to be planned in the HMI list.
4. Enter **Project Name** and select **PLC or Inverter Controller** to connect.
5. Click on **Finish** button.

Result: A new project is created as shown in the following figure.

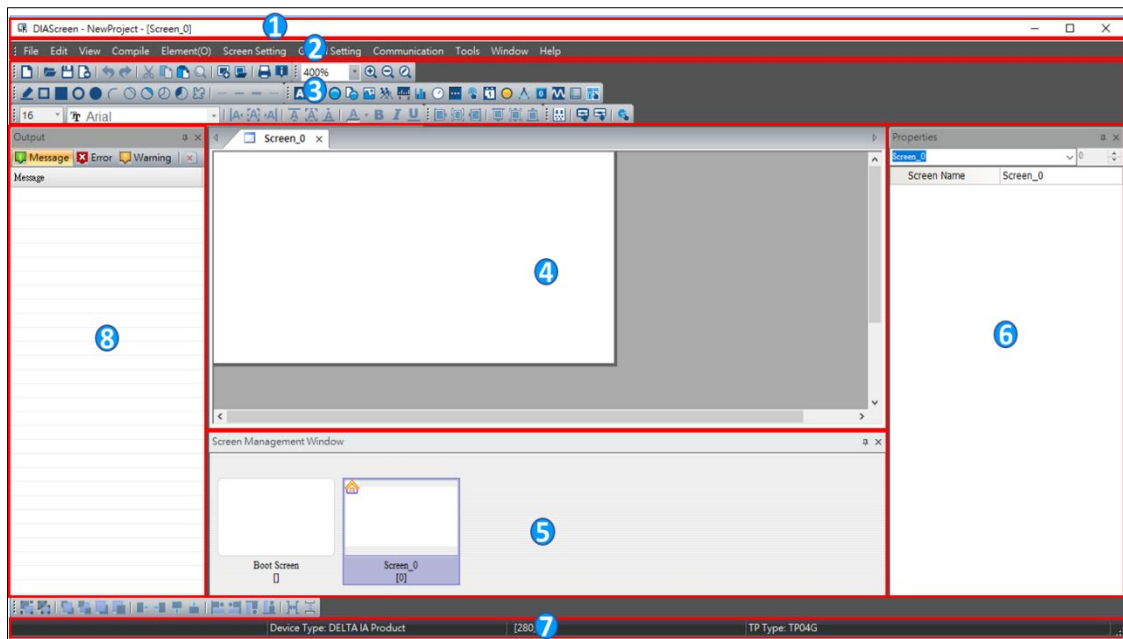


Figure 2 - 6: DIAScreen - New Project

The following table describes the default user interface elements.

Legend	Area Name
1	Window title
2	Menu bar
3	Tool bar
4	Screen Editing Area
5	Screen Management window
6	Object Inspection Area
7	Status bar
8	Output

2.2.1 Window Title

The **Window Title** displays the application's icon and name and the buttons to minimize, maximize and close the application as shown in the following figure.



Figure 2 - 7: DIAScreen - Window Title

2.2.2 Menu Bar

The **Menu** bar contains eleven different menus. The menu items vary depending on what user is doing in the application. The items that appear gray are not available. Different TP model types support different menu items.

The brief introduction of the Menu bar is given here. Refer [Chapter 3: Basic Editing Functions](#) for more information. Menu bar is shown in the following figure.

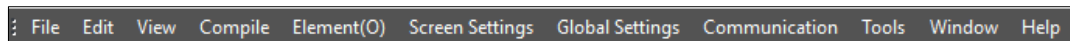


Figure 2 - 8: DIAScreen TP Menu Bar

2.2.2.1 File:

Use the **File** menu to access a file. Refer [3.1 Menu Bar - File](#) for more information. File menu is shown in the following figure. File menu is shown in the following figure.

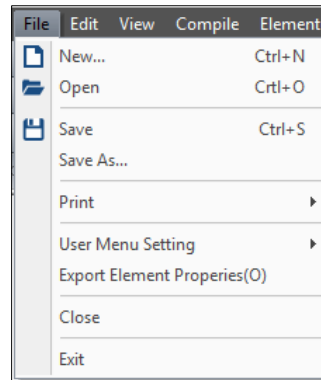


Figure 2 - 9: DIAScreen TP File menu

2.2.2.2 Edit:

The **Edit** menu provides the functions to edit a project. Refer [3.2 Menu Bar - Edit](#) for more information. Edit menu is shown in the following figure.

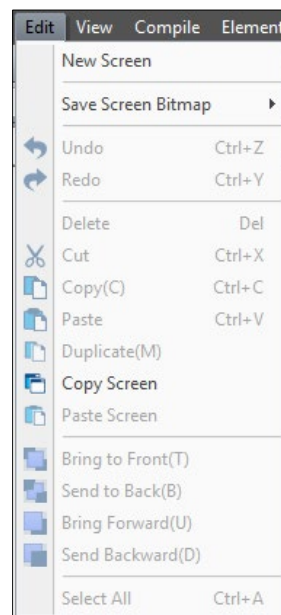


Figure 2 - 10: DIAScreen TP Edit menu

2.2.2.3 View:

The **View** menu helps to view screens and configure the appearance of a work environment. View menu is shown in the following figure.

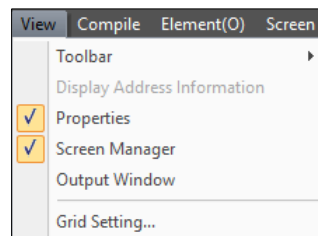


Figure 2 - 11: DIAScreen TP View menu

2.2.2.4 Compile:

The **Compile** menu compiles the settings on the screen and a text panel. Refer [3.4 Menu Bar - Compile](#) for more information. Compile menu is shown in the following figure.

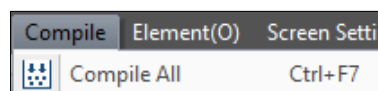


Figure 2 - 12: DIAScreen TP Compile menu

2.2.2.5 Element(O):

The **Element(O)** menu provides the objects to use and edit in a text panel. Different models support different elements. Refer [3.5 Menu Bar - Element\(O\)](#) for more information. Element menu is shown in the following figure.

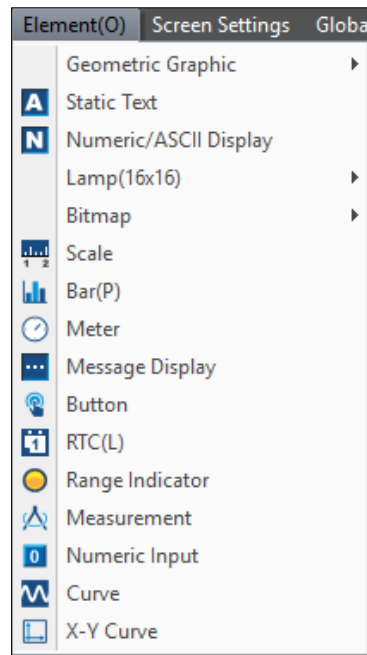


Figure 2 - 13: DIAScreen TP Element(O) menu

NOTE: The **Element** menu items vary depending on the type of TP series text panel user select.

2.2.2.6 Screen Setting:

The **Screen Setting** menu provides the functions to set particular screens in a text panel. Different models support different items. Refer [3.6 Menu Bar - Screen Setting](#) for more information. Screen Setting menu is shown in the following figure.

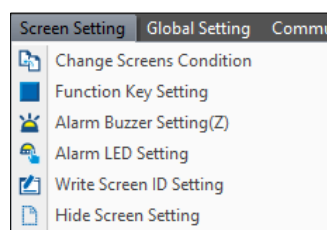


Figure 2 - 14: DIAScreen TP Screen Setting menu

NOTE: The **Screen Setting** menu items vary depending on the type of TP series text panel the user has selected.

2.2.2.7 Global Setting:

The **Global Setting** menu provides the functions to configure the text panel. It is applicable to all the screens in a text panel. However, in the text panel, if the setting for a particular screen conflicts with the settings for all the screens, the settings for the particular screen has priority. Different models support different items. Refer [3.7 Menu Bar - Global Setting](#) for more information. Global Setting menu is shown in the following figure.

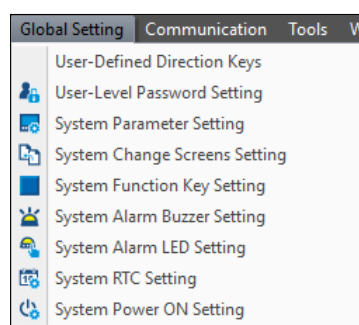


Figure 2 - 15: DIAScreen TP Global Setting menu

NOTE: The **Global Setting** menu items vary depending on the type of TP series text panel user select.

2.2.2.8 Communication:

The **Communication** menu provides the functions to download data from the computer to a text panel and upload data from the text panel to the computer. Refer [3.8 Menu Bar - Communication](#) for more information. Communication menu is shown in the following figure.

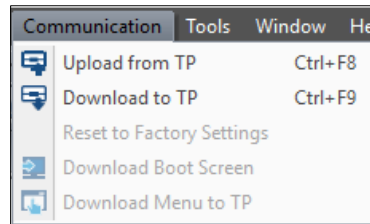


Figure 2 - 16: DIAScreen TP series Communication menu

2.2.2.9 Tools:

Use the **Tools** menu to set up the communications between the computer and a text panel as well as configure the environment in DIAScreen. Different models support different items. Refer [3.9 Menu Bar - Tools](#) for more information. Tools menu is shown in the following figure.

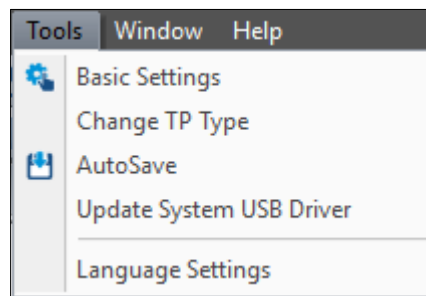


Figure 2 - 17: DIAScreen TP Tools menu

2.2.2.10 Window:

The **Window** menu allows user to rearrange and close windows. Refer [3.10 Menu Bar - Window](#) for more information. Window menu is shown in the following figure.

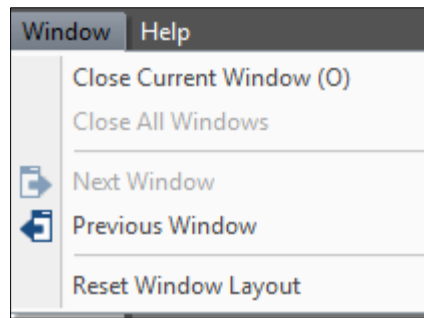


Figure 2 - 18: DIAScreen TP Window menu

2.2.2.11 Help:

The **Help** menu provides information about the version of DIAScreen. Refer [3.11 Menu Bar - Help](#) for more information. Help menu is shown in the following figure.

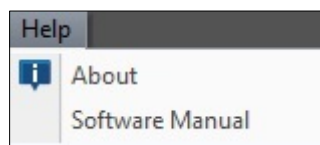


Figure 2 - 19: DIAScreen TP Help

2.2.3 Toolbar

The DIAScreen has eight different toolbars. User can click icons on the Toolbar to carry out specific edit operations. These are common functions that appear on the Menu bar and the Toolbar. The icons may vary depending what user is doing in DIAScreen. The icons that appear gray are not available for the given mode.

DIAScreen Toolbars are:

- Standard Toolbar
- Zoom Toolbar
- Element Selection Toolbar

- Drawing Toolbar
- Alignment Toolbar
- Font Toolbar
- Picture Toolbar
- Communication Toolbar

2.2.3.1 Standard Toolbar:

The **Standard** Toolbar provides common functions that user will use frequently in DIAScreen. Standard Toolbar is shown in the following figure.

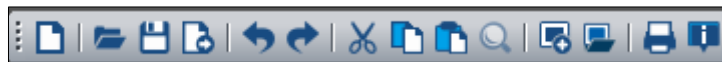
















Figure 2 - 20: DIAScreen TP Standard Toolbar

The **Standard** Toolbar functions are described in the following table:

Function - Icon	Description
	Click to create new DIAScreen project.
	Click to open previously created DIAScreen project.
	Click to save the current DIAScreen project.
	Click to export selected screen to bitmap file.
	Click to undo the last action.
	Click to redo the previous action.
	Click to cut the selection to the clipboard.
	Click to copy the selection to the clipboard.
	Click to paste the selection from clipboard.
	Click to find the specified content.
	Click to create a new screen.

Function - Icon	Description
	Click to select (open) existing screen.
	Click to print screens.
	Click to open the About window.

2.2.3.2 Zoom Toolbar:

The **Zoom** Toolbar provides common functions to zoom in and zoom out. Zoom Toolbar is shown in the following figure.

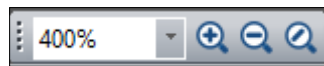
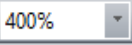





Figure 2 - 21: DIAScreen TP Zoom Toolbar

The Zoom Toolbar functions are described in the following table:

Function - Icon	Description
	Enter the zoom level.
	Click to zoom in (enlarge).
	Click to zoom out (reduce).
	Click to zoom in 1:1 ratio.























2.2.3.3 Element Selection Toolbar:

The **Element Selection** Toolbar provides the object icons for the selected model type. Element Toolbar is shown in the following figure.



Figure 2 - 22: DIAScreen TP Element Selection Toolbar

The **Element Selection** Toolbar functions are described in the following table:

Function - Icon	Description
	Click to select a Static Text.
	Click to select a Numeric/ASCII display.
	Click to select a Bit Lamp.
	Click to select a Word Lamp.
	Click to select a Static Bitmap.
	Click to select a Dynamic Bitmap.
	Click to select a Scale.
	Click to select a Bar.
	Click to select a Meter.
	Click to select a Message Display.
	Click to select a Button.
	Click to open RTC window.
	Click to select a Multistate Indicator.
	Click to select a Measurement.
	Click to select a Numeric Input.
	Click to select a Curve.
	Click to select a X-Y Curve.
	Click to open Delta Products Communication Device Setting window.
	Click to select an Alarm function.
	Click to select Slider.
	Click to select Input List.
	Click to select Combobox.
















2.2.3.4 Drawing Toolbar:

The **Drawing** Toolbar provides functions to draw simple figures. To draw a simple figure, click a geometric icon on the Toolbar. Drawing Toolbar is shown in the following figure.



Figure 2 - 23: DIAScreen TP Drawing Toolbar

The **Drawing** Toolbar functions are described in the following table:

Function - Icon	Description
	Click to draw Line.
	Click to draw Rectangle.
	Click to draw Rectangle (Solid).
	Click to draw Circle (Outline).
	Click to draw Circle (Solid).
	Click to draw Curve.
	Click to draw Chord (Outline).
	Click to draw Chord (Solid).
	Click to draw Sector (Outline).
	Click to draw Sector (Solid).
	Click to draw Polygon.
	Click to change to Width-1.
	Click to change to Width-2.
	Click to change to Width-3.
	Click to change to dashed line.

















2.2.3.5 Alignment Toolbar:

The **Alignment** Toolbar provides the functions for adjusting the positions of the objects and for arranging the objects. Alignment Toolbar is shown in the following figure.



Figure 2 - 24: DIAScreen TP Alignment Toolbar

The **Alignment** Toolbar functions are described in the following table:

Function - Icon	Description
	Click to group objects.
	Click to ungroup objects.
	Click to bring objects to front.
	Click to send objects to back.
	Click to bring forward.
	Click to send backward.
	Click to move elements one pixel to left.
	Click to move elements one pixel to right.
	Click to move elements one pixel to up.
	Click to move elements one pixel to down.
	Click to align left.
	Click to align right.
	Click to align top.
	Click to align bottom.
	Click to equal horizontal spacing.
	Click to equal vertical spacing.

2.2.3.6 Font Toolbar:

The **Font** toolbar provides the functions to set the appearance of the text. Font Toolbar is shown in the following figure.



Figure 2 - 25: DIAScreen TP Font Toolbar

The **Font** Toolbar functions are described in the following table:

Function - Icon	Description
	Select font size.
	Select font type.
	Click to align text left.
	Click to align text horizontal center.
	Click to align text right.
	Click to align text top.
	Click to align text vertical center.
	Click to align text bottom.
	Click to change text color.
	Click to bold the text.
	Click to italicize the text.
	Click to underline the text.







2.2.3.7 Picture Toolbar:

The **Picture** Toolbar provides the functions to adjust the positions of the images in an object and to select an image file. Picture Toolbar is shown in the following figure.



Figure 2 - 26: DIAScreen TP Picture Toolbar

The **Picture** Toolbar functions are described in the following table:

Function - Icon	Description
	Click to align picture left.
	Click to align picture horizontally center.
	Click to align picture right.
	Click to align picture top.
	Click to align picture vertically center.
	Click to align picture bottom.





2.2.3.8 Communication Toolbar:

The **Communication** Toolbar provides the functions to Compile All, upload and download a project, and to configure basic settings. Communication Toolbar is shown in the following figure.



Figure 2 - 27: DIAScreen TP Communication Toolbar

The **Communication** Toolbar functions are described in the following table:

Function - Icon	Description
	Click to Build All.
	Click to upload project from TP series text panel.
	Click to download project to TP series text panel.
	Click to open Basic Setting.

2.2.4 Screen Editing Area


The **Screen Editing Area** is an area for designing or editing a screen. It is the area displayed on the screen of a Text Panel. Screen Editing Area is shown in the following figure.



Figure 2 - 28: Screen Editing Area

2.2.4.1 Adding an Element to the Screen Editing Area:

Follow these steps to add an element, for example – a button to a screen:

1. Click **Element(O) > Button** on the menu bar, or
Click the  icon on the **Element Selection** Toolbar as shown in the following figure.

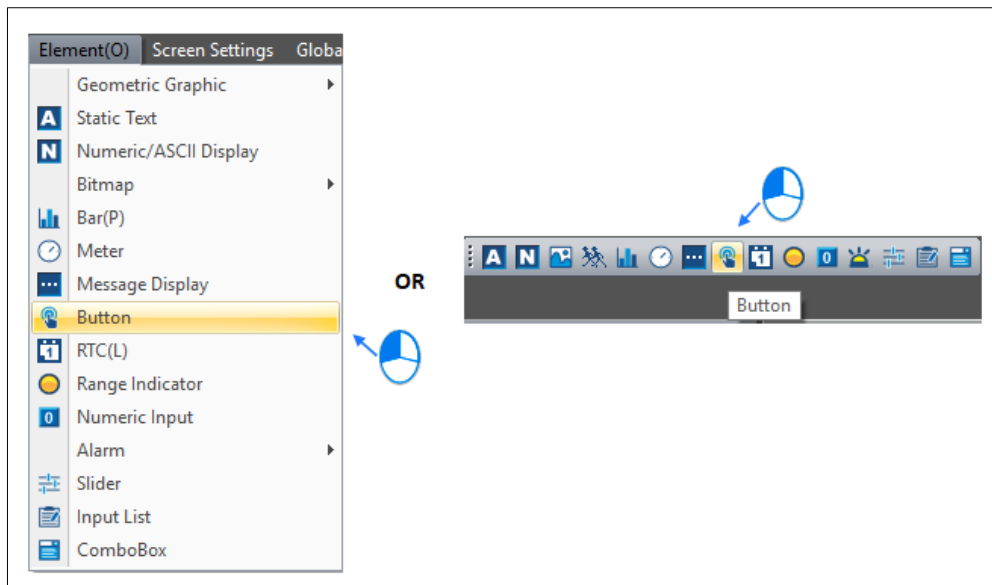


Figure 2 - 29: Insert Button

2. In the **Screen Editing Area**, drag the mouse on the button to set the exact size as shown in the following figure.

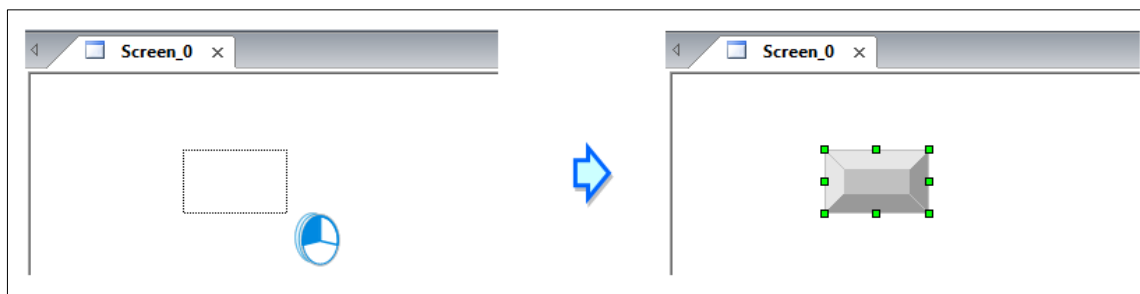


Figure 2 - 30: Insert a Button and dragging

3. Release the mouse cursor.

Result: **Button** is added to the **Screen Editing Area**.

2.2.4.2 Resizing the Button:

Follow these steps to resize a button in a screen:

1. Click the button element in the **Screen Editing Area** as shown in the following

figure.

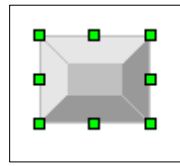


Figure 2 - 31: Object which is selected

2. Click the frame of the Button.
3. Press and hold the left mouse cursor and drag vertically or horizontally to resize the Button element as shown in the following figure.

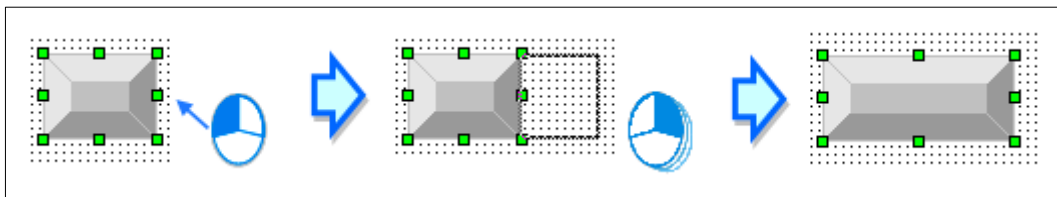


Figure 2 - 32: Object resizing

Double-click an item in the **Screen Editing Area**, to open the window to set the object properties. For example, the **Button** settings window is shown in the following figure.

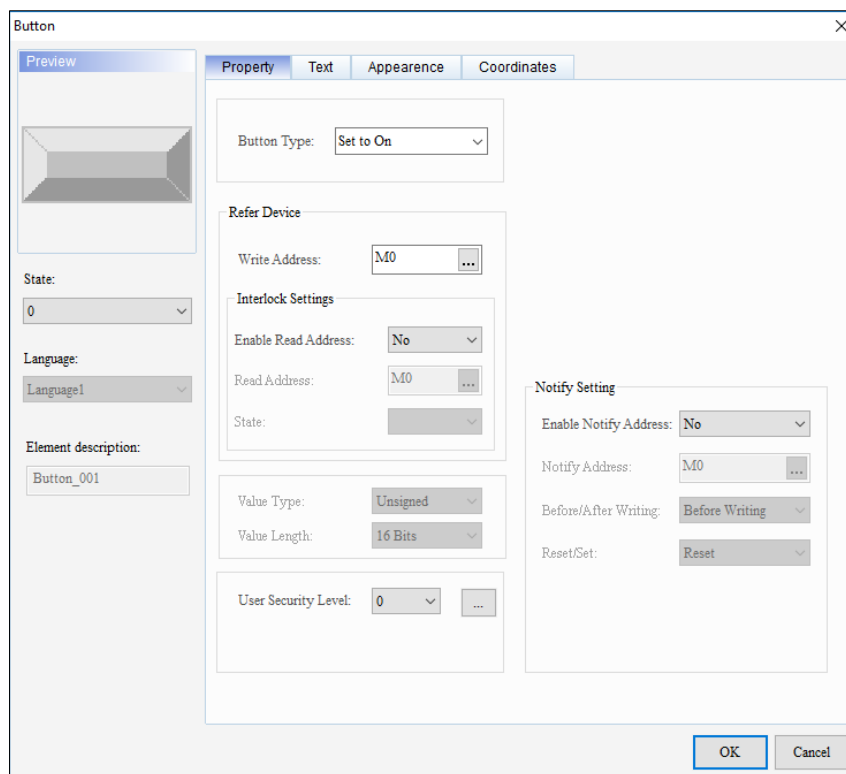


Figure 2 - 33: Button window

Right-click the **Screen Editing Area** to display a context menu. Common functions on the **Menu** bar and **Standard** Toolbar displays in the context menu. Context menu of the **Screen Editing Area** is shown in the following figure.

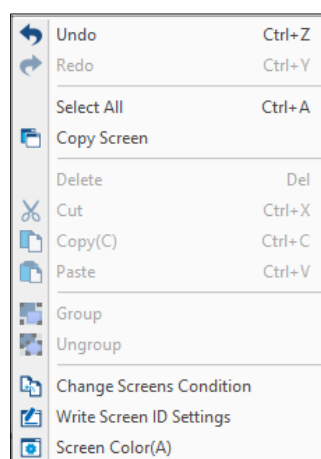


Figure 2 - 34: Screen Editing Area context menu

2.2.5 Screen Management Window

The screens that user created in the TP project display in the **Screen Management Window**. At least one screen with number **0** exists. **Boot Screen** is the welcome screen in the Text Panel. Boot screen cannot be added or deleted. When user double-click a screen in the **Screen Management Window**, it displays in the Screen Editing Area. Screen Management Window is shown in the following figure.

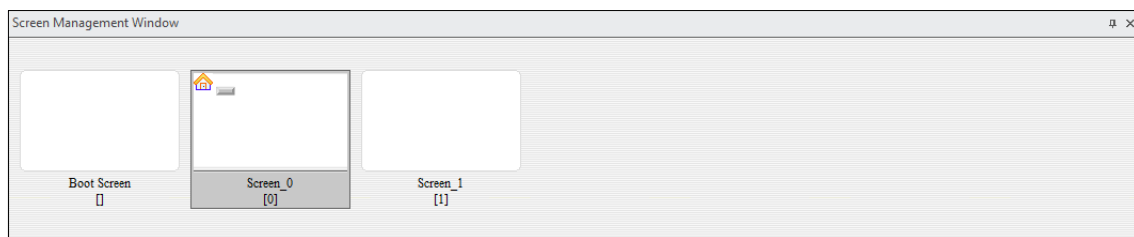


Figure 2 - 35: Screen Management Window

Right-click in the **Screen Management Window** to display a context menu as below.

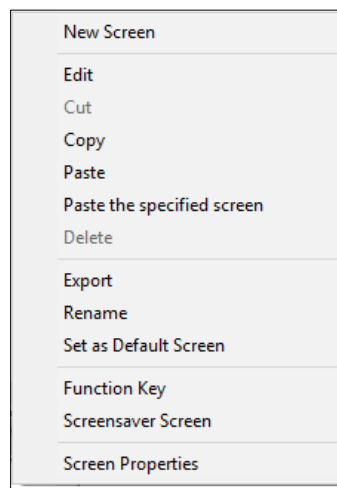


Figure 2 - 36: Screen Management Window context menu

The Screen Management Window has two icons in the upper right corner, to hide and close the **Screen Management Window** as shown in [Figure 2 - 35: Screen Management Window](#).

2.2.6 Properties

The properties for the objects added to the screens display in the Properties window. User can directly change the properties of the objects in **Properties** window. Properties window for TP is shown in the following figure.

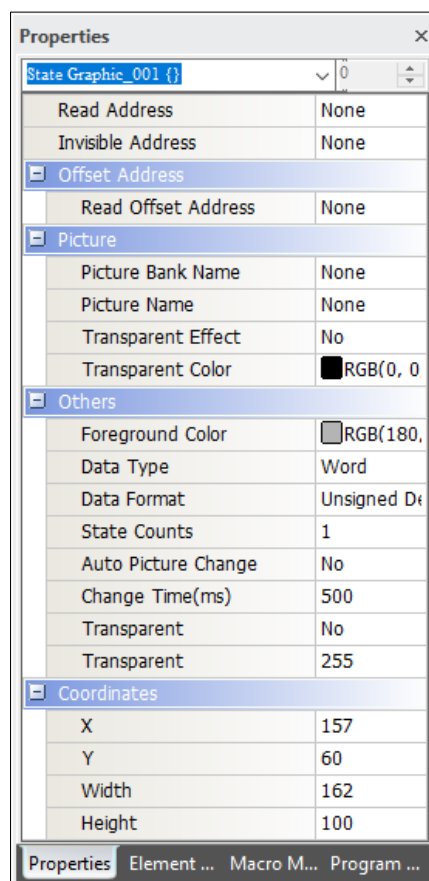


Figure 2 - 37: Properties window

If user selects several objects or if user do not select any object, the **Properties** window is blank. Use the two icons on the upper right corner of the **Properties** window to hide and close the Properties window.

2.2.7 Status Bar

The **Status** Bar for the selected object includes the Device Type, mouse coordinates, TP Model Type, Caps lock, Number lock and Scroll lock status information.



Figure 2 - 38: Status Bar

2.2.8 Output

The **Output** window displays compiling data and error messages as shown in the following figure.

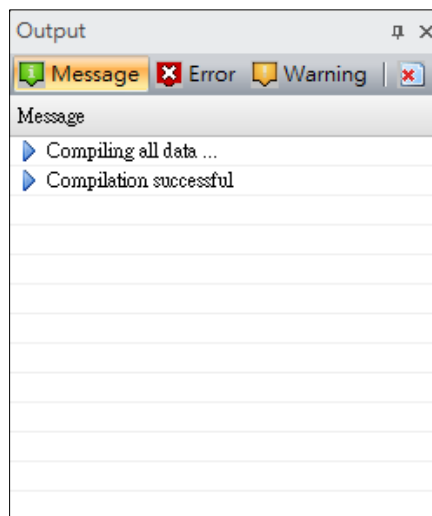


Figure 2 - 39: Output window

Chapter 3: Basic Editing Functions

3.1 Menu Bar - File

This section provides the detailed information about the functions available from the File menu. The **File** menu functions are:


- New
- Open
- Save
- Save As
- Print
- User Menu Setting
- Export Element Properties
- Close
- Previously opened Projects
- Exit

3.1.1 New

User can create a new project in DIAScreen for the TP series text panel from the Menu bar, Toolbar or using keyboard shortcuts.

Follow these steps to create a new project:

1. Click **File > New** on Menu bar, **Ctrl+N** in keyboard or

Click the  icon in the **Standard** Toolbar.

Result: The **Project Wizard** window displays as shown in the following figure.

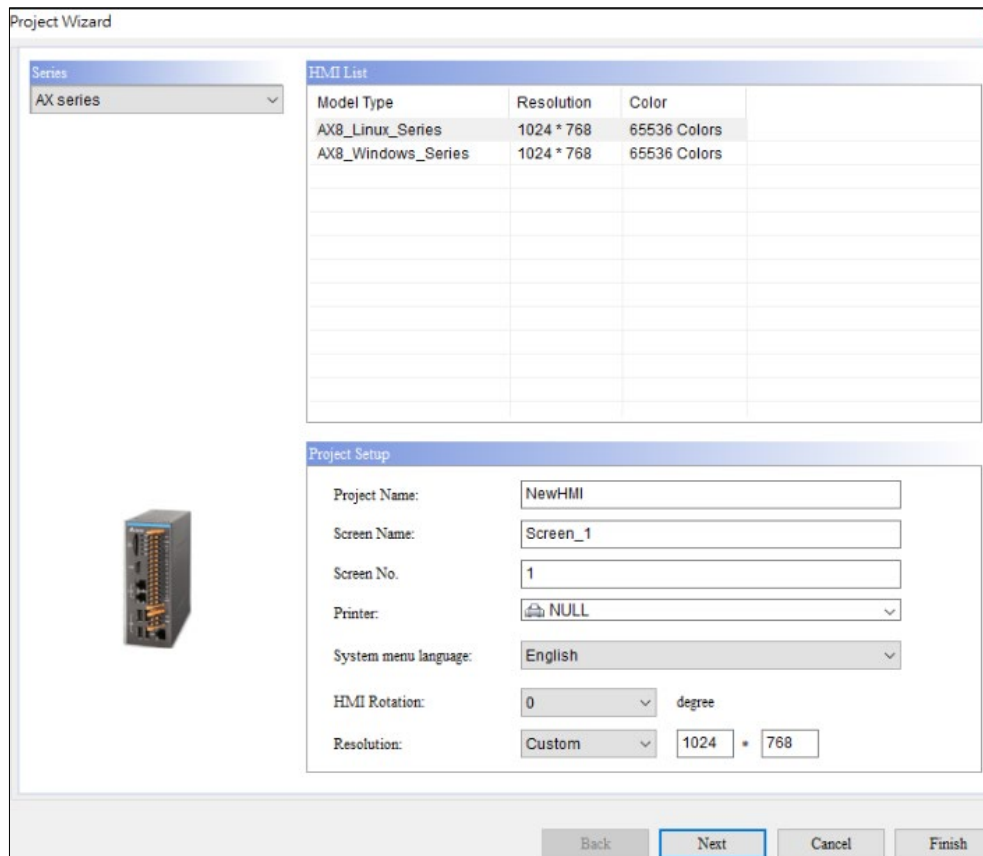


Figure 3 - 1: Project Wizard

2. Select **TP series** in the **Series** field.
3. Select the particular **TP Series** from the **HMI List**.
4. Enter a name in **Project Name** under **Project Setup**.
5. Select the device from the **PLC or Inverter Controller** drop-down menu.
6. Click on **Finish** button.

Result: New TP project is created as shown in the following figure.

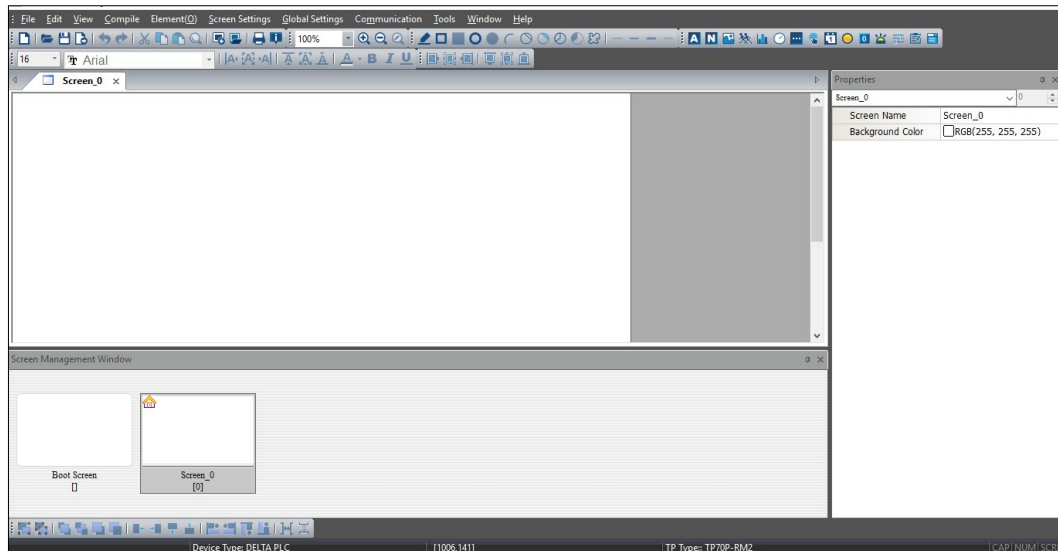



Figure 3 - 2: New TP Project

3.1.2 Open

User can open a previously created project for the TP series text panel from the Menu bar, Toolbar, or using keyboard shortcuts.

Follow these steps to open a project:

1. Click **File > Open** on Menu bar, **Ctrl+O** in keyboard or

Click the  icon in the **Standard** Toolbar.

Result: The **Open** window displays as shown in the following figure.

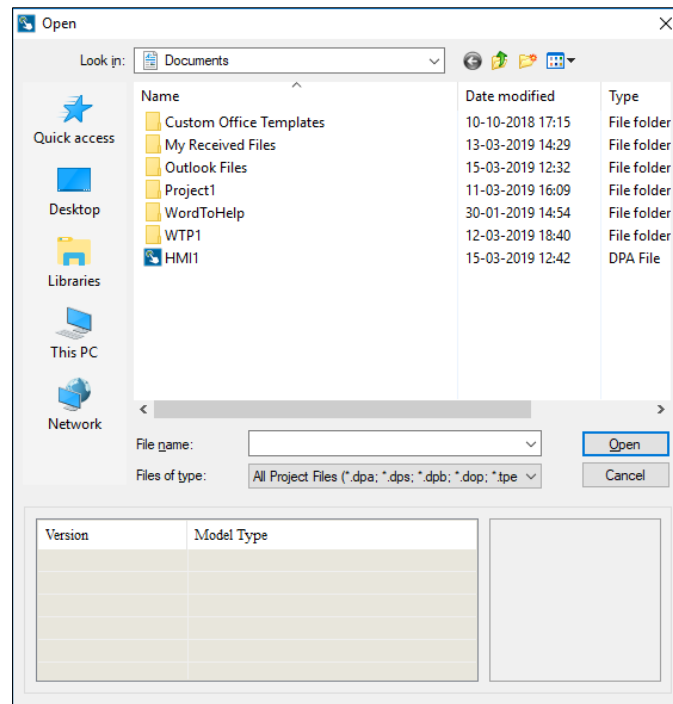


Figure 3 - 3: Open Project window

2. Browse to the file location and select the TP project.
3. Click on **Open** button.

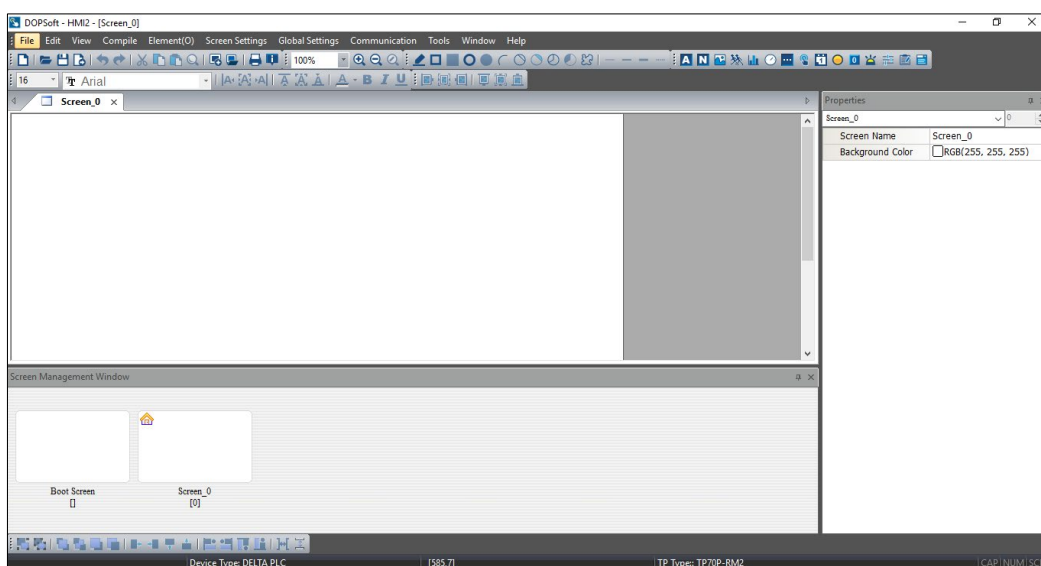


Figure 3 - 4: Open Project


Result: The Project opens as shown in the above figure.

3.1.3 Save

User can save a project in DIAScreen, either from Menu bar, or Toolbar, or using keyboard shortcuts.

Follow the steps to save a project:

1. Click **File** > **Save** on **Menu** bar, **Ctrl+S** in keyboard or

Click the  icon on the **Standard** Toolbar.

Result: The project is saved.

NOTE: If user is saving the project for the first time, the **Save As** window appears as shown in the following figure.

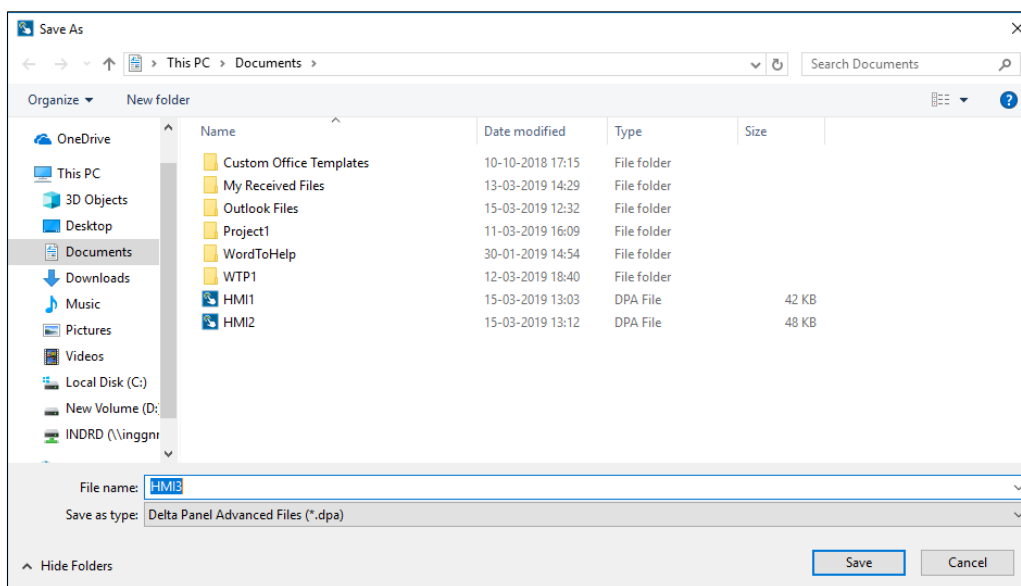


Figure 3 - 5: Project Save - first time

2. Select a suitable location, enter a project name in the **File Name** field and click on **Save** button.

Result: The project is saved.

3.1.3.1 Create auto Update Data File

Remark: This item is only applicable to DOP-100 series and DXMC series.

The DIAScreen software will automatically compile the current screen data, and then save the file in the specified path. When the HMI detects the external device and there is an automatic update file, it will display the automatic update firmware to update the HMI project.

1. Click on **File > Create Auto Update Data file.**

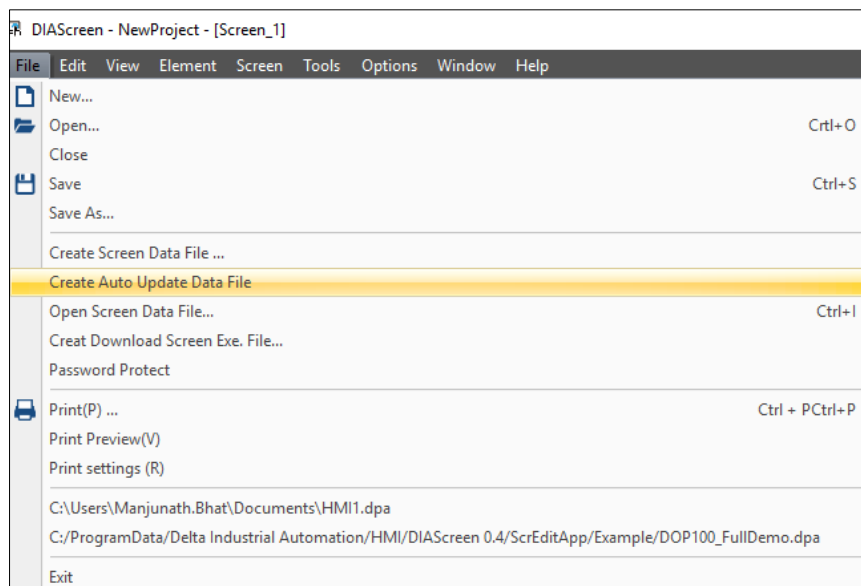


Figure 3 - 6: Auto Update File Path

Result: It displays the **Setting** window as shown in the following figure.

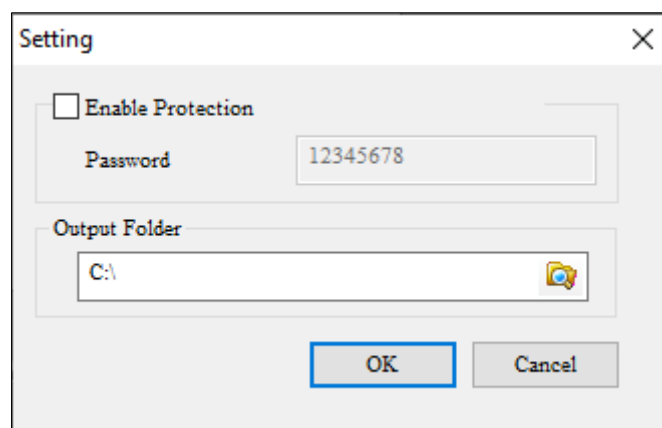


Figure 3 - 7: Setting Window

Features	Description
Enable Protection	Enable password protection mechanism
Password	Password protection
Archive folder	The folder path where the update file is expected to be saved

- After setting, compile, the project will be automatically updated to the specified external path.

If the model of the project is DXMC series, after creating the project, set the archive path and execute the compilation. The DIAScreen software will automatically create a folder with the same name as the project under the project path, and save the current screen data update file in this folder. This update file can be directly imported into DXMC model software-DMARS (DELTA Motion and Robot Software) to perform HMI screen update.

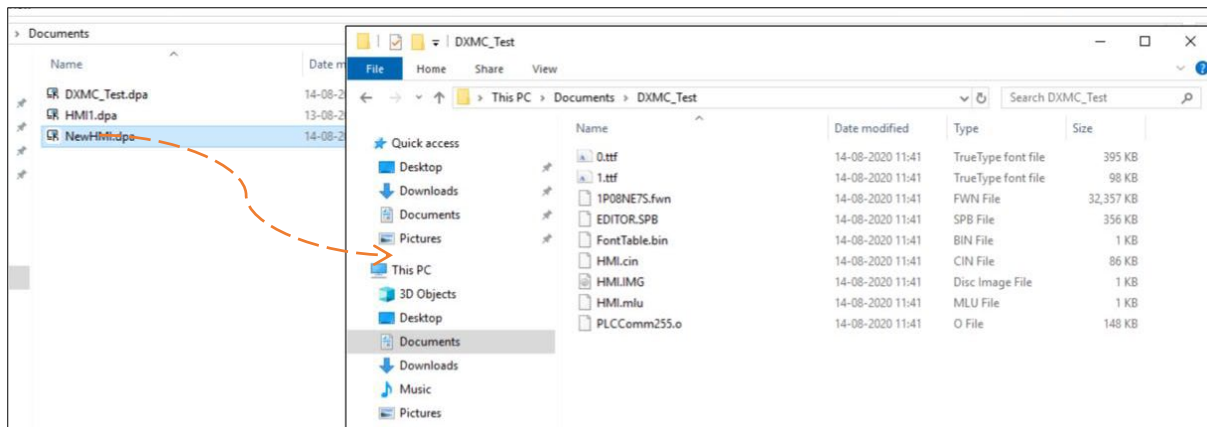


Figure 3 - 8: The screen is automatically updated

3.1.4 Save As

User can save the TP project with a different name or to a different location by clicking **File > Save As**.

Follow the steps to Save As a project:

1. Click **File > Save As** on **Menu** bar.

Result: The **Save As** window displays as shown in the following figure.

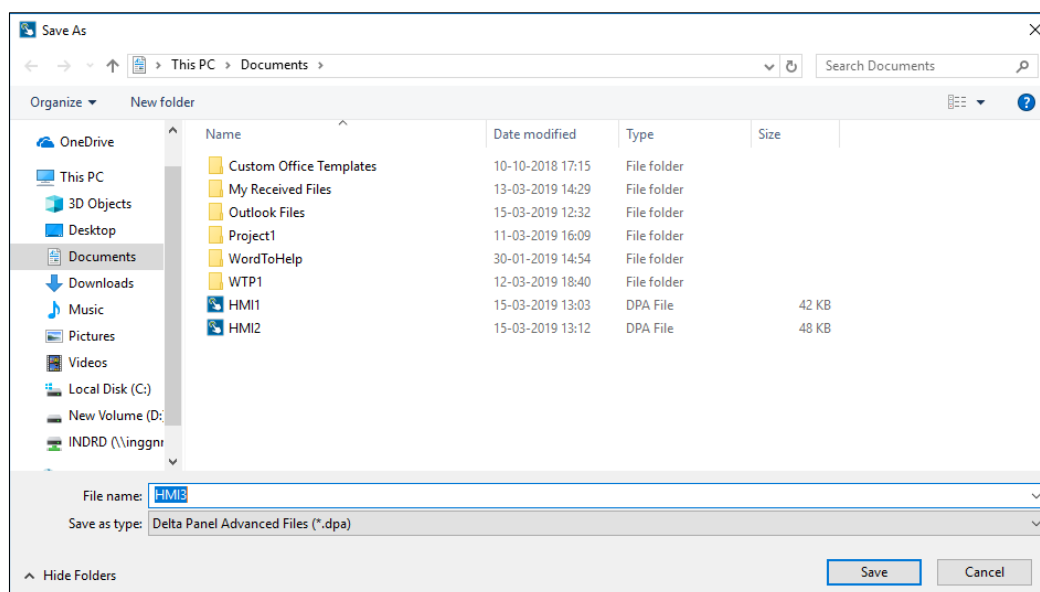


Figure 3 - 9: Save As

2. Select the location, enter a project name in the **File Name** field and click on **Save** button.

Result: The project is saved.

3.1.5 Print

After user has designed the screens, he/she can print them using the **Print** option on **File** menu. User can print two types of screens:

- General screen
- Boot screen

User can print the general screens and also Boot screen.

3.1.5.1 General Screen

Follow the steps to print a TP screen:

1. Click on **File > Print > Print TP Screen** as shown in the following figure.

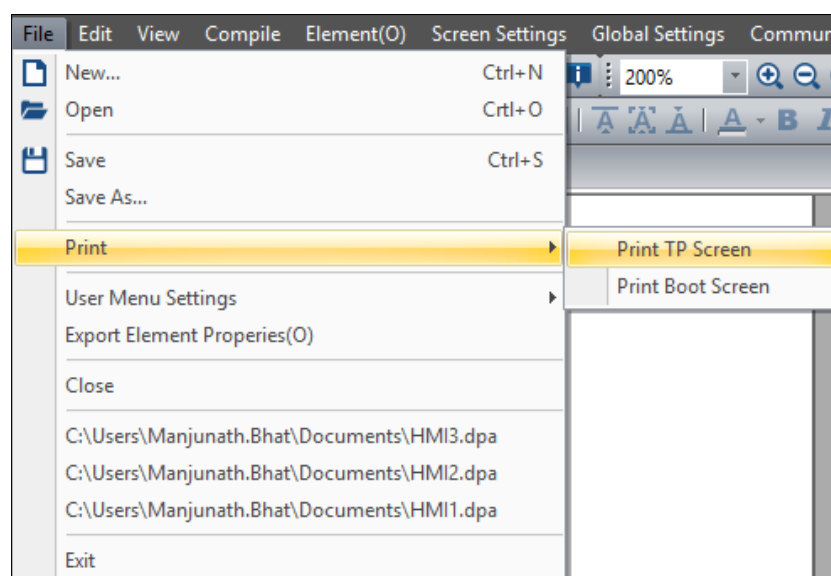


Figure 3 - 10: Print TP Screen

Result: The **Print TP Screen** window displays as shown in the following figure:

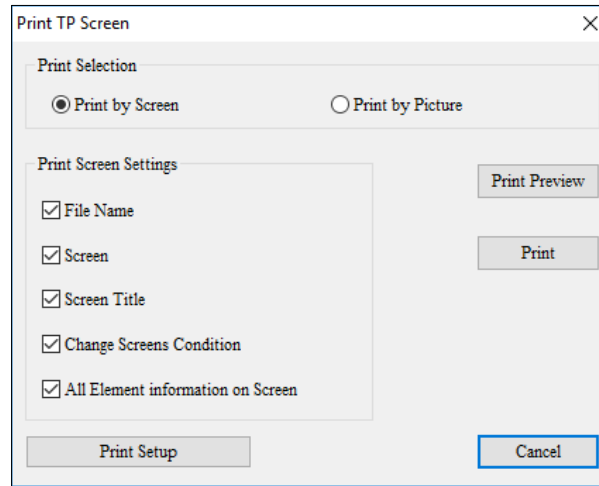


Figure 3 - 11: Print TP Screen window

2. Select either **Print by Screen** or **Print by Picture**.
3. Select the appropriate print screen settings.
4. Click on **Print** button.

Result: The screen prints.

3.1.5.2 Boot Screen

The **Print TP Screen** functions are described in the following table:

Function	Description
Print by Screen	Click to print by screen.
Print by Picture	Click to print by picture.
File Name	Click to display project name in the print.
Screen	Click to display screen in the print.
Screen Title	Click to display screen name in the print.

Function	Description
Change Screens Condition	Click to display Screen Change Condition in the print result.
All Element information on Screen	Click to display all element information on screen.
Print Setup	Click to setup print environment.
Print Preview	Click to display a print preview.
Print	Click to print.
Cancel	Click to cancel the print action.

Follow these steps to print a **Boot Screen**:

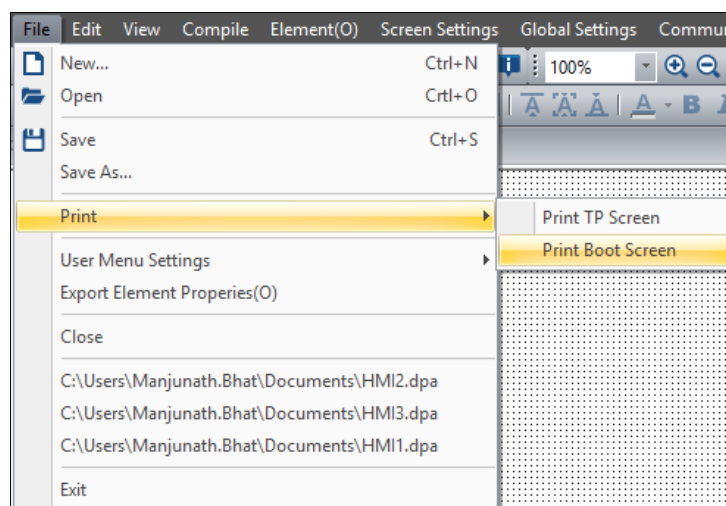


Figure 3 - 12: Print Boot Screen

1. Click **File** > **Print** > **Print Boot Screen** as shown in the above figure.

NOTE: Refer **Print TP Screen** for more information.

Result: The **Boot Screen** prints.

3.1.6 User Menu Setting

DIAScreen allows user to select which language to design the menus and the messages with the **User Menu Setting**. In addition to the built-in languages in DIAScreen, user can use other languages.

The **User Menu Setting** on the **File** menu is described with a TP04G panel as an example:

1. Create a project with the **TP04G** model type.
2. Click the **File > User Menu Setting** on the **Menu** bar.

Result: A sub-menu displays with the options of TP02, TP04, TP05 and TP08 as shown in the following figure.

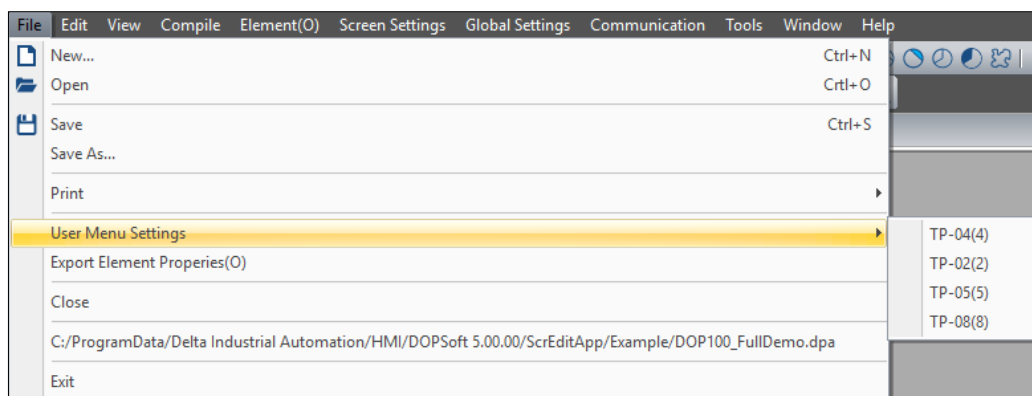


Figure 3 - 13: User Menu Setting

3. Click **TP04G**.

Result: The system prompts user to save the project. Then 21 screens of TP-04 displays in the **Screen Management Window** as shown in the following figure.

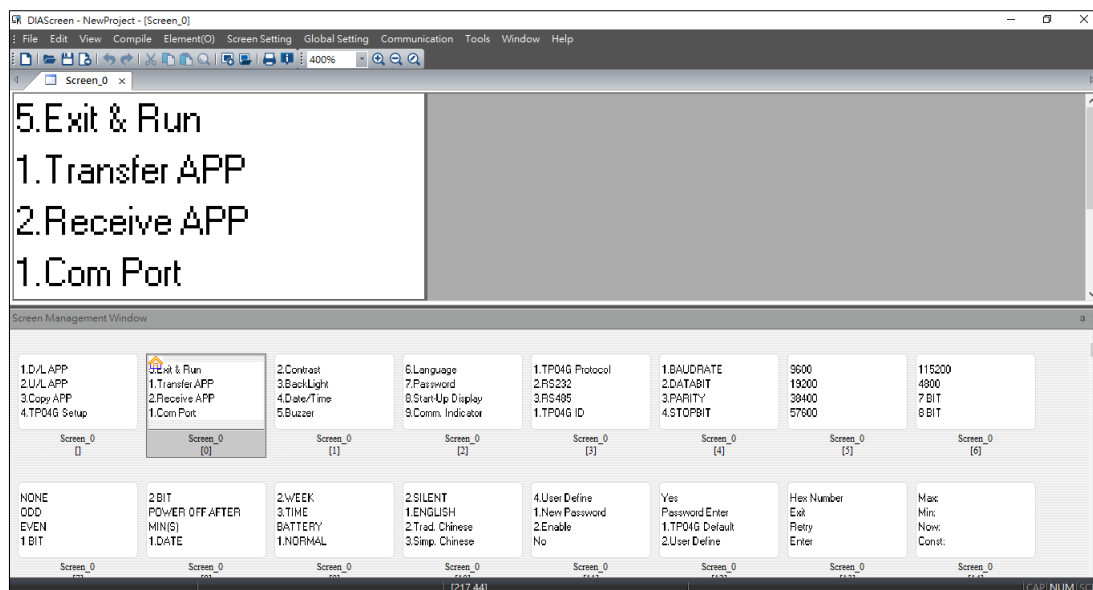


Figure 3 - 14: Screen Management Setting - User Menu Setting results

NOTE: User can edit the menus in the language he/she wants to use. User cannot change the functions and the sizes of the menus. User can only change the language.

- To modify a screen, double-click on any of the items in **Screen Management Setting** window. For example – **Backlight** in screen_0 [1].

Result: The **Static Text** window appears as shown in the following figure.

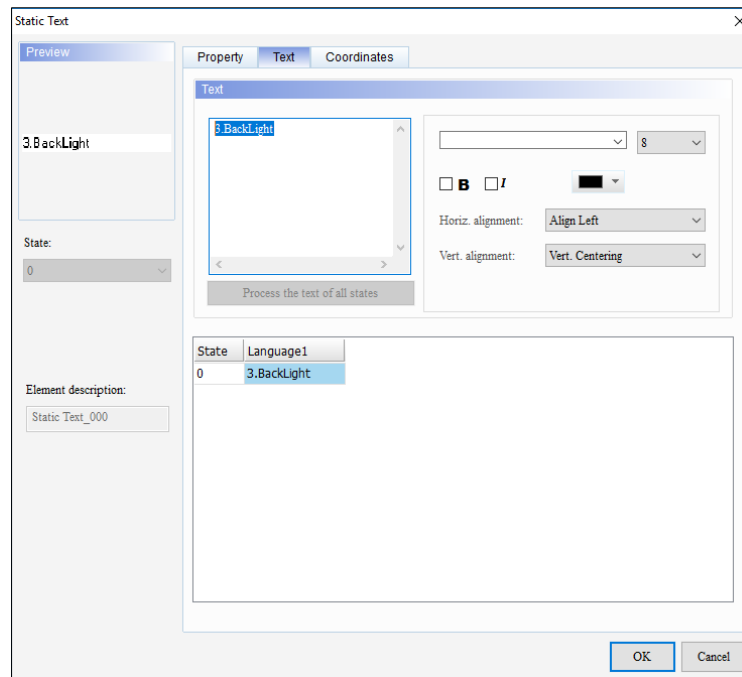


Figure 3 - 15: Static Text window - User Menu item - Backlight

5. In the window, edit the items using the desired language and click on **OK** button as shown in the following figure.

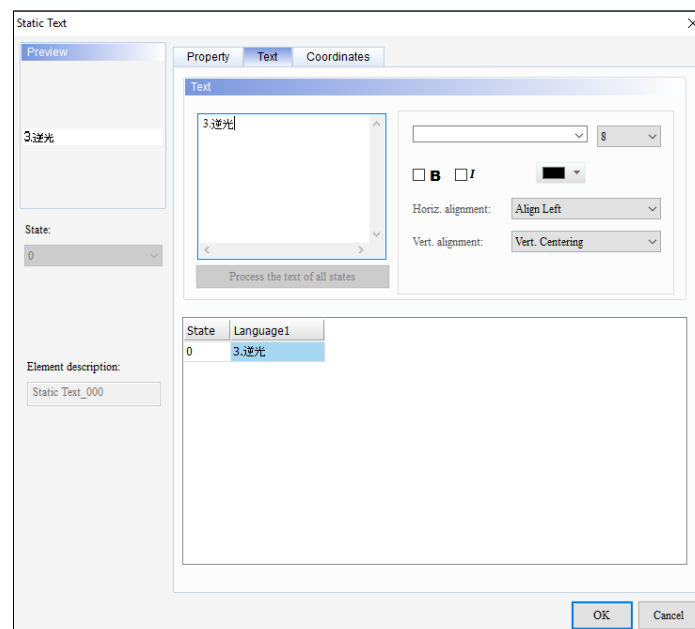


Figure 3 - 16: Static Text window - User Menu - Backlight edited

6. After user edit the menu, touch **1.D/L AP TP04G <= PC** on the screen of the TP04G series text panel. **WAIT COMM...** displays.
7. Click **Communication > Download Menu to TP** on the **Menu** bar as shown in the following figure.

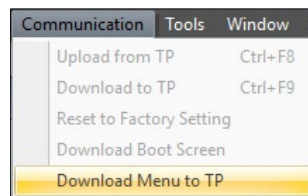


Figure 3 - 17: Download Menu to TP

Result: The 21 menus are downloaded to the TP04G series text panel.

NOTE: The **Download Menu to TP** is only available when using **User Menu Setting**.

3.1.6.1 Post Download Menu to TP:

Touch the **TP04G SETUP** on the main menu displayed on TP04G series text panel screen. Touch **Language** and press **Enter** on the panel and then select **USER DEFINE**. After **USER DEFINE** is selected, the user-defined language can be used.

3.1.7 Export Element Properties(O)

User can export the screen's element properties as a .txt file or a .xls file with **Export Element Properties(O)**.

Follow these steps to export the element properties for a screen:

1. Click on **File > Export Element Properties(O)** on the **Menu** bar as shown in the following figure.

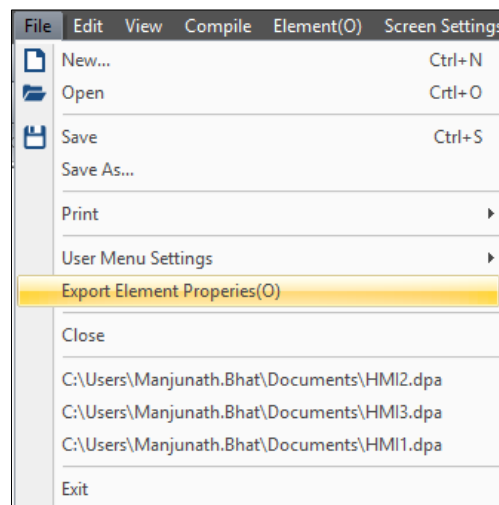


Figure 3 - 18: Export Element Properties(O)

Result: The **Export Element Properties** window displays as shown in the following figure.

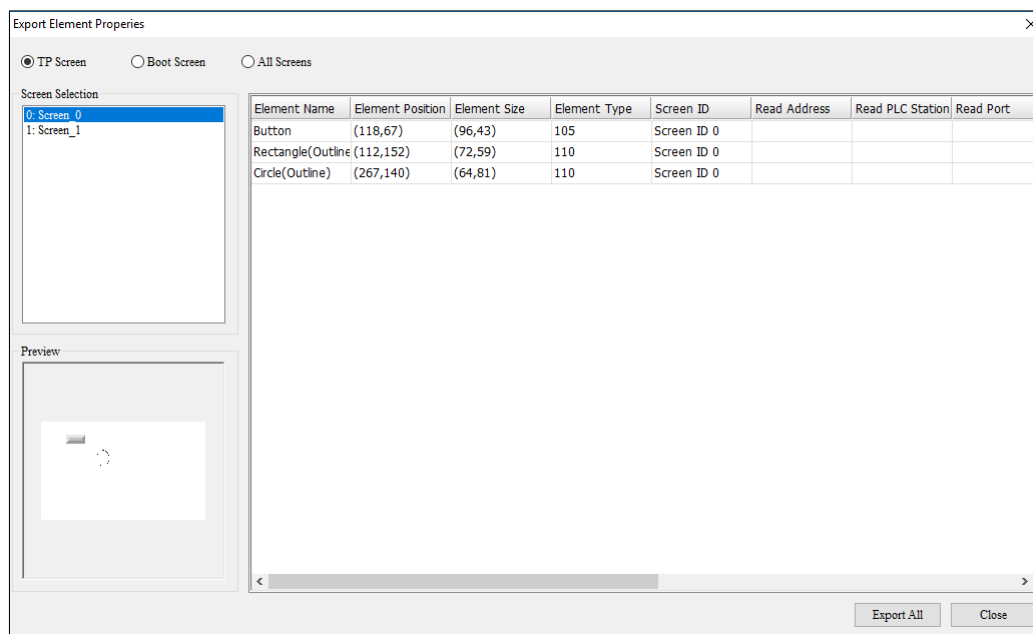


Figure 3 - 19: Export Element Properties window

The **Export Element Properties** window displays the function mentioned in the following table:

Function	Description
TP Screen	Click to select a particular screen in the Screen Selection field.
Boot Screen	Click to select Boot Screen .
All Screens	Click to select elements for all screens in the project.
Screen Selection	Displays the list of screens in the project: <ul style="list-style-type: none"> • TP Screen • Boot Screen • All Screens <p>NOTE: The TP Screen is default value.</p>
Preview	Displays the screen contents in graphic.

2. Select either, **TP Screen**, **Boot Screen**, or **All Screens**.

NOTE: If **TP Screen** is selected, user must select a particular screen for which the element property is exported.

3. Click on **Export All**.

Result: The **Export** window displays as shown in the following figure.

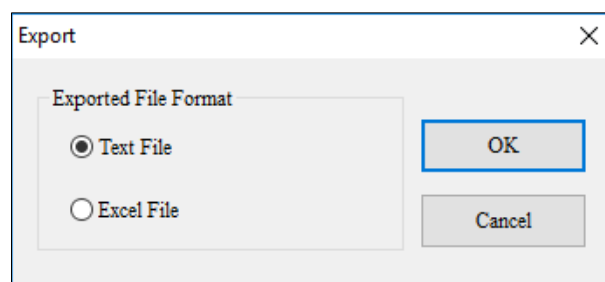


Figure 3 - 20: Export window

4. Select **Text File** or **Excel File** as the export file format and click on **OK** button.

Result: The **Save As** window displays.

5. Select a location, enter a file name and click on **Save** to export the element properties.

3.1.8 Close

Click the **File** > **Close** to close the current project.

Result: Home page of DIAScreen displays.

3.1.9 Previously Opened Projects

A list of previously opened projects displays when user opens **File** menu. Click on a project to open it. An example with list of previously displayed projects are shown in the following figure.

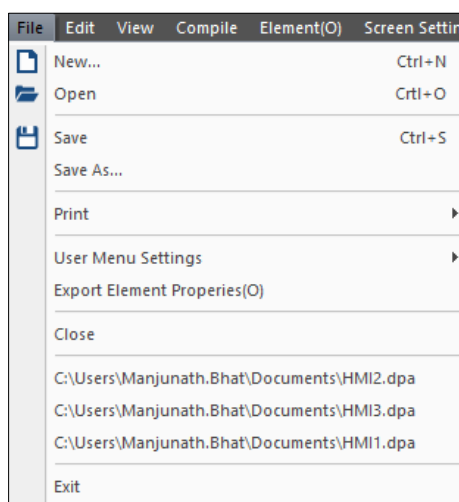


Figure 3 - 21: List of previously opened projects

3.1.10 Exit

Click **File** > **Exit** to close the DIAScreen application.

3.2 Menu Bar - Edit

This section provides detailed information about the functions available from the Edit

menu. **Edit** menu functions are:

- New Screen
- Save Screen Bitmap
- Undo
- Redo
- Delete
- Cut
- Copy(C)
- Paste
- Duplicate(M)
- Copy Screen
- Paste Screen
- Bring to Front(T)
- Send to Back(B)
- Bring Forward(U)
- Bring Backward(D)
- Select All

3.2.1 New Screen

User can create a new screen in DIAScreen for TP function from the Edit menu bar or Toolbar.

Follow these steps to create a new screen:

1. Click on **Edit** > **New Screen** on the **Menu** bar, or

Click the  icon on the **Standard** Toolbar, or

Click **New Screen** from the **Screen Management Window** context menu.

Result: The New Screen window displays as shown in the following figure.

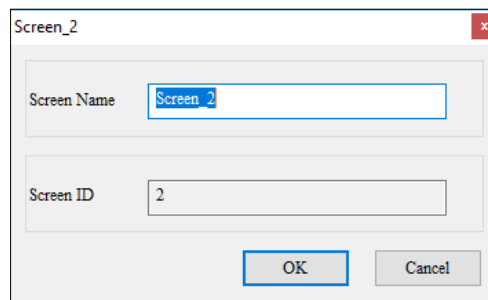


Figure 3 - 22: New Screen

2. Enter a name in the **Screen Name** field and click on **OK** button.

Result: A new screen is created.

3.2.2 Save Screen Bitmap

User can save the current screen to a clipboard or file using the **Save Screen Bitmap** function as shown in the following figure.

The Save Screen Bitmap has two options:

- Save to Clipboard
- Save to File

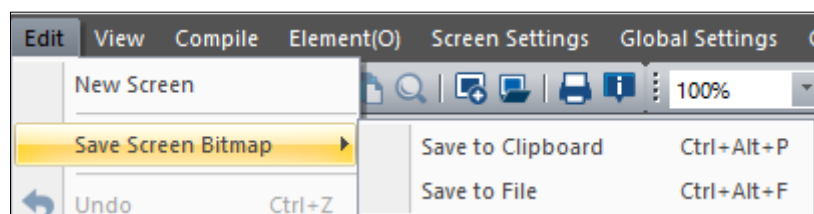


Figure 3 - 23: Save Screen Bitmap

3.2.2.1 Save to Clipboard

1. Click on **Edit > Save Screen Bitmap > Save to Clipboard** on the **Menu** bar,
or

Press the **Ctrl+Alt+P** keys simultaneously.

Result: The current screen is ready to be pasted into an editor, e.g. MS-Paint.

2. Paste the clipboard item to an editor.

3.2.2.2 Save to File

1. Click on **Edit > Save Screen Bitmap > Save to File** on the **Menu** bar, or
Press the **Ctrl+Alt+F** keys simultaneously.

Result: The **Save As** window displays.

2. Select a location and click on **Save** to save the file as a .bmp file.

3.2.3 Undo

User can undo a previous action in the TP project by clicking **Edit > Undo** on the **Menu** bar or by pressing **Ctrl+Z** keys simultaneously.

Result: The previous action is cancelled.

3.2.4 Redo

User can redo a previous action in the TP project by clicking **Edit > Redo** on the **Menu** bar or by pressing **Ctrl+R** keys simultaneously.

Result: The previous action is redone.

3.2.5 Delete

User can delete elements selected on a screen in the TP project by clicking **Edit > Delete** on the **Menu** bar or by pressing the **Delete** key.

Result: The selected elements on the screen is are deleted.

3.2.6 Cut

User can cut elements selected on a screen in the TP project by clicking **Edit > Cut** on the **Menu** bar or by pressing **Ctrl+X** in keyboard.

Result: The selected elements on the screen is are cut.

3.2.7 Copy

User can copy elements selected on a screen in the TP project by clicking **Edit > Copy** on the **Menu** bar or by pressing **Ctrl+C** in keyboard.

Result: The selected elements on the screen are are copied.

3.2.8 Paste

User can paste elements that are cut or copied to a screen in the TP project by clicking **Edit > Paste** on the **Menu** bar or by pressing **Ctrl+V** in keyboard.

Result: The selected elements is pasted to the screen.

3.2.9 Duplicate

User can create duplicates of an element in the TP project by clicking **Edit > Duplicate**.

Result: **Duplicate** window displays as shown in the following figure.

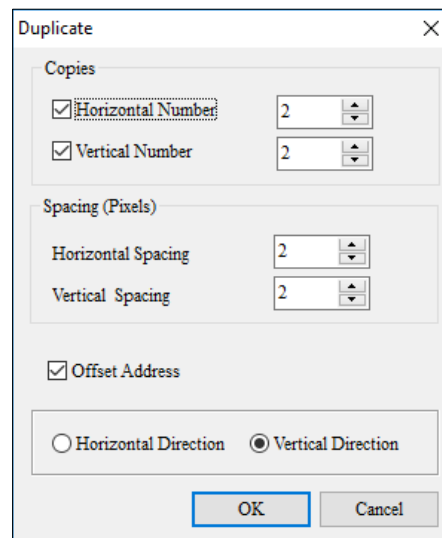


Figure 3 - 24: Duplicate window

The **Duplicate** window function are described in the following table:

Function	Description
Horizontal Number	Select the check box and enter the number of horizontal copies user need.
Vertical Number	Select the check box and enter the number of vertical copies user need.
Horizontal Spacing	Select the horizontal spacing, in pixels, user need.
Vertical Spacing	Select the vertical spacing, in pixels, user need.
Offset Address	Select the check box to offset address from the copied location.
Horizontal Direction	Select to duplicate in horizontal direction.
Vertical Direction	Select to duplicate in vertical direction.
OK	Click to duplicate.
Cancel	Click to cancel duplication action.

As an example, the copied element is duplicated as shown in the following figure.

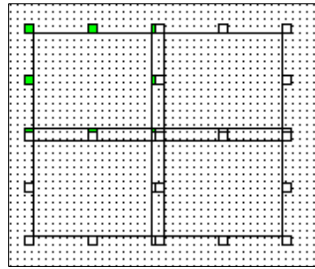


Figure 3 - 25: Duplicate result

3.2.10 Copy Screen

User can copy all the elements on the current screen by clicking **Edit > Copy Screen** or by clicking **Copy Screen** from the screen's context menu.

3.2.11 Paste Screen

User can paste all the copied elements to a current screen by clicking **Edit > Paste Screen** or by clicking **Paste Screen** from the screen's context menu.

3.2.12 Bring to Front

User can bring an element in front of all the other elements by clicking **Edit > Bring to Front(T)** or by clicking **Bring to Front** from the element's context menu.

3.2.13 Send to Back

User can send an element behind all other elements by clicking **Edit > Send to Back(B)** or by clicking **Send to Back** from the element's context menu.

3.2.14 Bring Forward

User can bring an element in front of another element that is one layer above it by clicking **Edit > Bring Forward** or by clicking **Bring Forward** from the element's context menu.

3.2.15 Send Backward

User can send an element behind another element that is one layer below it by clicking **Edit > Send Backward** or by clicking **Send Backward** from the element's context menu.

3.2.16 Select All

User can select all the elements on a screen by clicking **Edit > Select All** or by pressing **Ctrl+A** in keyboard.

3.2.17 Paste multiple Element Graphics

Remark: This function is applicable to DOP-100 series and AX-8 series.

DIAScreen supports copying and pasting multiple graphics:

1. Click **Element > Graphic > State Graphic** to draw the element as shown in the following figure.

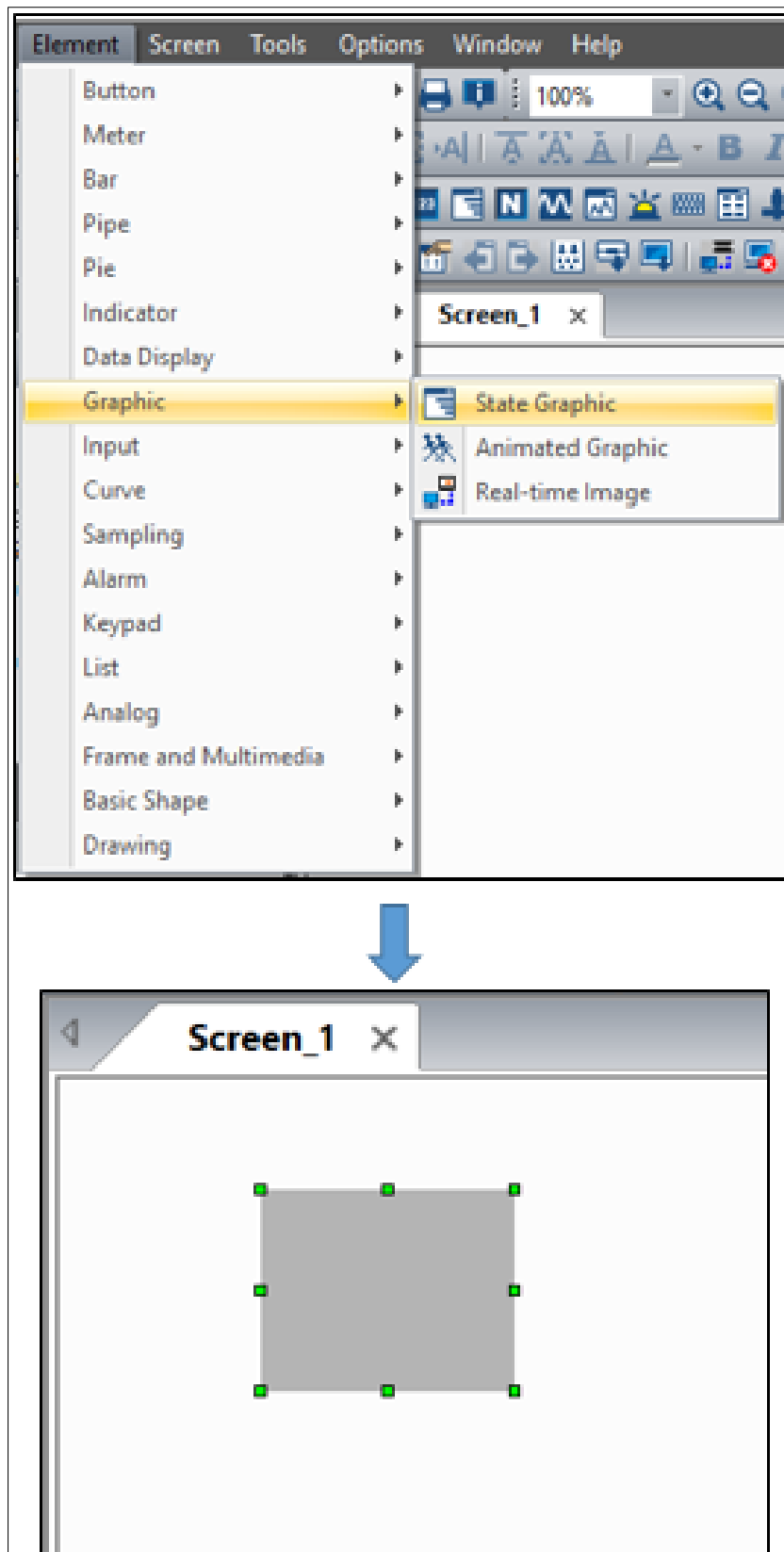


Figure 3 - 26: Draw Element

2. Double-click on the element.

Result: The **Status Graphic** window appears as shown in the following figure.

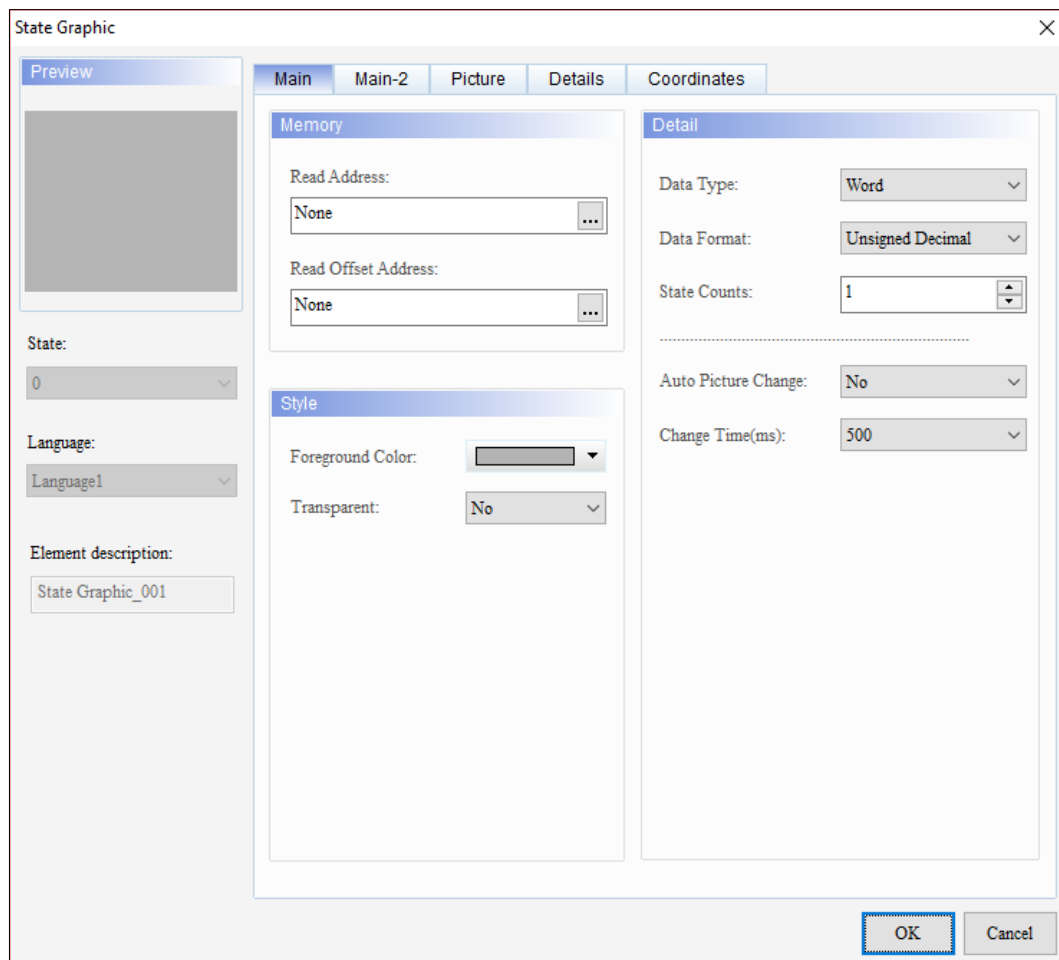


Figure 3 - 27: State Graphic Tab

3. Click on the **Picture** tab and then select the required graphic from the **Picture Bank Name**.

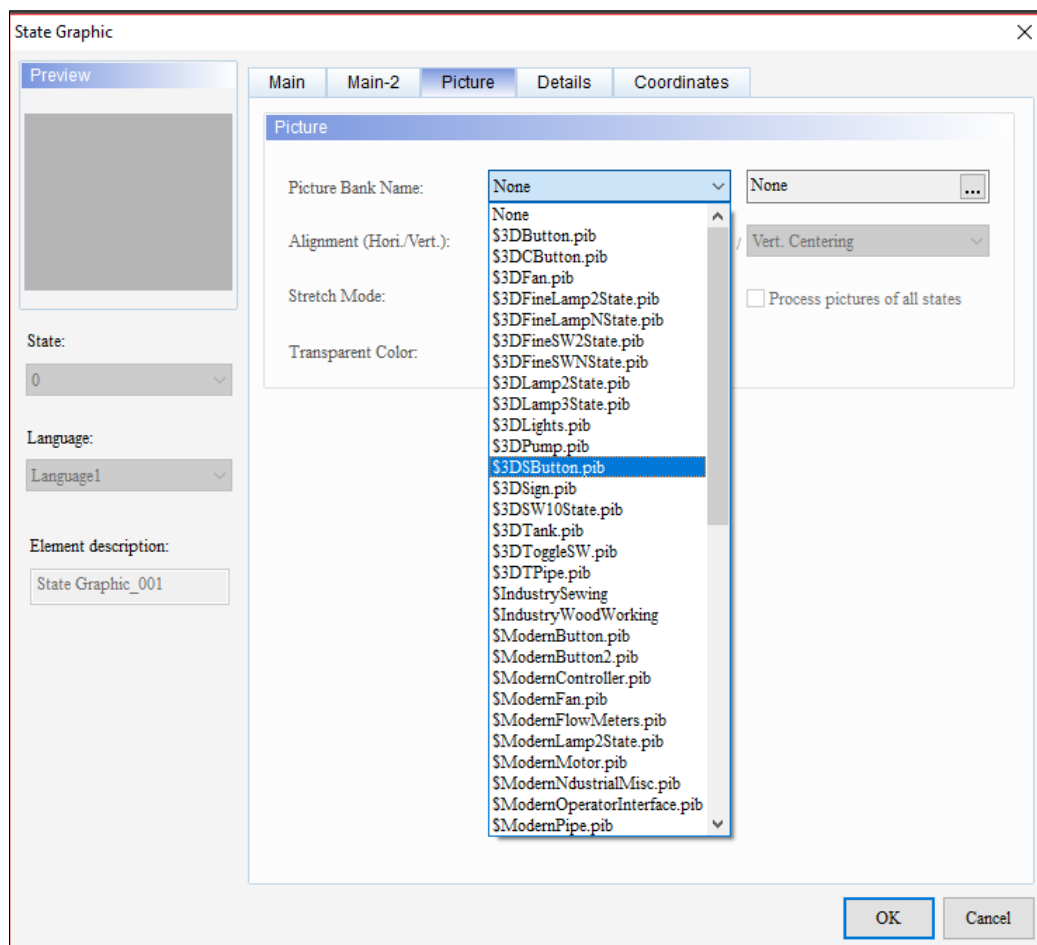


Figure 3 - 28: Graphic library name menu

Result: The screen displays the selected graphics as shown in the following figure.

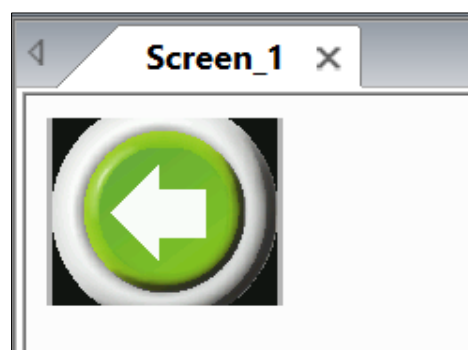


Figure 3 - 29: Graphics

4. After repeating step 1 to draw the elements, use the right-click copy and paste function to create the required number of elements.
5. Right-click on the element image and click on **Copy Image** from the menu.

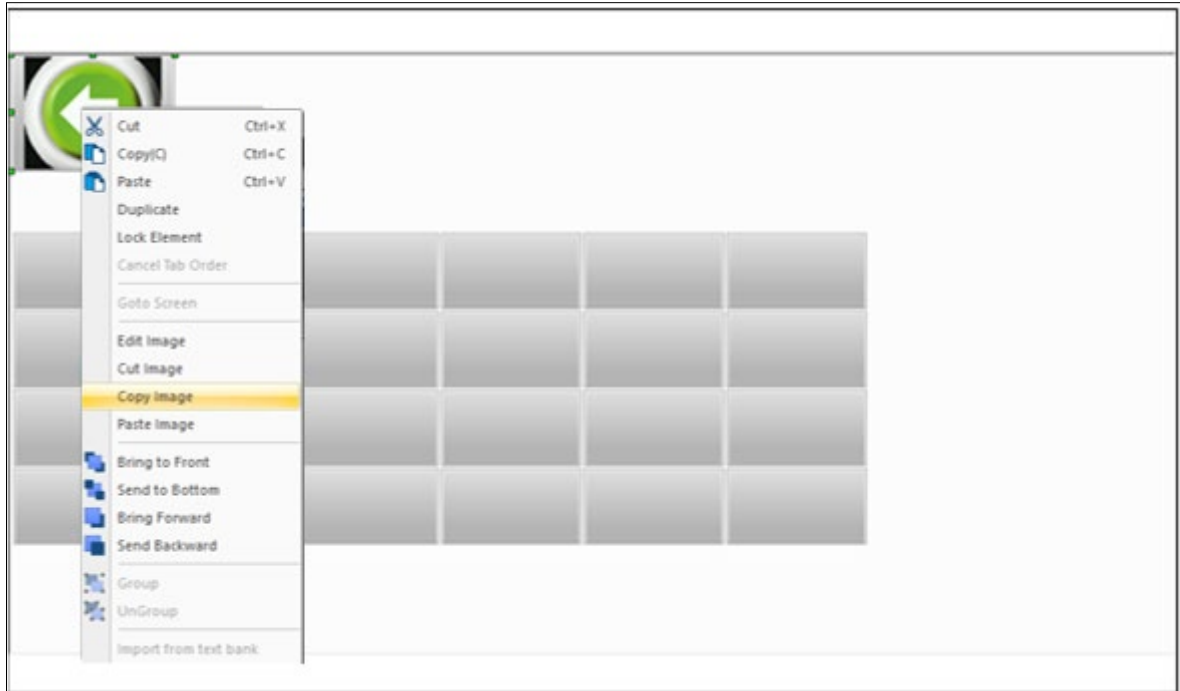


Figure 3 - 30: Copy graphics

6. Select all the components, and then right-click.

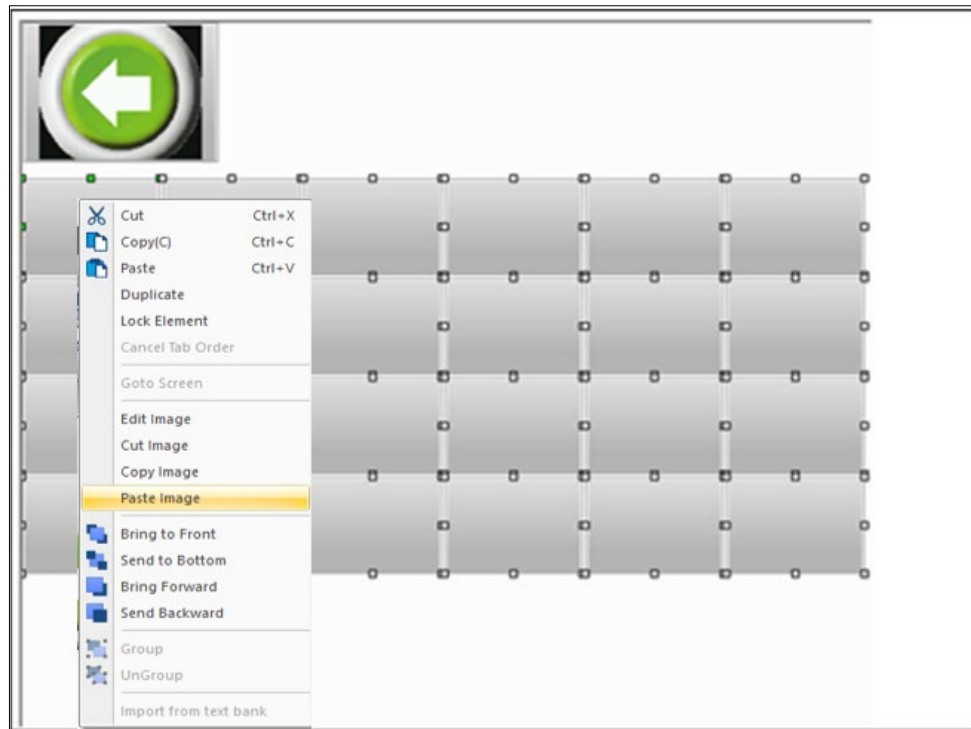


Figure 3 - 31: Paste Image

7. Click on **Paste Image**.

Result: Multiple element images are pasted as shown in the following figure.

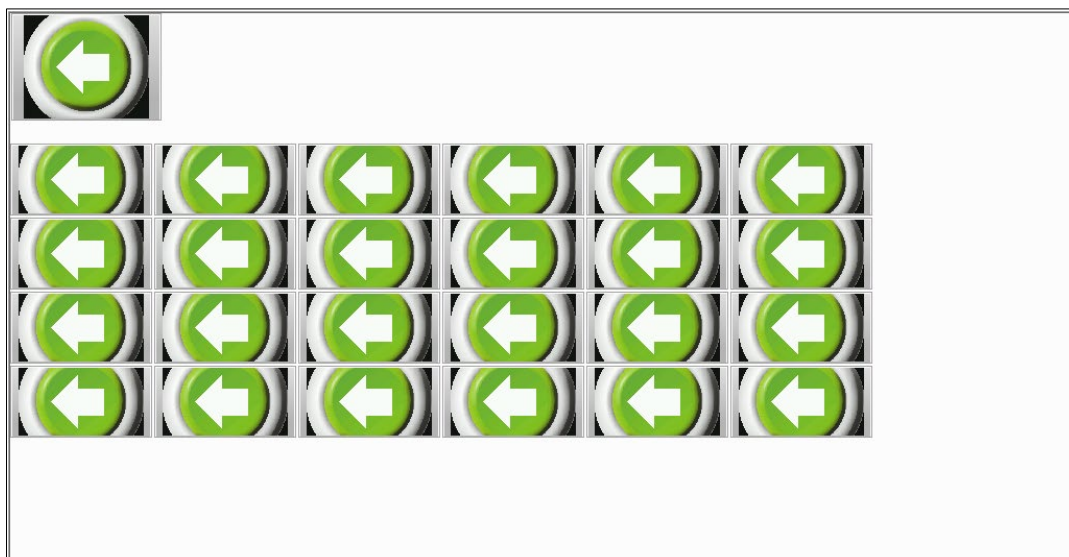


Figure 3 - 32: Multiple component graphics

3.3 Menu Bar - View

This section provides the detailed information about the functions available in View menu. **View** menu functions are:

- Toolbar
- Display Address Information
- Properties
- Screen Manager
- Output Window
- Grid Setting

3.3.1 Toolbar

DIAScreen has eight Toolbars and a Status bar. User can display or hide them by clicking **View** > **Toolbar** on the **Menu** bar as shown in the following figure.

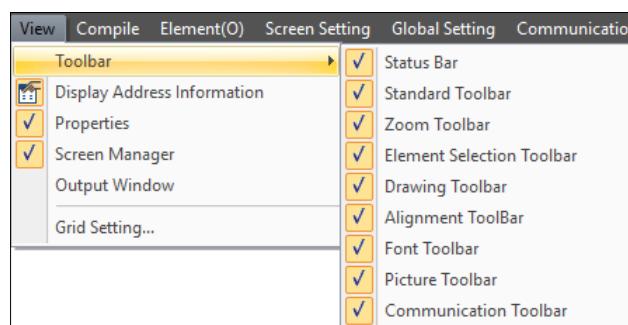


Figure 3 - 33: View > Toolbar

A check mark next to its name indicates that the toolbar displays the application. To hide a toolbar, clear the check box.

3.3.2 Display Address Information

In TP70P series models, the address information of each object setting can be displayed or hidden. Click the menu **View > Display Address information**, the upper left corner of all components will display the address information, as shown below



Figure 3 - 34: Display Address Information

3.3.3 Properties

User can switch between displaying or hiding the **Properties** window by clicking the **View > Properties** menu option. A check mark next to the name in the menu indicates that the window is open. Clear the check box to hide the Properties window.

3.3.4 Screen Manager

User can display or hide the Screen Management Window by clicking the **View > Screen Manager** menu option. A check mark next to the name of **Screen Manager** indicates that the **Screen Management Window** is open. Clear the check box to hide the Screen Management Window.

3.3.5 Output Window

User can check the results of the project compilation in the **Output Window**. Output window shows messages, error and warnings. Refer [3.4.1 Compile All](#) for more information. Display the Output Window using the **View > Output Window**. A check mark next to the name of the Output Window indicates that the Output Window is open. Clear the check box to hide the Output window.

3.3.6 Grid Setting

User can adjust the grid settings from the **Grid Setting** window. Click **View > Grid Setting** to open the Grid Settings window as shown in the following figure.

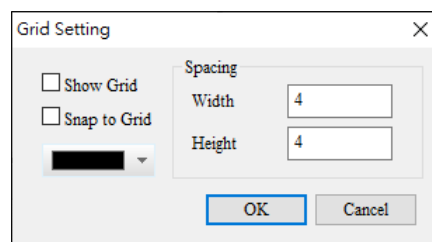


Figure 3 - 35: Grid Setting window

The **Grid Setting** window functions are described in the following table:

Function	Description
Show Grid	Select the check box to display grid.
Snap to Grid	Select the check box to snap to grid.
<Color pallet>	Select the grid color(TP70P series).
Spacing Width	Enter the grid horizontal spacing width.
Spacing Height	Enter the grid vertical spacing height.
OK	Click to change the grid settings.
Cancel	Click to cancel the grid getting action.

3.4 Menu Bar - Compile


This section provides detailed information about the functions available in Compile menu. **Compile** Menu function includes:

- Compile All

3.4.1 Compile All

After user finish designing the screens and settings functions, user can compile the TP project with the Compile All function. After a project compiles successfully, download it to a TP series text panel.

Follow these steps to compile a project:

1. Click **Compile > Compile All** on the menu bar, or
Press **Ctrl+F7** keys simultaneously, or
Click the  icon on the **Communication** toolbar.

Result: A pop-up message displays the completion of compile process.

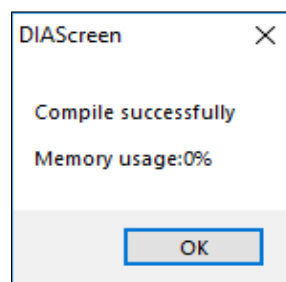


Figure 3 - 36: Compile message

Then the **Output** window displays the compile results in **Message**, **Error** and **Warning** tabs as shown in the following figure.



Figure 3 - 37: Output window after compile

2. In case of compilation errors, check the contents in the **Output** window and correct the errors.

3.5 Menu Bar - Element(O)

In this section, the detailed information is presented for functions available on the Element(O) menu For a brief description please refer to [2.2.2 Menu bar](#). Different models support different elements. **Element(O)** Menu functions are:

- Geometric Graphic
- Static Text
- Numeric/ASCII Display
- Lamp(16x16)
- Bitmap
- Scale

- Bar(P)
- Meter
- Message Display
- Button
- RTC(L)
- Range Indicator
- Measurement
- Numeric Input
- Curve
- X-Y Curve
- Alarm
- Slider
- Input List
- ComboBox
- Delta Products Communication Device Setting

3.5.1 Geometric Graphic

User can add geometric objects to a screen with the Geometric Graphic element.

Geometric Graphics supported are:

- Line
- Rectangle(Outline)
- Rectangle(Solid)
- Circle(Outline)
- Circle(Solid)
- Curve

- Chord(Outline)
- Chord(Solid)
- Sector(Outline)
- Sector(Solid)
- Polygon

Follow these steps to add a geometric graphic element to a screen for the TP series text panel:

1. Click the **Element(O) > Geometric Graphic > Element** on the **Menu** bar, or
Click a **Geometric Graphic** icon on the **Drawing Toolbar**.
2. Click the screen and drag the mouse to the required dimensions.

Result: The selected **Geometric Graphic** element is added to the screen.

NOTE: All elements in **Geometric Graphic** menu except **Polygon** can be added with this procedure.

The **Geometric Graphic** elements available for general model TP series text panel is shown in the following figure.

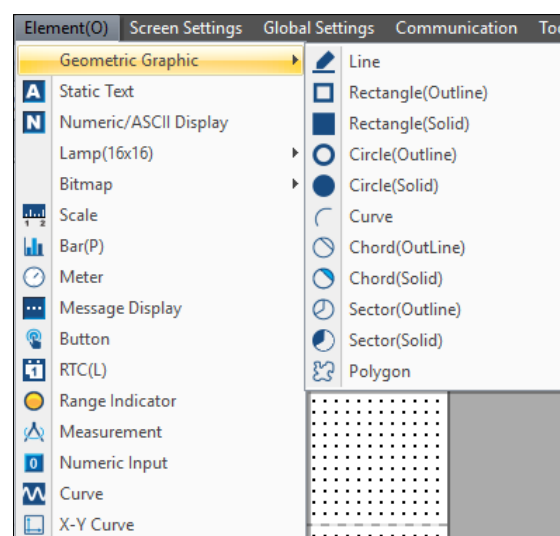


Figure 3 - 38: Element(O) > Geometric Graphic (general models)

The **Geometric Graphic** elements available for the TP70P series text panel are shown in the following figure. *Figure 3 - 39: Geometric Graphic (TP70P series)*

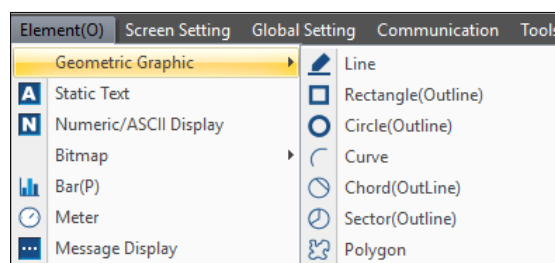



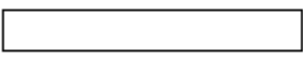

















Figure 3 - 39: Geometric Graphic (TP70P series)

The **Geometric Graphic** elements for general model and TP70PPP series text panel are shown in the following table:

Geometric Graphic	General Model	TP70PPP series
Line		
Rectangle(Outline)		
Rectangle(Solid)		Not Applicable
Circle(Outline)		
Circle(Solid)		Not Applicable
Curve		
Chord(Outline)		

Geometric Graphic	General Model	TP70PPP series
Chord(Solid)		Not Applicable
Sector(Outline)		
Sector(Solid)		Not Applicable
Polygon		

Follow these steps to add a **Polygon** to a screen:

1. Click **Element(O) > Geometric Graphic > Polygon** on the **Menu** bar, or
Click the  icon on the **Drawing** Toolbar.
2. Click on the screen and then click each point to form the polygon.
3. When user have created the required corners, right-click the mouse to finish.

Result: The **Polygon** is added to the screen as shown in the above table.

User can open the property setting windows for the Geometric Graphic elements by double-clicking the element. The property setting window is not available for the general models. For the TP70P series text panel, there are two tabs in the property setting window for all Geometric Graphic element.

- Property
- Coordinates

The **Property** tab in the **Line** element window for the TP70P series text panel is shown in the following figure.

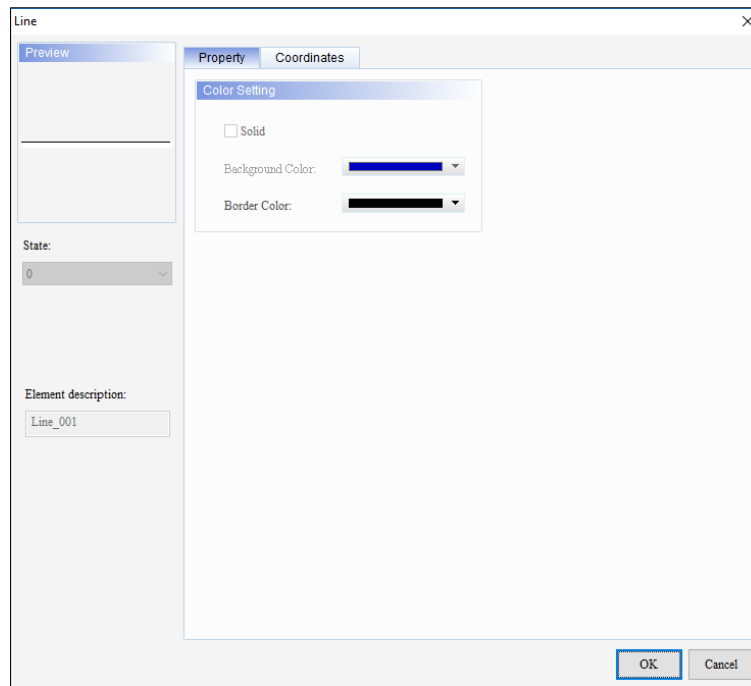


Figure 3 - 40: Line element window - Property tab for TP70P series

The **Property** tab in the **Rectangle(Outline)** element window for the TP70P series text panel is shown in the following figure *Figure 3 - 41: Rectangle(Outline) element window - Property tab for TP70P series.*

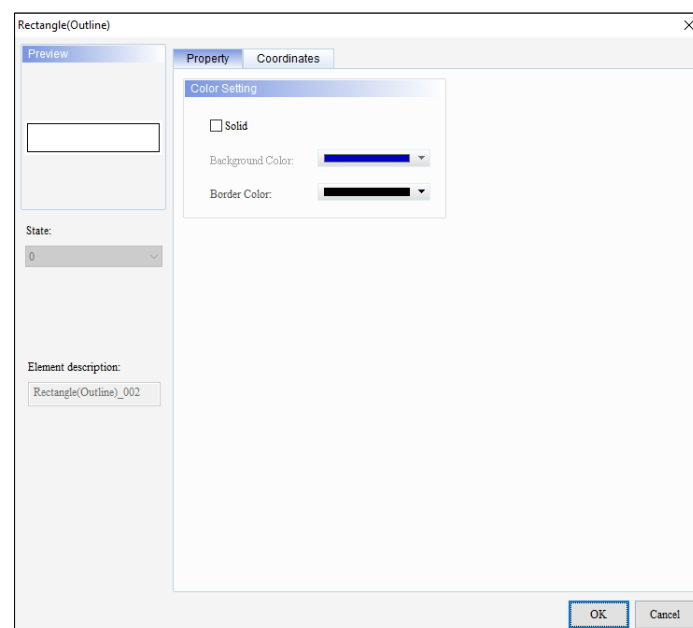


Figure 3 - 41: Rectangle(Outline) element window - Property tab for TP70P series

The **Property** tab in the **Circle(Outline)** element window for the TP70P series text panel is shown in the following figure.

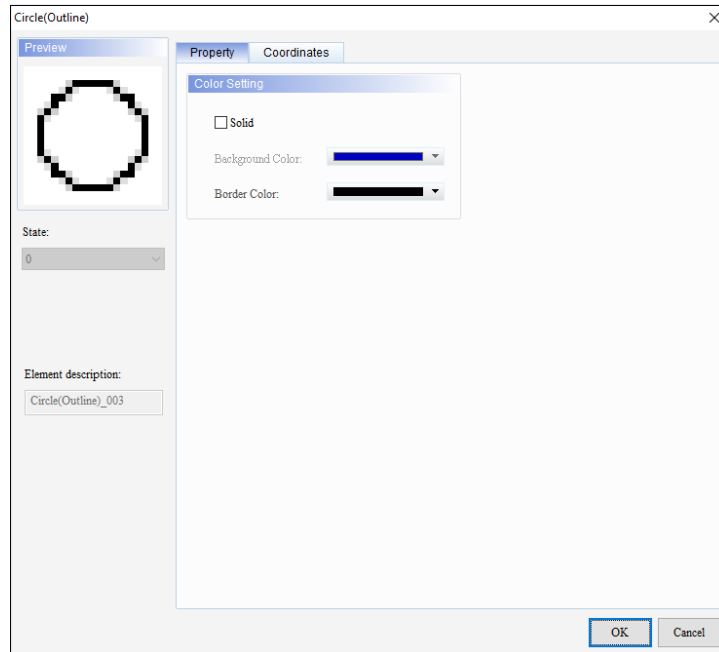


Figure 3 - 42: Circle(Outline) element window – Property tab for TP70P series

The **Property** tab in the **Curve** element window for the TP70P series text panel is shown in the following figure.

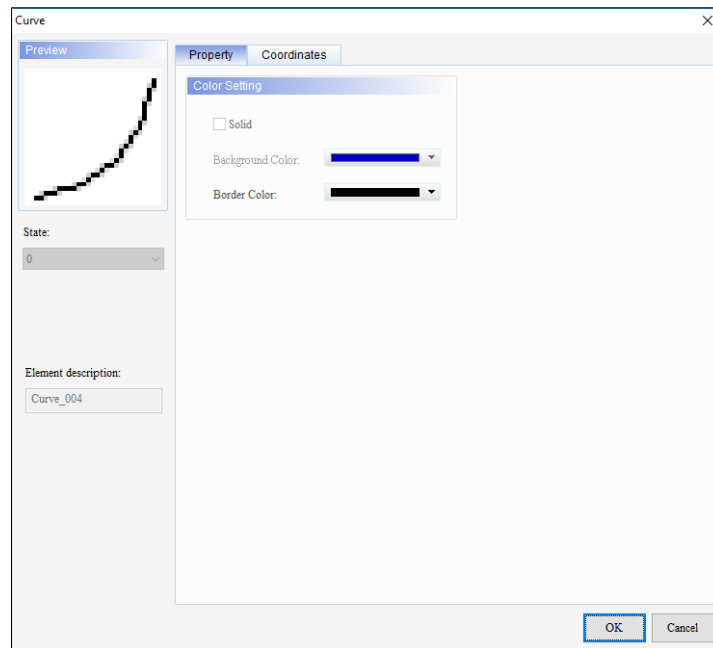


Figure 3 - 43: Curve element window – Property tab for TP 70 series

The **Property** tab in the **Chord(Outline)** element window for the TP70P series text panel is shown in the following figure.

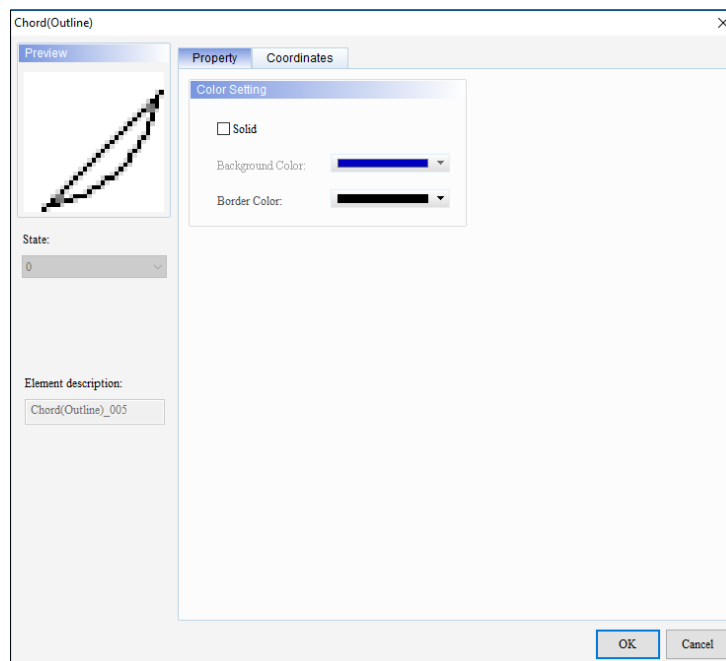


Figure 3 - 44: Chord(Outline) element window – Property tab for TP70P series

The **Property** tab in the **Sector(Outline)** element window for the TP70P series text panel is shown in the following figure.

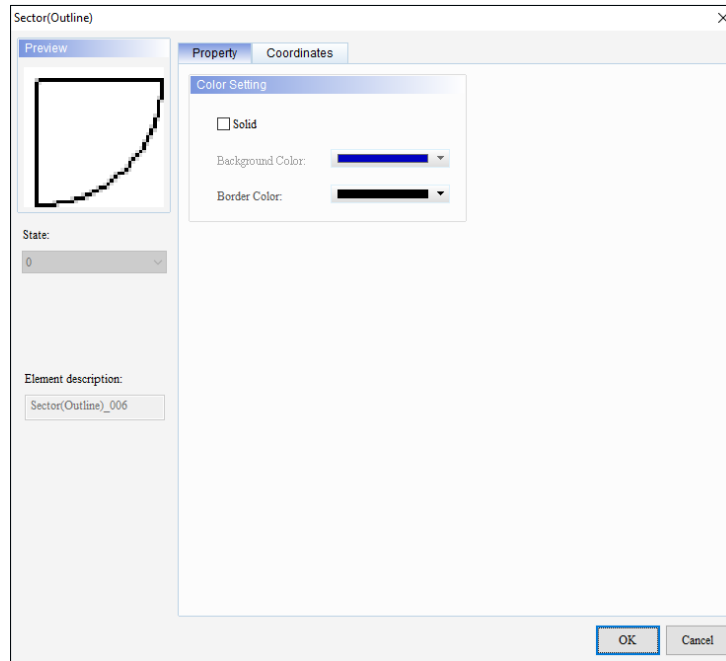


Figure 3 - 45: Sector(Outline) element window – Property tab for TP70P series

The **Property** tab in the **Polygon** element window for the TP70P series text panel is shown in the following figure.

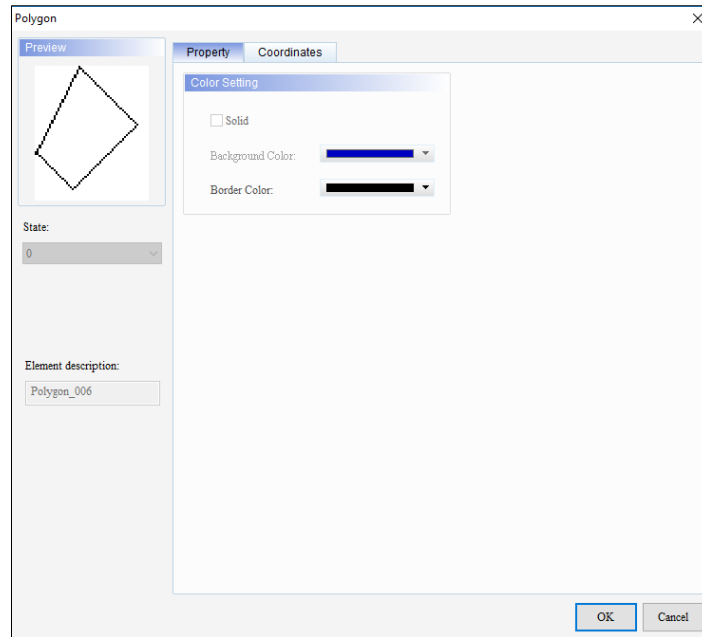


Figure 3 - 46: Polygon element window – Property tab for TP70P series

The **Property** tab in the **Geometric Graphic** element's window displays properties as mentioned in the following table:

Function	Description
Solid	Select the check box to enable the solid element (fill). NOTE: The Solid check box is not selected by default.
Background Color	Select the background color.
Border Color	Select the border color.

Click the **Coordinates** tab to open it. The **Coordinates** tab for all the **Geometric Graphic** elements displays the properties as shown in the following figure.

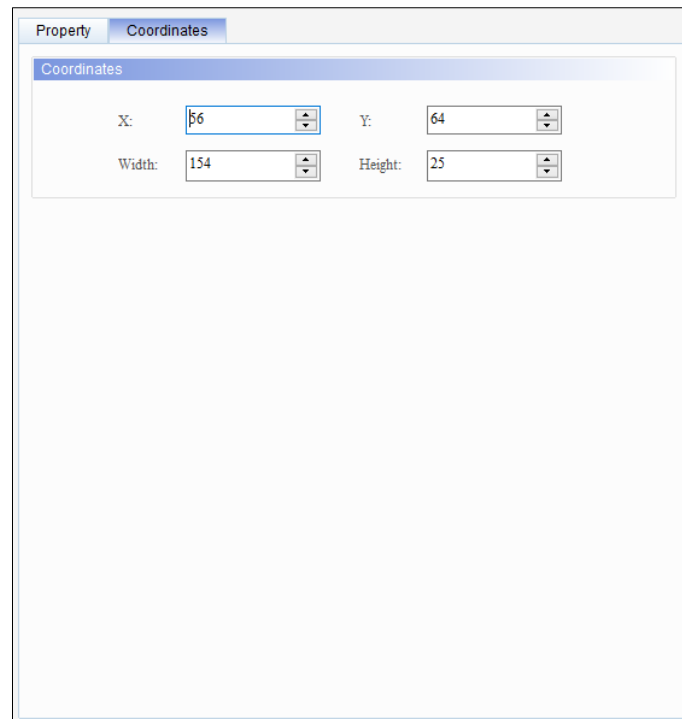


Figure 3 - 47: Geometric Graphic element window - Coordinates tab

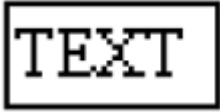

The **Coordinates** tab in the **Geometric Graphic** element's window displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate of the Geometric Graphic element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate of the Geometric Graphic element. Enter a value to change the Y coordinate.
Width	Displays the width of Geometric Graphic element. Enter a value to change the width.
Height	Displays the height of Geometric Graphic element. Enter a value to change the height.

3.5.2 Static Text

User can add text to a screen using the **Static Text** element.

The **Static Text** element for general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P Series
Static Text		

3.5.2.1 Static Text in General Model TP Series Text Panel:

Follow these steps to add a **Static Text** to a screen and edit the properties in a general model TP series text panel:

1. Click on **Element(O) > Static Text** on **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The **Static Text** element is added to the screen.

3. Double-click the **Static Text** element to edit the properties.

Result: The **Static Text** window displays as shown in the following figure.

The **Property** tab displays by default. The **Static Text** window has three tabs for general model TP series text panel:

- Property
- Text
- Coordinates

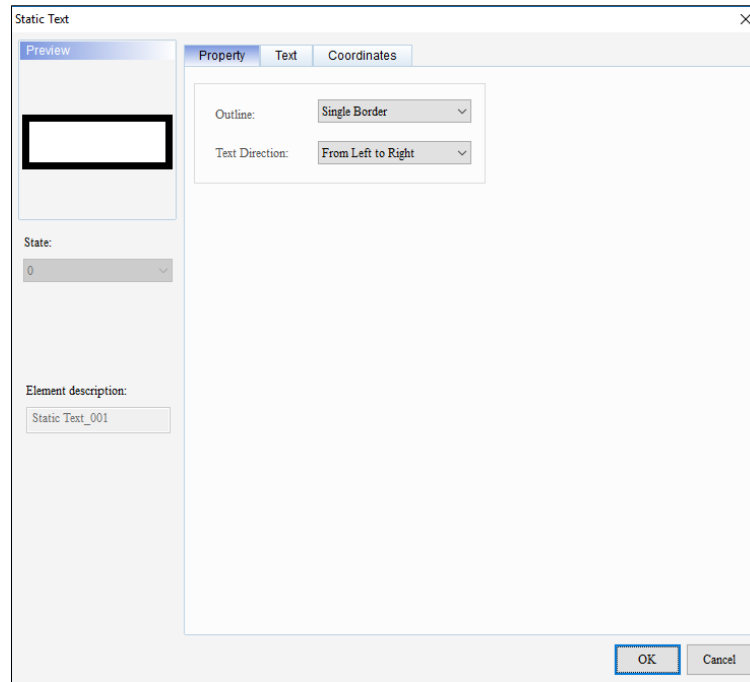


Figure 3 - 48: Static Text window – Property tab for general model

The **Property** tab in the **Static Text** window displays properties as mentioned in the following table:

Function	Description
Outline	<p>Select the desired outline. Options are:</p> <ul style="list-style-type: none"> • No Border • Single Border • Double Border • Thick Border • Dot Border • Dotted Line Border <p>NOTE: The default value is Single Border.</p>
Text Direction	<p>Select the text direction. Options are:</p> <ul style="list-style-type: none"> • From Left to Right • From Right to Left • From Top to Bottom • From Bottom to Top

Function	Description
	NOTE: The default value is From Left to Right .

Click the **Text** tab in the **Static Text** window to display the Text tab as shown in the following figure.

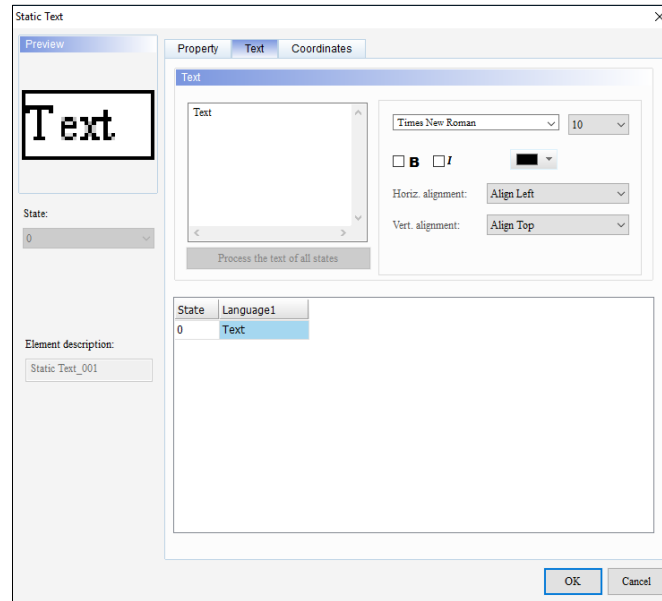


Figure 3 - 49: Static Text - Text tab for general model

The **Text** tab in the **Static Text** window displays properties as mentioned in the following table:

Function	Description
Text field	Enter the text.
Font Type field	Select the font type.
Font Size field	Select the font size.
Bold field	Select the check box to make the text bold.
Italic field	Select the check box to make the text italic.
Font Color field	Select the font color of the text.
Horiz. alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> Align Left

Function	Description
	<ul style="list-style-type: none"> • Horiz. Centering • Align Right <p>NOTE: The default value is Align Left.</p>
Vert. alignment	<p>Select the vertical alignment. Options are:</p> <ul style="list-style-type: none"> • Align Top • Vert. Centering • Align Bottom <p>NOTE: The default value is Align Top.</p>

Click the **Coordinates** tab in the **Static Text** window to display the Coordinates tab as shown in the following figure.

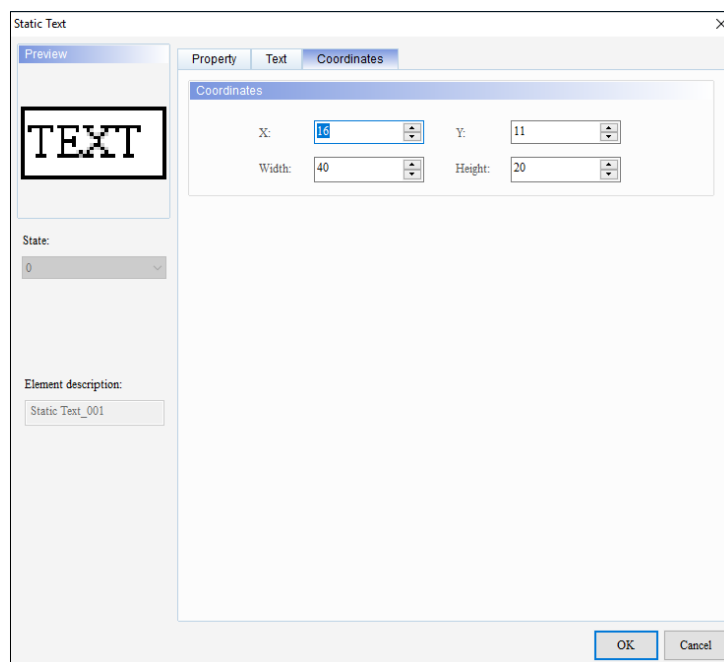


Figure 3 - 50: Static Text window – Coordinates tab for general model

The **Coordinates** tab in the **Static Text** window displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Static Text element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Static Text element. Enter a value to change the Y coordinate.
Width	Displays the Width for the Static Text element. Enter a value to change the width.
Height	Displays the Height for the Static Text element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.2.2 Static Text in TP70P Series Text Panel:

Steps for adding a Static Text element to TP70P series text panel are the same as the steps for the general model TP series text panel. Refer [3.5.2.1 Static Text in general model TP series text panel](#): for more information.

Double-click the Static Text element in the TP70P series text panel to open the **Static Text** window as shown in the following figure. The **Property** tab displays by default. The **Static Text** window has three tabs for TP70P series text panel:

- Property
- Text
- Coordinates

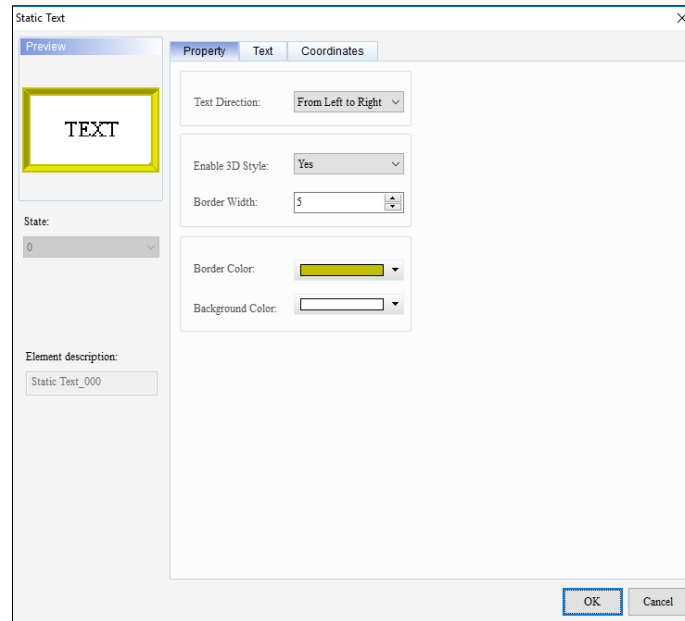


Figure 3 - 51: Static Text window – Property tab for TP70P series

The **Property** tab in the **Static Text** window displays properties as mentioned in the following table:

Function	Description
Text Direction	<p>Select the text direction. Options are:</p> <ul style="list-style-type: none"> • From Left to Right • From Right to Left • From Top to Bottom • From Bottom to Top <p>NOTE: The default value is From Left to Right.</p>
Enable 3D Style	<p>Select to enable or disable 3D style. Options are:</p> <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Border Width	<p>Enter the border width.</p> <p>NOTE: The default value is 5.</p>
Border Color	Select the border color.

Function	Description
Background Color	Select the background color.

Click the **Text** tab in the **Static Text** window to display the Text tab as shown in the following figure.

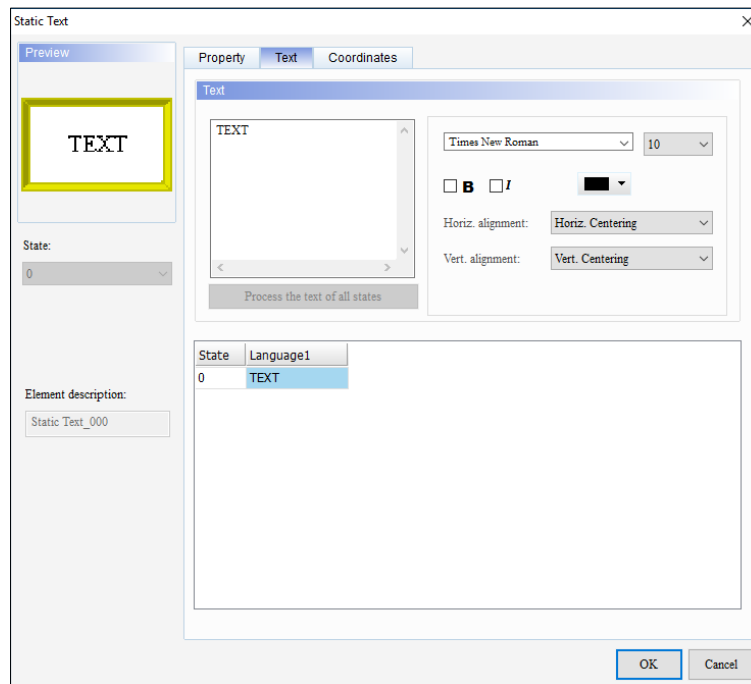


Figure 3 - 52: Static Text window – Text tab for TP70P series

The **Text** tab in the **Static Text** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Enter the text.
Font Type field	Select the font type.
Font Size field	Select the font size.
Bold field	Select the check box to make the text bold.
Italic field	Select the check box to make the text italic.
Font Color field	Select the font color.

Function	Description
Horiz. alignment	<p>Select the horizontal alignment. Options are:</p> <ul style="list-style-type: none"> Align Left Horiz. Centering Align Right <p>NOTE: The default value is <i>Align Left</i>.</p>
Vert. alignment	<p>Select the vertical alignment. Options are:</p> <ul style="list-style-type: none"> Align Top Vert. Centering Align Bottom <p>NOTE: The default value is <i>Align Top</i>.</p>

Click the **Coordinates** tab in the **Static Text** window to display the Coordinates tab as shown in the following figure.

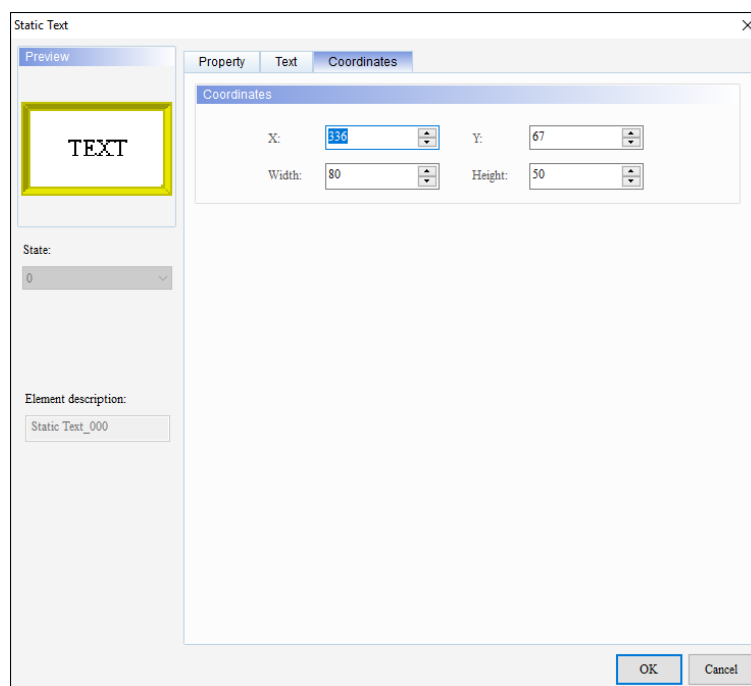


Figure 3 - 53: Static Text window – Coordinates tab for TP70P series



The **Coordinates** tab in the **Static Text** window for TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Static Text element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Static Text element. Enter a value to change the Y coordinate.
Width	Displays the Width for the Static Text element. Enter a value to change the width.
Height	Displays the Height for the Static Text element. Enter a value to change the height.

3.5.3 Numeric/ASCII Display

A TP series text panel reads the value from a device and displays it on the screen in the TP series text panel using the **Numeric/ASCII Display** element.

The **Numeric/ASCII Display** element for the general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
Numeric/ASCII Display		

3.5.3.1 Numeric/ASCII Display in General Model TP Series Text Panel:

Follow these steps to add a Numeric/ASCII Display element to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O) > Numeric/ASCII Display** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The Numeric/ASCII Display element is added to the screen.

3. Double-click the Numeric/ASCII Display element to edit the properties.

Result: The **Numeric/ASCII Display** window for the general model TP series is shown in the following figure. The **Property** tab displays by default. The Numeric/ASCII Display window for general model TP series text panel has two tabs:

- Property
- Coordinates

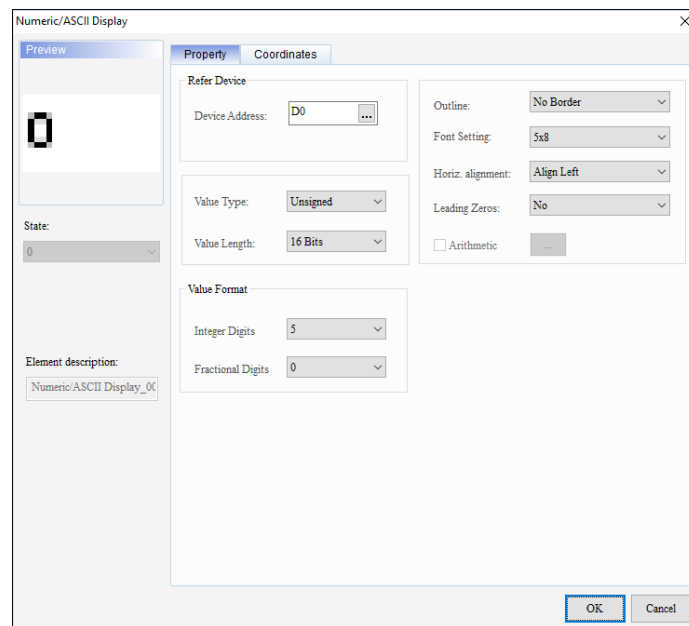


Figure 3 - 54: Numeric/ASCII Display window – Property tab for general model

The **Property** tab in **Numeric/ASCII Display** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address that the text panel reads to display its value.
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD

Function	Description
	<ul style="list-style-type: none"> • ASCII • Binary • Float <p>NOTE: The default value is Unsigned.</p>
Value Length	<p>Select the bit length. Options are:</p> <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Value Format - Integer Digits	<p>Select the number of integer places. Options are:</p> <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 5.</p>
Value Format - Fractional Digits	<p>Select the number of decimal places. Options are:</p> <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 0.</p>
Outline	<p>Select the border type. Options are:</p> <ul style="list-style-type: none"> • No Border • Single Border • Double Border • Thick Border • Dot Border • Dotted Line Border <p>NOTE: The default value is No Border.</p>
Font Setting	<p>Select the font setting. Options are:</p> <ul style="list-style-type: none"> • 5x8

Function	Description
	<ul style="list-style-type: none"> • 8x8 • 8x12 • 8x16 <p>NOTE: The default value is 5x8.</p>
Horiz. alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> • Align Left • Horizontal Centering • Align Right <p>NOTE: The default value is Align Left.</p>
Leading Zeros	Select whether to display leading zeros or not. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Arithmetic	Select to perform an arithmetic operation on the device address. Click <input type="button" value="..."/> to open Operation Setting dialog box.

User can perform an arithmetic operation in the **Operation Setting** window. Click to select an operator. Click to open **Refer Device** window to set an operand. Click to clear the settings.

An example of arithmetic operation to display $D0 = ((D0 + D1) \times D10)$ is shown in the following figure.

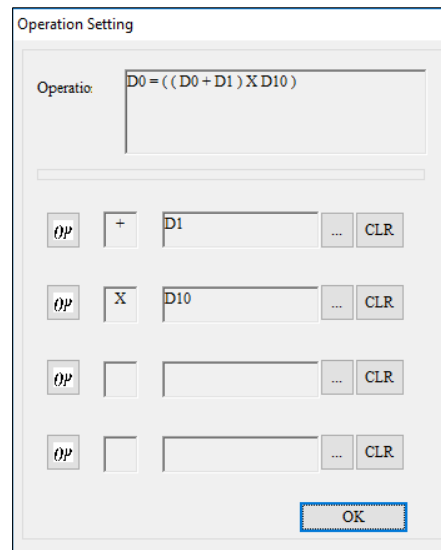


Figure 3 - 55: Operations Setting window

Example 1: (Integer Digits and Fractional Digits)

Suppose the value in T0 is 500 (the time interval that T0 measures is 50 seconds).

Case 1: If **Integer Digits** = 3 and **Fractional Digits** = 0.

Result: 500 displays.

Case 2: If **Integer Digits** = 3 and if **Fractional Digits** = 1.

Result: 50.0 displays.

Example 2: (Integer Digits, Fractional Digits and Leading Zeros)

Suppose take a value of 32483

Case 1: If **Integer Digits** = 5, **Fractional Digits** = 2 and **Leading Zeros** = **No**.

Result: 324.83 displays.

Case 2: If **Integer Digits** = 5, **Fractional Digits** = 2 and **Leading Zeros** = **Yes**.

Result: 00324.83 displays.

Click the **Coordinates** tab in the **Numeric/ASCII Display** window to display the Coordinates tab as shown in the following figure.

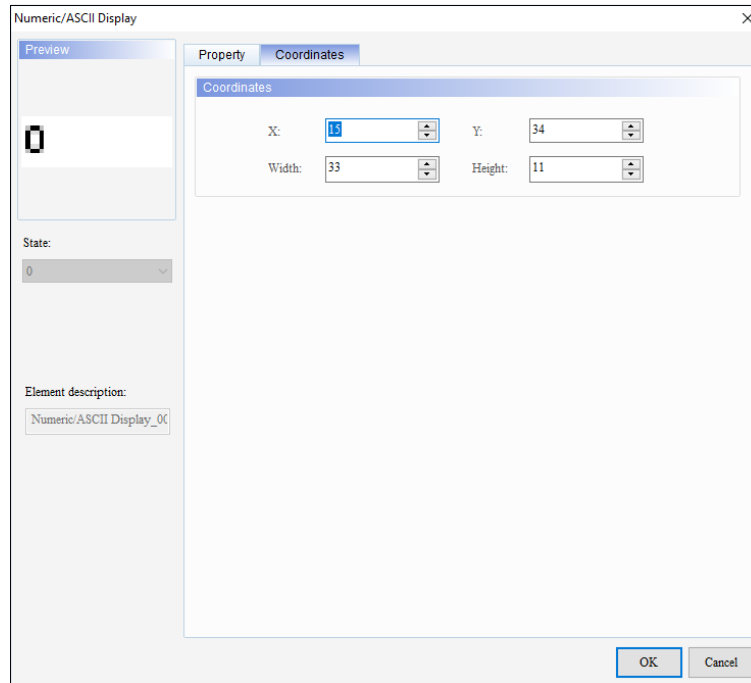


Figure 3 - 56: Numeric/ASCII Display window – Coordinates tab for general model

The **Coordinates** tab in the **Numeric/ASCII Display** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Numeri/ASCII Display element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Numeric/ASCII Display element. Enter a value to change the Y coordinate.
Width	Displays the width for the Numeric/ASCII Display element. Enter a value to change the width.
Height	Displays the height for the Numeric/ASCII Display element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK** button.

3.5.3.2 Numeric/ASCII Display in TP70P Series Text Panel:

The procedure to add a **Numeric/ASCII Display** element in TP70P series text panel is same as that of general model TP series text panel. Refer [3.5.3.1 Numeric/ASCII Display in general model TP series text panel](#): for more information.

The **Numeric/ASCII Display** window for the TP70P series text panels displays as shown in the following figure. The **Property** tab displays by default. The Numeric/ASCII Display window has two tabs for the TP70P series text panel:

- Property
- Coordinates

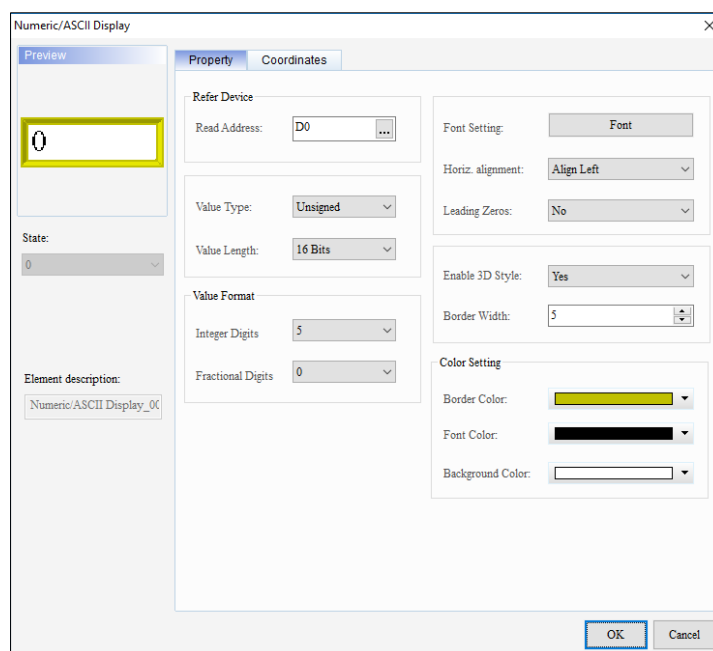


Figure 3 - 57: Numeric/ASCII Display window – Property tab for TP70P series

The **Property** tab in the **Numeric/ASCII Display** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device -Device Address	Select the device address that the text panel reads to display its value.
Value Type	Select the datatype of the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD • Binary • Float <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Value Format - Integer Digits	Select the number of integer places. Options are: <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 5.</p>
Value Format - Fractional Digits	Select the number of decimal places. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 0.</p>
Font Setting	Click to open the Font Setting dialog box. User can set the following properties: <ul style="list-style-type: none"> • Font • Size • Bold

Function	Description
	<ul style="list-style-type: none"> • Italics <p>Click OK to save settings.</p>
Horiz. alignment	<p>Select the horizontal alignment. Options are:</p> <ul style="list-style-type: none"> • Align Left • Horizontal Centering • Align Right <p>NOTE: The default value is Align Left.</p>
Leading Zeros	<p>Select whether to display leading zeros. Options are:</p> <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Color Setting – Border Color	Select the border color.
Color Setting – Font Color	Select the font color.
Color Setting – Background Color	Select the background color.

Click the **Coordinates** tab in the **Numeric/ASCII Display** window to display the Coordinates tab as shown in the following figure.

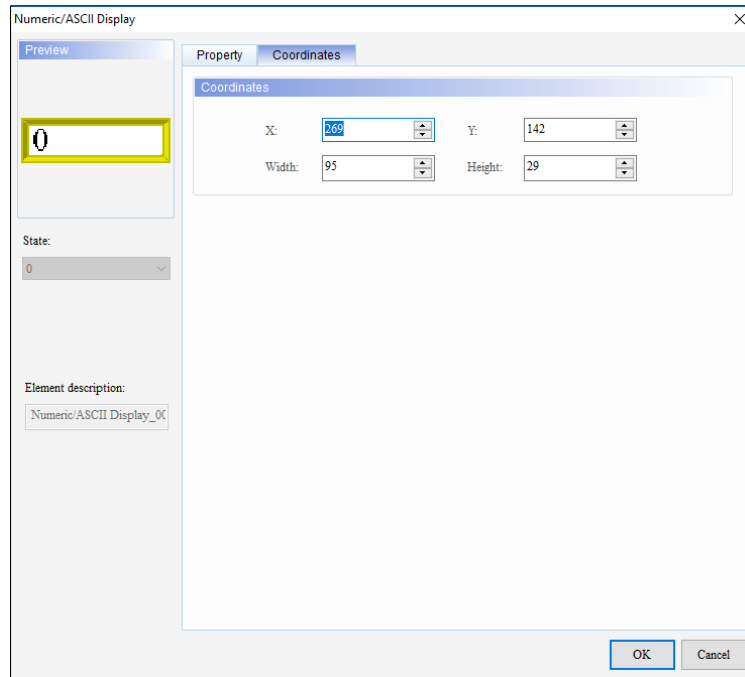


Figure 3 - 58: Numeric/ASCII Display window – Coordinates tab for TP70P series

The **Coordinates** tab in the **Numeric/ASCII Display** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Numeric/ASCII Display element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Numeric/ASCII Display element. Enter a value to change the Y coordinate.
Width	Displays the width for Numeric/ASCII Display element. Enter a value to change the width.
Height	Displays the height for Numeric/ASCII Display element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK** button.

3.5.4 Lamp (16x16)

User can show the state(s) of a Boolean/multiple state variable with the Lamp element. User can add a Lamp element to the screen by clicking **Element(O) > Lamp(16x16)**. TP series supports two types of Lamps:

- **Bit Lamp** (for Boolean variable)
- **Word Lamp** (for variable with multiple states)

The options to add a Lamp element from menu bar are shown in the following figure.

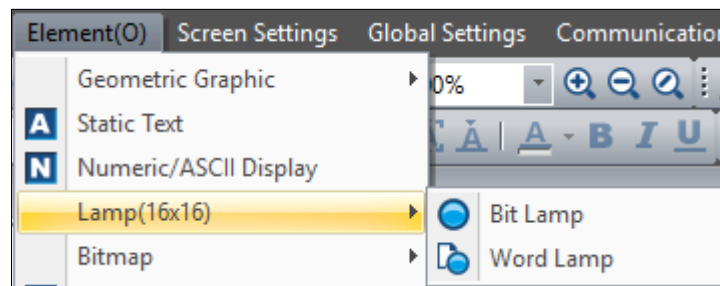



Figure 3 - 59: Lamp(16x16) options

3.5.4.1 Bit Lamp in General Model TP Series Text Panel:

Follow these steps to add a Bit Lamp to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O) > Lamp(16x16) > Bit Lamp** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The **Bit Lamp** element is added to the screen as shown in the following figure.

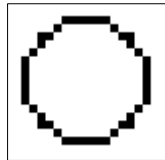


Figure 3 - 60: Bit Lamp

3. Double-click the Bit Lamp element to edit the properties.

Result: The **Bit Lamp** window displays as shown in the following figure. The **Property** tab is the default tab in the Bit Lamp window. The Bit Lamp window has two tabs for general model TP series text panel:

- Property
- Coordinates

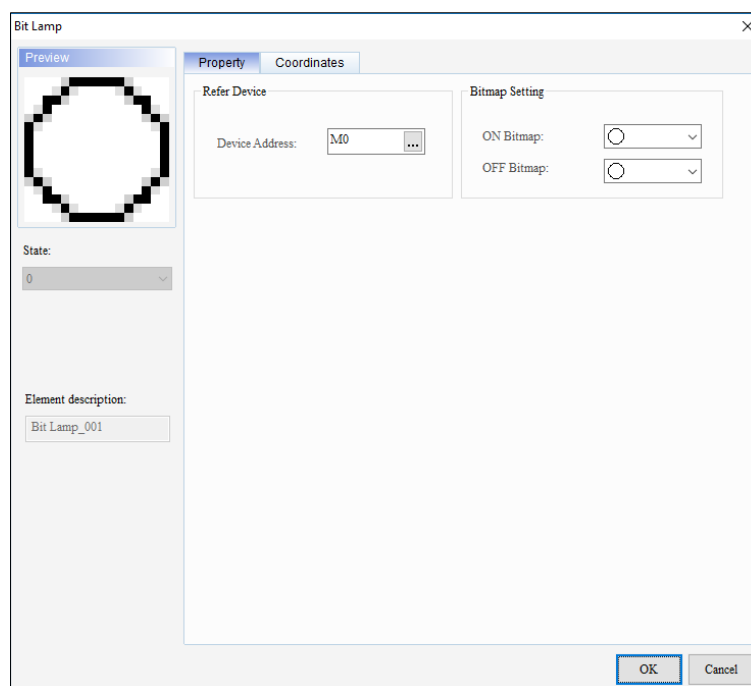


Figure 3 - 61: Bit Lamp window – Property tab for general model

The **Property** tab in the **Bit Lamp** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address that has the images user want to display.
Bitmap Setting – ON Bitmap	Select the image to display when the value of the variable is 1.
Bitmap Setting – OFF Bitmap	Select the image to display when the value of the variable is 0.

Click on the **Coordinates** tab in the **Bit Lamp** window to display the Coordinates tab as shown in the following figure.

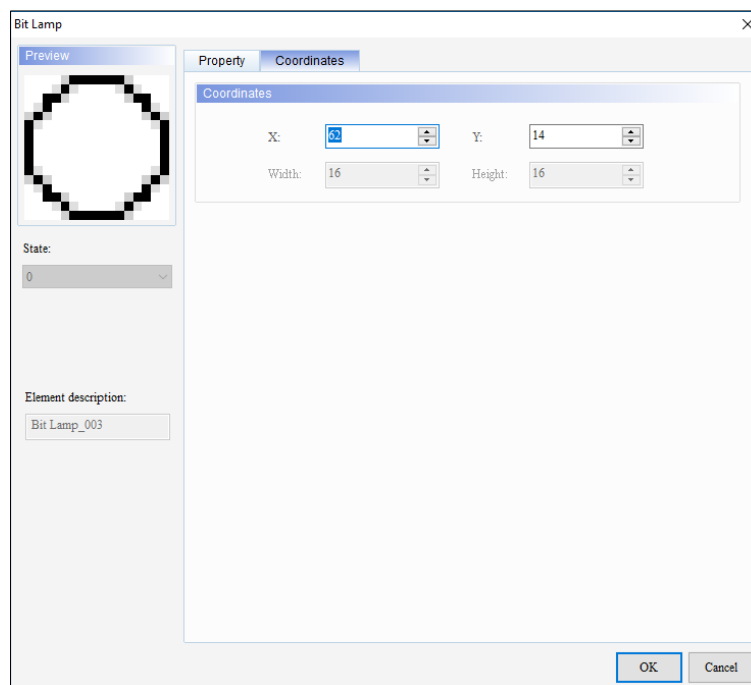


Figure 3 - 62: Bit Lamp window – Coordinates tab for general model

The **Coordinates** tab in the **Bit Lamp** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Bit Lamp element. Enter a value to change the X coordinate.

Function	Description
Y	Displays the Y coordinate for the Bit Lamp element. Enter a value to change the Y coordinate.
Width	Displays the width of the Bit Lamp element. NOTE: <i>Width is read-only.</i>
Height	Displays the height of the Bit Lamp element. NOTE: <i>Height is read-only.</i>

4. Set the properties as per user's requirements and click on **OK** button.

3.5.4.2 Word Lamp in General Model TP Series Text Panel:

Follow these steps to add a Word Lamp to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O) > Lamp(16x16) > Word Lamp** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The **Word Lamp** element is added to the screen.

NOTE: *Bit Lamp and Word Lamp images look similar.*

3. Double-click the **Word Lamp** element to edit the properties.

Result: The **Word Lamp** property window is shown in the following figure.

The Word Lamp window has two tabs for general model TP series text panel:

- Property
- Coordinates

The **Property** tab is the default tab in the Word Lamp window.

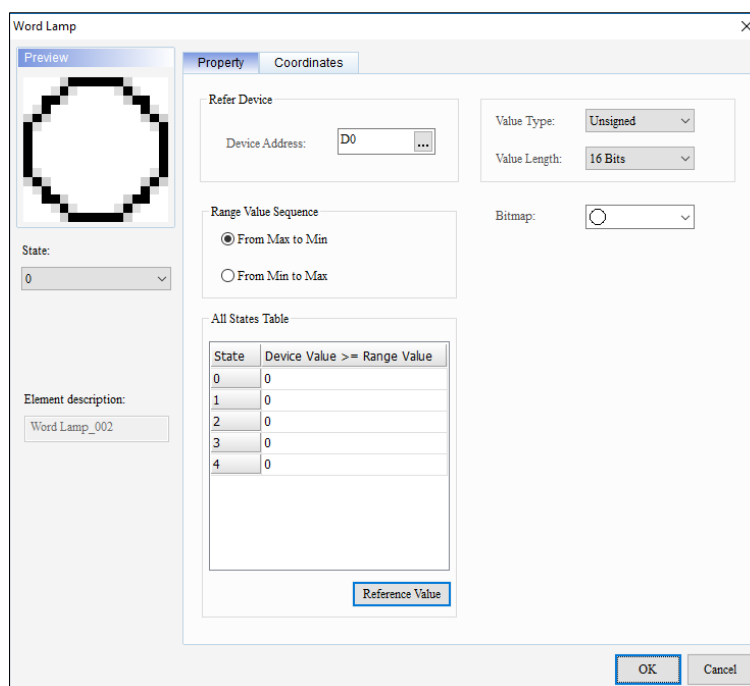


Figure 3 - 63: Word Lamp window – Property tab for general model

The **Property** tab in the **Word Lamp** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device -Device Address	Select the device address that has the images user want to display.
Range Value Sequence - From Max to Min	Select to define range values in descending order.
Range Value Sequence - From Min to Max	Select to define range values in ascending order.
All States Table	Enter the values for states from state0 to state4.
All States Table - Reference Value	Click the Reference Value button to open Range Value Reference Value dialog box. Enter the Range Limit for Lower Bound and Upper Bound .
Value Type	Select the variable datatype. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD

Function	Description
	NOTE: The default value is Unsigned .
Value Length	Select the Bit Length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits .
Bitmap	Select the image from the drop down menu for the different states.
State	Select the state value from the drop down menu for the desired states.

The value in a device address is compared to the values corresponding to **state0** to **state4**. If the device address's value is greater than or equal to the value of a state, the **Word Lamp** corresponding to the state displays on the text panel screen.

There are five states (state0 ~ state4). User can set the images and the range values for the four states. If the value in the device address is greater than or equal to a range value, the image corresponding to the state displays on the screen.

Example:

Range Value Sequence = From Max to Min, state 0 = 300, state 1 = 100.

Case 1: Variable value is greater than or equal to 300.

Result: image corresponding to state0 displays.

Case 2: Variable value is more than 100 and less than 300.

Result: Image corresponding to state1 displays.

Click on the **Coordinates** tab in the **Word Lamp** window to display the Coordinates tab as shown in the following figure.

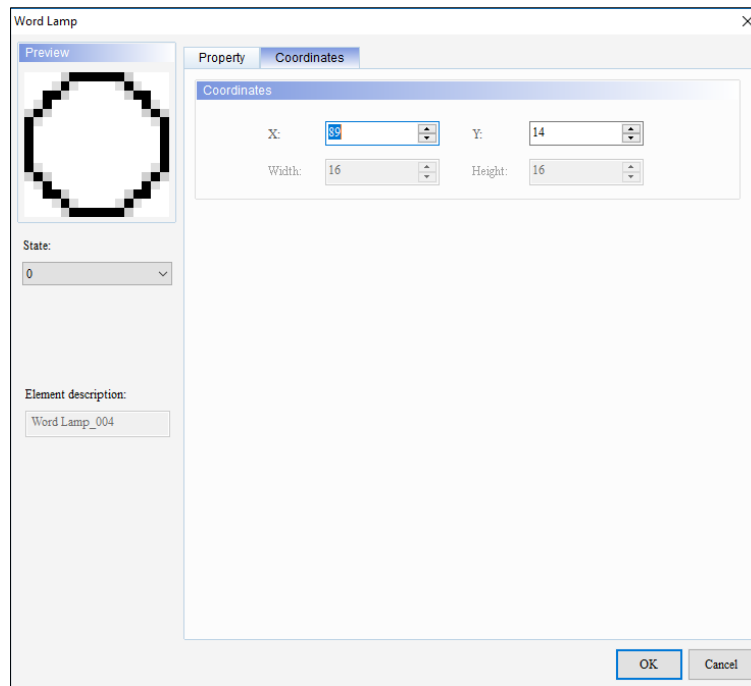


Figure 3 - 64: Word Lamp window – Coordinates tab for general model

The **Coordinates** tab in the **Word Lamp** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Word Lamp element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Word Lamp element. Enter a value to change the Y coordinate.
Width	Displays the width for the Word Lamp element NOTE: Width is read-only.
Height	Displays the height for the Word Lamp element NOTE: Height is read-only.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.5 Bitmap

User can add a bitmap to a screen with the **Bitmap** element. The DIAScreen supports two types of bitmaps as displayed

- Static Bitmap
- Dynamic Bitmap

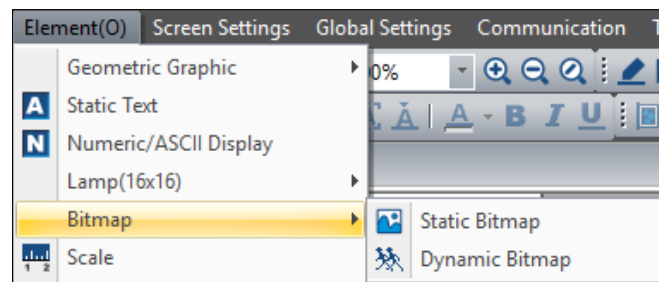


Figure 3 - 65: Bitmap options

3.5.5.1 Static Bitmap:

User can add a bitmap that is static in nature with the Static Bitmap element.

An example of Static Bitmap is shown in the following figure.



Figure 3 - 66: Static Bitmap

Static Bitmap in General Model TP Series Text Panel:

Follow these steps to add a Static Bitmap to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O) > Bitmap > Static Bitmap** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse cursor to the required dimensions.

Result: The Static Bitmap element is added to the screen.

3. Double-click the Static Bitmap to edit the properties.

Result: The **Static Bitmap** window displays as shown in the following figure.

The **Property** tab is the default tab of Static Bitmap window. Static Bitmap window has two tabs for general model TP series text panel:

- Property
- Coordinates

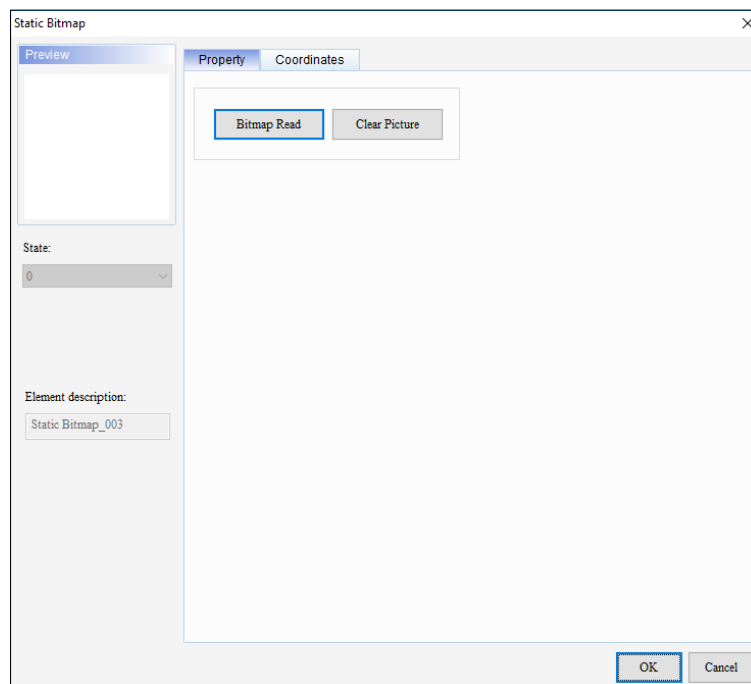


Figure 3 - 67: Static Bitmap window – Property tab for general model

The **Property** tab in the **Static Bitmap** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Bitmap Read	Click to display the Open window to select a location and the .bmp file to display. NOTE: <i>Bitmap images are available in:</i> < drive>\Program Files (x86)\Delta Industrial Automation\DIAScreen\ScrEditApp\TPSeries\BmpGroup\<folders>
Clear Picture	Click to delete the current bitmap.

Click on the **Coordinates** tab in the **Static Bitmap** window to display the Coordinates tab as shown in the following figure.

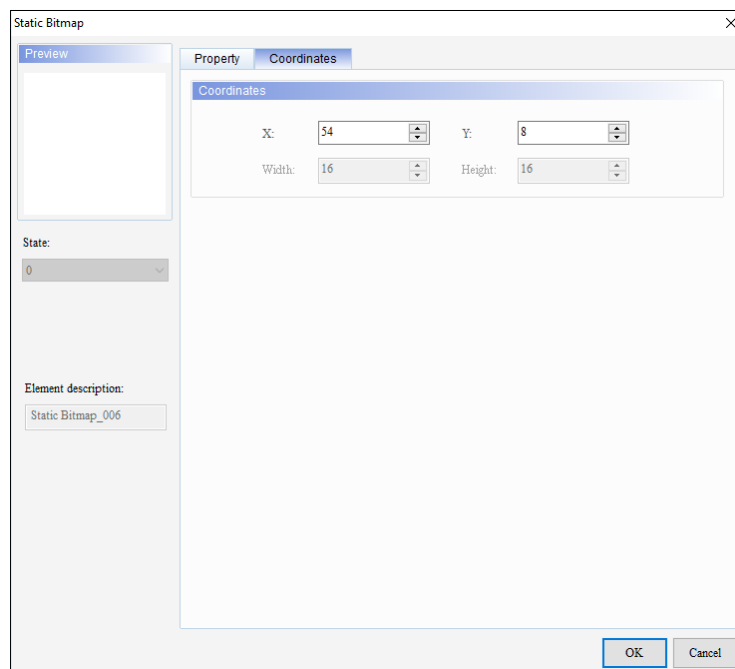


Figure 3 - 68: Static Bitmap window – Coordinates tab for general model

The **Coordinates** tab in the **Static Bitmap** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Static Bitmap element. Enter a value to change the X coordinate.

Function	Description
Y	Displays the Y coordinate for the Static Bitmap element. Enter a value to change the Y coordinate.
Width	Displays the width for the Static Bitmap element NOTE: <i>Width is read-only.</i>
Height	Displays the height for the Static Bitmap element NOTE: <i>Height is read-only.</i>

4. Set the properties as per user's requirements and click **OK** button.

Static Bitmap in TP70P Series Text Panel:

The procedure to add a Static Bitmap element in TP70P series text panel is same as that of Static Bitmap element to a general model TP series text panel. Refer [Static Bitmap in general model TP series text panel](#): for more information.

The **Static Bitmap** window for TP70P series text panel is shown in following figure. The Property tab displays by default. The Static Bitmap window has two tabs for TP70P series text panel:

- Property
- Coordinates

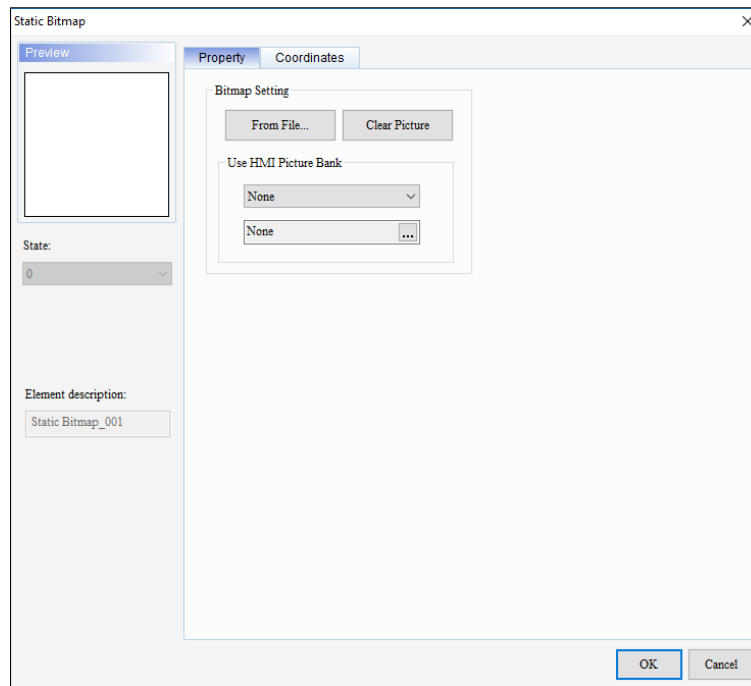


Figure 3 - 69: Static Bitmap window – Property tab for TP70P series

The **Property** tab in the **Static Bitmap** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Bitmap Settings – From File	Click to display the Open window to select a location and the .bmp file to display. NOTE: <i>Bitmap images are available in:</i> <drive>\Program Files (x86)\Delta Industrial Automation\DIAScreen\ScrEditApp\TPSeries\BmpGroup\<folders>
Bitmap Settings – Clear Picture	Click to delete the current bitmap.
Use HMI Picture Bank	Select a picture bank and an image in the picture bank.

Click the **Coordinates** tab in the **Static Bitmap** window to display the Coordinates tab as shown in the following figure.

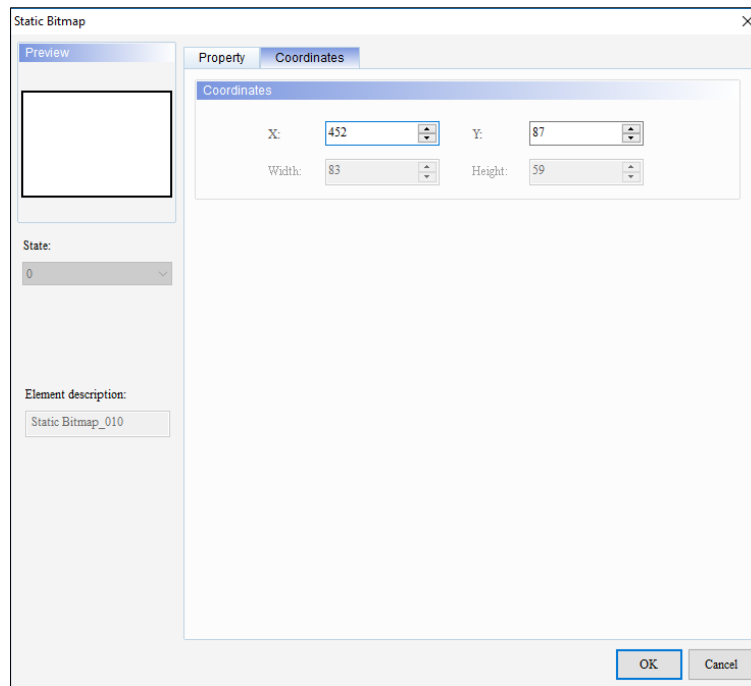


Figure 3 - 70: Static Bitmap window – Coordinates tab for TP70P series

The **Coordinates** tab in the **Static Bitmap** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Static Bitmap element. Enter value to change the X coordinate.
Y	Displays the Y coordinate for the Static Bitmap element. Enter value to change the Y coordinate.
Width	Displays the width for the Static Bitmap element. NOTE: Width is read-only.
Height	Displays the height for the Static Bitmap element. NOTE: Height is read-only.

- Set the properties as per user's requirements and click on **OK** button.

3.5.5.2 Dynamic Bitmap:

User can add a bitmap that is dynamic in nature using the **Dynamic Bitmap** element. The value in a device address is compared to the values corresponding to a state. If the value in the device address is greater than or equal to the value of the state, the image corresponding to the state displays on the text panel screen. A dynamic image is different from a static image because the Dynamic Bitmap image corresponds to a state.

Dynamic Bitmap in General Model TP Series Text Panel:

Follow these steps to add a Dynamic Bitmap to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O) > Bitmap > Dynamic Bitmap** on the Menu bar, or

Click the  icon on the Element Selection Toolbar.

2. Click the screen and drag the mouse to the desired requirements.

Result: The Dynamic Bitmap element is added to the screen.

3. Double-click the Dynamic Bitmap to edit the properties.

Result: The **Dynamic Bitmap** window displays as shown in the following figure.

The Dynamic Bitmap window has two tabs for general model TP series text panel:

- Property
- Coordinates

The **Property** tab displays by default.

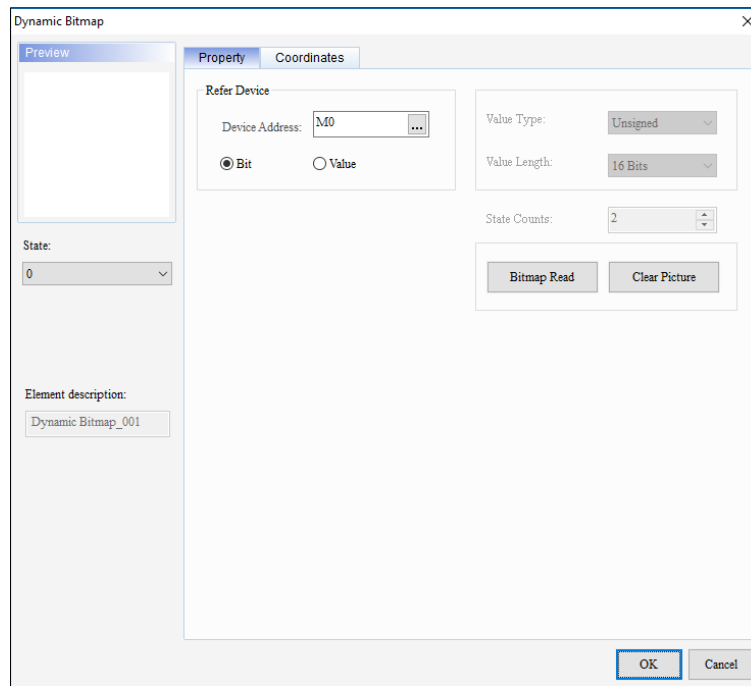


Figure 3 - 71: Dynamic Bitmap window – Property tab for general model

The **Property** tab in the **Dynamic Bitmap** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device – Device Address	Select the device address that has the images user want to display.
Refer Device - Bit	Select Bit if the variable is a Boolean datatype.
Refer Device - Value	Select Value if the variable has multiple states.
Bitmap Read	Click to display the Open window to select the location and .bmp file to display. NOTE: <i>Bitmap images are available in:</i> <drive>\Program Files (x86)\Delta Industrial Automation\DIAScreen\ScrEditApp\TPSeries\BmpGroup\<folders>
Clear Picture	Click to delete the current bitmap.

If user select **Bit**, select images corresponding to values 0 and 1. If user select **Value**, then user can set up to a maximum of 255 states.

If **Value** is selected, the **Dynamic Bitmap** window displays the **Property** tab as shown in the following figure.

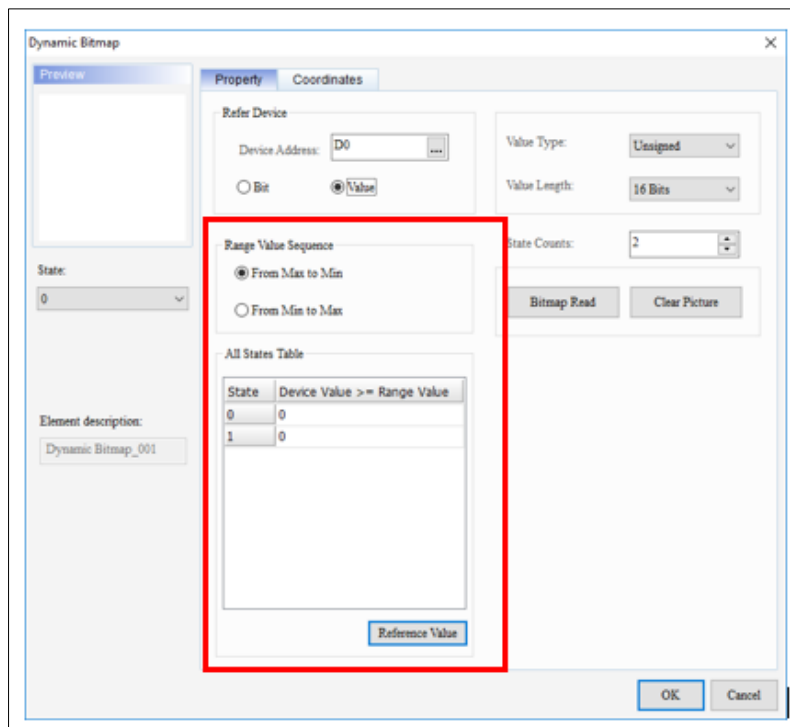


Figure 3 - 72: Dynamic Bitmap window – Property tab (Value) for general model

If user select **Value**, the **Property** tab in the **Dynamic Bitmap** window displays extra properties as mentioned in the following table:

Function	Description
Range Value Sequence - From Max to Min	Select to define range values in the descending order.
Range Value Sequence - From Min to Max	Select to define range values in the ascending order.
All States Table	Enter the values for state0 to stateN, where N = (State Counts - 1).

Function	Description
All States Table - Reference Value	Click Reference Value open the Range Value Reference Value dialog box. Enter the Range Limit for Lower Bound and Upper Bound .
Value Type	Select the variable datatype. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length here. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
State Counts	Select the number of states. <p>NOTE: The default value is 2.</p>

When user selects **Bit** or **Value** and click **Bitmap Read**, a **File Open** dialog will be displayed. User needs to select the .bmp files to be displayed for the particular state.

User can set the images corresponding to the states and set the range values for the states. If the value in the device address is greater than or equal to a range value, the image corresponding to the state for the range value displays.

Example:

Range Value Sequence = From Max to Min, state 0 = 300, state 1 = 100.

Case 1: Variable value is greater than or equal to 300.

Result: Image corresponding to state0 displays.

Case 2: Variable value is more than 100 and less than 300.

Result: Image corresponding to state1 displays.

Click on the **Coordinates** tab in the **Dynamic Bitmap** window to display the Coordinates tab as shown in the following figure.

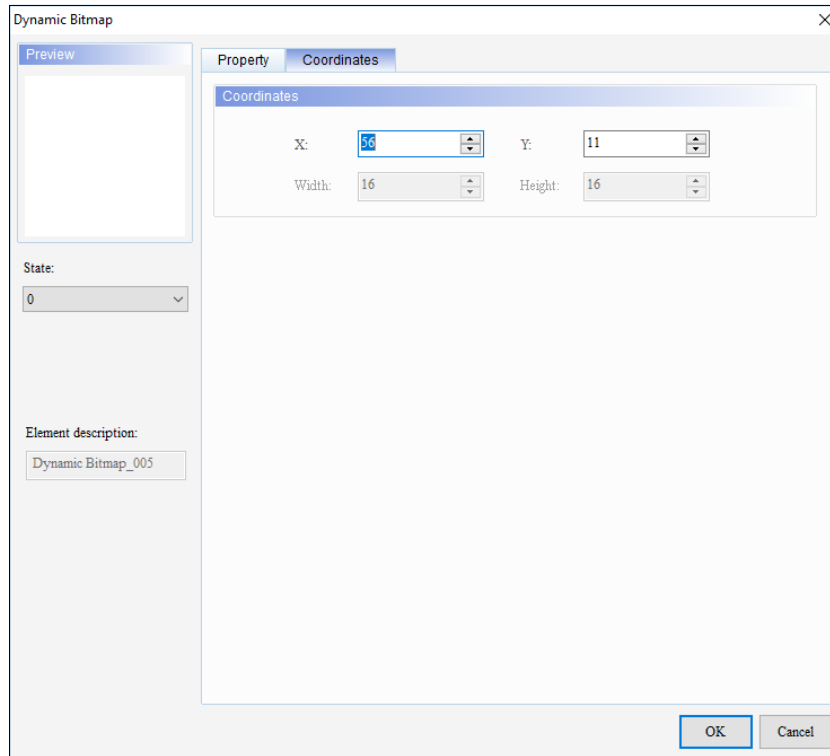


Figure 3 - 73: Dynamic Bitmap window – Coordinates tab for general model

The **Coordinates** tab in the **Dynamic Bitmap** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Dynamic Bitmap element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Dynamic Bitmap element. Enter a value to change the Y coordinate.
Width	Displays the width for the Dynamic Bitmap element. NOTE: Width is read-only.
Height	Displays the height for the Dynamic Bitmap element. NOTE: Height is read-only.

4. Set the properties as per user's requirements and click on **OK** button.

Dynamic Bitmap in TP70P Series Text Panel:

Procedure to add a Dynamic Bitmap element to TP70P series text panel is the same as to add Dynamic Bitmap element to a general model TP series text panel. Refer *Dynamic Bitmap in general model TP series text panel:* for more information.

The **Dynamic Bitmap** window for the TP70P series text panel is shown in the following figure. The Dynamic Bitmap window has two tabs for TP70P series text panel:

- Property
- Coordinates

The **Property** tab displays by default.

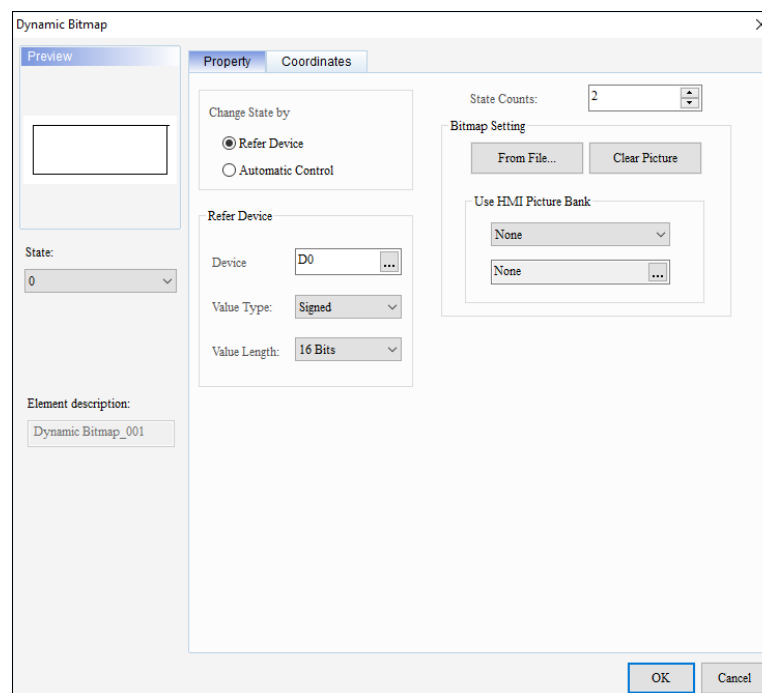


Figure 3 - 74: Dynamic Bitmap window – Property tab for TP70P series

The **Property** tab in the **Dynamic Bitmap** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Change State by – Refer Device	Select the device address for animation of bitmap.
Change State by – Automatic Control	Select to do change state by automatic control.
Refer Device - Device	Select the device address that has the images user want to display.
Refer Device – Value Type	Select the variable datatype. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Refer Device – Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
State Counts	Select the number of states.
Bitmap Setting – From File	Click to display the Open window to select the location and the .bmp file to display. <p>NOTE: Bitmap images are available in: <drive>\Program Files (x86)\Delta Industrial Automation\DIAScreen\ScrEditApp\TPSeries\BmpGroup\<folders></p>
Bitmap Setting – Clear Picture	Click to delete the current Bitmap.
User HMI Picture Bank	Click to select the picture bank and an image in the picture bank

NOTE: The Change State by and HMI picture bank options are only available for the TP70P series.

The **Change State by** property has the following options:

- Refer Device
- Automatic Control

The default value is **Refer Device**. If user change the option to **Automatic Control**, then the **Property** tab displays as shown in the following figure.

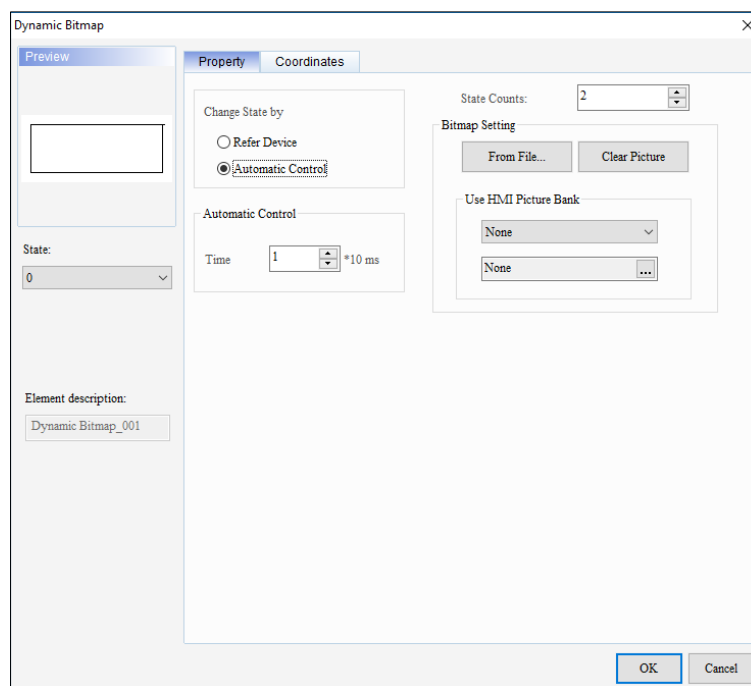


Figure 3 - 75: Dynamic Bitmap window – Property tab – Automatic Control for TP70P series

When user select **Automatic Control**, an additional property displays in the **Property** tab as mentioned in the following table:

Function	Description
Automatic Control - Time	Enter a time with the multiplication factor of 10ms.

NOTE: For the **Automatic Control** option, user need to select a value in the **Time** field that has a multiplication factor of 10ms.

Click on the **Coordinates** tab in the **Dynamic Bitmap** window to display the **Coordinates** tab.

The **Coordinates** tab in the **Dynamic Bitmap** window for the TP70P series text panel displays properties as mentioned in the following table:


Function	Description
X	Displays the X coordinate for the Dynamic Bitmap element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Dynamic Bitmap element. Enter a value to change the Y coordinate.
Width	Displays the width for the Dynamic Bitmap element. Enter a value to change the width.
Height	Displays the height for the Dynamic Bitmap element. Enter a value to change the height.

5. Set the properties as per user's requirements and click on **OK** button.

3.5.6 Scale

User can add a scale to a screen with the **Scale** element.

Follow these steps to add a Scale to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O)** > **Scale** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Scale element is added to the screen.

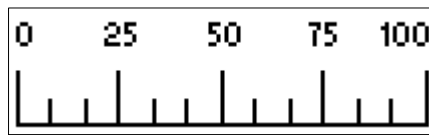


Figure 3 - 76: Scale element

3. Double-click the Scale element to edit the Scale properties.

Result: The **Scale** window is displayed as shown in the following figure.

The Scale window has two tabs for general model TP series text panels:

- Property
- Coordinates

The **Property** tab is displayed by default.

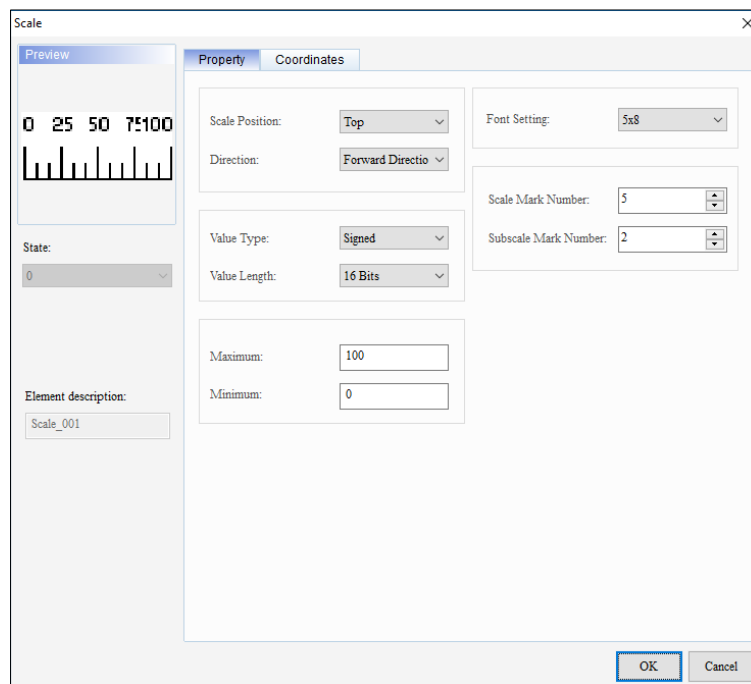


Figure 3 - 77: Scale window – Property tab for general model

The **Property** tab in the **Scale** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Scale Position	Select the Scale position. Options are: <ul style="list-style-type: none"> • Top • Bottom • Left • Right <p>NOTE: The default value is Top.</p>
Direction	Select the scaling direction. Options are: <ul style="list-style-type: none"> • Forward Direction • Reverse Direction <p>NOTE: The default value is Forward Direction.</p>
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Maximum	Enter the maximum value for the Scale. <p>NOTE: The default value is 100.</p>
Minimum	Enter the minimum value for the Scale. <p>NOTE: The default value is 0.</p>
Font Setting	Select the font setting. Options are: <ul style="list-style-type: none"> • 5x8 • 8x8 • 8x12 • 8x16 <p>NOTE: The default value is 5x8.</p>
Scale Mark Number	Enter the intervals between the major tick marks. <p>NOTE: The default value is 5.</p>
Subscale Mark Number	Enter the intervals between the minor tick marks. <p>NOTE: The default value is 2.</p>

Click on the **Coordinates** tab in the **Scale** window to display the Coordinates tab as shown in the following figure.

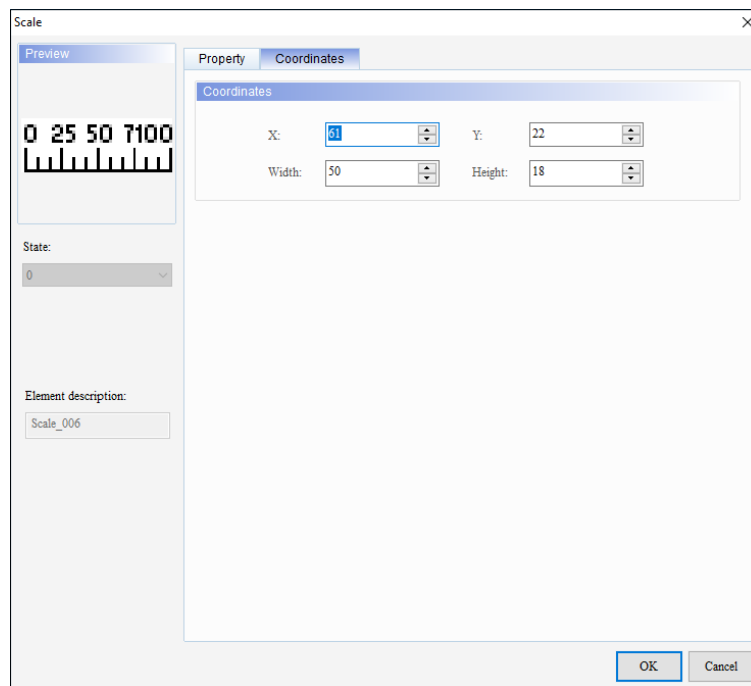


Figure 3 - 78: Scale window – Coordinates tab for general model

The **Coordinates** tab in the **Scale** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Scale element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Scale element. Enter a value to change the Y coordinate.
Width	Displays the width for the Scale element. Enter a value to change the width.
Height	Displays the height for the Scale element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK** button.

Example:

Scale Position = Top, **Direction** = Forward Direction, **Minimum** = 0, **Maximum** = 100. **Font Setting** = 5x8, **Scale Mark Number** = 5 and **Subscale Mark Number** = 4 displays as shown in the following figure.

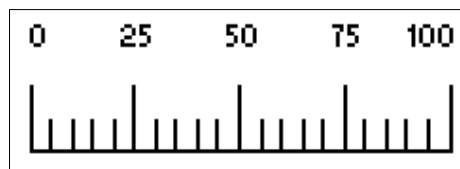




Figure 3 - 79: Scale element

3.5.7 Bar(P)


User can display the value of a variable in a bar with the **Bar** element.

The Bar element for general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
Bar		

3.5.7.1 Bar Element in General Model TP Series Text Panel:

Follow these steps to add a Bar element to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O) > Bar(P)** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Bar element is added to the screen.

3. Double-click the Bar element to edit the Bar properties.

Result: The **Bar** window is displayed as shown in the following figure. The Bar window has two tabs for general model TP series text panel:

- Property
- Coordinates

The **Property** tab is displayed by default.

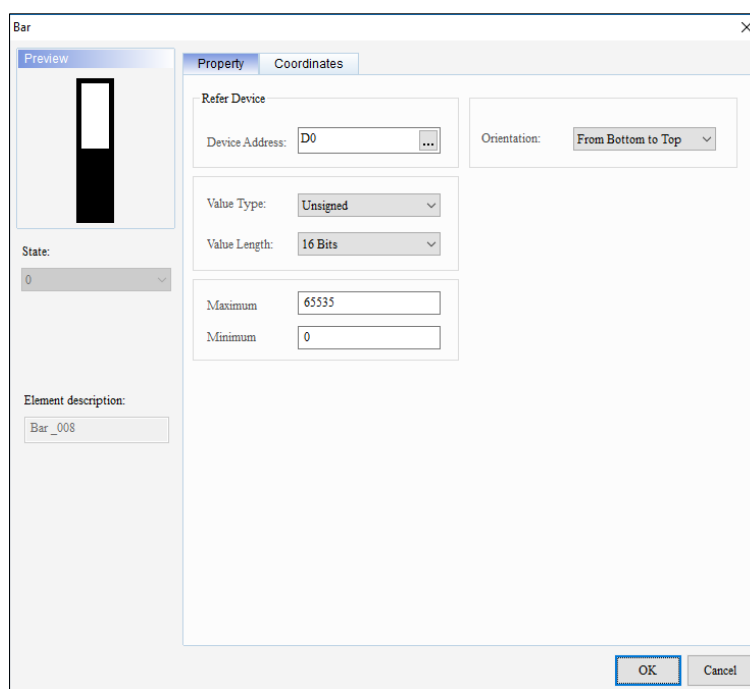


Figure 3 - 80: Bar window - Property tab for general model

The **Property** tab in the **Bar** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address whose value user want to display.
Value Type	Select the datatype of the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the Bit Length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Maximum	Enter the maximum value. <p>NOTE: The default value is 65535.</p>
Minimum	Enter the minimum value. <p>NOTE: The default value is 0.</p>
Orientation	Select the orientation of the Bar element. Options are: <ul style="list-style-type: none"> • From Bottom to Top • From Top to Bottom • From Right to Left • From Left to Right <p>NOTE: The default value is From Bottom to Top.</p>

Click on the **Coordinates** tab in the **Bar** window to display the Coordinates tab as shown in the following figure.

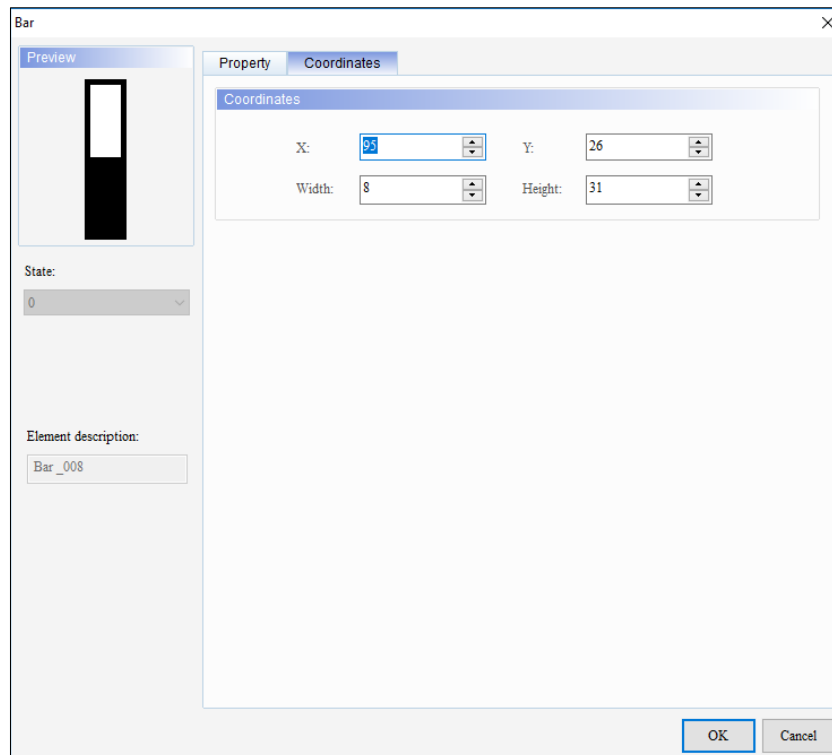


Figure 3 - 81: Bar window - Coordinates tab for general model

The **Coordinates** tab in the **Bar** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Bar element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Bar element. Enter a value to change the Y coordinate.
Width	Displays the width for the Bar element. Enter a value to change the width.
Height	Displays the height for the Bar element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.7.2 Bar Element in TP70P Series Text Panel:

Steps to add a Bar element to the TP70P series text panel are the same as the steps to add a Bar element to the general model TP series text panel. Refer [3.5.7.1 Bar element in general model TP series text panel](#): for more information.

The **Bar** window for TP70P series is displayed as shown in the following figure. The Bar window displays two tabs for TP70P series text panel:

- Property
- Coordinates

The **Property** tab is displayed by default.

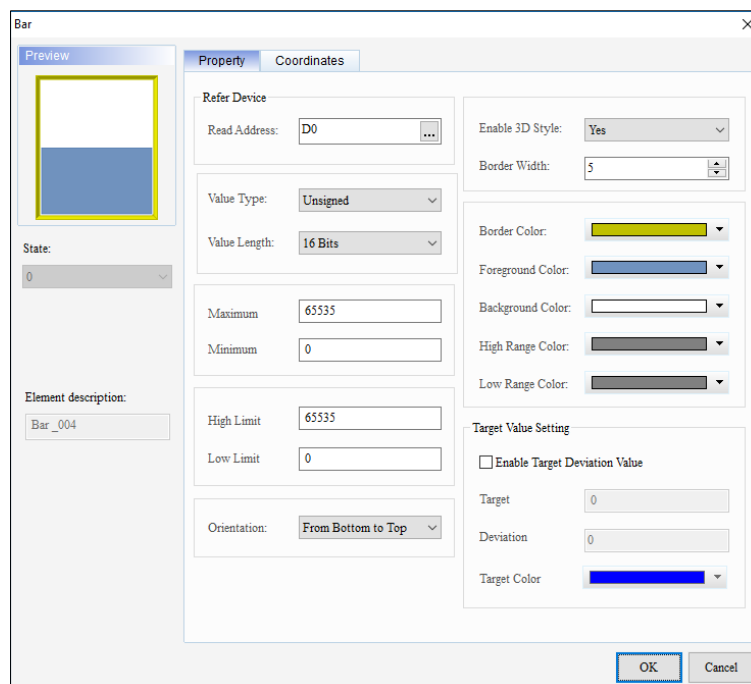


Figure 3 - 82: Bar window - Property tab for TP70P series

The **Property** tab in the **Bar** window for the TP70P series text panel displays properties as shown in the following table:

Function	Description
Refer Device – Device Address	Select the device address whose value user want to display.
Value Type	Select the datatype of the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the Bit Length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Maximum	Enter the maximum value. <p>NOTE: The default value is 65535.</p>
Minimum	Enter the minimum value. <p>NOTE: The default value is 0.</p>
High Limit	Enter high limit value. <p>NOTE: The default value is 65535.</p>
Low Limit	Enter low limit value. <p>NOTE: The default value is 0.</p>
Orientation	Select the orientation of the Bar element. Options are: <ul style="list-style-type: none"> • From Bottom to Top • From Top to Bottom • From Right to Left • From Left to Right <p>NOTE: The default value is From Bottom to Top.</p>
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>

Function	Description
Border Width	Select the border width. NOTE: The default value is 5.
Border Color	Select the border color.
Foreground Color	Select the foreground color.
Background Color	Select the background color.
High Range Color	Select the high range color.
Low Range Color	Select the low range color.
Target Value Setting - Enable Target Deviation Value	Select the check box to enable Target Deviation value settings. NOTE: Target Deviation is not selected by default.
Target Value Setting - Target	Enter the Target value.
Target Value Setting - Deviation	Enter the Deviation value.
Target Value Setting - Target Color	Select the Target color.

If the value of the variable is less than the **Lower Limit**, then the Bar's foreground color changes from the **Foreground Color** to **Low Range Color**. If the value of the variable is greater than the **High Limit**, the Bar's foreground color changes from the **Foreground Color** to **High Range Color**.

If the value of the variable is in the range of (**Target – Deviation**) or (**Target + Deviation**) and the **Enable Target Deviation Value** is set, then the Bar's foreground color changes from **Foreground Color** to **Target Color**.

Example:

Target Value = 50, **Deviation** = 5.

If the value of the variable is in the range of 45 to 55, the Bar's foreground color is set to the **Target Color**.

If the value of the variable is in the range of (**Target – Deviation**) to (**Target + Deviation**) and is less than the **Low Limit**, the Bar's foreground color is set to the **Low Range Color**. If the value of the variable is in the range of (**Target – Deviation**) to (**Target + Deviation**) and is greater than **High Limit**, then the Bar's foreground color is set to the **High Range Color**.

Click the **Coordinates** tab in the **Bar** window to display the Coordinates tab as shown in the following figure.

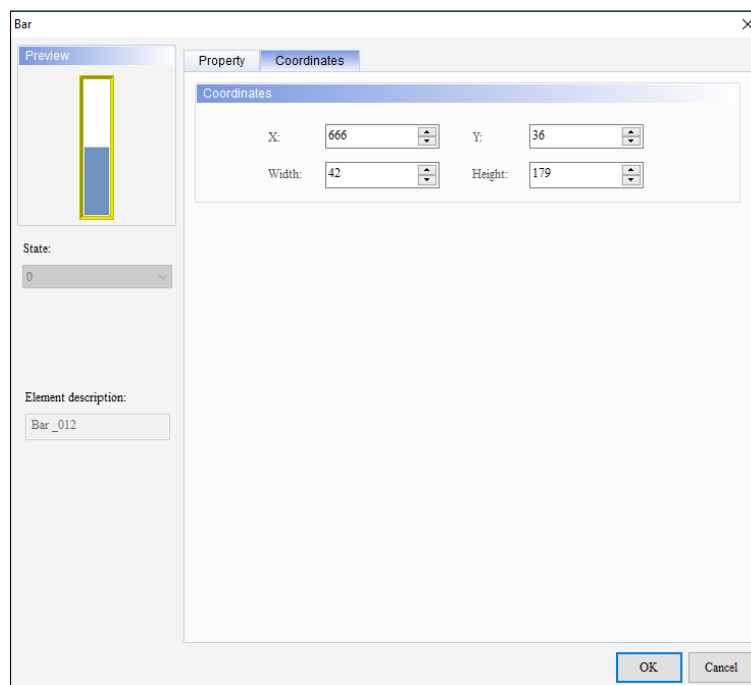


Figure 3 - 83: Bar window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Bar** window for the TP70P series text panel displays properties as mentioned in the following table:

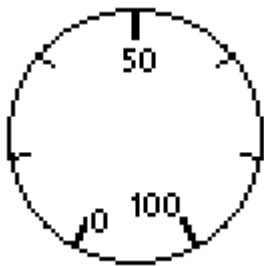

Function	Description
X	Displays the X coordinate for the Bar element. Enter a value to change the X coordinate.

Function	Description
Y	Displays the Y coordinate for the Bar element. Enter a value to change the Y coordinate.
Width	Displays the width for the Bar element. Enter a value to change the width.
Height	Displays the height for the Bar element. Enter a value to change the height.

3.5.8 Meter


User can add the value of a variable to a screen using the pointer of a dial meter pointer with the **Meter** element.

The Meter element for general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
Meter		

3.5.8.1 Meter Element in General Model TP Series Text Panel:

Follow these steps to add a Meter to a screen and edit the properties in a general model TP series text panel:

1. Click **Element(O)** > **Meter** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Meter element is added to the screen.

3. Double-click on the Meter element to edit the Meter properties.

Result: The **Meter** window is displayed as shown in the following figure. The Meter window has two tabs for general model TP series text panel:

- Property
- Coordinates

The **Property** tab is displayed by default.

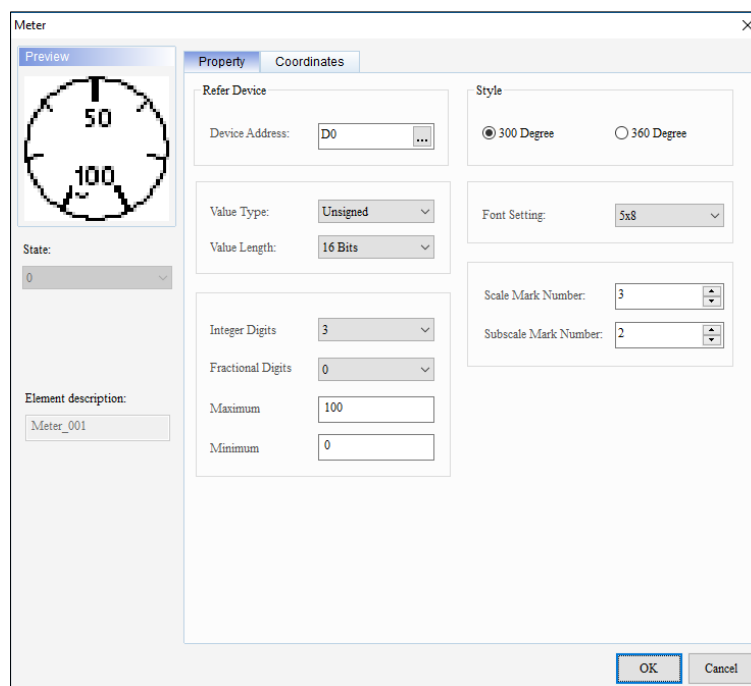


Figure 3 - 84: Meter window – Property tab for general model

The **Property** tab in **Meter** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address whose value user want to display.
Value Type	Select the datatype of the variable. Options are: <ul style="list-style-type: none"> • Unsigned

Function	Description
	<ul style="list-style-type: none"> • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length. Option is: <ul style="list-style-type: none"> • 16 Bits
Integer Digits	Select the number of integer places. Options are: <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 3.</p>
Fractional Digits	Select the number of decimal places. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 0.</p>
Maximum	Enter the maximum value for the Meter's scale. <p>NOTE: The default value is 100.</p>
Minimum	Enter the minimum value for the Meter's scale. <p>NOTE: The default value is 0.</p>
Style – 300 Degree	Click to select 300-degree Meter. <p>NOTE: The 300 Degree option is checked by default.</p>
Style – 360 Degree	Click to select 360-degree Meter.
Font Setting	Select the Font Setting. Options are: <ul style="list-style-type: none"> • 5x8

Function	Description
	<ul style="list-style-type: none"> • 8x8 • 8x12 • 8x16 <p>NOTE: The default value is 5x8.</p>
Scale Mark Number	<p>Enter the precision of main scale for the Meter.</p> <p>NOTE: The default value is 3.</p>
Subscale Mark Number	<p>Enter the precision of subscale for the Meter.</p> <p>NOTE: The default value is 2.</p>

Example: (300 Degree and 360 Degree Meters)

Sample Meter elements with 300 Degree and 360 Degree for general models are shown in the following figure.

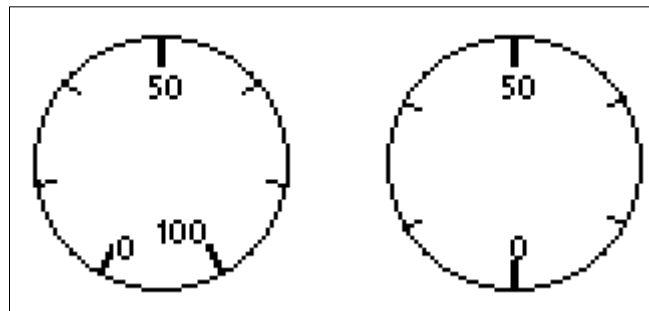


Figure 3 - 85: Meters - 300 and 360 Degrees for general model

Example:

Style = 360 Degree, **Minimum** = 0, **Maximum** = 100, **Font Setting** = 5x8, **Scale Mark Number** = 5 and **Subscale Mark Number** = 4 is shown in the following figure.

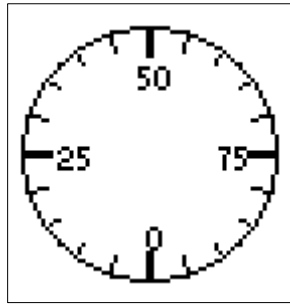


Figure 3 - 86: Meter – example for general model

Click the **Coordinates** tab in the **Bar** window to display the Coordinates tab as shown in the following figure.

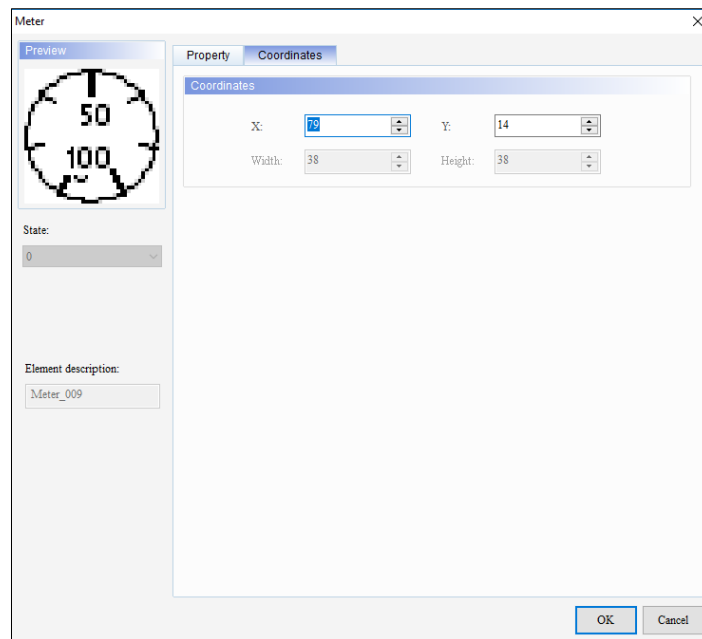


Figure 3 - 87: Meter window – Coordinates tab for general model

The **Coordinates** tab in the **Meter** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Meter element. Enter value to change the X coordinate.

Function	Description
Y	Displays the Y coordinate for the Meter element. Enter value to change the Y coordinate.
Width	Displays the width for the Meter element. NOTE: <i>Width is read-only.</i>
Height	Displays the height for the Meter element. NOTE: <i>Height is read-only.</i>

4. Set the properties as per user's requirements and click on **OK** button.

3.5.8.2 Meter Element in TP70P Series Text Panel:

The procedure to add a Meter element to a TP70P series text panel is same as the adding Meter element to a general model TP series text panel. Refer [3.5.8.1 Meter element in general model TP series text panel](#): for more information.

The **Meter** window in the TP70P series is shown in the following figure. The Meter window has four tabs for TP70P series text panel:

- Property
- Appearance
- Constraint
- Coordinates

The **Property** tab is displayed by default.

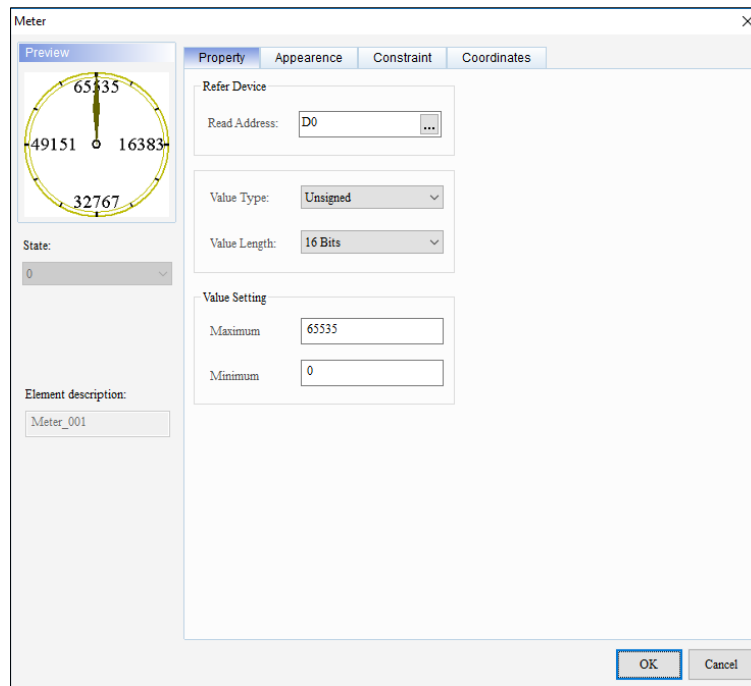


Figure 3 - 88: Meter window – Property tab for TP70P series

The **Property** tab in the **Meter** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device – Read Address	Select the device address whose value user want to display.
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length. Option is: <ul style="list-style-type: none"> • 16 Bits
Value Setting – Maximum	Enter the maximum value for the Meter's scale. <p>NOTE: The default value is 65535.</p>

Function	Description
Value Setting – Minimum	Enter the minimum value for the Meter's scale. NOTE: The default value is 0 .

Click on the **Appearance** tab in the **Meter** window of the TP70P series text panel to display the contents as shown in the following figure.

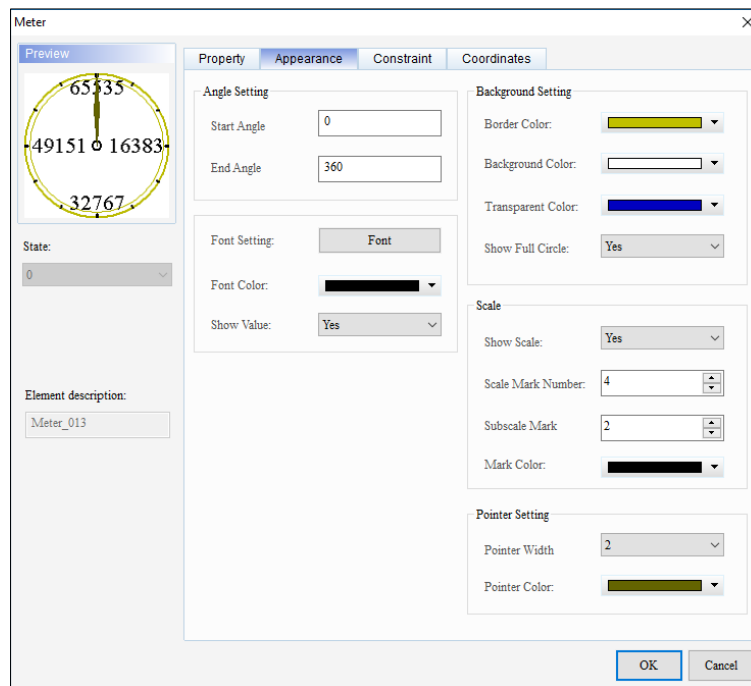


Figure 3 - 89: Meter window - Appearance tab for TP70P series

The **Appearance** tab in the **Meter** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Angle Settings – Start Angle	Enter the start angle value. Example: The 12:00 position is 0 angle, and the 3:00 position is 90 angle.
Angle Settings – End Angle	Enter the end angle value.

Function	Description
Font Settings	<p>Click to open the Font Setting dialog box to set the following properties:</p> <ul style="list-style-type: none"> • Font • Size • Bold • Italics <p>Click on OK to save the settings.</p>
Font Color	Select the font color for Scale Mark Number field.
Show Value	<p>Select whether to display or hide the text near Scale Mark Number. Options are:</p> <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Background Settings – Border Color	Select the border color of the meter (dial color).
Background Settings – Background Color	Select the background color of the meter.
Background Settings – Transparent Color	<p>Select the transparent color.</p> <p>NOTE: If the Transparent Color is the same as the Background Color, the Meter's background color is transparent.</p>
Background Settings – Show Full Circle	<p>Select to display the meter in a circle or angular format. Options are:</p> <ul style="list-style-type: none"> • Yes • No <p>If Circle is set to Yes, then the circular dial displays in the meter. If Circle is set to No, then the area between End Angle and Start Angle is not displayed to users.</p> <p>NOTE: The default value is Yes.</p>
Scale – Show Scale	<p>Select whether to display or hide the scale. Options are:</p> <ul style="list-style-type: none"> • Yes • No

Function	Description
	NOTE: The default value is Yes .
Scale – Scale Mark Number	Select the required number of scale marks. NOTE: The default value is 4 .
Scale – Subscale Mark Number	Select the required number of subscale marks. NOTE: The default value is 2 .
Scale – Mark Color	Select the color of the scale marks.
Pointer Settings – Pointer Width	Select the width of the pointer width. NOTE: The default value is 2 .
Pointer Settings – Pointer Color	Select the color of the pointer.

Click the **Constraint** tab in the **Meter** window of the TP70P series text panel to display the contents as shown in the following figure.

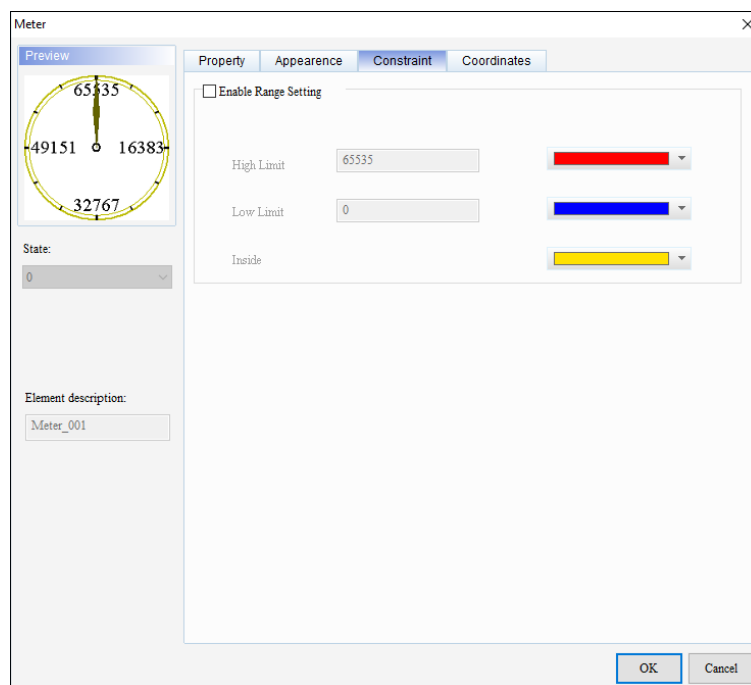


Figure 3 - 90: Meter window – Constraint tab for TP70P series

The **Constraint** tab in the **Meter** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Enable Range Setting	Select the check box to enable the constraint setting. Clear the check box to disable the constraint setting. NOTE: The Enable Range Setting is disabled by default.
High Limit and Color field	Enter a high limit range. Select a color for the region between the High Limit and the Maximum value .
Low Limit and Color field	Enter a low limit range. Select a color for the region between the Minimum and the Low Limit .
Inside Color field	Select a color for the region between Low Limit and High Limit .

Click the **Coordinates** tab in the **Meter** window for the TP70P series text panel to display the contents as shown in the following figure.

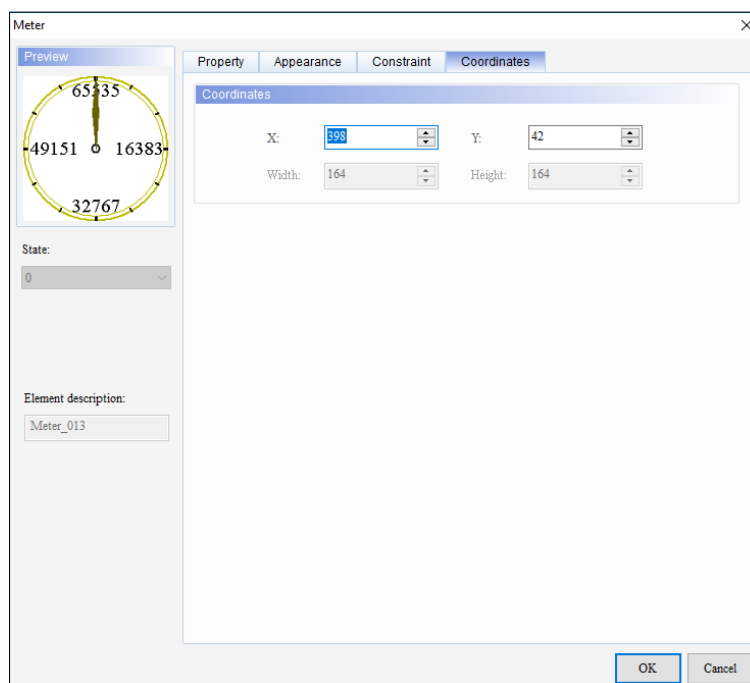


Figure 3 - 91: Meter window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Meter** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Meter element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Meter element. Enter a value to change the Y coordinate.
Width	Displays the width for the Meter element. NOTE: <i>Width is read-only.</i>
Height	Displays the height for the Meter element NOTE: <i>Height is read-only.</i>

Example:

Minimum = 0, **Maximum** = 100, **Start Angle** = 200, **End Angle** = 160, **Show Value** = Yes, **Circle** = Yes, **Scale Mark Number** = 4 and **Subscale Mark Number** = 4, **Pointer Width** = 3, **Enable Range Setting** = selected, **High Limit** = 80, **Low Limit** = 20 with the Font Color (RGB) = (0,0,0), **Border Color** = (192,192,0), **Background Color** = (255,255,255), **Transparent Color** = (255,0,128), **Mark Color** = (0,0,0), **Pointer Color** = (100,100,0), **High Limit Color** = (255,0,0), **Low Limit Color** = (0,0,255), and **Inside Color** = (255,225,0) is shown in the following figure.

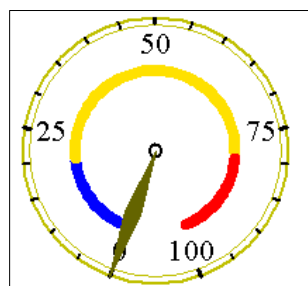
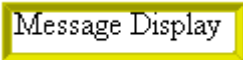


Figure 3 - 92: Meter - TP70P series – example

3.5.9 Message Display

User can display the state of a variable on a screen in a message using the **Message Display** element.

The Message Display element for general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
Message Display	Message Display	

3.5.9.1 Message Display Element in General Model TP Series Text Panel:

Follow these steps to add a Message Display to a screen and edit the properties in a general model TP series text panel:

1. Click on the **Element(O) > Message Display** on the Menu bar, or

Click the  icon on the Element Selection Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The Message Display element is added to the screen.

3. Double-click the Message Display element to edit the Message Display.

Result: The **Message Display** window displays as shown in the following figure. The Message Display window has three tabs for the general model TP series text panel:

- Property
- Text
- Coordinates

The **Property** tab displays by default.

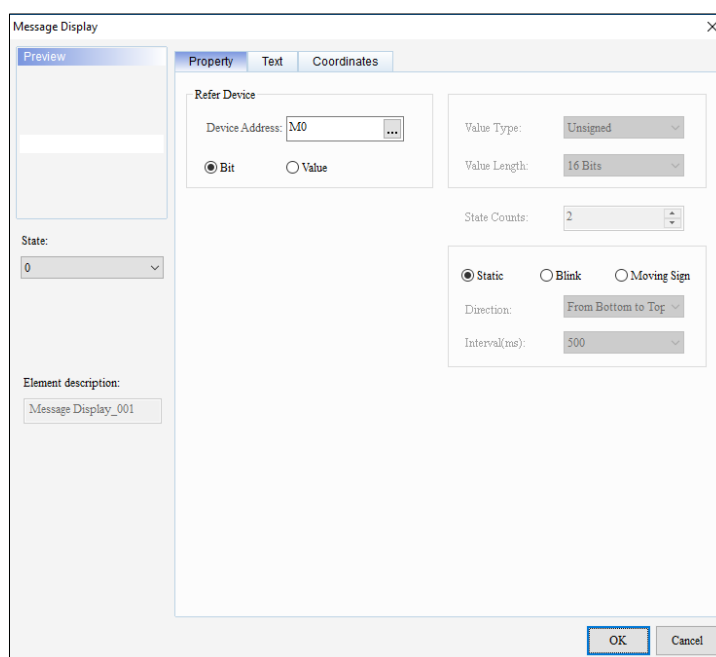


Figure 3 - 93: Message Display window – Property tab (Bit) for general model

The **Property** tab in the **Message Display** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address based on which message user want to display.
Refer Device – Bit	Select Bit if there are only two states for which messages are displayed. NOTE: The default value is Bit.
Refer Device - Value	Select Value , if there are multiple states for which messages are displayed.
Static	Select if user want a static message display. NOTE: The default value is Static.
Blink	Select if user want a blinking message display.
Moving Sign	Select if user want a scrolling message display.
Direction	Select the direction of the scrolling message display. Options are:

Function	Description
	<ul style="list-style-type: none"> • From Bottom to Top • From Top to Bottom • From Left to Right • From Right to Left <p>NOTE: The Direction is enabled only if Moving Sign is selected. The default value is From Bottom to Top.</p>
Interval(ms)	<p>Select an interval in milliseconds for the display animation. Options are:</p> <ul style="list-style-type: none"> • 500 • 1000 • 1500 • 2000 • 2500 <p>NOTE: The default value is 500.</p>
State	Select the state number for which user want to assign properties.

If user select **Value**, the **Property** tab in the **Message Display** window displays as shown in the following figure.

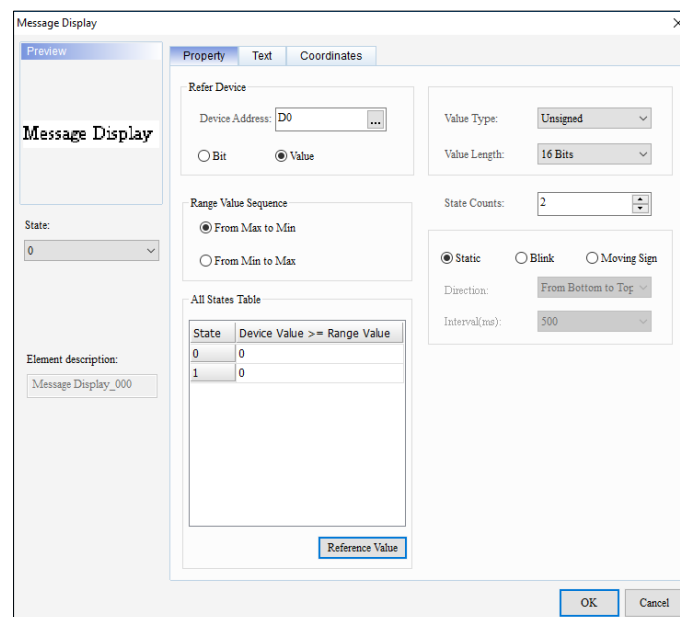


Figure 3 - 94: Message Display window - Property tab (Value) for general model

When user select **Value**, the **Property** tab in the **Message Display** window for general model TP series text panel displays extra properties as mentioned in the following table:

Function	Description
Range Value Sequence - From Max to Min	Select to define the range values in descending order.
Range Value Sequence - From Min to Max	Select to define the range values in ascending order.
All States Table	Enter the values for each state from state0 to stateN, where N = (State Counts -1).
All States Table - Reference Value	Click the button to open the Range Value Reference Value dialog box to enter the Range Limit for the Lower Bound and Upper Bound .
Value Type	Select the variable datatype. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length here. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
State Counts	Select the number of states.

Click the **Text** tab in the **Message Display** window for the general model TP series text panel to display the contents as shown in the following figure.

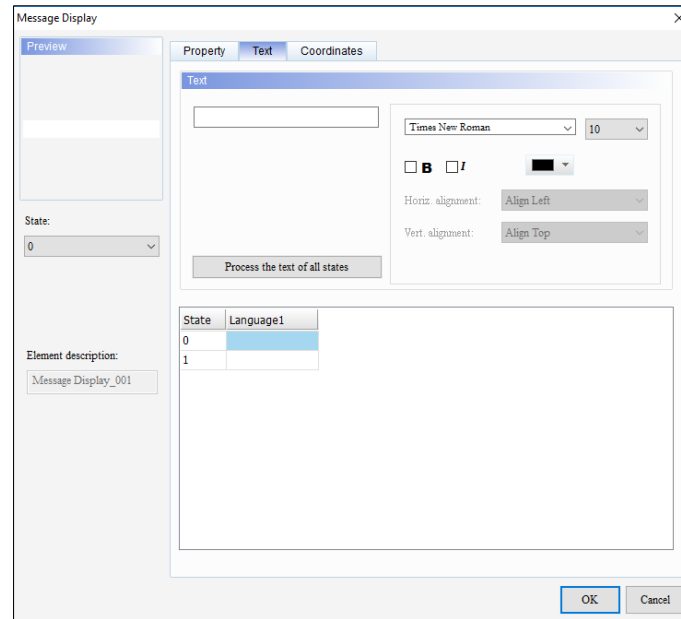


Figure 3 - 95: Message Display window – Text tab for general model

The **Text** tab in the **Message Display** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Enter the text to display in the message display for a particular state.
Process the text of all states	Click to use the text in the text field for all the states.
Font type field	Select the font type.
Font size field	Select the font size.
Bold check box	Select to bold the font.
Italics check box	Select to italicize the font.

Click the **Coordinates** tab in the **Message Display** window for the general model TP series text panel to display the contents as shown in the following figure.

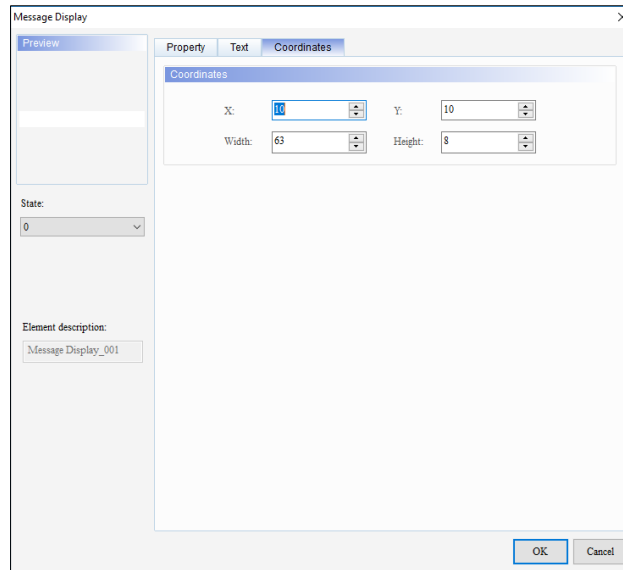


Figure 3 - 96: Message Display window – Coordinates tab for general model

The **Coordinates** tab in the **Message Display** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Message Display element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Message Display element. Enter a value to change the Y coordinate.
Width	Displays the width for the Message Display element. Enter a value to change the width.
Height	Displays the height for Message Display element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.9.2 Message Display Element in TP70P Series Text Panel:

The procedure for adding a Message Display element to a TP70P series text panel is same as for the general model TP series text panel. Refer [3.5.9.1 Message Display element in general model TP series text panel](#): for more information.

For the TP70P series, the **Message Display** window displays the properties as shown in the following figure. The Message Display window has four tabs for TP70P series text panel:

- Property
- Text
- Appearance
- Coordinates

The **Property** tab displays by default.

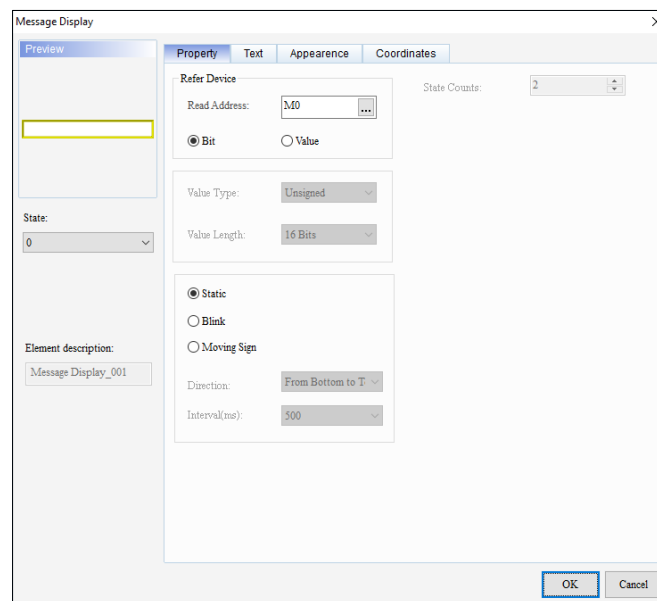


Figure 3 - 97: Message Display window – Property tab (Bit) for TP70P series

The **Property** tab in the **Message Display** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Read Address	Select the device address based on which the message user want to display.
Refer Device – Bit	Select Bit if there are only two states for which messages are displayed.

Function	Description
	NOTE: The default value is Bit .
Refer Device - Value	Select Value , if there are multiple states for which messages are displayed.
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD NOTE: The default value is Unsigned . This field is enabled only when Value is selected.
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits . This field is enabled only when Value is selected.
State Counts	Select the number of state counts. <p>NOTE: The State Counts is enabled only if Value is selected.</p>
Range Value Sequence – From Max to Min	Select the range value sequence from maximum value to minimum value. <p>NOTE: The Range Value Sequence field is available only when Value is selected. If Value is selected, the default value is From Max to Min.</p>
Range Value Sequence – From Min to Max	Select the range value sequence from minimum value to maximum value. <p>NOTE: The Range Value Sequence field is enabled only if Value is selected.</p>
All States Table	Enter the value for each state. <p>NOTE: The number of States is set in State Counts.</p>
Static	Select if user want a static message display. <p>NOTE: The default value is Static.</p>
Blink	Select if user want a blinking message display.

Function	Description
Moving Sign	Select if user want a scrolling message display.
Direction	<p>Select the direction of the scrolling message display. Options are:</p> <ul style="list-style-type: none"> • From Bottom to Top • From Top to Bottom • From Left to Right • From Right to Left <p>NOTE: The Direction is enabled only if Moving Sign is selected. The default value is From Bottom to Top.</p>
Interval(ms)	<p>Select an interval in milliseconds for the display animation. Options are:</p> <ul style="list-style-type: none"> • 500 • 1000 • 1500 • 2000 • 2500 <p>NOTE: The default value is 500.</p>
State	Select the state for which user want to assign properties.

When user select **Value**, the **Property** tab in the **Message Display** for the TP70P series text panel displays the contents as shown in the following figure.

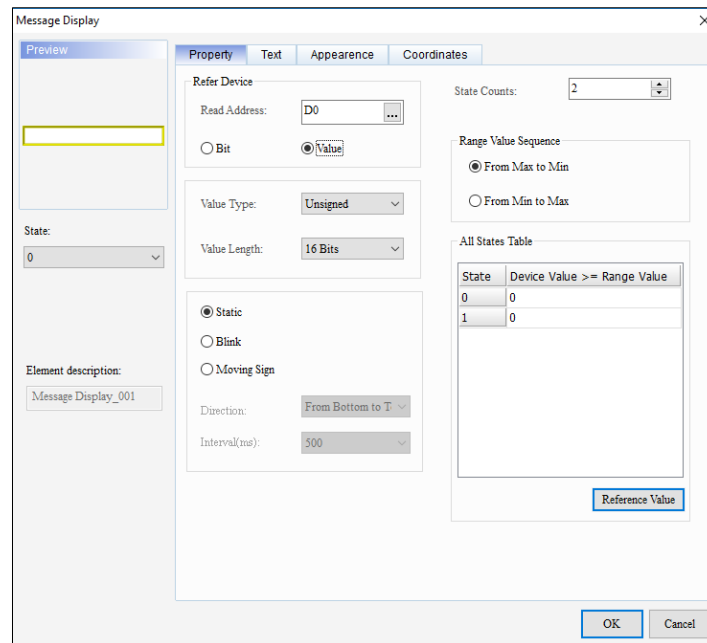


Figure 3 - 98: Message Display window – Property tab (Value) for TP70P series

The **Property** tab in the **Message Display** window for the TP70P series text panel displays extra properties as mentioned in the following table:

Function	Description
Range Value Sequence -From Max to Min	Select to define the range values in descending order.
Range Value Sequence -From Min to Max	Select to define the range values in ascending order.
All States Table	Enter the values for each state from state0 to stateN, where N = (State Counts - 1).
All States Table - Reference Value	Click the button to open Range Value Reference Value dialog box to enter the Range Limit for Lower Bound and Upper Bound .
Value Type	Select the variable datatype. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD

Function	Description
	NOTE: The default value is Unsigned .
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits .
State Counts	Select the number of states.

Click the **Text** tab in the **Message Display** window for the TP70P series text panel to display the contents as shown in the following figure.

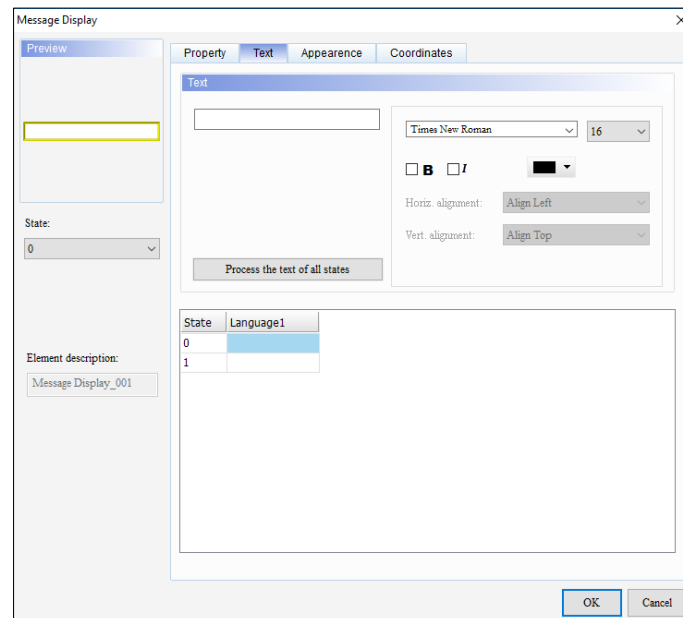


Figure 3 - 99: Message Display window – Text tab for TP70P series

The **Text** tab in the **Message Display** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Enter the text to display in the message display for a particular state.

Function	Description
Process the text of all states	Click to copy the text in text field and paste in the text field for all states.
Font type field	Select the font type.
Font size field	Select the font size.
Bold check box	Select to bold the font.
Italics check box	Select to italicize the font.
Font Color field	Select the font color.

Click the **Appearance** tab in the **Message Display** window for the TP70P series text panel to display the contents as shown in the following figure.

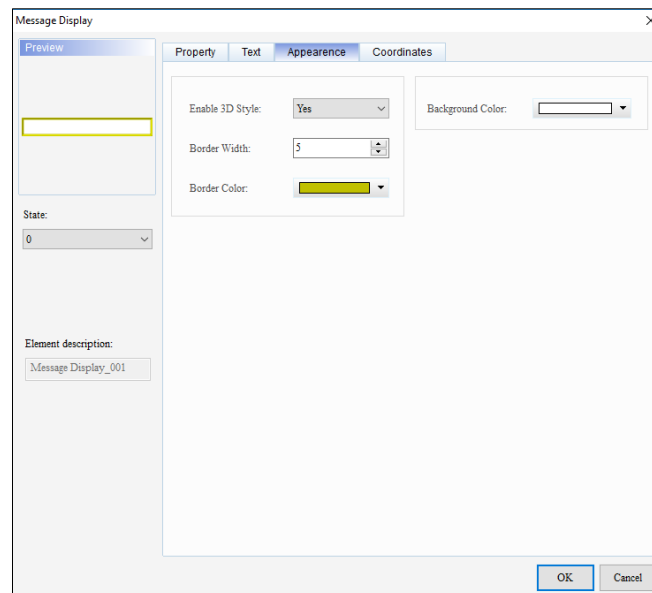


Figure 3 - 100: Message Display window – Appearance tab for TP70P series

The **Appearance** tab in the **Message Display** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No

Function	Description
	NOTE: The default value is Yes .
Border Width	Select the border width. NOTE: The default value is 5 .
Border Color	Select the border color.
Background Color	Select the background color.

Click the **Coordinates** tab in the **Message Display** window for the TP70P series text panel to display the contents as shown in the following figure.

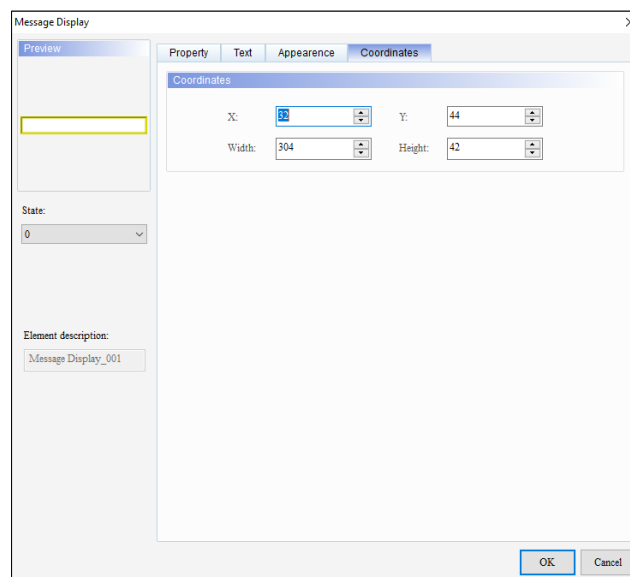


Figure 3 - 101: Message Display window – Coordinates tab for TP70P series

The **Coordinates** tab in the **Message Display** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Message Display element. Enter a value to change the X coordinate.



Function	Description
Y	Displays the Y coordinate for the Message Display element. Enter a value to change the Y coordinate.
Width	Displays the width for the Message Display element. Enter a value to change the width.
Height	Displays the height for the Message Display element. Enter a value to change the height.

3.5.10 Button

Use the **Button** element to perform the following actions:

- Turn a device on and off
- Reset a button
- Start and stop a pulse
- Toggle the button
- Perform momentary action and multi-state operations
- Input a value
- Set a constant value
- Increment and decrement the value of a variable
- Go to a screen
- Set passwords
- Scroll a screen
- Set the RTC and PLC Link settings
- Set the Recipe Write/Read settings

The Button element for general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
Button		

The functions of Button elements are described in the following table:

Button Type	Functions
Set to On	When user press the button, the device address linked to the button turns ON. Once the button is released, the device address remains ON.
Set to Off	When user press the button, the device address lined to the button turns of OFF. Once the button is release, the device address remains OFF.
Pulse On	When user press the button, a signal going from low to high value is sent to the device address linked to the button.
Pulse Off	When user press the button, a signal going from high to low value is sent to the device address linked to the button.
Maintained	When user press the button, the device address linked to the button turns ON. Once the button is released, the device address remains ON. When user press the button again, the device address turns OFF and remains OFF once the button is released.
Momentary	When user press the button, the device address linked to the button turns ON. Once the button is released, the device address turns OFF.
Multistate	When user press the button, the state of the device address linked to the button changes. User can select the Bit option, Value option, or the LSB option.
Set Value	When user press the button, a dialog box opens to enter a value that is written to the device address linked to the button.
Set Constant	When user press the button, a constant value is written to the device address linked to the button.
Increment	When user press the button, the value of the device address linked to the button increments by one.
Decrement	When user press the button, the value of the device address linked to the button decrements by one.
Goto Screen	When user press the button, the specified screen opens.

Button Type	Functions
Set password	When user press the button, a dialog box opens to change the user level and password.
Screen Scroll	When user press the button, the screen scrolls up or down.
Recipe Write/Read	When the button is pressed, the Recipe writes or read from the device address linked to the button.
RTC Setting	When the button is pressed, the RTC dialog box displays to perform RTC settings.

NOTE: Refer A.2 Button Types and supported Models to check the Button types supported in TP series text panel.

3.5.10.1 Button Element in General Model TP Series Text Panel:

Follow these steps to add a Button to a screen and edit the properties in a general model TP series text panel:

1. Click on the **Element(O)** > **Button** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The Button element is added to the screen.

3. Double-click on the Button element to edit the Button properties.

Result: The **Button** window displays as shown in the following figure. The Button window has four tabs for the general model TP series text panel:

- Property
- Text
- Appearance
- Coordinates

The **Property** tab displays by default.

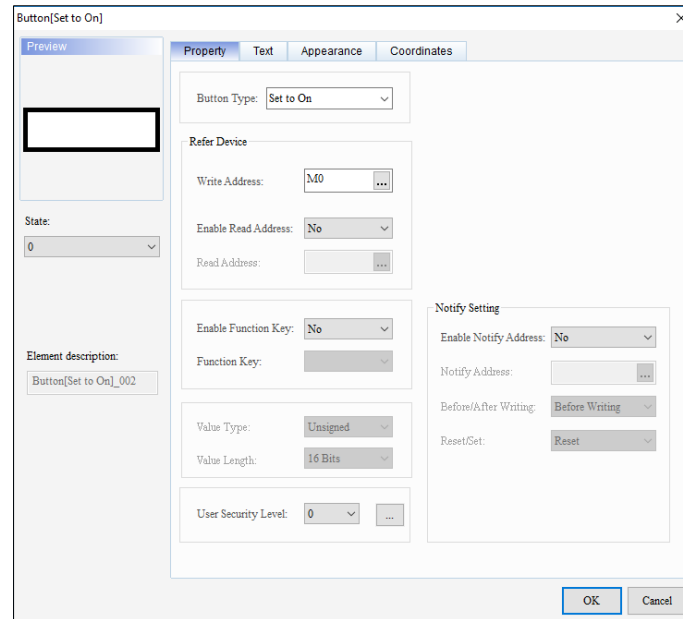



Figure 3 - 102: Button window - Property tab - Set to On for general model

NOTE: If the **Button Type** is set to - **Set to On**, **Set to Off**, **Pulse On**, **Pulse Off**, **Momentary**, the **Property** tab in the **Button** window displays the properties as shown in the above figure. If user selects **Momentary**, he/she cannot select a user level.

The **Property** tab in the **Button** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Button Type	<p>Select the button type. Options are:</p> <ul style="list-style-type: none"> • Set to On • Set to Off • Pulse On • Pulse Off • Maintained • Momentary • Multistate • Set Value • Set Constant

Function	Description
	<ul style="list-style-type: none"> • Increment • Decrement • Goto Screen • Set password • Screen Scroll • Recipe Write/Read • RTC Setting <p>NOTE: The default value is Set to On.</p>
Refer Device - Device Address	Select the device address that the Button element writes to.
Refer Device – Enable Read Address	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Refer Device – Read Address	Select the device address that the button reads from to get a value. This field is enabled only when the Enable Read Address is set to Yes .
Enable Function Key	Select whether to enable or disable the function key. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Function Key	Select the function key from the drop-down list. <p>NOTE: This field is enabled when Enable Function Key is set to Yes.</p>
Value Type	Select the datatype of the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits

Function	Description
	<ul style="list-style-type: none"> • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
User Security Level and select field	<p>Select the user security level. Options are:</p> <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 <p>NOTE: The default value is 0.</p> <p>Click the  button to open the User-Level Password Setting window to set the passwords for various user levels. For the setting method, refer to 3.7.2 User-Level Password Setting</p>
Notify Setting – Enable Notify Address	<p>Select to enable notify address. Options are:</p> <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Notify Setting – Notify Address	<p>Select the notify address.</p> <p>NOTE: This is enabled if the Enable Notify Address is set to Yes.</p>
Notify Setting – Before/After Writing	<p>Select when to send notification. Options are:</p> <ul style="list-style-type: none"> • Before Writing • After Writing <p>NOTE: This field is enabled if Enable Notify Address is set to Yes. The default value is Before Writing.</p>
Notify Setting – Reset/Set	<p>Select to set the variable. Options are:</p> <ul style="list-style-type: none"> • Reset • Set <p>NOTE: This field is enabled if Enable Notify Address is set to Yes. The default value is Reset.</p>

When the **Button Type** is set to **Multistate**, the **Property** tab in the **Button** window displays as shown in the following figure.

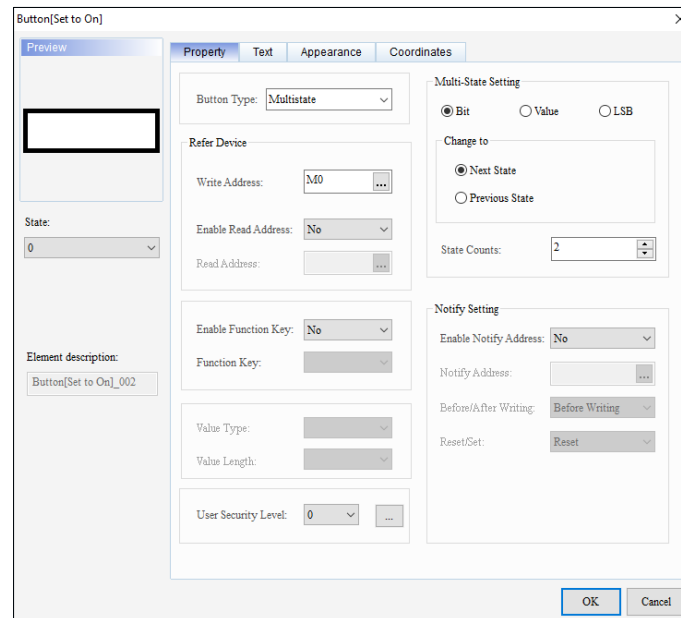


Figure 3 - 103: Button window - Property tab - Multistate for general model

The **Property** tab in the **Button** window for the **Multistate** Button Type displays extra properties as mentioned in the following table:

Function	Description
Multi-State Setting – Bit	Select the Bit option to set the State Counts to 2. The states are state0 and state1.
Multi-State Setting – Value	Select the Value option to set State Counts up to a maximum of 255 states. The states are from state0 to (State Counts -1)
Multi-State Setting – LSB	Select the LSB option to set States Counts to 16. The available states are $1(2^0)$, $2(2^1)$, $4(2^2)$, 8 $16 \dots 2^{\text{State Counts} - 1}$
Change to – Next State	Select to change to next state.
Change to – Previous State	Select to change to previous state.
State Counts	Select the number of state counts. The count depends on the Multi-State Setting .

When the **Button Type** is set to **Set Value**, the **Property** tab in the **Button** window displays as shown in the following figure.

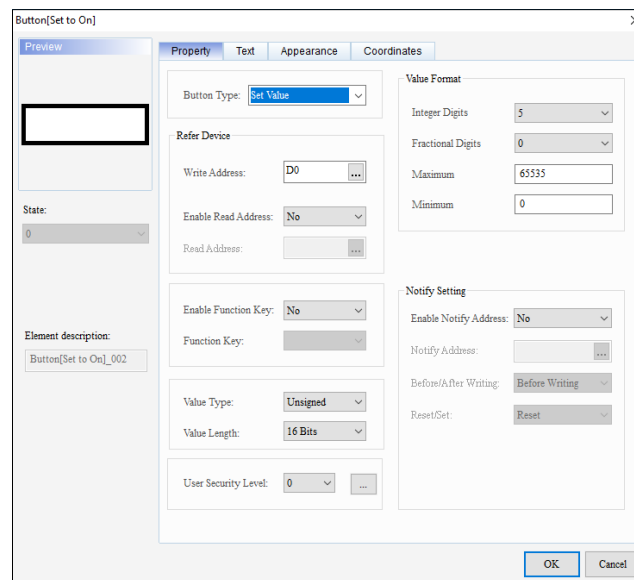


Figure 3 - 104: Button window - Property tab - Set Value button type for general model

The **Property** tab in the **Button** window for the **Set Value** Button Type displays extra properties as mentioned in the following table:

Function	Description
Value Format – Integer Digits	<p>Select the number of integer places. Options are:</p> <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 5.</p>
Value Format – Fractional Digits	<p>Select the number of decimal places. Options are:</p> <ul style="list-style-type: none"> • 0 • 1

Function	Description
	<ul style="list-style-type: none"> • 2 • 3 • 4 • 5 <p>NOTE: The default value is 0.</p>
Value Format – Maximum	<p>Enter the maximum value for the set value.</p> <p>NOTE: The default value is 65535.</p>
Value Format - Minimum	<p>Enter the minimum value for the set value.</p> <p>NOTE: The default value is 0.</p>

Example:

Case 1: If **Integer Digits** = 3, **Fractional Digits** = 2, **Maximum** = 5000, **Minimum** = 0, the maximum set value possible is 50.00

Case 2: If **Integer Digits** = 3, **Fractional Digits** = 2, **Maximum** = 500, **Minimum** = 0, the maximum set value possible is 5.00

When the **Button Type** is set to **Set Constant**, the **Property** tab in the **Button** window displays as shown in the following figure.

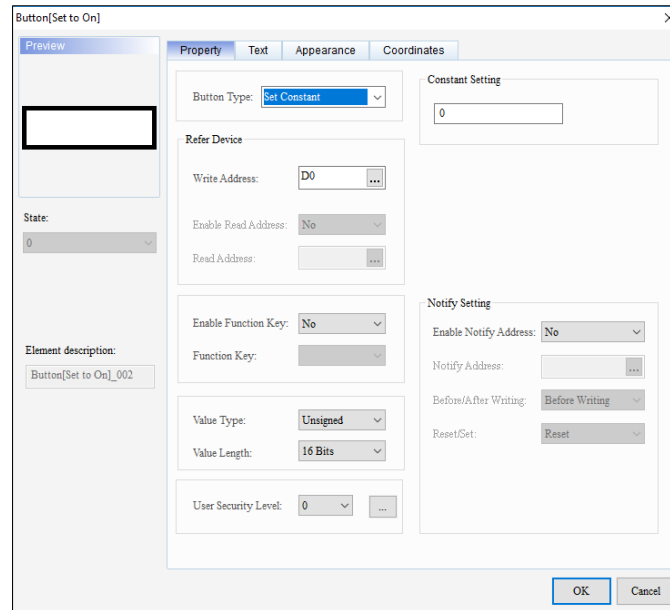


Figure 3 - 105: Button window - Property tab - Set Constant Button Type for general model

The **Property** tab in the **Button** window for the **Set Constant** Button Type displays extra properties as mentioned in the following table:

Function	Description
Constant Setting	Enter the value that is written to the device address when user press the set constant button type

When the **Button Type** is set to **Increment** or **Decrement**, the **Property** tab in the **Button** window displays as shown in the following figure.

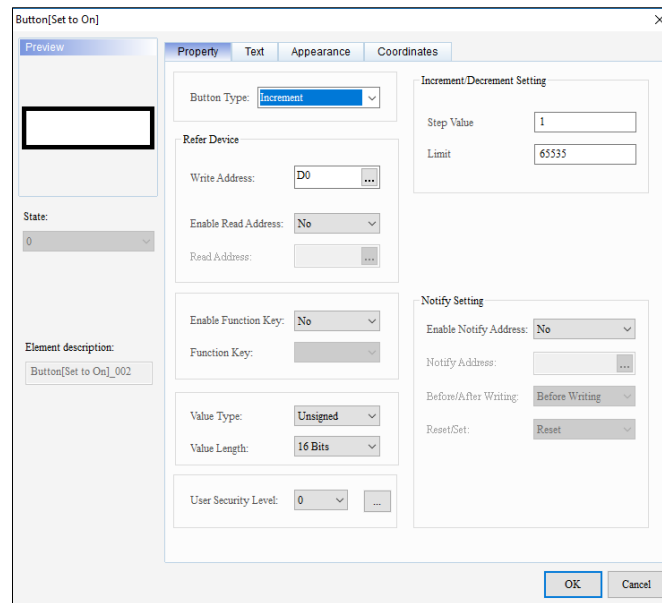


Figure 3 - 106: Button window - Property tab – Increment Button Type for general model

The **Property** tab in the **Button** window for the **Increment/Decrement** Button Type displays extra properties as mentioned in the following table:

Function	Description
Increment/Decrement Setting – Step Value	Enter the value that is added to the existing value when the button is pressed. NOTE: The default value is 1 .
Increment/Decrement Setting - Limit	Set the maximum increment value. NOTE: If user select Increment , the default value is 65535 . If user select Decrement , the default value is 0 .

Example:

Case 1: If the **Button Type** selected is **Increment**, **Step Value**=10, **Limit**=1000, initial value is 10

Result: Values are available from 20, 30, 40,...to limit 1000.

Case 2: If the **Button Type** selected is **Decrement**, **Step Value**=10, **Limit**=0, initial value is 100

Result: Values are available from 90, 80, 70,...to limit 0.

When the **Button Type** is set to **Goto Screen**, the **Property** tab in the **Button** window displays as shown in the following figure.

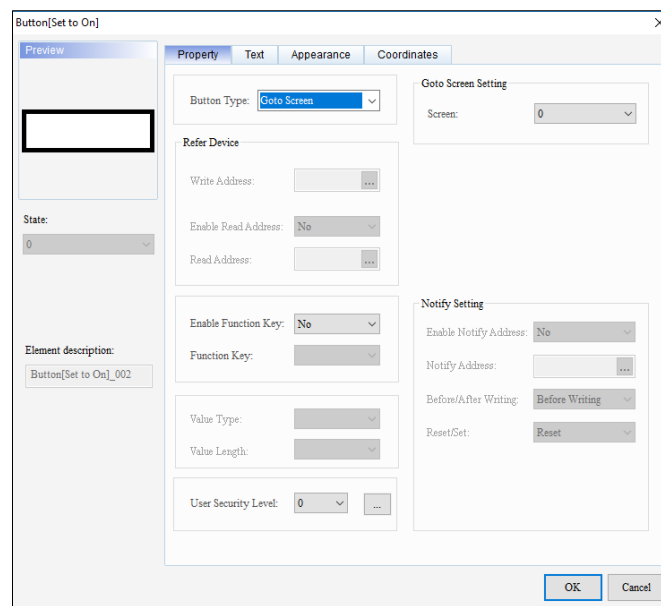


Figure 3 - 107: Button window - Property tab - Go to Screen Button Type for general model

The **Property** tab in the **Button** window for the **Goto Screen** Button Type displays extra properties as mentioned in the following table:

Function	Description
Goto Screen Setting - Screen	Select the screen to navigate to when this button is pressed.

When the **Button Type** is set to **Set password**, the **Property** tab in the **Button** window displays as shown in the following figure.

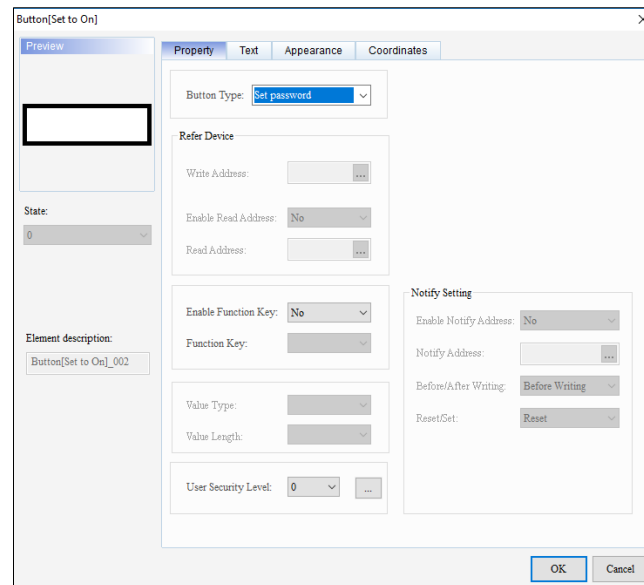


Figure 3 - 108: Button window - Property tab - Set password Button Type for general model

In the runtime operation of the HMI, when the **Set password** button is pressed, a window displays, to set the user level and password.

When the **Button Type** is set to **Screen Scroll**, the **Property** tab in the **Button** window displays as shown in the following figure.

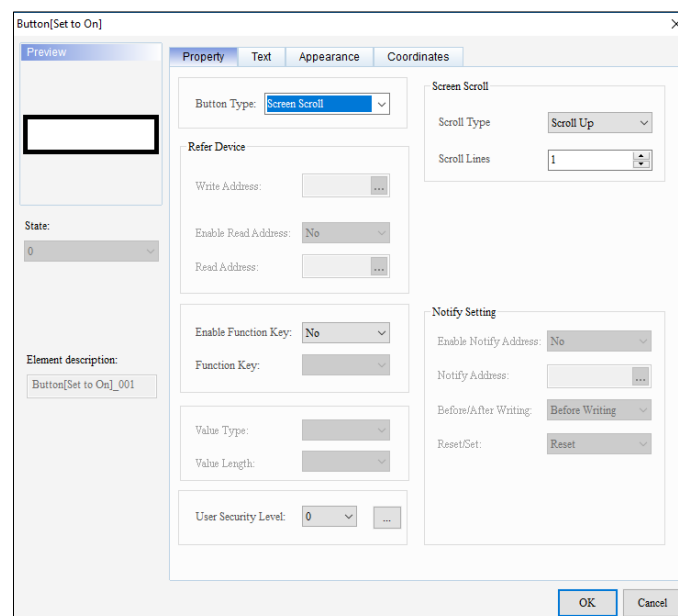


Figure 3 - 109: Button window - Property tab - Screen Scroll Button Type for general model

The **Property** tab in the **Button** window for the **Screen Scroll** Button Type displays extra properties as mentioned in the following table:

Function	Description
Screen Scroll – Scroll Type	Select the direction of the scroll when the button is pressed. Options are: <ul style="list-style-type: none"> • Scroll Up • Scroll Down <p>NOTE: The default value is Scroll Up.</p>
Screen Scroll – Scroll Lines	Select the number of lines to scroll up or down.

When the **Button Type** is set to **RTC Setting**, the **Property** tab in the **Button** window displays as shown in the following figure.

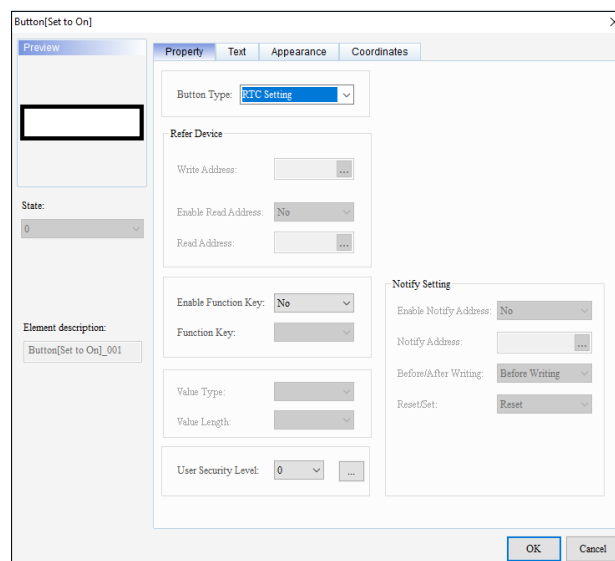


Figure 3 - 110: Button window - Property tab - RTC Setting Button Type for general model

In the runtime operation of the HMI, when the **RTC Setting** button is pressed, a window is displayed, to set the year, the month, the day, the week, and the time of the clock in the general model TP series text panel.

When the **Button Type** is set to **PLC Link Setting**, the **Property** tab in the **Button** window is displayed.

In the runtime operation of the HMI, when the **PLC Link Setting** button is pressed, a window is displayed, to set the PLC Link.

When the **Button Type** is set to **Recipe Write/Read**, the **Property** tab in the **Button** window is displayed as shown in the following figure.

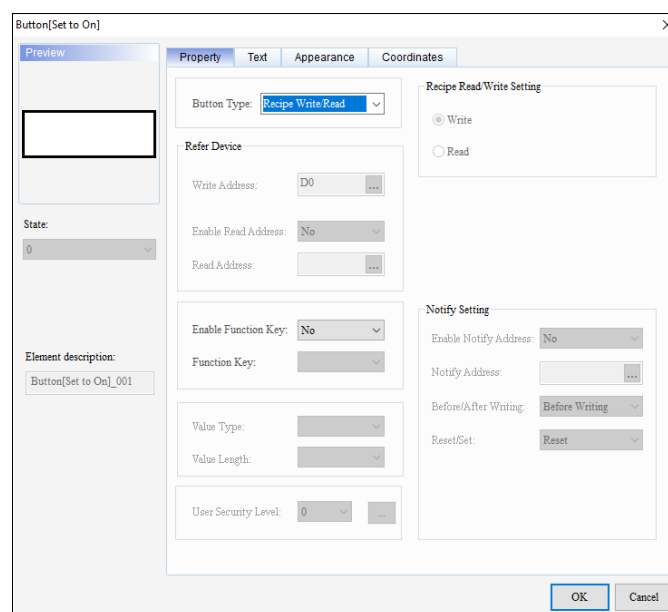


Figure 3 - 111: Button window - Property tab - Recipe Write/Read Button Type for general model

The **Property** tab in the **Button** window for the **Recipe Write/Read** Button Type displays extra properties as mentioned in the following table:

Function	Description
Recipe Read/Write Setting	<p>Select to write or read the recipe. Options are:</p> <ul style="list-style-type: none"> • Write • Read <p>NOTE: The default value is Write.</p>

NOTE: Before using this function, users have to create a recipe. Refer [3.7.11 Recipe Setting](#) for more information.

Click on the **Text** tab in the **Button** window for the general model TP series text panel to display the contents as shown in the following figure.

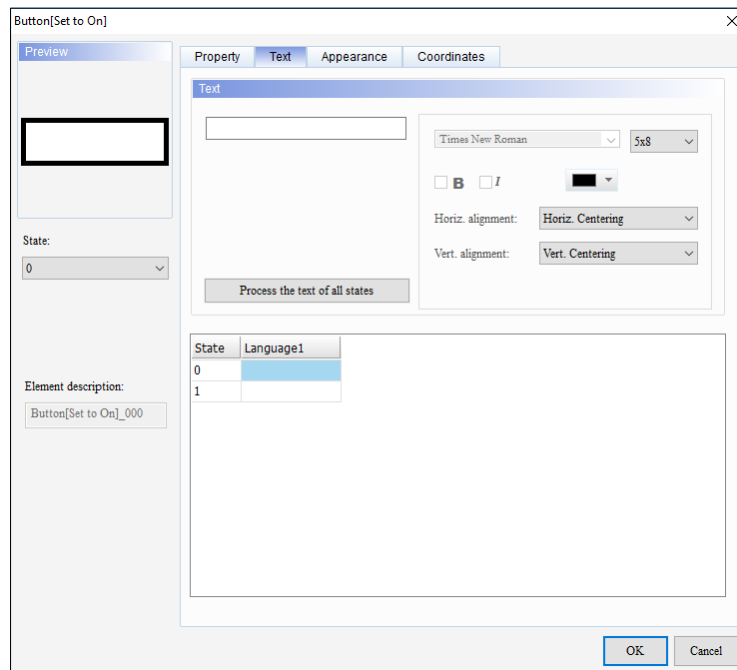


Figure 3 - 112: Button window - Text tab for general model

The **Text** tab in the **Button** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Select the text to display in the Button.
Process the text of all states	Click to copy the text in text field and paste in the text field for all states.
Font size field	Select the font size from the drop-down menu. Options are: <ul style="list-style-type: none"> • 5x8 • 8x8

Function	Description
	<ul style="list-style-type: none"> • 8x12 • 8x16 <p>NOTE: The default value is 5x8.</p>
Horiz. alignment	<p>Select the horizontal alignment. Options are:</p> <ul style="list-style-type: none"> • Align Left • Horiz. Centering • Align Right <p>NOTE: The default value is Horiz. Centering.</p>
Vert. alignment	<p>Select the vertical alignment. Options are:</p> <ul style="list-style-type: none"> • Align Top • Vert. Centering • Align Bottom <p>NOTE: The default value is Vert. Centering.</p>

Click on the **Appearance** tab in the **Button** window of the general model TP series text panel to display the contents as shown in the following figure.

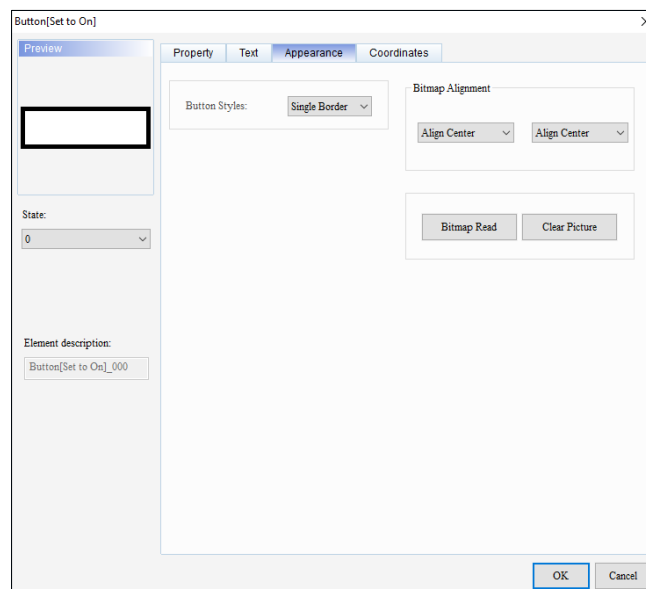


Figure 3 - 113: Button window - Appearance tab for general model

The **Appearance** tab in the **Button** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Button Styles	Select the border type. Options are: <ul style="list-style-type: none"> • No Border • Single Border • Double Border • Circle Border • Hide <p>NOTE: The default value is Single Border.</p>
Bitmap Alignment	Select the vertical alignment. Options are: <ul style="list-style-type: none"> • Align Top • Align Center • Align Bottom <p>NOTE: The default value is Align Center.</p> Select the horizontal alignment. Options are: <ul style="list-style-type: none"> • Align Left • Align Center • Align Right <p>NOTE: The default value is Align Center.</p>
Bitmap Read	Click to display the Open window to select a location and a .bmp file of the Bitmap <p>NOTE: Bitmap images are available in: <code><drive>\Program Files (x86)\Delta Industrial Automation\DIAScreen\ScrEditApp\TPSeries\BmpGroup\<folders></code></p>
Clear Picture	Click to delete the current bitmap

Click the **Coordinates** tab in the **Button** window of the general model TP series text panel to display the contents as shown in the following figure.

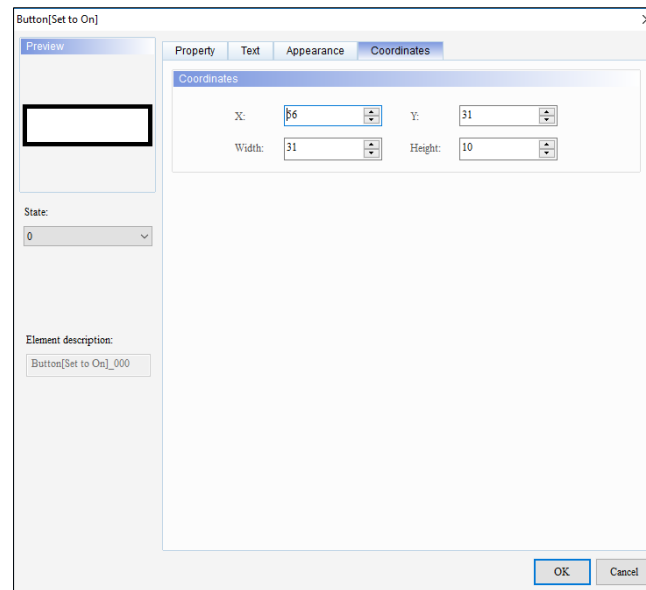


Figure 3 - 114: Button window - Coordinates tab for general model

The **Coordinates** tab in the **Button** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Button element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Button element. Enter a value to change the Y coordinate.
Width	Displays the width for the Button element. Enter a value to change the width.
Height	Displays the height for the Button element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK**.

3.5.10.2 Button Element in TP70P Series Text Panel:

The procedure for adding a Button element to a TP70P series text panel is same as steps for the general model TP series text panel. Refer [3.5.10.1 Button element in general model TP series text panel](#): for more information.

For TP70P series, the **Button** window displays the properties as shown in the following figure. The Button window has four tabs for the TP70P series text panel:

- Property
- Text
- Appearance
- Coordinates

The **Property** tab displays by default.

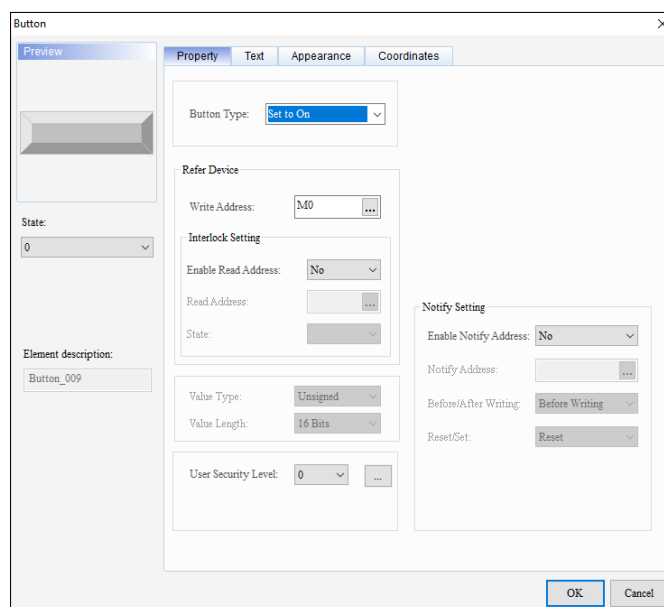




Figure 3 - 115: Button window - Property tab for TP70P series

The **Property** tab in the **Button** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Button Type	<p>Select the button type. Options are:</p> <ul style="list-style-type: none"> • Set to On • Set to Off • Pulse On • Pulse Off • Maintained • Momentary • Multistate • Set Value • Set Constant • Increment • Decrement • Goto Screen • Set password • RTC Setting <p>NOTE: The default value is Set to On.</p>
Refer Device - Device Address	<p>Select the device address that the Button element writes to.</p>
Interlock Settings – Enable Read Address	<p>Select to enable a device register to start reading the value. Options are:</p> <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Interlock Settings – Read Address	<p>Click  button to open the Refer Device dialog box to select the variable that works as interlock for the Numeric Input controls.</p> <p>NOTE: The Read Address is not available by default.</p>
Interlock Settings - State	<p>Select the OFF(0) or ON(1) state of the Read Address at which interlock can be applied to the Numeric Input controls. Options are:</p> <ul style="list-style-type: none"> • OFF • ON

Function	Description
	NOTE: The default value is OFF .
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD NOTE: The default value is Unsigned .
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits .
User Security Level and select field	Select user security level. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 NOTE: The default value is 0 . Click  button to open the User-Level Password Setting dialog box to set the passwords for various user levels.
Notify Setting – Enable Notify Address	Select to enable notify address. Options are: <ul style="list-style-type: none"> • No • Yes NOTE: The default value is No .
Notify Setting – Notify Address	Select the notify address. NOTE: This field is enabled if Enable Notify Address is set to Yes .
Notify Setting – Before/After Writing	Select to notify before writing or after writing. Options are: <ul style="list-style-type: none"> • Before Writing • After Writing NOTE: This field is enabled if Enable Notify Address is set to Yes . The default value is Before Writing .

Function	Description
Notify Setting – Reset/Set	Select to set the variable. Options are: <ul style="list-style-type: none"> • Reset • Set <p>NOTE: This field is enabled if the Enable Notify Address is set to Yes. The default value is Reset.</p>

NOTE: Other properties in the **Property** tab for the TP70P series panel are the same as those in the **Property** tab for the general model TP series text panel.

Click on the **Text** tab in the **Button** window of the TP70P series text panel to display the contents as shown in the following figure.

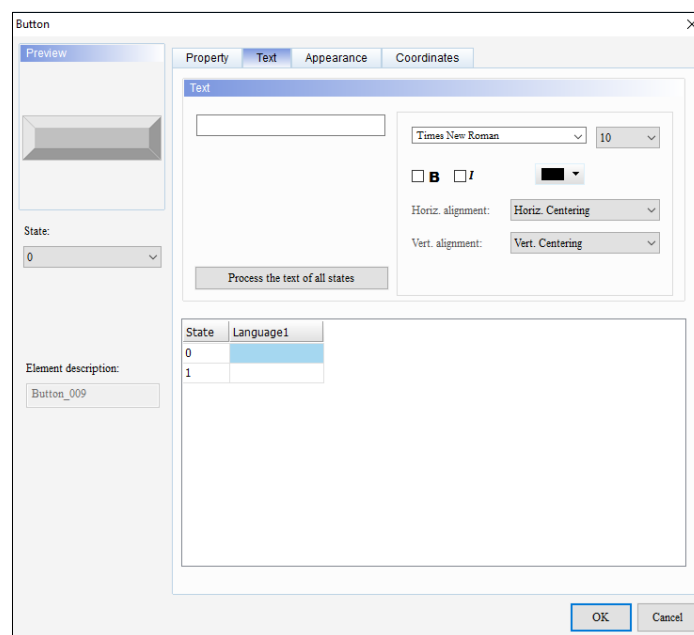


Figure 3 - 116: Button window - Text tab for TP70P series

The **Text** tab in the **Button** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Select the text to display in the Button.
Process the text of all states	Click to copy the text in text field and paste in the text field for all the states.
Font type field	Select the font type.
Font size field	Select the font size.
Bold check box	Select to bold the font.
Italics check box	Select to italicize the font.
Font Color field	Select the font color.
Horiz. alignment	<p>Select the horizontal alignment. Options are:</p> <ul style="list-style-type: none"> • Align Left • Horiz. Centering • Align Right <p>NOTE: The default value is Horiz. Centering.</p>
Vert. alignment	<p>Select the vertical alignment. Options are:</p> <ul style="list-style-type: none"> • Align Top • Vert. Centering • Align Bottom <p>NOTE: The default value is Vert. Centering.</p>

Click on the **Appearance** tab in the **Button** window of the TP70P series text panel to display the contents as shown in the following figure.

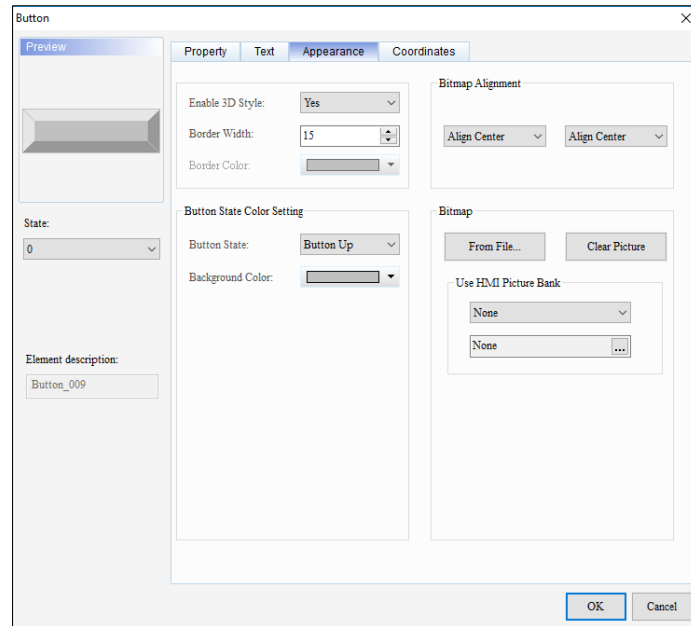


Figure 3 - 117: Button window - Appearance tab for TP70P series

The **Appearance** tab in the **Button** window for the TP70P series text panel displays extra properties compared to the **Appearance** tab in general model TP series text panel as mentioned in the following table:

Function	Description
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Border Width	Select the border width. <p>NOTE: The default value is 15.</p>
Border Color	Select the border color. <p>NOTE: This field is enabled when Enable 3D Style is set to No.</p>
Button State Color Setting – Button State	Select the button state. Options are: <ul style="list-style-type: none"> • Button Up • Button Down

Function	Description
	<ul style="list-style-type: none"> Disable <p>NOTE: The default value is Button Up.</p>
Button State Color Setting – Background Color	Select the background color for the button.
Use HMI Picture Bank and select field	Click to select a picture bank and an image in the bank.

Click the **Coordinates** tab in the **Button** window of the TP70P series text panel to display the contents as shown in the following figure.

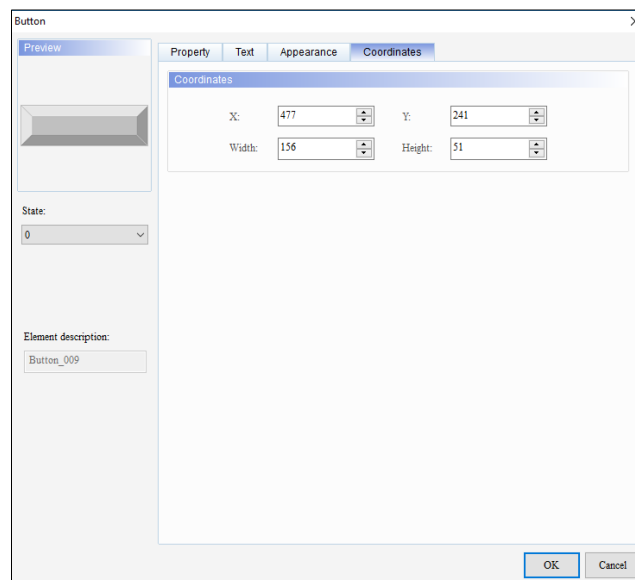


Figure 3 - 118: Button window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Button** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Button element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Button element. Enter a value to change the Y coordinate.

Function	Description
Width	Displays the width for the Button element. Enter a value to change the width.
Height	Displays the height for the Button element. Enter a value to change the height.

3.5.10.3 Multiple Actions Button

Remark: This function is applicable to DOP-100 series and AX-8 series models.

The Multiple actions button provides a variety of button behaviors. The user can define (1) the action to be performed after pressing the button, (2) the action to be performed after releasing the button, and (3) the action to be performed after pressing the button continuously. This function can be used to replace complicated procedures written by macro trigger buttons.

The button behavior provided by the Multiple actions includes the following:

- Set to On
- Set to Off
- Maintained
- Multistate
- Set Constant
- Increment
- Decrement
- Goto Screen
- Set Low Security
- System Menu
- Report List
- Screen Capture
- Remove Storage
- Import/Export Recipe
- Language Change
- Delay

Figure 3 - 119 : Buttons provided by Multiple actions buttons

Remark:

1. Press action, release action and continuous pressing action, each action can add up to 32 new actions, so a Multiple Actions button can perform up to 32*3 actions.
2. The system directory can only be used as the last action (other actions cannot be added later).
3. One Multiple actions button can only have one-page change action, including Goto Screen and previous page.

Please refer to the following steps to create a Multiple actions button :

1. On the menu, click **Element** > **Button** > Multiple actions or click the button on the component selection toolbar > **Multiple actions**.
2. Click anywhere in the editing area of the screen and drag out the appropriate size and release the mouse.
3. Double-click the Multiple actions button component on the screen, and the property window will display as shown below.

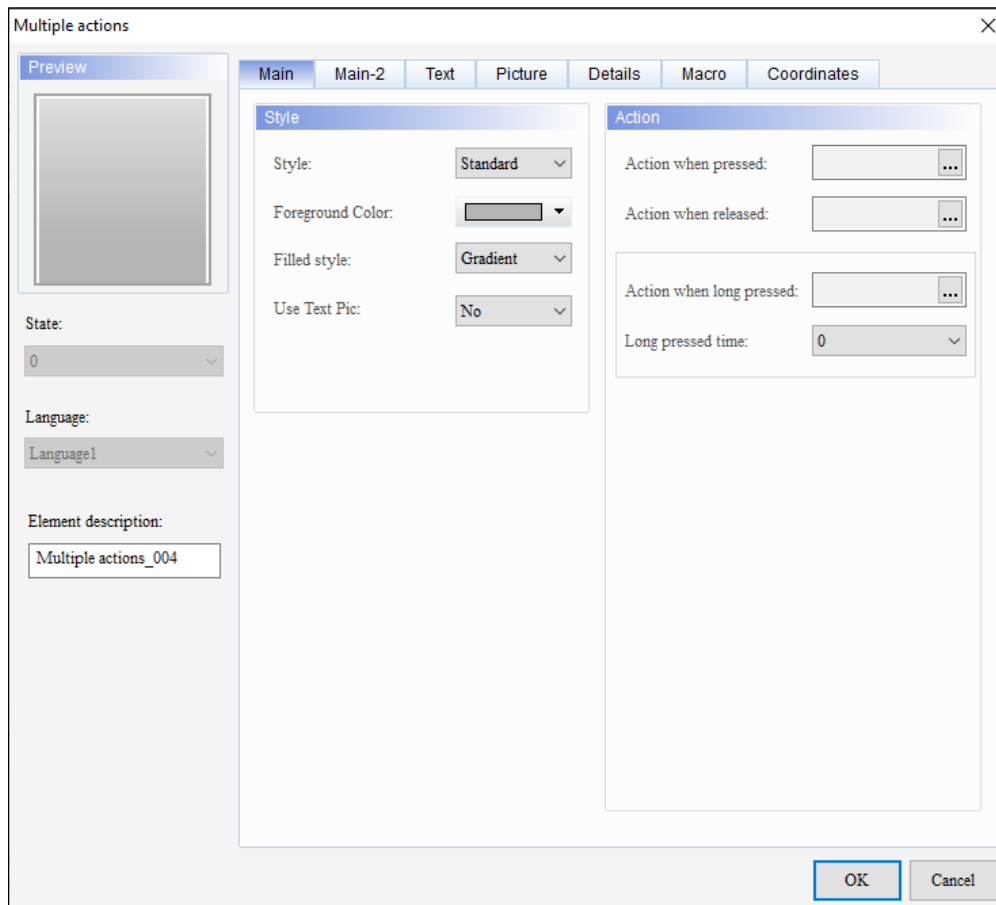


Figure 3 - 120 : Multiple actions button window

4. Set the action when it is pressed, No. 1 is set as the added value, the write memory address is \$10, the addition and subtraction number is 3, and the upper and lower limits are 100, as shown in the figure below.

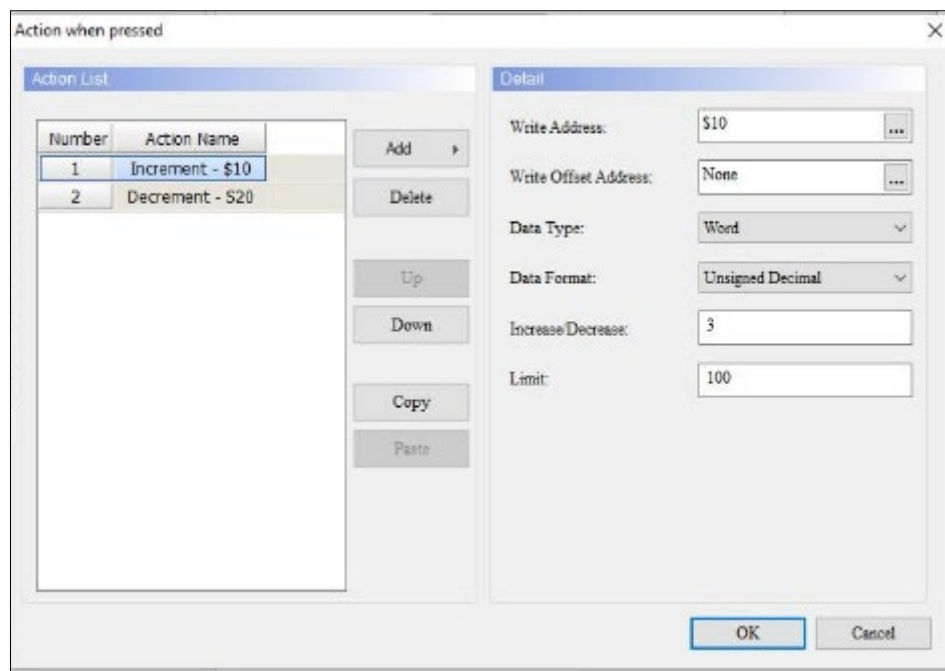


Figure 3 - 121: Action setting when pressed (1)

- Continue to set the action when pressing, No. 2 is set to the reset state, the write memory address is \$20, and the total number of states is set to 3, as shown below

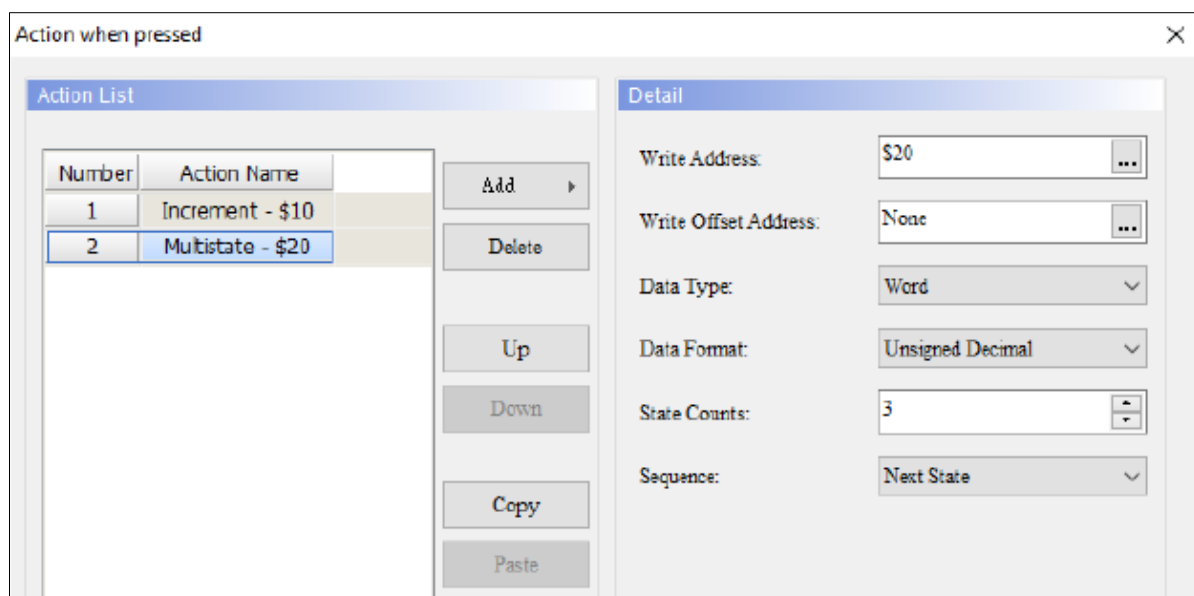


Figure 3 - 122: Action setting when pressed (2)

6. Set the action when releasing is to change the screen to Screen_2, as shown below.

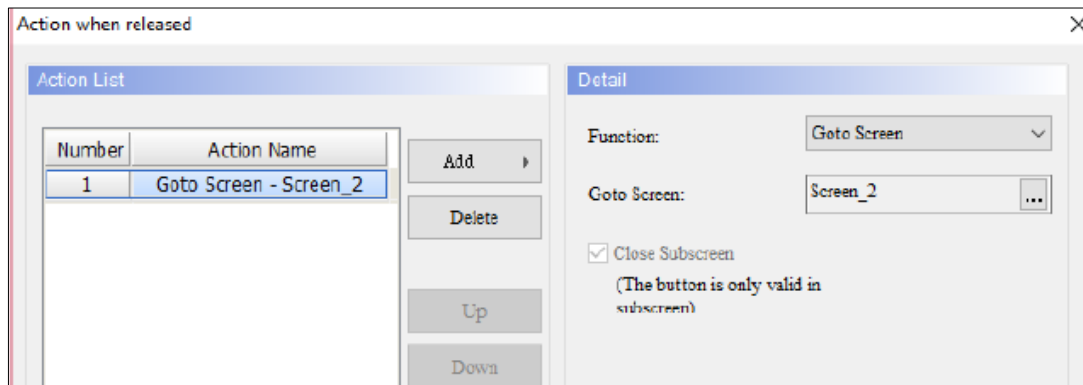


Figure 3 - 123: Action setting when releasing

7. The action of setting the continuous pressing is a constant value, and the continuous pressing time is 3 seconds. Set the write memory address to \$30 and the set value to 5000, as shown below °

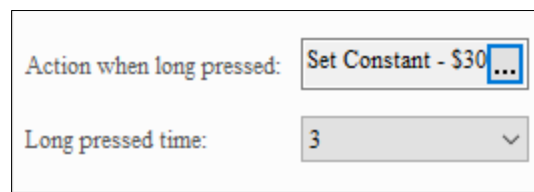


Figure 3 - 124: Long pressed

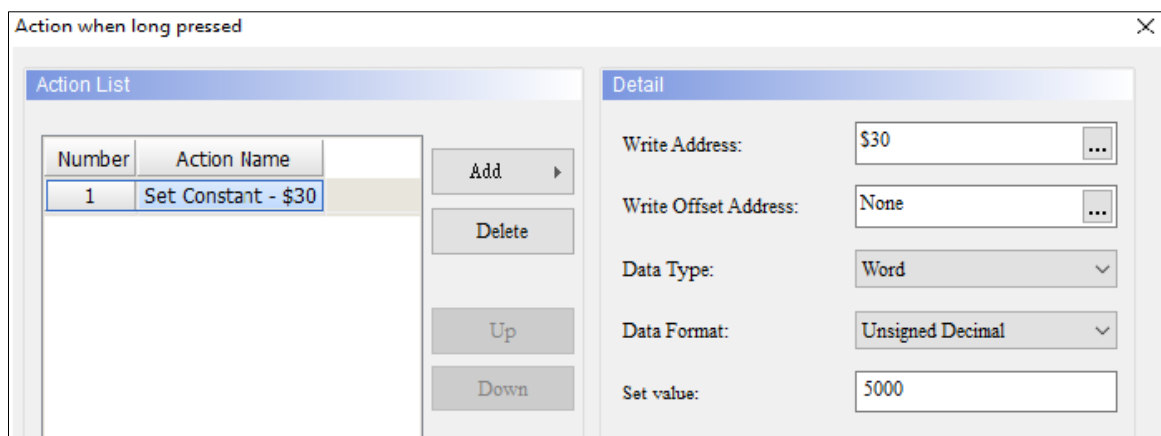


Figure 3 - 125: Action setting for continuous pressing

8. Create two numerical display components, respectively set the read memory address to **\$10** to display the value change after the addition action is executed; and set the read memory address to **\$30** to show the constant value action is executed Value change.

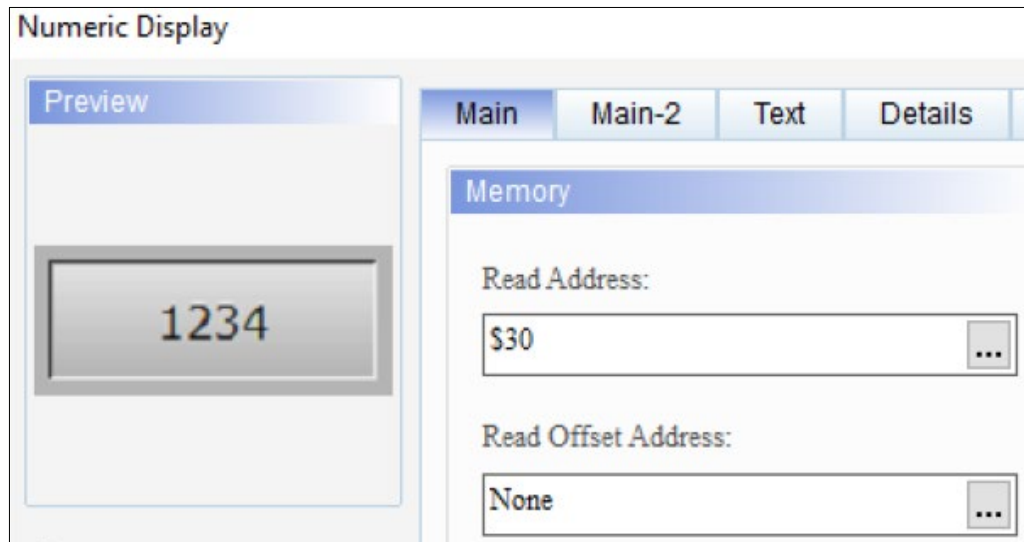





Figure 3 - 126: Create two numerical display components

9. Create a reset button, set the write memory address to **\$20**, the total number of states to **3**, and the switching sequence to the next state. And set the foreground color of the component in state **0, 1, 2**.

Status	Component foreground color
0	
1	
2	

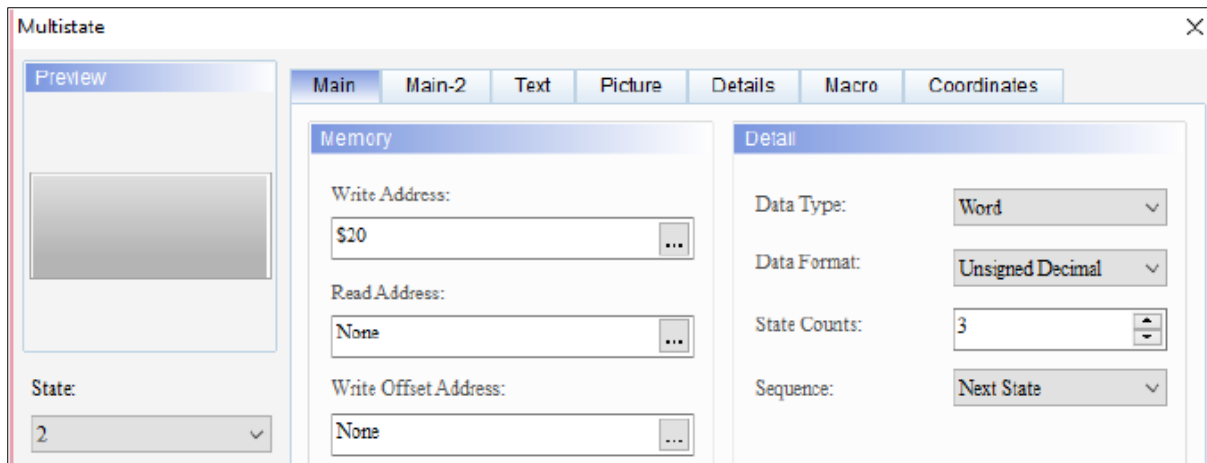


Figure 3 - 127: Set MultiState

10. Add Screen_2, create a table component and a screen change button, and set the screen to switch to Screen_1.

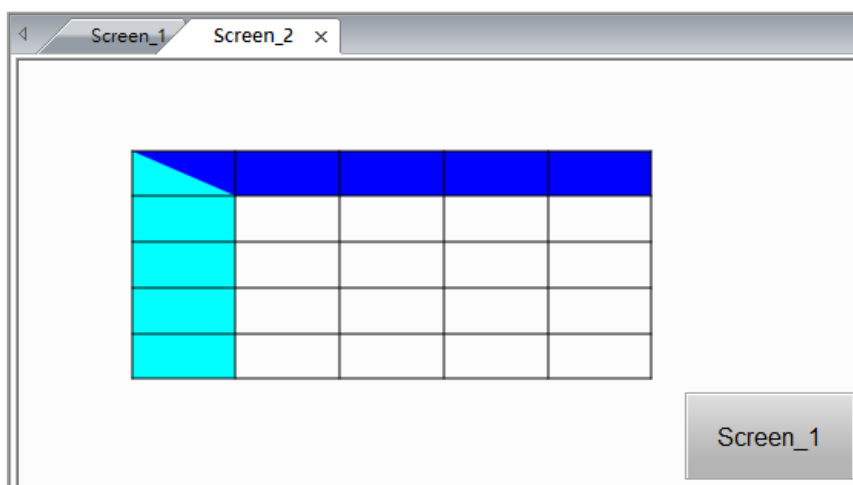


Figure 3 - 128: Switch screen to Screen_1

Result:

- Press the Multiple Actions button, the actions of the added value and the reset state will be executed.

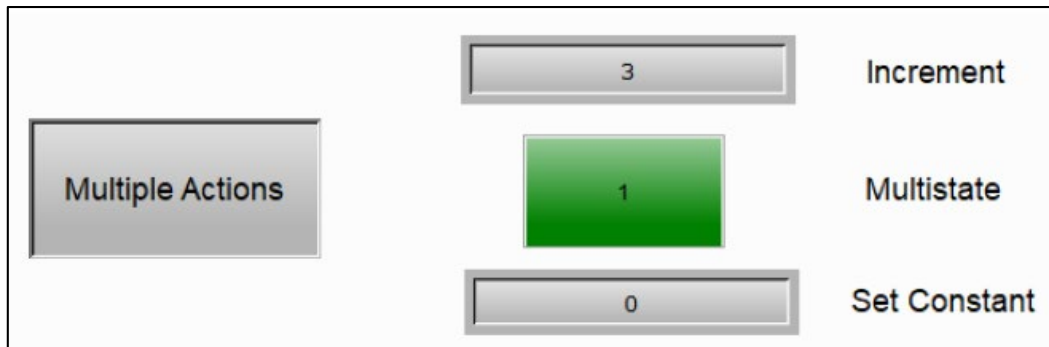


Figure 3 - 129: The actions of added value and recovery state will be executed

- Release the Multiple actions button, the screen change action will be executed, and the HMI screen has been switched to Screen_2.

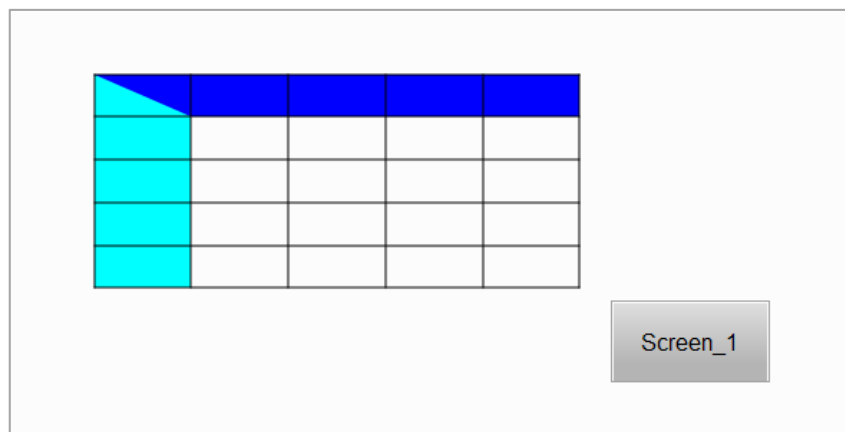


Figure 3 - 130: Switch to Screen_2

- Switch the screen to Screen_1, press and hold the Multiple actions button for 3 seconds, the action of setting the constant value will be executed. Because the Multiple Actions button is not only pressed for 3 seconds, but also executed the pressed action, so the added and re-state actions will also be executed.

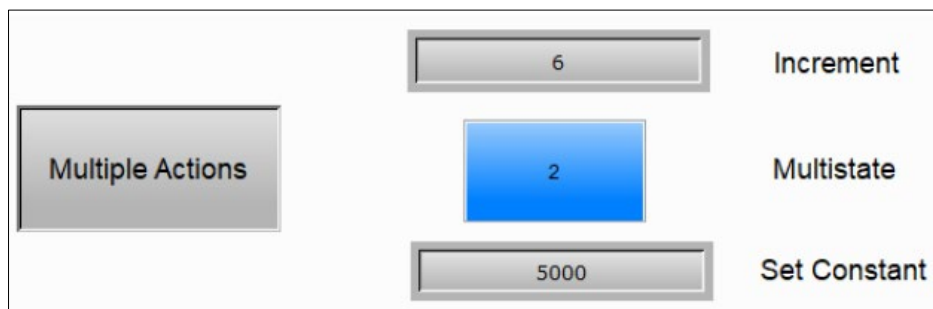


Figure 3 - 131: Switch screen to Screen_1

Functions in the Property tab of Multiple Actions window are described in the table below:

Features	Description
Preview	The Multiple actions button can only be used to view the display data of multiple languages, because this component does not have multiple status attributes.
Main	<ul style="list-style-type: none"> • Style: Set component style, component foreground color, fill style and use text map. • Action: Set the action when pressing, the action when releasing, the action of continuous pressing, the time of continuous pressing.
Main Two	Set transparency, turn on smooth animation, turn on anti-aliasing °
Text	Set the text content / font / size / color / format / zoom / alignment type to be displayed.
Picture	Set graphics library name, alignment style, graphics extension mode, specify graphics transparent color.
Advanced	Set the effective level, effective bit, invisible bit, user authority, and set the lowest authority after input.
Macro	Set pre-execution macro and post-execution macro.
Position	X-Y coordinate value and width and height settings of button components.

- General tab function description

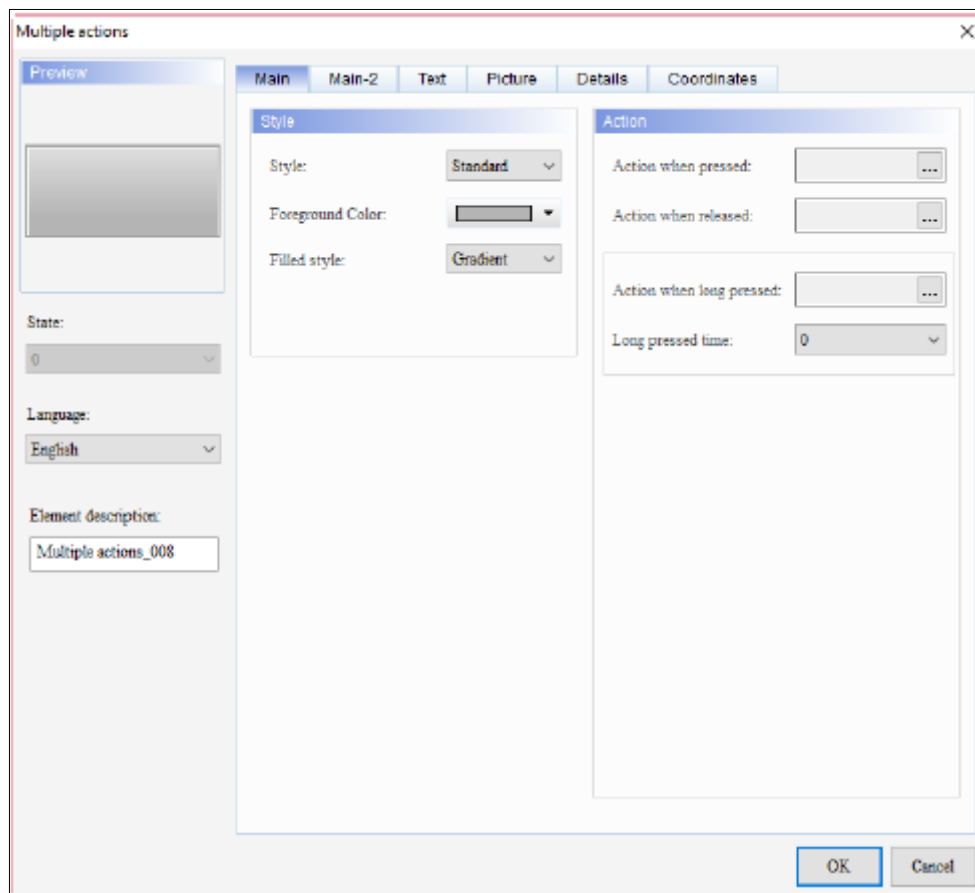
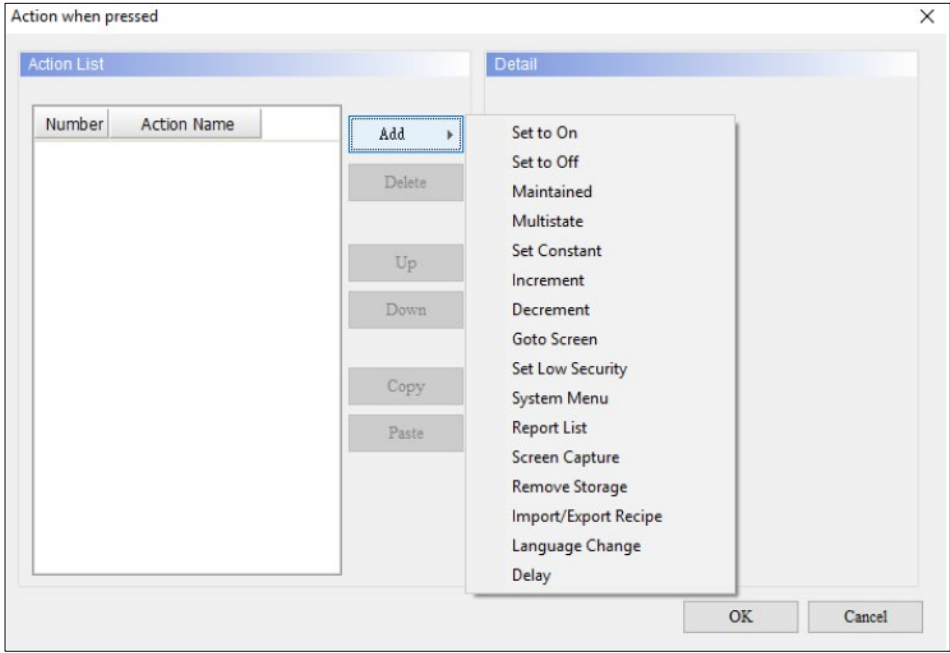
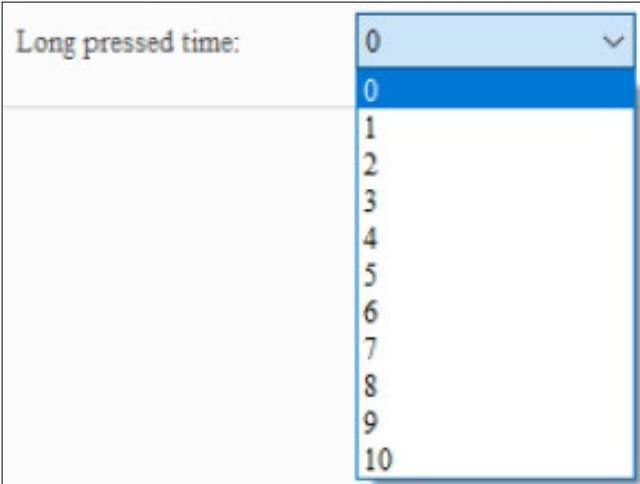
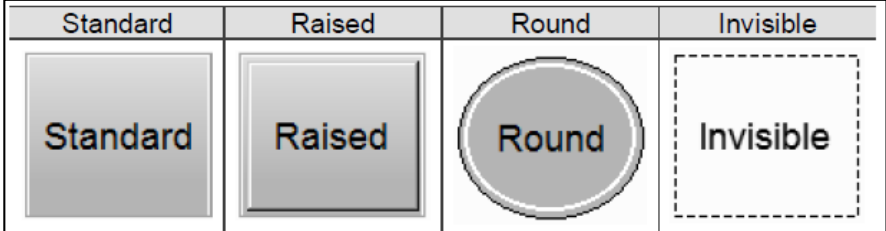
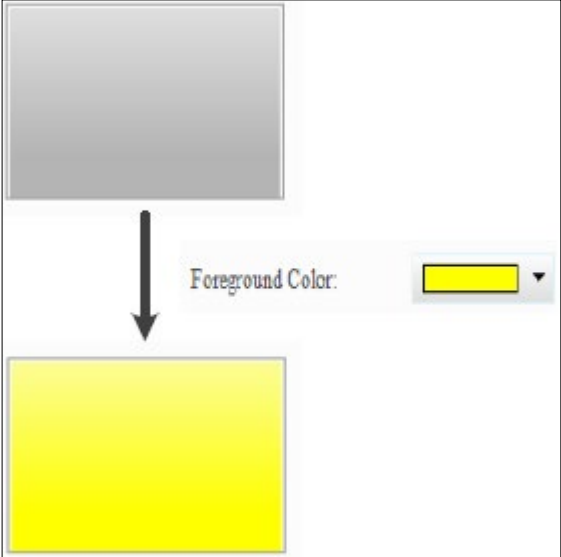
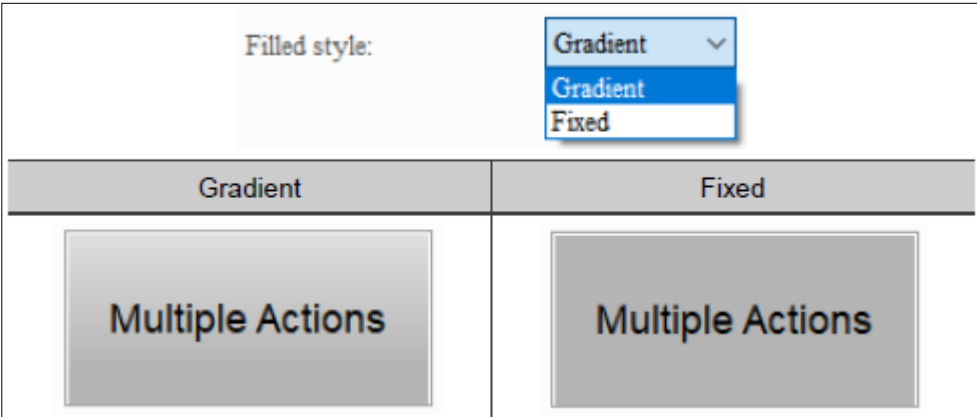
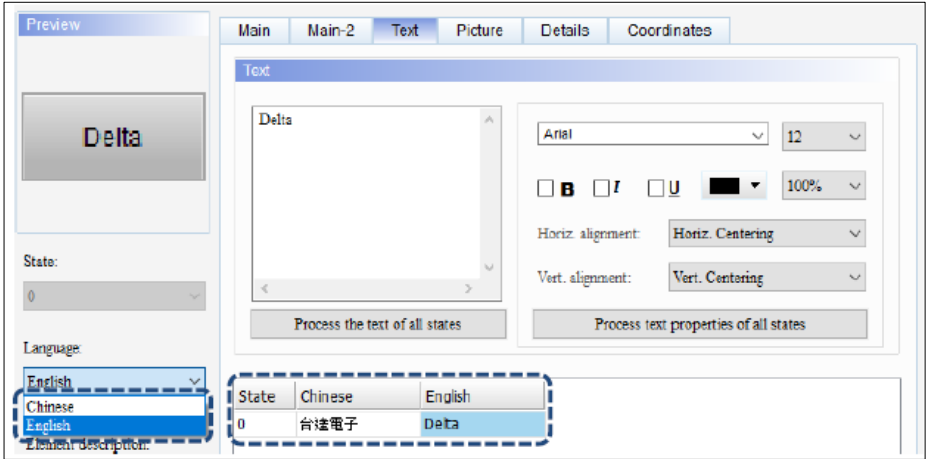


Figure 3 - 132: Multiple actions button window Main tab

Features	Description
Action when pressed	<ul style="list-style-type: none"> • Refers to the action to be performed after pressing the Multiple actions button. • The actions supported by the action when pressed are as follows.

Features	Description
	
<p>Action when released</p>	<ul style="list-style-type: none"> Refers to the action to be performed after releasing the Multiple actions button. The behavior supported by the action when released is the same as the action when pressed.
<p>Action when long pressed</p>	<ul style="list-style-type: none"> Refers to the action to be performed after continuously pressing the Multiple actions button. Need to match the setting of continuous pressing time, the continuous pressing action will take effect. The button behavior supported by the continuous pressing action is the same as the action when pressed and released.
<p>Long pressed time</p>	<p>Continuous pressing threshold time can be set from 0 to 10 seconds.</p> 

Features	Description
Component type	<p>The component types are divided into Standard, Raised, Round, Invisible. This setting can provide the user to change the appearance of the component.</p> 
Component foreground color	<ul style="list-style-type: none"> The display color of the component foreground can be set. When the component type is Invisible, setting the component foreground color has no effect. 
Filled style	Set the filling effect of the button, which can be set as a gradient color or a fixed color.
Language	When the user has set language data, they can edit the text attributes to be displayed through the language of the component, etc.

Features	Description																																																																																
	 																																																																																
<p>Component description</p>	<p>It can be used to record the action to be performed by the button. This description will be written into the CSV file of the operation log to let the user know the action performed.</p> <table border="1"> <thead> <tr> <th>Time</th> <th>Date</th> <th>Level</th> <th>Screen</th> <th>Desc</th> <th>Action</th> <th>Pre Value</th> <th>Change Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>13:37:54</td> <td>5/5/2016</td> <td>8</td> <td>Screen_22 Level 1 Btn</td> <td>Set Val</td> <td>1</td> <td>0</td> </tr> <tr> <td>2</td> <td>13:37:56</td> <td>5/5/2016</td> <td>8</td> <td>Screen_22 Level 1 Btn</td> <td>Set Val</td> <td>0</td> <td>1</td> </tr> <tr> <td>3</td> <td>13:38:19</td> <td>5/5/2016</td> <td>8</td> <td>Screen_22</td> <td>Level Switch</td> <td>8</td> <td>4</td> </tr> <tr> <td>4</td> <td>13:38:21</td> <td>5/5/2016</td> <td>4</td> <td>Screen_22 Level 2 Btn</td> <td>Set Val</td> <td>0</td> <td>1</td> </tr> <tr> <td>5</td> <td>13:38:21</td> <td>5/5/2016</td> <td>4</td> <td>Screen_22 Level 2 Btn</td> <td>Set Val</td> <td>1</td> <td>0</td> </tr> <tr> <td>6</td> <td>13:38:22</td> <td>5/5/2016</td> <td>4</td> <td>Screen_22 Level 4 Btn</td> <td>Set Val</td> <td>0</td> <td>1</td> </tr> <tr> <td>7</td> <td>13:38:23</td> <td>5/5/2016</td> <td>4</td> <td>Screen_22 Level 4 Btn</td> <td>Set Val</td> <td>1</td> <td>0</td> </tr> <tr> <td>8</td> <td>13:38:31</td> <td>5/5/2016</td> <td>4</td> <td>Screen_22</td> <td>Level Switch</td> <td>4</td> <td>8</td> </tr> <tr> <td>9</td> <td>13:38:35</td> <td>5/5/2016</td> <td>8</td> <td>Screen_22 \$100 Value</td> <td>Set Val</td> <td>85</td> <td>25</td> </tr> </tbody> </table>	Time	Date	Level	Screen	Desc	Action	Pre Value	Change Value	1	13:37:54	5/5/2016	8	Screen_22 Level 1 Btn	Set Val	1	0	2	13:37:56	5/5/2016	8	Screen_22 Level 1 Btn	Set Val	0	1	3	13:38:19	5/5/2016	8	Screen_22	Level Switch	8	4	4	13:38:21	5/5/2016	4	Screen_22 Level 2 Btn	Set Val	0	1	5	13:38:21	5/5/2016	4	Screen_22 Level 2 Btn	Set Val	1	0	6	13:38:22	5/5/2016	4	Screen_22 Level 4 Btn	Set Val	0	1	7	13:38:23	5/5/2016	4	Screen_22 Level 4 Btn	Set Val	1	0	8	13:38:31	5/5/2016	4	Screen_22	Level Switch	4	8	9	13:38:35	5/5/2016	8	Screen_22 \$100 Value	Set Val	85	25
Time	Date	Level	Screen	Desc	Action	Pre Value	Change Value																																																																										
1	13:37:54	5/5/2016	8	Screen_22 Level 1 Btn	Set Val	1	0																																																																										
2	13:37:56	5/5/2016	8	Screen_22 Level 1 Btn	Set Val	0	1																																																																										
3	13:38:19	5/5/2016	8	Screen_22	Level Switch	8	4																																																																										
4	13:38:21	5/5/2016	4	Screen_22 Level 2 Btn	Set Val	0	1																																																																										
5	13:38:21	5/5/2016	4	Screen_22 Level 2 Btn	Set Val	1	0																																																																										
6	13:38:22	5/5/2016	4	Screen_22 Level 4 Btn	Set Val	0	1																																																																										
7	13:38:23	5/5/2016	4	Screen_22 Level 4 Btn	Set Val	1	0																																																																										
8	13:38:31	5/5/2016	4	Screen_22	Level Switch	4	8																																																																										
9	13:38:35	5/5/2016	8	Screen_22 \$100 Value	Set Val	85	25																																																																										

- Main-2 tab function description

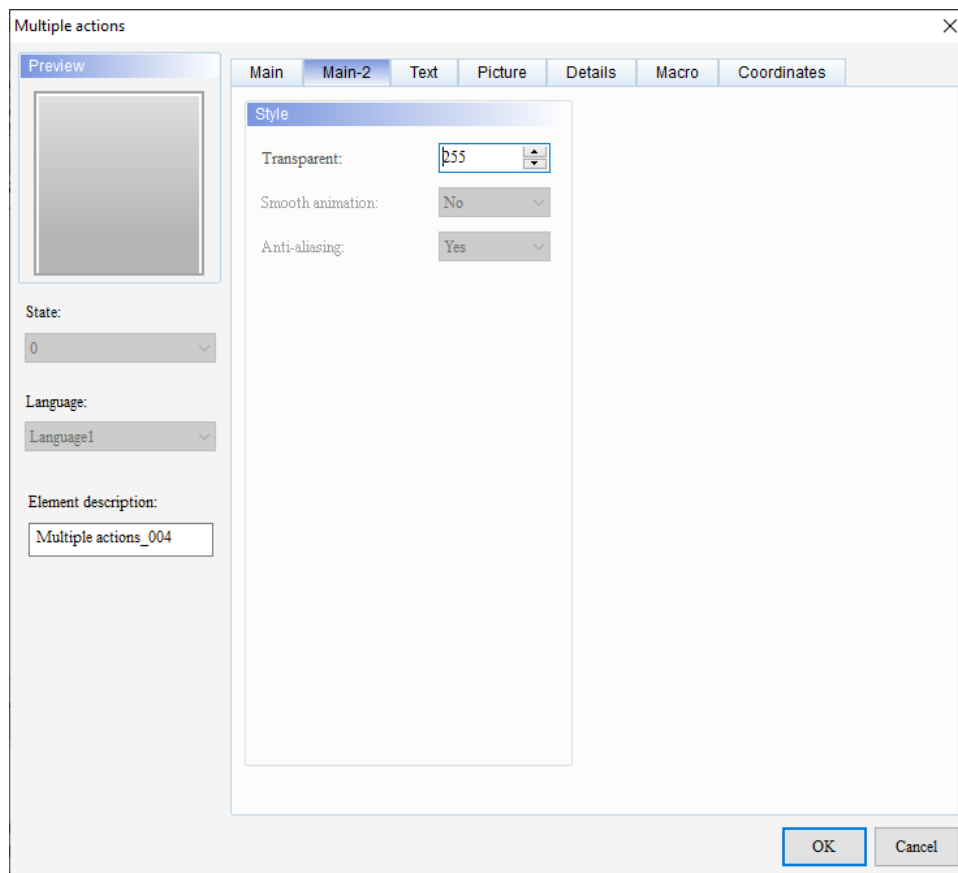


Figure 3 - 133: Multiple actions button window Main-2

Features	Description
Transparent	The default transparency is 255 , the minimum is 50 , and the maximum is 255 , which can be adjusted by the user. The smaller the value, the higher the transparency of the component.
Smooth animation	This component cannot enable smooth animation.
Anti-aliasing	This component cannot turn on anti-aliasing.

- Description of the content tab function

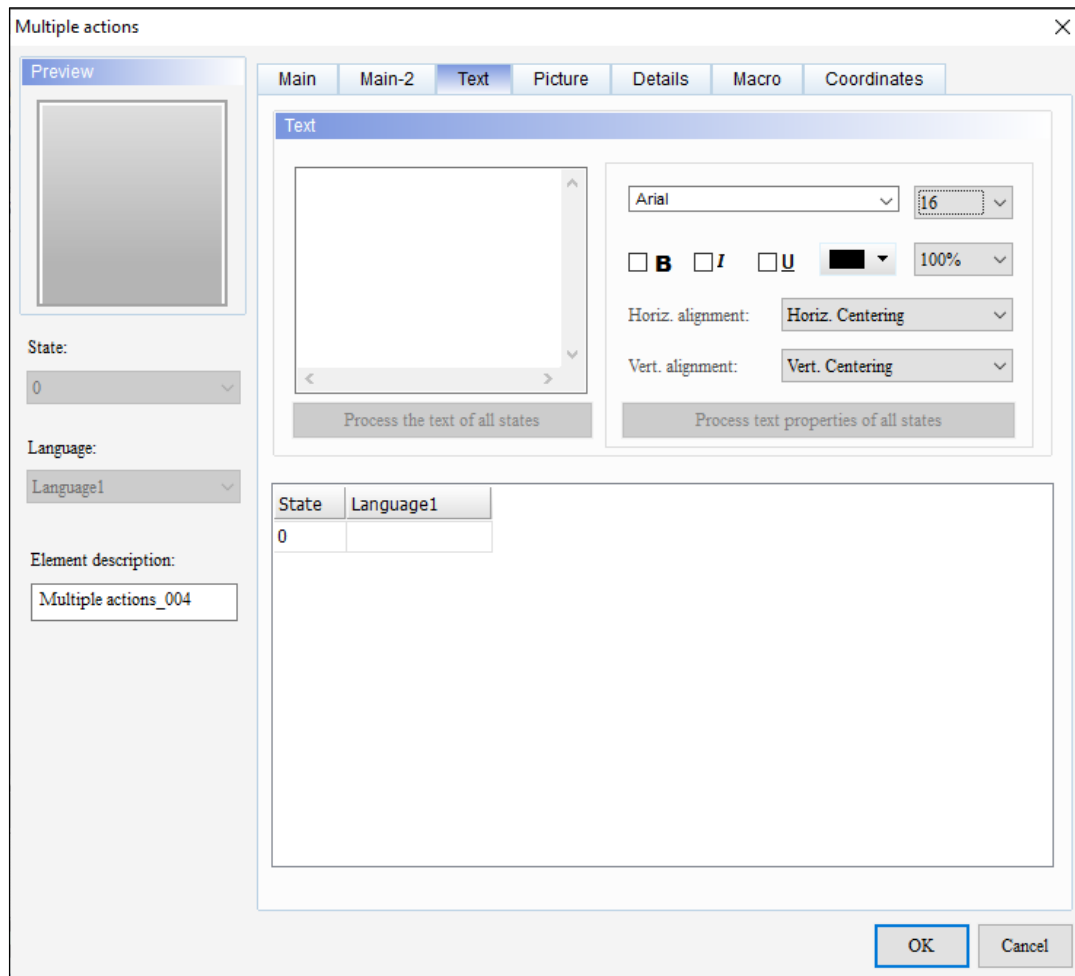


Figure 3 - 134 : Multiple actions button window Text tab

Features	Description
Text	The user can enter the text message to be displayed in the text box.

Features	Description
	<div> </div> <p>As long as it is a component that can input any text, user can click the component on the screen and press the blank key on the keyboard to edit and input text immediately.</p>
<p>Text property</p>	<p>User can set the text-related attributes, including setting the text font, text size, text color, the scale of the text to be zoomed, the alignment displayed, and whether the text is bold/italicized/underlined.</p>
<p>Edit Multilanguage Text</p>	<p>If the user has added multi-language data, then user can enter this text page to edit the multi-language text data, as shown in the text attribute diagram, user can enter English words in the English field.</p> <div> </div>

- Picture

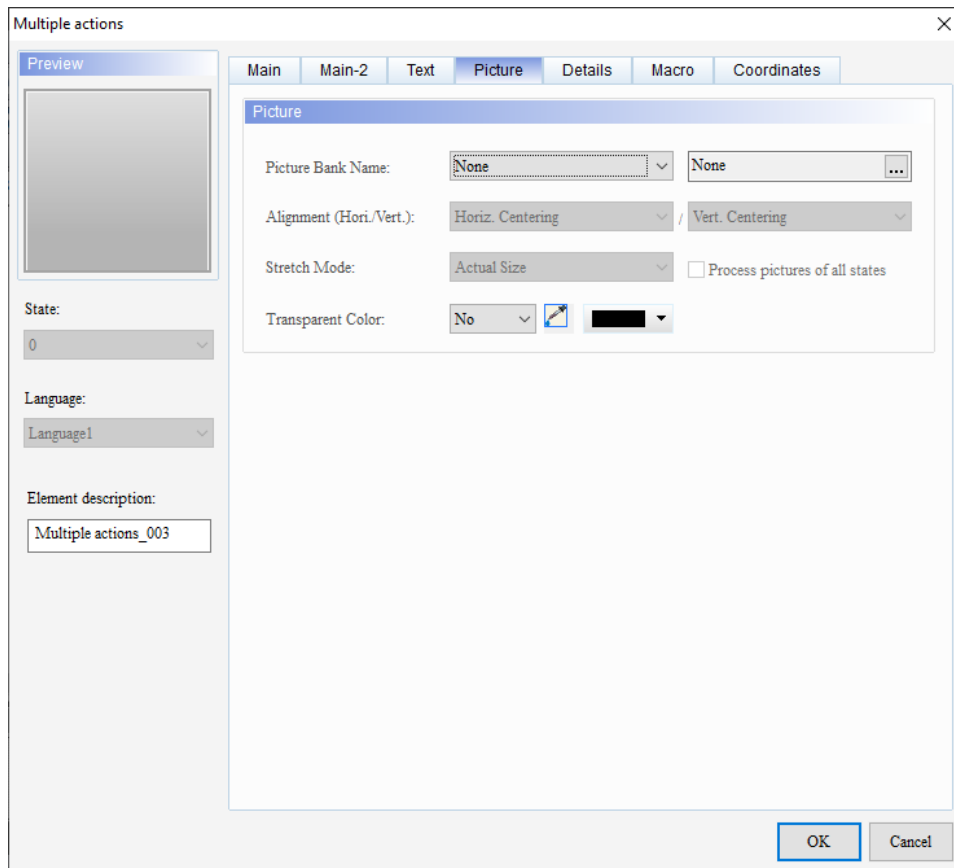
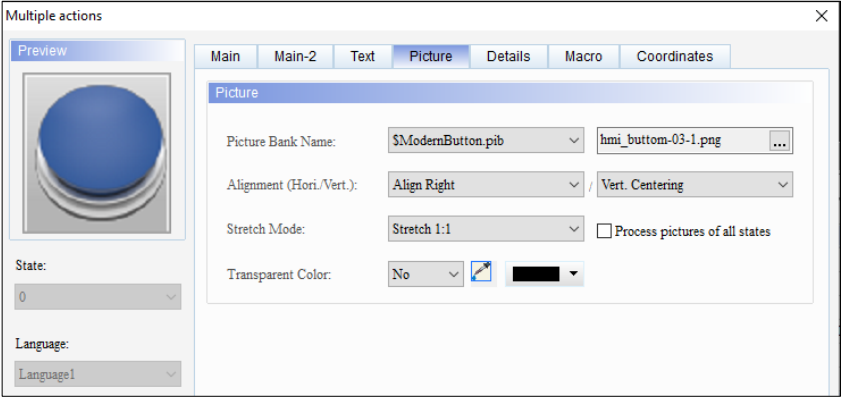













Figure 3 - 135: Multiple actions button window Picture tab

Features	Description
Picture Bank Name	The default graphic library name is None . If the user wants to set a customized graphic display, he can click to pull down the graphic library built in the software and select the desired graphic.

Features	Description
	<div> <p>Main Main-2 Text Picture Details Macro Coordinates</p> <p>Picture</p> <p>Picture Bank Name: None</p> <p>Alignment (Hori./Vert.): None</p> <p>Stretch Mode:</p> <p>Transparent Color:</p> <p>None</p> <p>Vert. Centering</p> <p><input type="checkbox"/> Process pictures of all states</p> <ul style="list-style-type: none"> \$3DButton.pib \$3DCButton.pib \$3DFan.pib \$3DFineLamp2State.pib \$3DFineLampNState.pib \$3DFineSW2State.pib \$3DFineSWNState.pib \$3DLamp2State.pib \$3DLamp3State.pib \$3DLights.pib \$3DPump.pib \$3DSButton.pib \$3DSign.pib \$3DSW10State.pib \$3DTank.pib \$3DToggleSW.pib \$3DTPipe.pib \$IndustrySewing \$IndustryWoodWorking \$ModernButton.pib \$ModernButton2.pib \$ModernController.pib \$ModernFan.pib \$ModernFlowMeters.pib \$ModernLamp2State.pib \$ModernMotor.pib \$ModernNdustrialMisc.pib \$ModernOperatorInterface.pib \$ModernPipe.pib </div> <div> <p>Select Picture</p> <p>Buttons shown:</p> <ul style="list-style-type: none"> BUTTON_01.bmp [140x140x65536] BUTTON_02.bmp [140x140x65536] BUTTON_03.bmp [140x140x65536] BUTTON_04.bmp [140x140x65536] BUTTON_05.bmp [140x140x65536] BUTTON_06.bmp [140x140x65536] BUTTON_07.bmp [140x140x65536] BUTTON_08.bmp [140x140x65536] BUTTON_09.bmp [140x140x65536] <p>OK Cancel</p> </div>

Features	Description									
<p>Alignment</p>	<p>The alignment of the set graphics can be set through the alignment options.</p> 									
<p>Stretch Mode</p>	<ul style="list-style-type: none"> The extension mode is divided into all areas, maintaining the proportion, and the actual size can be set. <table border="1"> <thead> <tr> <th>Stretch All</th> <th>Stretch 1:1</th> <th>Actual Size</th> </tr> </thead> <tbody> <tr> <td>If you select Stretch All, the picture fills the full element display area.</td> <td>If you select Stretch 1:1, the picture displays in 1:1 size based on the element width and length.</td> <td>If you select Actual Size, regardless of the element size, the picture displays in its actual size in the element display area.</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <ul style="list-style-type: none"> If the user selects the graphics processing all states, it means that the component has multiple state values, and the graphics may not extend to the entire area. After checking this function, all graphics can be processed instead of setting them one by one. Can reduce time-consuming editing. <p><input checked="" type="checkbox"/> Process pictures of all states</p>	Stretch All	Stretch 1:1	Actual Size	If you select Stretch All, the picture fills the full element display area.	If you select Stretch 1:1, the picture displays in 1:1 size based on the element width and length.	If you select Actual Size, regardless of the element size, the picture displays in its actual size in the element display area.			
Stretch All	Stretch 1:1	Actual Size								
If you select Stretch All, the picture fills the full element display area.	If you select Stretch 1:1, the picture displays in 1:1 size based on the element width and length.	If you select Actual Size, regardless of the element size, the picture displays in its actual size in the element display area.								
										

Features	Description
Transparent Color	<p>This function can specify a color in the graph and make it transparent. Represents if using the transparent color icon of the selected graphics  Click the white part of the calendar, the software will skip the white part of the picture and become a transparent color, which means it is the foreground color of the component.</p> 

- Description of Details tab function

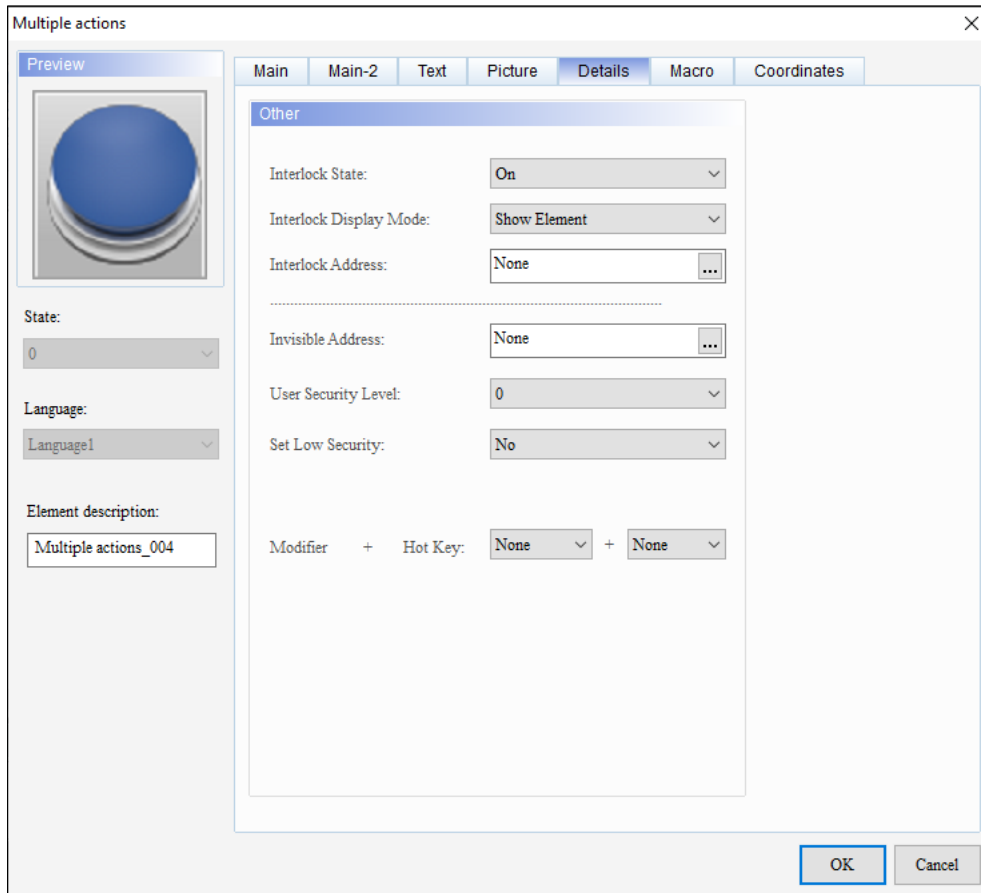
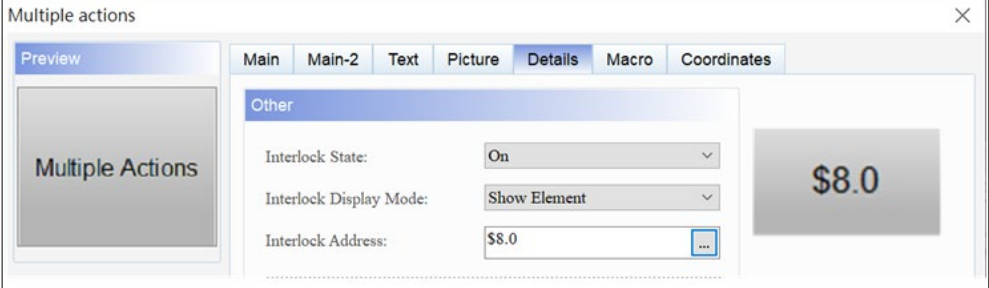
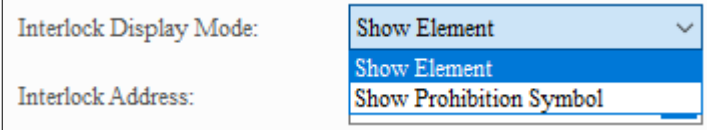

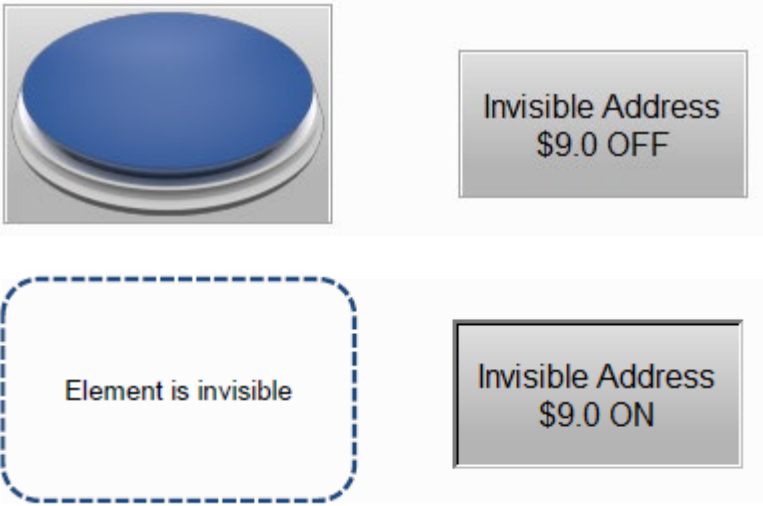
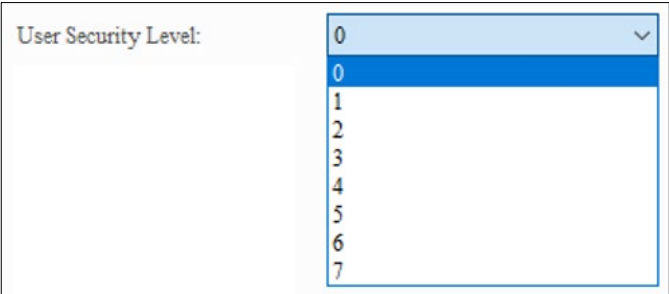
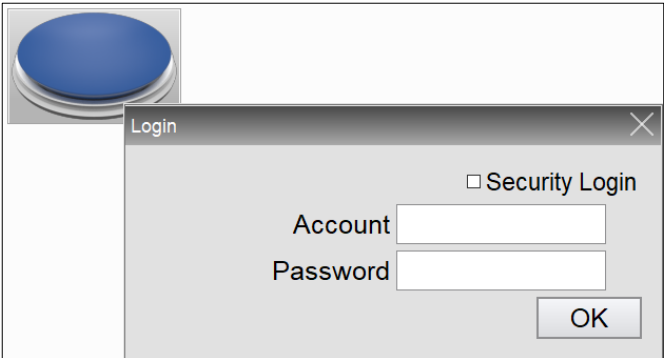
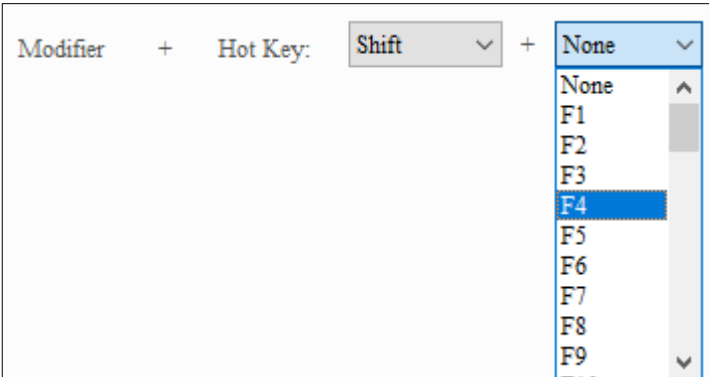


Figure 3 - 136: Multiple actions button window Details tab

Features	Description
Interlock State	<p>The interlock state bit is mainly used to allow the user to operate a component through this bit, and must be used with the effective level. If the effective level is set to OFF, it means that the effective bit can be operated when the effective level is OFF; on the contrary, if the effective level is set to ON, it means that the effective bit is in the state of ON Before operation.</p> <p>Its behavior is as follows:</p> <ol style="list-style-type: none"> 1. Please create a button first and set its address to \$8.0, then set the effective bit in the Multiple actions button to \$8.0.

Features	Description
<p>Interlock Address</p>	<p>2. If user want the Multiple actions button to operate, user must first press the \$8.0 button to make the Multiple actions button action take effect.</p> 
<p>Interlock Display Mode</p>	<ul style="list-style-type: none"> The Interlock display mode is divided into, Show Element and Show Prohibition Symbol.  <ul style="list-style-type: none"> If the prohibition symbol is displayed when no action is selected, the effective level is shown as follows. 
<p>Invisible Address</p>	<p>When the invisible bit is set to On, the button element will be hidden and its setting function will not be executed.</p> 

Features	Description
<p>User Security Level</p>	<ul style="list-style-type: none"> Use this function to set the authority of the components pressing action, and it can only be used if it is higher than or equal to the set authority. After setting the user authority level, the password input window will pop up when pressing the component to confirm whether the authority level password is correct. 
<p>Set Low Security</p>	<p>Set the lowest authority after input. If it is set to YES, the HMI will automatically set the use authority to the lowest after each input. When the component is pressed next time, it will ask for the password again and ask for the corresponding authority level password.</p> 
<p>Modifier + Hot Key</p>	

- Function description of macro tab

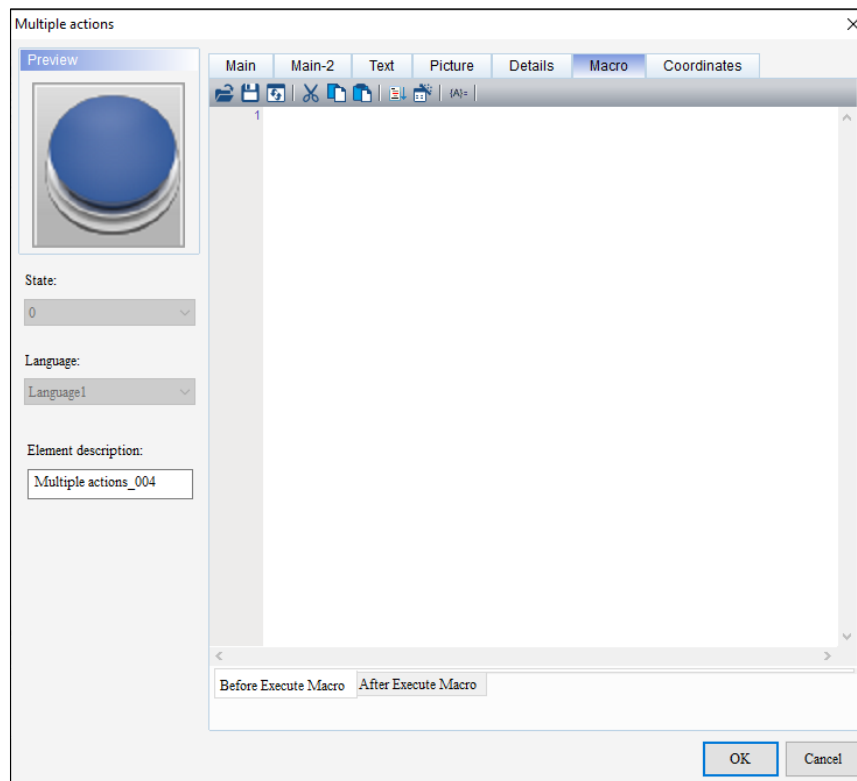


Figure 3 - 137: Multiple actions button window Macro tab

Features	Description
Before Execute macro	When the user touches the button element, the command in this macro will be executed first before the button action is executed. But if the state of the button is not changed by touch (using external controller commands or other macro changes), the macro command will not be executed.

Features	Description
	<pre> graph TD S0["Maintained Button 0"] -- "Trigger ON / Input Numeric" --> M1["Before Execute Macro"] M1 -- "Button triggered ON and numeric written" --> S50["Maintained Button 50"] S50 -- "Trigger OFF / Input Numeric" --> M2["Before Execute Macro"] M2 -- "Button triggered OFF and numeric written" --> S90["Maintained Button 90"] S90 -- "Trigger at next time" --> S0 </pre>
After Execute macro	<p>When the user touches the button element, the button will be executed first, and then this macro command will be executed. But if the state of the button is not changed by touch (using external controller commands or other macro changes), the macro command will not be executed.</p>

Features	Description
	<p>The flowchart illustrates a cycle for a 'Maintained Button'. It starts at a value of 0. When the button is triggered ON, the value increases to 50. When the button is triggered OFF, the value increases to 90. After each macro execution, the button is ready to be triggered again at the next time.</p> <pre> graph TD A["Maintained Button 0"] -- "Trigger ON / Input Numeric" --> B["Maintained Button 50"] B -- "Button triggered ON and numeric written" --> C["After Execute Macro"] C -- "Trigger OFF / Input Numeric" --> D["Maintained Button 90"] D -- "Button triggered OFF and numeric written" --> E["After Execute Macro"] E -- "Trigger at next time" --> A </pre>

- Function description of Coordinates tab

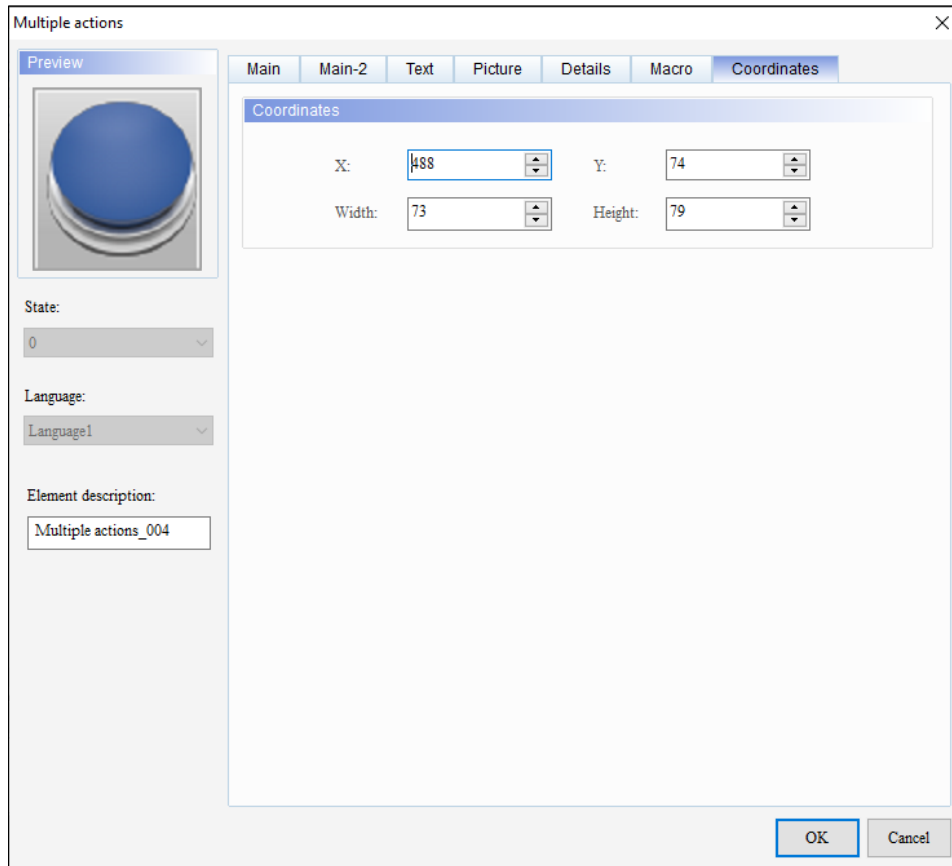


Figure 3 - 138: Multiple actions button window Coordinates tab

Function	Description
X	Displays the X coordinate of the upper left corner of the element.
Y	Displays the Y coordinate of the upper left corner of the component
Width	Displays the width of an element. Enter a value to change the width.
Height	Displays the height of an element. Enter a value to change the height.

3.5.11 RTC(L)

User can display a real time clock on the screen of a TP series text panel using the RTC element, the time on the real time clock is written to a related device connected

to the equipment or the time in a related device connected to the equipment is read and displayed on the screen of the TP series text panel.

The RTC element for general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
RTC	HH:MM:SS	hh:mm:ss

3.5.11.1 RTC Element in General Model TP Series Text Panel:

Follow these steps to add the RTC element to a screen and edit the properties in a general model TP series text panel:

1. Click the **Element(O) > RTC(L)** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The RTC element is added to the screen.

3. Double-click the RTC element to edit the RTC element properties.

Result: The **RTC** window displays as shown in the following figure. The **RTC** window has two tabs for general model TP series text panel:

- Property
- Coordinates

The **Property** tab displays by default.

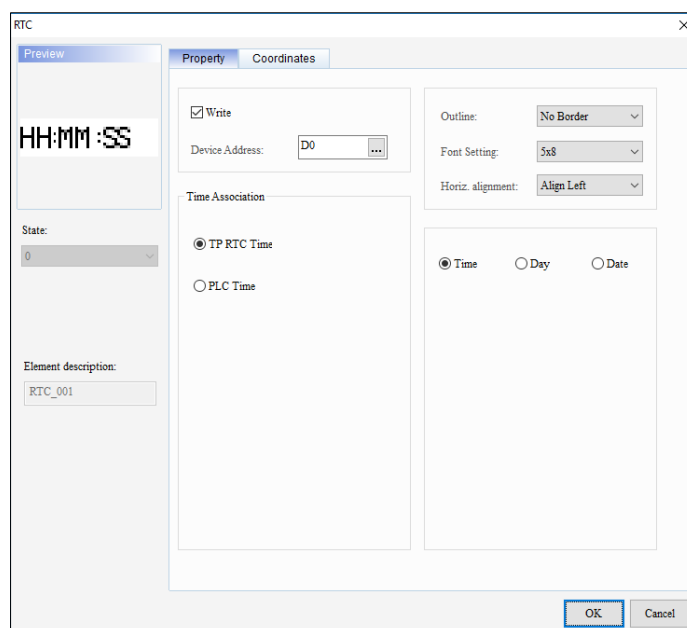


Figure 3 - 139: RTC window – Property tab for general model

The **Property** tab in the **RTC** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Write	Select to enable the RTC to write to the device.
Device Address	Click to open the Refer Device window to select the variable address for the device.
Time Association – TP RTC Time	Select, to write the time/day/date of the RTC in the TP series text panel to the related devices and display on the screen in the TP series text panel.
Time Association – PLC Time	Select, to read the time/day/date in the related devices and display on the screen in the TP series text panel.
Outline	Select the border type. Options are: <ul style="list-style-type: none"> • No Border • Single Border • Double Border • Thick Border • Dot Border • Dotted Line Border

Function	Description
	NOTE: The default value is No Border .
Font Setting	Select the font setting. Options are: <ul style="list-style-type: none"> • 5x8 • 8x8 • 8x12 • 8x16 NOTE: The default value is 5x8 .
Horiz. Alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> • Align Left • Horizontal Centering • Align Right NOTE: The default value is Align Left .
Time	Select to display the RTC time. Example: HH:MM: SS
Day	Select to display the RTC day. Example: SUN.
Date	Select to display the RTC date. Example: YYYY/MM/DD.

Click on the **Coordinates** tab in the **RTC** window of the general model TP series text panel to display the contents as shown in the following figure.

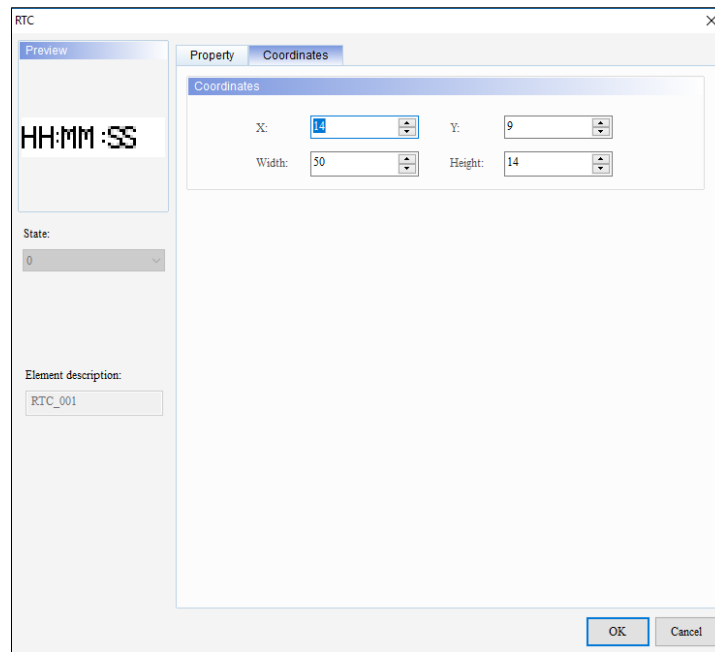


Figure 3 - 140: RTC window – Coordinates tab for general model

The **Coordinates** tab in the **RTC** window for general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the RTC element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the RTC element. Enter a value to change the Y coordinate.
Width	Displays the width for the RTC element. Enter a value to change the width.
Height	Displays the height for the RTC element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.11.2 RTC Element in TP70P Series Text Panel:

The procedure to add a RTC element in the TP70P series text panel is same as that for the general model TP series text panel. Refer [3.5.11.1 RTC element in general model TP series text panel](#): for more information.

The **RTC** window for the TP70P series displays as shown in the following figure. The RTC window has three tabs for TP70P series text panel:

- Property
- Appearance
- Coordinates

The **Property** tab is the default tab.

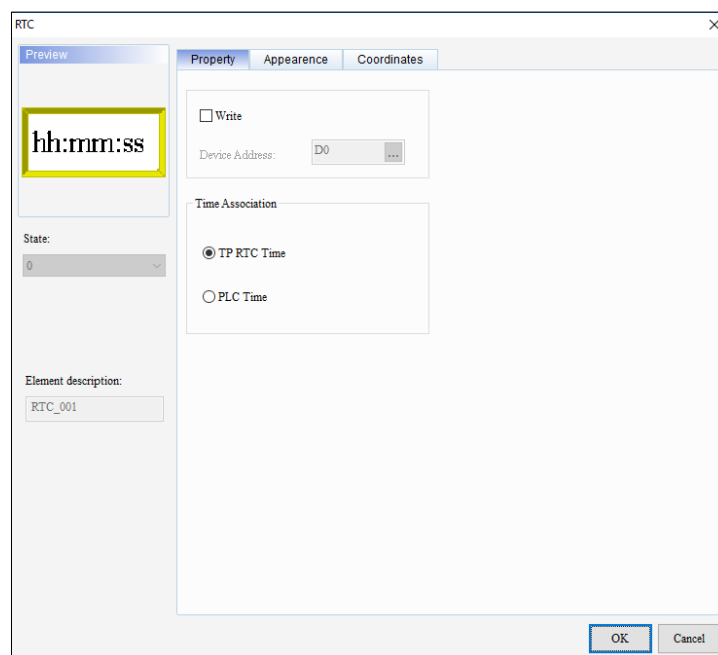


Figure 3 - 141: RTC window – Property tab for TP70P series

The **Property** tab in the **RTC** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Write	Select to enable RTC write to the device.
Device Address	Click to open Refer Device window to select the variable address for the device.
Time Association – TP RTC Time	Select, to write the time/day/date of RTC in the TP series text panel to the related devices and display on the screen in the TP series text panel.
Time Association – PLC Time	Select, to read the time/day/date in the related devices and display on the screen in the TP series text panel.

Click the **Appearance** tab in the **RTC** window of the TP70P series text panel to display the contents as shown in the following figure.

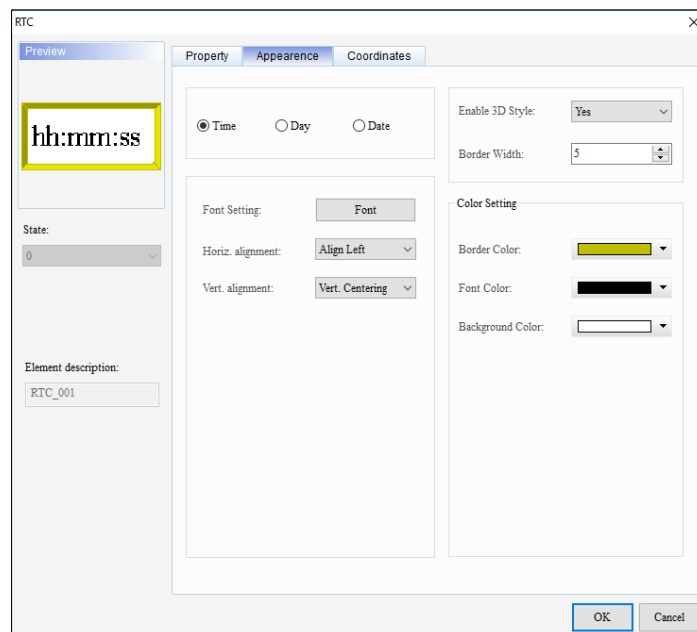


Figure 3 - 142: RTC window – Appearance tab for TP70P series

The **Appearance** tab in the **RTC** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Time	Select to display the RTC time.

Function	Description
	Example: HH:MM: SS.
Day	Select to display the RTC day. Example: SUN.
Date	Select to display the RTC date. Example: YYYY/MM/DD.
Font Settings	Click to open Font Setting window to set the following properties: <ul style="list-style-type: none"> • Font • Size • Bold • Italics Click OK to save settings.
Horiz. Alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> • Align Left • Horizontal Centering • Align Right NOTE: The default value is Align Left .
Vert. alignment	Select the vertical alignment. Options are: <ul style="list-style-type: none"> • Align Top • Vert. Centering • Align Bottom NOTE: The default value is Align Top .
Enable 3D Style	Select to enable or disable 3D style. Options are: <ul style="list-style-type: none"> • Yes • No NOTE: The default value is Yes .
Border Width	Select the border width. NOTE: The default value is 5 .
Color Setting - Border Color	Select the border color.

Function	Description
Color Setting - Border Color	Select the font color.
Color Setting - Background Color	Select the background color.

Click the **Coordinates** tab in the **RTC** window of the TP series text panel to display the contents as shown in the following figure.

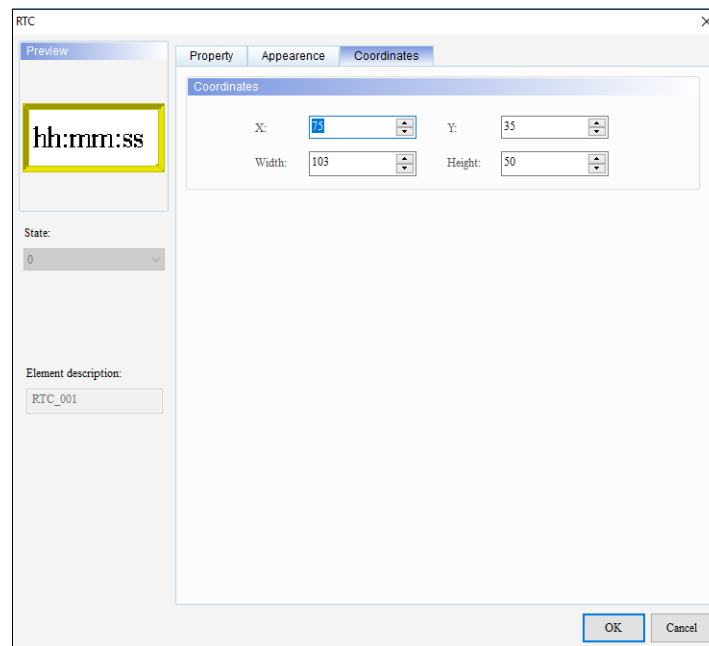


Figure 3 - 143: RTC window – Coordinates tab for TP70P series

The **Coordinates** tab in the **RTC** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the RTC element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the RTC element. Enter a value to change the Y coordinate.
Width	Displays the width for the RTC element. Enter a value to change the width.

Function	Description
Height	Displays the height for the RTC element. Enter a value to change the height.

3.5.12 Multistate Indicator

User can add a multistate image or text to a screen using the **Multistate Indicator** element.

3.5.12.1 Multistate Indicator in General Model TP Series Text Panel:

Follow these steps to add a Multistate Indicator element to the screen in a general model TP series text panel:

1. Click the **Element(O) > Multistate Indicator** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The Multistate Indicator element is added to the screen.

3. Double-click on the Multistate Indicator element to edit the properties.

Result: The **Multistate Indicator** window displays as shown in the following figure.

The Multistate Indicator window has three tabs for general model TP series text panel:

- Property
- Text
- Coordinates

The **Property** tab is the default tab.

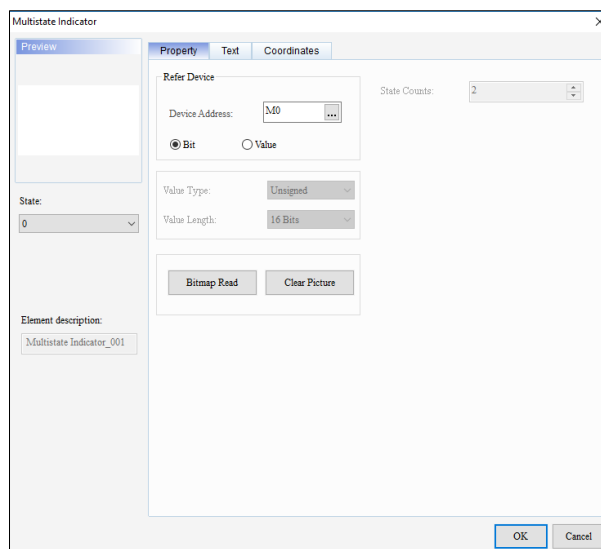


Figure 3 - 144: Multistate Indicator window – Property tab (Bit) for general model

The **Property** tab in the **Multistate Indicator** window for the general mode TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address that user want to display.
Refer Device – Bit	Select Bit if there are only 2 states. NOTE: The default value is Bit.
Refer Device - Value	Select Value , if there are multiple states.
Bitmap Read	Click to display the Open window to select a location and a .bmp file for the Bitmap.
Clear Picture	Click to delete the current Bitmap.

If user select **Bit**, user can select images corresponding to the values of 0 and 1. If user select **Value**, user can set up to a maximum of 255 states.

If user select **Value**, the **Multistate Indicator** window displays the **Property** tab as shown in the following figure.

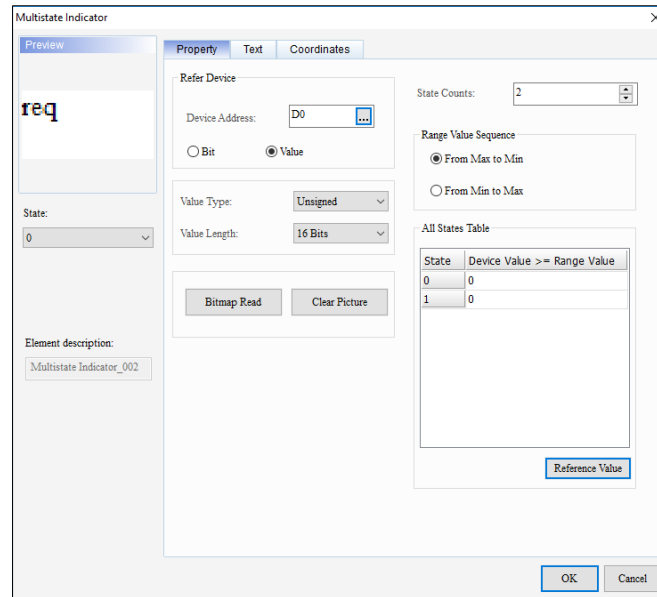


Figure 3 - 145: Multistate Indicator – Property tab (Value) for general model

The **Property** tab in the **Multistate Indicator** window for the general model TP series text panel displays **Value** properties as mentioned in the following table:

Function	Description
Range Value Sequence -From Max to Min	Select to define range values in descending order.
Range Value Sequence -From Min to Max	Select to define range values in ascending order.
All States Table	Enter the values for states from state0 to stateN, where N = (States Counts -1) .
All States Table Reference Value	Click the button to open Range Value Reference Value dialog box. Enter the Range Limit for Lower Bound and Upper Bound .

Click the **Text** tab in the **Multistate Indicator** window in the general model TP series text panel to display the contents as shown in the following figure.

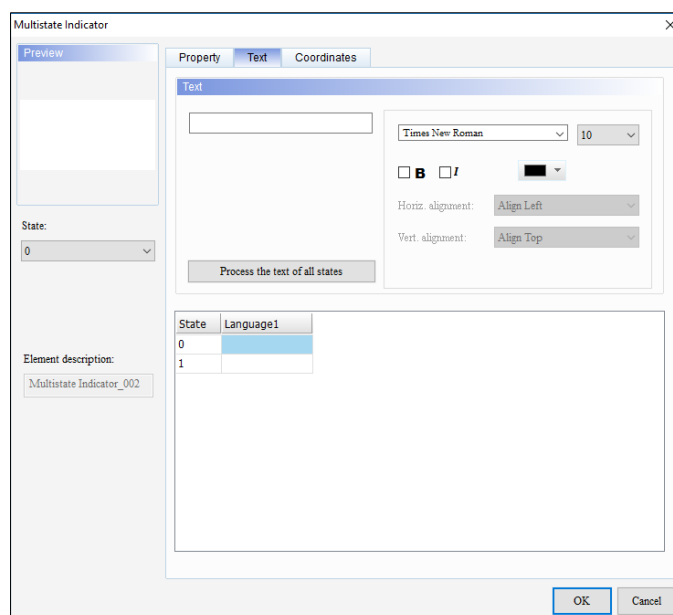


Figure 3 - 146: Multistate Indicator – Text tab for general model

The **Text** tab in the **Multistate Indicator** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Enter the text.
Process the text of all states	Click to copy the text in text field to paste in all the state.
Font Type field	Select the font type.
Font Size field	Select the font size.
Bold field	Select to bold the text.
Italic	Select to italicize the text.

Click the **Coordinates** tab in the **Multistate Indicator** window for the general model TP series text panel to display the contents as shown in the following figure.

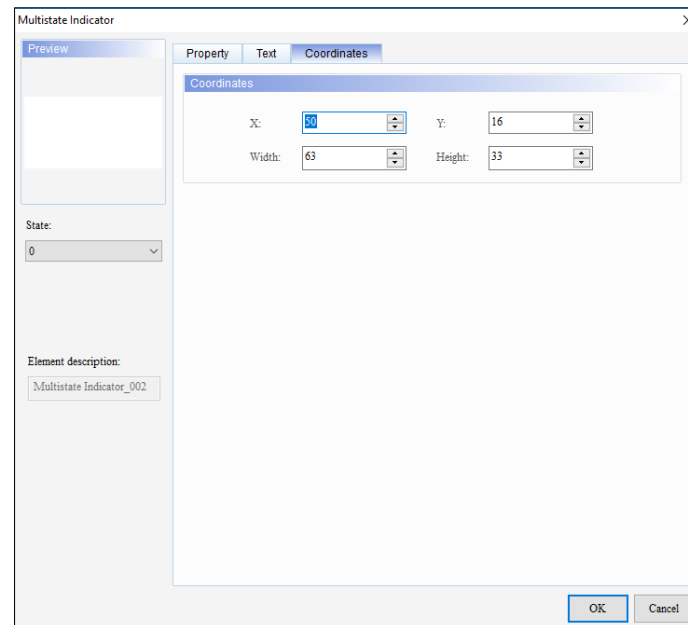


Figure 3 - 147: Multistate Indicator – Coordinates tab for general model

The **Coordinates** tab in the **Multistate Indicator** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Multistate Indicator element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Multistate Indicator element. Enter a value to change the Y coordinate.
Width	Displays the width for the Multistate Indicator element. Enter a value to change the width.
Height	Displays the height for the Multistate Indicator element. Enter a value to change the height.

- Set the properties as per user's requirements and click **OK**.

3.5.12.2 Multistate Indicator in TP70P Series Text Panel:

The steps for adding a Multistate Indicator element in the TP70P series text panel are the same as the steps for the general model TP series text panel. Refer [3.5.12.1 *Multistate Indicator in general model TP series text*](#) panel: for more information.

The **Multistate Indicator** window for the TP70P series text panel is shown in the following figure. The Multistate Indicator window has four tabs for the TP70P series text panel:

- Property
- Text
- Appearance
- Coordinates

The **Property** tab is the default tab.

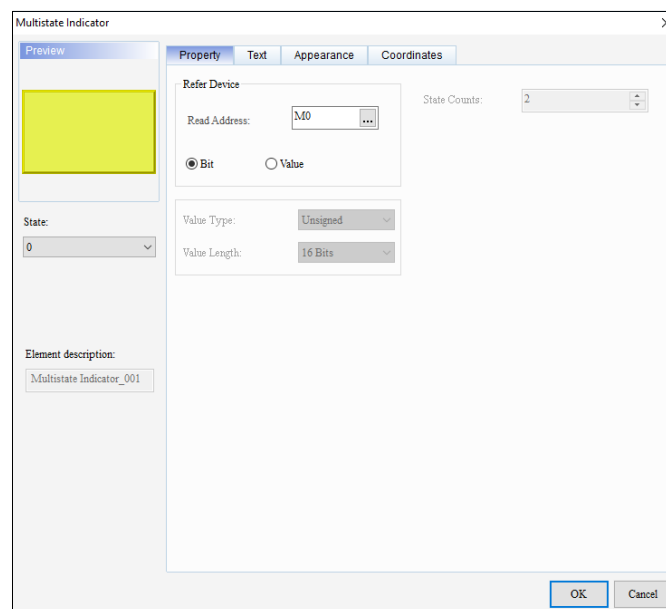


Figure 3 - 148: Multistate Indicator – Property tab (Bit) for TP70P series

The **Property** tab in the **Multistate Indicator** window for the TP70P series text panel displays properties as same as general model.

The **Property** tab in the **Multistate Indicator** window for the TP70P series text panel displays Value properties as mentioned in the following table:

Function	Description
Range Value Sequence - From Max to Min	Select to define range values in descending order.
Range Value Sequence - From Min to Max	Select to define range values in ascending order.
All States Table	Enter the values for states from state0 to stateN, where N = (States Counts -1) .
All States Table - Reference Value	Click the button to open Range Value Reference Value dialog box. Enter the Range Limit for Lower Bound and Upper Bound .

Click the **Text** tab in the **Multistate Indicator** window of the TP70P series text panel to display the contents as shown in the following figure.

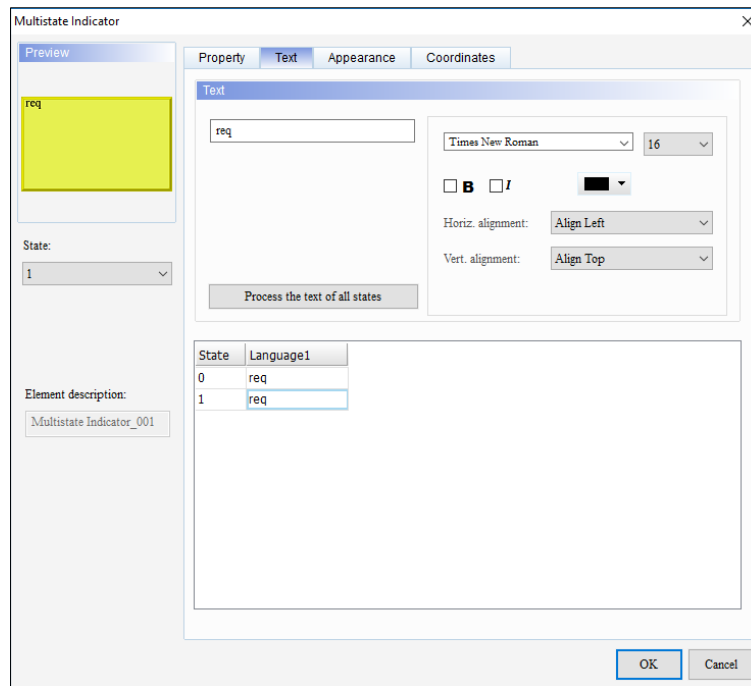


Figure 3 - 149: Multistate Indicator – Text tab for TP70P series

The **Text** tab in the **Multistate Indicator** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Text field	Enter the text.
Process the text of all states	Click to copy the text in text field to be past in all the states.
Font Type field	Select the font type.
Font Size field	Select the font size.
Bold field	Select to bold the text.
Italic	Select to italicize the text.
Horiz. alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> Align Left Horiz. Centering Align Right <p>NOTE: The default value is Align Left.</p>
Vert. alignment	Select the vertical alignment. Options are: <ul style="list-style-type: none"> Align Top

Function	Description
	<ul style="list-style-type: none"> • Vert. Centering • Align Bottom <p>NOTE: The default value is Align Top.</p>

Click the **Appearance** tab in the **Multistate Indicator** window of the TP70P series text panel to display the contents as shown in the following figure.

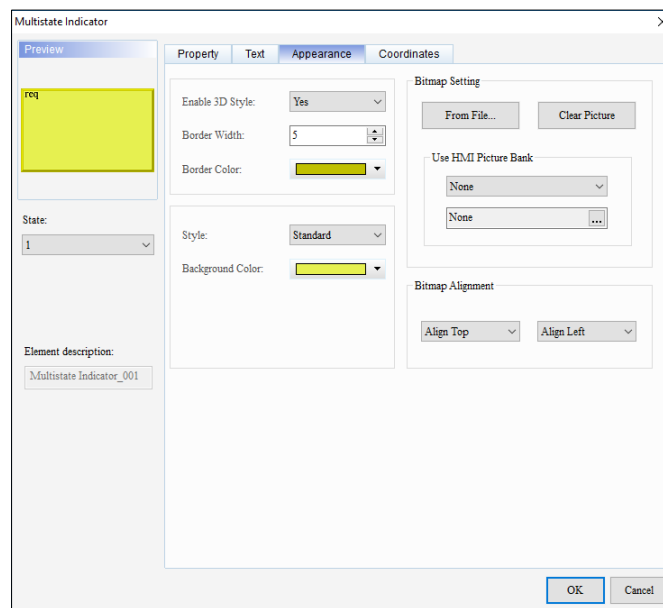


Figure 3 - 150: Multistate Indicator – Appearance tab for TP70P series

The **Appearance** tab in the **Multistate Indicator** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Enable 3D Style	Select enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Border Width	Select the border width.

Function	Description
	NOTE: The default value is 5 .
Border Color	Select the border color.
Background Color	Select the background color.
Style	Select the style. Options are: <ul style="list-style-type: none"> • Standard • Round NOTE: The default value is Standard .
Background Color	Select the background color.
Bitmap Setting – From File	Click to display the Open window to select a location and a .bmp file for the Bitmap.
Bitmap Setting – Clear Picture	Click to delete the current Bitmap.
User HMI Picture Bank	Click to select picture bank and an image in the picture bank.
Bitmap Alignment	Select vertical and horizontal alignment NOTE: The default values are Align Top and Align Left .

Click the **Coordinates** tab in the **Multistate Indicator** window of the TP70P series text panel to display the contents as shown in the following figure.

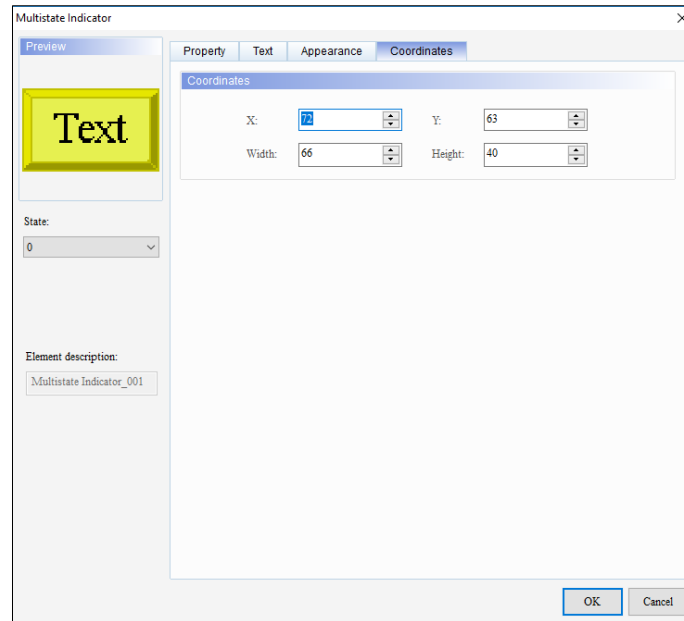


Figure 3 - 151: Multistate Indicator - Coordinates tab for TP70P series

The **Coordinates** tab in the **Multistate Indicator** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Multistate Indicator element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Multistate Indicator element. Enter a value to change the Y coordinate.
Width	Displays the width for the Multistate Indicator element. Enter a value to change the width.
Height	Displays the height for the Multistate Indicator element. Enter a value to change the height.

3.5.13 Measurement

User can display engineering unit on the screen of the TP series text panel using the **Measurement** element.

Follow these steps to add a Measurement element to a screen and edit the properties in a general model TP series text panel:

1. Click the **Element(O) > Measurement** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

Result: The Measurement element is added to the screen.

A sample Measurement for general models is shown in the following figure.



Figure 3 - 152: Measurement

2. Double-click the Measurement element to edit the properties.

Result: The **Measurement** window displays as shown in the following figure.

The Measurement window has two tabs for the general model TP series text panel:

- Property
- Coordinates

The **Property** tab is the default tab.

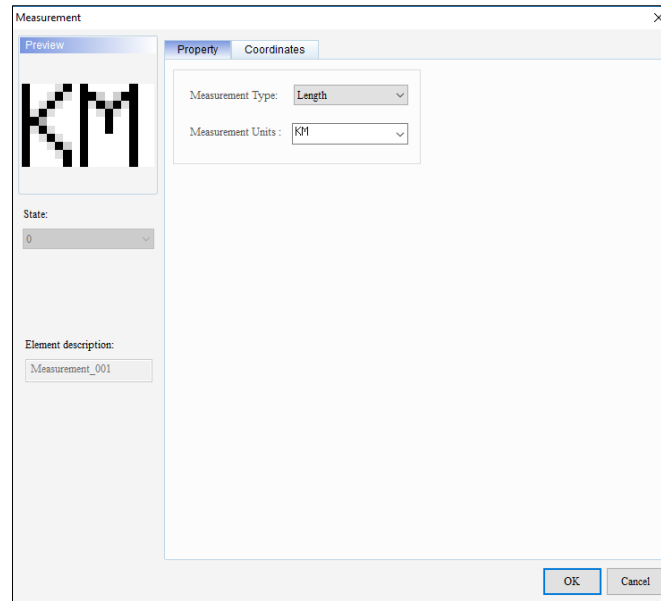


Figure 3 - 153: Measurement window - Property tab for general model

The **Property** tab in the **Measurement** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Measurement Type	Select the measurement type. Options are: <ul style="list-style-type: none"> • Length • Square Measure • Volume/Solid Measure • Weight • Speed • Time • Temperature <p>NOTE: The default value is Length.</p>
Measurement Units	Select the measurement units. Options available depends on the Measurement Type. <p>Options available for Length are:</p>

Function	Description																															
	<div> <table border="1"> <tr><td>KM</td></tr> <tr><td>M</td></tr> <tr><td>CM</td></tr> <tr><td>MM</td></tr> <tr><td>MILE</td></tr> <tr><td>FT</td></tr> <tr><td>IN</td></tr> </table> </div> <p>Options available for Square Measure are:</p> <div> <table border="1"> <tr><td>KM²</td></tr> <tr><td>M²</td></tr> <tr><td>CM²</td></tr> <tr><td>MILE²</td></tr> <tr><td>FT²</td></tr> <tr><td>IN²</td></tr> </table> </div> <p>Options available for Volume/Solid Measure are:</p> <div> <table border="1"> <tr><td>M³</td></tr> <tr><td>CM³</td></tr> <tr><td>FT³</td></tr> <tr><td>IN³</td></tr> </table> </div> <p>Options available for Weight are:</p> <div> <table border="1"> <tr><td>kg</td></tr> <tr><td>g</td></tr> <tr><td>mg</td></tr> <tr><td>lb</td></tr> </table> </div> <p>Options available for Speed are:</p> <div> <table border="1"> <tr><td>KM/SEC</td></tr> <tr><td>M/SEC</td></tr> <tr><td>FT/SEC</td></tr> <tr><td>MILE/SEC</td></tr> </table> </div> <p>Options available for Time are:</p> <div> <table border="1"> <tr><td>ms</td></tr> <tr><td>s</td></tr> <tr><td>min</td></tr> <tr><td>h</td></tr> </table> </div> <p>Options available for Temperature are:</p> <div> <table border="1"> <tr><td>°C</td></tr> <tr><td>°F</td></tr> </table> </div>	KM	M	CM	MM	MILE	FT	IN	KM ²	M ²	CM ²	MILE ²	FT ²	IN ²	M ³	CM ³	FT ³	IN ³	kg	g	mg	lb	KM/SEC	M/SEC	FT/SEC	MILE/SEC	ms	s	min	h	°C	°F
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lb																																
KM/SEC																																
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FT/SEC																																
MILE/SEC																																
ms																																
s																																
min																																
h																																
°C																																
°F																																

Click the **Coordinates** tab in the **Measurement** window of the general model TP series text panel to display the contents as shown in the following figure.

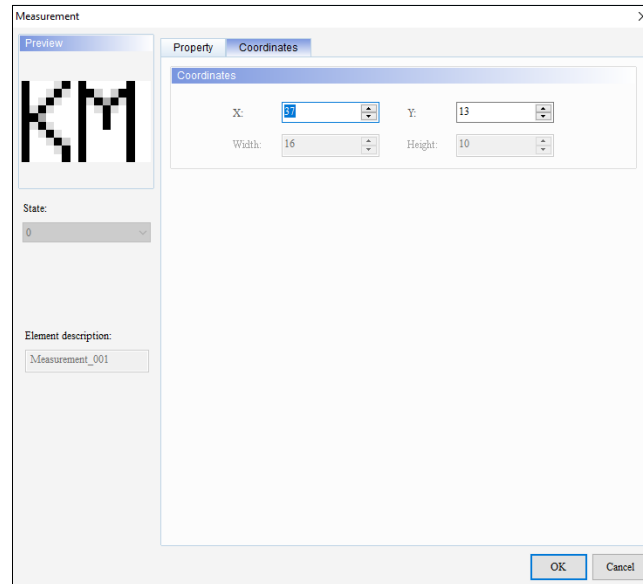


Figure 3 - 154: Measurement window - Coordinates tab for general model

The **Coordinates** tab in the **Measurement** window for the general model TP series text panel displays properties as mentioned in the following table:



Function	Description
X	Displays the X coordinate for the Measurement element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Measurement element. Enter a value to change the Y coordinate.
Width	Displays the width for the Measurement element. NOTE: Width is read-only.
Height	Displays the height for the Measurement element. NOTE: Height is read-only.

3. Set the properties as per user's requirements and click **OK** Button.

3.5.14 Numeric Input

User can write a value to a related device address in the TP series text panel using the **Numeric Input** element.

The Numeric Input element for the general model and TP70P series text panel is shown in the following table:

Element	General Model	TP70P series
Numeric Input		

3.5.14.1 Numeric Input Element in General Model TP Series Text Panel:

Follow these steps to add a Numeric Input element to a screen and edit the properties in a general model TP series text panel:

1. Click the **Element(O) > Numeric Input** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The Numeric Input element is added to the screen.

3. Double-click the Numeric Input element to edit the properties.

Result: The **Numeric Input** window displays as shown in the following figure.

The Numeric Input window has two tabs for the general model TP series text panel:

- Property
- Coordinates

The **Property** tab is the default tab.

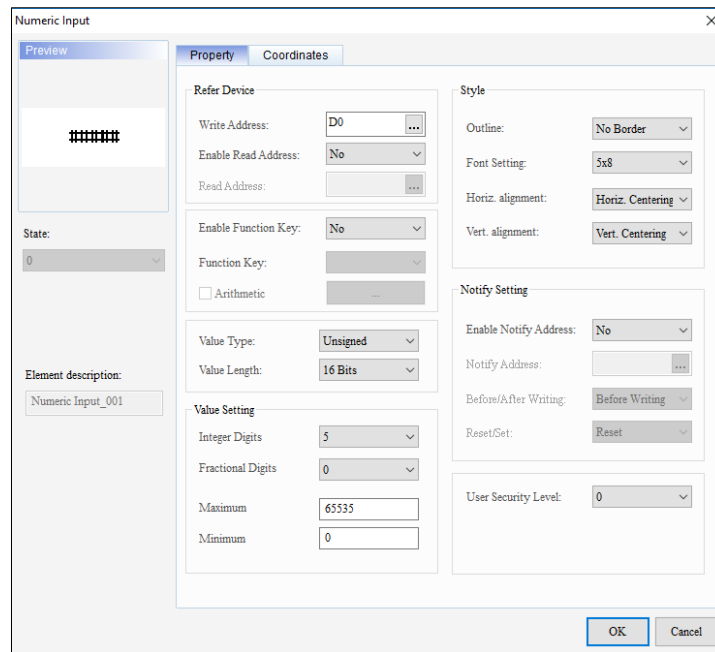



Figure 3 - 155: Numeric Input window - Property tab for general model

The **Property** tab in the **Numeric Input** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address to write the value.
Refer Device – Enable Read Address	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Refer Device – Read Address	Select the device address to read the value. This field is enabled only when the Enable Read Address is set to Yes .
Enable Function Key	Select whether to enable or disable the function key. <p>NOTE: The default value is No.</p>
Function Key	Select the function key from the drop-down menu. <p>NOTE: This field is enabled when Enable Function Key is set to Yes.</p>

Function	Description
Arithmetic	Select the check box to perform an arithmetic operation on the device address. Click <input type="checkbox"/> to open the Operation Setting dialog box.
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Value Setting – Integer Digits	Select the number of integer places. Options are: <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 5.</p>
Value Setting – Fractional Digits	Select the number of decimal places. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 • 5 <p>NOTE: The default value is 0.</p>
Value Setting - Maximum	Enter the maximum value of the numeric input. <p>NOTE: The default value is 65535.</p>
Value Setting – Minimum	Enter the minimum value of the numeric input. <p>NOTE: The default value is 0.</p>

Function	Description
Style – Outline	Select the border type. Options are: <ul style="list-style-type: none"> • No Border • Single Border • Double Border • Thick Border • Dot Border • Dotted Line Border <p>NOTE: The default value is No Border.</p>
Style – Font Setting	Select the Font Setting. Options are: <ul style="list-style-type: none"> • 5x8 • 8x8 • 8x12 • 8x16 <p>NOTE: The default value is 5x8.</p>
Style – Horiz. alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> • Align Left • Horiz. Centering • Align Right <p>NOTE: The default value is Horiz. Centering.</p>
Style – Vert. alignment	Select the vertical alignment. Options are: <ul style="list-style-type: none"> • Align Top • Vert. Centering • Align Bottom <p>NOTE: The default value is Vert. Centering.</p>
Notify Setting – Enable Notify Address	Select to enable the notify address. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Notify Setting – Notify Address	Select the notify address. <p>NOTE: This is enabled if Enable Notify Address is set to Yes.</p>

Function	Description
Notify Setting – Before/After Writing	Select to notify before writing or after writing. Options are: <ul style="list-style-type: none"> • Before Writing • After Writing <p>NOTE: This is enabled if Enable Notify Address is set to Yes. The default value is Before Writing.</p>
Notify Setting – Reset/Set	Select to set or reset the variable. Options are: <ul style="list-style-type: none"> • Reset • Set <p>NOTE: This is enabled if Enable Notify Address is set to Yes. The default value is Reset.</p>
User Security Level	Select the user security level. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 <p>NOTE: The default value is 0. Click  icon to open User-Level Password Setting window to set the passwords for various user levels. For the setting method, refer to 3.7.2 User-Level Password Setting</p>

Click the **Coordinates** tab in the **Numeric Input** window of the general model TP series text panel to display the contents as shown in the following figure.

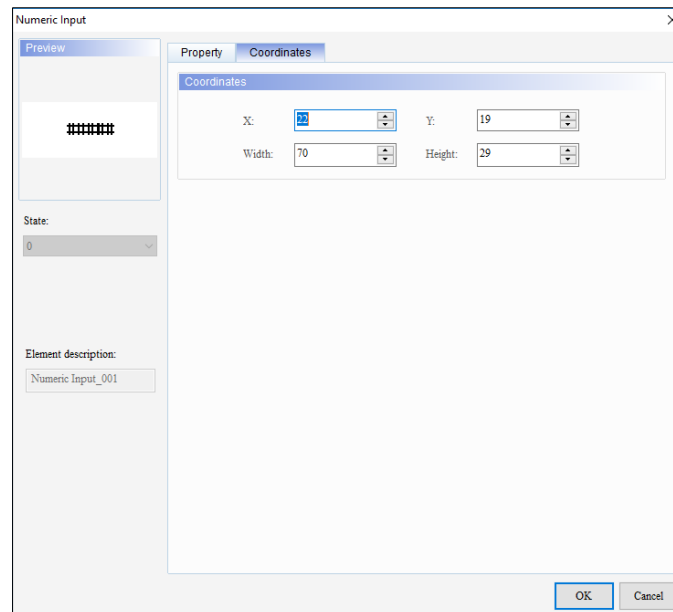


Figure 3 - 156: Numeric Input window - Coordinates tab for general model

The **Coordinates** tab in the **Numeric Input** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Numeric Input element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Numeric Input element. Enter a value to change the Y coordinate.
Width	Displays the width for the Numeric Input element. Enter a value to change the width.
Height	Displays the height for the Numeric Input element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK** button.

3.5.14.2 Numeric Input Element in TP70P Series Text Panel:

The steps for adding a Numeric Input element in the TP70P series text panel are the same as the steps for the general model TP series text panel. Refer [3.5.14.1 *Numeric Input element in general model TP series text*](#) panel: for more information.

The **Numeric Input** window in the TP70P series text panel is shown in the following figure. The Numeric Input window has three tabs in the TP70P series text panel:

- Property
- Appearance
- Coordinates

The **Property** tab is the default tab.

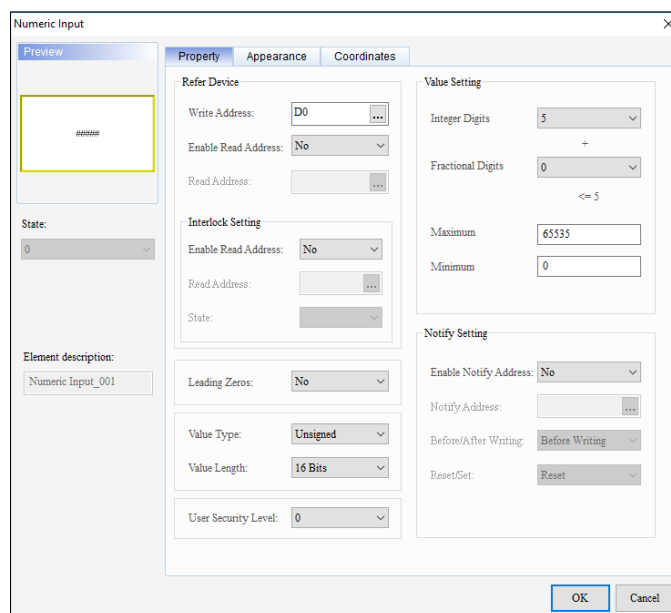



Figure 3 - 157: Numeric Input window – Property tab for TP70P series

The **Property** tab in the **Numeric Input** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Refer Device - Device Address	Select the device address to write the value.
Refer Device – Enable Read Address	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Refer Device – Read Address	Select the device address to read the value. This field is enabled only when the Enable Read Address is set to Yes .
Interlock Settings – Enable Read Address	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Interlock Settings – Read Address	Click <input type="button" value="..."/> button to open the Refer Device window to select the interlock for the Numeric Input controls. <p>NOTE: The Read Address is disabled by default.</p>
Interlock Settings - State	Select the OFF(0) or ON(1) state of the Read Address in which to apply the interlock to the Numeric Input controls. Options are: <ul style="list-style-type: none"> • OFF • ON <p>NOTE: The default value is OFF.</p>
Leading Zeros	Select to enable or disable leading zeros. <p>NOTE: The default value is No.</p>
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD • ASCII • Binary • Float

Function	Description
	NOTE: The default value is Unsigned .
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits .
User Security Level	Select the user security level. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 NOTE: The default value is 0 . Click on the  button to open User-Level Password Setting window to set the passwords for various user levels. For the setting method, refer to <u>3.7.2 User-Level Password Setting</u>
Value Setting – Integer Digits	Select the number of integer places. Options are: <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 NOTE: The default value is 5 .
Value Setting – Fractional Digits	Select the number of decimal places. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 • 5 NOTE: The default value is 0 .
Value Setting - Maximum	Enter the maximum value for the numeric input. NOTE: The default value is 65535 .

Function	Description
Value Setting – Minimum	Enter the minimum value for the numeric input. NOTE: The default value is 0 .
Notify Setting – Enable Notify Address	Select to enable the notify address. Options are: <ul style="list-style-type: none"> • No • Yes NOTE: The default value is No .
Notify Setting – Notify Address	Select the notify address. NOTE: This is enabled if Enable Notify Address is set to Yes .
Notify Setting – Before/After Writing	Select to notify before writing or after writing. Options are: <ul style="list-style-type: none"> • Before Writing • After Writing NOTE: This is enabled if Enable Notify Address is set to Yes . The default value is Before Writing .
Notify Setting – Reset/Set	Select to set or reset the variable. Options are: <ul style="list-style-type: none"> • Reset • Set NOTE: This is enabled if Enable Notify Address is set to Yes . The default value is Reset .

Click the **Appearance** tab in the **Numeric Input** window of the TP70P series text panel to display the contents as shown in the following figure.

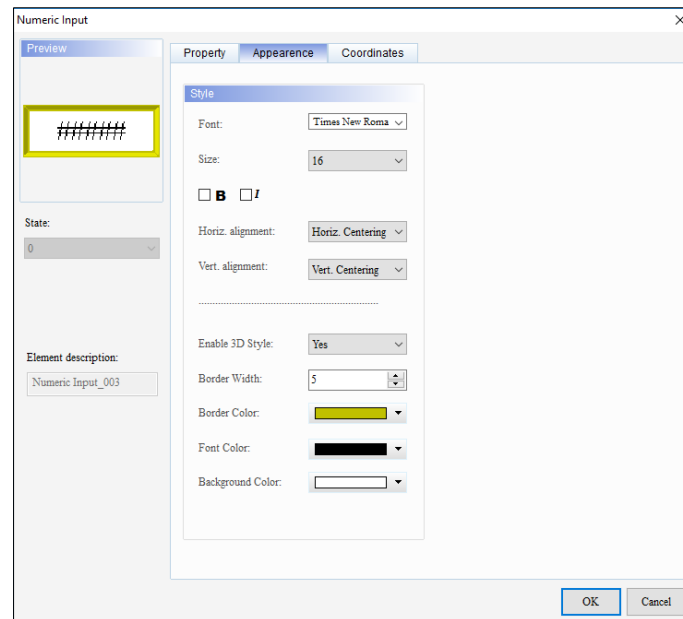


Figure 3 - 158: Numeric Input window - Appearance tab for TP70P series

The **Appearance** tab in the **Numeric Input** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
Style – Font	Select the font type.
Style – Size	Select the font size.
Style – Bold	Select to bold the number.
Style – Italic	Select to italicize the number.
Style – Horiz. alignment	Select the horizontal alignment. Options are: <ul style="list-style-type: none"> Align Left Horiz. Centering Align Right <p>NOTE: The default value is Align Left.</p>
Style – Vert. alignment	Select the vertical alignment. Options are: <ul style="list-style-type: none"> Align Top Vert. Centering Align Bottom <p>NOTE: The default value is Align Top.</p>

Function	Description
Style – Enable 3D Style	Select to enable or disable 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Style – Border Width	Select the border width. <p>NOTE: The default value is 5.</p>
Style – Border Color	Select the border color.
Style – Font Color	Select the font color.
Style – Background Color	Select the background color.

Click the **Coordinates** tab in the **Numeric Input** window of the TP70P series text panel to display the contents as shown in the following figure.

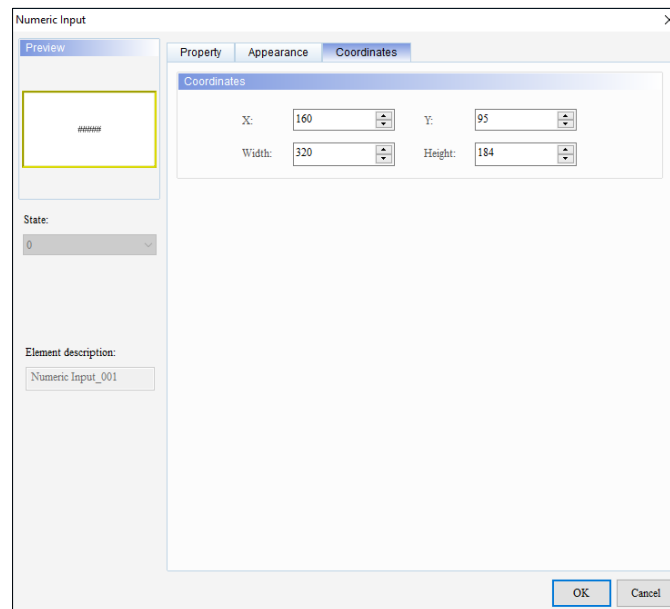


Figure 3 - 159: Numeric Input window – Coordinates tab for TP70P series


The **Coordinates** tab in the **Numeric Input** window for the TP70P series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Numeric Input element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Numeric Input element. Enter a value to change the Y coordinate.
Width	Displays the width for the Numeric Input element. Enter a value to change the width.
Height	Displays the height for the Numeric Input element. Enter a value to change the height.

3.5.15 Curve

User can represent the values in registers by displaying two curves on the screen of a TP series text panel with the **Curve** element.

Follow these steps to add a Curve element to a screen and edit the properties in a general model TP series text panel:

1. Click the **Element(O) > Curve** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Curve element is added to the screen.

3. Double-click the Curve element to edit the properties.

Result: The **Curve** window displays as shown in the following figure. The **Curve** window has two tabs for general model TP series text panel:

- Property
- Coordinates

The **Property** tab is the default tab.

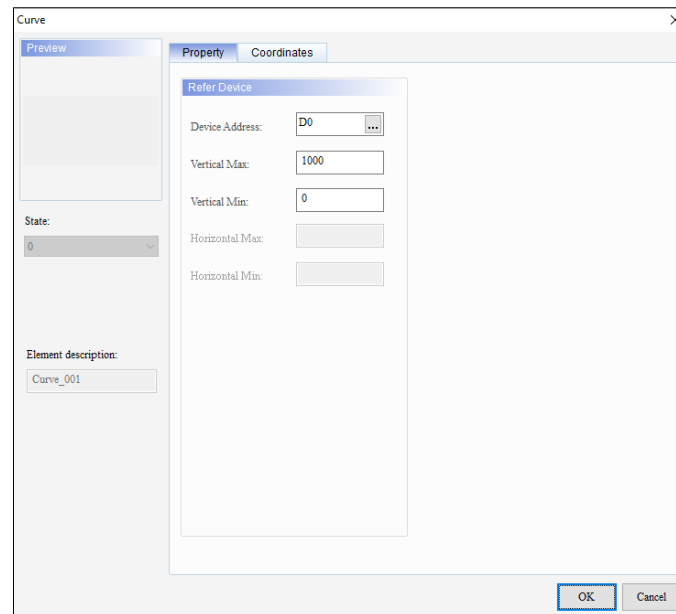


Figure 3 - 160: Curve window - Property tab for general model

The **Property** tab in the **Curve** window for the general TP series text panel displays properties as mentioned in the following table:

Function	Description
Device Address	Select the device address that user want to display in the Curve.
Vertical Max	Enter the maximum value to be read.
Vertical Min	Enter the minimum value to be read.
Horizontal Max	Not available.
Horizontal Min	Not available.

NOTE: If the value in the register is not in the range of the **Vertical Min ~ Vertical Max** values, it will not be represented by a point on the **Curve**.

The rule of the sampling points:

Suppose the Device Address is D0. The number of points that are stored depends on the value in D0. The maximum number of points that can be sampled is 100. The

odd register numbers (D1, D3,...) are in a group, and the even register numbers (D2, D4,...) are in another group. Two curves are drawn.

Example:

D0: Number of points stored

D1: First point of the first curve

D2: First point of the second curve

D3: Second point of the first curve

D4: Second point of the second curve

The series of values are represented by curves displayed on the screen of a TP series text panel.

Click the **Coordinates** tab in the **Curve** window of the general model TP series text panel to display the contents as shown in the following figure.

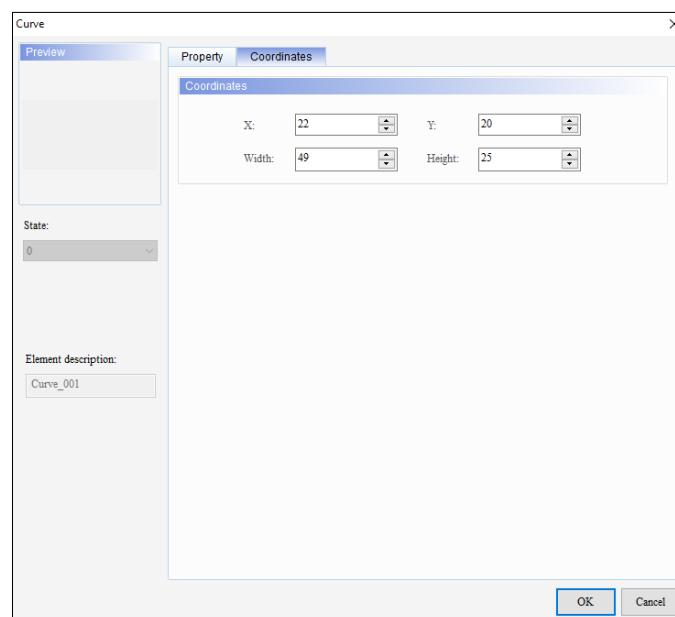


Figure 3 - 161: Curve window - Coordinates tab for general model

The **Coordinates** tab in the **Curve** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the Curve element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Curve element. Enter a value to change the Y coordinate.
Width	Displays the width for the Curve element. Enter a value to change the width.
Height	Displays the height for the Curve element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.16 X-Y Curve

User can represent the values in registers by an X-Y curve on the screen of a TP series text panel with the **X-Y Curve** element.

Follow these steps to add a X-Y Curve element to a screen and edit the properties in a general model TP series text panel:

1. Click the **Element(O) > X-Y Curve** in **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The X-Y Curve element is added to the screen.

3. Double-click the X-Y Curve element to edit the properties.

Result: The **X-Y Curve** window displays as shown in the following figure. The X-Y Curve window has two tabs for general model TP series text panel:

- Property

- Coordinates

The **Property** tab is displayed by default.

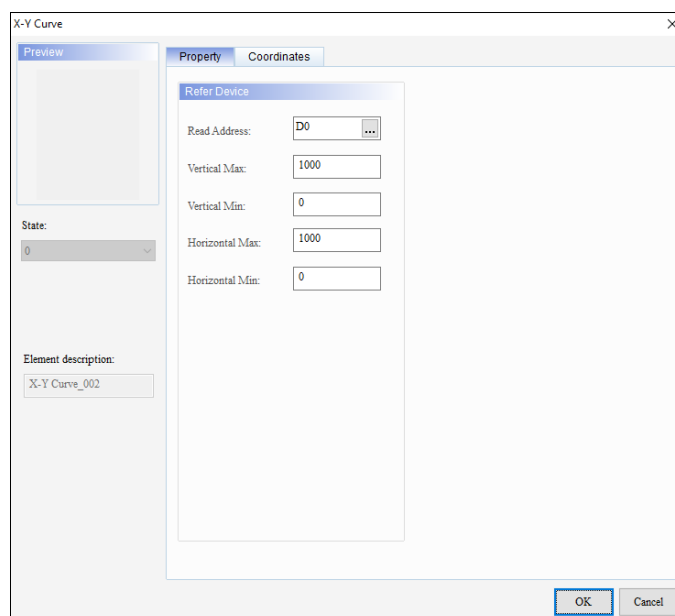


Figure 3 - 162: X-Y Curve window - Property tab for general model

The **Property** tab in the **X-Y Curve** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
Device Address	Select the device address in which the number of points to be displayed in the Curve has to be stored.
Vertical Max	Enter the maximum value that can be plotted along the vertical axis.
Vertical Min	Enter the minimum value that can be plotted along the vertical axis.
Horizontal Max	Enter the maximum value that can be plotted along the horizontal axis.
Horizontal Min	Enter the minimum values that can be plotted along the horizontal axis.

NOTE: *If the value in the register is not in the range of the **Vertical Min ~ Vertical Max** or in the range of the **Horizontal Max ~ Horizontal Min** values, it is not represented by a point in the **X-Y Curve**.*

The rule of sampling points:

Suppose the **Read Address** is D0. The number of points which are stored depends on the value in D0. The maximum number of points that can be sampled is 100. D1 and D2 define the x-coordinate and y-coordinate of the first point, D3 and D4 define the x-coordinate and y-coordinate of the second point, and so on. An X-Y Curve is drawn.

D0: Number of points stored

D1: X-coordinate of the first point on the X-Y Curve

D2: Y-coordinate of the first point on the X-Y Curve

D3: X-coordinate of the second point on the X-Y Curve

D4: Y-coordinate of the second point on the X-Y Curve

The series of values are represented by an X-Y curve displayed on the screen of a TP series text panel.

Click on the **Coordinates** tab in the **X-Y Curve** window of the general model TP series text panel to display the contents as shown in the following figure.

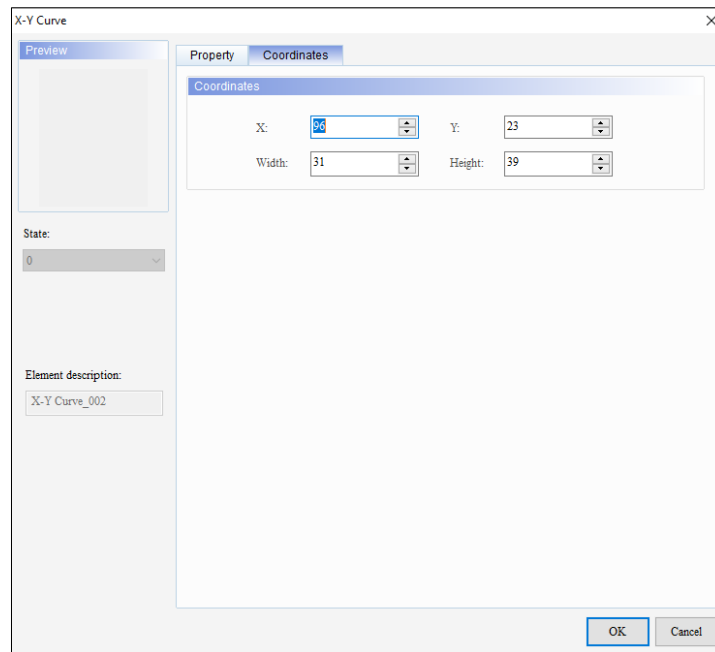


Figure 3 - 163: X-Y Curve window - Coordinates tab for general model

The **Coordinates** tab in the **X-Y Curve** window for the general model TP series text panel displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the X-Y Curve element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the X-Y Curve element. Enter a value to change the Y coordinate.
Width	Displays the width for the X-Y Curve element. Enter a value to change the width.
Height	Displays the height for the X-Y Curve element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK** button.

3.5.17 Alarm

DIAScreen supports three types of Alarm functions for the TP70P series text panels as shown in the following figure.

- Active Alarm List
- Alarm History Table
- Alarm Moving Sign

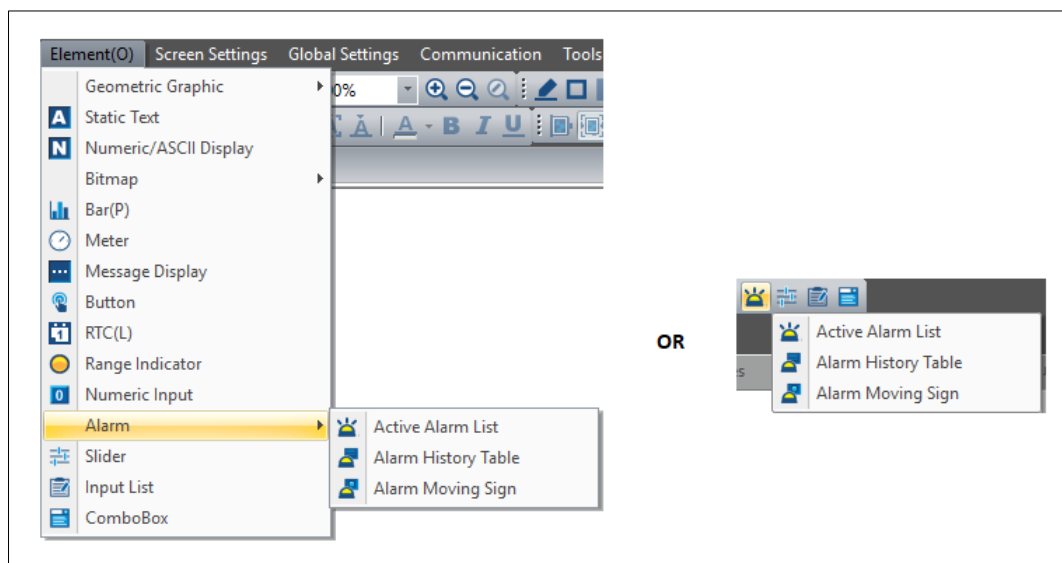


Figure 3 - 164: Alarm element

3.5.17.1 Active Alarm List:

An Alarm list must be used with a System Alarm Buzzer as mentioned in section [3.7.6 System Alarm Buzzer Setting](#). If an alarm condition is met, the current active alarm displays. The Alarms display in the TP70P series text panel with the **Active Alarm List** element.

Follow these steps to add an Active Alarm List to a screen and edit the properties in a TP70P series text panel:

1. Click the **Element(O) > Alarm > Active Alarm List** on the **Menu** bar, or

Click the  icon on the **Element Selection** Toolbar.

2. Click the screen and drag the mouse to the required dimensions.

Result: The Active Alarm List element is added to the screen.

A sample Active Alarm List displays as shown in the following figure.

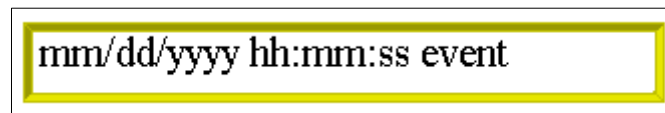


Figure 3 - 165: Active Alarm List

3. Double-click the **Active Alarm List** element to edit the properties

Result: The **Active Alarm List** window displays as shown in the following figure.

The Active Alarm List window has two tabs:

- Property
- Coordinates

The **Property** tab is displayed by default.

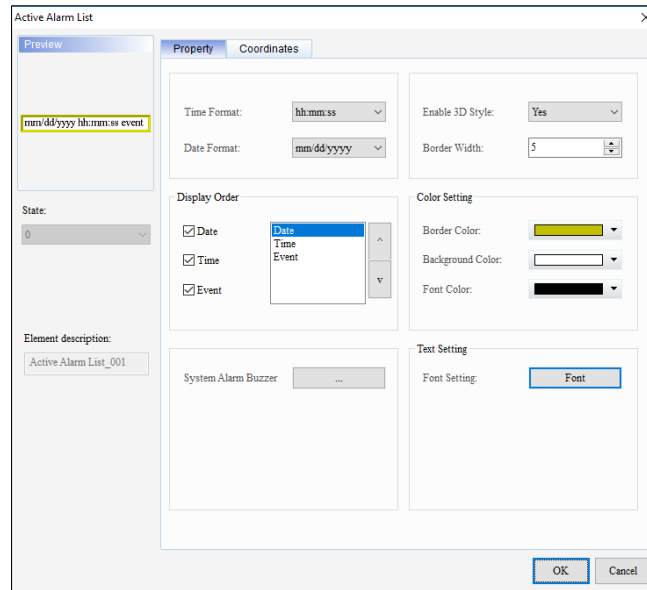


Figure 3 - 166: Active Alarm List window - Property tab for TP70P series

The **Property** tab in the **Active Alarm List** window displays properties as mentioned in the following table:

Function	Description
Time Format	<p>Select the time format. Options are:</p> <ul style="list-style-type: none"> • hh:mm:ss • hh:mm • ss:hh:mm • hh <p>NOTE: The default value is hh:mm:ss.</p>
Date Format	<p>Select the date format. Options are:</p> <ul style="list-style-type: none"> • mm/dd/yyyy • dd/mm/yyyy • yyyy/mm/dd • yyyy/dd/mm <p>NOTE: The default value is mm/dd/yyyy.</p>
Display Order – Date	<p>Select to display or hide the Date.</p> <p>NOTE: The Date is selected by default.</p>

Function	Description
Display Order – Time	Select to display or hide the Time NOTE: The Time is selected by default.
Display Order – Event	Select to display or hide the Event . NOTE: Event is selected by default.
Display Order - Selection field	Use the up and down arrows to select the order in which to display the Date , Time and Event . NOTE: Date, Time, Event is the default order.
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No NOTE: The default value is Yes .
Border Width	Select the border width. NOTE: The default value is 5 .
Color Settings – Border Color	Select the border color.
Color Settings – Background Color	Select the background color.
Color Settings – Font Color	Select the font color.
System Alarm Buzzer	Click to open the System Alarm Buzzer Setting dialog box.
Text Settings – Font Settings - Font	Click Font to open the Font Setting dialog box to set the following properties: <ul style="list-style-type: none"> • Font • Size • Bold • Italics Click on OK to save settings.

Click the **Coordinates** tab in the **Active Alarm List** window of the TP70P series text panel to display the contents as shown in the following figure.

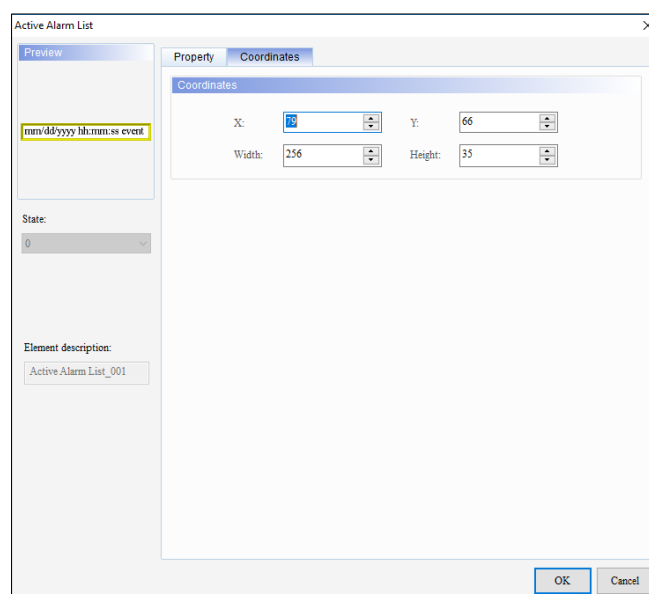


Figure 3 - 167: Active Alarm List window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Active Alarm List** window displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate of the Active Alarm List. Enter a value to change the X coordinate.
Y	Displays the Y coordinate of the Active Alarm List. Enter a value to change the Y coordinate.
Width	Displays the width of active alarm list. Enter a value to change the width.
Height	Displays the height of active alarm list. Enter a value to change the height.


- Set the properties as per user's requirements and click on **OK** button.

3.5.17.2 Alarm History Table:

A historical alarm is used with the system alarm buzzer as mentioned in section [3.7.6 System Alarm Buzzer Setting](#) If the value in the selected device address is set

to 1, it clear all the historical records. A historical alarm shows up to a maximum of 256 records. After 256th record, the next record replaces the very first record shown in the historical alarm. User can display historical alarms in a TP70P series text panel with the **Alarm History Table** element.

Follow these steps to add an Alarm History Table to a screen and edit the properties in a TP70P series text panel:

1. Click the **Element(O) > Alarm > Alarm History table** on **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Alarm History Table element is added to the screen.

A sample Alarm History Table displays as shown in the following figure.

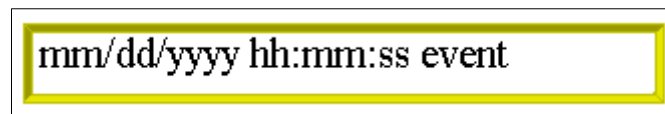


Figure 3 - 168: Alarm History Table

3. Double-click the Alarm History Table element to edit the properties.

Result: The **Alarm History Table** window displays as shown in the following figure. The Alarm History Table window has two tabs:

- Property
- Coordinates

The **Property** tab is displayed by default.

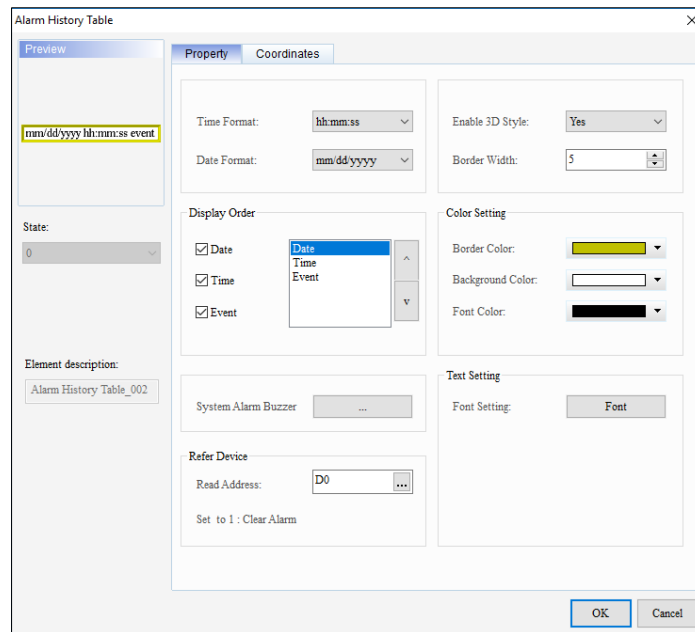


Figure 3 - 169: Alarm History Table window - Property tab for TP70P series

The **Property** tab in the **Alarm History Table** window displays properties as mentioned in the following table:

Function	Description
Time Format	<p>Select the time format. Options are:</p> <ul style="list-style-type: none"> • hh:mm:ss • hh:mm • ss:hh:mm • hh <p>NOTE: The default value is hh:mm:ss.</p>
Date Format	<p>Select the date format. Options are:</p> <ul style="list-style-type: none"> • mm/dd/yyyy • dd/mm/yyyy • yyyy/mm/dd • yyyy/dd/mm <p>NOTE: The default value is mm/dd/yyyy.</p>
Display Order – Date	<p>Select to display or hide the Date.</p>

Function	Description
	NOTE: Date is selected by default.
Display Order – Time	Select to display or hide the Time . NOTE: Time is selected by default.
Display Order – Event	Select to display or hide the Event . NOTE: Event is selected by default.
Display Order - Selection field	Use the up and down arrows to select the order in which to display the Date, Time and Event NOTE: Date, Time, Event is the default order.
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No NOTE: The default value is Yes .
Border Width	Select the border width. NOTE: The default value is 5 .
Color Settings – Border Color	Select the border color.
Color Settings – Background Color	Select the background color.
Color Settings – Font Color	Select the font color.
System Alarm Buzzer	Click to open the System Alarm Buzzer Setting dialog box.
Text Settings – Font Settings - Font	Click Font to open the Font Setting dialog box to can set the following properties: <ul style="list-style-type: none"> • Font • Size • Bold • Italics Click OK to save settings.
Refer Device – Read Address	Select the variable reference address. If the value in the selected device address is 1, clear all historical records.

Click the **Coordinates** tab in the **Alarm History Table** window of the TP70P series text panel to display the contents as shown in the following figure.

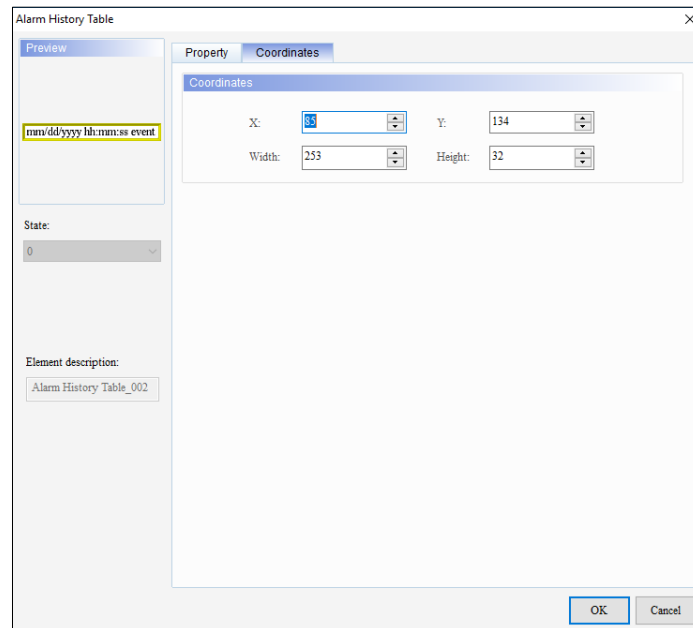


Figure 3 - 170: Alarm History Table window - Coordinates tab for TP70P series

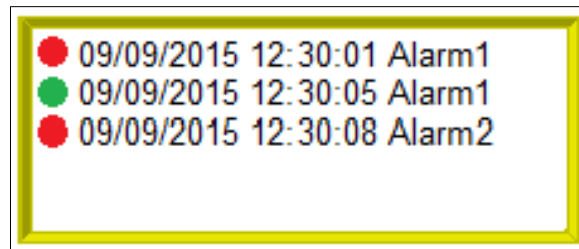
The **Coordinates** tab in the **Alarm History Table** window displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate of the Alarm History Table element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate of the Alarm History Table element. Enter a value to change the Y coordinate.
Width	Displays the width of Alarm History Table element. Enter a value to change the width.
Height	Displays the height of Alarm History Table element. Enter a value to change the height.

- Set the properties as per user's requirements and click on **OK** button.

When system conditions are met, the message in **Alarm History Table** appears in chronological order. Red or green color LEDs display to the left side of the alarm

messages. The red color LED is the time the alarm condition is met and the green color LED is the time the alarm condition releases. An example of Alarm History Table display is shown in the following figure.




●	09/09/2015 12:30:01 Alarm1
●	09/09/2015 12:30:05 Alarm1
●	09/09/2015 12:30:08 Alarm2

Figure 3 - 171: Alarm History Table - example

3.5.17.3 Alarm Moving Sign:

A scrolling alarm is used with a system alarm buzzer as mentioned in section [3.7.6 System Alarm Buzzer Setting](#). If an alarm condition is met, a scrolling alarm appears and the text corresponding to the condition scrolls in the direction set. User can add a scrolling alarm to a TP70P series text panel screen with the **Alarm Moving Sign** element.

Follow these steps to add an Alarm Moving Sign to a screen and edit the properties in a TP70P series text panel:

1. Click the **Element(O) > Alarm > Alarm Moving Sign** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Alarm Moving Sign element is added to the screen.

A sample Alarm Moving Sign displays as shown in the following figure.

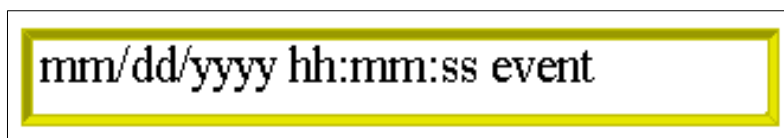


Figure 3 - 172: Alarm Moving Sign

3. Double-click the Alarm Moving Sign element.

Result: The **Alarm Moving Sign** window displays as shown in the following figure. The Alarm Moving Sign window has two tabs:

- Property
- Coordinates

The **Property** tab displays by default.

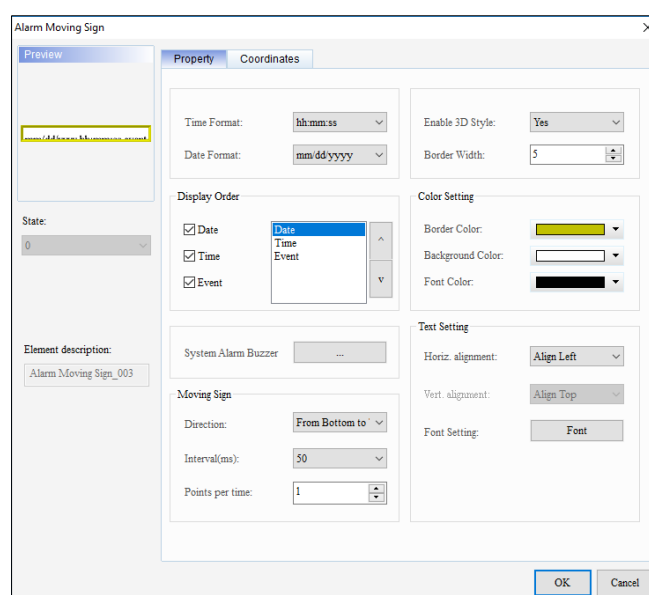


Figure 3 - 173: Alarm Moving Sign window - Property tab for TP70P series

The **Property** tab in the **Alarm Moving Sign** window displays properties as mentioned in the following table:

Function	Description
Time Format	Select the time format. Options are: <ul style="list-style-type: none"> • hh:mm:ss • hh:mm • ss:hh:mm • hh <p>NOTE: The default value is hh:mm:ss.</p>
Date Format	Select the date format. Options are: <ul style="list-style-type: none"> • mm/dd/yyyy • dd/mm/yyyy • yyyy/mm/dd • yyyy/dd/mm <p>NOTE: The default value is mm/dd/yyyy.</p>
Display Order – Date	Select to display or hide the Date <p>NOTE: Date is selected by default.</p>
Display Order – Time	Select to display or hide the Time <p>NOTE: Time is selected by default.</p>
Display Order – Event	Select to display or hide the Event <p>NOTE: The Event is selected by default.</p>
Display Order - Selection field	Use the up and down arrows to select the order in which to display of Date , Time and Event . <p>NOTE: Date, Time, Event is the default order.</p>
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Border Width	Select the border width. <p>NOTE: The default value is 5.</p>
Color Settings – Border Color	Select the border color.

Function	Description
Color Settings – Background Color	Select the background color.
Color Settings – Font Color	Select the font color.
System Alarm Buzzer	Click to open the System Alarm Buzzer Setting window.
Text Settings – Horiz. alignment	<p>Select the horizontal text alignment. Options are:</p> <ul style="list-style-type: none"> • Align Left • Horiz. Centering • Align Right <p>NOTE: <i>Horiz. alignment</i> is disabled when <i>Direction</i> is set to <i>From Left to Right</i> or <i>From Right to Left</i>. The default value is Align Left.</p>
Text Settings – Font Settings - Font	<p>Click on Font to open the Font Setting dialog box to set the following properties:</p> <ul style="list-style-type: none"> • Font • Size • Bold • Italics <p>Click OK to save settings.</p>
Direction	<p>Select the alarm text scroll direction. Options are:</p> <ul style="list-style-type: none"> • From Bottom to Top • From Top to Bottom • From Right to Left • From Left to Right <p>NOTE: <i>The default value is From Bottom to Top.</i></p>
Interval(ms)	<p>Set the time interval in ms for scrolling. Options are:</p> <ul style="list-style-type: none"> • 50 • 100 • 200 • 300 • 400 • 500 • 1000 • 1500

Function	Description
	<ul style="list-style-type: none"> • 2000 • 2500 <p>NOTE: The default value is 50.</p>
Points per time	Select the moving distance for every move.

Click on the **Coordinates** tab in the **Alarm Moving Sign** window of the TP70P series text panel to display the contents as shown in the following figure.

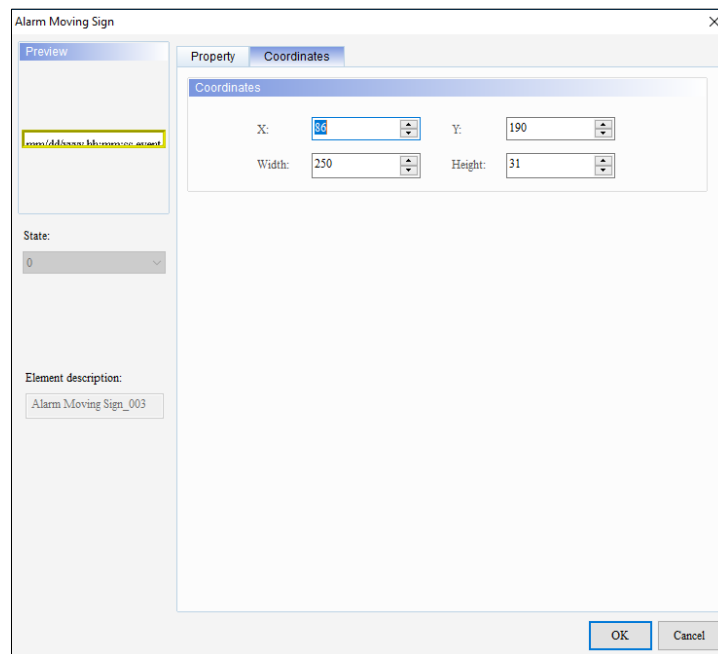


Figure 3 - 174: Alarm Moving Sign window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Alarm Moving Sign** window displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate of the Alarm Moving Sign element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate of the Alarm Moving Sign element. Enter a value to change the Y coordinate.

Function	Description
Width	Displays the width of Alarm Moving Sign element. Enter a value to change the width.
Height	Displays the height of Alarm Moving Sign element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.17.4 Alarm Enable Function

Remark: This function is only applicable to DOP-100 series and AX-8 series.

The alarm function has a new enable function. User can click on the enable function for individual alarms. If the alarm is not checked, the alarm rule will not be executed when it is downloaded into the HMI.

When using the alarm function, enter the alarm from the project tree.

The alarm setting is mainly to set the following attributes:

- monitor address
- sampling period
- maximum number of records that can be accessed
- power-off holding area setting
- alarm revolving lights related settings
- output to CSV file
- and to edit the content of the alarm message to be displayed and other related attributes.

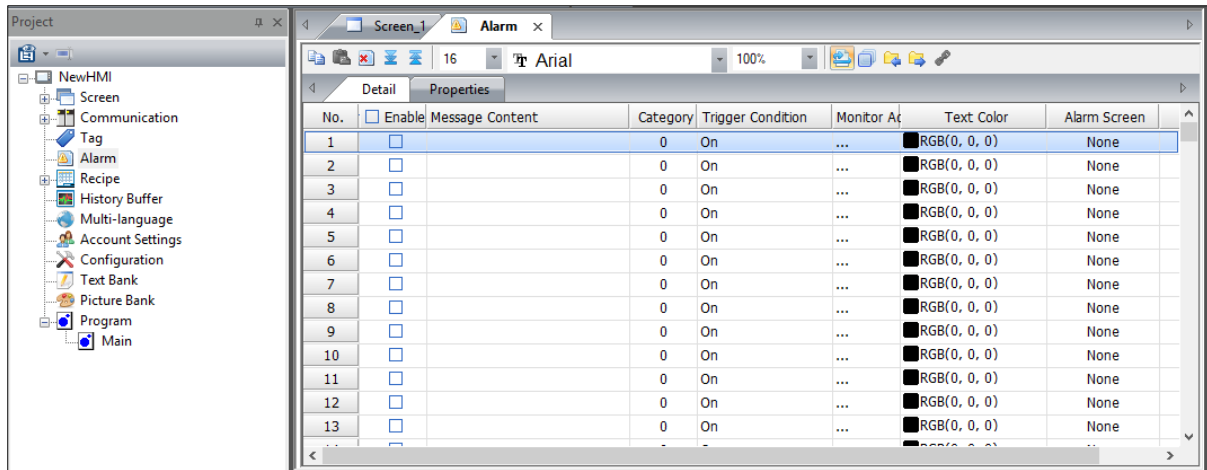
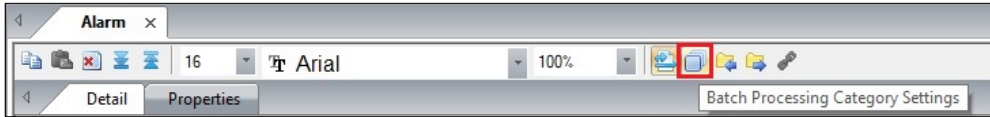
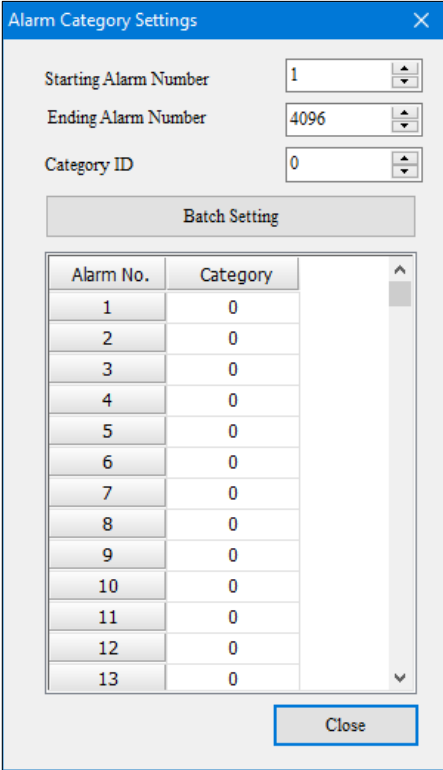



Figure 3 - 175: Alarm

Features	Description
No.	Represents the number of alarm messages, and supports up to 8192 alarms.
Enable	User can enable this alert rule after download. NOTE: By default, alarm is disabled.
Message Content	The user can write the content of the alarm message to be displayed in the message content field. User can modify the message content directly in the field. Provide "%d1" format string, add the message content such as Alarm%d1, but it needs to be used with the monitoring address.
Category	<p>It represents the category to which the alarm number belongs, and has the concept of a group.</p> <ul style="list-style-type: none"> The range of category support is 1 ~ 4095. User can use the batch tool to set the category number quickly.  <ul style="list-style-type: none"> Steps to set alarm category Settings: <ul style="list-style-type: none"> Set starting alarm number, example: 1 Set ending alarm number, example: 10 Set the category ID, example: 5 and click Press Batch Setting. Now, the alarm number 1-10 is defined as group 5.

Features	Description
	
Trigger Condition	<p>Trigger condition settings decides when to raise the Alarm.</p> <p>ON: If Trigger Condition is set to ON, (when the bit is 1, Alarm is triggered).</p> <p>OFF: If Trigger Condition is set to OFF, (when the bit is 0, Alarm is triggered)</p>
Monitor Address	<p>The monitor address is used to display customized alarm message content. Click  to display watch address setting. Add "%d1" after the entered message such as Alarm in the message content field. When the value of the monitoring address is 10, the alarm message displayed in the historical alarm table is Alarm10.</p>
Text color	<p>The text color is the color of the text displayed in the alarm message. The default color is black.</p>
Alarm Screen	<p>Set the screen needs to display when the alarm triggered, the user can select the other screen using drop down list.</p>

Features	Description										
	<table border="1"> <thead> <tr> <th>Text Color</th> <th>Alarm Screen</th> </tr> </thead> <tbody> <tr> <td>■ RGB(0, 0, 0)</td> <td>2 - Screen_2</td> </tr> <tr> <td>■ RGB(0, 0, 0)</td> <td>None</td> </tr> <tr> <td>■ RGB(0, 0, 0)</td> <td>1 - Screen_1</td> </tr> <tr> <td></td> <td>2 - Screen_2</td> </tr> </tbody> </table>	Text Color	Alarm Screen	■ RGB(0, 0, 0)	2 - Screen_2	■ RGB(0, 0, 0)	None	■ RGB(0, 0, 0)	1 - Screen_1		2 - Screen_2
Text Color	Alarm Screen										
■ RGB(0, 0, 0)	2 - Screen_2										
■ RGB(0, 0, 0)	None										
■ RGB(0, 0, 0)	1 - Screen_1										
	2 - Screen_2										
Mail	The mail data function can send an e-mail to notify the relevant personnel at the same time when an alarm occurs. It needs to be used with the Options > Configuration > Network Settings > SMTP .										

After setting the alarm-related configuration, select the alarm-related component on the screen, fill in the content of the message address and uncheck the alarm to enable the function. When compiling, the software will skip this item and no error message will be generated. As shown in the figure below, the alarms that are also enabled will not appear on the display of the alarm element.

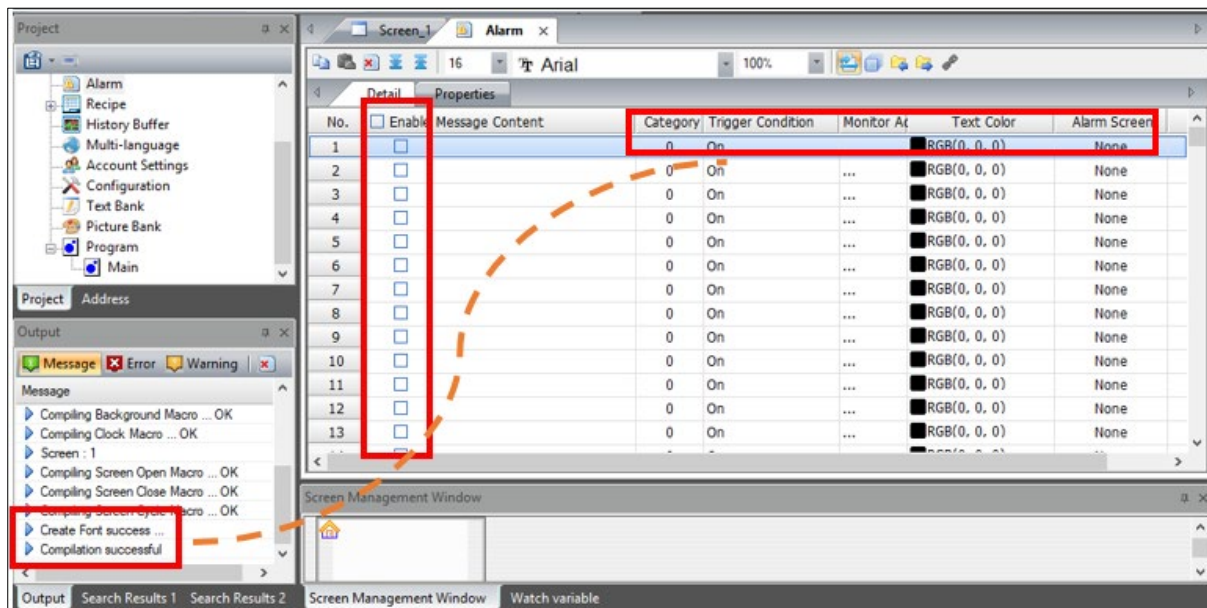



Figure 3 - 176: Alarm activation related interface

NOTE: For detailed alarm settings, please refer to the DELTA_IA-HMI_DOPSOFT_UM alarm display chapter

3.5.18 Slider

User can write a value to a related device address by moving the indicator on a slider displayed on a TP70P series text panel. To add a slider to the screen, use the Slider element.

Follow these steps to add a Slider to a screen and edit the properties in a TP70P series text panel:

1. Click on the **Element(O)** > **Slider** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Slider element is added to the screen.

A sample Slider displays as shown in the following figure.

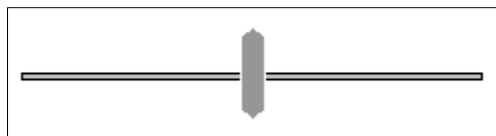


Figure 3 - 177: Slider

3. Double-click the Slider element to edit the properties.

Result: The **Slider** window displays as shown in the following figure. The Slider window has three tabs:

- Property
- Appearance
- Coordinates

The **Property** tab is displayed by default.

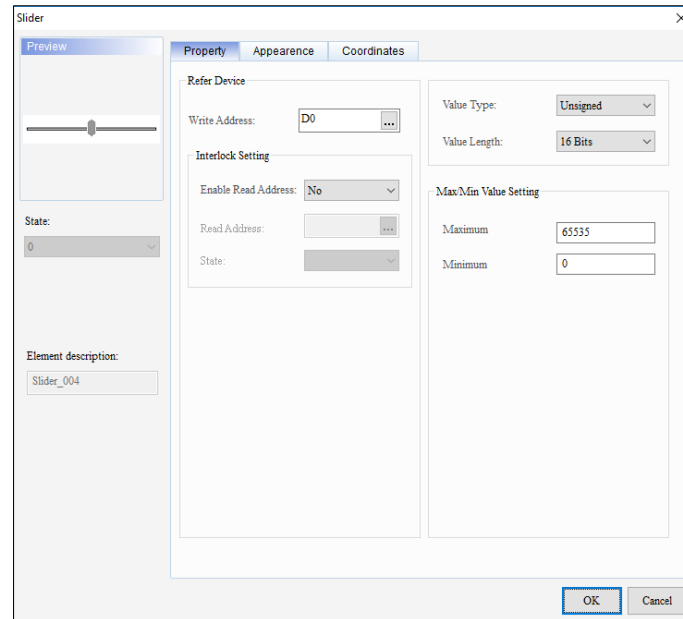



Figure 3 - 178: Slider window - Property tab for TP70P series

The **Property** tab in the **Slider** window displays properties as mentioned in the following table:

Function	Description
Refer Device – Write Address	Click <input type="button" value="..."/> button to open the Refer Device window to select the variable that the Slider value is written to.
Value Type	Select the value type. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Refer Device – Interlock Settings	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No

Function	Description
– Enable Read Address	<ul style="list-style-type: none"> • Yes <p>NOTE: The default value is No.</p>
Refer Device – Interlock Settings – Read Address	<p>Click the  button to open the Refer Device window to select the variable that works as an interlock for the Slider controls.</p> <p>NOTE: The Read Address is disabled by default.</p>
Refer Device – Interlock Settings – State	<p>Select the OFF(0) or ON(1) state of the Read Address at which interlock is applied to the Slider controls. Options are:</p> <ul style="list-style-type: none"> • OFF • ON <p>NOTE: The default value is OFF.</p>
Max/Min Value Settings – Maximum	<p>Enter the maximum value for the Slider control.</p> <p>NOTE: The default value is 65535.</p>
Max/Min Value Settings - Minimum	<p>Enter the minimum value for the Slider control</p> <p>NOTE: The default value is 0.</p>

Click the **Appearance** tab in the **Slider** window of the TP70P series text panel to display the contents as shown in the following figure.

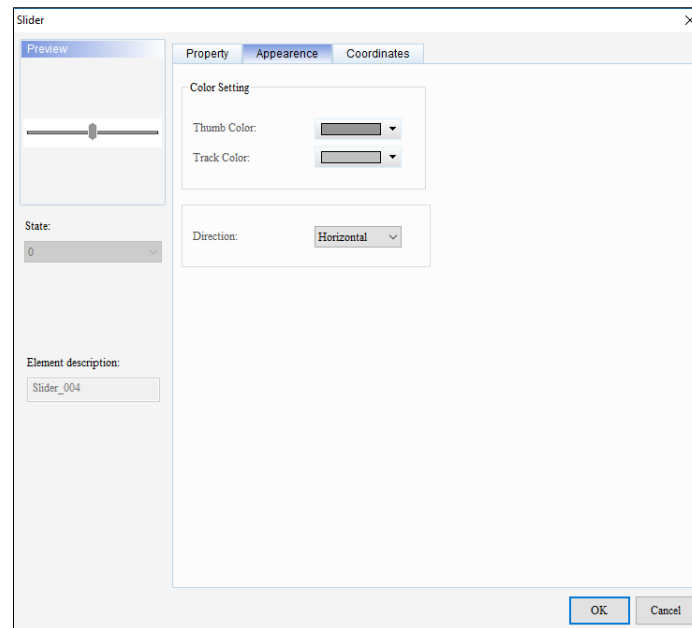


Figure 3 - 179: Slider window - Appearance tab for TP70P series

The **Appearance** tab in the **Slider** window displays properties as mentioned in the following table:

Function	Description
Color Settings – Thumb Color	Select the slider thumb (pointer) color.
Color Settings – Track Color	Select the slider track color.
Direction	Select the Slider direction. NOTE: The default value is <i>Horizontal</i>.

Click the **Coordinates** tab in the **Slider** window of the TP70P series text panel to display the contents as shown in the following figure.

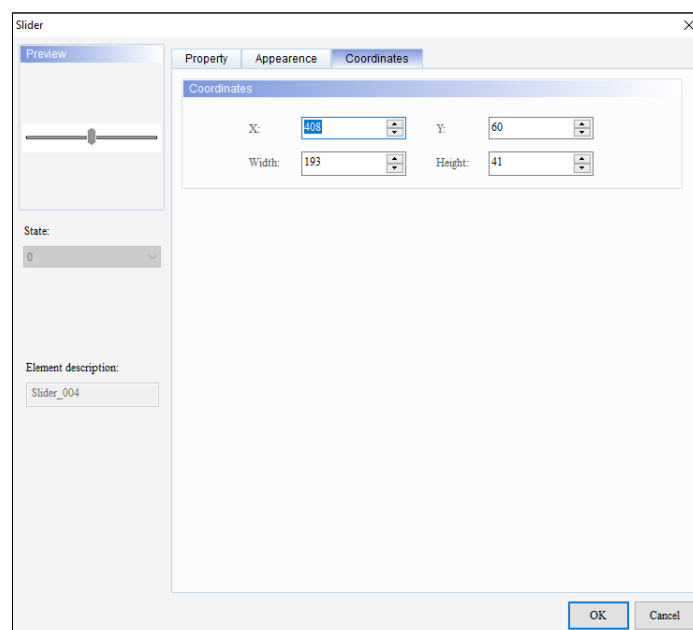


Figure 3 - 180: Slider window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Slider** window displays properties as mentioned in the following table:


Function	Description
X	Displays the X coordinate for the Slider element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Slider element. Enter a value to change the Y coordinate.
Width	Displays the width for the Slider element. Enter a value to change the width.
Height	Displays the height for the Slider element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.19 Input List

User can write a value to a related device address by entering a string value on the TP70P series text panels with the **Input List** element.

Follow these steps to add an Input List to a screen and edit the properties in a TP70P series text panel:

1. Click the **Element(O) > Input List** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The Input List element is added to the screen.

A sample Input List displays as shown in the following figure.

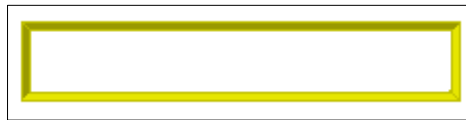


Figure 3 - 181: Input List

3. Double-click the Input List element to edit the properties.

Result: The **Input List** window is displayed as shown in the following figure.

The Input List window has four tabs:

- Property
- Appearance
- Items
- Coordinates

The **Property** tab is displayed by default.

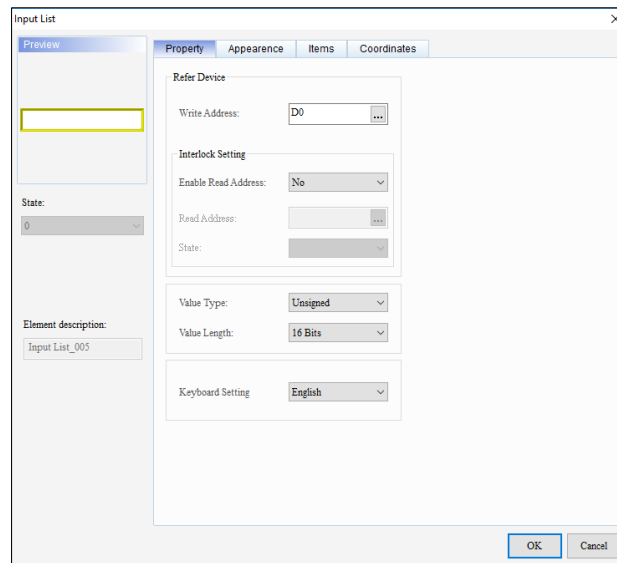


Figure 3 - 182: Input List window - Property tab for TP70P series

The **Property** tab in the **Input List** window displays properties as mentioned in the following table:

Function	Description
Refer Device – Write Address	Click <input type="button" value="..."/> button to open the Refer Device window to select the variable in which the Input List value is written to.
Interlock Settings – Enable Read Address	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No • Yes NOTE: The default value is No .
Interlock Settings – Read Address	Click <input type="button" value="..."/> button to open the Refer Device window to select the variable that works as an interlock for the Input List entry. NOTE: The Read Address is disable by default.
Interlock Settings - State	Select the OFF(0) or ON(1) state of the Read Address in which the interlock is applied to the Input List . Options are: <ul style="list-style-type: none"> • OFF • ON

Function	Description
	NOTE: The default value is OFF .
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD • Float NOTE: The default value is Unsigned .
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits .
Keyboard Setting	Select the language for the keyboard. Options are: <ul style="list-style-type: none"> • English • Chinese (Traditional) • Chinese (Simplified) NOTE: The language that is installed with the system is the default value.

Click the **Appearance** tab in the **Input List** window of the TP70P series text panel to display the contents as shown in the following figure.

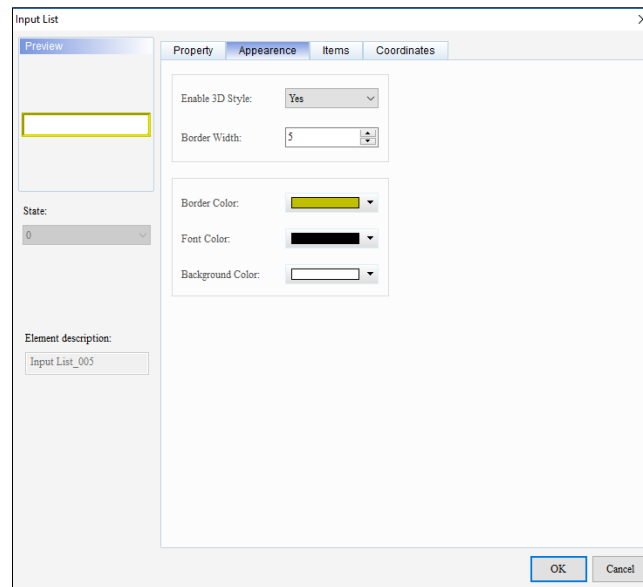


Figure 3 - 183: Input List window - Appearance tab for TP70P series

The **Appearance** tab in the **Input List** window displays properties as mentioned in the following table:

Function	Description
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Border Width	Enter the border width. <p>NOTE: The default value is 5.</p>
Border Color	Select the border color.
Font Color	Select the font color.
Background Color	Select the background color.

Click the **Items** tab in the **Input List** window of the TP70P series text panel to display the contents as shown in the following figure.

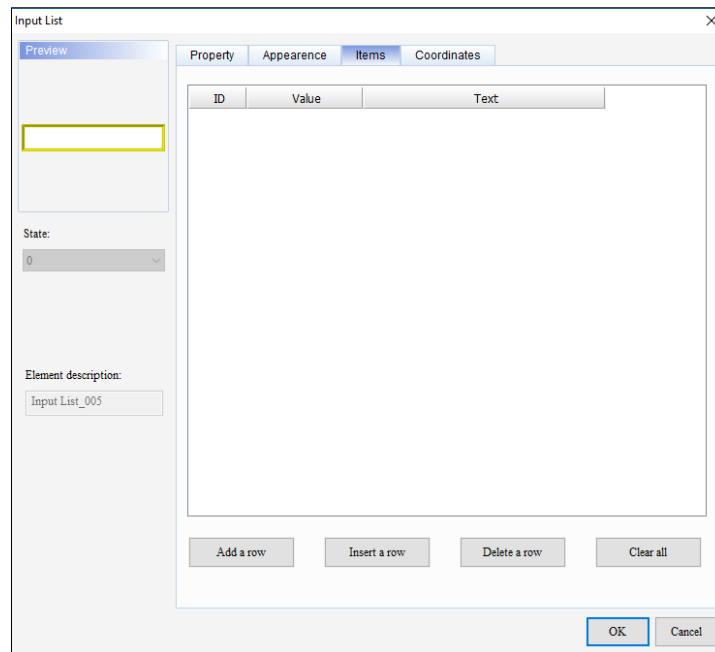


Figure 3 - 145: Input List window - Items tab for TP70P series

The **Items** tab in the **Input List** window displays properties as mentioned in the following table:

Function	Description
Add a row	Click to add a row to the item list. Enter a value and corresponding text that is written to the Write Address when the value is entered in the Input List.
Insert a row	Click to insert a row above the selected row.
Delete a row	Click to delete the selected row.
Clear All	Click to delete all records.

Click the **Coordinates** tab in the **Input List** window of the TP70P series text panel to display the contents as shown in the following figure.

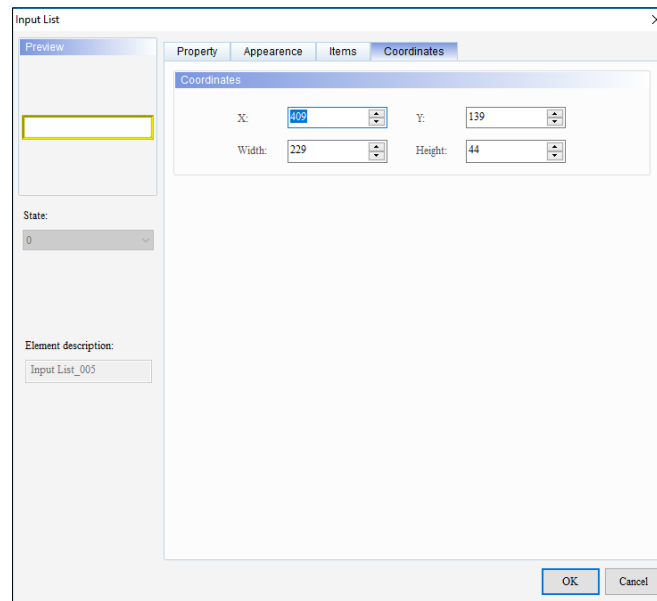


Figure 3 - 146: Input List window - Coordinates tab for TP70P series

The **Coordinates** tab in the **Input List** window displays properties as mentioned in the following table:


Function	Description
X	Displays the X coordinate for the Input List element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the Input List element. Enter a value to change the Y coordinate.
Width	Displays the width for the Input List element. Enter a value to change the width.
Height	Displays the height for the Input List element. Enter a value to change the height.

4. Set the properties as per user's requirements and click on **OK** button.

3.5.20 ComboBox

User can write a value to a related device address by selecting an item in a combo box displayed on the TP70P series text panel. Use the **ComboBox** element to add a combo box to a screen.

Follow these steps to add a ComboBox to a screen and edit the properties in a TP70P series text panel:

1. Click the **Element(O) > ComboBox** on the **Menu** bar, or
Click the  icon on the **Element Selection** Toolbar.
2. Click the screen and drag the mouse to the required dimensions.

Result: The ComboBox element is added to the screen.

A sample ComboBox displays as shown in the following figure.

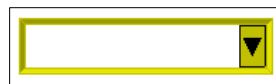


Figure 3 - 184: ComboBox

3. Double-click on the ComboBox element.

Result: The **ComboBox** window displays as shown in the following figure.

The ComboBox window has four tabs:

- Property
- Appearance
- Items
- Coordinates

The **Property** tab displays by default.

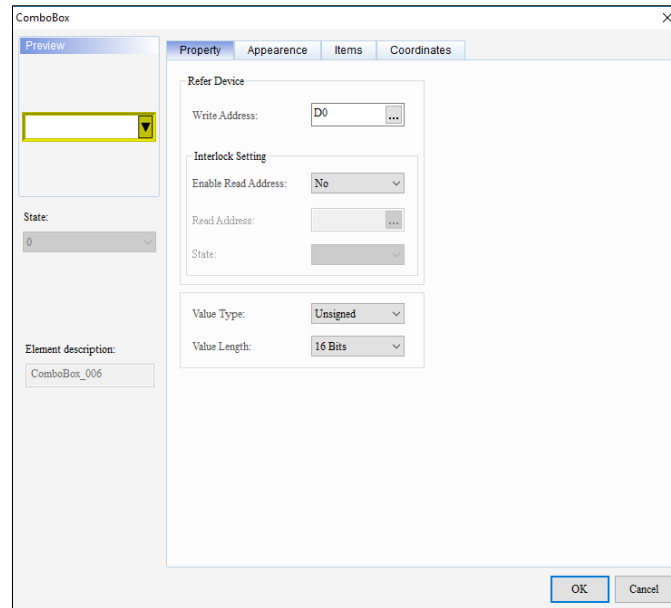


Figure 3 - 185: ComboBox window - Property tab for TP70P series

The **Property** tab in the **ComboBox** window displays properties as mentioned in the following table:

Function	Description
Refer Device – Write Address	Click <input type="button" value="..."/> button to open the Refer Device window to select the variable in which the ComboBox value is written to.
Interlock Settings – Enable Read Address	Select to enable a device register to start reading the value. Options are: <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Interlock Settings – Read Address	Click <input type="button" value="..."/> button to open the Refer Device window to select the variable that works as an interlock for the ComboBox controls. <p>NOTE: The Read Address is disable by default.</p>
Interlock Settings - State	Select the OFF(0) or ON(1) state of the Read Address in which the interlock is applied to the ComboBox controls. Options are: <ul style="list-style-type: none"> • OFF • ON

Function	Description
	NOTE: The default value is OFF .
Value Type	Select the datatype for the variable. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD • Float NOTE: The default value is Unsigned .
Value Length	Select the bit length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: The default value is 16 Bits .

Click on the **Appearance** tab in the **ComboBox** window of the TP70P series text panel to display the contents as shown in the figure.

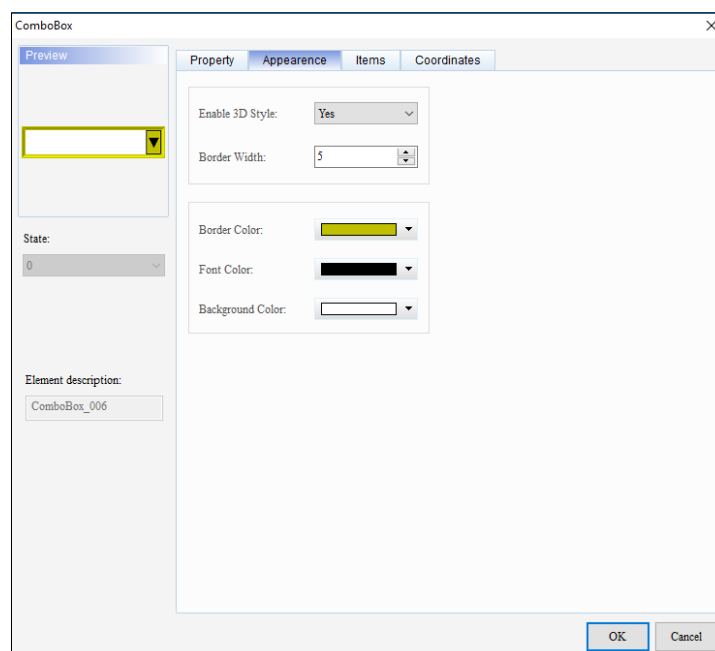


Figure 3 - 186: ComboBox window - Appearance tab for TP70P series

The **Appearance** tab in the **ComboBox** window displays properties as mentioned in the following table:

Function	Description
Enable 3D Style	Select to enable or disable the 3D style. Options are: <ul style="list-style-type: none"> • Yes • No <p>NOTE: The default value is Yes.</p>
Border Width	Enter the border width. <p>NOTE: The default value is 5.</p>
Border Color	Select the border color.
Font Color	Select the font color.
Background Color	Select the background color.

Click the **Items** tab in the **ComboBox** window of the TP70P series text panel to display the contents as shown in the following figure.

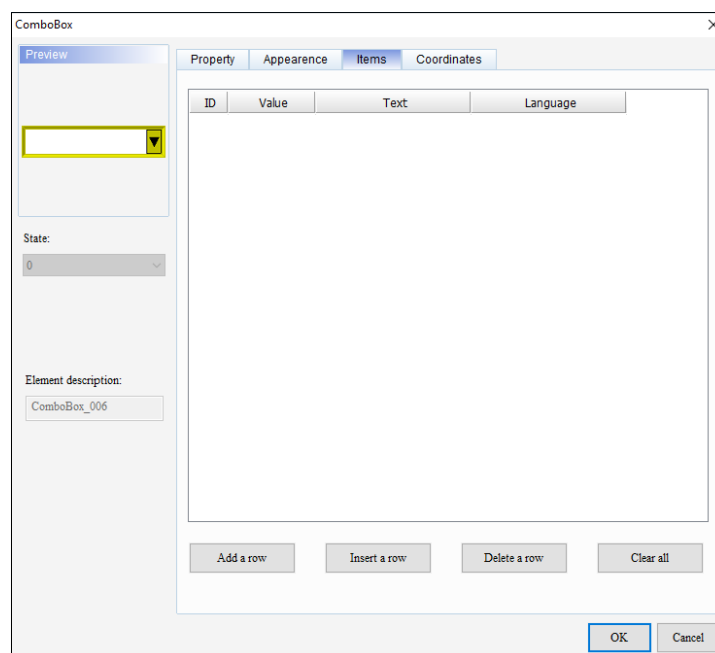


Figure 3 - 187: ComboBox window - Items tab for TP70P series

The **Items** tab in the **ComboBox** window displays properties as mentioned in the following table:

Function	Description
Add a row	Click to add a row to the Item List. Enter a value and a corresponding text that is written to the Write Address when the value is selected in the ComboBox.
Insert a row	Click to insert a row above the selected row.
Delete a row	Click to delete a selected row.
Clear All	Click to delete all records.

Click the **Coordinates** tab in the **ComboBox** window of the TP70P series text panel to display the contents as shown in the following figure.

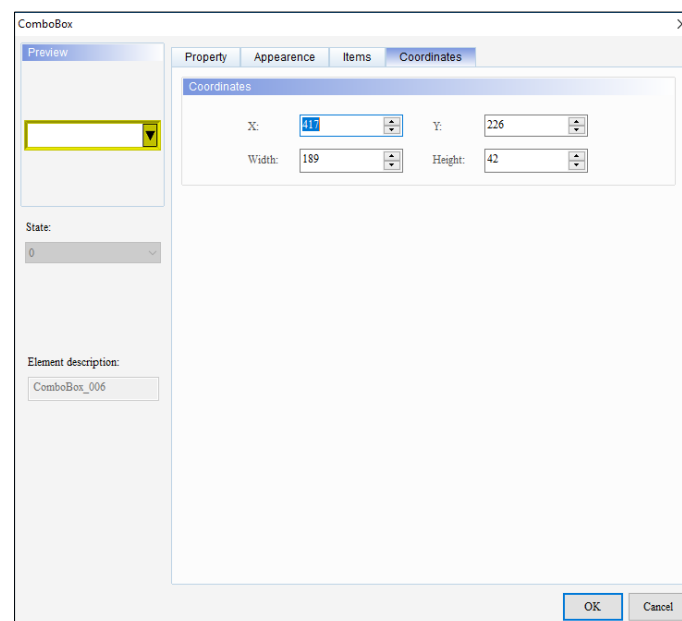


Figure 3 - 188: ComboBox window - Coordinates tab for TP70P series

The **Coordinates** tab in the **ComboBox** window displays properties as mentioned in the following table:

Function	Description
X	Displays the X coordinate for the ComboBox element. Enter a value to change the X coordinate.
Y	Displays the Y coordinate for the ComboBox element. Enter a value to change the Y coordinate.
Width	Displays the width for the ComboBox element. Enter a value to change the width.
Height	Displays the height for the ComboBox element. Enter a value to change the height.

3.5.21 Delta Products Communication Device Setting

User can set the input parameters in the equipment connected to a TP04G text panel in DIAScreen using the **Delta Products Communication Device Setting** feature.

User can launch the Delta Products Communication Device Setting window by clicking the  icon on the **Element Selection Toolbar**.

The **Delta Products Communication Device Setting** window is shown in the following figure.

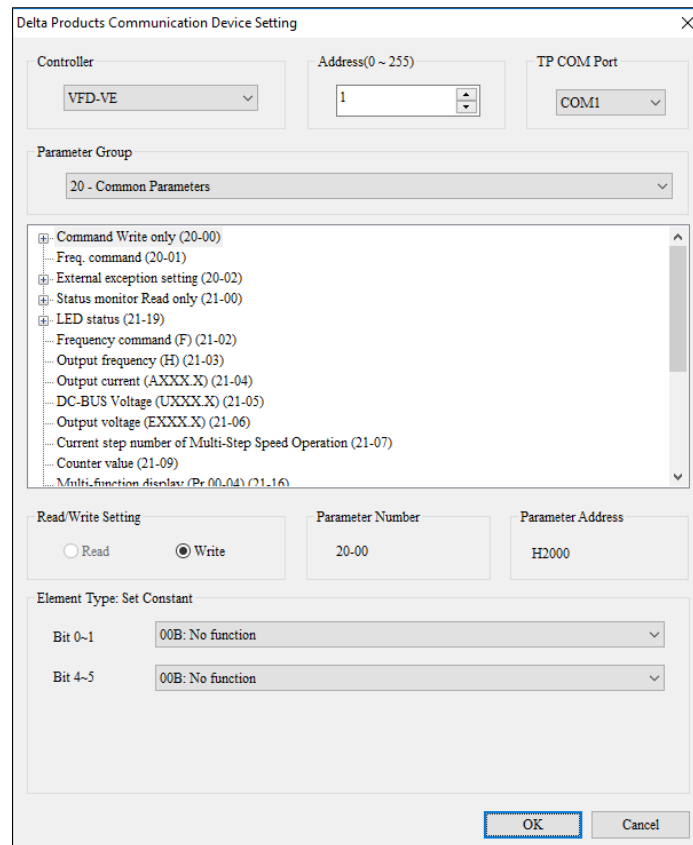


Figure 3 - 189: Delta Products Communication Device Setting window

Select the equipment connected to a TP04G text panel from the **Controller** drop-down menu. Enter the equipment address in the **Address** field and then select the communication port connected to the equipment from the **TP Com Port** drop-down menu. The equipment selected in the Controller determines the **Parameter Group** parameters.

After selecting a particular group and a parameter, the Delta Product Communication Device Setting window displays whether the parameter is **Read** or **Write**, **Parameter Number**, **Parameter Address**, and **Element Type**. Click **OK** to insert the object set related to the selected parameter. The corresponding element will be added to the screen and the element property window will be displayed in DIAScreen.

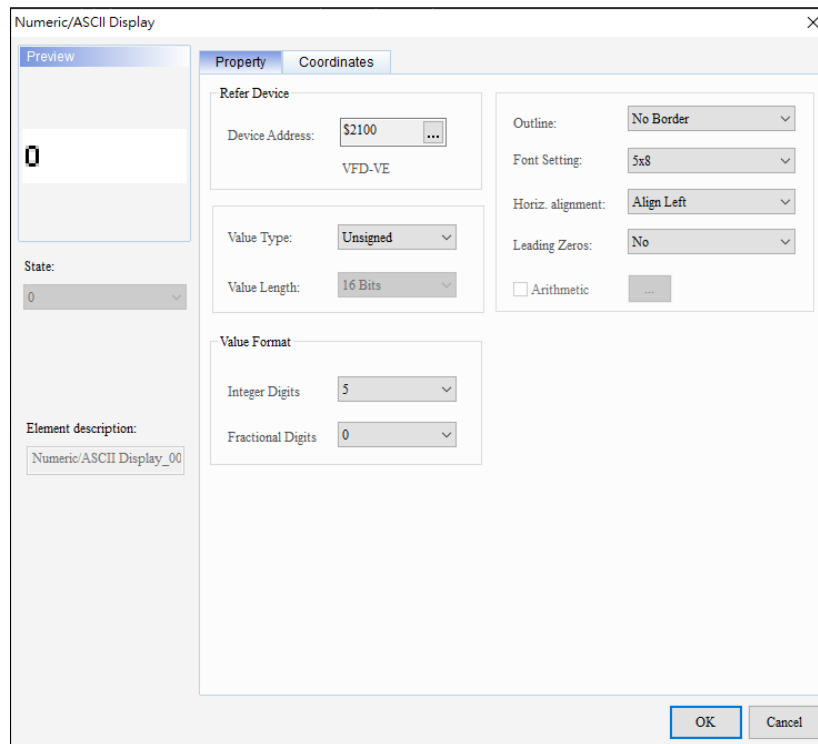


Figure 3 - 190: Delta Products Communication Device Setting window - Numeric Display

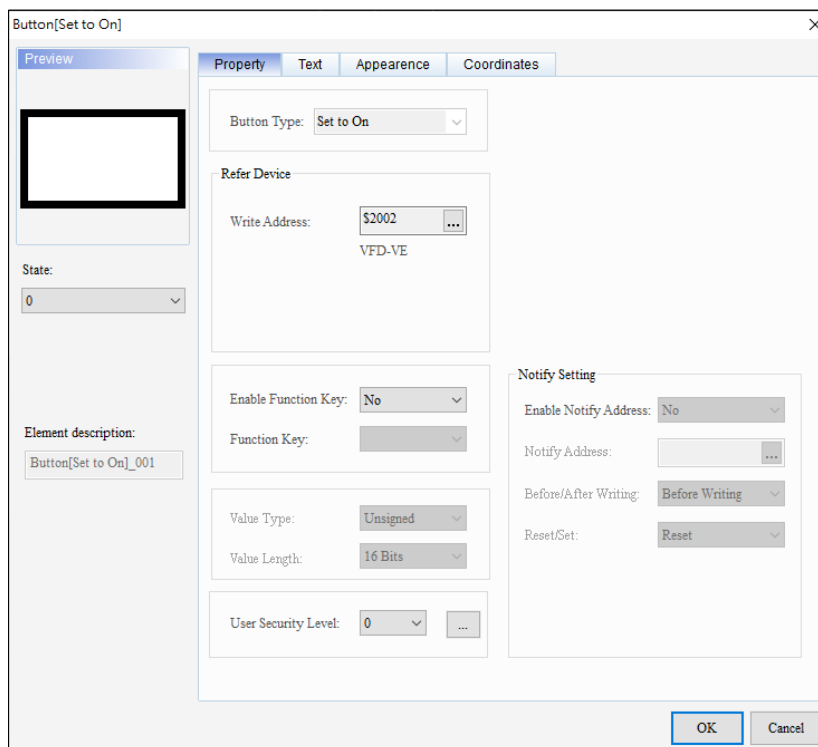


Figure 3 - 191: Delta Products Communication Device Setting window - Button

3.6 Menu Bar - Screen Setting

This section provides the detailed information about the functions available on the Screen Setting menu. For more details refer to 2.2.2 Menu bar. The **Screen Setting** menu functions are:

- Change Screens Condition
- Function Key Setting
- Alarm Setting
- Alarm LED Setting
- Write Screen ID Setting
- Hide Screen Setting
- Screen Macro Setting

Use the Screen Setting functions to configure the screens on a TP series text panel. Each individual page on a TP series can be set and therefore the TP series text panel can operate conveniently. Some functions are supported only in some models. Refer [A.3 Screen Setting Menu Items and supported Models](#) for more information.

3.6.1 Change Screens Condition

Use the **Change Screens Condition** to set the conditions for navigating to a particular screen. Once the condition is met, the target screen displays on the TP series text panel.

Follow these steps to configure the Change Screens Condition:

1. Click **Screen Setting** > **Change Screens Condition** on the **Menu** bar, or
Click **Change Screens Condition** on the screen's context menu.

Result: The **Change Screens Condition Settings** window is shown as in the following figure.

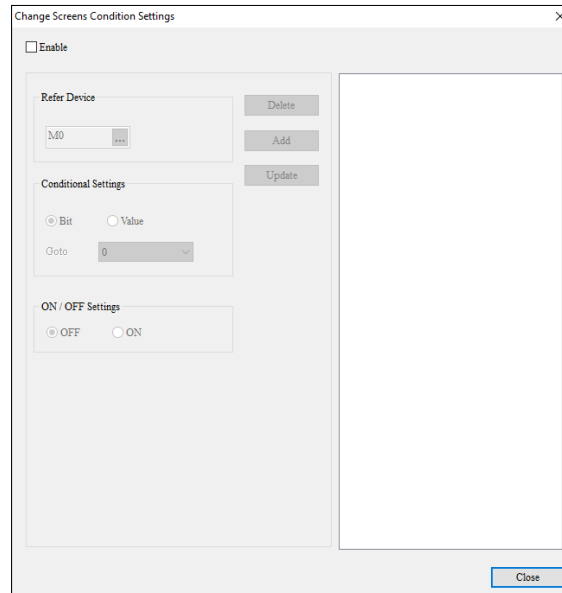


Figure 3 - 192: Change Screens Condition Settings window

The **Change Screens Condition Settings** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the Change Screens Condition Settings options.
Refer Device	Click ... button to open the Refer Device window to select the device address.
Conditional Settings – Bit	Select Bit if the change screen condition is based on an ON or OFF condition. Select ON or OFF condition in ON / OFF Settings .
Conditional Settings – Value	Select Value if the change screen condition is based on a value. Select the – Value Type , Value Length , Conditional operator and Condition in Value Setting .
Goto	Select the screen user want to navigate to.
ON / OFF Settings - ON	Select ON condition for ON / OFF settings.

Property/Field	Description
ON / OFF Settings - OFF	Select OFF condition for ON / OFF settings.
Delete	Select a condition on the Condition display area and click Delete to remove it.
Add	Click to add the condition to the Condition display area. NOTE: User can set up to 20 conditions.
Update	Select a condition in the Condition display area and click Update to modify the condition.
Close	Click to close the Change Screens Condition Settings window.

When **Value** is selected in **Conditional Setting** field, the **Change Screens Condition Settings** window displays the value properties as shown in the following figure.

Figure 3 - 193: Change Screens Condition Setting window - Value

The **Change Screens Condition Settings** window displays the **Value** properties as shown in the following table:

Property/Field	Description
Value Type	Select the value type. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: The default value is Unsigned.</p>
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: The default value is 16 Bits.</p>
Conditional operator	Select the conditional operator. Options are: <ul style="list-style-type: none"> • = • > • < • >= • <= • != <p>NOTE: The default value is =.</p>
Conditional Value	Enter the conditional parameter value.

2. Set the properties as per user's requirements and click **Close**.

Example 1:

Change Screens Condition Setting with the **Refer Device** value M0 = OFF, **Goto** = Screen0 displays on the screen as shown in the following figure.

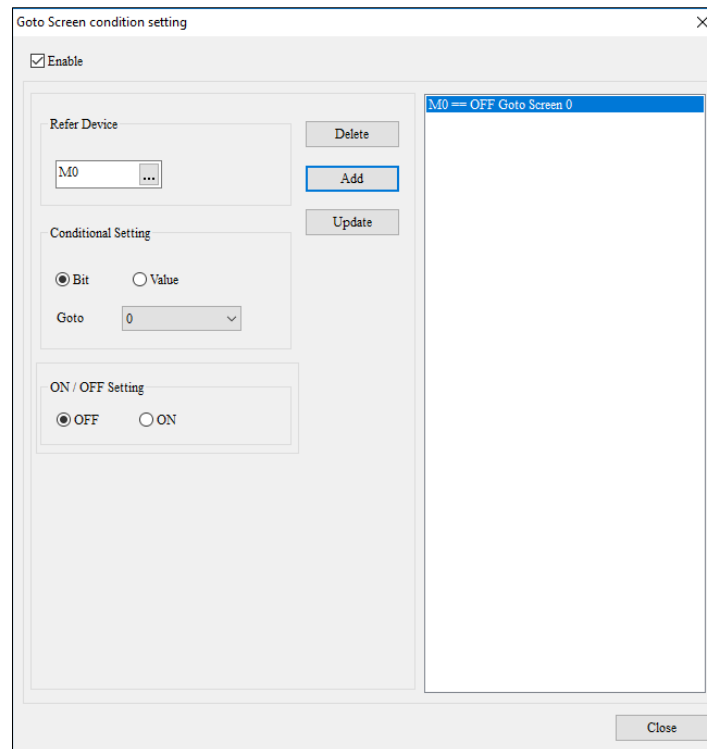


Figure 3 - 194: Change Screens Condition Setting - Example - Bit

Example 2:

Change Screens Condition Setting with the **Refer Device** value D0, **Value Type** = Unsigned, **Value Length** = 16 Bits, **Conditional operator** = >, **Conditional value** = 100, **Goto** = Screen0 displays on the screen as shown in the following figure.

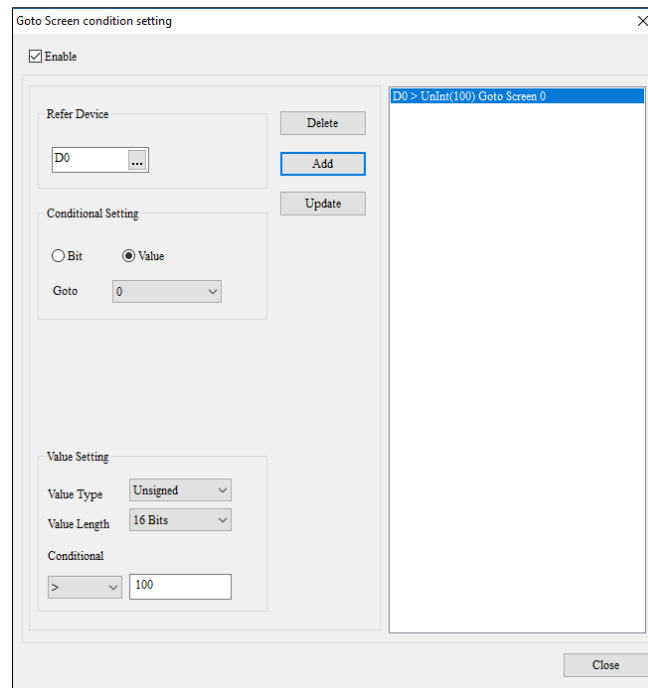


Figure 3 - 195: Change Screens Condition Setting - example - Value

NOTE: Once the Change Screens Condition is set, the **Change Screens Condition** icon on the menu bar and the screen's context menu displays as shown in the following figure.

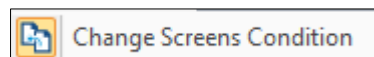


Figure 3 - 196: Change Screens Condition Setting – enabled

3.6.2 Function Key Setting

User can set the functions corresponding to function keys on a TP series text panel for a screen with the **Function Key Setting**. When a function key is pressed, it enables the function corresponding to the key.

Follow these steps to configure the Function Key Setting:

1. Click **Screen Setting > Function Key Setting** on the **Menu** bar, or
Click **Function Key Setting** on the screen's context menu.

Result: The **Function Key Setting** window displays as shown in the following figure.

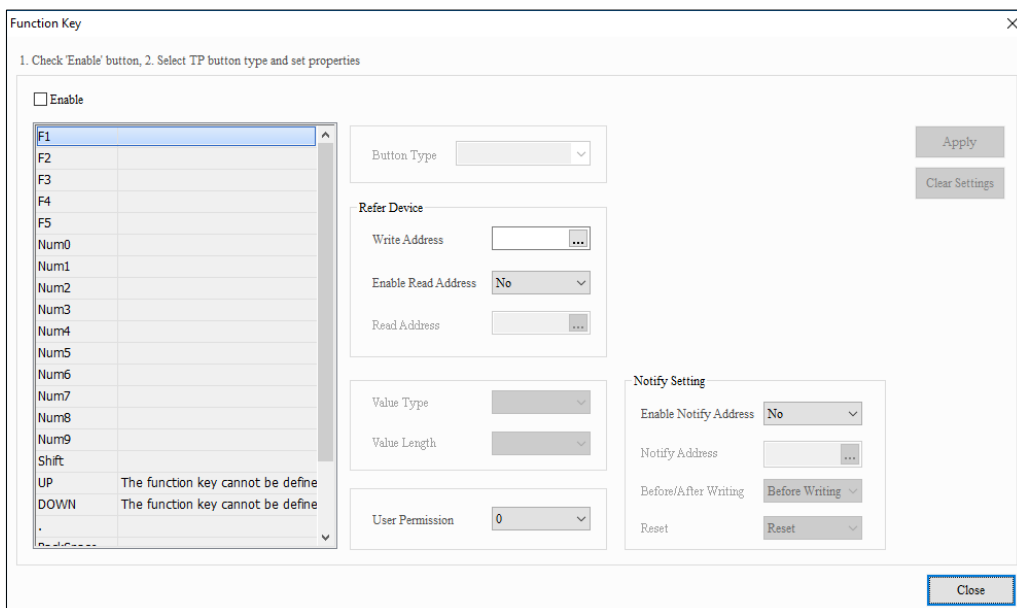


Figure 3 - 197: Function Key Setting window

The **Function Key Setting** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the Function Key Setting options.
Function Key box	Select the Function Key to edit the settings.
Button Type	<p>Select the button type. Options are:</p> <ul style="list-style-type: none"> • Set to On • Set to Off • Pulse On • Pulse Off • Maintained • Momentary • Multistate • Set Value • Set Constant • Increment • Decrement • Goto Screen • Password Setting • Screen Scroll • Recipe Write/Read <p>NOTE: The screen displays the button's properties to the right of this field.</p>
Write Address	Select the device address to write the value.
Enable Read Address	<p>Select to enable a device register to start reading the value. Options are:</p> <ul style="list-style-type: none"> • No • Yes <p>NOTE: The default value is No.</p>
Read Address	Select the device address to read the value. This field is enabled only when the Enable Read Address is set to Yes .
Value Type	<p>Select the value type. Options are:</p> <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD

Property/Field	Description
	NOTE: This field is enabled based on the selected Button Type . The default value is Unsigned .
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: This field is enabled based on the selected Button Type . The default value is 16 Bits .
User Permission	Select the user permission. Options are: <ul style="list-style-type: none"> • 0 • 1 • 2 • 3 • 4 NOTE: The default value is 0 .
Enable Notify Address	Select to enable the notify address. Options are: <ul style="list-style-type: none"> • No • Yes NOTE: The default value is No .
Notify Address	Select the notify address. NOTE: This field is enabled if the Enable Notify Address property is set to Yes .
Before/After Writing	Select to notify before writing or after writing. Options are: <ul style="list-style-type: none"> • Before Writing • After Writing NOTE: This is enabled if Enable Notify Address is set to Yes . The default value is Before Writing .
Reset	Select to set or reset the variable. Options are: <ul style="list-style-type: none"> • Reset • Set NOTE: This is enabled if Enable Notify Address is set to Yes . The default value is Reset .
Apply	Click to apply the changes.
Clear Settings	Click to change settings back to the default values.

Property/Field	Description
Close	Click to close the Function Key Setting window.

2. Set the properties as per user's requirements and click on **Close** button.

NOTE: Once the **Function Key Settings** is set, the **Function Key Setting** icon on the menu bar and the screen's context menu displays as shown in the following figure.

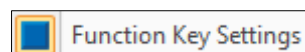


Figure 3 - 198: Function Key Setting - enabled

3.6.3 Alarm Buzzer Setting

User can set the alarm buzzer for a screen with the **Alarm Buzzer Setting**. If the condition is met, the alarm buzzer for the TP series text panel will activate.

Follow these steps to configure Alarm Buzzer Setting:

1. Click on the **Screen Setting > Alarm Buzzer Setting** on the **Menu** bar, or Click **Alarm Buzzer Setting** on the screen's context menu.

Result: The **Alarm Buzzer Setting** window displays as shown in the following figure.

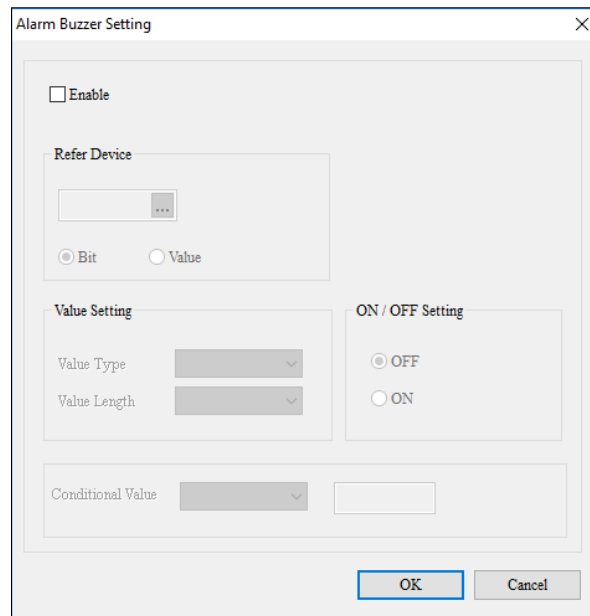


Figure 3 - 199: Alarm Buzzer Setting window

The **Alarm Buzzer Setting** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Click the check box to enable the Alarm Buzzer Setting options.
Refer Device	Click ... button to open the Refer Device window to choose the device address.
Bit	Select Bit if the Alarm Buzzer Condition is based on an ON or OFF condition in ON / OFF Settings .
Value	Select Value if the Alarm Buzzer Condition is based on a value. Select the – Value Type , Value Length , Conditional operator and Condition in Value Setting .
ON / OFF Settings – OFF	Select OFF condition for ON / OFF Settings. NOTE: This field is enabled if the Refer Device is a Bit . This field is selected by default.
ON / OFF Settings - ON	Select ON condition for ON / OFF Settings. NOTE: This field is enabled if the Refer Device is a Bit .

Property/Field	Description
Value Type	Select the value type. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD <p>NOTE: This field is enabled only if the Refer Device is a Value. The default value is Unsigned.</p>
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits <p>NOTE: This field is enabled only if the Refer Device is a Value. The default value is 16 Bits.</p>
Condition operator	Select the conditional operator. Options are: <ul style="list-style-type: none"> • = • > • < • >= • <= • != <p>NOTE: This field is enabled only if the Refer Device is a Value. The default value is =.</p>
condition value	Enter the conditional parameter value. <p>NOTE: This field is enabled only if the Refer Device is a Value.</p>
OK	Click to save the settings and close the Alarm Buzzer Setting window.
Cancel	Click to cancel the action and close the window.

2. Set the properties as per user's requirements and click on **OK** button.

Example:

Alarm Buzzer Setting with **Refer Device** value D0, **Value Type** = Unsigned, **Value Length** = 16 Bits, **Conditional operator** = >, **Conditional value** = 100 displays on the screen as shown in the following figure.

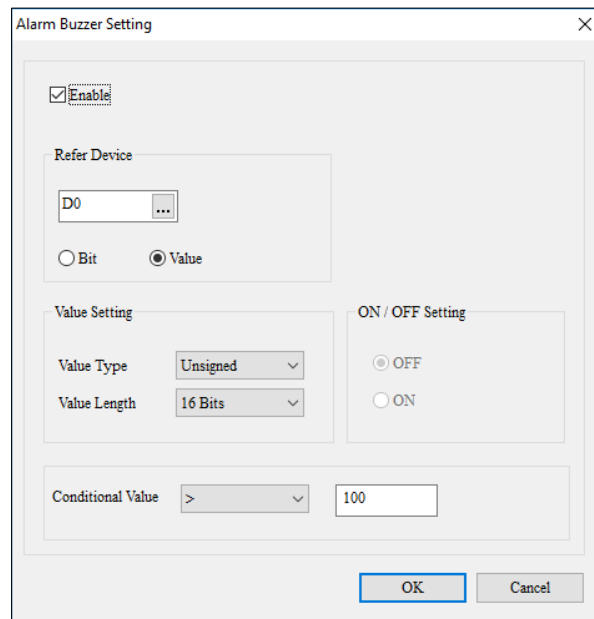


Figure 3 - 200: Alarm Buzzer Setting - example

NOTE: Once the **Alarm Buzzer Setting** is set, the Alarm Settings icon on the menu bar and the screen's context menu displays as shown in the following figure.



Figure 3 - 201: Alarm Buzzer Setting - enabled

3.6.4 Alarm LED Setting

User can set the Alarm LED on a TP series text panel using the **Alarm LED Setting**. When the condition for the alarm is met, the alarm LED on the TP series text panel blinks.

Follow these steps to configure the Alarm LED Setting:

1. Click the **Screen Setting > Alarm LED Setting** on the Menu bar, or
Click **Alarm LED Setting** on the screen's context menu.

Result: The **Alarm LED Setting** window displays as shown in the following figure.

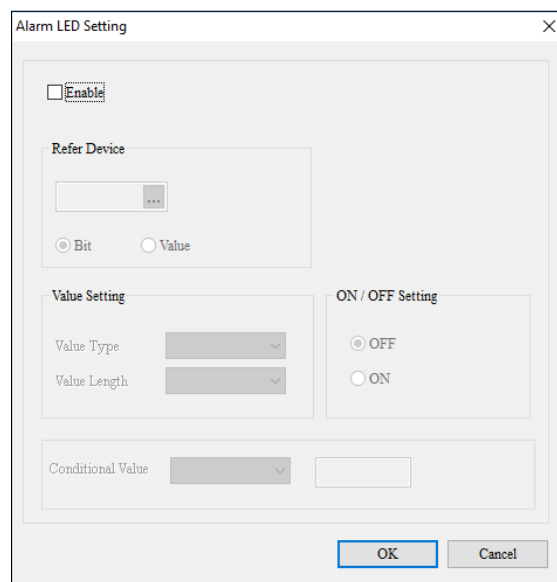



Figure 3 - 202: Alarm LED Setting window

The **Alarm LED Setting** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the Alarm LED Setting options.

Property/Field	Description
Refer Device	Click the  button to open the Refer Device window to choose the device address.
Bit	Select Bit if the Alarm LED condition is based on an ON or OFF condition in ON / OFF Settings .
Value	Select Value if the Alarm LED condition is based on a value. Select the – Value Type , Value Length , Conditional operator and Condition in Value Setting .
ON / OFF Settings – OFF	Select OFF condition for ON / OFF Settings. NOTE: This field is enabled only if the Refer Device is a Bit . This field is selected by default.
ON / OFF Settings – ON	Select ON condition for ON / OFF Settings. NOTE: This field is enabled only if the Refer Device is a Bit .
Value Type	Select the value type. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD NOTE: This field is enabled only if the Refer Device is a Value . The default value is Unsigned .
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: This field is enabled only if the Refer Device is a Value . The default value is 16 Bits .
Condition Value operator	Select the conditional operator. Options are: <ul style="list-style-type: none"> • = • > • < • >= • <= • != NOTE: This field is enabled only if the Refer Device is a Value . The default value is = .

Property/Field	Description
<i>conditional value</i>	Enter the conditional parameter value. NOTE: This field is enabled only if the Refer Device is a Value .
OK	Click to save the settings and close the Alarm LED Setting window.
Cancel	Click to cancel the action and close the window.

2. Set the properties as per user's requirements and click on **OK** Button.

Example:

Alarm LED Setting with **Refer Device** value D0, **Value Type** = Unsigned, **Value Length** = 16 Bits, **Conditional operator** = !=, **Conditional value** = 100 displays on the screen as shown in the following figure.

Figure 3 - 203: Alarm LED Setting – example

NOTE: Once the **Alarm LED Settings** is set, the **Alarm LED Settings** icon on the menu bar and the screen's context menu displays as shown in the following figure.



Figure 3 - 204: Alarm LED Setting - enabled

3.6.5 Write Screen ID Setting

User can write the number assigned to the screen that is opened on a TP series text panel using the **Write Screen ID Setting**. When a screen is open, the screen's number is written to a variable address.

Follow these steps to configure the Write Screen ID Setting:

1. Click the **Screen Setting > Write Screen ID Setting** on the **Menu** bar, or
Click **Write Screen ID Setting** on the screen's context menu.

Result: The **Write Screen ID Setting** window is displayed as shown in the following figure.

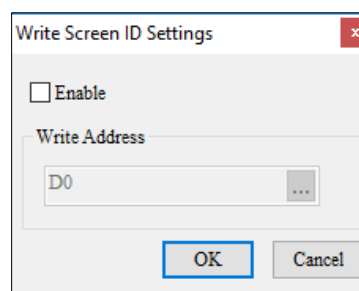



Figure 3 - 205: Write Screen ID Setting window

The **Write Screen ID Settings** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the Write Screen ID Setting feature.
Write Address	Click the  button to open the Refer Device window to select the device address in which the opened screen number is written to.

Example:

Write Screen ID Setting with **Write Address** = D10 displays as shown in the following figure.

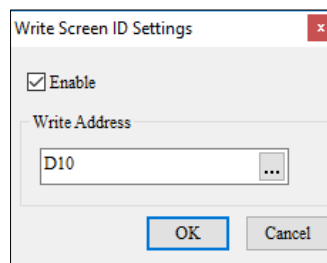


Figure 3 - 206: Write Screen ID Setting - example

NOTE: Once the **Write Screen ID Settings** is set, the **Write Screen ID Settings** icon on the menu bar and the screen's context menu displays as shown in the following figure.

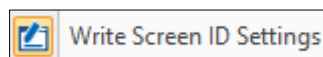


Figure 3 - 207: Write Screen ID Setting - enabled

3.6.6 Hide Screen Setting

User can display screens on the TP text panel series by pressing the Up or the Down key on the panel. User can hide the edited screen using the **Hide Screen Setting**.

Follow these steps to configure the Hide Screen Setting:

1. Click the **Screen Setting > Hide Screen Setting** on the **Menu** bar, or
Click **Hide Screen Setting** on the screen's context menu.

Result: The screen does not display on the TP series text panel.

2. Click the **Screen Setting > Hide Screen Setting** on the **Menu** bar again, or
Click **Hide Screen Setting** on the screen's context menu again.

NOTE: *This function switches between hiding or displaying the screen.*

Result: The screen displays in the TP series text panel.

NOTE: *Once the **Hide Screen Setting** is set, the Hide Screen Setting icon on the menu bar displays as shown in the following screen.*

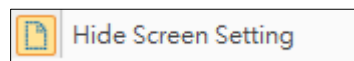


Figure 3 - 208: Hide Screen Setting - enabled

A screen which is hidden using **Hide Screen Setting** can be displayed using **Change Screens Condition Setting**.

3.6.7 Screen Macro Setting

User can set a macro for a screen using the **Screen Macro Setting**. If the macro is set for a screen, then the program executes continuously when the screen displays.

Follow these steps to configure the Screen Macro Setting:

1. Click the **Screen Setting > Screen Macro Setting** on the **Menu** bar, or
Click **Screen Macro Setting** on the screen's context menu.

Result: The **Screen Macro Setting** window displays as shown in the following figure.

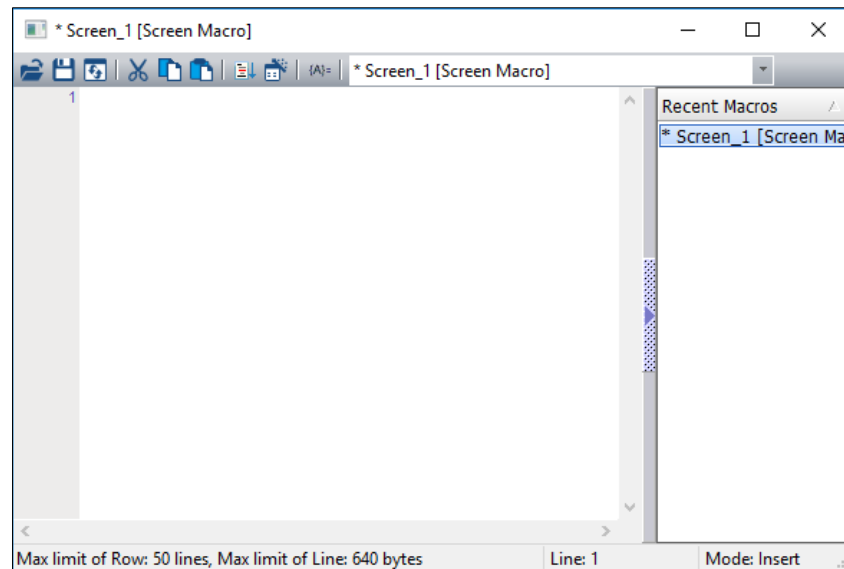



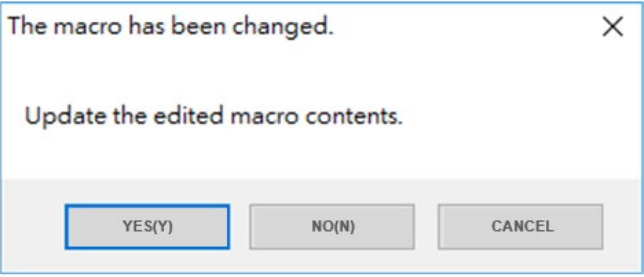
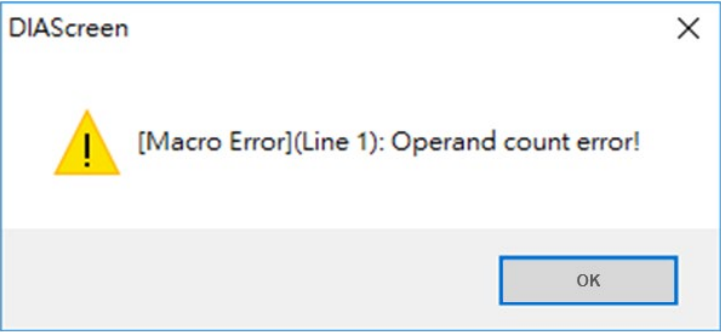






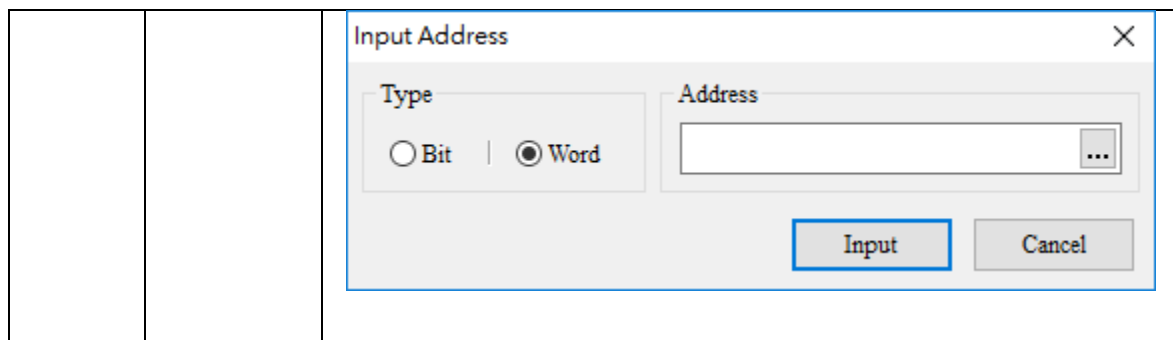



Figure 3 - 209: Screen Macro Setting window

The **Screen Macro Setting** window displays the properties as shown in the following table:

Icon	Function	Description
	Open	The Open function is equivalent to the action of import. The software provides *.mrc formats for opening. User can import edited macros to reduce the time for repeated editing. Click to open a Macro (*.mrc) file.
	Save	The Save function is equivalent to the action of export. The software can save the macro in *.mrc format only. User can save the edited macros for backup or for use of other screens. Click to save a Macro file.
	Update	Click to update a Macro file. The Update function updates the modified macro contents and check the macro syntax as well. If user close the macro edit window without executing update the software informs user that the macro is changed.

		 <p>If update is executed, the current syntax is checked. If there are syntax errors, the software shows the following message.</p> 
	Cut	<p>Operations of Cut, Copy, and Paste are the same as those of Office. User can also execute Cut, Copy, and Paste with the keyboard shortcuts.</p> <p>NOTE: cut: Ctrl+X; copy: Ctrl+C; paste: Ctrl+V.</p>
	Copy	
	Paste	
	Syntax check	<p>The function of Syntax check is used to make sure that macro commands are correct. An error message displays if there is a syntax error.</p>
	Macro Wizard	<p>The Macro Wizard function provides convenient and easy input of macro commands, that are less error-prone than manually entering macro commands.</p>
	Input Address	<p>User can input the PLC memory address used in the macro through the Input Address function preventing any entry of wrong address.</p>



1. Click on the  icon.

Result: The **Macro Command** window is displayed as shown in the following figure.

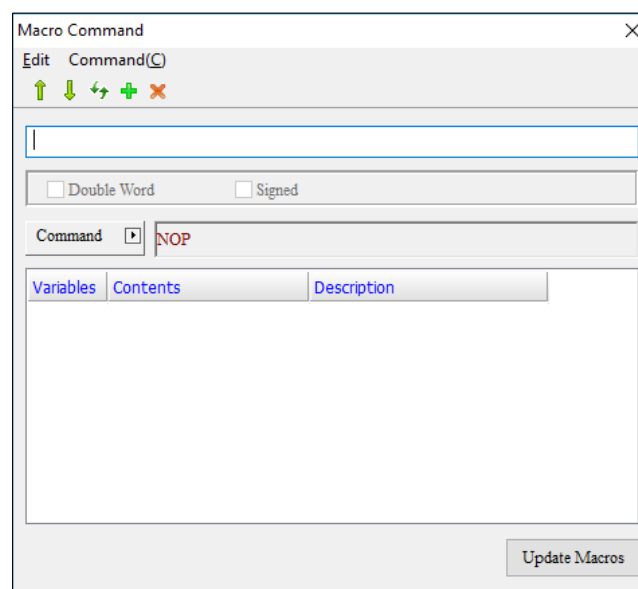



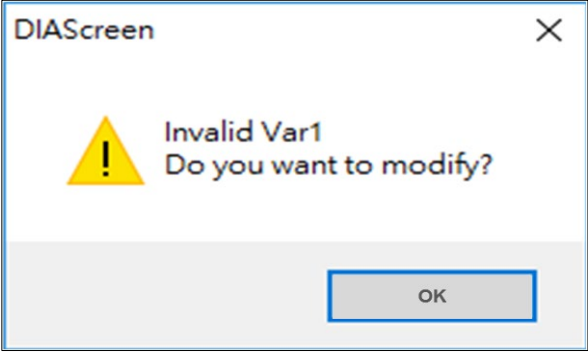




Figure 3 - 210: Macro Command window

The **Macro Command** window displays the properties as shown in the following table:

Icon/Field/Property	Description
 Edit – Up	Click to move a macro command up.
 Edit – Down	Click to move a macro command down.

 Edit – Update	<p>Click the Update button to check whether the syntax of macro command is correct. If there are syntax errors, an error message displays.</p> 																		
 Edit – Insert	<p>Insert (add) a line of macro command. The new macro command is inserted above the selected macro command.</p>																		
 Edit – Delete	<p>Delete the selected macro command. If there are other macro commands below the deleted one, they move up automatically. If the cursor has selected a line without a macro command, the delete action is invalid.</p>																		
<p>Double Word</p>	<p>The command is operated with 32 bits if Double Word is checked and 16 bits if it is not checked.</p>																		
<p>Signed</p>	<p>The command is operated with signed number if Signed is checked and unsigned number if it is not checked.</p>																		
<p>Command – Arithmetic</p>	<p>Click to add arithmetic macro command. Options are:</p> <table border="1"> <thead> <tr> <th>Command</th> <th>Expression</th> <th>NOTE</th> </tr> </thead> <tbody> <tr> <td>ADD</td> <td>Var3 = Var1 + Var2</td> <td>addition</td> </tr> <tr> <td>SUB</td> <td>Var3 = Var1 - Var2</td> <td>subtraction</td> </tr> <tr> <td>MUL</td> <td>Var3 = Var1 * Var2</td> <td>multiplication</td> </tr> <tr> <td>DIV</td> <td>Var3 = Var1 / Var2</td> <td>division</td> </tr> <tr> <td>MOD</td> <td>Var3 = Var1 % Var2</td> <td>remainder</td> </tr> </tbody> </table>	Command	Expression	NOTE	ADD	Var3 = Var1 + Var2	addition	SUB	Var3 = Var1 - Var2	subtraction	MUL	Var3 = Var1 * Var2	multiplication	DIV	Var3 = Var1 / Var2	division	MOD	Var3 = Var1 % Var2	remainder
Command	Expression	NOTE																	
ADD	Var3 = Var1 + Var2	addition																	
SUB	Var3 = Var1 - Var2	subtraction																	
MUL	Var3 = Var1 * Var2	multiplication																	
DIV	Var3 = Var1 / Var2	division																	
MOD	Var3 = Var1 % Var2	remainder																	
<p>Command – Logical Operation</p>	<p>Click to add logical macro command. Options are:</p> <table border="1"> <thead> <tr> <th>Command</th> <th>Expression</th> <th>NOTE</th> </tr> </thead> <tbody> <tr> <td>AND</td> <td>Var3 = Var1 & Var2</td> <td>AND</td> </tr> <tr> <td>OR</td> <td>Var3 = Var1 Var2</td> <td>OR</td> </tr> <tr> <td>XOR</td> <td>Var3 = Var1 ^ Var2</td> <td>XOR</td> </tr> </tbody> </table>	Command	Expression	NOTE	AND	Var3 = Var1 & Var2	AND	OR	Var3 = Var1 Var2	OR	XOR	Var3 = Var1 ^ Var2	XOR						
Command	Expression	NOTE																	
AND	Var3 = Var1 & Var2	AND																	
OR	Var3 = Var1 Var2	OR																	
XOR	Var3 = Var1 ^ Var2	XOR																	

	NOT	Var3 = NOT Var1	NOT
	SHR	Var3 = Var1 >> Var2	right shift
	SHL	Var3 = Var1 <<Var2	left shift
Command – Data Transfer	Click to add data transfer command. Options are:		
	Command	Expression	
	MOV	Var1 -> Var3	
	BMOV	Var1(Var2 bytes)-> Var3(Var2 bytes)	
Command – Compare Operation	Click to add compare operation command. Options are:		
	Command	Expression	
	IF ==	IF Var1 == Var2	
	IF !=	IF Var1 != Var2	
	IF >	IF Var1 > Var2	
	IF >=	IF Var1 >= Var2	
	IF <	IF Var1 < Var2	
	IF <=	IF Var1 <= Var2	
	ELSEIF ==	ELSEIF Var1 ==Var2	
	ELSEIF !=	ELSEIF Var1 !=Var2	
	ELSEIF >	ELSEIF Var1 >Var2	
	ELSEIF >=	ELSEIF Var1 >=Var2	
	ELSEIF <	ELSEIF Var1 <Var2	
	ELSEIF <=	ELSEIF Var1 <=Var2	
	IF AND ==0	IF (Var1 & Var2)== 0	
	IF AND !=0	IF (Var1 & Var2)!= 0	
	IF ==ON	IF Var1 == ON	
	IF ==OFF	IF Var1 == OFF	
	ELSEIF AND ==0	ELSEIF (Var1 & Var2) == 0	
	ELSEIF AND !=	ELSEIF (Var1 & Var2) != 0	
	ELSEIF ==ON	ELSEIF Var1 == ON	
	ELSEIF ==OFF	ELSEIF Var1 == OFF	
	ELSE	ELSE	
ENDIF	ENDIF		

Command – Bit Operation	Click to add bit operation command. Options are: <ul style="list-style-type: none"> • SETB • CLRB
Command - Other	Click to add other commands. Options are: <ul style="list-style-type: none"> • NOP • END

NOTE: Click **Command** button to select command with input instruction.

3.6.8 Screen Color Setting

User can change the background color of the screen in a TP series text panel using the **Screen Color Setting**.

Follow these steps to configure the Screen Color Setting:

1. Click on the **Screen Setting** > **Screen Color Setting** on the **Menu** bar, or Click **Screen Color Setting** on the context menu.

Result: The **Screen Color Setting** window displays as shown in the following figure.

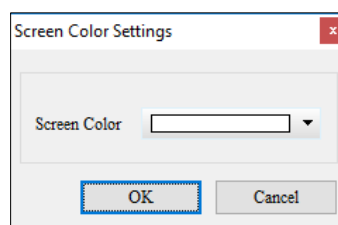


Figure 3 - 211: Screen Color Setting window

2. Click the Screen Color drop-down menu to choose a color.

Result: The **Color** window displays as shown in the following figure.

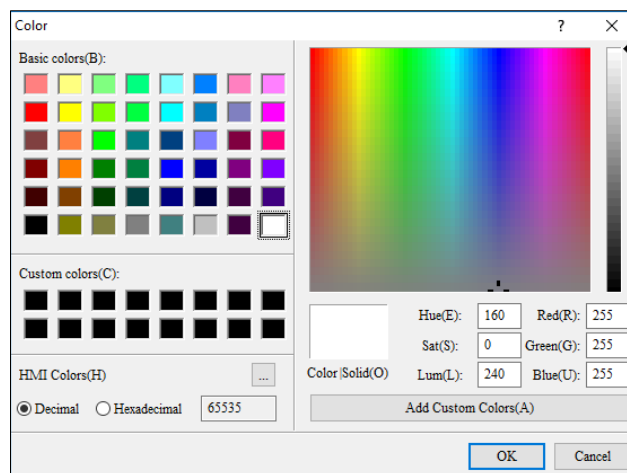


Figure 3 - 212: Color window

3. Select the required color or define a custom color by selecting the RGB values.
4. Click **OK** button on the **Color** window to save the color selection.
5. Click **OK** button on the **Screen Color Setting** window.

Result: The screen's background color is set.

3.7 Menu Bar - Global Setting

This section provides the detailed information about the functions available on the Global Setting menu. For more details refer to 2.2.2 Menu bar The Global Setting menu allows user to set the functions for a TP series text panel as a whole. Different models support different functions. The **Global Setting menu** functions are:

- User-Defined Direction Keys
- User-Level Password Setting
- System Parameter Setting
- System Change Screen Setting
- System Function Key Setting
- System Alarm Buzzer Setting
- System Alarm LED Setting

- System RTC Setting
- System Power ON Setting
- Global Macro Setting
- Recipe Setting
- Default Screen Color Setting

3.7.1 User-Defined Direction Keys

If user set the **Hide Screen Setting** on a TP series text panel, the hidden screens do not display on the text panel. To display the hidden screens, use the **User-Defined Direction Keys** setting.

Follow these steps to configure the User-Defined Direction Keys:

1. Click the **Global Setting** > **User-Defined Direction Keys** on the **Menu** bar.

Result: A **Confirm** window is displayed as shown in the following figure.

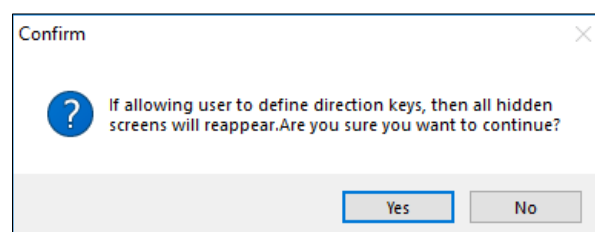


Figure 3 - 213: Confirm window

2. Click on **Yes** button to display the hidden screens in the text panel. Select **No** to cancel the action and the screens remain hidden.

Result: When the **User-Defined Direction Keys** is activated, a check mark appears next to the **Global Setting** > **User-Defined Direction Keys** as shown in the following figure.

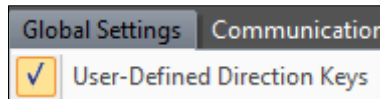


Figure 3 - 214: User-Defined Direction Keys – enabled

NOTE: Click **User-Defined Direction Keys** to toggle between the enabling and disabling the function.

3.7.2 User-Level Password Setting

User can set passwords belonging to different levels with the **User-Level Password Setting**.

Follow these steps to configure the User-Level Password Setting:

1. Click on the **Global Setting > User-Level Password Setting** on the **Menu** bar.

Result: The **User-Level Password Setting** window is displayed as shown in the following figure.

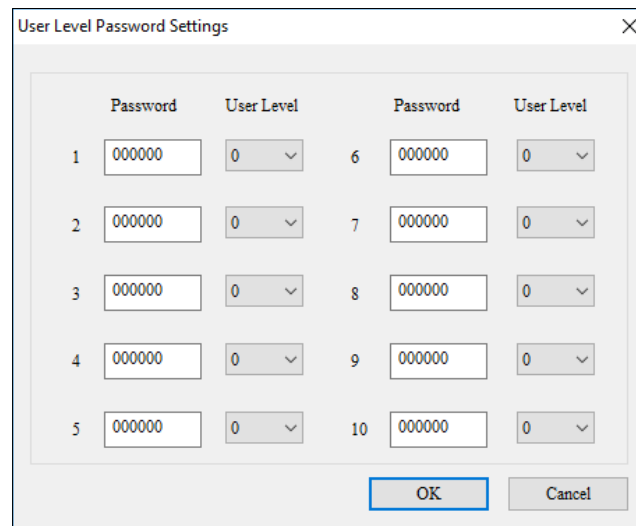


Figure 3 - 215: User-Level Password Setting window

If the User-Level Password is set for an element, the system asks user to type the password when user presses the element's function key. If user type

inputs a password of the same user level or a password for a higher user level, the element is enabled. Select 0 in a User Level drop down menu to disable the user level. The user levels are arranged in ascending order from 1 to 4. The user level password must include six numerals.

NOTE: *User cannot enter 000000 as a password.*

2. Select a **User Level** and enter a **Password**.
3. Click on **OK** button to save the settings or **Cancel** to cancel the action.

3.7.2.1 LUA program password setting

Remark: This function is only applicable to DOP-100 series and AX-8 series.

The user can set the password protection for the LUA program. Each program (Prog) can be set with its own password, and the protected program can be opened normally after entering the correct password. This password executes the procedure to export/import, and the password will not be cleared or changed after archiving/opening the old file.

After the user has completed the program, please follow the steps below to set the password:

1. Right-click on the program to protect with password
Result: Context menu of Program is displayed!
2. Click **Protection** on the context menu of the program.
Result: The **Enable Protection** pop-up is displayed!
3. Enter the password user want to set (the maximum characters are limited to 8 digits, numbers: 0~9, letters are limited to English A~F).
4. After completing the password setting, the color of the Prog pattern changes from blue to red and the protection item shows a check mark. (Please refer to Figure 3-192 for this status).

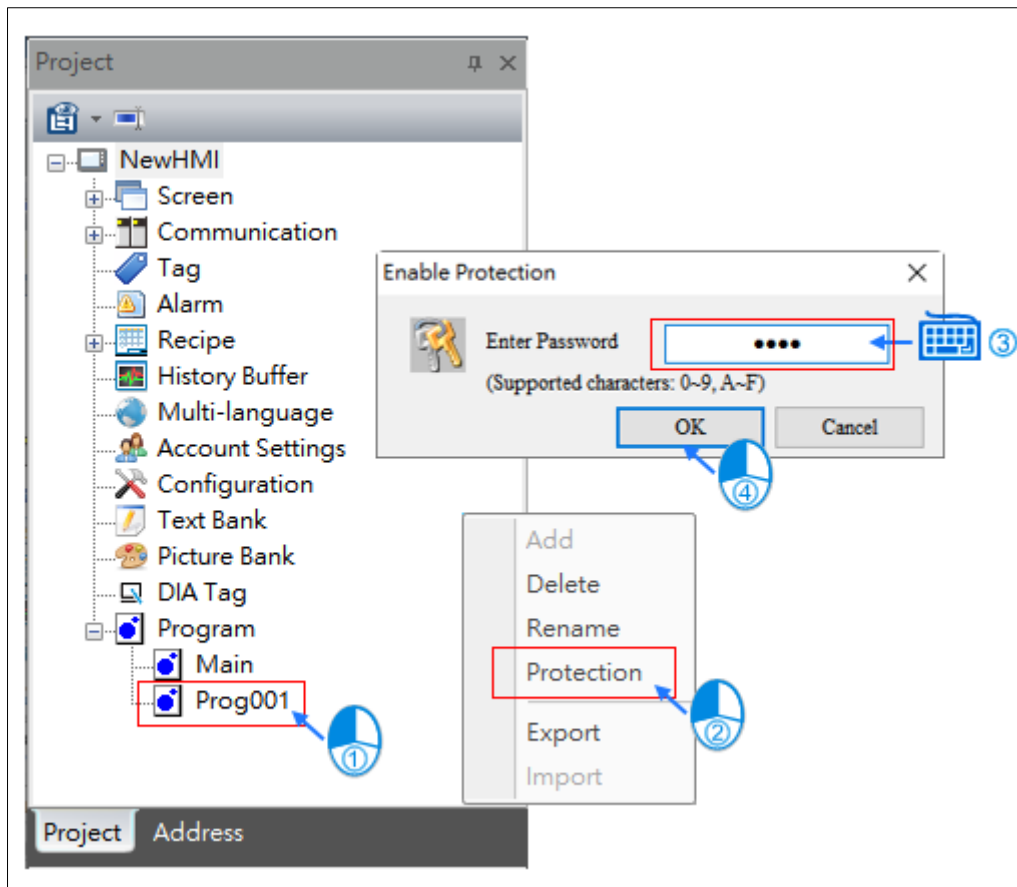


Figure 3 - 216: Program setting password protection

Follow the steps to open the protected program (Prog) file:

1. Double-click on the Protected program (Prog) on left mouse button.
2. Enter the correct password.
3. Open the file.

Result: After entering the correct password, the program is displayed to user.

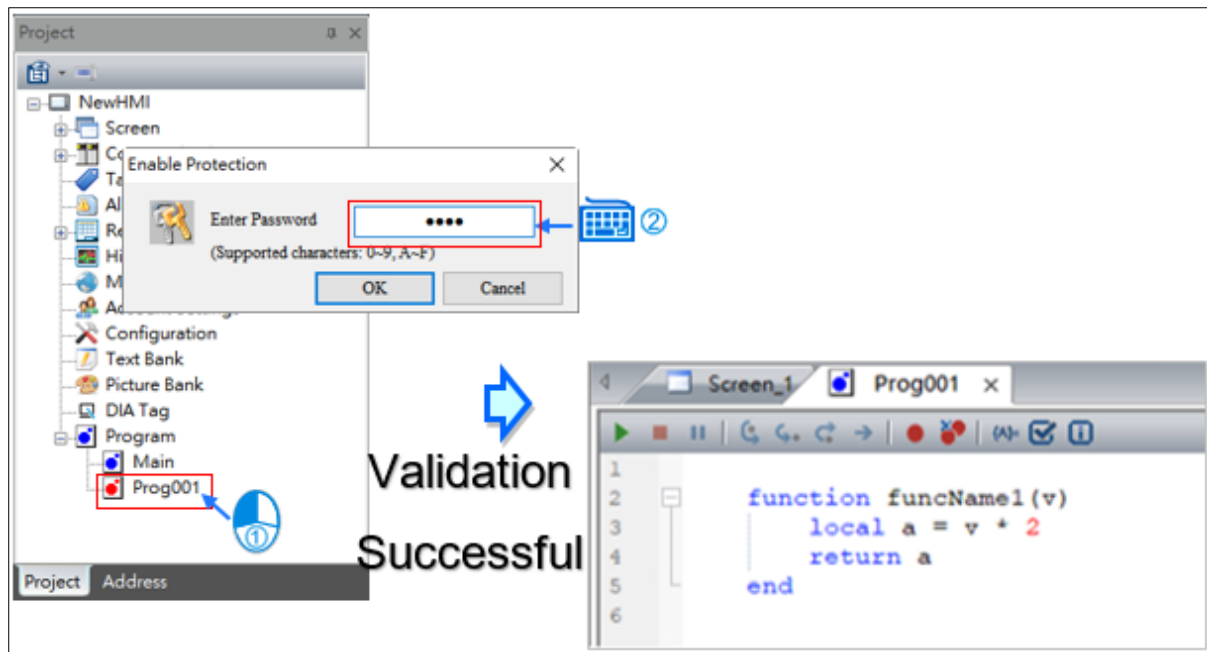


Figure 3 - 217: Open a protected program

Follow the steps to remove the password protection:

1. Right click on the protected program.
2. Click Protection on the context menu of the protected program.

Result: Displays the **Enable Protection** window, then enter password.

3. Enter the correct password.

On inputting a correct password, the color of the Prog pattern changes from red to blue, and the protected icon against the item is also removed. (Please refer to Figure 3-190 for this status).

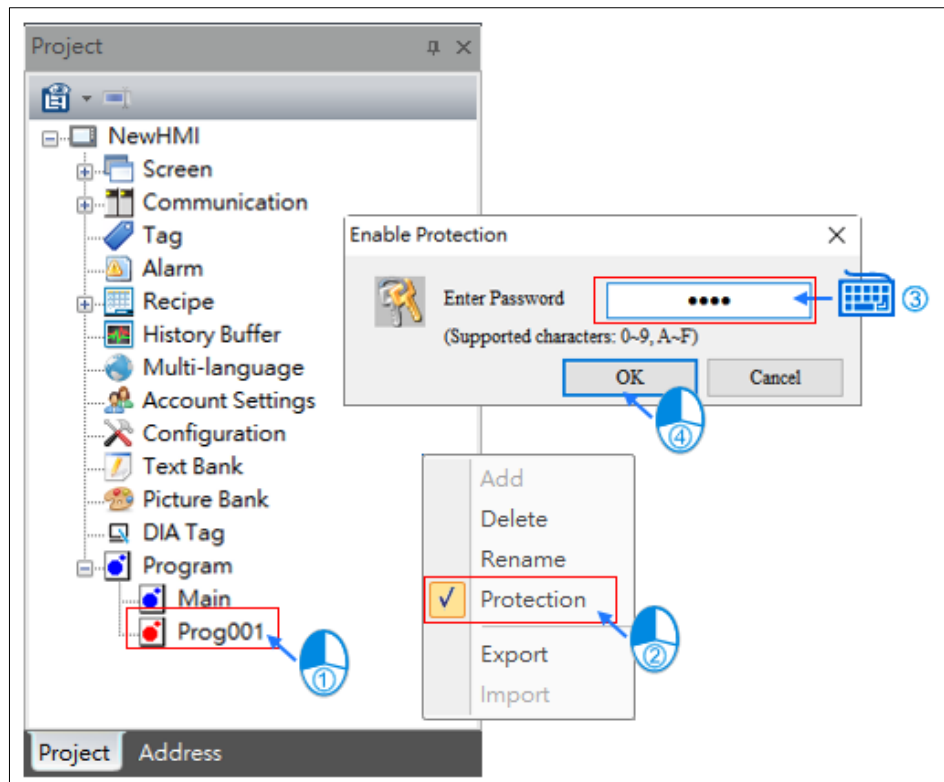


Figure 3 - 218: Program setting to remove password protection

3.7.3 System Parameter Setting

User can set the system parameters in a TP series text panel using the **System Parameter Setting**.

3.7.3.1 System Parameter Setting for general models except TP04P

This section provides the system parameter settings for TP04G, TP04G-AL-C, TP04G-AL2, TP04G-BL-C, TP04G-BL-CU, TP05G and TP08G series of TP text panels.

Click the **Global Setting** > **System Parameter Setting** on the menu bar.

Result: The **System Parameter Setting** window is displayed as shown in the following figure.

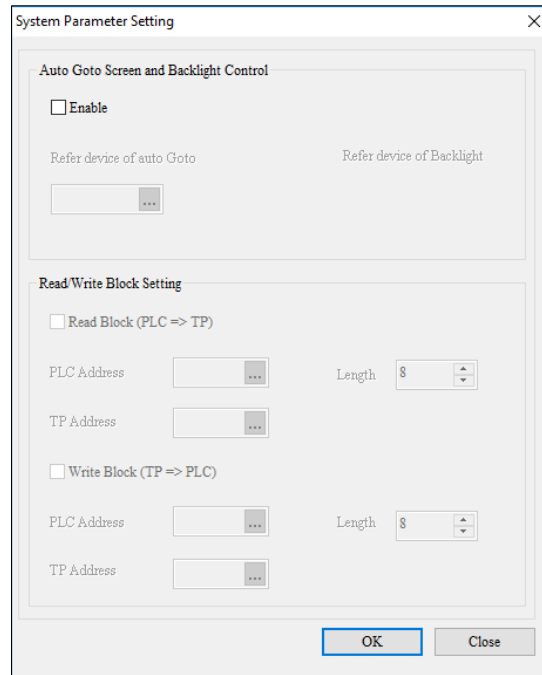


Figure 3 - 219: System Parameter Setting window – general models except TP04P

The **System Parameter Setting** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the Auto Goto Screen and Backlight Control .
Refer Device of auto Goto	Click the ... button to open the Refer Device window to select the variable.
Refer Device of Backlight	Displays the address of the device address that controls the backlight illumination of a TP series text panel. NOTE: This is a read-only field. Its value = (Refer Device of auto Goto +1).
Read Block (PLC => TP)	Select the checkbox to enable reading data from the PLC to the TP.
PLC Address (Read Block)	Enter the starting PLC address from which the values are read to the TP.

Property/Field	Description
TP Address (Read Block)	Enter the starting TP address to which the values are written to.
Length (Read Block)	Enter the number device addresses to be read.
Write Block (TP => PLC)	Select the checkbox to enable writing from the TP to the PLC.
PLC Address (Write Block)	Enter the starting PLC Address to which the values are written to.
TP Address (Write Block)	Enter the starting TP Address from which the values are written to the PLC.
Length (Write Block)	Enter the number of registers to write (length).

After a value is written to the address set in the **Refer Device of auto Goto** field, the screen specified by the value displays. If the register value set in **Refer Device of auto Goto** field is greater than the number of screens in the text panel, the present screen displays. After a value is written to the register in the **Refer Device of auto Goto** field, it becomes 0xFFFF whether or not the screen specified by the value displays. The register that controls the backlight illuminating the screen of a TP series text panel is the device address following the device address set in the **Refer Device of auto Goto** field. By default, its address is (**Refer Device of auto Goto**+1). If the first bit (bit0) in the device address that controls the backlight illuminating the screen of a TP series text panel is 1, the backlight will always illuminate the TP series text panel screen. If the first bit (bit0) in the device address that controls the backlight illuminating the screen of a TP series text panel is 0, the backlight will last for a specified time.

After user select the **Read Block (PLC => TP)** checkbox, user must select a register in the **PLC Address** field, a register in the **TP Address** field and a value in the **Length** field. When the text panel operates, the value in the N device addresses starting from the device address set in the **PLC Address** field will be written to the N device addresses starting from the device address set in the **TP Address** field, where N = value selected in the **Length (Read)** field.

After user select the **Write Block (TP > PLC)** checkbox, user must select a register in the **PLC Address** field, a register in the **TP Address** field and a value in the **Length** field. When the text panel operates, the values in the N device addresses starting from the device address set in the **TP Address** field will be written to the N device addresses starting from the device address set in the **PLC Address** field, where N = value selected in the **Length (Write)** field.

3.7.3.2 System Parameter Setting for TP04P and TP70P series:

This section provides the System Parameter Setting for the TP04P and TP70P series of TP text panels.

Click the **Global Setting > System Parameter Setting** on the **Menu** bar.

Result: The **System Parameter Setting** window displays as shown in the following figure.

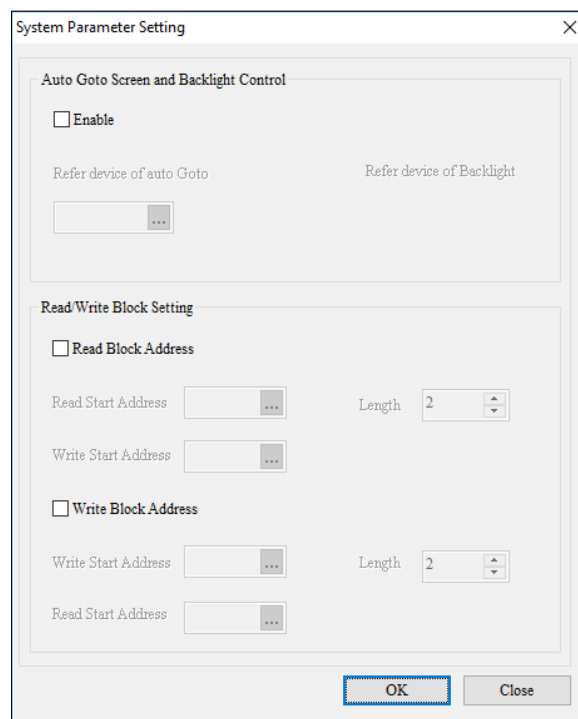


Figure 3 - 220: System Parameter Setting - TP04P and TP70P series

The **System Parameter Setting** window for TP04P and TP70P TP text panels displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the Auto Goto Screen and Backlight Control options.
Refer Device of auto Goto	Click the <input type="button" value="..."/> button to open the Refer Device window to select the variable.
Refer Device of Backlight	Displays the device address that controls the backlight illumination of a TP series text panel. NOTE: This is a read-only field. Its value = (Refer Device of auto Goto + 1).
Read Block Address	Select the checkbox to enable reading.
Read Start Address (Read Block Address)	Enter the starting address (source) of the Read Block.
Write Start Address (Read Block Address)	Enter the starting address (target) of the Read Block.
Length (Read Block Address)	Enter the number of device addresses to read.
Write Block Address	Select the checkbox to enable writing.
Write Start Address (Write Block Address)	Enter the starting address (target) of the Write Block.
Read Start Address (Write Block Address)	Enter the starting address (source) of the Write Block.
Length (Write Block Address)	Enter the number of device addresses to write.

After a value is written to the device address set in the **Refer Device of auto Goto** field, the screen specified by the value displays. If the device address value in the **Refer Device of auto Goto** field is greater than the number of text panel screens, the present screen displays. After a value is written to the device address set in the **Refer Device of auto Goto** field, it will become 0xFFFF whether or not the screen indicated by the value displays. The device address that controls the backlight illuminating the screen of a TP series text panel is the device address following the device address set in the **Refer Device of auto Goto** field. By default, its address is

(*Refer Device of auto Goto+1*). If the first bit (bit0) in the device address that controls the backlight illuminating the screen of a TP series text panel is 1, the backlight will always illuminate the TP series text panel screen. If the first bit (bit0) in the device address that controls the backlight illuminating the TP series text panel screen is 0, the backlight will last for the specified time.

After user select the **Read Block Address** checkbox, user must select a related device address in the **Read Start Address** field, a related device address in the **Write Start Address** field and a value in the **Length** field. When the text panel operates, the value in the N device addresses starting from the device address set in the **Read Start Address** field will be written to the N device addresses starting from the device address set in the **Write Start Address** field, where N = value selected in the **Length (Read)** field.

After user select the **Write Block Address** checkbox, user must select a related device address in the **Write Start Address** field, a related device address in the **Read Start Address** field and a value in the **Length** field. When the text panel operates, the value in the N device addresses starting from the device address set in the **Read Start Address** field will be written to the N device addresses starting from the device address set in the **Write Start Address** field, where N = value selected in the **Length (Read)** field.

NOTE: Once the **System Parameter Setting** is set, the **System Parameter Setting** icon on the menu bar and the screen's context menu displays as shown in the following figure.

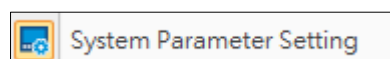


Figure 3 - 221: System Parameter Setting - enabled

3.7.4 System Change Screens Setting

With the **Screen Setting > Change Screens Condition Setting**, set the conditions to go from the current screen to a particular screen. Set the conditions to go to a particular screen for all screens with the **System Change Screens Setting**.

Follow these steps to configure the System Change Screens Setting:

1. Click the **Global Setting > System Change Screens Setting** on the **Menu** bar.

Result: The **System Change Screens Setting** window is displayed as shown in the following figure.

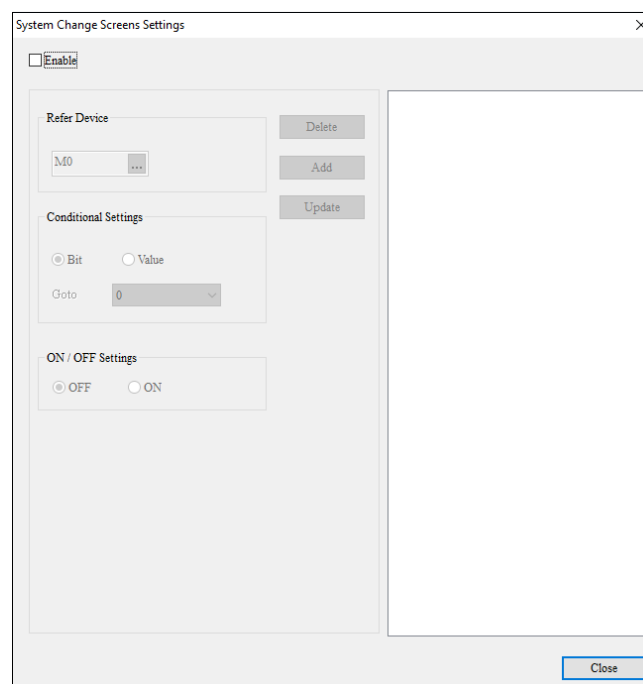


Figure 3 - 222: System Change Screens Setting window

NOTE: The properties in the **System Change Screens Setting** window are the same as the properties for the **Change Screen Condition Setting**. Refer [3.6.1 Change Screens Condition](#) for more information.

If the conditions set in the **Change Screen Condition Setting** window conflicts with the conditions set in the **System Change Screen Setting** window, the conditions in the **Change Screen Condition Setting** are given preference.

NOTE: User can set up to 20 conditions in the **System Change Screen Setting** window. Once the **System Change Screens Setting** is set, the System Change Screens Setting icon on the menu bar displays as shown in the following figure.

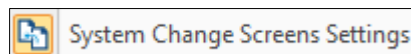


Figure 3 - 223: System Change Screens Setting - enabled

3.7.5 System Function Key Setting

With the **Screen Setting > Function Key Setting**, user set the functions for the function keys on a TP series text panel screen. User configure the functions keys for all screens with the **System Function Key Setting**.

Follow these steps to configure the System Function Key Setting:

1. Click **Global Setting > System Function Key Setting** on the **Menu** bar.

Result: The **System Function Key Setting** window displays as shown in the following figure.

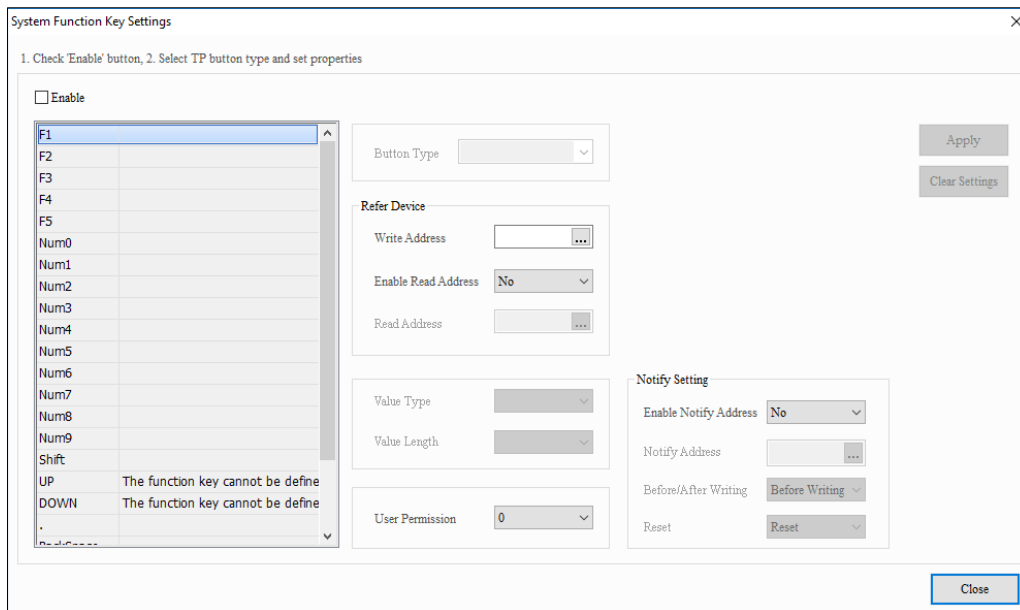


Figure 3 - 224: System Function Key Setting window

NOTE: The properties in the **System Function Key Setting** are the same as the **Function Key Setting** properties. Refer [3.6.2 Function Key Setting](#) for more information.

If the functions corresponding to the function keys set in the **Function Key Setting** window conflicts with the functions corresponding to the function key in the **System Function Key Setting** window, the **Function Key Settings** are given preference.

NOTE: Once the **System Function Key Setting** is set, the System Function Key Setting icon on the menu bar displays as shown in the following figure.



Figure 3 - 225: System Function Key Setting - enabled

3.7.6 System Alarm Buzzer Setting

With the **Screen Setting > Alarm Buzzer Setting**, user set the alarm buzzer for a TP series text panel screen. User can set the alarm buzzer for all screens with the **System Alarm Buzzer Setting**.

3.7.6.1 System Alarm Buzzer Setting for General Model TP Series Text Panels:

Follow these steps to configure the System Alarm Buzzer Setting for a general model TP series text panel:

1. Click the **Global Setting > System Alarm Buzzer Setting** on the **Menu** bar.

Result: The **System Alarm Buzzer Setting** window is displayed as shown in the following figure.

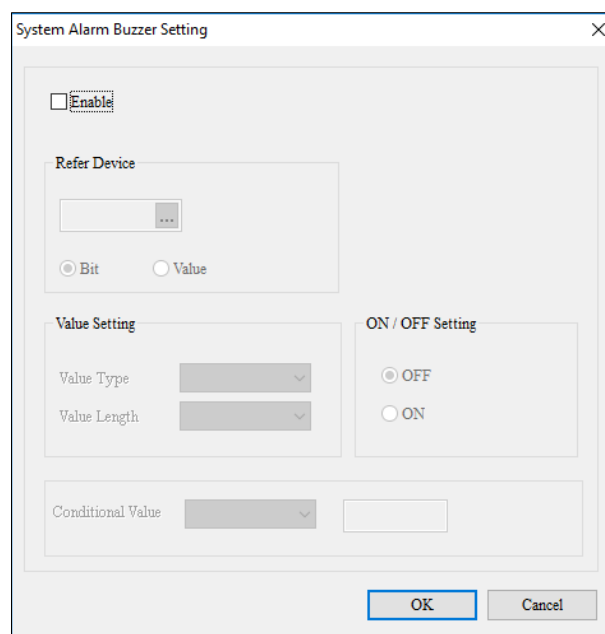


Figure 3 - 226: System Alarm Buzzer Setting window for general models

NOTE: The properties in the **System Alarm Buzzer Setting** window are the same as the properties for the **Alarm Buzzer Setting**. Refer [3.6.3 Alarm Buzzer Setting](#) for more information.

If the condition set in the **Alarm Buzzer Setting** window is different from the condition set in the **System Alarm Buzzer Setting** window, then both conditions can be used to trigger the alarm buzzer for the TP series text panel.

3.7.6.2 System Alarm Buzzer Setting for TP70P Series Text Panels:

In the case of TP70P series text panel, user can set up to 20 Alarm conditions in the **System Alarm Buzzer Setting** window.

Follow these steps to configure the System Alarm Buzzer Setting in a TP70P series text panel:


1. Click the **Global Setting > System Alarm Buzzer Setting** on the **Menu** bar.

Result: The **System Alarm Buzzer Setting** window is displayed as shown in the following figure.

ID	Trigger condition	Notify Address	Alarm	Text
----	-------------------	----------------	-------	------

Figure 3 - 227: System Alarm Buzzer Setting window - TP70P series

The **System Alarm Buzzer Setting** window for TP70P series text panel has the additional properties mentioned in the following table:

Property/Field	Description
Text	Enter the alarm message user want to display.
Notify	Select the check box to write the Alarm value to an address. NOTE: This field is unchecked by default.
Address field	Select the notify address. Click the  button to open the Refer Device dialog box to select the variable. NOTE: This field is enabled if the Notify property is selected.
Before Writing	Select the check box to Notify before writing the alarm value. NOTE: This field is enabled if the Notify check box is selected. Before Writing is selected by default.
After Writing	Select the check box to Notify after writing the alarm value. NOTE: This field is enabled if the Notify check box is selected. After Writing is not selected by default.
Reset	Select the check box to reset the Notify variable. NOTE: This field is enabled if the Notify check box is selected. The Reset is selected by default.
Set	Select the check box to configure the Notify variable. NOTE: This field is enabled if the Notify check box is selected. Set is not selected by default.
Delete	Select a condition and click Delete to delete the condition.
Delete All	Click to delete all the conditions.
Add	Click to add a condition.
Update	Select a condition and click Update to edit the condition.

NOTE: Once the **System Alarm Buzzer Setting** is set, the System Alarm Buzzer icon on the menu bar displays as shown in the following figure.



Figure 3 - 228: System Alarm Buzzer Setting - enabled

3.7.7 System Alarm LED Setting

With the **Screen Setting > Alarm LED Setting**, user set the alarm LED on a TP series text panel. User can set the alarm LED for all screens with the **System Alarm LED Setting**.

Follow these steps to configure the System Alarm LED Setting:

1. Click the **Global Setting > System Alarm LED Setting** on the **Menu** bar.

Result: The **System Alarm LED Setting** window is displayed as shown in the following figure.

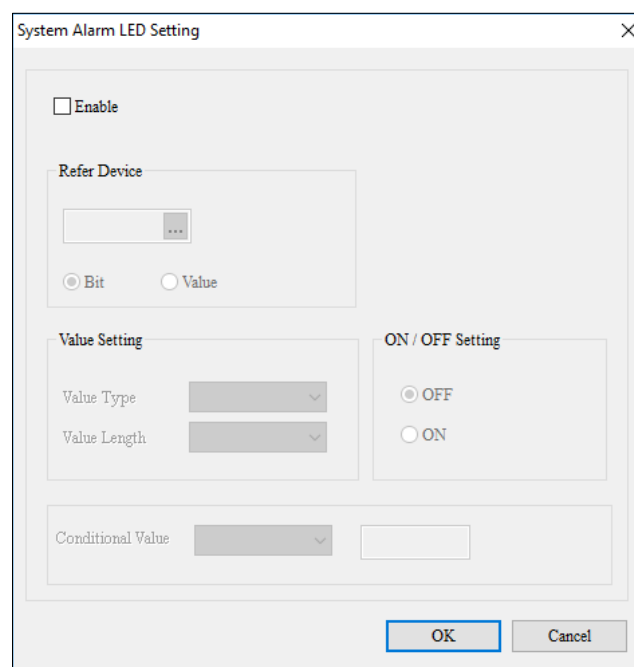


Figure 3 - 229: System Alarm LED Setting window

NOTE: The properties in the **System Alarm LED Setting** are the same as the properties for the **Alarm LED Setting**. Refer [3.6.4 Alarm LED Setting](#) for more information.

If the condition set in the **Alarm LED Setting** window is different from the condition set in the **System Alarm LED Setting** window, then both conditions can be used to trigger the alarm LED for the TP series text panel.

NOTE: Once the **System Alarm LED Setting** is set, the **System Alarm LED Settings** icon on the menu bar is displayed as shown in the following figure.



Figure 3 - 230: System Alarm LED Setting - enabled

3.7.8 System RTC Setting

User can write the time, week, and date in a TP series text panel to a device address with the **System RTC Setting**.

Follow these steps to configure the System RTC Setting:

1. Click the **Global Setting** > **System RTC Setting** on the **Menu** bar.

Result: The **System RTC Setting** window displays as shown in the following figure.

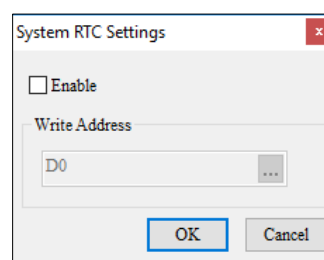



Figure 3 - 231: System RTC Setting window

The **System RTC Setting** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the RTC settings.
Write Address	Click the  button to open the Refer Device dialog box to select the variable in which the RTC can write to.

Example:

In the **System RTC Setting** window, the **Write Address** D10 is displayed as shown in the following figure.

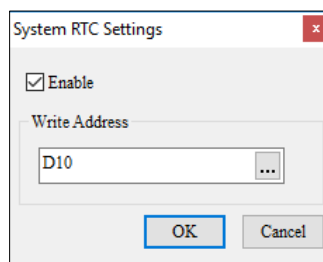


Figure 3 - 232: System RTC Setting - example

NOTE: Once the **System RTC Setting** is set, the **System RTC Setting** icon on the menu bar is displayed as shown in the following figure.



Figure 3 - 233: System RTC Setting – enabled

3.7.9 System Power ON Setting

User can send a command to a variable address after the system is powered on with the **System Power ON Setting**.

Follow these steps to configure the System Power ON Setting:

1. Click the **Global Setting** > **System Power ON Setting** on the **Menu** bar.

Result: The **System Power ON Settings** window is displayed as shown in the following figure.

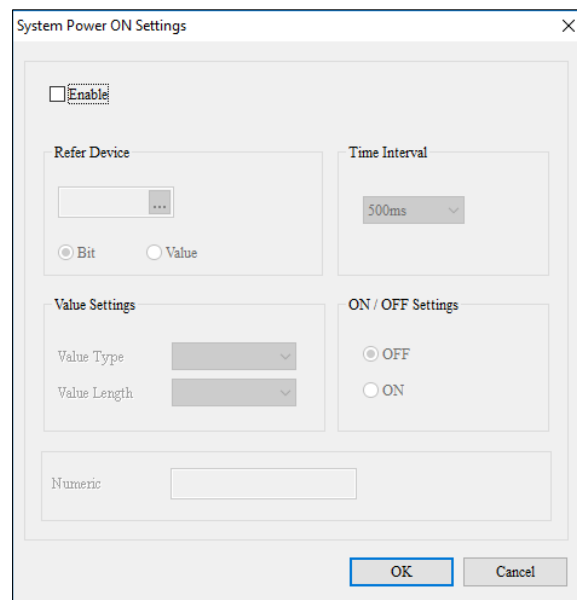


Figure 3 - 234: System Power ON Settings

The **System Power ON Settings** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable the System Power On Settings .
Refer Device	Click the ... button to open the Refer Device dialog box to select the variable.

Property/Field	Description
Bit	Select Bit to select the ON or OFF condition in ON / OFF Settings .
Value	Select Value to select the – Value Type, Value Length and enter the Numeric in Value Settings .
ON / OFF Settings – OFF	Select OFF condition in the ON / OFF Settings. NOTE: This field is enabled only if the Bit option is selected. The field is ticked by default.
ON / OFF Settings – ON	Select ON condition in the ON / OFF Settings. NOTE: This field is enabled only if the Bit option is selected.
Value Type	Select the value type. Options are: <ul style="list-style-type: none"> • Unsigned • Signed • Hex • BCD NOTE: This field is enabled only if Value option is selected. The default value is Unsigned .
Value Length	Select the value length. Options are: <ul style="list-style-type: none"> • 16 Bits • 32 Bits NOTE: This field is enabled only if Value option is selected. The default value is 16 Bits .
Numeric	Enter the value to write to the variable during system power on. NOTE: This field is enabled only if Value option is selected.
Time Interval	Select the amount of time after the system power on to wait to send the Bit/Value command.
OK	Click to save the settings and close the System Power On Setting window.
Cancel	Click to cancel the action and close the window.

NOTE: Once the **System Power ON Setting** is set, the System Power ON Setting icon on the menu bar is displayed as shown in the following figure.



Figure 3 - 235: System Power ON Setting - enabled

3.7.10 Global Macro Setting

With the **Screen Setting > Screen Macro Setting**, user can set the macros on a screen in the TP series text panel. User can set the macros for all screens with the **Global Macro Setting**.

Follow these steps to configure the Global Macro Setting:

1. Click the **Global Setting > Global Macro Setting** on the **Menu** bar.

Result: The **Global Macro Setting** window displays as shown in the following figure.

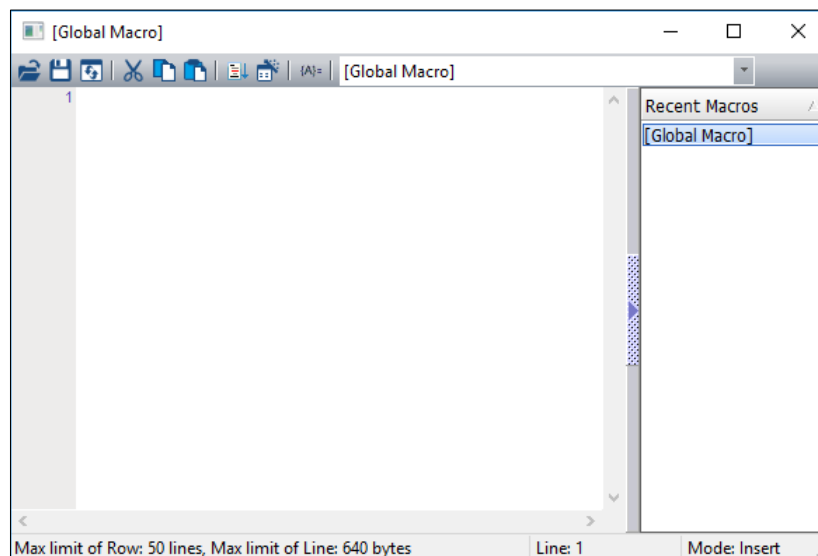


Figure 3 - 236: Global Macro Setting window

NOTE: The properties in the **Global Macro Setting** window are the same as the properties in the **Screen Macro Setting window**. Refer [3.6.7 Screen Macro Setting](#) for more information.

If the macro is set in both the **Screen Macro Setting** window and the **Global Macro Setting** window, then the macro in **Screen Macro Setting** window executes first.

NOTE: Once the **Global Macro Setting** is set, the **Global Macro Setting** icon on the menu bar is displayed as shown in the following figure.

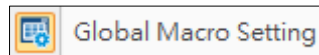


Figure 3 - 237: Global Macro Setting - Enable

NOTE: The **Global Macro Setting** is applicable only to the TP05G and TP08G series text panels.

3.7.11 Recipe Setting

A recipe is composed of several groups of parameters. Different products correspond to different parameters. If a recipe number changes, the parameters to which it corresponds to will also change. For example, a bread producer needs different proportions of ingredients (such as - sugar, cream, and flour) for different breads (such as - toast and cream buns). In a recipe table, the rows represent recipe numbers and the columns represent ingredient types. The value selected in the **Recipe Group (rows)** is the number of recipes (the number of bread types), and the value selected in the **Recipe Length (columns)** is the number of ingredient types. The number of recipes multiplied by the ingredient types is the number of items in a recipe.

Click the **Global Setting > Recipe Setting** to open the **Recipe Setting** window as shown in the following figure.

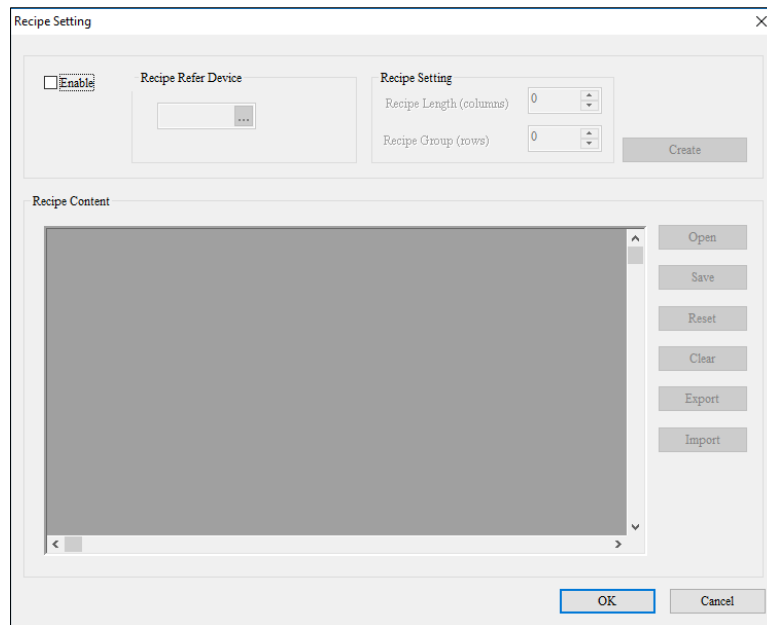


Figure 3 - 238: Recipe Setting window

The **Recipe Setting** window properties are described in the following table:

Property/Field	Description
Enable	Select the checkbox to enable recipe settings.
Recipe Refer Device	Click the ... button to open Refer Device dialog box. The value in the device address selected indicates a recipe. Example: A 0 indicates first recipe, 1 indicates second recipe and so on.
Recipe Length (columns)	Enter the number of ingredients. NOTE: Maximum recipe length is 32.
Recipe Group (rows)	Enter the number of recipes. NOTE: Maximum recipe group is 125.
Create	Click to create the recipe table in the Recipe Content area.
Open	Click to open a recipe file (*.rcp).
Save	Click to save the recipe file (*.rcp).
Reset	Click to reset the recipe data to factory settings.
Clear	Click to clear the data set.

Property/Field	Description
Export	Click to export recipe table file (*.csv).
Import	Click to import recipe table file (*.csv).
OK	Click to save data.
Cancel	Click to cancel the actions.

Here is an example of 3 group of recipe with 3 elements for each as below.

	W1	W2	W3
1	9	18	27
2	8	16	24
3	44	55	66

Figure 3 - 239: Recipe Content

If user want to read/write a recipe, he/she have to use a button or function key. Refer [3.7.5 System Function Key Setting](#), [3.6.2 Function Key Setting](#) and [3.5.10 Button](#) sections for more information. Select the **Recipe Write/Read** from the **Button Type** drop-down menu. If user select the **Write** option, the Nth recipe in the TP series text panel is written to the related device address set. If user select the **Read** option, then the value in the related device address set is written to the Nth recipe in the TP series text panel. *N* is the values in the device address selected in the **Refer Device** section.

3.7.12 Default Screen Color Setting

With the **Screen Setting > Screen Color Setting**, user can set the screen's background color from a screen in TP series text panel. User can set the default screen color for all screens with the **Default Screen Color Setting**.

Follow these steps to configure the Default Screen Color Setting in a TP70P series text panel:

Click the **Global Setting > Default Screen Color Setting** on the **Menu** bar.

Result: The **Default Screen Color Setting** window is displayed as shown in the following figure.

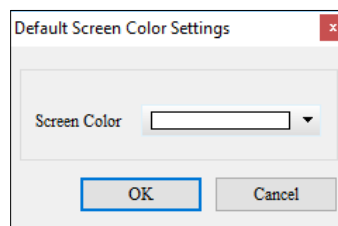


Figure 3 - 240: Default Screen Color Setting window

NOTE: The properties for the **Default Screen Color Setting** are the same as the properties for the **Screen Color Setting**. Refer [3.6.8 Screen Color Setting](#) for more information.

NOTE: The **Default Screen Color Setting** is applicable only to TP70P series text panels.

3.8 Menu Bar - Communication

This section provides detailed information about the functions available on the Communication menu. For more details refer to [2.2.2 Menu bar Communication](#)

Menu functions are:

- Upload from TP
- Download to TP
- Reset to Factory Setting
- Download Boot Screen
- Download Menu to TP

3.8.1 Upload from TP

If user want to edit a TP series text panel project in DIAScreen, upload the project from the TP series text panel using the **Upload from TP**.

1. Click the **Communication > Upload from TP** on the **Menu** bar, or

Click the  icon on the **Communication** Toolbar.

3.8.2 Download to TP

After editing a TP series text panel project in DIAScreen, download the project to the TP series text panel using **Download to TP**.

1. Click the **Communication > Download to TP** on the **Menu** bar, or

Click the  icon on the **Communication** Toolbar.

3.8.3 Reset to Factory Setting

If user want to restore the TP series text panel to its factory settings, use the **Communication > Reset to Factory Setting**.

3.8.4 Download Boot Screen

If user want to download the Boot Screen to the TP series text panel, use **Communication > Download Boot Screen**.

Pre-requisite:

To download the boot screen to a TP series text panel, user must open the **Boot Screen**. If any other screen is opened, the Download Boot Screen option appears grayed out.

Follow these steps to download the Boot Screen to TP series text panel:

1. Click **Communication > Download Boot Screen** on the menu bar.

Result: DIAScreen displays the confirmation message.

2. If user is using one of the following models, then touch **1. D/L AP TP model type <= PC** on the screen of the text panel screens:
 - TP02G series text panel
 - TP04G series text panel
 - TP-04G-AL-C series text panel
 - TP04G-AL2 series text panel
 - TP05G series text panel
 - TP08G series text panel
 - VFD-C series keypad

Result: **WAIT COMM...** is displayed on the text panel screen, and a window displaying the progress percentage of the Boot Screen download appears in the DIAScreen.

NOTE: *If user is using a TP series text panel that is not mentioned in the above list, the DIAScreen detects that the firmware in the TP series text panel is old, and prompts user to update the firmware.*

3.8.5 Download Menu to TP

Follow these steps to download the User Menu to the TP series text panel:

1. If user want to download the **User Menu** in DIAScreen to the TP series text panel, execute the **User Menu Setting** [3.1.6 User Menu Setting](#) and then click on **Communication > Download Menu to TP**.

NOTE: *If any other screen is opened, then **Download Menu to TP** appears grayed out.*

2. Touch **1. D/L AP TP model type <= PC** on the text panel screen.

Result: **WAIT COMM...** is displayed on the text panel screen, and the window showing the progress percentage of the User Menu download appears in the DIAScreen.

NOTE: *If DIAScreen detects that the firmware in the TP series text panel is old, it prompts user to update the firmware.*

3.9 Menu Bar - Tools

This section provides detailed information about the functions available on the Tools menu. For more details refer to [2.2.2 Menu bar Tools](#) menu functions are:

- Basic Setting
- Change TP Type

- AutoSave
- Update System USB Driver
- Language Setting

3.9.1 Basic Setting

User can configure basic communication settings on the text panel with the **Basic Setting**.

Follow these steps to configure the Basic Setting in a text panel:

1. Click on the **Tools > Basic Setting** on the **Menu** bar, or

Click the  icon on the **Communication** Toolbar.

Result: The **Basic Setting** window displays as shown in the following figure.

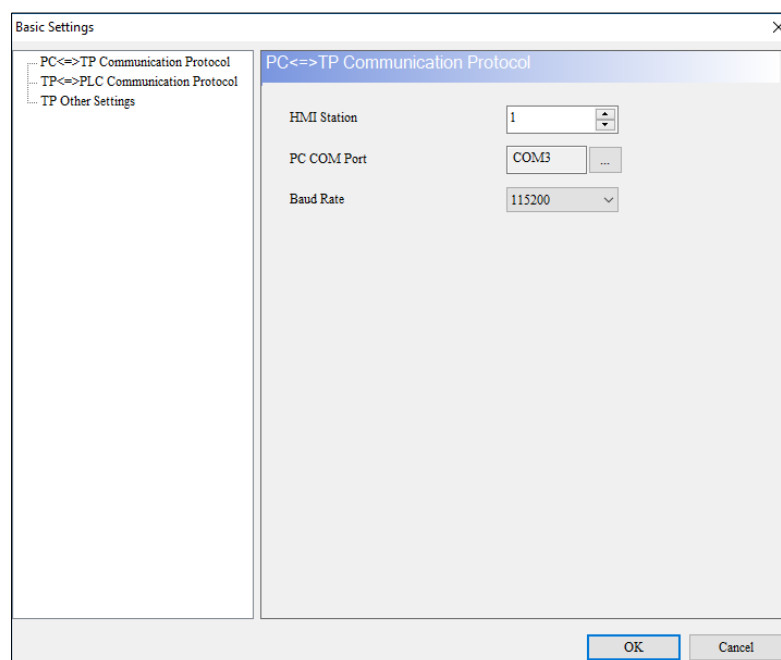


Figure 3 - 241: Basic Setting window – PC < = > TP Communication Protocol

The **Basic Setting** window supports the following functions:

- PC<=>TP Communication Protocol

- TP<=>PLC Communication Protocol
- TP Other Settings

NOTE: The items that can be set vary with the model used.

3.9.1.1 PC<=>TP Communication Protocol:

User can set the communication between a TP series text panel and the computer with **PC<=>TP Communication Protocol**.

The **PC<=>TP Communication Protocol** tab properties in the **Basic Setting** window are mentioned in the following table:

Property/Field	Description
HMI Station	Select the HMI station address that is set in the TP series text panel. NOTE: Range is 1 to 255 and the default value is 1 .
PC COM Port	Select the communication port of the PC that is connected to the TP series text panel
Baud Rate	Select the baud rate. NOTE: Range is 9600 to 115200 and the default value is 115200 .

3.9.1.2 TP<=>PLC Communication Protocol:

User can set the communication between a TP series text panel and the device (PLC) connected to the TP series text panel with **TP<=>PLC Communication Protocol**.

Click the **TP<=>PLC Communication Protocol** in the **Basic Setting** window.

Result: The **TP<=>PLC Communication Protocol** tab properties display (except TP04P) as shown in the following figure.

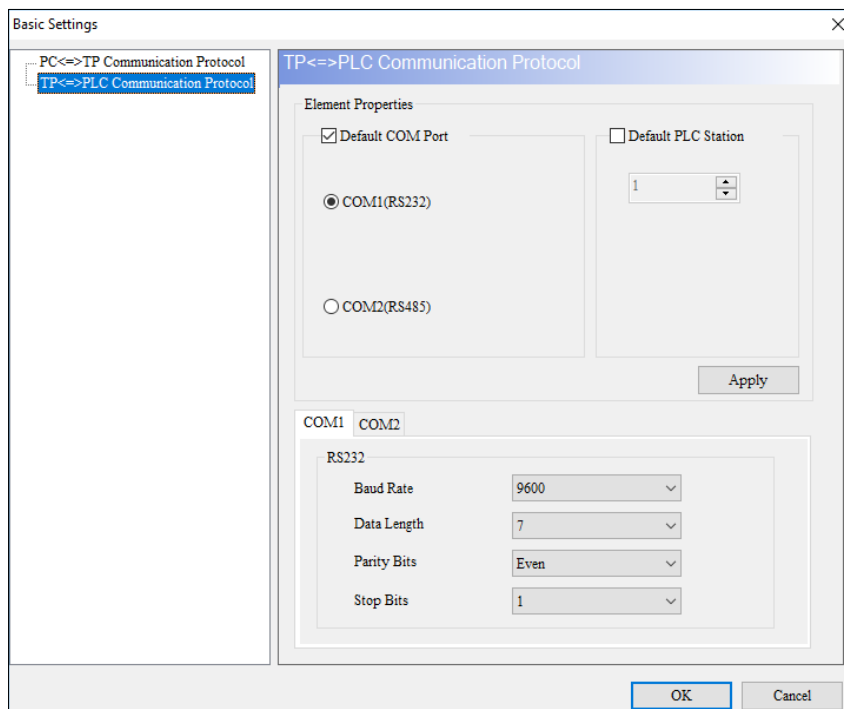


Figure 3 - 242: Basic Setting window - TP <=> PLC Communication Protocol (general model except TP04P)

The **TP<=>PLC Communication Protocol** tab properties in the **Basic Setting** window are described in the following table:

Property/Field	Description
Default COM Port	Select the Default COM Port check box to select the COM port. NOTE: The Default COM Port is selected by default.
COM1(RS232)	Select COM1 Port if the connection is through COM1 port. NOTE: The COM1(RS232) is selected by default.
COM2(RS485)	Select COM2 Port if the connection is through COM1 port.
Default PLC Station and Station address	Select the Default PLC Station check box and choose the station address.

Property/Field	Description
	<p>NOTE: The Default PLC Station is unchecked by default. The station address field is enabled only when Default PLC Station is selected. Default PLC Station value is 1.</p>
Apply	Click to save the settings
Baud Rate	<p>Select the baud rate for COM port in bits per second. Options are:</p> <ul style="list-style-type: none"> • 4800 • 9600 • 19200 • 38400 • 57600 • 115200 <p>NOTE: The default value is 9600.</p>
Data Length	<p>Select the data length. Options are:</p> <ul style="list-style-type: none"> • 7 • 8 <p>NOTE: The default value is 7.</p>
Parity Bits	<p>Select the parity bits. Options are:</p> <ul style="list-style-type: none"> • None • Odd • Even <p>NOTE: The default value is Even.</p>
Stop Bits	<p>Select the stop bits. Options are:</p> <ul style="list-style-type: none"> • 1 • 2 <p>NOTE: The default value is 1.</p>
OK	Click to set the TP<=>PLC Communication Protocol settings.
Cancel	Click to cancel the action and close the window.

The **TP<=>PLC Communication Protocol** tab properties in **Basic Settings** window for the TP04P and TP70P are shown in the following figure.

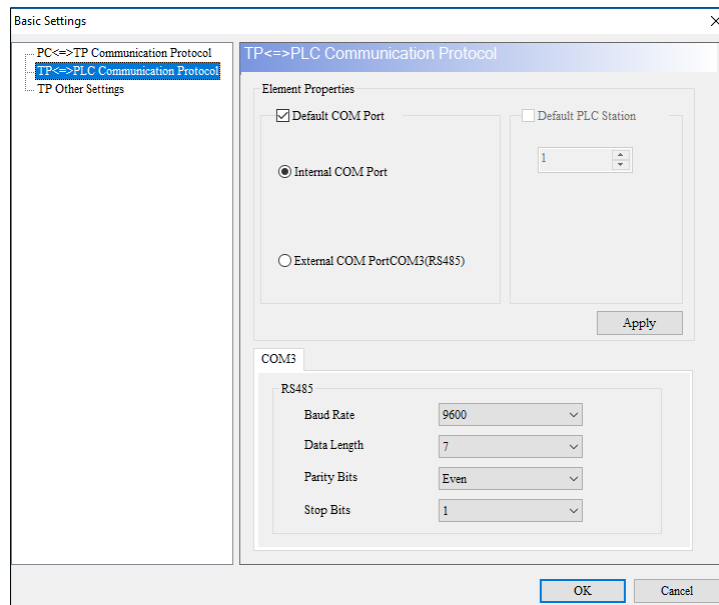


Figure 3 - 243: Basic Setting window - TP <=> PLC Communication Protocol (TP04P and TP70P series)

The **TP<=>PLC Communication Protocol** tab properties are mentioned in the following table:

Property/Field	Description
Default COM Port	Select the Default COM Port check box to select the COM port. NOTE: The Default COM Port is selected by default.
Internal COM Port	Select if the Internal COM Port is the communication port. NOTE: This field is enabled only if Default COM Port is selected. Internal COM Port is selected by default.
External COM Port COM3 (RS485)	Select External COM Port if it is the communication port. NOTE: This field is enabled only if Default COM Port is selected. External COM Port COM3(RS485) is not selected by default.
Default PLC Station and Station address	Select Default PLC Station check box and choose the station address.

Property/Field	Description
	NOTE: This field is enabled only if External COM Port COM3(RS485) is selected. Station address field is enabled only if Default PLC Station is selected.
Apply	Click to save the settings
COM3 – RS485 – Baud Rate	<p>Select the baud rate for the COM3 port in bits per second. Options are:</p> <ul style="list-style-type: none"> • 4800 • 9600 • 19200 • 38400 • 57600 • 115200 <p>NOTE: The default value is 9600.</p>
COM3 – RS485 – Data Length	<p>Select the data length for COM3 port. Options are:</p> <ul style="list-style-type: none"> • 7 • 8 <p>NOTE: The default value is 7.</p>
COM3 – RS485 – Parity Bits	<p>Select the parity bits for the COM3 port. Options are:</p> <ul style="list-style-type: none"> • None • Odd • Even <p>NOTE: The default value is Even.</p>
COM3 – RS485 – Stop Bits	<p>Select the stop bits for the COM3 port. Options are:</p> <ul style="list-style-type: none"> • 1 • 2 <p>NOTE: The default value is 1.</p>
OK	Click to set the TP<=>PLC Communication Protocol settings.
Cancel	Click to cancel the action and close the window.

3.9.1.3 TP Other Settings:

User can set the hardware properties for the TP series text panel with **TP Other Settings**.

Click the **Tools** > **Basic Setting** to open the **Basic Setting** window and then click the **TP Other Settings** option.

Result: The **TP Other Settings** tab is displayed as shown in the following figure.

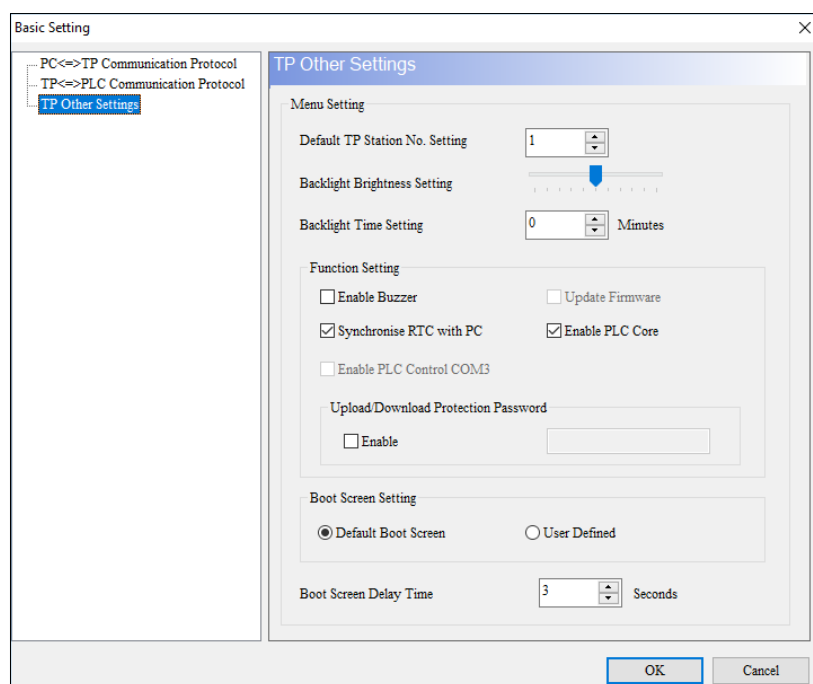


Figure 3 - 244: Basic Setting window - TP Other Settings

The properties available in **TP Other Settings** tab are mentioned in the following table:

Property/Field	Description
Default TP Station	Enter the default TP Station address. NOTE: Range is 1-255 and the default value is 1 .
Backlight Brightness	Select the backlight brightness in a scale of 0 to 10. NOTE: The default value is 5 .

Property/Field	Description
Backlight Time	<p>Enter the time in minutes in which the backlight has to be illuminated.</p> <p>NOTE: A value of 0 always illuminates the TP series text panel screen.</p>
Enable Buzzer	<p>Select the check the box to enable or disable the Buzzer.</p> <p>NOTE: The Enable Buzzer check box is unchecked by default.</p>
Update Firmware	<p>Select the check box to perform a firmware update.</p> <p>NOTE: The Update Firmware check box is unchecked and appears grayed out by default.</p>
Synchronize RTC with PC	<p>If user select this check box, the PC time clock downloads to the TP series text panel while downloading the project from the PC to the TP series text panel.</p> <p>NOTE: Synchronize RTC with PC check box is selected by default</p>
Enable PLC Core	<p>Select this check box, to enable the PLC in the TP series text panel. Clear the check box to disable the PLC in the TP series text panel. System resources are saved and the screens of the text panel are updated more rapidly.</p> <p>NOTE: The Enable PLC Core check box is selected by default.</p>
Enable PLC Control COM3	<p>Select this check box, when the COM3 port is occupied by the internal PLC core. Clear the check box if COM3 belongs to TP for communication.</p> <p>NOTE: The Enable PLC Control COM3 check box is unchecked by default.</p>
Upload/Download Protection Password - Enable	<p>Select this check box to enable Password Protection and enter a password during the upload or download. Clear the check box to disable the Password Protection feature.</p> <p>NOTE: The Upload/Download Password Protection is unchecked by default.</p>
Upload/Download Protection Password - field	<p>Enter the password for the upload or download protection feature.</p>

Property/Field	Description
Default Boot Screen	Select this check box to display the default boot screen during the boot of the TP series text panel. NOTE: The Default Boot Screen is checked by default.
User Defined	Select this check box to enable the user defined boot screen during the boot of the TP series text panel.
Boot Screen Delay Time	Enter a delay time to apply to the boot before displaying the selected boot screen.

3.9.2 Change TP Type

User can replace the current TP series text panel with another TP series text panel as long as the current panel's screen is smaller than the replacement screen. To replace the TP series text panel and configure the keys corresponding to function keys, use **Change TP Type** function.

NOTE: User cannot replace a TP series text panel with a screen that is smaller than the current panel's screen.

Follow these steps to configure the Change TP Type in a text panel:

1. Click the **Tools** > **Change TP Type** on the **Menu** bar.

Result: The **Change TP Type** window is displayed.

Example:

On a **TP02G** project in DIAScreen, the **Change TP Type** window is displayed as shown in the following figure.

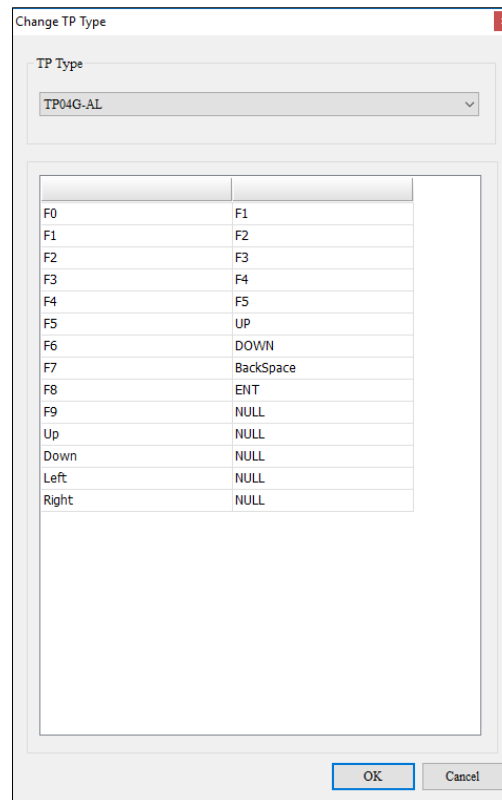


Figure 3 - 245: Change TP Type window

NOTE: The options available in the **TP Type** field for the **TP02G** panel are shown in the following figure.

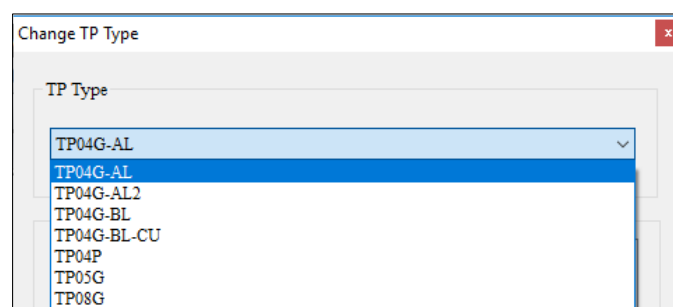


Figure 3 - 246: Change TP Type - example

2. If user select **TP04G-AL** to replace the **TP02G**, a confirmation window is displayed. Click **Yes**.

Result: After saving the changes, a confirmation dialog box is displayed as shown in the following figure.

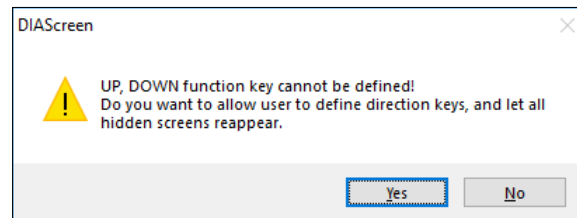


Figure 3 - 247: Confirmation of keys used

3. Click on **Yes** button.

Result: The HMI changes and the project compiles.

3.9.3 AutoSave

User can set a time to save the DIAScreen project file using **AutoSave**.

Follow these steps to configure the AutoSave in a text panel:

1. Click the **Tools > AutoSave** on the menu bar.

Result: The **AutoSave** window is displayed as shown in the figure.

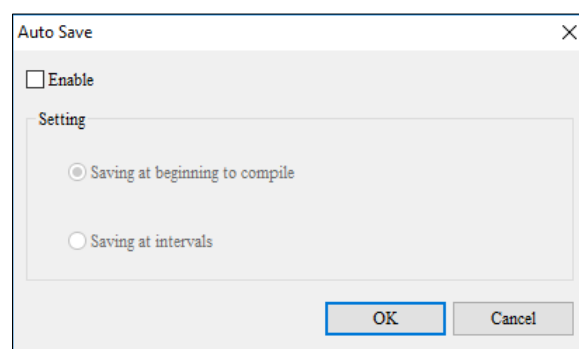


Figure 3 - 248: Auto Save

The **AutoSave** window displays the properties as shown in the following table:

Property/Field	Description
Enable	Select the check box to enable AutoSave settings.
Saving at beginning to compile	Select this option to save the DIAScreen project file every time the compile action is performed. NOTE: The Saving at beginning to compile is enabled by default when AutoSave is enabled.
Saving at intervals	Select this option to save the project at a specified time interval. NOTE: When user select Saving at intervals , the time period field displays where user can set the time period in minutes.

3.9.4 Update System USB Driver

In case the USB driver is not installed properly. User can update the USB Driver installed in the PC with the **Update System USB Driver**.

1. Click the **Tools > Update System USB Driver** on the **Menu** bar.

NOTE: The function is only allowed with administrator user of computer.



Figure 3 - 249: Success to proceed

2. Click the **OK** to proceed to the next step.

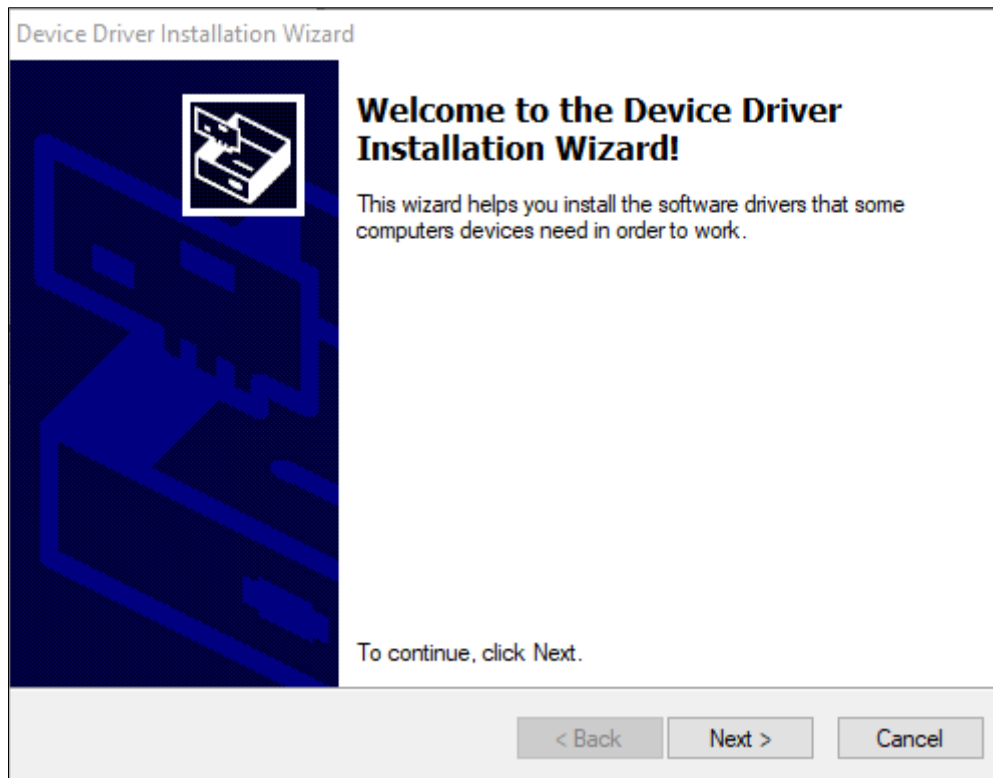


Figure 3 - 250: Update USB driver

3. Click **Next** to start installation. After the installation is complete, the below message displays.

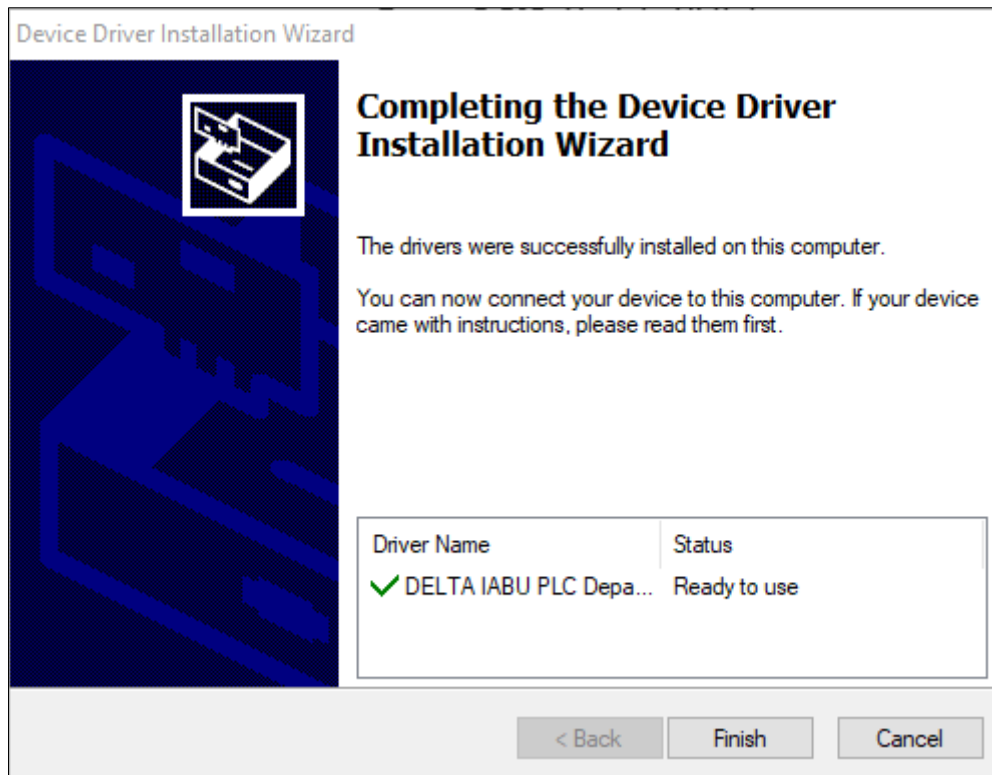


Figure 3 - 251: Update USB driver finish

3.9.5 Language Setting

User can configure to show project functionalities for any supported language with **Language Setting**.

Follow these steps to configure the Language Setting:

1. Click the **Tools** > **Language Setting** on the **Menu** bar.

Result: The **Language Setting** window displays as shown in the following figure.

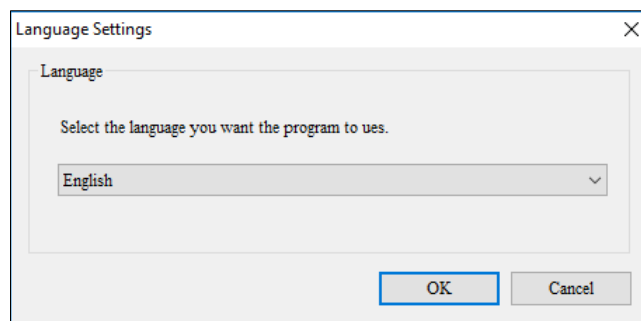


Figure 3 - 252: Language Setting window

The following languages are supported by DIAScreen:

- Traditional Chinese
 - Simplified Chinese
 - English – United States
2. Select a language from the drop-down menu.
 3. Click **OK** to apply the changes.

Result: All the fonts change to the selected language.

NOTE: *DIAScreen will restart application to realize the change.*

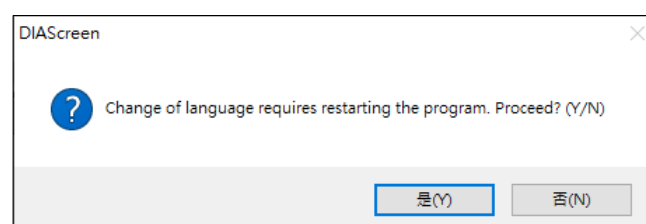


Figure 3 - 253: Ask for restarting DIAScreen

3.9.5.1 System Settings Multi-language Conversion


Remark: This function is applicable to DOP-100 series and AX-8 series.

For the system setting page of DOP-100 series and AX-8 series during operation, the user can set the internal system parameter LANG_OF_SYSMMSG address

through the numerical input component, and input the number 0~6 of the national language system during operation, and then the system language can be changed through

- 0: English (English)
- 1: Traditional Chinese
- 2: Simplified Chinese
- 3: Spanish (Spanish)
- 4: French (French)
- 5: Russian (Russian)
- 6: Turkish (Turkish)

Click the menu **Element > Input > Numeric Entry** .Create a Numeric entry on screen. Double click the Numeric entry on screen. Numeric Entry window opens.

Click . In the **Write address in Memory**. Input window opens, set the **Link > internal parameter**. In **Device type**, select **LANG_OF_SYSMMSG**.

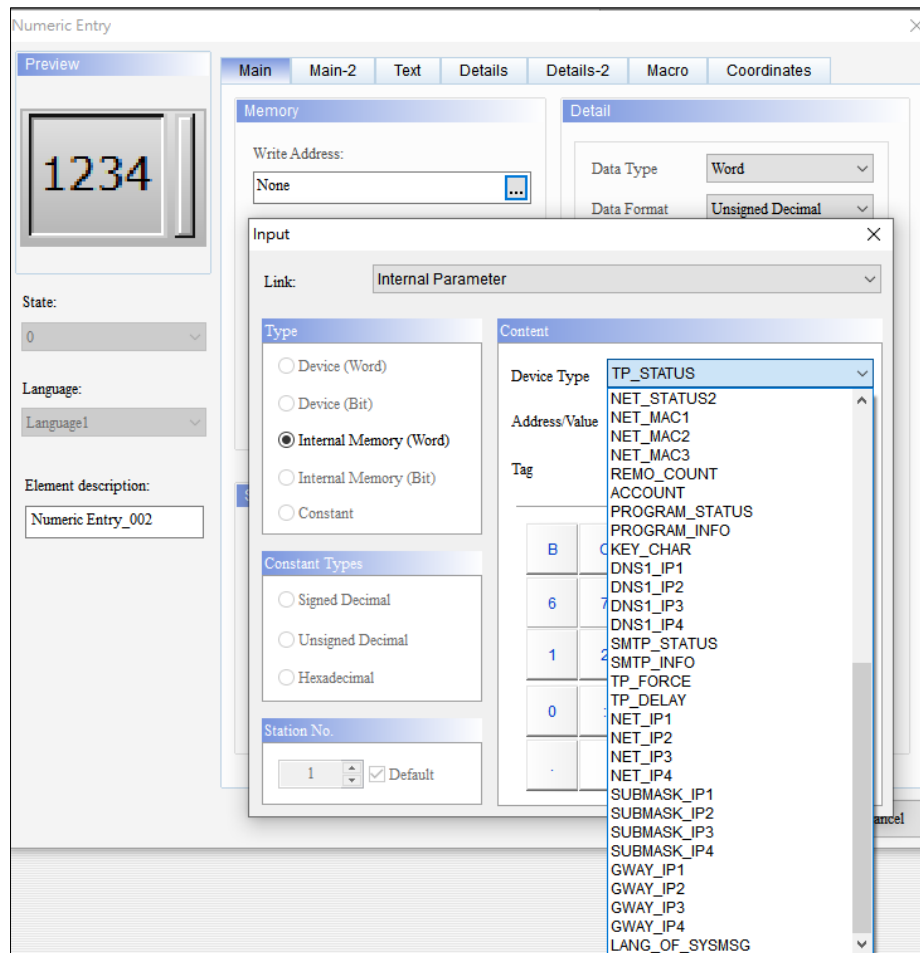


Figure 3 - 254: Internal national language system parameters

- After the setting is completed, it can be downloaded to the HMI or viewed by online simulation.



Figure 3 - 255: Download button



Figure 3 - 256: Online simulation button

After entering the screen, change the input value to 2, long press the blank space, user can see the system setting page is converted to Simplified Chinese.

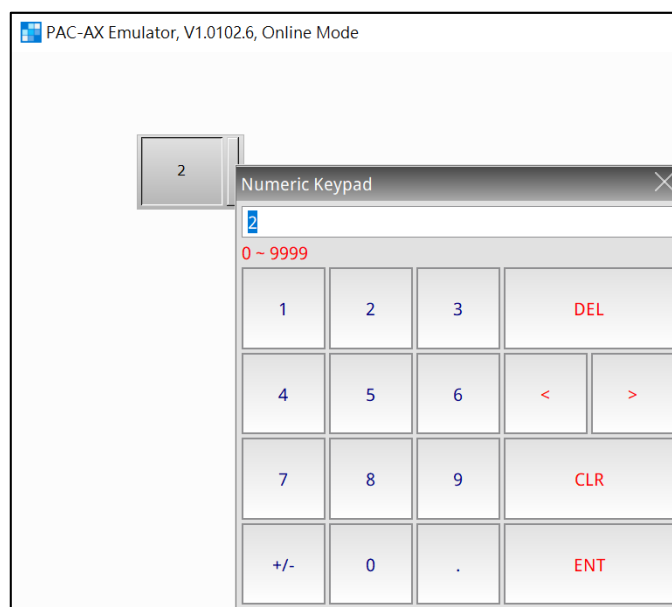


Figure 3 - 257: Transform the input value

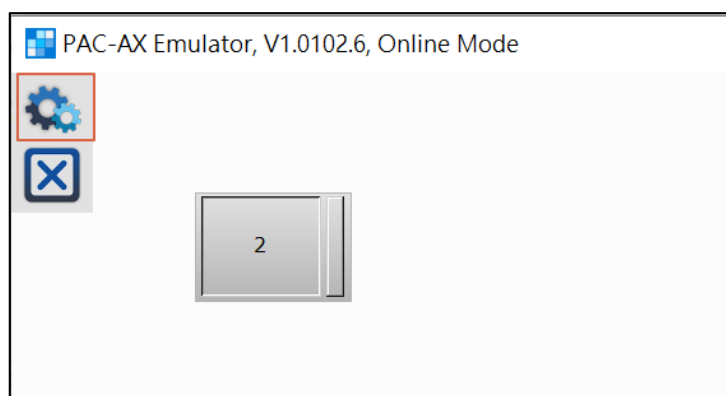


Figure 3 - 258: System setting

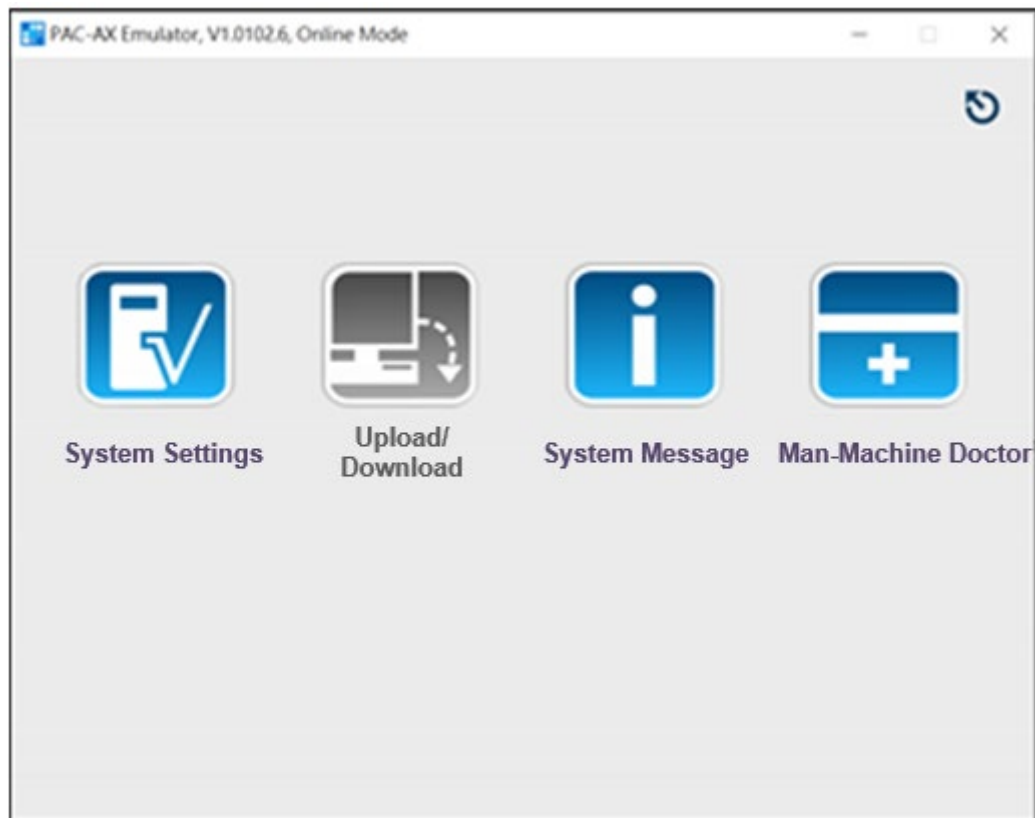


Figure 3 - 259: Simplified Chinese

3.10 Menu Bar - Window

This section provides detailed information about the functions available from the Window menu. For more details refer to 2.2.2 Menu bar **Window** menu functions are:

- Close Current Window (O)
- Close All Windows
- Next Window
- Previous Window
- Reset Window Layout

3.10.1 Close Current Window(O)

Close the current window (screen) using one of the following methods:

- Click **×** icon on the title bar of the window (screen) opened or as shown in the following figure.



Figure 3 - 260: Close Current Window

- Click **Window > Close Current Window(O)**.

Result: The current window (screen) close.

NOTE: When no window is open, **Close Current Window(O)** option appears grayed out.

3.10.2 Close All Windows

Close all the screens open in the screen editing area with **Close All Windows**.

Click the **Windows > Close All Windows** on the **Menu** bar.

Result: All screens will close.

NOTE: When no screen is open, **Close All Windows** option appears grayed out.

3.10.3 Next Window

Switch or navigate to the next open screen in the DIAScreen application with **Next Window**.

Click the **Windows > Next Window** on the menu bar.

Result: A screen with the next higher number displays.

NOTE: When the screen with highest number is open, **Next Window** option appears grayed out.

3.10.4 Previous Window

Switch or navigate to the previous screen in the DIAScreen application with **Previous Window**.

Click the **Windows > Previous Window** on the menu bar.

Result: A screen with the next lower number displays.

NOTE: When the *Boot* screen is the current screen, **Previous Window** option appears grayed out.

3.10.5 Reset Window Layout

User can reset the entire screen layout with **Reset Window Layout**.

Follow these steps to reset the window layout:

1. Click the **Window > Reset Window Layout** on the **Menu** bar.

Result: The confirmation window appears to confirm the action as shown in the following figure.

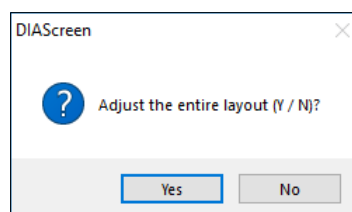


Figure 3 - 261: Reset Window Layout – confirmation

2. Click on **Yes** button.

Result: The system prompts user to save the project.

3.11 Menu Bar - Help

This section provides detailed information about the functions available from the Help menu. **Help** menu functions are:

- About

3.11.1 Help > About

The **About** window provides the information about the software version and the supported devices in the current software version.

Click the **Help > About** on the **Menu** bar.

Result: The **About** window displays as shown in the following figure.

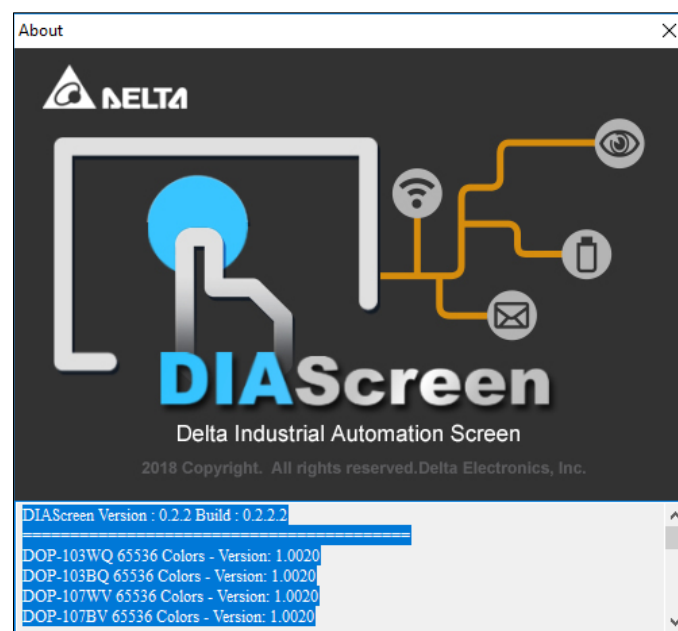


Figure 3 - 262: About window

3.11.2 Help > Software Manual

The **Software Manual** window provides the information about the latest user manual.

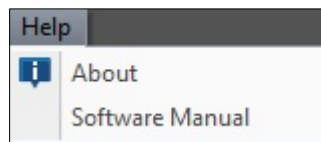


Figure 3 - 263: Software Manual

3.12 Menu-Options

Remark: This function is suitable for DOP-100 series and AX-8 series.

3.12.1 Configuration

The Configuration is divided into seven pages: Main, Control Status Block, Real Time Clock, Print, Default, Network Settings, and Multi-language.

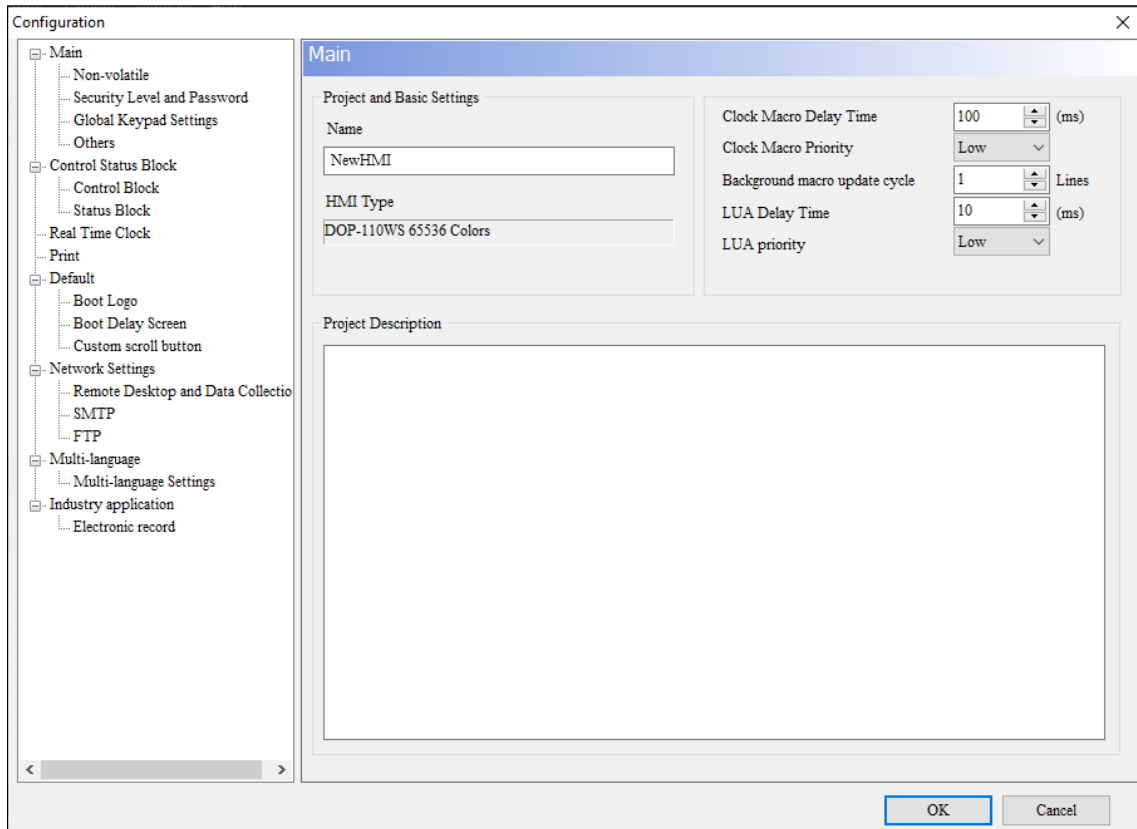
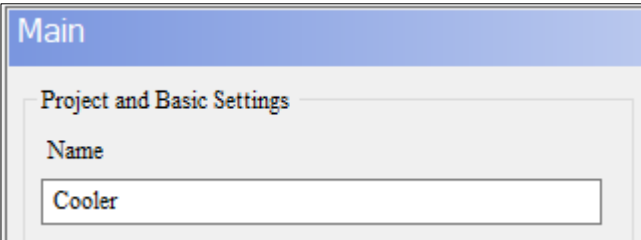
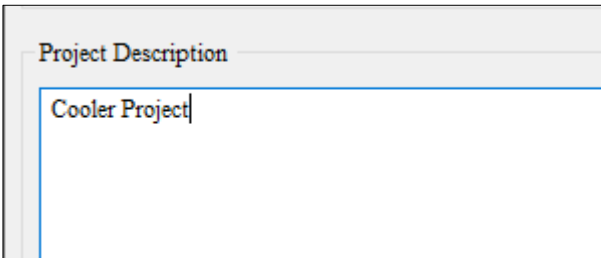
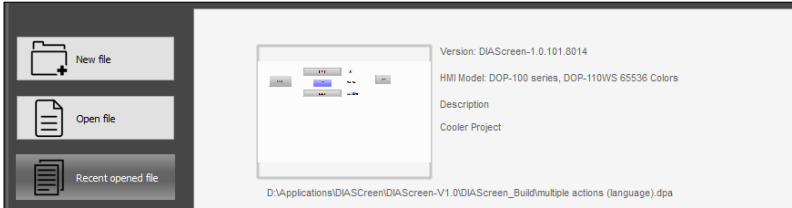


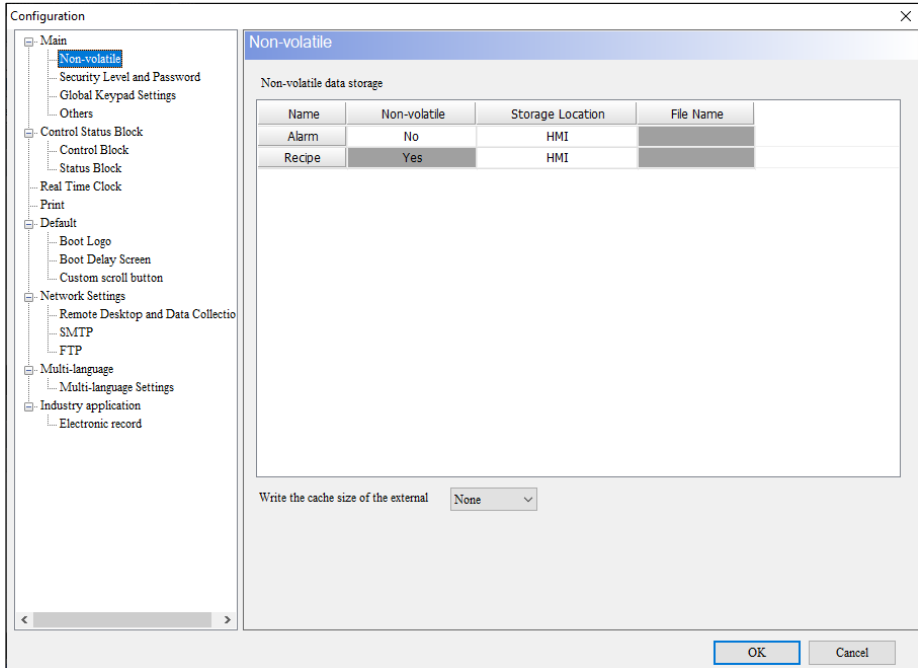
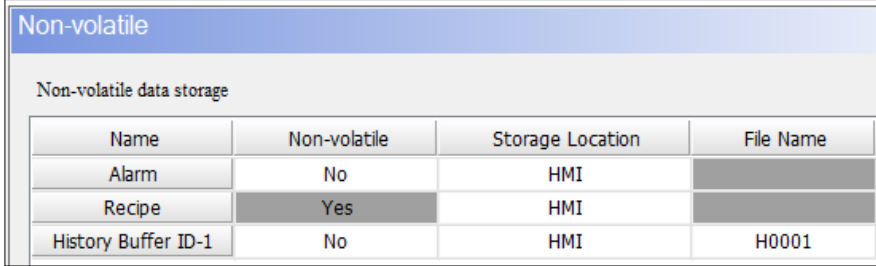
Figure 3 - 264: Configuration

3.12.1.1 General

Features	Description
Name	<ul style="list-style-type: none"> User can change the name of the project yourself, and it will be displayed in the project tree on the left. 

Features	Description
	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> </div> <ul style="list-style-type: none"> • When saving, this name will be the default archive name. <div style="border: 1px solid black; padding: 5px;"> </div>
<p>HMI interface types</p>	<p>Used to display the current HMI model.</p>
<p>Clock Macro delay time</p>	<p>Clock macro delay time, the range is 50 ms ~ 65535 ms. This time is how long is the interval after the macro is executed every time the Clock is executed.</p>

Features	Description
Clock Macro priority	Clock macro priority can be divided into low, medium and high. Set the priority of Clock macro execution. The higher the priority, the more accurate the clock macro delay time can be.
Background macro Update Cycle	Set the number of lines executed by the background macro in each cycle. The set number of rows range is 1 ~ 512.
Lua delay time	Lua delay time, the range is 0 ~ 10 ms. This time is the interval time after each execution of LUA.
Lua priority	Lua priority can be divided into low, medium and high. Set the priority of LUA execution, the higher it can ensure the more accurate LUA delay time.
Project Description	<p>It can be used to describe the purpose and description of this HMI screen. After running the software, when user select this file, user can see the project description, which makes the purpose of the project clearer.</p>  <p>The screenshot shows a dialog box titled "Project Description" with a text input field containing "Cooler Project".</p>  <p>The screenshot shows the DIAScreen software interface. On the left is a menu with "New file", "Open file", and "Recent opened file". The main area displays a preview of the HMI screen and project details: "Version: DIAScreen-1.0.101.8014", "HMI Model: DOP-100 series, DOP-110WS 65536 Colors", "Description: Cooler Project", and the file path "D:\Applications\DIAScreen\DIAScreen-V1.0\DIAScreen_Build\multiple actions (language).dpa".</p>
Non Volatile	

Features	Description
	 <ul style="list-style-type: none"> • The storage location of the data to be kept after power failure can be divided into three parts according to the category: one is alarm; the second is recipe; the third is history buffer. • The historical data will be determined according to whether the customer has established a historical buffer.  <ul style="list-style-type: none"> • If users have used these three parts of data, they can choose where they want to store their data. Storage locations include HMI, USB Disk, and SD Card. • The user can directly click [Storage Location] to set the storage location of the power-off retention data in the alarm, formula, and history buffer.
<p>External storage device cache write Set value</p>	<ul style="list-style-type: none"> • External storage devices include USB Disk and SD Card. • The data written by the HMI to the external storage device will be temporarily placed in the cache area. However, the external storage device cache write setting value is for the amount of data in the cache area. If it does not reach this cache write

Features	Description																		
	<p>setting value, the data will not actually be written to the external storage device. This method can prevent the external storage device from being damaged due to continuous writing.</p> <ul style="list-style-type: none">Assuming that the amount of data that the user expects to access is less than the capacity of the buffer or an unannounced power failure may cause part of the data to be lost, to avoid this situation, the Bit5 external storage device can be forced to trigger the general control flag in the control area at regular intervals. Fetch and write data to an external storage device to ensure the existence of the data. <div><p>Write the cache size of the external</p><table border="1"><tr><td>None</td><td>None</td></tr><tr><td></td><td>Default</td></tr><tr><td></td><td>64 KB</td></tr><tr><td></td><td>32 KB</td></tr><tr><td></td><td>16 KB</td></tr><tr><td></td><td>8 KB</td></tr><tr><td></td><td>2 KB</td></tr><tr><td></td><td>1 KB</td></tr><tr><td></td><td>512 B</td></tr></table></div>	None	None		Default		64 KB		32 KB		16 KB		8 KB		2 KB		1 KB		512 B
None	None																		
	Default																		
	64 KB																		
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	2 KB																		
	1 KB																		
	512 B																		

Security Level and Password

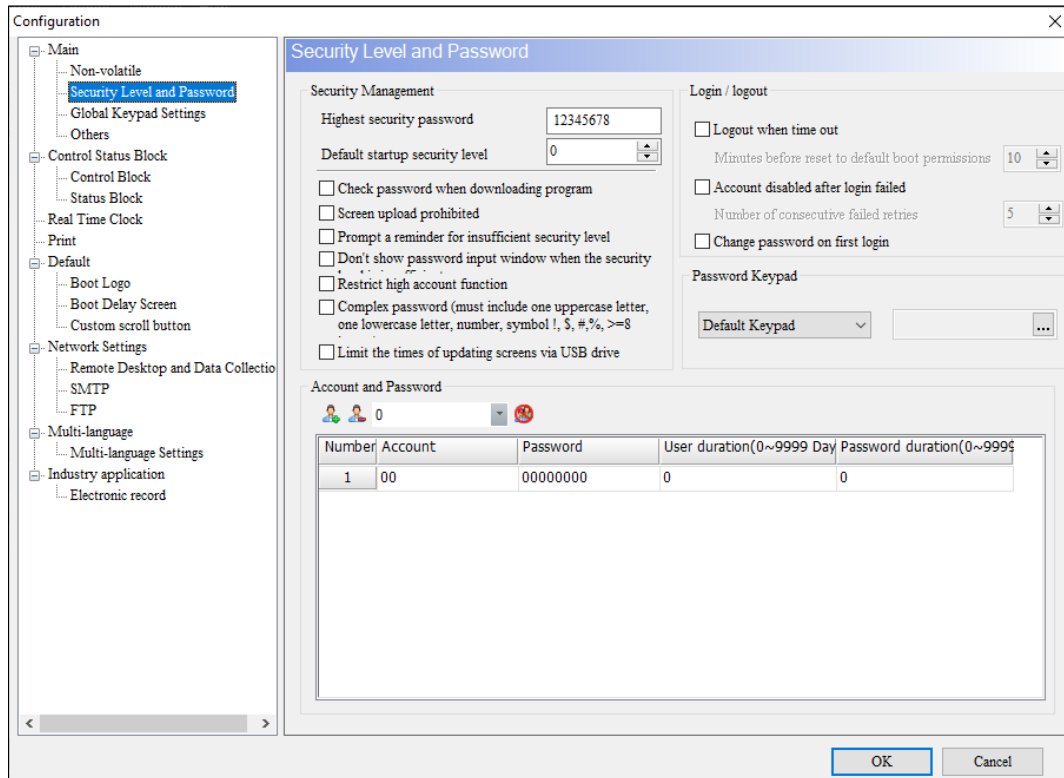
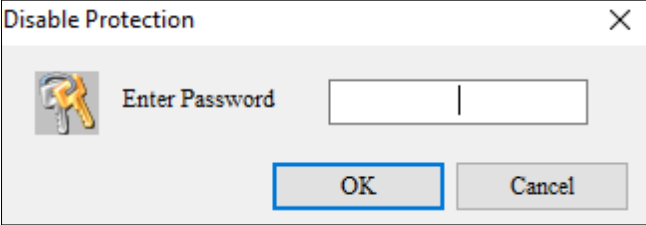
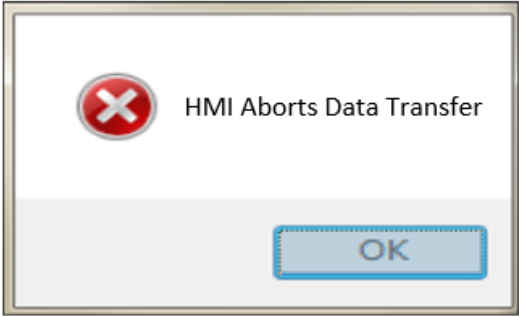

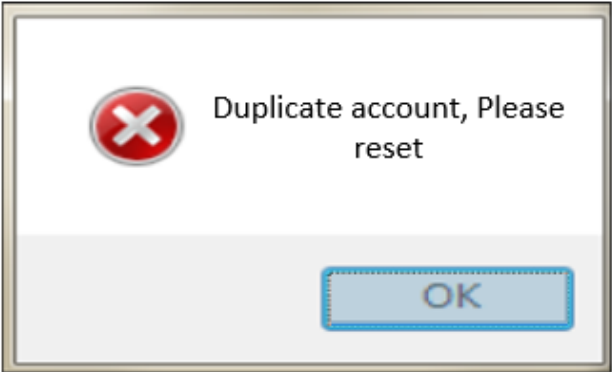


Figure 3 - 265 : Authority and password

Features	Description
Highest security password	<p>The highest authority password is the password with the highest HMI authority level, which means level 8. The default value of the highest authority password is [12345678]. This password is used to control upload screen data and formulas, download screen data and formulas (user need to check the download password verification first), password protection, execute system formatting, system file encryption function and copy file function (need to check screen update first) Times check). The password text format is</p> <p>The hexadecimal unit of 0 ~ F.</p>
Default startup security level	<ul style="list-style-type: none"> • If user want to use the default boot permissions, please use it with the user permissions of each component attribute. • The preset power-on authority is the authority level when the HMI is turned on, and the range is level 0 ~ 7.

Features	Description
Check password when downloading program	<ul style="list-style-type: none"> If user check this option, they must download this setting to the HMI first, and then execute the second download of screen data and formulas, the software will ask the user to enter the highest authority password.  <ul style="list-style-type: none"> The screen can be downloaded to the HMI normally after the password is entered successfully; if the password fails to be entered, a warning window will pop up to inform the user that the entered password is incorrect and the download cannot be performed.
Screen upload prohibited	<p>The screen upload prohibition function allows the user to download the screen to the HMI, and then upload all the data. DIAScreen will display the following message to inform the user that the data cannot be uploaded.</p> 
Prompt a reminder for insufficient security level.	<p>Assuming that the user permissions set by the component are higher than the default boot permissions, and the user checks this option, the component will display after downloading to the HMI</p>  <p>The user is prompted that the current permission level is insufficient.</p>
Restrict high account function	Restrict the functions of high-level accounts, do not do any operations on low-level accounts
Complex password	When this option is activated, the password must contain an uppercase letter, lowercase letter, number, symbol (!, \$, #, %), greater than (including) 8 characters.

Features	Description
Limit the times of updating screens via USB drive	The screen update frequency check is mainly used for file encryption and copying files. Therefore, users can perform encryption operations on screen data files, and can set a limit on the number of copies to provide customers with a safe and flexible file protection mechanism
Logout when time out	When the user selects this function, the user can return to the default boot permission after the number of minutes selected by the user.
Account disabled after login failed	After checking, the account will be disabled according to the number of failed logins selected by the user.
Change password on first login	After checking, the HMI will force the user to change the password after the user logs in for the first time.
Account and Password	<ul style="list-style-type: none"> The password table setting is mainly used to distinguish the permission level of HMI. The permission level is divided into 0 ~ 7, a total of eight levels, each level has a preset password. The DOP-100 series HMIs also provide multiple accounts and passwords for multiple users to log in at the same time. <p>NOTE:</p> <ol style="list-style-type: none"> <i>The password cannot be blank.</i> <div> <p>The image shows a standard Windows-style error dialog box. It has a white background with a thin grey border. In the top-left corner, there is a red circular icon containing a white 'X'. To the right of this icon, the text 'Password cannot be blank' is displayed in a black sans-serif font. At the bottom center of the dialog, there is a blue rectangular button with the text 'OK' in white.</p> </div> <ol style="list-style-type: none"> <i>In the same permission level, the account name cannot be the same, but the password can be the same.</i> <i>The account names of different permission levels can be the same. For example, the account name of permission level 0 is 123, and the account name of permission level 1 can also be 123.</i> <i>The length of the account and password is limited to 24 characters.</i> <i>The account number and password are not case sensitive and will only be displayed in uppercase.</i> <ul style="list-style-type: none"> <i>Permission level 0: No protection function,</i>

Features	Description
	<p><i>anyone can operate.</i></p> <ul style="list-style-type: none"> ○ <i>Permission level 1 ~ 7: User need to enter the corresponding password or a higher permission level to operate.</i> ○ <i>Permission level 8: the highest permission password. Higher than permission level1 ~ 7 password, and this password is also the protection password after project storage, download password verification, format system files, etc.</i> <ul style="list-style-type: none"> • When the user adds the same account in the same permission level, the HMI will display the message of the duplicate account. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> • The user can also change the password and account content through the button element Set Password Table. Or enter the system screen, select [System Settings > Password to change the password and account content. • The account supports Unicode input and combines multilingual input components to log in user permissions.

Global keypad Settings

Global Keypad Setting provides decimal, hexadecimal, binary and ASCII Keypads for users to customize their styles. This function can be applied to multiple numeric input or alphanumeric input components on the editing screen. Set the decimal, hexadecimal, binary and ASCII keyboard styles through the global Keypad, and then execute the application to update the system Keypad. Into a customized format. Users don't need to worry about multiple numeric input on the old screen or the

Keypad style in the alphanumeric input cannot be applied. The global Keypad setting provides the function of applying to all, replacing the old existing Keypad style with the new one. If it is a new component, we also provide the function of applying to the new one. This will only apply to the newly created Keypad, so users can apply it conveniently and quickly whether it is new or old Update Custom Keypad format.

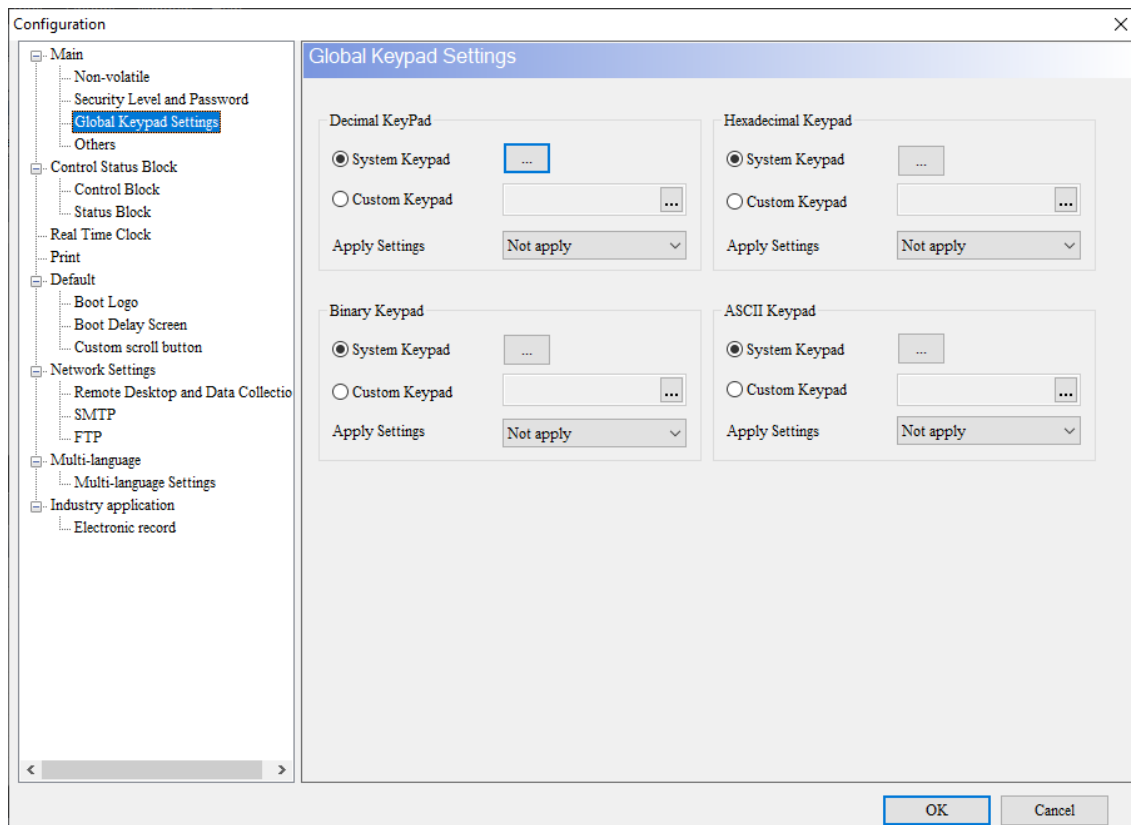
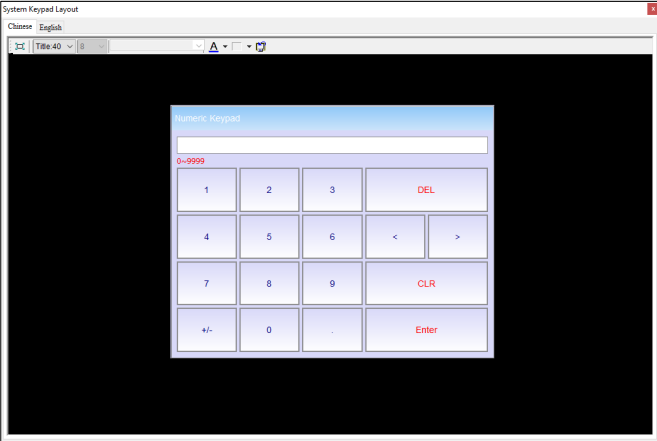
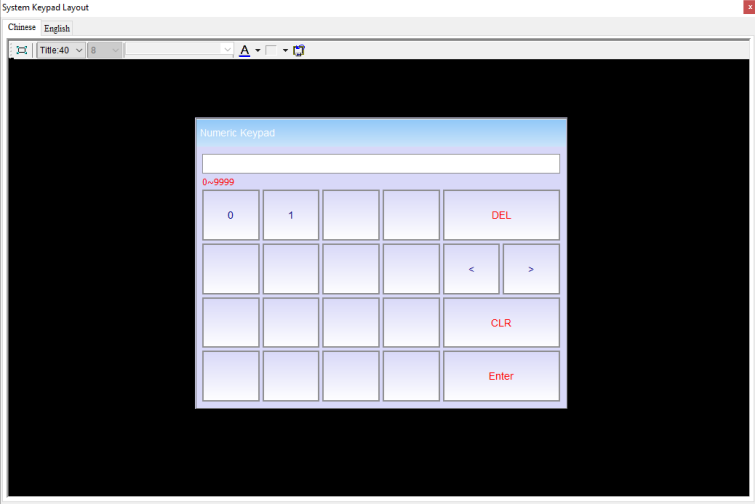
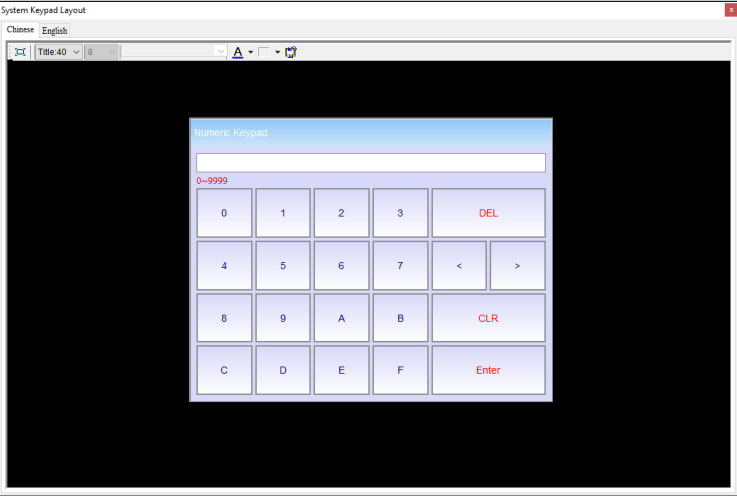
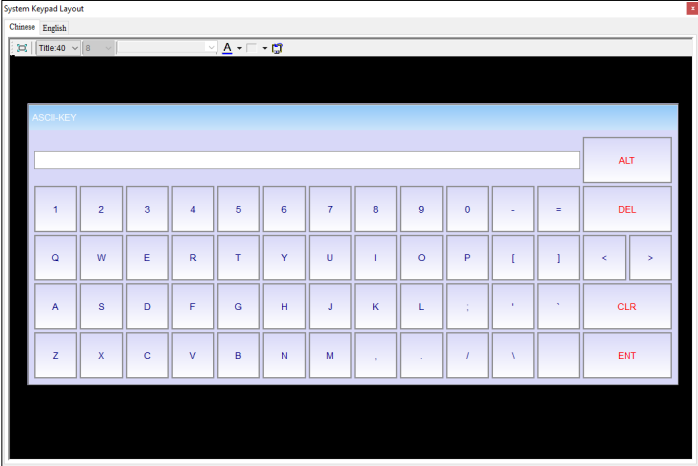
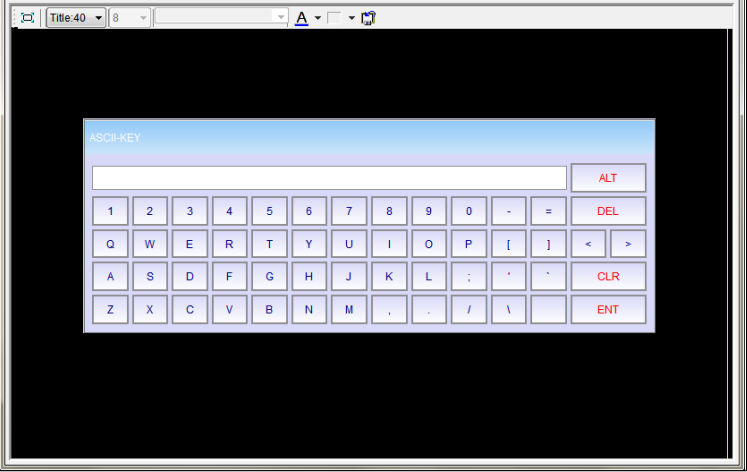


Figure 3 - 266 : All-in-one Keypad setting

Features	Description	
Decimal keypad	System keypad	The decimal keypad style can be customized.

Features	Description		
			
	Apply Settings	Not apply	Even if the Keypad style is customized, the old or new Keypad Will maintain the original style of the system Keypad.
		Apply to all	Replace the old Keypad style with the new one.
		Apply to new	This will only apply to the newly created Keypad.
Binary keypad	System Keypad	Customizable binary Keypad style. 	
	Apply Settings	Not apply	Even if the Keypad style is customized, the old or new Keypad
		Apply to all	Replace the old Keypad style with the new one.
		Apply to new	Only apply to newly created Keypads.
Hexadecimal Keypad	System keypad	The hexadecimal Keypad style can be customized.	

Features	Description		
			
	Apply Settings	Not apply	Even if the Keypad style is customized, the old or new Keypad Will maintain the original style of the system Keypad.
		Apply to all	Replace the old Keypad style with the new one.
		Apply to new	Only apply to newly created Keypads.
ASCII Keypad	System keypad	Customizable ASCII Keypad style. 	
	Apply Settings	Not apply	Even if the Keypad style is customized, the old or new Keypad will maintain the original style of the system Keypad.
		Apply to all	Replace the old Keypad style with the new one.

Features	Description		
		Apply to new	Only apply to newly created keypads.
ASCII Keypad	System Keypad	Customizable ASCII Keypad style. 	
	Apply Settings	Not apply	Even if the Keypad style is customized, the old or new Keypad will maintain the original style of the system Keypad.
		Apply to all	Replace the old Keypad style with the new one.
		Apply to new	Only apply to newly created Keypads.

Other

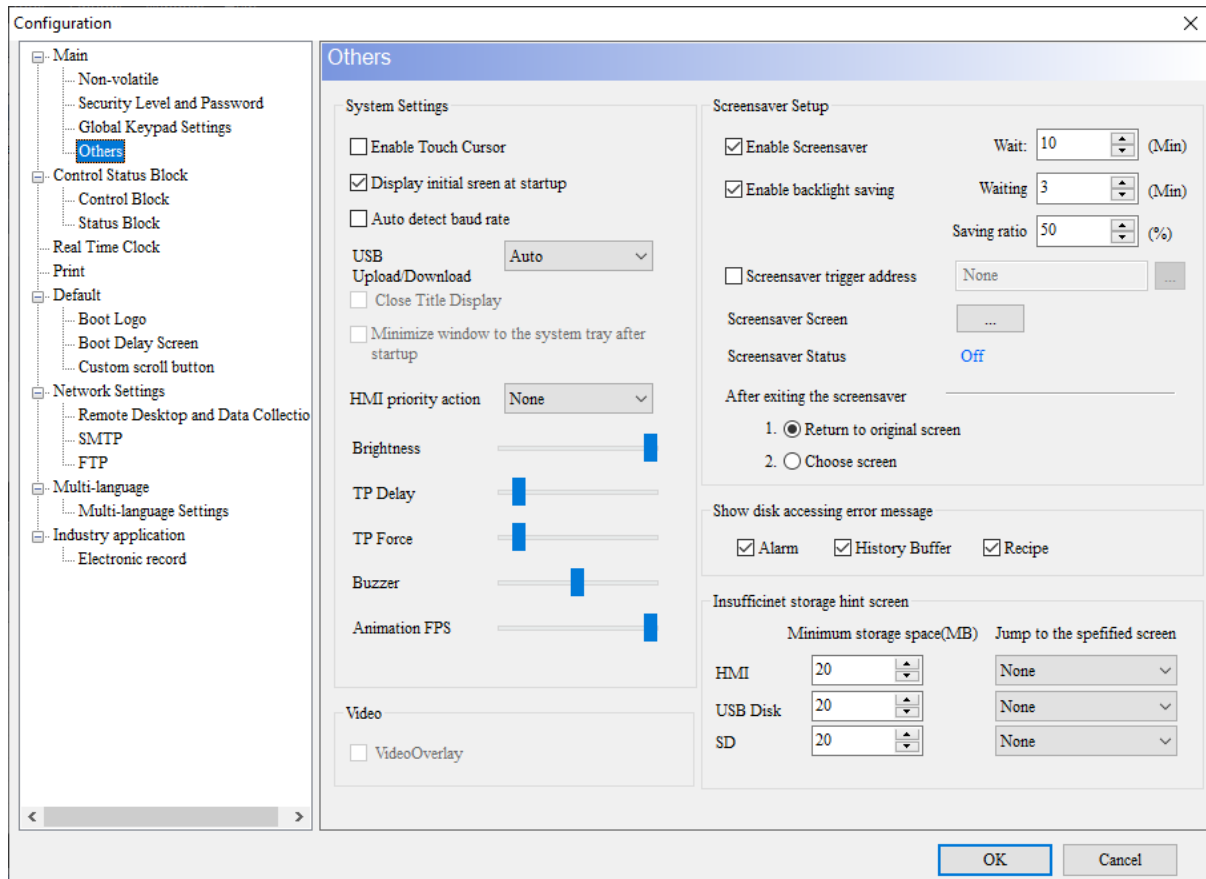

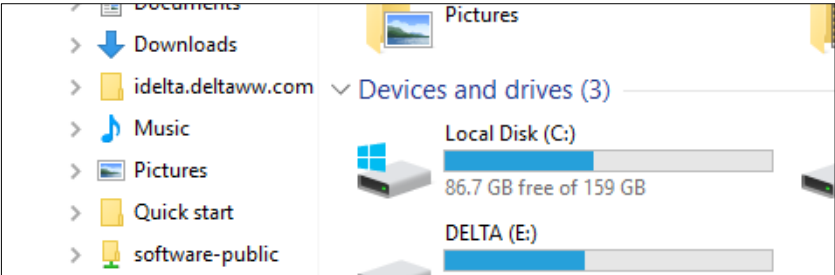
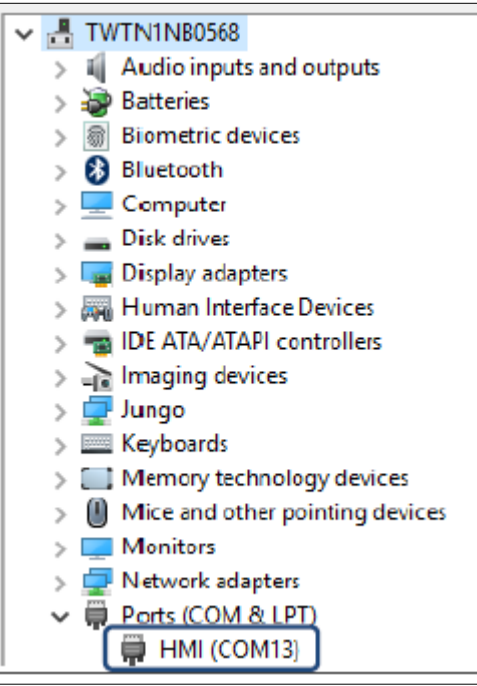
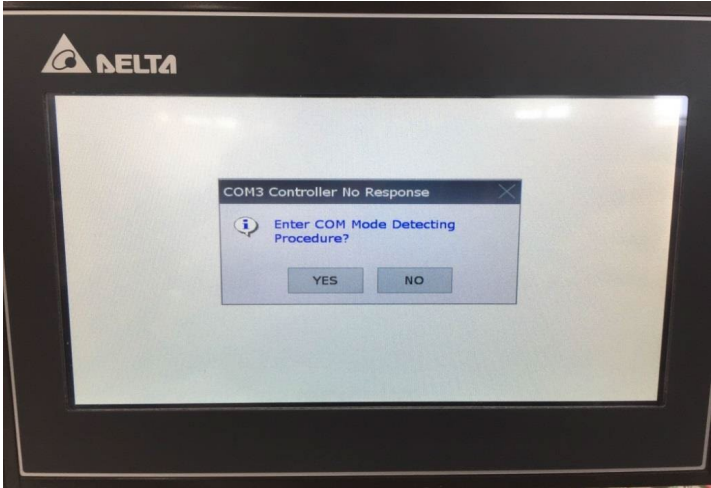


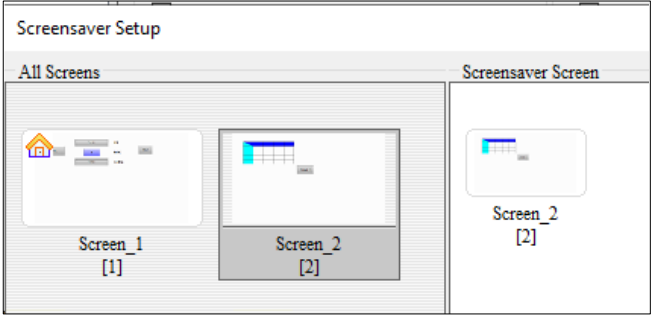
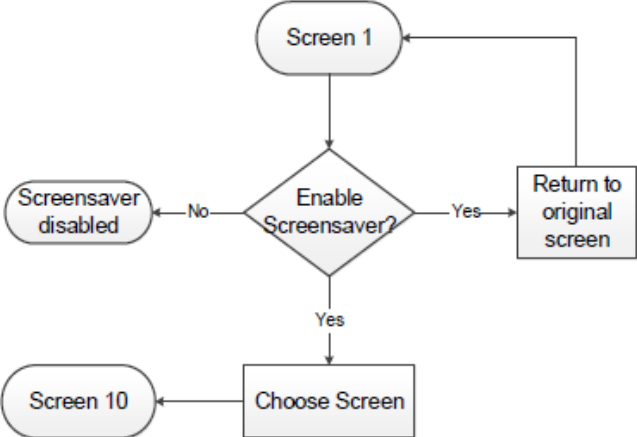
Figure 3 - 267: Other

Features	Description
<p>Enable Touch Cursor</p>	<ul style="list-style-type: none"> The HMI provides the same mouse pointer as the Windows system. When the HMI screen is touched, the mouse pointer icon will appear. The HMI can support wireless mice with Unifying receivers.
<p>Display initial screen at startup</p>	<p>Check the display initial screen at boot, it means that the HMI will display the initial screen every time it is turned on, as shown in the figure below. The user can set whether to display the initial screen.</p>

Features	Description
	
<p style="text-align: center;">USB Upload/Download</p>	<p>AUTO</p> <ul style="list-style-type: none"> • AUTO mode will be based on the HMI USB upload and download mode. • If the USB upload and download mode is set to AUTO, after downloading the project, the operator will maintain the currently set USB upload and download mode. If the USB is currently downloaded through Disk mode (USBCommMode is 1), after downloading the project, the HMI will still use Disk mode to download; if the current USB is downloaded through CDC mode (USBCommMode is 2), after downloading the project, the HMI will still Use CDC mode to download. • Except for B05S100, B05S101, B07S201, and B07S211, the factory default values of other HMI models are AUTO.
	<p>DISK</p> <p>Disk is equivalent to USBCommMode 1. When set to Disk, after downloading to the HMI, user can view a removable storage device named DELTA in My Computer.</p> 
	<p>CDC</p> <p>CDC is equivalent to USBCommMode 2. When set to CDC, after downloading to the HMI, user can go to My Computer > Right-click the content> Device Manager to check whether the port has a device named HMI.</p>

Features	Description
	
<p>Auto detect baud rate</p>	<ul style="list-style-type: none"> • After this function is turned on, the baud rate of the HMI will be automatically adjusted to be the same as that of the PLC.  <ul style="list-style-type: none"> • The condition for adjustment is when the HMI baud rate is different from the PLC baud rate.
<p>Brightness</p>	<p>The user can adjust the brightness of the HMI backlight by himself.</p>
<p>TP Delay</p>	<p>Set the delay time for HMI processing to touch and move messages. Set the delay to the right to decrease, which means faster speed; set the delay to the left to increase, mean the speed becomes slower.</p>

Features	Description	
TP Force	Set the force with which the HMI presses the screen. Setting the force to the left becomes smaller, which means that the HMI recognizes that the trigger force is smaller, so it becomes easier to touch; setting the force to the right becomes larger, which means it is harder to press.	
Buzzer	This setting can adjust the sound produced by the HMI pressing and the volume of the buzzer. The lower the volume is set to the left, the higher the volume is set to the right.	
Animation FPS	This setting can adjust the update speed of the animation component setting frequency	
Screensaver Setup	<p>The related screen saver settings can only be turned on if user check Enable screen saver.</p> <ul style="list-style-type: none"> • After starting the screen saver, just touch the HMI screen again to end the screen saver. • If user check Enable screen saver and go to Screen> Screen Saver, but there is no screen saver to be activated, the screen saver will be displayed on the HMI in a completely black state. • If the screen saver activation is not checked, but the screen saver to be activated is edited in Screen> Screen Saver, the screen saver will not be activated. 	
Enable Screensaver	If user check Enable screen saver, they can set how long the HMI screen will not be touched before entering the screen saver screen. The time range is 1 ~ 100 min., and the default value is 10 min.	
Enable backlight saving	<ul style="list-style-type: none"> • Tick Backlight Saving, user can set how long the HMI screen will not be touched before enabling the Backlight Saving function. • The time range is 1~10min, and the default is 3min. • The time range is 1~10min, and the default is 3min. 	
Screensaver trigger address	Set the starting address of word, 0 means to turn off the screen saver, 1 to turn on the screen saver.	
After exiting the screensaver	Return to original screen	If user check Enable screen saver, they can select the screen they want to go to after the screen saver ends. Jump to the original screen means that after the screen saver screen ends, it will jump to the original screen before the screen saver is activated.
	Choose Screen	<ul style="list-style-type: none"> • If user check Enable screen saver, they can also choose to go to the designated screen number after the screen saver ends. The designated screen means that the user can specify the screen number

Features	Description	
		<p>by himself, so that after the screen saver ends, the user can go to the specified screen.</p> <p>NOTE: If user want to use the specified screen, they must create a screen saver screen.</p>  <ul style="list-style-type: none"> The following figure is the flow chart of the screen saver: 
<p>Show disk accessing error message</p>	<ul style="list-style-type: none"> Since alarms, history buffers and recipes can all be set to keep data as USB Disk or SD Card after power failure, if the external disk access fails, user can use this option to determine whether to display its warning message. The so-called disk access failure means that if the history buffer has set the power-off retention data location to USB Disk, but the HMI cannot detect the existence of the USB Disk and cannot write data after power-on, this is considered Disk access failed. Therefore, if the display disk access failure warning message is not checked, when the HMI cannot detect the existence of the USB Disk and cannot write data to 	

Features	Description
	the USB Disk, no error message will pop up to inform the user.
Insufficient storage hint screen	The user can specify three storage spaces: HMI, USB DISK, and SD when the storage space is lower than the set MB, the HMI screen will jump to the specified screen

3.12.1.2 Control Commands

DIAScreen software provides command area and status area functions to execute or monitor the execution or status of some system actions. Users can set the memory addresses of the command area and status area from **Options > Configuration > Control Status Block**.

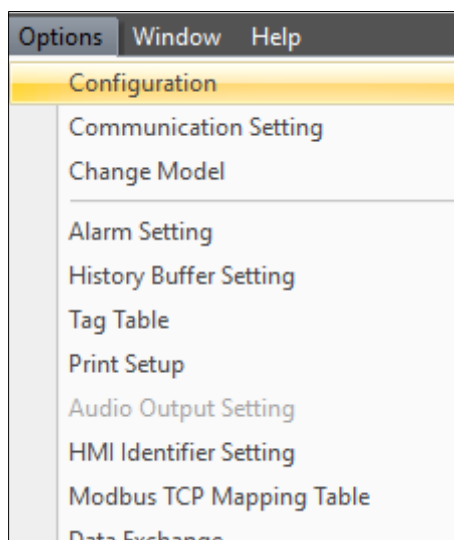


Figure 3 - 268: Configuration

NOTE: This function is applicable to DOP-100 series and AX-8 series.

Control Block

The Control Block page provides the Auto Reset Flags & Data Format setting used in the command area.

- **Auto Reset Flags**
If some functions of the command area need to be used repeatedly, user must first set this flag to OFF and then trigger again. The flag can be cleared through the action to be completed by the HMI to automatically complete the flag clearing action.
- **Data Format**
Allows users to customize the numerical format of the command area, providing Unsigned Decimal and BCD.

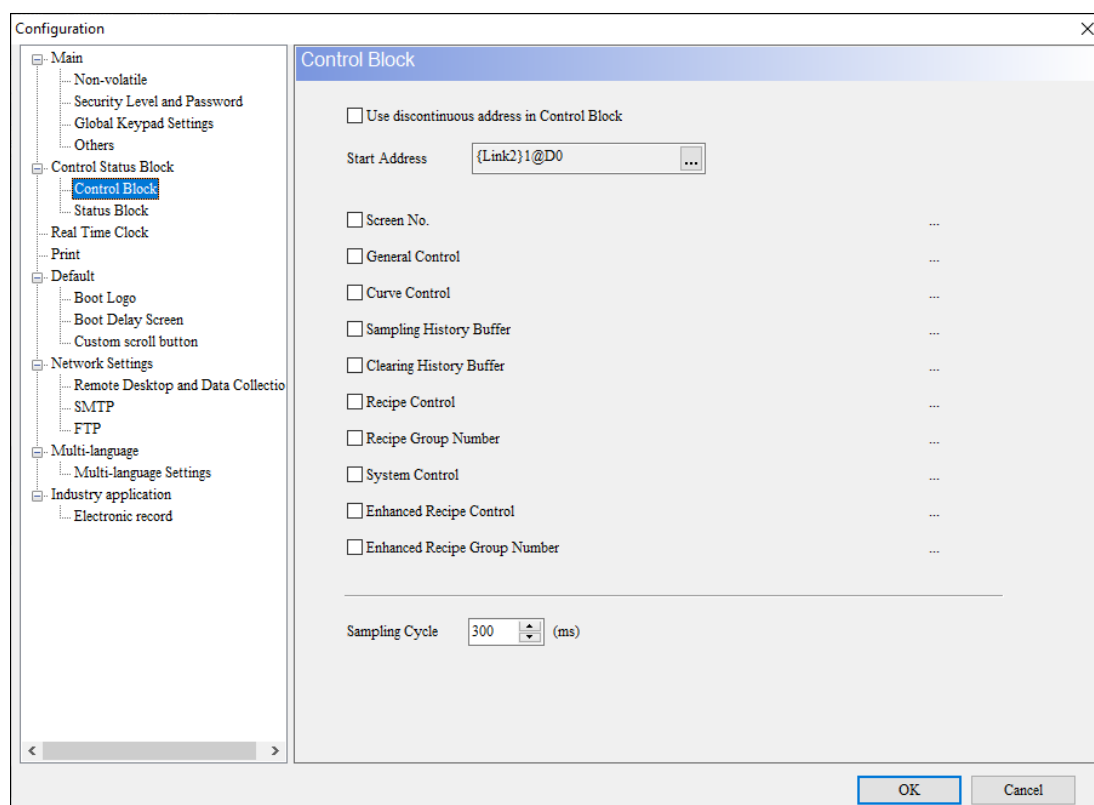


Figure 3 - 269: Control Block

Control Block

The Control Block of the HMI allows the user to define the address of the controller or some register of the HMI. The user can perform HMI control actions by setting the command area.

- **Use discontinuous addresses in Control Block**

If it is not checked, set the address at the starting address, and then check the function according to the requirement. The command area will be automatically configured with consecutive addresses and only the checked control function application will be opened. If user check the use of discontinuous addresses in the command area, user can individually set the control addresses of each function in the command area.

- **Sampling Cycle**

The sampling period allows the user to flexibly control the sampling time. The default is 300ms, which means that the sampling will be performed every 300ms. The minimum sampling period is 100ms; the maximum sampling period is 1000ms.

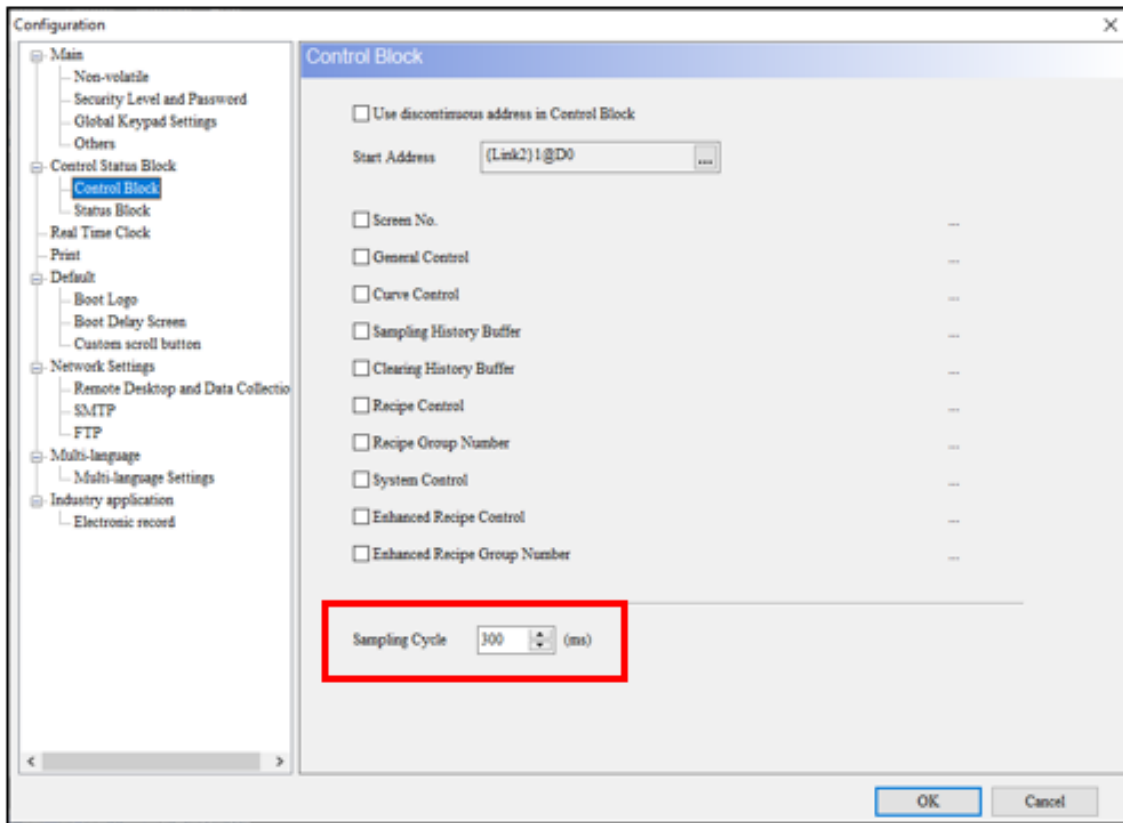


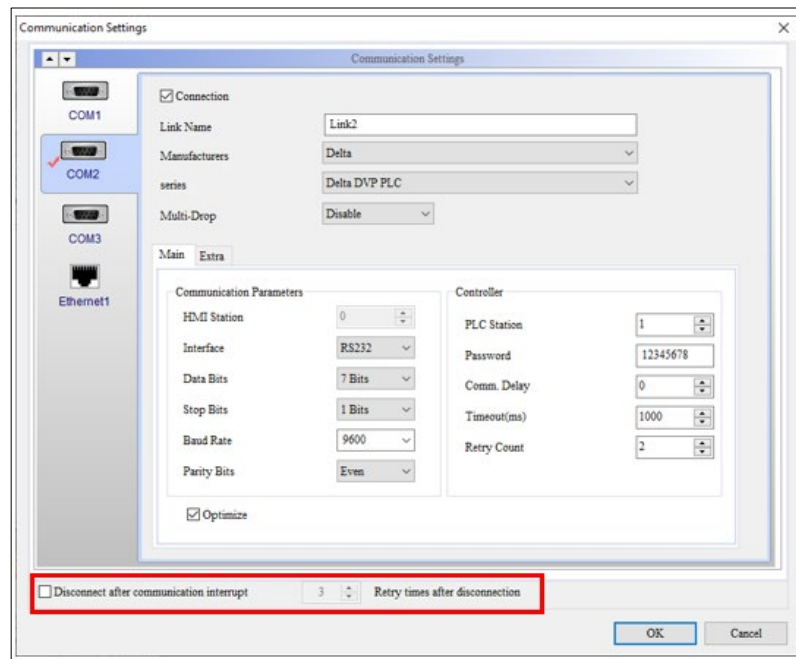
Figure 3 - 270: Sampling Cycle

The function description of the command area is as follows:

Screen Number Register	
<p>Bit 0~15 Screen number</p>	<ul style="list-style-type: none"> • Write the specified screen number into this register, and the HMI will jump to the specified screen. • As shown in the figure below, if a value input element is set to D0 and the input value is 1, the HMI will switch to the first page. <div style="text-align: center;"> </div>

General Control Register

- Control the HMI re-communication switch. If user want to use this communication switch flag, the user must go to **Options > Communication Settings**, click **Cancel** connection after communication is interrupted and set the number of retries after interruption, as shown in the figure below.



Communication enable/disable flag

- When the HMI communicates with the controller, when the number of communication interruptions reaches the set number of retries after interruption, the HMI will automatically close the communication with the controller and set this flag to ON. At this time, the communication between the HMI and the controller will be interrupted and no communication error warning window will appear. The user can restart the communication between the HMI and the controller by setting this flag to OFF.
- This flag can only be used to resume communication when the communication is automatically interrupted, and it is not possible to directly close the communication between the HMI and any controller by setting this flag to ON. If user need to manually close or open the communication with the controller, user can use the LOCKCOM/UNLOCKCOM macro command.
- This flag is not applicable to clear the flag after the action is completed.

General Control Register	
Backlight enable/disable flag	<p>Enable/disable the HMI backlight.</p> <ul style="list-style-type: none"> • When the flag is ON, the HMI backlight is disabled. • When the flag is OFF, the HMI backlight is enabled. <p>The Auto Reset Flags function is not applicable to this flag.</p>
Buzzer enable/disable flag	<ul style="list-style-type: none"> • Enable/disable the HMI buzzer. <p>When the flag is ON, the HMI buzzer is enabled. When the flag is OFF, the HMI buzzer is disabled.</p> <ul style="list-style-type: none"> • The Auto Reset Flags function is not applicable to this flag.
Bit 3 Alarm buffer clear	<p>Clear the HMI alarm buffer. When the flag is turned ON, the HMI clears the alarm buffer. To reactivate the function, user must turn the flag OFF and then ON again.</p>
Bit 4 Alarm counter clear	<p>Clear the HMI Alarm Frequency Table. When the flag is turned ON, the data in the Alarm Frequency Table is cleared. To reactivate the function again, user must turn the flag OFF and then ON again.</p>
Bit 5 External storage device cache write flag	<ul style="list-style-type: none"> • Update the HMI cache data into a USB Disk or an SD Card in real time. If the alarm buffer, history buffer or recipe function is activated, and the non-volatile storage location is set to a USB Disk or an SD Card, when the flag is turned ON, the HMI updates the data temporarily stored in the cache into a USB Disk or an SD Card in real time. To reactivate the function again, user must turn the flag OFF and then ON again. • The data written into a USB Disk or an SD Card by the HMI is temporarily stored in the cache first. Before the cache data size reaches the set limit, the data is not written into a USB Disk or an SD Card. This is to keep the USB Disk or SD Card from being damaged by frequent overwriting. However, if the data volume user are accessing is less than the buffer capacity or the power is cut off unexpectedly, part of the data may be lost. To keep the data, user can have the flag turned ON in a cyclic pattern to write the data into the USB Disk or SD Card.

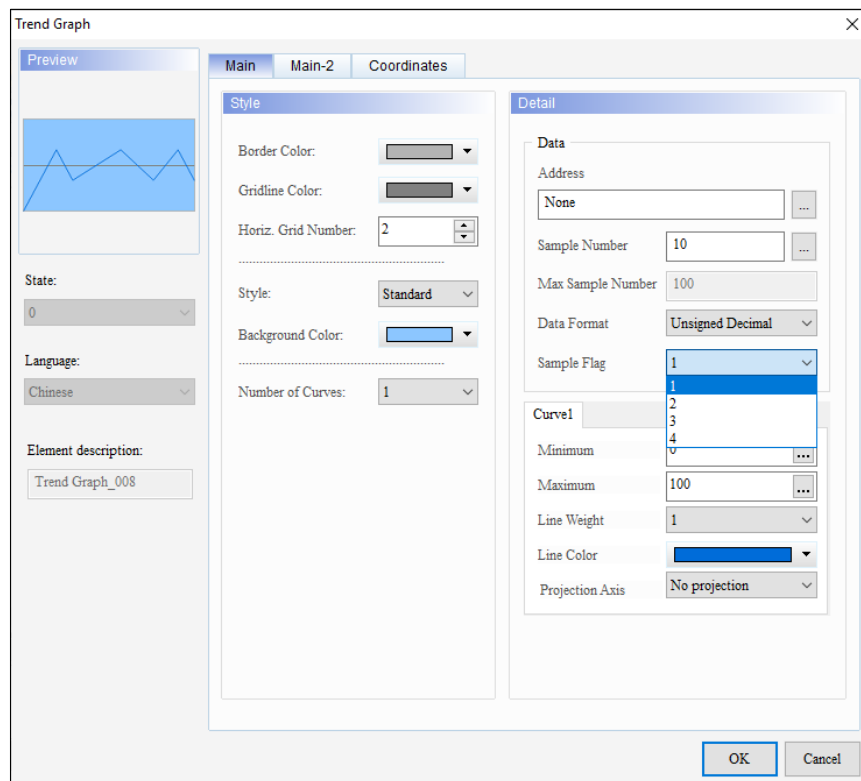
General Control Register																				
<p>Bit 6 Remote control lock</p>	<p>Enable / disable the operation of eRemote.</p> <ul style="list-style-type: none"> When the flag is ON, eRemote can only be monitored rather than be operated. When the flag is OFF, eRemote can be operated properly. <p>The Auto Reset Flags function is not applicable to this flag.</p>																			
<p>Bit 8~11 Set user level</p>	<ul style="list-style-type: none"> The user can change the current HMI user authority by triggering the three flags of Bit 8, Bit 9 and Bit 10 provided by the general control register. There are two types of HMI internal permissions, as follows: <ol style="list-style-type: none"> Permission 0 ~ Permission 7: Permission 0 represents the lowest permission Highest authority: when Bit 11 is 1, it is the highest authority The user can use the three flags to set authority 0 ~ authority 7. The detailed setting method is as follows. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Permission level</th> <th colspan="3">Flag Control</th> </tr> <tr> <th>Bit 10</th> <th>Bit 9</th> <th>Bit 8</th> </tr> </thead> <tbody> <tr> <td>Authority 0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Authority 1</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>Authority 2</td> <td>0</td> <td>1</td> <td>0</td> </tr> </tbody> </table>	Permission level	Flag Control			Bit 10	Bit 9	Bit 8	Authority 0	0	0	0	Authority 1	0	0	1	Authority 2	0	1	0
Permission level	Flag Control																			
	Bit 10	Bit 9	Bit 8																	
Authority 0	0	0	0																	
Authority 1	0	0	1																	
Authority 2	0	1	0																	

General Control Register				
Authority 3	0	1	1	
Authority 4	1	0	0	
Authority 5	1	0	1	
Authority 6	1	1	0	
Authority 7	1	1	1	

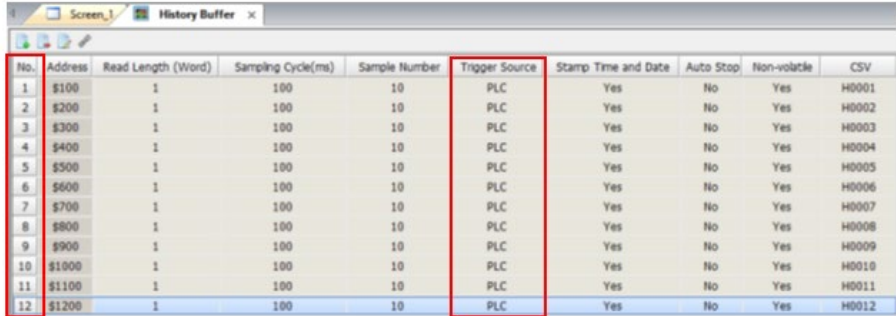
Curve Control Register

- DIAScreen software provides four curve sampling flags. The graphs include general graphs and X-Y graphs. The graph drawing actions are controlled by the curve sampling flag.
- If this flag is triggered to be ON, the corresponding graph component will be sampled and drawn. If user need to use this function again, user must first set this flag to OFF and then trigger again.
- The sampling flag 1 of the graph component corresponds to the curve sampling flag 1; the sampling flag 2 of the graph component corresponds to the curve sampling flag 2, and so on.

Bit 0~3 Curve sampling flags (1 ~ 4)

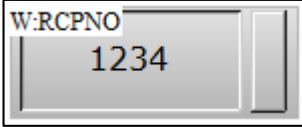
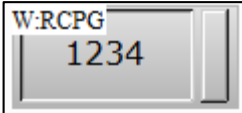


Curve Control Register	
<p>Bit 8~11 Curve clear flag (1 ~ 4)</p>	<ul style="list-style-type: none"> • DIAScreen software provides four curve clear flags. The curve graph includes general curve graph and X-Y curve graph, and the curve clearing is controlled by the curve clearing flag. • When this flag is triggered to be ON, the corresponding curve graph component will clear the curve on the component. If user need to use this function again, user must first set this flag to OFF and then trigger again. • The sampling flag 1 of the graph component corresponds to the curve clear flag 1; the sampling flag 2 of the graph component corresponds to the curve clear flag 2, and so on.

History Buffer Sampling Register																																																																																																																																			
<p>Bit 0~11 Historical buffer sampling flag (1 ~ 12)</p>	<ul style="list-style-type: none"> • Twelve groups of historical buffer data can be recorded, each of which corresponds to 12 groups of historical buffer sampling flags. The trigger source of the history buffer needs to be set to [PLC] to execute the sampling action through the history buffer sampling flag in the control command area. <div style="text-align: center;">  <table border="1" style="margin: auto;"> <thead> <tr> <th>No.</th> <th>Address</th> <th>Read Length (Word)</th> <th>Sampling Cycle(ms)</th> <th>Sample Number</th> <th>Trigger Source</th> <th>Stamp Time and Date</th> <th>Auto Stop</th> <th>Non-volatile</th> <th>CSV</th> </tr> </thead> <tbody> <tr><td>1</td><td>\$100</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0001</td></tr> <tr><td>2</td><td>\$200</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0002</td></tr> <tr><td>3</td><td>\$300</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0003</td></tr> <tr><td>4</td><td>\$400</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0004</td></tr> <tr><td>5</td><td>\$500</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0005</td></tr> <tr><td>6</td><td>\$600</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0006</td></tr> <tr><td>7</td><td>\$700</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0007</td></tr> <tr><td>8</td><td>\$800</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0008</td></tr> <tr><td>9</td><td>\$900</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0009</td></tr> <tr><td>10</td><td>\$1000</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0010</td></tr> <tr><td>11</td><td>\$1100</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0011</td></tr> <tr><td>12</td><td>\$1200</td><td>1</td><td>100</td><td>10</td><td>PLC</td><td>Yes</td><td>No</td><td>Yes</td><td>H0012</td></tr> </tbody> </table> </div> <ul style="list-style-type: none"> • The user can determine the sampling timing by triggering the sampling flag of the history buffer. When the sampling flag of the history buffer is triggered to be ON, a data sampling will be performed. If user need to use this function again, they must first set this flag to OFF and then trigger again. 	No.	Address	Read Length (Word)	Sampling Cycle(ms)	Sample Number	Trigger Source	Stamp Time and Date	Auto Stop	Non-volatile	CSV	1	\$100	1	100	10	PLC	Yes	No	Yes	H0001	2	\$200	1	100	10	PLC	Yes	No	Yes	H0002	3	\$300	1	100	10	PLC	Yes	No	Yes	H0003	4	\$400	1	100	10	PLC	Yes	No	Yes	H0004	5	\$500	1	100	10	PLC	Yes	No	Yes	H0005	6	\$600	1	100	10	PLC	Yes	No	Yes	H0006	7	\$700	1	100	10	PLC	Yes	No	Yes	H0007	8	\$800	1	100	10	PLC	Yes	No	Yes	H0008	9	\$900	1	100	10	PLC	Yes	No	Yes	H0009	10	\$1000	1	100	10	PLC	Yes	No	Yes	H0010	11	\$1100	1	100	10	PLC	Yes	No	Yes	H0011	12	\$1200	1	100	10	PLC	Yes	No	Yes	H0012
No.	Address	Read Length (Word)	Sampling Cycle(ms)	Sample Number	Trigger Source	Stamp Time and Date	Auto Stop	Non-volatile	CSV																																																																																																																										
1	\$100	1	100	10	PLC	Yes	No	Yes	H0001																																																																																																																										
2	\$200	1	100	10	PLC	Yes	No	Yes	H0002																																																																																																																										
3	\$300	1	100	10	PLC	Yes	No	Yes	H0003																																																																																																																										
4	\$400	1	100	10	PLC	Yes	No	Yes	H0004																																																																																																																										
5	\$500	1	100	10	PLC	Yes	No	Yes	H0005																																																																																																																										
6	\$600	1	100	10	PLC	Yes	No	Yes	H0006																																																																																																																										
7	\$700	1	100	10	PLC	Yes	No	Yes	H0007																																																																																																																										
8	\$800	1	100	10	PLC	Yes	No	Yes	H0008																																																																																																																										
9	\$900	1	100	10	PLC	Yes	No	Yes	H0009																																																																																																																										
10	\$1000	1	100	10	PLC	Yes	No	Yes	H0010																																																																																																																										
11	\$1100	1	100	10	PLC	Yes	No	Yes	H0011																																																																																																																										
12	\$1200	1	100	10	PLC	Yes	No	Yes	H0012																																																																																																																										

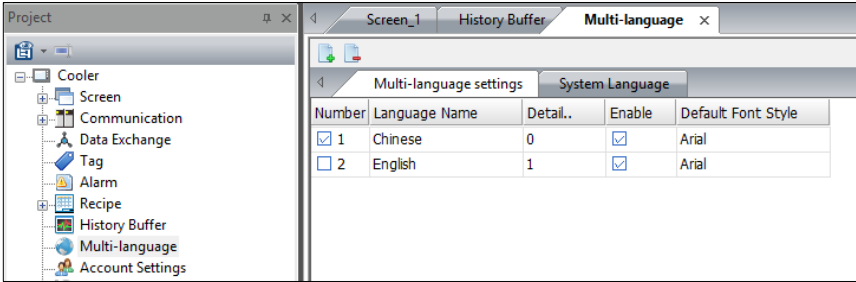
History Buffer Clear Registry	
<p>Bit 0~11 History buffer</p>	<ul style="list-style-type: none"> • The user can clear the data in the buffer by triggering the clear flag of the history buffer. When the trigger of the history buffer clear flag is ON, the buffer is cleared. If user

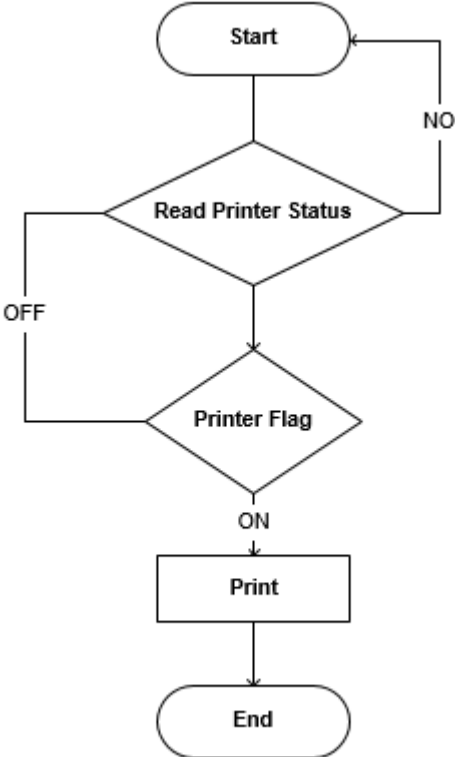
clear flag (1 ~ 12)	need to use this function again, they must first set this flag to OFF and then trigger again.
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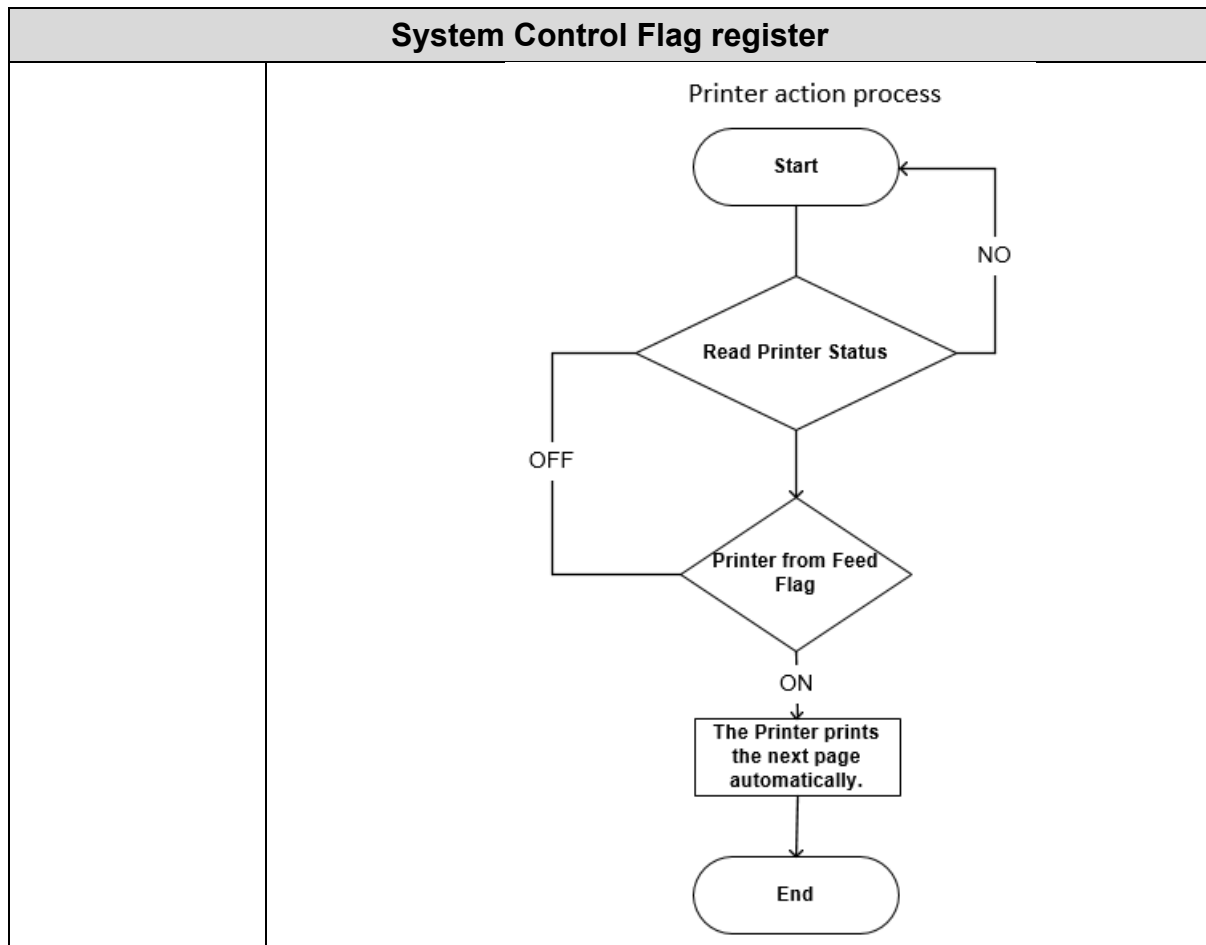
Recipe Control Register	
Bit 0 Recipe group change flag	<ul style="list-style-type: none"> • Use for 16-bit recipe • There are two ways for the user to call or change the formula group: <ol style="list-style-type: none"> a. Change directly through the internal register RCPNO of the HMI. <div style="text-align: center; margin: 10px 0;">  </div> b. Use this formula group change flag to change. • If the user wants to change the HMI formula group number through this flag, he must first write the formula group he wants to change into the formula group control register, and then trigger the formula group change flag. • When the recipe group change flag is triggered to be ON, the recipe group number will be changed according to the value in the recipe group control register and the number of the internal register RCPNO will be automatically changed. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 1 Recipe read flag (PLC→HMI)	<ul style="list-style-type: none"> • When the recipe read flag trigger is ON, the HMI will read the recipe data in the controller and write it to the specified recipe data register. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 2 Recipe write flag (HMI→PLC)	<ul style="list-style-type: none"> • When the recipe writing flag trigger is ON, the HMI will write the specified recipe data to the controller register. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 3 Recipe group type change flag	<ul style="list-style-type: none"> • Use for 32-bit formula • There are two ways for users to call and change the formula group: <ol style="list-style-type: none"> a. Change directly through the internal register RCPG of the HMI <div style="text-align: center; margin: 10px 0;">  </div> b. Use this formula group change flag to change.

Recipe Control Register	
	<ul style="list-style-type: none"> When the formula group change flag is triggered to be ON, the formula group number will be changed according to the value in the changed formula group number (Bit 8 ~ Bit 15) and the internal register RCPG number will be changed automatically. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 8~15 Specify the number of the formula group to be changed	<ul style="list-style-type: none"> The user can specify the formula group number to be changed through the high byte of the formula control register Bit 8 ~ Bit 15, and cooperate with the trigger formula group change flag, the HMI will change the internal register RCPG. The number means to change the formula group.

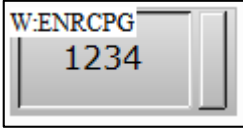
Recipe Group Control Register	
Bit 0~15 Recipe group assignment	<ul style="list-style-type: none"> The user can specify the formula group number to be changed through the formula group control register, and combined with the trigger formula group change flag, the HMI will automatically change the number of the internal register RCPNO, which means Change the formula group.

System Control Flag register																
Bit 0~7 Multi-language settings	<ul style="list-style-type: none"> Supports 32 languages, and users can switch languages by changing more national language settings. To edit the language, user can edit the multi-language settings through the Options > Configuration > Multi-Language Settings, as shown in the figure below:  <table border="1"> <thead> <tr> <th>Number</th> <th>Language Name</th> <th>Detail..</th> <th>Enable</th> <th>Default Font Style</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> 1</td> <td>Chinese</td> <td>0</td> <td><input checked="" type="checkbox"/></td> <td>Arial</td> </tr> <tr> <td><input type="checkbox"/> 2</td> <td>English</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td>Arial</td> </tr> </tbody> </table>	Number	Language Name	Detail..	Enable	Default Font Style	<input checked="" type="checkbox"/> 1	Chinese	0	<input checked="" type="checkbox"/>	Arial	<input type="checkbox"/> 2	English	1	<input checked="" type="checkbox"/>	Arial
Number	Language Name	Detail..	Enable	Default Font Style												
<input checked="" type="checkbox"/> 1	Chinese	0	<input checked="" type="checkbox"/>	Arial												
<input type="checkbox"/> 2	English	1	<input checked="" type="checkbox"/>	Arial												
Bit 8 Print flag	<ul style="list-style-type: none"> When the print flag is set to ON, the print action will be executed; when the print flag is set to OFF, there is no action. 															

System Control Flag register	
	 <pre>graph TD; Start([Start]) --> ReadPrinterStatus{Read Printer Status}; ReadPrinterStatus -- NO --> Start; ReadPrinterStatus --> PrinterFlag{Printer Flag}; PrinterFlag -- OFF --> ReadPrinterStatus; PrinterFlag -- ON --> Print[Print]; Print --> End([End]);</pre>
Bit 9 Print form feed flag	<ul style="list-style-type: none">• When the print page feed flag is set to ON, the printer paper will automatically eject the paper for page change; when the print page feed flag is set to OFF, there is no action.



Enhanced Recipe Control Register	
<p>Bit 0 Enhanced formula group change flag</p>	<ul style="list-style-type: none"> • Use for enhanced formula • There are two ways for the user to call or change the enhanced formula group: <ol style="list-style-type: none"> a. Change directly through the HMI internal register ENRCPNO <div style="text-align: center; margin: 10px 0;"> </div> <ul style="list-style-type: none"> <li style="margin-left: 40px;">b. Use this enhanced formula group change flag to change. • If the user wants to change the HMI enhanced formula group number through this flag, he must first write the enhanced formula group to be changed into the formula group control register, and then trigger the enhanced formula group change Flags.

Enhanced Recipe Control Register	
	<ul style="list-style-type: none"> When the enhanced formula group change flag is triggered to be ON, the enhanced formula group number will be changed according to the value in the enhanced formula group control register and the number of the internal register ENRCPNO will be automatically changed. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 1 Enhanced formula reading flag (PLC→HMI)	<ul style="list-style-type: none"> When the enhanced recipe read flag trigger is ON, the HMI will read the enhanced recipe data in the controller and write it into the designated enhanced recipe data register. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 2 Enhanced formula write flag (HMI→PLC)	<ul style="list-style-type: none"> When the enhanced recipe writing flag is ON, the HMI will write the specified enhanced recipe data to the controller register. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 3 Enhanced formula group change flag	<ul style="list-style-type: none"> Use for enhanced formula There are two ways for users to call and change the enhanced formula group: <ol style="list-style-type: none"> Change directly through the internal register ENRCPG of the HMI <div style="text-align: center; margin: 10px 0;">  </div> Use this enhanced formula group change flag to change. When the enhanced formula group change flag is triggered to be ON, the enhanced formula group number will be changed according to the value in the changed enhanced formula group number (b8 ~ b15) and the internal temporary storage will be automatically changed The number of the ENRCPG. If user need to use this function again, they must first set this flag to OFF and then trigger again.
Bit 8~15 Specify the number of the enhanced formula group to be changed	<ul style="list-style-type: none"> The user can specify the enhanced recipe group number to be changed through the high byte of the enhanced recipe control register, Bit 8 ~ Bit 15, and trigger the enhanced recipe group change flag, the HMI will Changing the number of the internal register ENRCPG means to change the enhanced formula group.

Enhanced Formula Group Control Register	
Bit 0~15 Enhanced formula group designation	<ul style="list-style-type: none"> The user can specify the enhanced formula group number to be changed through the enhanced formula group control register, and combined with the trigger formula group change flag, the HMI will automatically change the internal register ENRCPNO Number, which means to change the enhanced formula group.

Status Block

The status Block of the HMI allows the user to specify the address of the controller or the internal register of the HMI. Users can view the current HMI action status by setting the status area

- **Use discontinuous address in Status Block**

If user don't check it, set the address at the start address, and then check the function according to your needs. The status area will automatically be configured with consecutive addresses, and only the checked status applications will be opened. If user check **Use discontinuous addresses in Status Block**, user can set the status addresses of each function in the status area separately.

NOTE:

1. *When the Control Block function is not configured, then the Status Block cannot monitor the status.*
2. *The addresses of Control Block & Status Block must not be identical.*

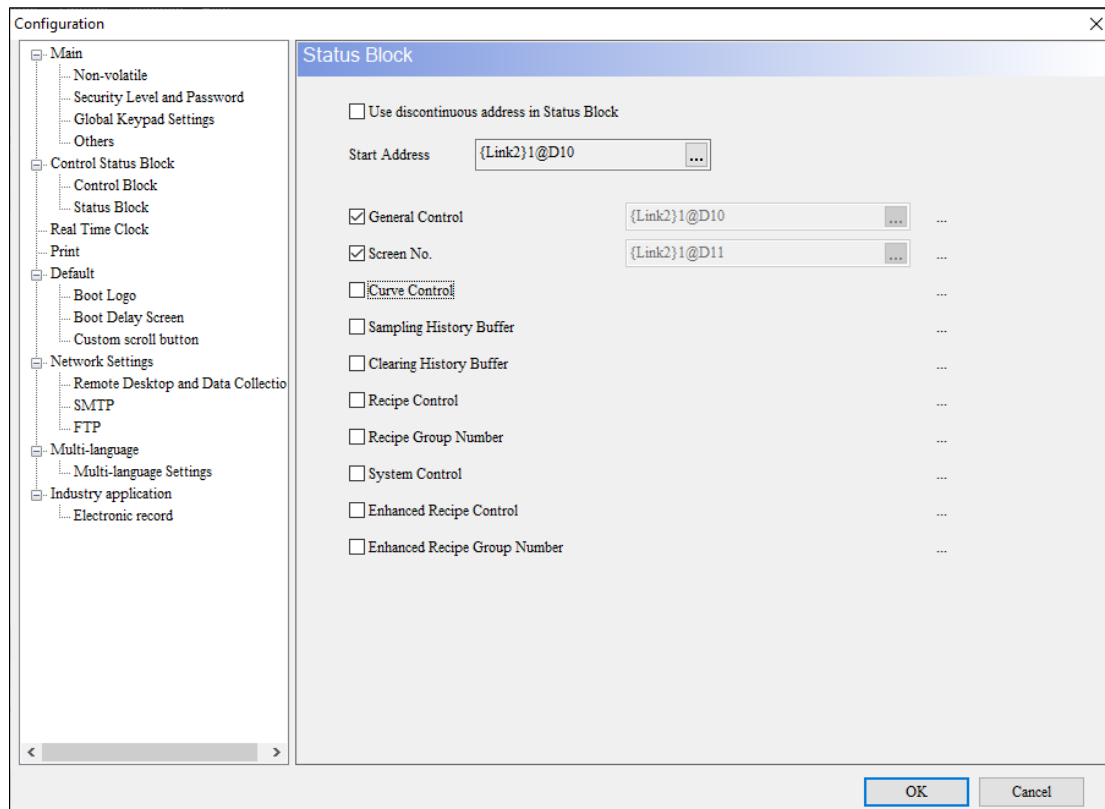


Figure 3 - 271: Status Area

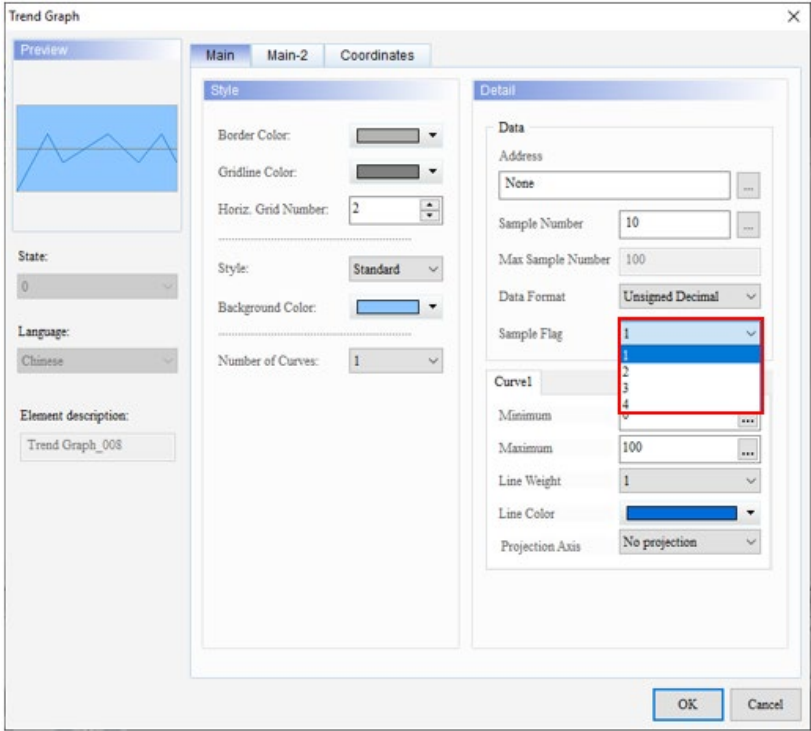
Status Block function description is as follows:

General Control Status Register	
Bit 0 Screen switching status	<ul style="list-style-type: none"> • During screen switching, this flag will be set to ON. • After the screen is switched, this flag is set to OFF.
Bit 3 Alarm buffer clear	<ul style="list-style-type: none"> • When the HMI is clearing the alarm buffer, this flag will be set to ON. • When the alarm buffer is cleared, this flag is set to OFF.
Bit 4 Alarm counter clear	<ul style="list-style-type: none"> • When the HMI is clearing the alarm counter, this flag will be set to ON. • When the alarm counter is cleared, this flag is set to OFF.
Bit 5 Write to external storage immediately	<ul style="list-style-type: none"> • When the HMI is updating the data in the cache area to the USB flash drive or SD card, this flag will be set to ON. • When the data is written, this flag is set to OFF.

General Control Status Register				
Bit 8~11 Set user level	<ul style="list-style-type: none"> And BIT 10 can know the user authority level of the current HMI operation. 			
	Permission level	Flag Control		
		Bit 10	Bit 9	Bit 8
	Authority 0	0	0	0
	Authority 1	0	0	1
	Authority 2	0	1	0
	Authority 3	0	1	1
	Authority 4	1	0	0
	Authority 5	1	0	1
	Authority 6	1	1	0
Authority 7	1	1	1	
<ul style="list-style-type: none"> The user can know whether it is currently the highest authority operation through BIT 11. 				

Screen Number Status Register	
Bit 0~15 Screen number	<ul style="list-style-type: none"> The last screen number of the HMI can be queried through this status register.

Curve Control Status Register	
Bit 0~3 Curve sampling status flag (1 ~ 4)	<ul style="list-style-type: none"> When the HMI executes data sampling in general graph or X-Y graph components, it will set the curve sampling state flag corresponding to the graph to ON, and the curve sampling state flag will be set to OFF after sampling is completed. The sampling flag 1 of the graph component corresponds to the curve sampling status flag 1; the sampling flag 2 of the graph component corresponds to the curve sampling status flag 2, and so on.

Curve Control Status Register	
	
<p>Bit 8~11 Curve clear status flag (1 ~ 4)</p>	<ul style="list-style-type: none"> When the HMI executes the data clearing action in the general graph or X-Y graph component, it will set the curve clearing status flag corresponding to the graph to ON, and the curve clearing status flag will be set to OFF after the sampling is completed. The curve clear flag 1 of the curve graph component corresponds to the curve clear state flag 1; the curve clear flag 2 of the graph component corresponds to the curve clear state flag 2, and so on.

History Buffer Sampling Status Register	
<p>Bit 0~11 Historical buffer sampling status flag (1 ~ 12)</p>	<ul style="list-style-type: none"> When the HMI executes the historical buffer sampling action, it will set the historical buffer sampling status flag corresponding to the buffer to ON. After the sampling is completed, the historical buffer sampling status flag will be set to OFF immediately.

History Buffer Clear Status Register	
<p>Bit 0~11 History buffer clear status flag (1 ~ 12)</p>	<ul style="list-style-type: none"> When the HMI executes the historical buffer clearing action, it will set the historical buffer clearing status flag corresponding to the buffer to ON. After the clearing is completed, the historical buffer clearing

	status flag will be set to OFF immediately.
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Recipe Control Status Register	
Bit 0 Recipe group change status flag	<ul style="list-style-type: none"> When the control formula group in the command area is changed, the formula group change status flag will be set to ON. When the HMI change group is completed and the RCPNO number is updated, the formula group change status flag will be set to OFF.
Bit 1 Recipe read status flag	<ul style="list-style-type: none"> When the HMI reads back 1 set of recipe data from the command area, the recipe read status flag will be set to ON. When the recipe is read back from the command area and storage is complete, the recipe read status flag will be set to OFF immediately.
Bit 2 Recipe write status flag	<ul style="list-style-type: none"> When the HMI sends a group of specified formula data to the command area, the formula writing status flag will be set to ON, when the formula writing to the command area is completed, the formula writing status flag will be set to OFF immediately.

Recipe Group Control Status Register	
Bit 0~15 Recipe group assignment status	<ul style="list-style-type: none"> Regardless of whether the value of the recipe group designation register (RCPNO) is changed by the command area or the HMI interface, as long as there is a change, the recipe group status register will be changed to a new value to facilitate the command area. Get the current formula group number through this register. This formula group designated flag should be used in conjunction with the formula group change flag.

System Control Flag Status Register	
Bit 0~7 Multi-language setting status value	<ul style="list-style-type: none"> Display the status value corresponding to the current language text.
Bit 8 Print status flag	<ul style="list-style-type: none"> When the printing status flag is set to ON, the printer is printing the screen displayed by the HMI or the edited and typeset screen at the time; when the printing status flag is set to OFF, the printer has no action.
Bit 9 Print form feed status flag	<ul style="list-style-type: none"> When the print page feed status flag is set to ON, the printer is executing automatic paper eject and page change; when the print page feed status flag is set to OFF, the printer does not act.

Enhanced Formula Control Status Register	
Bit 0 Enhanced formula group change status flag	<ul style="list-style-type: none"> When the control-enhanced formula group in the command area is changed, the formula group change status flag will be set to ON. When the HMI change group is completed and the RCPNO number is updated, the formula group change status flag will be set immediately OFF.
Bit 1 Enhanced formula reading status flag	<ul style="list-style-type: none"> When the HMI reads back 1 set of recipe data from the command area, the enhanced recipe read status flag will be set to ON. When the enhanced recipe is read back from the command area and the storage is complete, the enhanced recipe read status flag Then set to OFF.
Bit 2 Enhanced formula write status flag	<ul style="list-style-type: none"> When the HMI sends a group of designated enhanced recipe data to the command area, the recipe writing status flag will be set to ON. When the enhanced recipe writing to the command area is completed, the enhanced recipe writing status flag will be set immediately Is OFF.

Enhanced Formula Group Control Status Register	
Bit 0~15 Enhanced formula group assignment status	<ul style="list-style-type: none"> Whether the value of the enhanced formula group designated register (ENRCPNO) is changed by the command area or the HMI interface, as long as there is a change, the enhanced formula group status register will be changed to the new value. Eliminate the command area to get the current formula group number through this register. This enhanced formula group designated flag should be used in conjunction with the enhanced formula group change flag.

3.12.1.3 Real Time Clock

Some PLC controllers do not have a built-in RTC clock (Real-time clock), so they cannot be used for operations related to time setting, such as daily switch on and off, access control management... etc. If the PLC controller has a built-in RTC, the HMI provides a synchronization function, allowing the user to synchronize the HMI RTC time to the PLC or the PLC RTC time to the HMI. To use the Real Time Clock update settings, user must first check **Enable RTC Updates**. The Real Time Clock update setting includes two parts: PLC Link Settings and Time Field Setting.

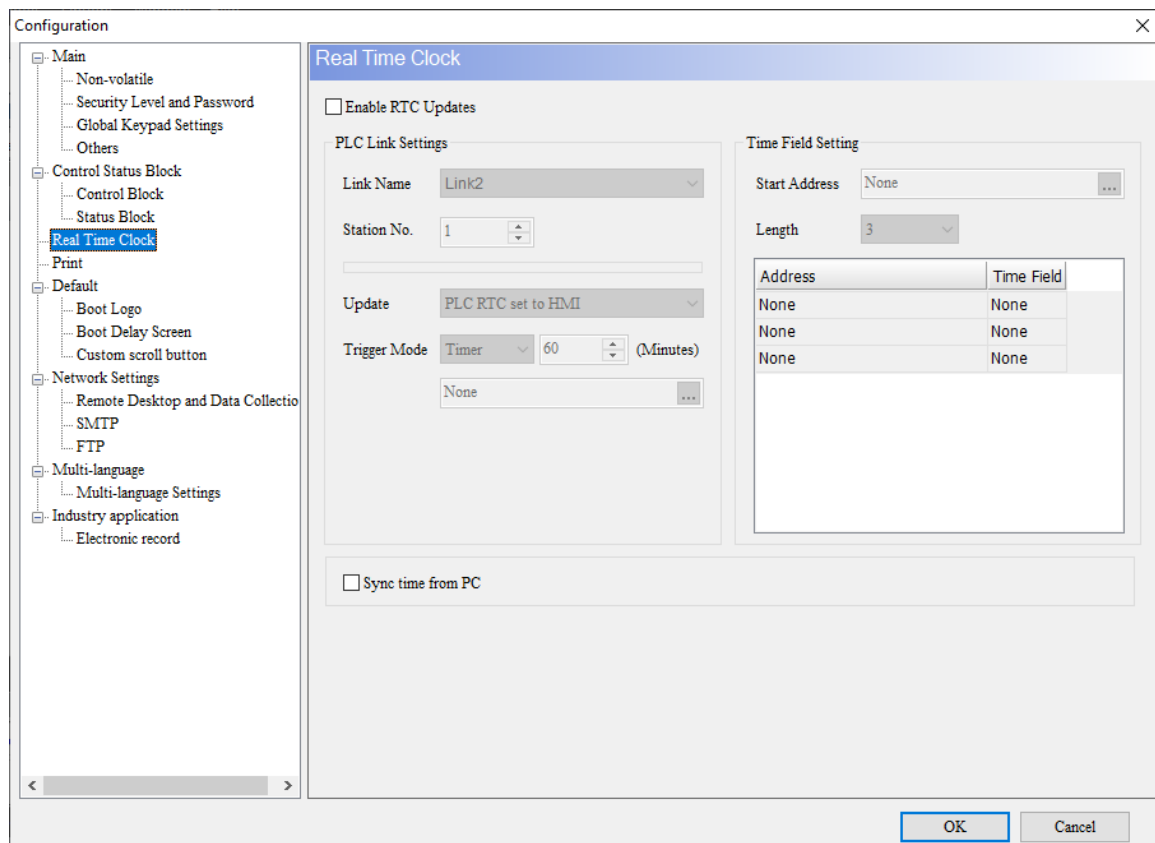
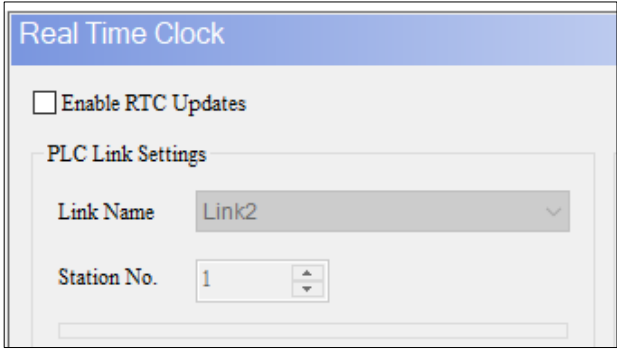
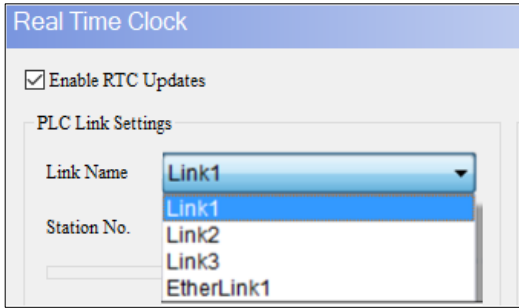
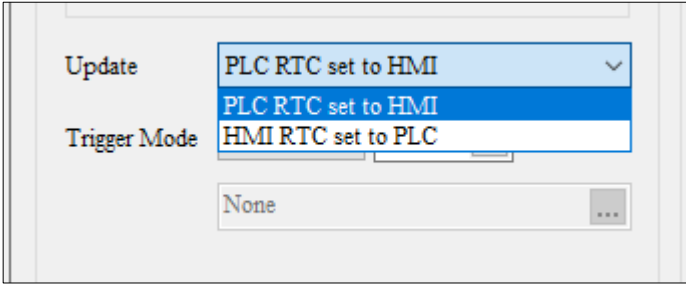
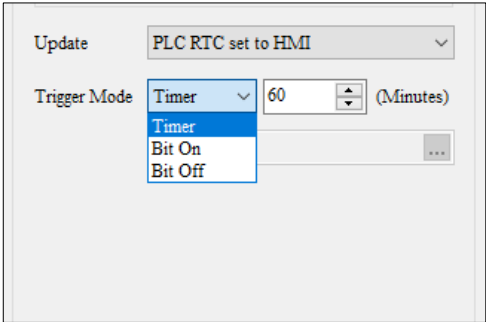



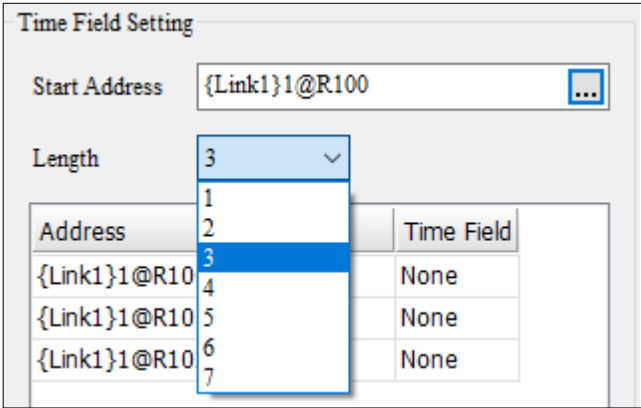
Figure 3 - 272: Real Time Clock

NOTE:

1. If the controller is a PLC product of Delta, there is no need to set additional time fields. DIAScreen software will display the time field that cannot be set, and set this field as a special register for Delta PLCs RTC D1319 ~ D1313.
2. Some old Delta PLC models (ES / SS / EC) do not support RTC update.

PLC connection setting	
Enable RTC Updates	<p>Check it to enable the RTC update settings.</p> 
Link Name	<p>User can choose a Link Name arbitrarily, regardless of whether the controller belongs to COM1 / COM2 / COM3 or Ethernet.</p> 
Station No.	<p>User can set the station number of the controller whose time the user wants to update. If the selected controller does not support station number setting, this option cannot be set.</p>
Update	<p>There are two modes for users to choose:</p> <ol style="list-style-type: none"> 1. HMI RTC time is set to PLC 2. PLC RTC Set time to HMI. 
Trigger Mode	<p>There are three trigger modes to choose from:</p> <ol style="list-style-type: none"> 1. Timer 2. Bit On

PLC connection setting	
	<p>3. Bit Off.</p> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> If user choose Timer, they can set how often to perform automatic update. The minimum is 1 minute; the maximum is 1440 minutes (1 day), the default value is 60 minutes. <p>Selecting Bit ON means that when Bit is ON, the update setting is triggered.</p> <ul style="list-style-type: none"> If Bit Off is selected, it means that when Bit is OFF, the update setting will be triggered. If user choose [Bit On] or [Bit Off], they must additionally set the trigger address. The trigger address can be the internal memory or the controller register address.
Time Field Setting	
Start Address	<ul style="list-style-type: none"> The register address of the controller for RTC time synchronization can be set. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> If the controller chooses Deltas PLC product, there is no need to set the start address.
Length	<ul style="list-style-type: none"> Users can choose the length according to the number of time fields they want to synchronize. The minimum length is 1, the maximum is 7.

PLC connection setting									
	 <p>The screenshot shows the 'Time Field Setting' dialog box. The 'Start Address' field is set to '{Link1}1@R100'. The 'Length' dropdown menu is open, showing options 1 through 7, with '3' selected. Below the dropdown is a table with columns 'Address' and 'Time Field'.</p> <table border="1"> <thead> <tr> <th>Address</th> <th>Time Field</th> </tr> </thead> <tbody> <tr> <td>{Link1}1@R100</td> <td>None</td> </tr> <tr> <td>{Link1}1@R100</td> <td>None</td> </tr> <tr> <td>{Link1}1@R100</td> <td>None</td> </tr> </tbody> </table>	Address	Time Field	{Link1}1@R100	None	{Link1}1@R100	None	{Link1}1@R100	None
Address	Time Field								
{Link1}1@R100	None								
{Link1}1@R100	None								
{Link1}1@R100	None								
	<ul style="list-style-type: none"> If the controller chooses Delta's PLC product, there is no need to set the length. 								
Example description									
RTC update steps	<p>Step 1: go to [Options] > [RTC Update Settings].</p> <p>Step 2: set the properties associated with RTC update.</p> <ol style="list-style-type: none"> Enable RTC Auto Updates. Select Link name: Link3 (Mitsubishi-FX3U and FX3GA). Select [PLC RTC set to HMI] for Update setting. Set Bit On for Trigger Mode. Set the trigger address to \$11.0. Set Start Address to {Link3}1@D8013. Set the Length to 6. Select Second for the Time Field corresponding to {Link3}1@D8013. Select Minute for the Time Field corresponding to {Link3}1@D8014. Select Hour for the Time Field corresponding to {Link3}1@D8015. Select Day for the Time Field corresponding to {Link3}1@D8016. Select Month for the Time Field corresponding to {Link3}1@D8017. Select Year for the Time Field corresponding to {Link3}1@D8018. <p>Step 3: after setting is complete, click OK to exit the RTC Update settings. Please refer to the following figure:</p>								

PLC connection setting															
	<div style="border: 1px solid gray; padding: 5px;"> <p>Real Time Clock</p> <p><input checked="" type="checkbox"/> Enable RTC Updates</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>PLC Link Settings</p> <p>Link Name: <input type="text" value="Link3"/></p> <p>Station No.: <input type="text" value="1"/></p> <p>Update: <input type="text" value="PLC RTC set to HMI"/></p> <p>Trigger Mode: <input type="text" value="Bit On"/> <input type="text" value="60"/> (Minutes)</p> <p><input type="text" value="\$11.0"/></p> </div> <div style="width: 45%;"> <p>Time Field Setting</p> <p>Start Address: <input type="text" value="{Link3}0@D8013"/></p> <p>Length: <input type="text" value="6"/></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Address</th> <th>Time Field</th> </tr> </thead> <tbody> <tr><td>{Link3}0@D8013</td><td>Second</td></tr> <tr><td>{Link3}0@D8014</td><td>Minute</td></tr> <tr><td>{Link3}0@D8015</td><td>Hour</td></tr> <tr><td>{Link3}0@D8016</td><td>Day</td></tr> <tr><td>{Link3}0@D8017</td><td>Month</td></tr> <tr><td>{Link3}0@D8018</td><td>Year</td></tr> </tbody> </table> </div> </div> </div> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p><input checked="" type="checkbox"/> Connection</p> <p>Link Name: <input type="text" value="Link3"/></p> <p>Manufacturers: <input type="text" value="Mitsubishi"/></p> <p>series: <input type="text" value="FX3U/FX3GA"/></p> <p>Multi-Drop: <input type="text" value="Disable"/></p> </div>	Address	Time Field	{Link3}0@D8013	Second	{Link3}0@D8014	Minute	{Link3}0@D8015	Hour	{Link3}0@D8016	Day	{Link3}0@D8017	Month	{Link3}0@D8018	Year
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{Link3}0@D8016	Day														
{Link3}0@D8017	Month														
{Link3}0@D8018	Year														
<p>Set up Alternate Maintained Button element</p>	<p>Step 1: Create an alternate button and set its write memory address to \$11.0.</p> <p>Step 2: Edit the alternate button State0 text as RTC BIT OFF, and State1 text as RTC BIT ON. The foreground color of the component is red, which represents the state of being triggered to ON.</p> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 5px;">State 0</td> <td style="padding: 5px;"> <div style="border: 1px solid gray; padding: 5px; width: 100px; height: 60px; display: flex; flex-direction: column; align-items: center; justify-content: center;"> <p style="font-size: small; margin: 0;">W:\$11.0</p> <p style="margin: 0;">RTC BIT OFF</p> </div> </td> </tr> <tr> <td style="padding: 5px;">State 1</td> <td style="padding: 5px;"> <div style="border: 1px solid gray; padding: 5px; width: 100px; height: 60px; display: flex; flex-direction: column; align-items: center; justify-content: center;"> <p style="font-size: small; margin: 0;">W:\$11.0</p> <p style="margin: 0; color: red;">RTC BIT ON</p> </div> </td> </tr> </table> </div>	State 0	<div style="border: 1px solid gray; padding: 5px; width: 100px; height: 60px; display: flex; flex-direction: column; align-items: center; justify-content: center;"> <p style="font-size: small; margin: 0;">W:\$11.0</p> <p style="margin: 0;">RTC BIT OFF</p> </div>	State 1	<div style="border: 1px solid gray; padding: 5px; width: 100px; height: 60px; display: flex; flex-direction: column; align-items: center; justify-content: center;"> <p style="font-size: small; margin: 0;">W:\$11.0</p> <p style="margin: 0; color: red;">RTC BIT ON</p> </div>										
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<p>Create value Input components</p>	<p>Step 1: Create 6 numeric input components, and set the addresses as {Link3}1@D8013 ~ {Link3}1@D8018.</p> <p>Step 2: Create 6 more numerical input components, and set the internal system parameters in sequence as</p>														

PLC connection setting																																																							
	<p>TIME_YEAR TIME_MONTH TIME_DAY TIME_HOUR TIME_MINUTE TIME_SECOND.</p> <p>PLC Address</p> <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> W:{Link3}0@D8018 ##### W:{Link3}0@D8017 ##### W:{Link3}0@D8016 ##### W:{Link3}0@D8015 ##### W:{Link3}0@D8014 ##### W:{Link3}0@D8013 ##### </div> <p>Internal system parameters</p> <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> W:TIME_YEAR ##### W:TIME_MONTH ##### W:TIME_DAY ##### W:TIME_HOUR ##### W:TIME_MINUTE ##### W:TIME_SECOND ##### </div>																																																						
<p style="text-align: center;">Executio n Result</p>	<p>After creating all elements, compile and download to the HMI. When the RTC alternate button (BITON) is triggered, the system will set the PLC's RTC time to the HMI, so the HMI internal system parameters TIME_YEAR, TIME_MONTH, TIME_DAY, TIME_HOUR, TIME_MINUTE, and TIME_SECOND will be synchronized with the PLC's RTC.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="text-align: center;"> <div style="border: 1px solid gray; padding: 5px; background-color: #cccccc;"> RTC BIT OFF </div> </td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">BIT OFF</td> <td style="text-align: center;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; font-size: small;">D8013</td> <td style="text-align: center; font-size: small;">D8014</td> <td style="text-align: center; font-size: small;">D8015</td> <td style="text-align: center; font-size: small;">D8016</td> <td style="text-align: center; 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2013	10	30	15	4	20																																																		

PLC connection setting	
Synchronize PC time to HMI	When checked, the project will be downloaded and the HMI time will be synchronized with the PC.

3.12.1.4 Print

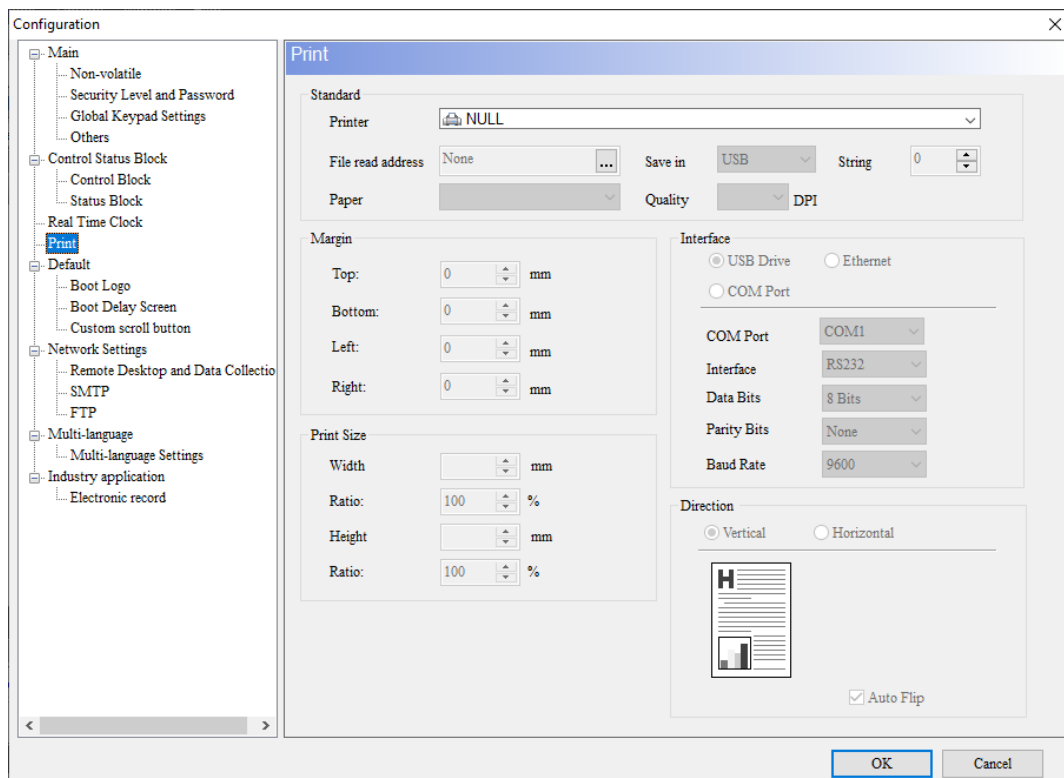
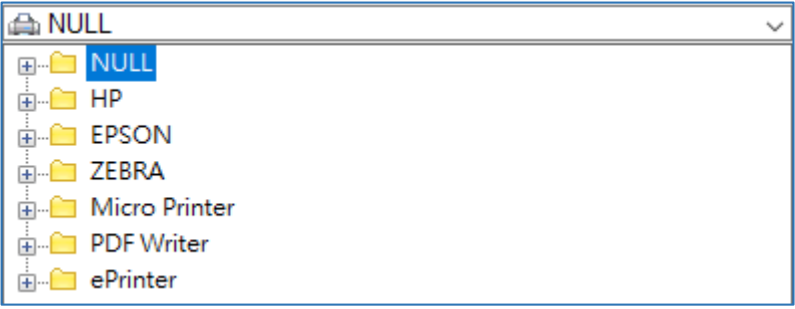


Figure 3 - 273 : Print

The print page function setting description is as follows:

Features	Description
Printer	DOP-100 series models support printers of various brands, including HP, EPSON, ZEBRA, Micro Printer, PDF Writer and ePrinter printing.

Features	Description
	
Paper	The paper will vary depending on the selected printer. It can be roughly summarized as A4, Letter, Report, Custom and other settings.
Quality	<ul style="list-style-type: none"> Quality is the resolution of the printer. According to different printers, provide 72, 203 DPI for users to choose.
Margin	<ul style="list-style-type: none"> The user can set the top, bottom, left, and right margins of the paper as the reserved area during printing, which means it will be blank and not printed. The unit of the boundary range is mm, and the range value is 0 ~ 550 mm.
Print Size	The print size can also be set as the zoom ratio of width and height. The maximum zoom can be 400%, and the minimum zoom can be 10%. The default is 100%.
Interface	<ul style="list-style-type: none"> According to the selected DOP model, provide USB or Ethernet transmission interface If user choose ePrinter to print, they need to fill in the PC IP address and printer port used 85.
Direction	The printing direction can be divided into Vertical printing and Horizontal printing.
Auto Flip	Auto-feeding means that the printer will automatically eject the paper and help the user to switch pages for printing. If checked, when a piece of paper is printed, the printer will automatically switch to the next paper to continue printing; if it is not checked, when the paper is printed, it will be forced to eject the paper, requiring the user to manually change the page action.

3.12.1.5 Network Settings

Network Settings

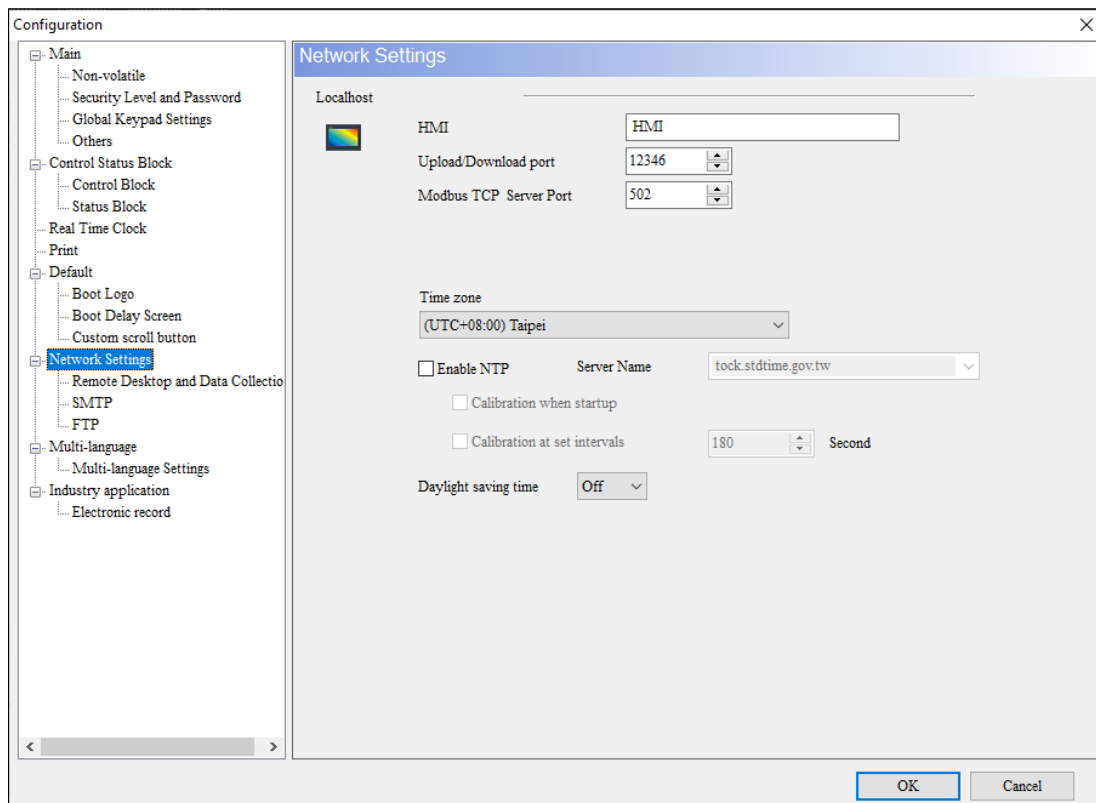


Figure 3 - 274: Network Settings

The Network Settings page description is as follows:

Features	Description
HMI	Users can set their own name; this name can be used to identify the HMI. When using remote network monitoring or data sampling, the HMI name can be used to quickly identify which HMI is being monitored or accessing data.
Upload /Download port	<ul style="list-style-type: none"> The communication port is the designated connection address, allowing programs on different computers to communicate. There are a total of 65536 ports, and some specific ports are reserved for specific programs. The default Upload/Download Port of the HMI is 12346.
Modbus TCP Server Port	<ul style="list-style-type: none"> Modbus TCP Server The default port is 502. This communication port must be the same as that of the Modbus TCP/IP controller.

Features	Description
	<ul style="list-style-type: none"> • The user can also customize the port number, but please make sure that both settings must be the same. • If the HMI is communicating with the Modbus software on the PC, please change the communication port here instead of changing the communication port of the controller in [Options]>[Set communication parameters]>[Ethernet1]>[Device].
Time zone	The user can choose the time to display according to the local time zone of the HMI.
Enable NTP	<ul style="list-style-type: none"> • After checking, the HMI can adjust the time of the HMI through the network. • If NTP is enabled, please confirm whether the network environment of the HMI is smooth.
Server Name	User can choose the server provided in the software, or can enter the name of the local NTP server.
Calibration when startup	After checking, the time to correct the time is when the HMI is turned on.
Calibration at set intervals	<ul style="list-style-type: none"> • After checking, user need to set the number of seconds. The timing of calibration is when the machine is turned on and enters the HMI screen, the time will be adjusted in a few seconds. • The default is 180 seconds, the minimum is 10 seconds, and the maximum is 99999 seconds.

Remote Desktop and Data Collection

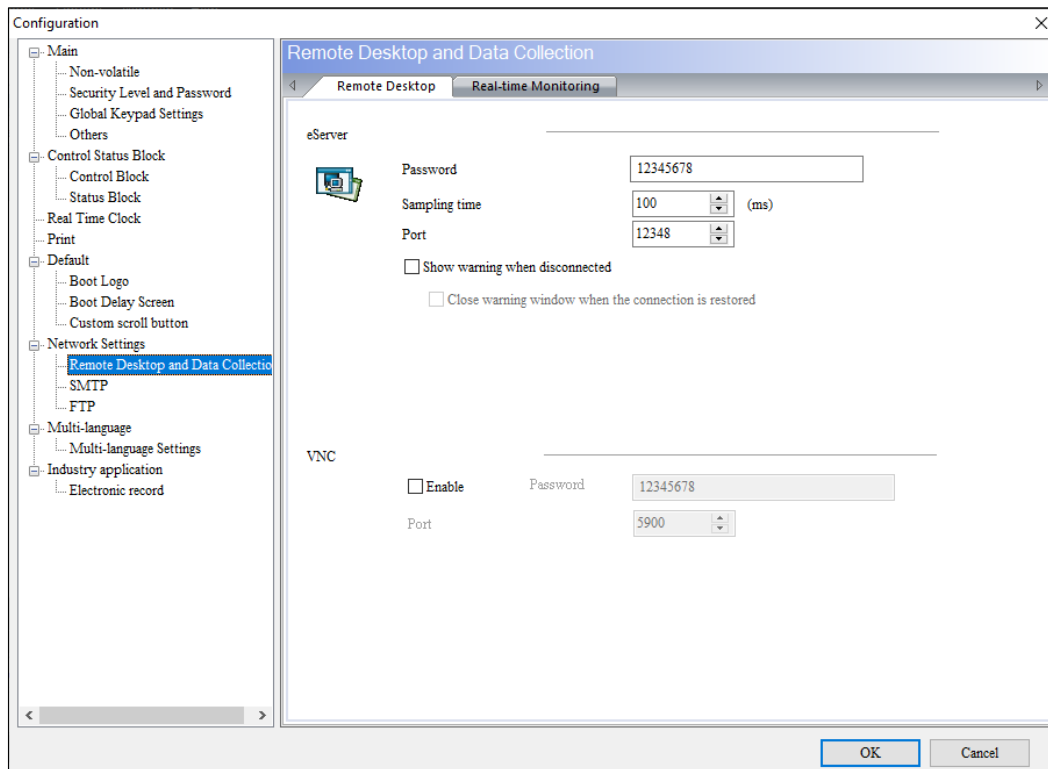


Figure 3 - 275: Remote Desktop Tab

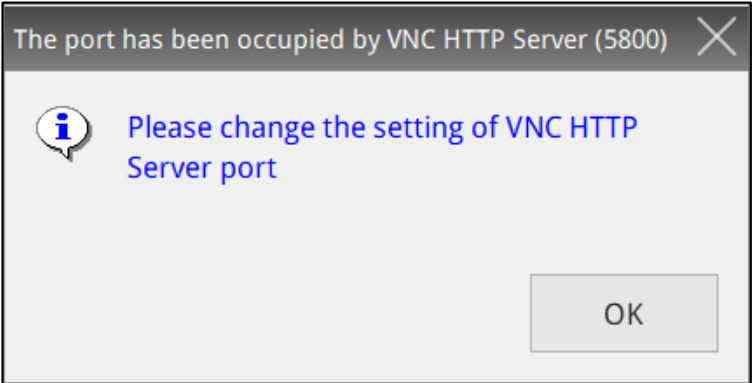
The eServer function of Remote Desktop and Data Collection, description is as follows :

Features	Description
Password	<ul style="list-style-type: none"> The password can be changed according to user needs. The default is 12345678. This password is to obtain HMI project data after executing eServer and eRemote, user must enter the password to monitor or access data.
Sampling time	The sampling time is how long the eServer and eRemote will perform sampling. The range is 100 ~ 5000ms, the default value is 100 ms.
Port	The connection port between eServer and eRemote is set to 12348. It is a different communication port from the upload/download port of the HMI, and the port used by different programs will be different.

Features	Description
Show warning when disconnected	<ul style="list-style-type: none"> • This option can be enabled after checking Start. • When the HMI is disconnected from the eServer or eRemote, the HMI will display a disconnected warning message.
Close warning window when the connection is restored	<ul style="list-style-type: none"> • This option can only be enabled when the option of Show disconnection warning window when disconnected is checked. • If it is checked, the representative will keep popping out the error and will not close the error window until the HMI and eServer or eRemote are connected again. • If it is not checked, it means that the HMI will only pop up a disconnected error message.

The VNC (Virtual Network Computing) function of the remote desktop page is a set of software that can remotely monitor and operate HMIs. This software can send Keypad and mouse actions and real-time screens through the Internet. When using the webpage to operate VNC, the browser must support JAVA installation, otherwise it cannot be opened. When using the webpage to operate VNC, the browser must support JAVA installation, otherwise it cannot be opened. The VNC function setting description is as follows :

Features	Description
Enable	Check Enable to remotely monitor and operate the HMI through VNC.
Password	The password can be changed according to user needs. The default is 12345678.
Port	<ul style="list-style-type: none"> • The default connection port is 5900. If the software connection port setting is changed to 5902, when using VNC Viewer to connect, the connection port must be changed to 5902. • Do not use 5800 when setting the connection port on the software side. If it is set to 5800, the following message will appear after downloading the screen to the HMI to inform the user to replace.

Features	Description
	 <ul style="list-style-type: none"> • VNC Viewer provides a webpage operation method. In this way, user only need to enter the browsers IP Address and the port is 5800 to open the connection. Even if the communication port of the software is not the default 5900, during browser operation, please enter 5800 for the connection port. Such as <code>http://192.168.123.148:5800</code>.

Real-time Monitoring

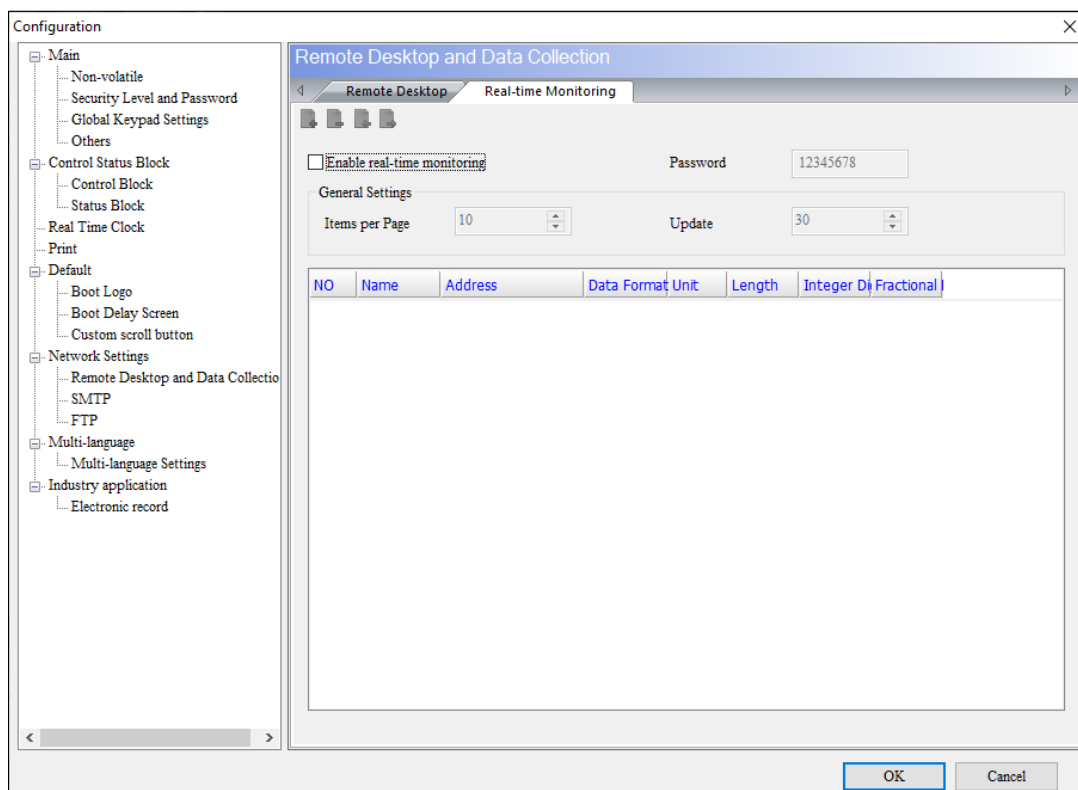


Figure 3 - 276: Real-time monitoring tab

- Network real-time monitoring provides that the HMI can write values to the HMI on the web side, or after the HMI writes the values, the web-side monitors the changes.
- The real-time monitoring interface provides a variety of Data formats for users to use. The supported data formats include BCD, Signed Decimal, Unsigned Decimal, Hex, Floating, Char.
- Each data format can be set to read length to determine whether to read Word or Double Word. When the read length is 1, the integer can be set up to 5 digits, that means the data format is Word. When the read length is 2, the integer can be set up to 10 digits, that means the data format is Double Word.
- Address input provides Word and Bit, which can support internal memory address and external PLC address.

How to use network real-time monitoring?

Check **Enable real-time monitoring** and set the address on the software first. Then please enter `http://[Man Machine IP]/RemoteMon/` on the browser. After success, user will see the following login screen. Enter the password of the web application to log in. The two words R and M must be capital letters, otherwise it will not be able to connect to the HMI through the Webpage.

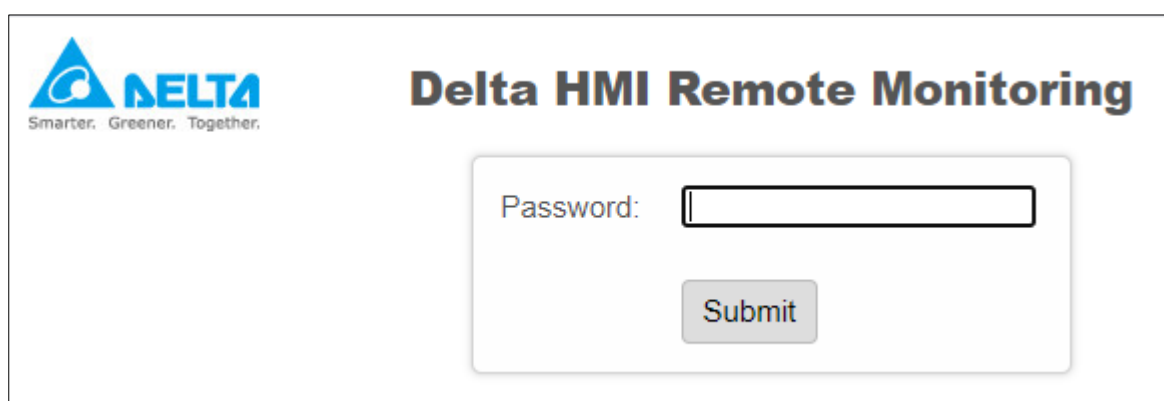










Figure 3 - 277: Delta HMI Remote Monitoring

The function setting description of the Real-time monitoring page is as follows:

Features	Description																																
Enable real-time monitoring	Tick the checkbox to enable Real-time Monitoring feature.																																
New Monitor Address 	<ul style="list-style-type: none"> Click  to add a monitoring address. The name can be used to name the entered address. The name length can be up to 30 characters. <table border="1"> <thead> <tr> <th>NO</th> <th>Name</th> <th>Address</th> <th>Data Format</th> <th>Unit</th> <th>Length</th> <th>Integer D</th> <th>Fractional I</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Delta</td> <td>None</td> <td>Unsigned</td> <td>Word</td> <td>1</td> <td>4</td> <td>0</td> </tr> <tr> <td>2</td> <td>Delta</td> <td>{EthernetLink1}@RW-0</td> <td> Unsigned</td> <td>Word</td> <td>1</td> <td>4</td> <td>0</td> </tr> </tbody> </table>	NO	Name	Address	Data Format	Unit	Length	Integer D	Fractional I	1	Delta	None	Unsigned	Word	1	4	0	2	Delta	{EthernetLink1}@RW-0	 Unsigned	Word	1	4	0								
NO	Name	Address	Data Format	Unit	Length	Integer D	Fractional I																										
1	Delta	None	Unsigned	Word	1	4	0																										
2	Delta	{EthernetLink1}@RW-0	 Unsigned	Word	1	4	0																										
Delete Monitor Address 	Select the number user want to delete, then click to delete the monitoring address.																																
Import CSV file 	After modifying the content of the exported CSV file, click to import the monitoring address parameters.																																
Export CSV file 	Export the content of the monitoring address to a CSV file. <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Define Na</td> <td>Address</td> <td>Memory F</td> <td>Type</td> <td>Read Coun</td> <td>Integer</td> <td>Fraction</td> </tr> <tr> <td>2</td> <td>Delta</td> <td>\$100</td> <td>Unsigned</td> <td>Word</td> <td>2</td> <td>10</td> <td>0</td> </tr> <tr> <td>3</td> <td>HMI</td> <td>{Link2}1@D100</td> <td>Unsigned</td> <td>Word</td> <td>1</td> <td>5</td> <td>0</td> </tr> </tbody> </table>		A	B	C	D	E	F	G	1	Define Na	Address	Memory F	Type	Read Coun	Integer	Fraction	2	Delta	\$100	Unsigned	Word	2	10	0	3	HMI	{Link2}1@D100	Unsigned	Word	1	5	0
	A	B	C	D	E	F	G																										
1	Define Na	Address	Memory F	Type	Read Coun	Integer	Fraction																										
2	Delta	\$100	Unsigned	Word	2	10	0																										
3	HMI	{Link2}1@D100	Unsigned	Word	1	5	0																										
Password	<ul style="list-style-type: none"> The default password is 12345678. After entering the monitoring address in the web page, user will be prompted to enter the password. 																																
Items per Page	<ul style="list-style-type: none"> User can set the number of monitoring addresses to be displayed on a page. The default setting is 10, the minimum is 1 and maximum 20. 																																
Update Frequency (seconds)	User can set the screen update frequency. The default is 30 seconds, the minimum is 1 second, and the maximum is 30 seconds.																																

SMTP

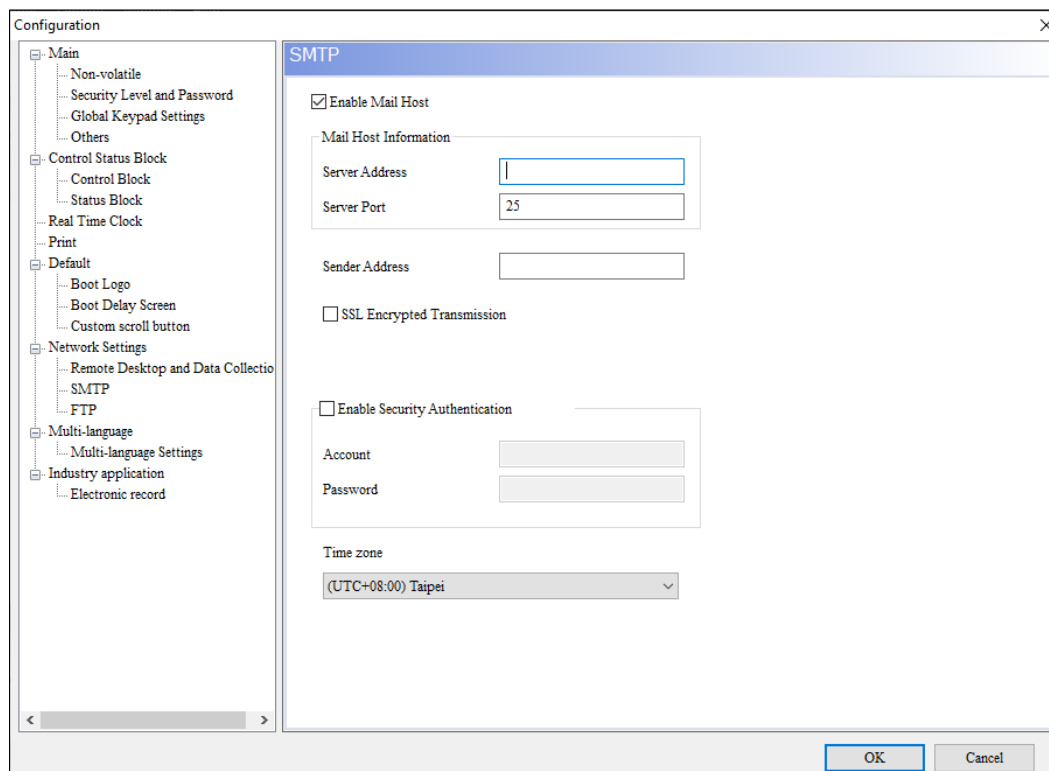
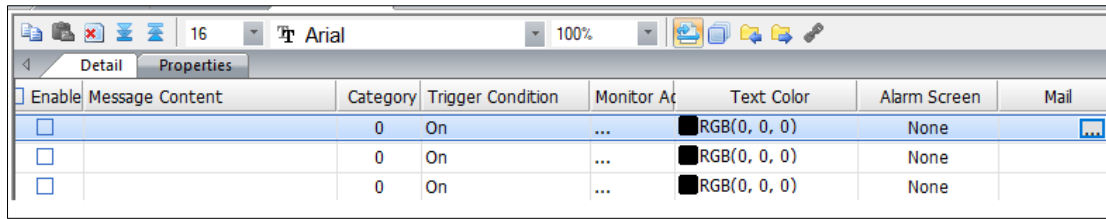
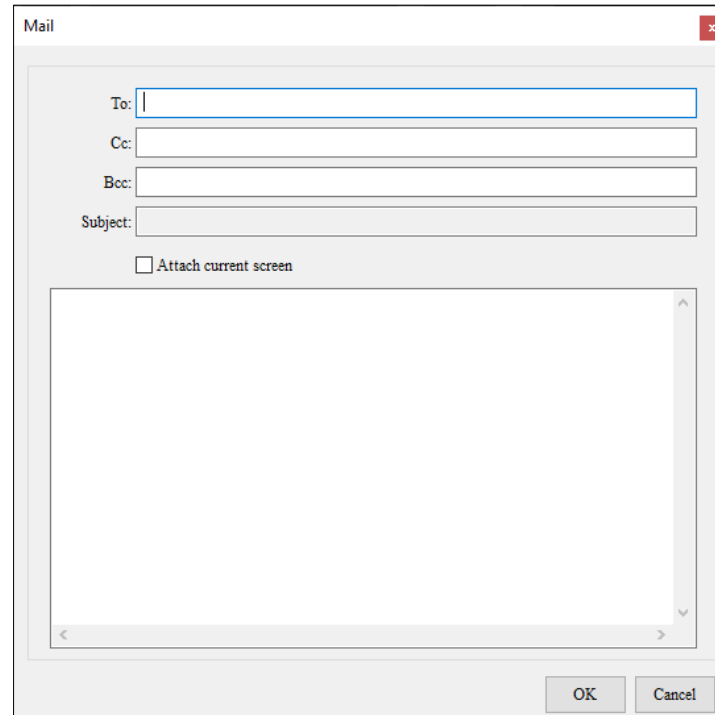


Figure 3 - 278: SMTP

- SMTP stands for **Simple Mail Transfer Protocol**. This server is used to send the mail. SMTP is a set of rules used to send mail from source address to destination address, and it controls how the mail is transferred.
- DIAScreen software provides SMTP service function, which allows users to notify users that an alarm has occurred by receiving mail when an alarm occurs.
- After the SMTP parameter setting is completed, the user must also enter **Options > Alarm Settings**, and fill in the recipient's Mail and related alarm information in the [Mail] field.



Enable	Message Content	Category	Trigger Condition	Monitor Ac	Text Color	Alarm Screen	Mail
<input type="checkbox"/>		0	On	...	RGB(0, 0, 0)	None	
<input type="checkbox"/>		0	On	...	RGB(0, 0, 0)	None	
<input type="checkbox"/>		0	On	...	RGB(0, 0, 0)	None	



Mail

To:

Cc:

Bcc:

Subject:

Attach current screen


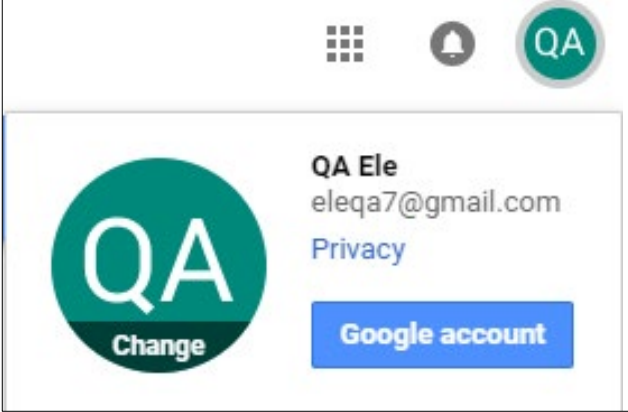
OK Cancel

Figure 3 - 279: Mail

If the user wants to enable SMTP, please check [Enable mail host function] first, and then set up the security verification of its host IP address, host port, account and password.

The SMTP page function setting description is as follows:

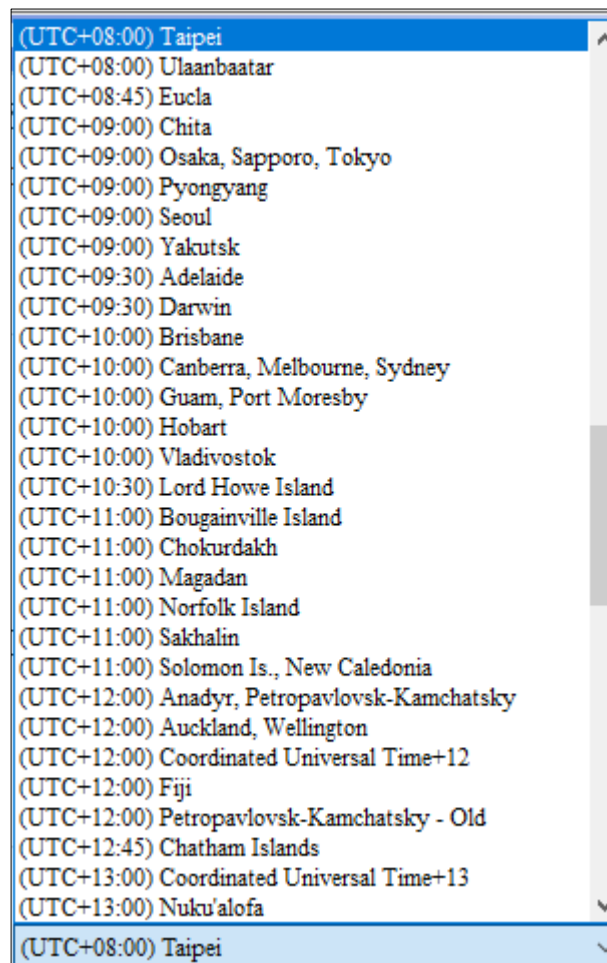
Features	Description
Enable Mail Host	<ul style="list-style-type: none"> This IP address is the Mail Server IP created by the user. Before using the SMTP function, please set up the Mail Server environment first, or user can search for free Mail Server on the Internet. In addition to filling in the IP address, user can also check [Use domain name] to enter the domain name.

Features	Description
	 <p>The screenshot shows a configuration window for mail host settings. At the top, there is a checked checkbox labeled "Enable Mail Host". Below it is a section titled "Mail Host Information" containing a "Server IP" field and a checked checkbox labeled "Domain Name". The "Domain Name" field contains the text "smtp.gmail.com".</p>
Server Port	The default port of the mail host port is 25, which is the general SMTP communication port.
Sender Address	Please fill in the sender's email address.
SSL Encrypted Transmission	<ul style="list-style-type: none"> • SSL is the abbreviation of Secure Socket Layer, which can provide confidential transmission on the Internet. Originally proposed by Netscape, the goal of SSL is to ensure the confidentiality and integrity of the communication between two applications, and to verify the identity of the server. • To use SSL encrypted transmission, e-mail must support this function. • Gmail itself also requires SSL encrypted transmission. If user want to use Gmail to send mails, user need to make the following settings first. <ol style="list-style-type: none"> 1. After logging into Gmail mailbox, select my account.  <p>The screenshot shows the Gmail account settings page. At the top right, there are icons for the app menu, notifications, and a profile picture labeled "QA". Below these is a card for the account "QA Ele" with the email address "eleqa7@gmail.com" and a "Privacy" link. A "Change" button is next to the profile picture, and a "Google account" button is at the bottom right.</p> <ol style="list-style-type: none"> 2. Choose Sign-in & security.

Features	Description
	<div> </div> <p>3. Open the apps that allow less security at the bottom of the page.</p> <div> </div> <ul style="list-style-type: none"> • After the above 3 points are set, user can use Gmail to receive alert letters.
<p>Enable Security Authentication</p>	<ul style="list-style-type: none"> • Before enabling the account security verification function, user must check the Enable mail host function before setting its account and password. • If the SMTP server is created with account and password authentication, this option must be checked.
<p>Account</p>	<ul style="list-style-type: none"> • The account and password must be based on the account and password required by the SMTP server. When setting up SMTP MailServer, if the security verification of account and password is checked, a set of account and password must be entered first. This account and password are used to check whether the recipient is a legitimate user of the back-end mail system, so as to prevent un received letters from entering the system and occupying resources, forming hidden mail security problems. • Please note that the format of the account number will be different due to the different formats required by each
<p>Password</p>	

Features	Description
	SMTP Mail Server. Users can first ask MIS for its rules.
Time zone	The HMI provides the time zone function, which allows the user to select the local time zone, so that the HMI will not have a time difference in various places, and the time of sending the alarm mail is more accurate.

After SMTP settings are loaded into the HMI, user can access the settings from the **System Directory > System Settings > Network Applications > SMTP** tab, as shown in the figure below. Users can also change the SMTP settings from the HMI and upload to DIAScreen.



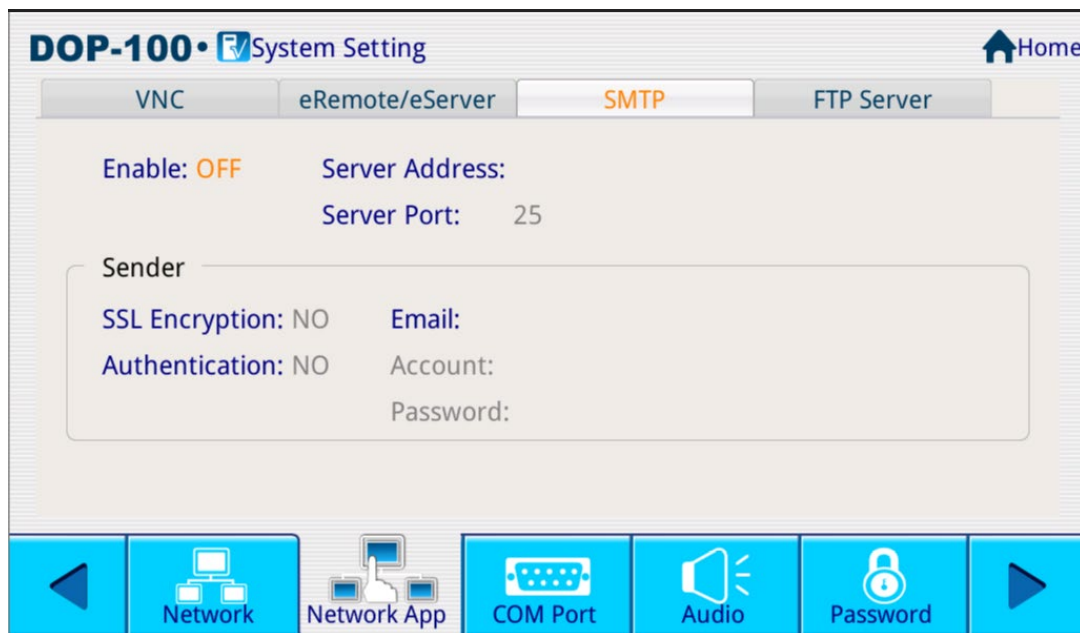


Figure 3 - 280: SMTP HMI Catalog setting page

FTP

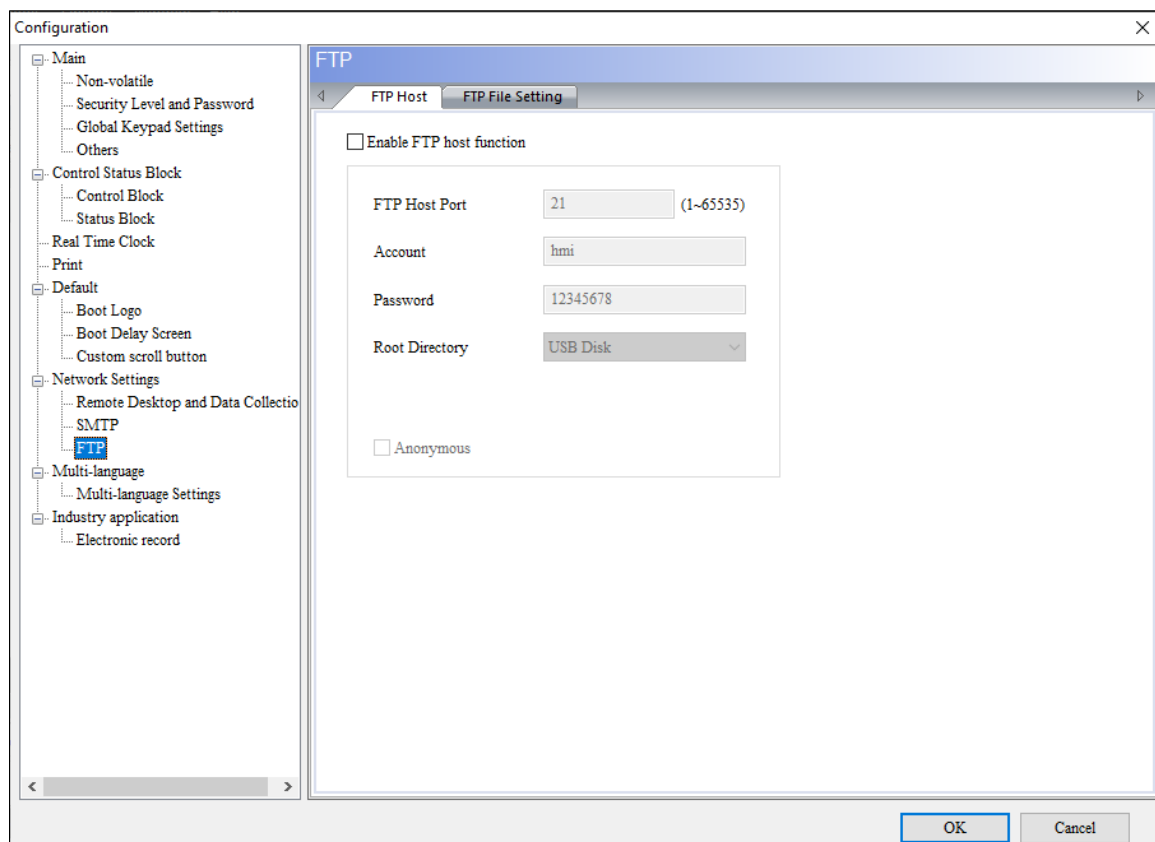


Figure 3 - 281: FTP

- The FTP Server function is mainly to provide users with the ability to download alarms, historical data, formulas, and operation records in USB Disk or SD storage devices to PC for review via the Internet, and upload files from PC to USB Disk or SD storage devices.

FTP rule	Description	
Supported HMI	Network model	
Network model	File transfer software	
	Windows File manager	
	DOS Command Line	
Connection restrictions	Allow up to 3 FTP Clients to connect at the same time	
	Idle for more than 90 seconds will automatically disconnect	
Login method	Support anonymous login	Cannot add directory
		Cannot upload file
		Cannot download file
		Cannot delete file
		Allow file name change
	Support account login	Allow new directories
		Allow file upload
		Allow downloading of files
		Allow file deletion
		Allow file name change
File transfer rules	Unlimited flow	
	Support resume	
	Unlimited file size	
	The maximum file name length is 260 bytes	
	Allow file name change	
	Supporting document name	
	Does not support encryption	
	Support active mode / passive mode connection	
	When FTP is transferring, access to system directory	

FTP supports three connection methods as follows:

1. File transfer software

Because the HMI provides FTP Server, user need to use FTP Client software to

upload and download files or use Windows File Explorer or DOS Command Line to connect. This example introduces the use of file transfer software FileZilla, which is free software, and the download URL is:

<https://filezilla-project.org/download.php>. After installation, please open FileZilla software.

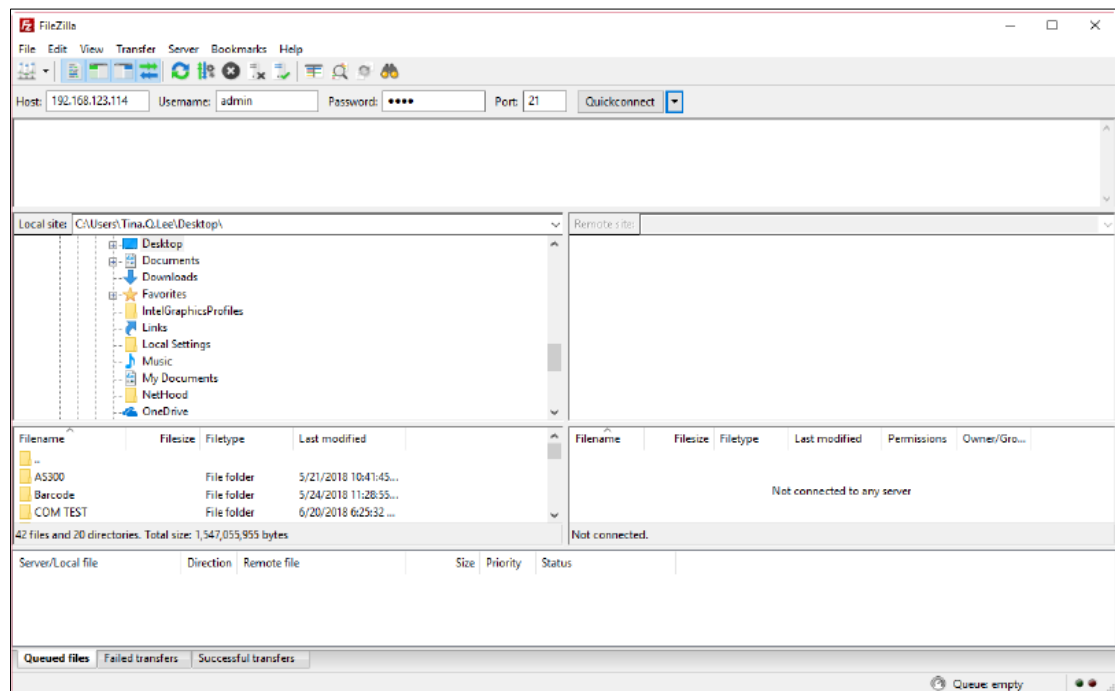


Figure 3 - 282: Transfer software FileZilla

Name	Action Description
Host	Enter the HMI IP address. The IP address in this example is 192.168.123.114.
Username	Enter the same username as the software setting, which is admin.
Password	Enter the same password as the software setting, which is 1234.
Port	Enter the same port as the software setting, which is 21.
Quickconnect	Before executing this button, please fill in the required settings from 1 to 4.

2. Windows File manager

Please open the file explorer, enter ftp://192.168.123.114/, enter the account and password, user can log in FTP.

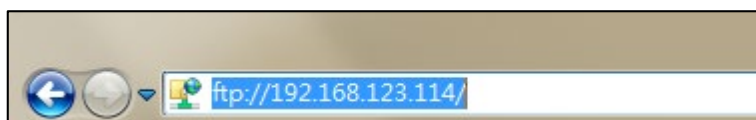


Figure 3 - 283: File manager

After logging in, user can display all files in the USB storage device.

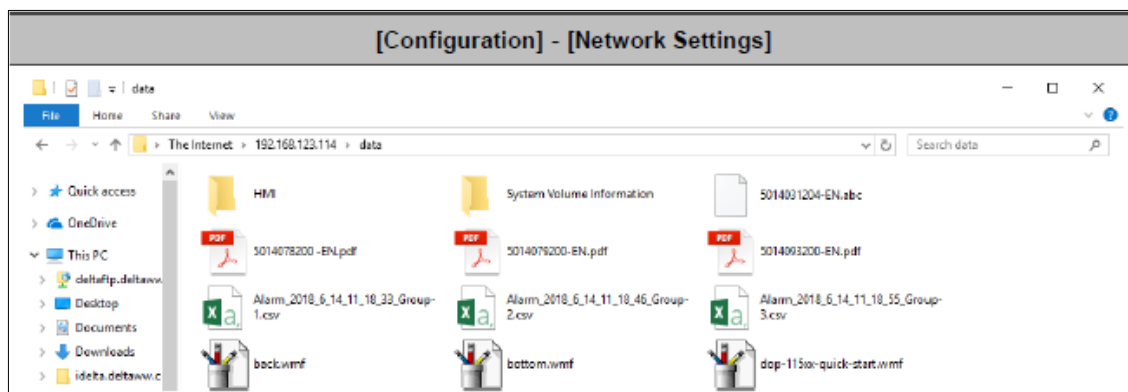


Figure 3 - 284: Files in USB storage device

3. DOS Command Line

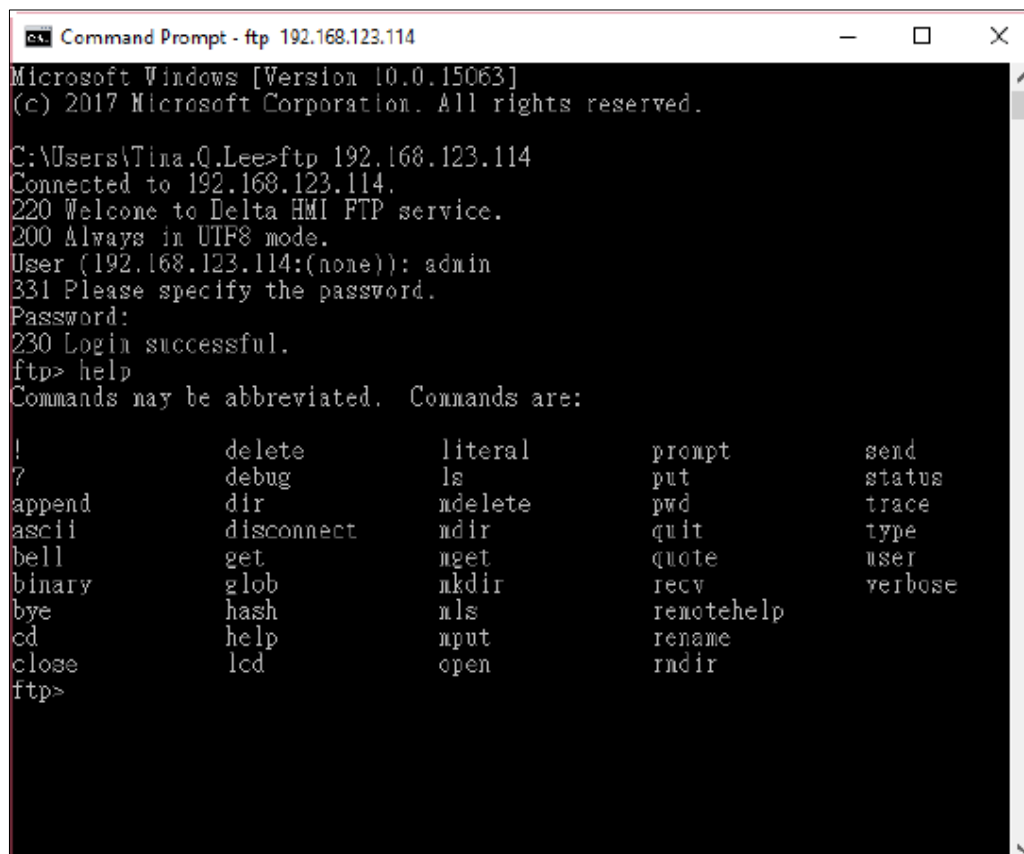
Enter ftp 192.168.123.114 at the command prompt, and enter the user account admin and password 1234 to connect to FTP.

```
Command Prompt - ftp 192.168.123.114
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\Tina.Q.Lee>ftp 192.168.123.114
Connected to 192.168.123.114.
220 Welcome to Delta HMI FTP service.
200 Always in UTF8 mode.
User (192.168.123.114:(none)): admin
331 Please specify the password.
Password:
230 Login successful.
ftp>
```

Figure 3 - 285: Connect to FTP

Under the ftp command, user can use help to view the supported related commands.



```
Command Prompt - ftp 192.168.123.114
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\Tina.O.Lee>ftp 192.168.123.114
Connected to 192.168.123.114.
220 Welcome to Delta HMI FTP service.
200 Always in UTF8 mode.
User (192.168.123.114:(none)): admin
331 Please specify the password.
Password:
230 Login successful.
ftp> help
Commands may be abbreviated.  Commands are:

!           delete          literal        prompt        send
?           debug           ls             put           status
append     dir             ndelete       pwd           trace
ascii     disconnect     ndir          quit          type
bell      get            nget         quote        user
binary    glob           nkdir        recv         verbose
bye      hash          nls          remotehelp
cd       help          nput        rename
close   lcd           open        rmdir
ftp>
```

Figure 3 - 286: Supported related commands

Enter the dir command to list all files in the current USB storage device.

```

Command Prompt - ftp 192.168.123.114
ftp> help
Commands may be abbreviated.  Commands are:
!          delete          literal          prompt          send
?          debug           ls              put             status
append    dir                  ndelete        pwd            trace
ascii    disconnect         nmdir         quit          type
bell     get                nget         quote         user
binary   glob              mkdir        recv         verbose
bye      hash             nls         renothelp
cd       help            nput        rename
close    lcd              open        rmdir

ftp> dir
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
-rwxrwxrwx  1 0      0      481517 Jan 09  2018 5014031204-EN.abc
-rwxrwxrwx  1 0      0      511544 May 28  2018 5014078200 -EN.pdf
-rwxrwxrwx  1 0      0      550702 Mar 15  2018 5014079200-EN.pdf
-rwxrwxrwx  1 0      0      317449 Apr 09  2018 5014093200-EN.pdf
-rwxrwxrwx  1 0      0        1728 Jun 14  2018 Alarm_2018_6_14_11_18_33_Group-1.csv
-rwxrwxrwx  1 0      0        1728 Jun 14  2018 Alarm_2018_6_14_11_18_46_Group-2.csv
-rwxrwxrwx  1 0      0        1728 Jun 14  2018 Alarm_2018_6_14_11_18_55_Group-3.csv
drwxrwxrwx  3 0      0        4096 May 23  2018 HMI
drwxrwxrwx  2 0      0        4096 May 23  2018 System Volume Information
-rwxrwxrwx  1 0      0      80922 May 31  2018 back.wmf
-rwxrwxrwx  1 0      0      29074 May 31  2018 botton.wmf
-rwxrwxrwx  1 0      0     123314 May 31  2018 dop-115xx-quick-start.wmf
226 Directory send OK.
ftp: 947 bytes received in 0.03Seconds 33.82Kbytes/sec.
ftp>

```

Figure 3 - 287: All current USB files

If user want to download files from USB Disk or SD Card, please use the get command. If user want to upload files from the PC to a USB Disk or SD Card, this is the put command.

The FTP File Setting page function description is as follows :

Features	Description
Enable FTP host function	The FTP function can be used only after it is checked.
FTP Host Port	The default FTP host port is 21.
Account	User can enter the name of the account they want to use.
Password	User can enter the password they want to use.
Root Directory	The root directory is the storage location of the HMI files, and the default is USB Disk. Users can also choose SD Card as the storage location.
Anonymous	<ul style="list-style-type: none"> Check this option to log in without entering the account and password FTP.

Features	Description
Enable FTP host function	The FTP function can be used only after it is checked.
FTP Host Port	The default FTP host port is 21.
Account	User can enter the name of the account they want to use.
Password	User can enter the password they want to use.
Root Directory	The root directory is the storage location of the HMI files, and the default is USB Disk. Users can also choose SD Card as the storage location.
	<ul style="list-style-type: none"> After logging in to FTP using an anonymous connection, uploading, downloading files, deleting files or adding directories cannot be performed.

After FTP settings are loaded into the HMI, go to **System Directory > System Settings > Network Application > FTP Server tab** to access the settings, as shown below. Users can also change the FTP settings from the HMI and upload to DIAScreen.

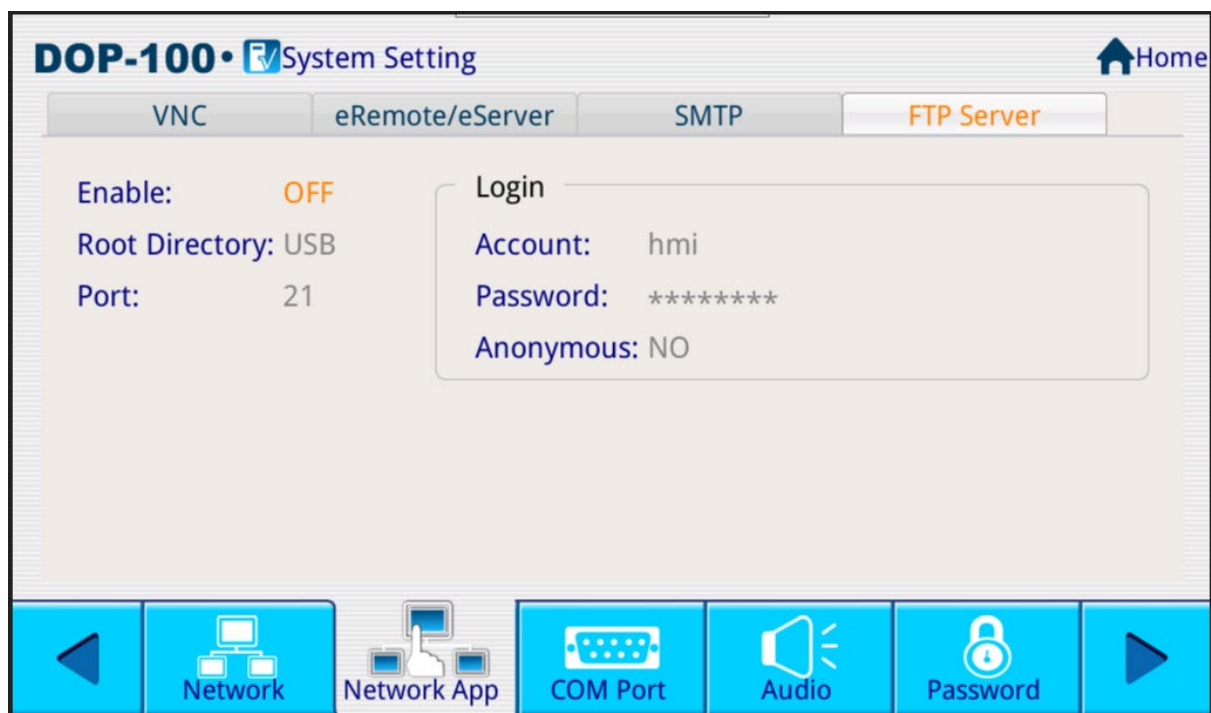


Figure 3 - 288: FTP HMI Catalog Setting page

3.12.2 Data Exchange Table

Remark: This function is applicable to DOP-100 series and AX-8 series.

The DIAScreen software provides the data exchange table function. The user double-clicks the data exchange table from the project tree to open the setting page. This function is used to map the remote device address to the HMI internal address. The user can use this table tool to set the correspondence between the remote address and the local address. For example, write the value of the remote address D0 to the local address \$100, please refer to the figure below.

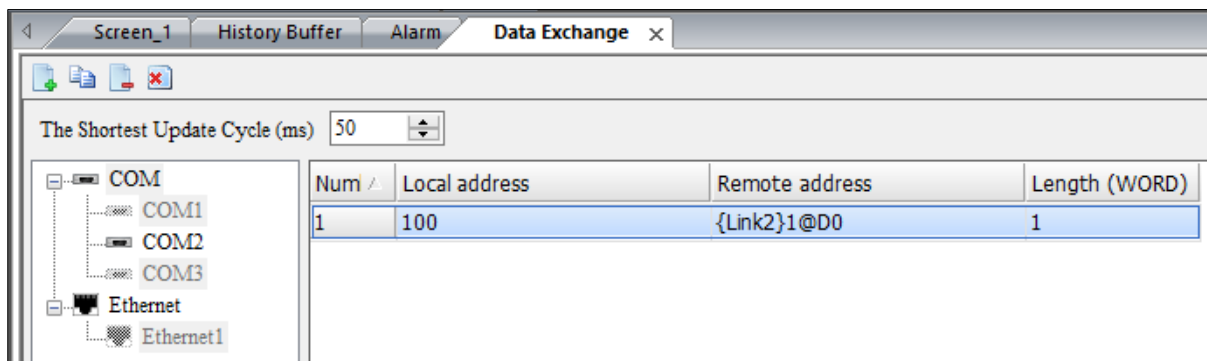






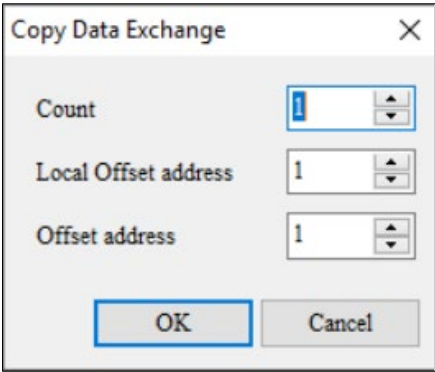


Figure 3 - 289: Data Exchange Table





The data exchange table provides WORD type data exchange. The maximum length of each data can be set to 100, and the entire data exchange table can set up to 200 data. The local address can only be entered in the internal memory address, and the remote address is based on the currently selected communication item to enter the corresponding address.

The data exchange table provides WORD type data exchange, and the entire data exchange table can set up to 200 data. The field description is as follows:

Field	Description
Local address	<ul style="list-style-type: none"> Enter the address of the internal register. <p>The internal register provided by the HMI is 16 bits. If the remote address data type is set to Double Word, it will be read by two internal registers. Enter 2 in the length field.</p>
Remote address	Enter the device address of the currently selected communication item.
Length	Data exchange length, the maximum is 100.

The function setting description of the data exchange table page is as follows:

Features	Description
Add 	Click on the connection user want to add in the connection tree, and then click  to add it in the last row of the data exchange form.
Copy 	<ul style="list-style-type: none"> Select the data row to be copied, click  to pop up the data exchange copy window, as shown below. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> Enter the number to be copied, the local offset address, and the remote offset address. After confirming, add the setting data in the last column of the data exchange table.
Delete 	<ul style="list-style-type: none"> Select the data row to be deleted, click  to pop up the delete confirmation window, as shown in the figure below, select Yes to delete the selected data row.

Features	Description
	<div style="border: 1px solid gray; padding: 5px; margin-bottom: 10px;"> <p style="text-align: right;">DIAScreen ×</p> <div style="display: flex; align-items: center; justify-content: center;"> ? <p>Do you want to delete the selected item?</p> </div> <div style="display: flex; justify-content: flex-end; gap: 20px; margin-top: 10px;"> <input style="border: 1px solid blue; padding: 2px 10px;" type="button" value="Yes"/> <input type="button" value="No"/> </div> </div> <ul style="list-style-type: none"> To delete multiple data, long press the  Keypad Ctrl key and select the data row to be deleted, and then click to delete the selected data row. To delete multiple data in a row, click the first row to be deleted, press and hold the Shift key on the Keypad and then click the last row to be deleted, and then click  to delete multiple data rows.
<p>Delete all </p>	<p>Click  to pop up the clear confirmation window, as shown in the figure below, select Yes to clear all the data rows of the connection.</p> <div style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: right;">DIAScreen ×</p> <div style="display: flex; align-items: center; justify-content: center;"> ? <p>Do you want to clear all items?</p> </div> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <input style="border: 1px solid blue; padding: 2px 10px;" type="button" value="Yes"/> <input type="button" value="No"/> </div> </div>
<p>Minimum update cycle</p>	<p>The shortest update cycle allows users to set the data update time. The default is 50ms, which means that data will be updated every 50ms. The minimum update cycle is 50ms; the maximum update cycle is 6000ms.</p>

Chapter 4: Tag Sharing

4.1 Tag Sharing with DIAStudio Programming

The DIAScreen can inherit the variables or tags declared by DIADesigner and DIADesigner-AX in the DIAStudio software package, and can be used directly in the components of DIAScreen without the need for repeated declarations. Please refer to (1) for operation mode. The following content and (2) AX-8 Series Package Installation Manual (Chapter 2).

Tag means the variable that is inherited between in DIADesigner & DIAScreen. User can share the Variables with **Address** created in DIADesigner with DIAScreen application, so that user can directly access those Variables in DIAScreen via **DIA Tag** function.

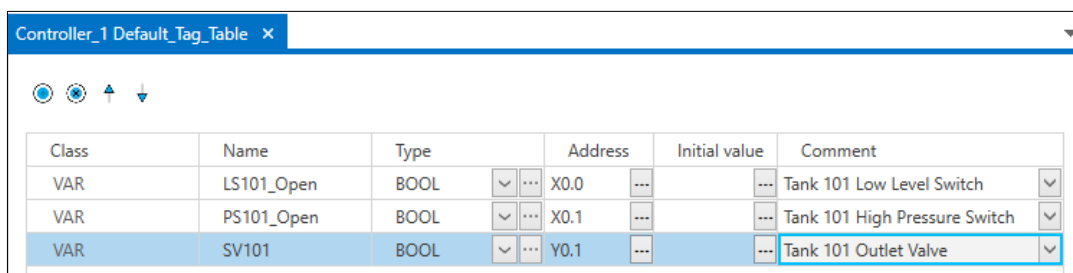
NOTE:

*Only **DOP-100 HMI series** supports **DIA Tag** sharing feature in the current version.*

Follow these steps to perform tag sharing to DIAScreen:

1. Create variables with address in any global variable table of **Controller** > **Programming** > **Global Variable**.

An example for Tag Sharing is shown in the following figure.



Class	Name	Type	Address	Initial value	Comment
VAR	LS101_Open	BOOL	X0.0	...	Tank 101 Low Level Switch
VAR	PS101_Open	BOOL	X0.1	...	Tank 101 High Pressure Switch
VAR	SV101	BOOL	Y0.1	...	Tank 101 Outlet Valve

Figure 4 - 1: Tag Sharing

2. Compile the DIADesigner device or project.
3. Launch DIAScreen.

4. Create a HMI project with DOP-100 HMI series. During **Project** creation, enter a **Link Name**, select **Delta** in **Manufacturers** drop-down list, select **Delta AS series PLC** in the **Series** drop-down list as shown in the following figure.

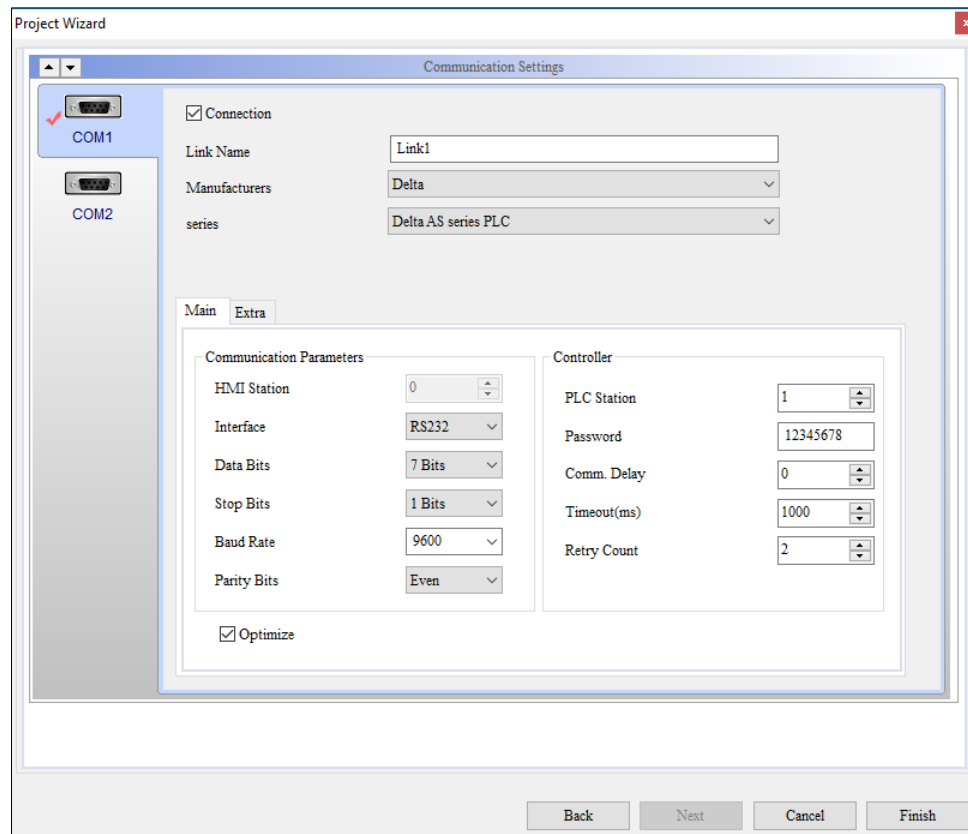


Figure 4 - 2: Project Wizard

Result: The DIAScreen project is created.

5. Double-click **DIA Tag** function in the **Project** tree in DIAScreen.

Result: **DIA Tag** window displays as shown in the following figure.

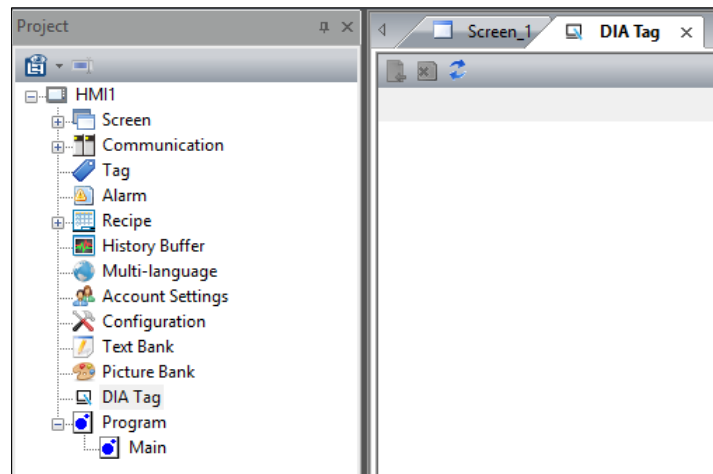



Figure 4 - 3: DIA Tag

6. Click  icon in the **DIA Tag** window.

Result: The **Device Name List** window of the device to be imported displayed as shown in the following figure.

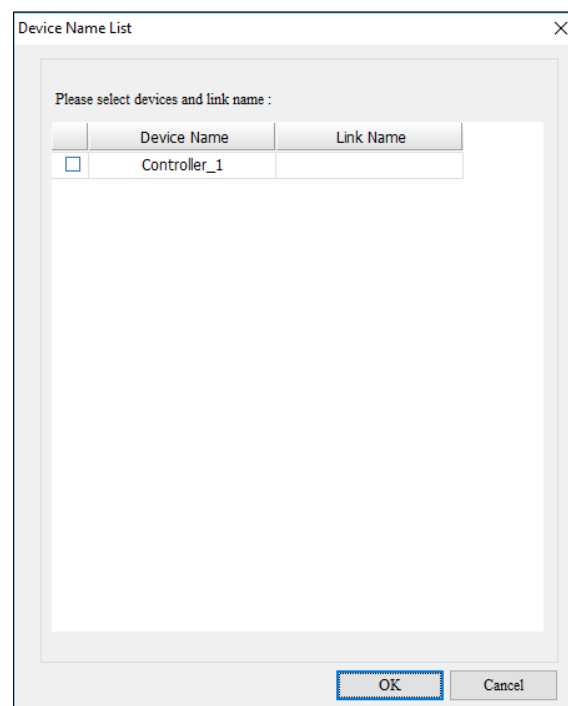


Figure 4 - 4: Select the device to import

7. Check the Device Name of the controller and select **Link Name**.

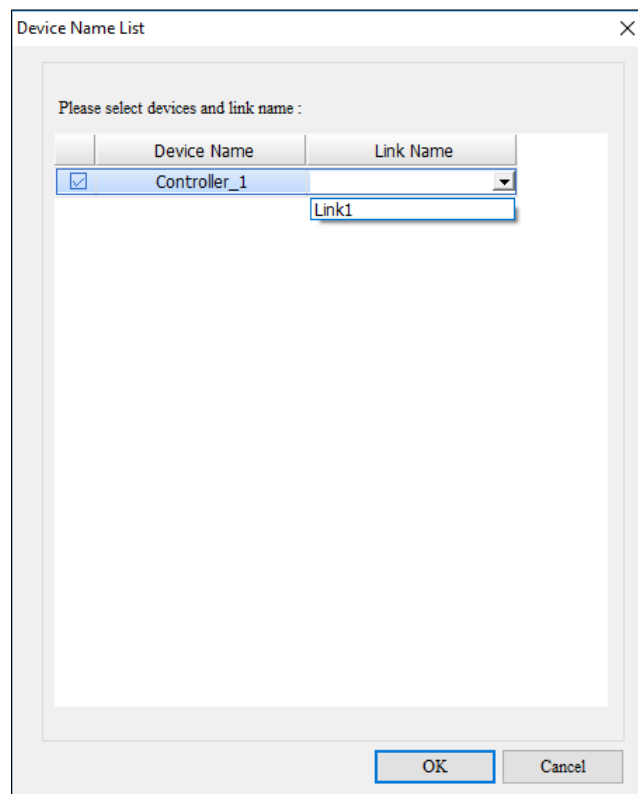


Figure 4 - 5: Select the device to import window

8. Click on **OK**.

Result: The DIADesigner Tags are now shared with DIAScreen so that the Variables can be used for different kinds of elements, animations, etc. as shown in the following figure.

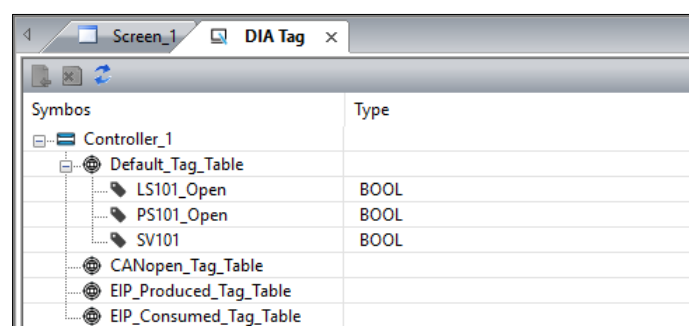


Figure 4 - 6: DIA Tag updated with Tag sharing

Example:

User can select DIA Tag function to select the DIADesigner variables as shown in the following figure:

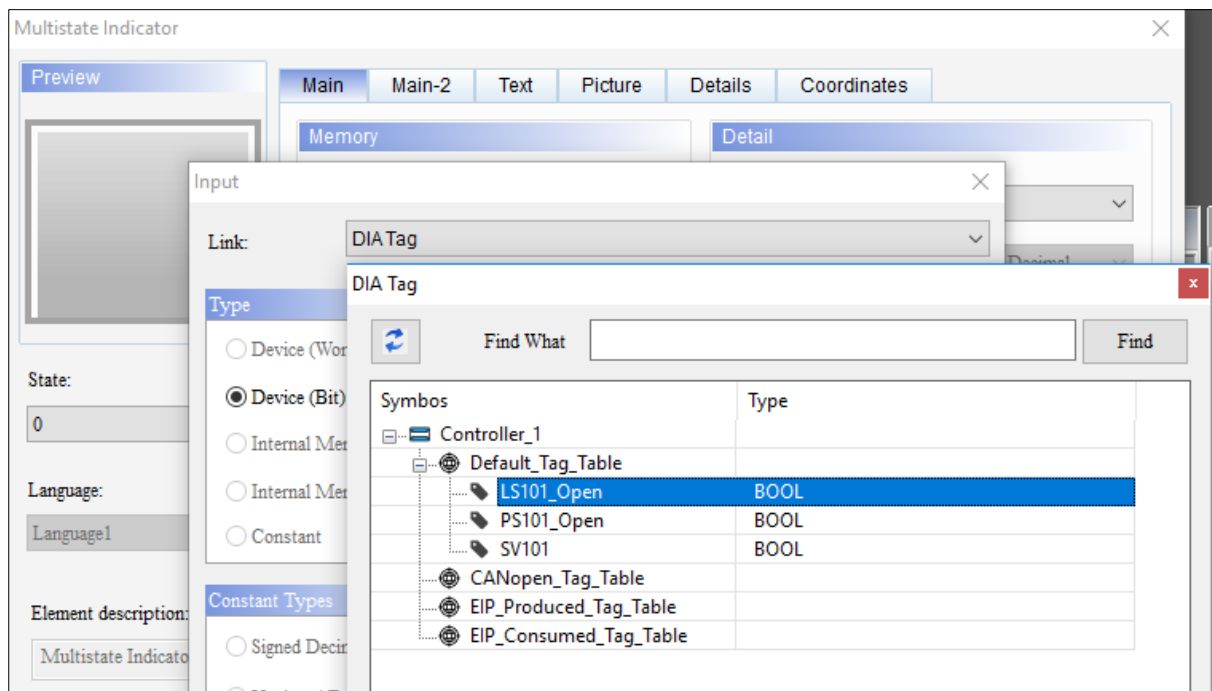


Figure 4 - 7: DIA Tag usage

4.1.1 DIA Tag Supports One-to-Many

Remarks: This function is suitable for DOP-100 series.

According to Section 4.1, DIAScreen can inherit the Tag declared by DIADesigner. After clicking DIA Tag, the window for selecting the controller will pop up, as shown in the figure below.

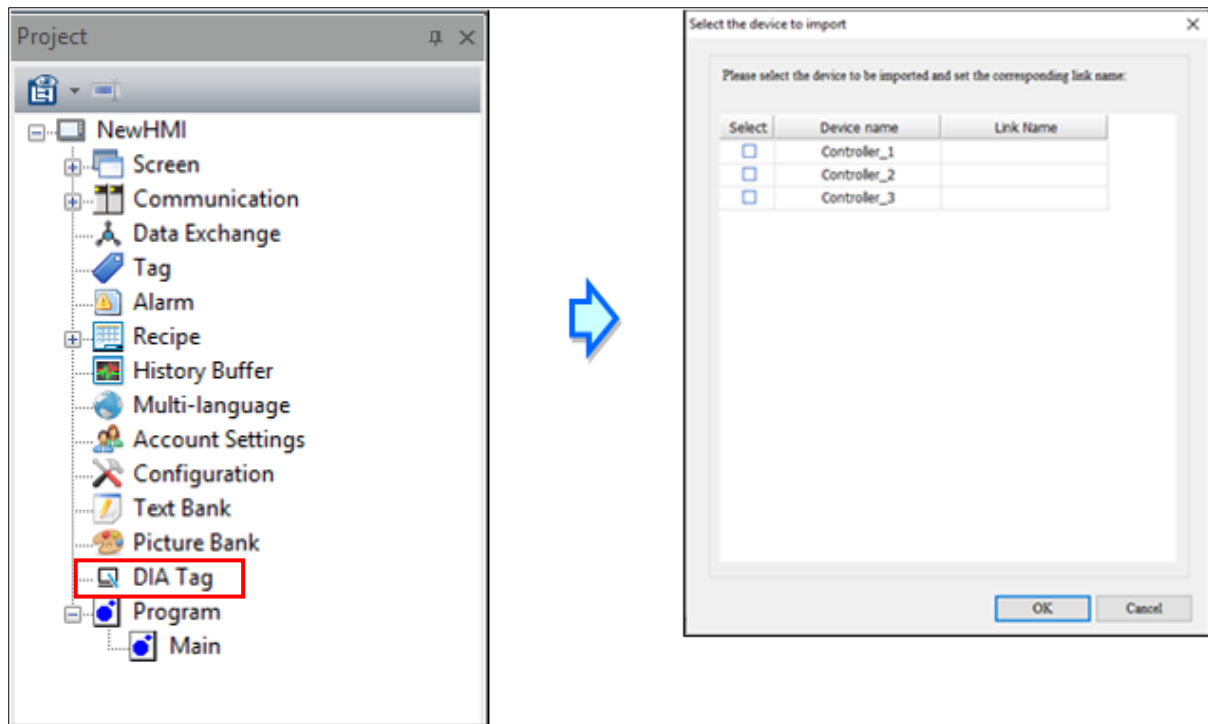


Figure 4 - 8: DIA Tag

Check to select the connection name to import DIA Tag.

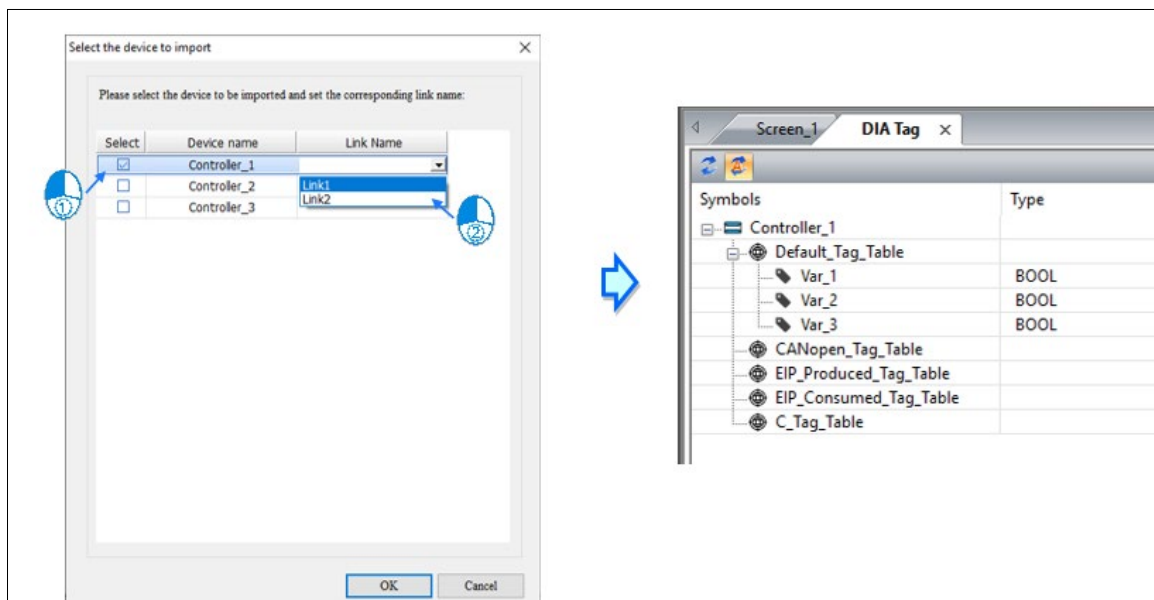


Figure 4 - 9: Import DIA Tag

The DIAScreen communication setting controller must be consistent with DIADesigner, as shown in the figure below:

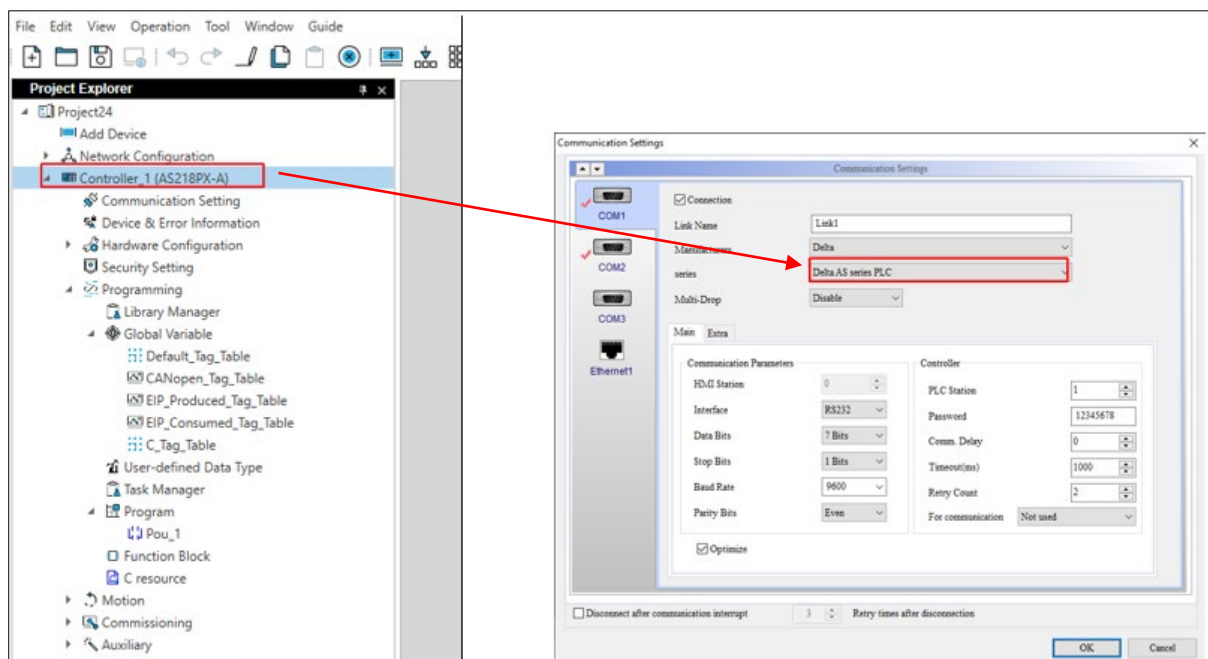


Figure 4 - 10: DIADesigner and DIAScreen Controller options

If the DIAScreen communication setting controller is inconsistent with the DIADesigner, an error message will appear when user press to confirm the imported DIA Tag, as shown in the figure below.

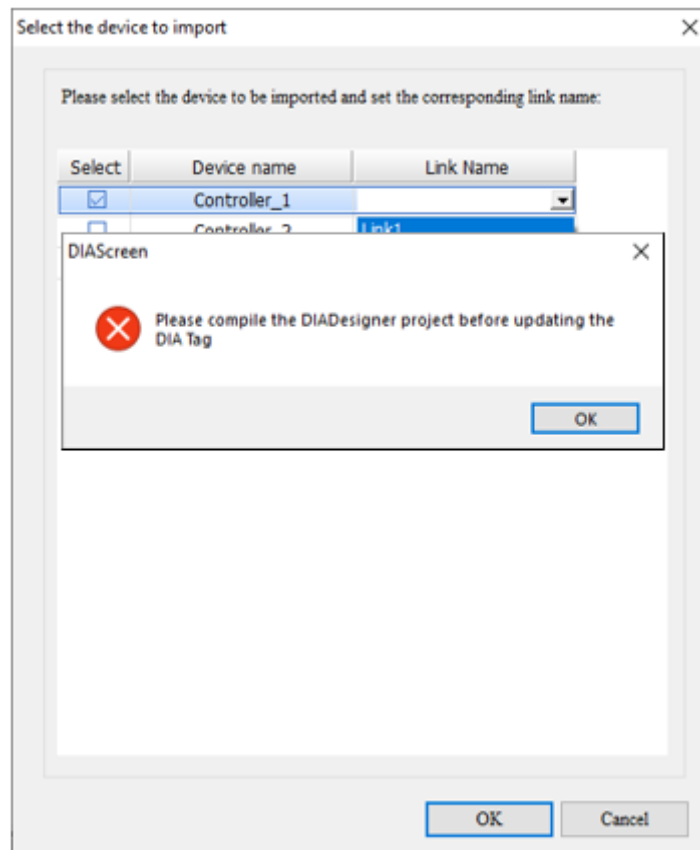


Figure 4 - 11: DIADesigner and DIAScreen Controller inconsistent error message

The current version of DIAScreen supports opening multiple DIAScreens at once, and can import DIA Tags generated by DIADesigner into multiple DIAScreen programs, as shown in the figure below:

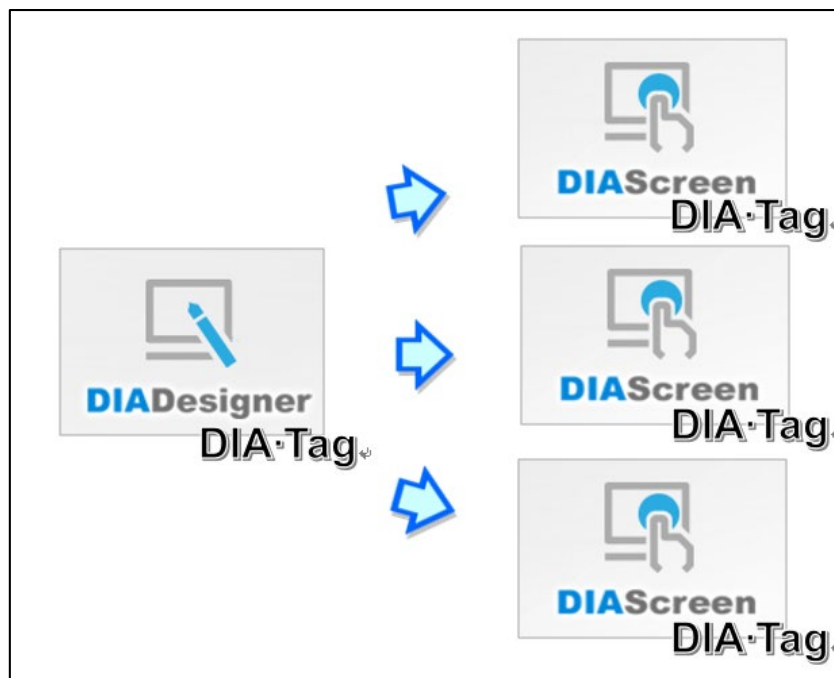


Figure 4 - 12: Import of multiple DIAScreen programs DIA Tag

4.1.2 DIA Tag Automatic Synchronization

Remark: This function is applicable to DOP-100 series.

Following the introduction of DIA Tag usage in section 4.1, this section introduces the automatic synchronization function of DIAScreen DIA Tag. The default value is on. Note that users need to perform manual synchronization first. After selecting the device to be imported and setting the corresponding connection name, automatic synchronization can work.

- Automatic synchronization function is turned on

After the user adds/adds/changes variables in DIADesigner, click compile, and DIAScreen “no need” clicks “Sync” to automatically import the add/add/change DIA Tag. The automatic synchronization button is turned on as shown in the figure below.

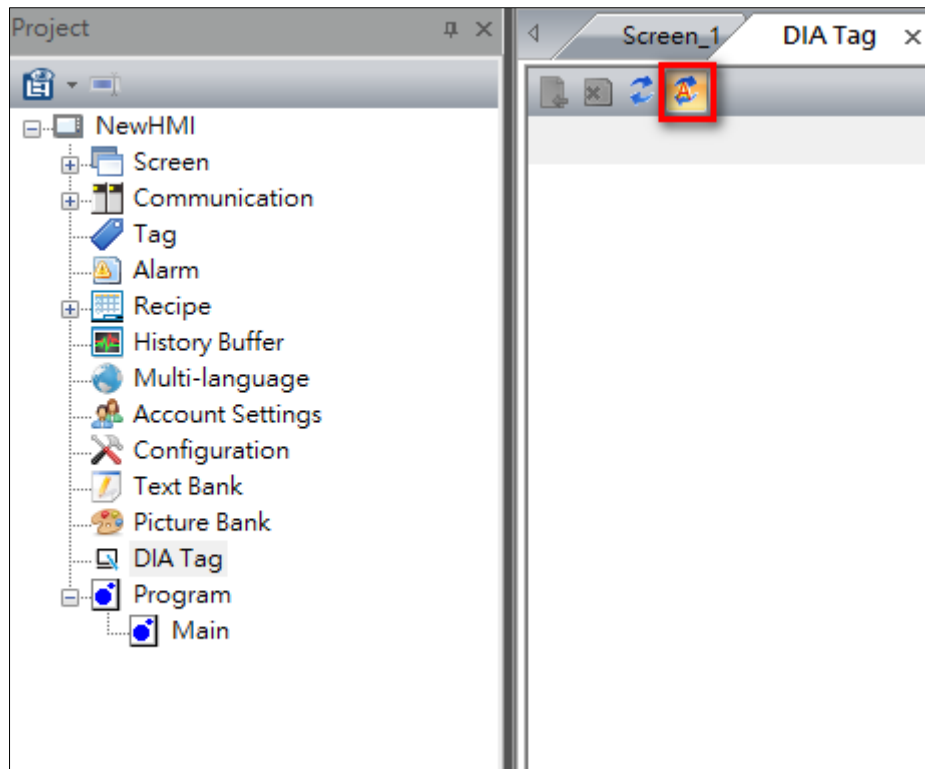


Figure 4 - 13: DIA Tag automatic synchronization button on

- The automatic synchronization function is off:

When the automatic synchronization function is turned off, please refer to Section 4.1 Sharing with DIAScreen Program Variables, DIAScreen needs to manually click the "Sync" button to synchronize DIA Tag each time. Automatic synchronization is turned off as shown below.

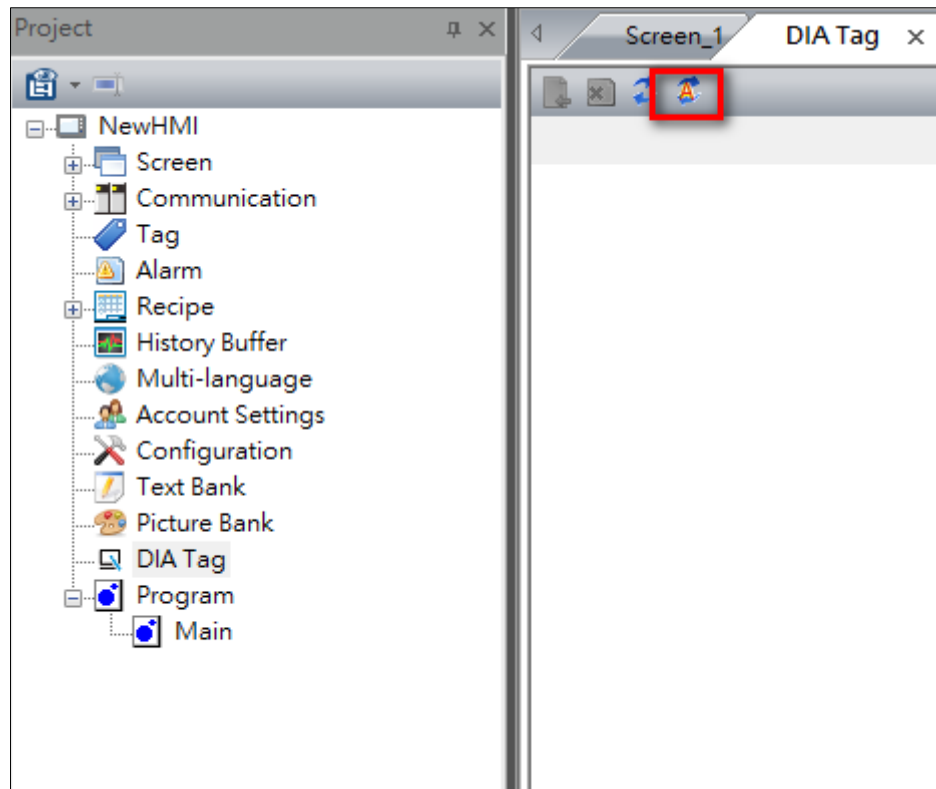


Figure 4 - 14: DIA Tag automatic synchronization button off

4.2 OPC UA Client Communication Function

Remark: This is only applicable to DOP-100 series.

DIAScreen supports the communication connection between the HMI and the OPC UA Client. Please refer to the following steps to establish the OPC UA Client connection, and use its tags in each function of DIAScreen:

1. Create a project with DOP-100 series and select a model which supports Ethernet connectivity from the HMI List in Project Wizard.
2. Create a Ethernet link device with **OPC UA Client** in the Controller field as shown in the following figure:

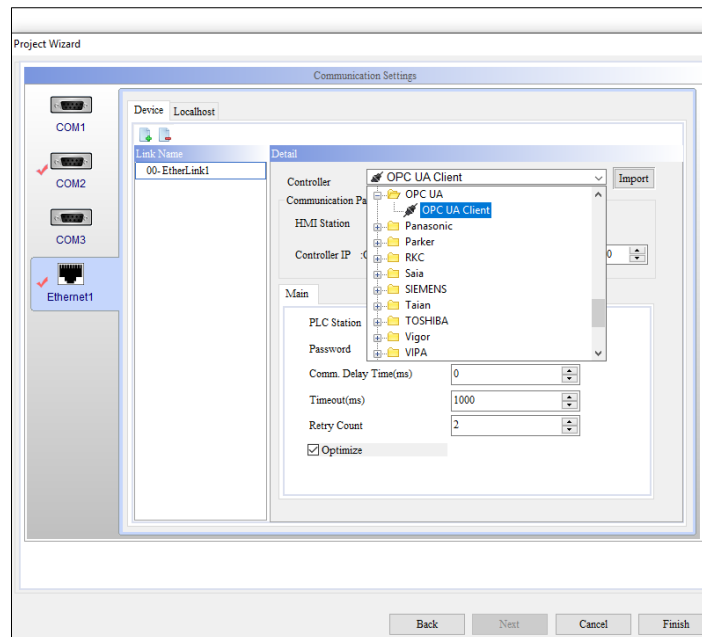


Figure 4 - 15: Establish OPC UA Client connection

3. Click Import button to open 'Tag List' window as shown in the following figure.

Click  to import OPC UA xml tag file.

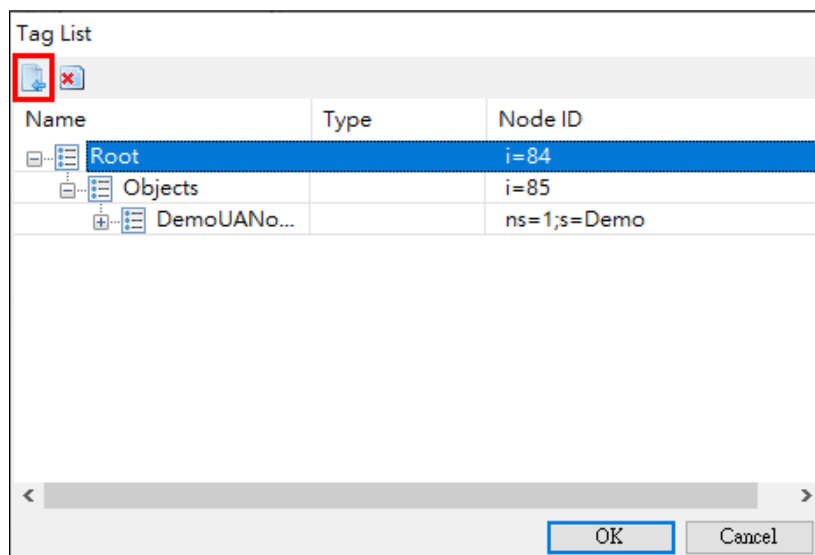


Figure 4 - 16: Import OPC UA Tag xml file

4. Set the IP of the OPC UA Client and click **Finish** button to create an OPC UA connection project.

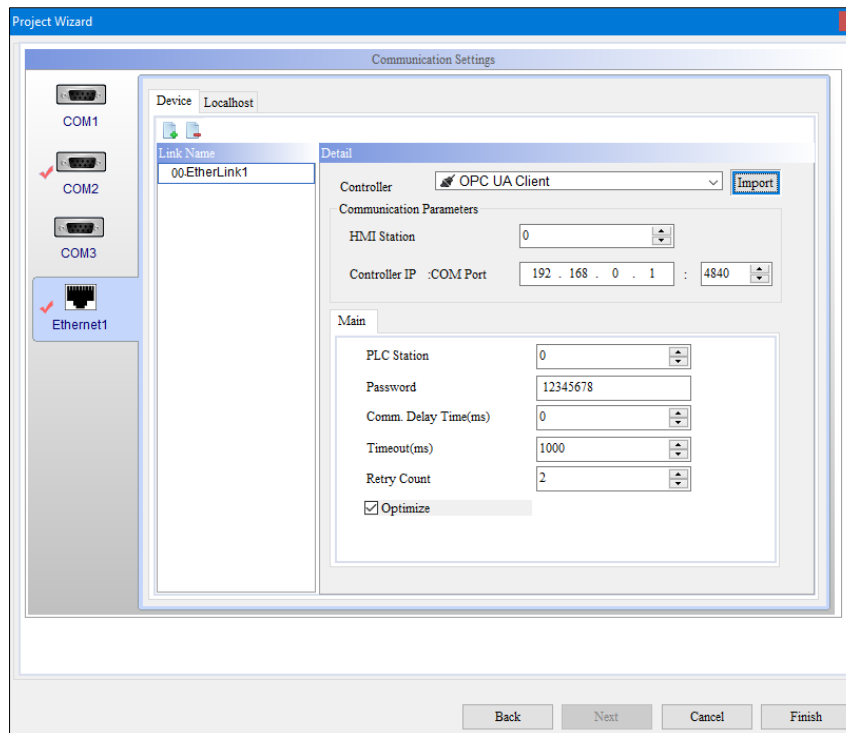


Figure 4 - 17: IP Address set up

5. Create the Element and set the read/write address to OPC UA Tag.

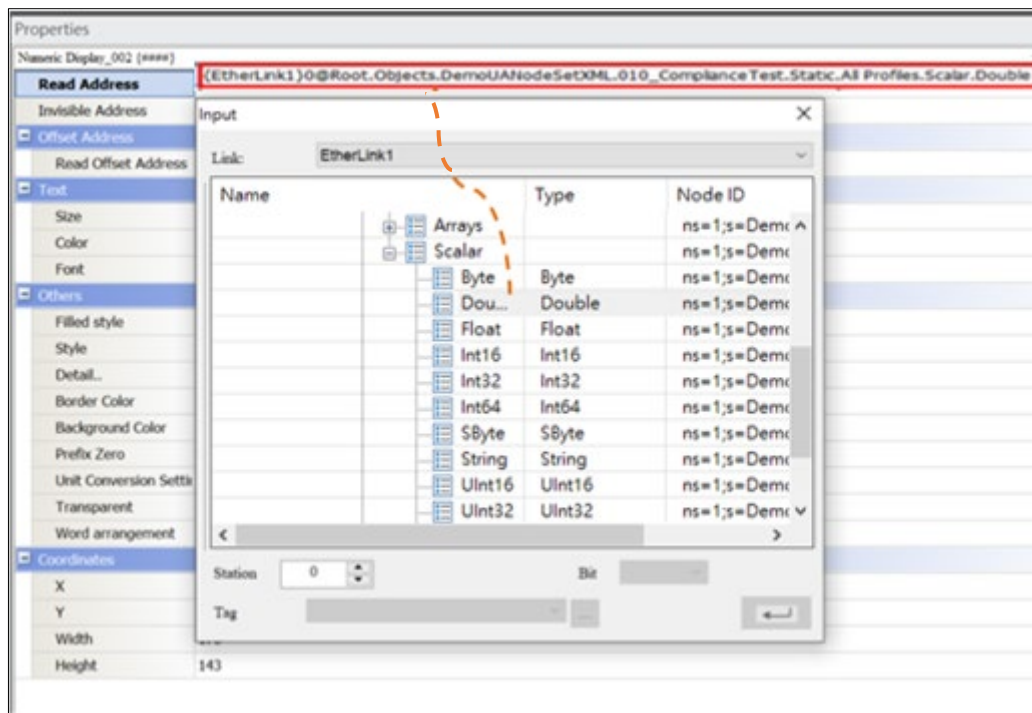



Figure 4 - 18: The Component uses OPC UA Tag

6. Use OPC UA Tag in the macro command: Open the macro editing window , click the macro wizard , and enter the macro command. If the variable selects OPC UA Tag, the OPC UA Tag will automatically add single quotes after the macro is updated `{A}:=`; To fill in the OPC UA Tag in the address tool, user need to manually add single quotes around the OPC UA Tag, as shown in the figure below.

```
{OPC_UA}0@Root.Objects.DemoUANodeSetXML.010_ComplianceTest.Static.All Profiles.Scalar.Double
```

4.2.1 Support HMI TAG Smart Input Function

NOTE: This function is suitable for AX/IMP series and DOP-100 series, currently only supports DIADesigner-AX Tag.

In order for the user to input the DIADesigner-AX Tag prefix, the DIADesigner-AX Tag with the prefix user input can be filtered out, the method is as follows.

- Select **PAC_AX8_Linux_Series** as an example:
 1. Open a **File > New > HMI series** drop-down menu, select **AX series > PAC_AX8_Linux_Series > Finish**

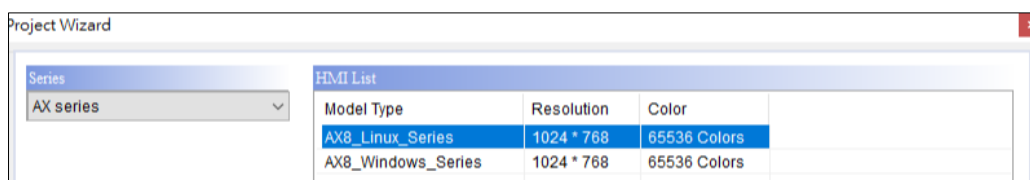


Figure 4 - 19: Open new file

2. On the left Screen **New HMI** Project tree, click **Build-In PLC**.

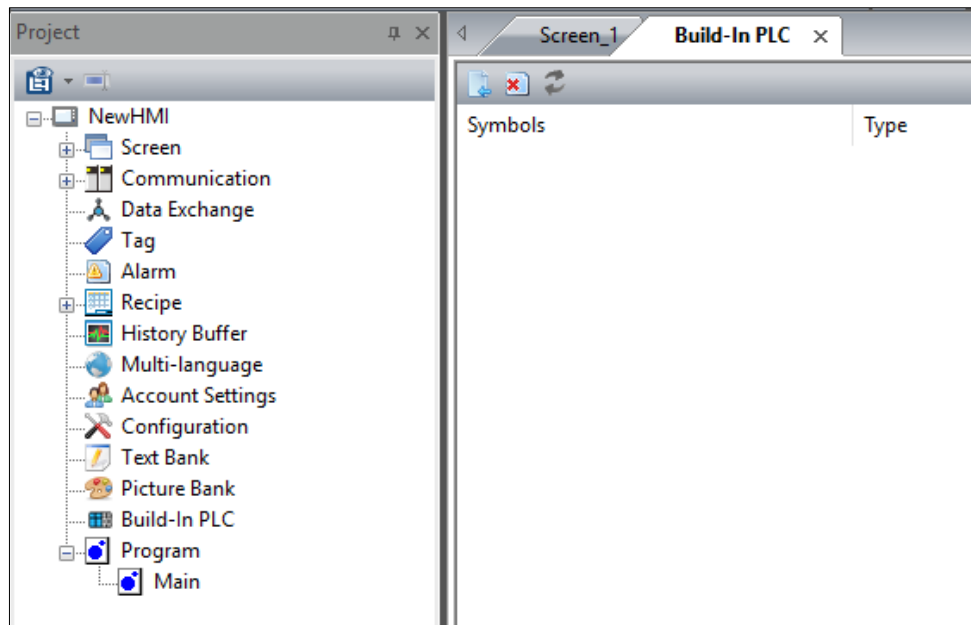


Figure 4 - 20: New HMI Project tree click Build-In PLC

Result: Open the **Build-In PLC** tab.

3. In Build-In PLC tab, Click **Import**.

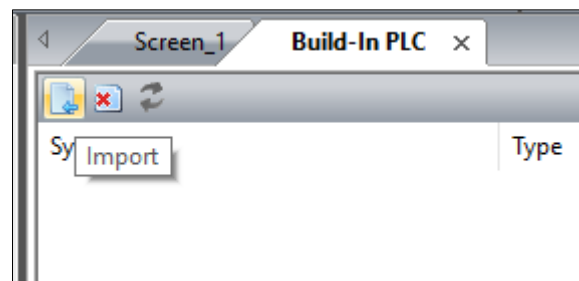


Figure 4 - 21: Import

Result: The **Open** window is displayed.

4. Select the xml file to be linked from the open window and click **Open**.

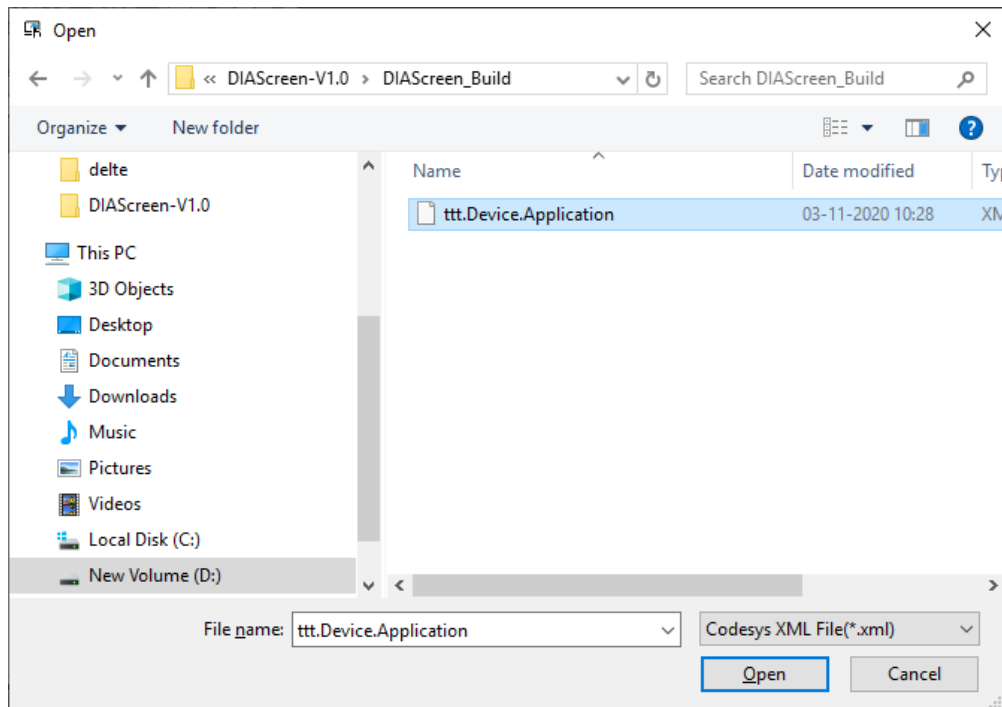


Figure 4 - 22: Open xml file

5. Go back to the Screen tab created at the beginning and add components.
6. Open the component and click **Write Address**.

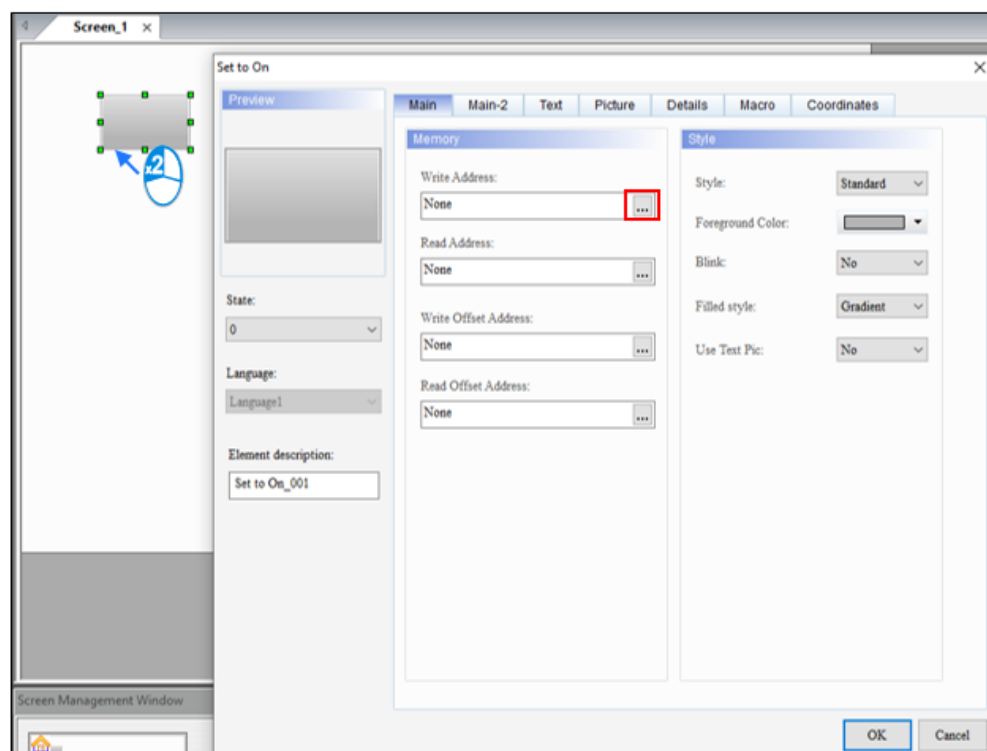


Figure 4 - 23: Write Address Location

Result: The input window is displayed.

7. Select from the drop-down menu of the connection name in the input window **Build-In PLC**.

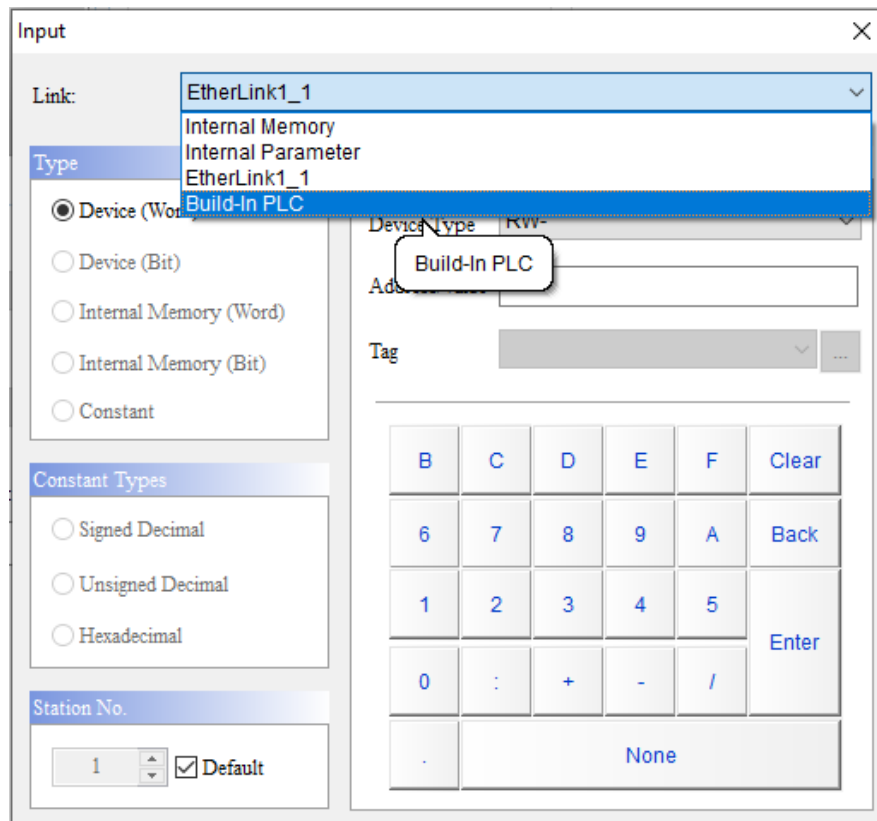


Figure 4 - 24: Connection name Build-In PLC

Result: The **Input** window pops up, the xml file just imported is linked to this screen.

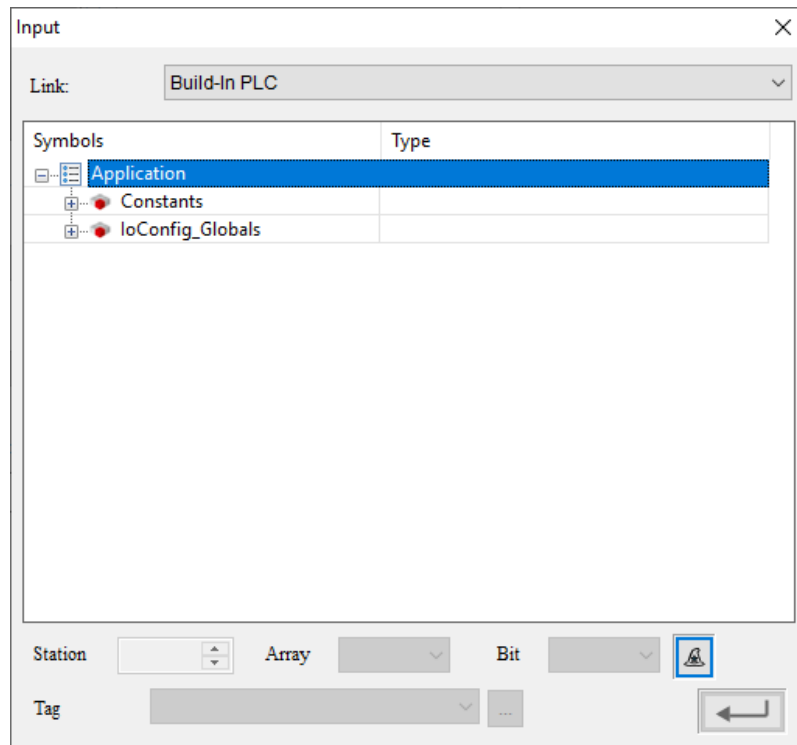



Figure 4 - 25: Input window

8. Click on Smart Input Shortcut 

Result: The automatic Input window pops up.

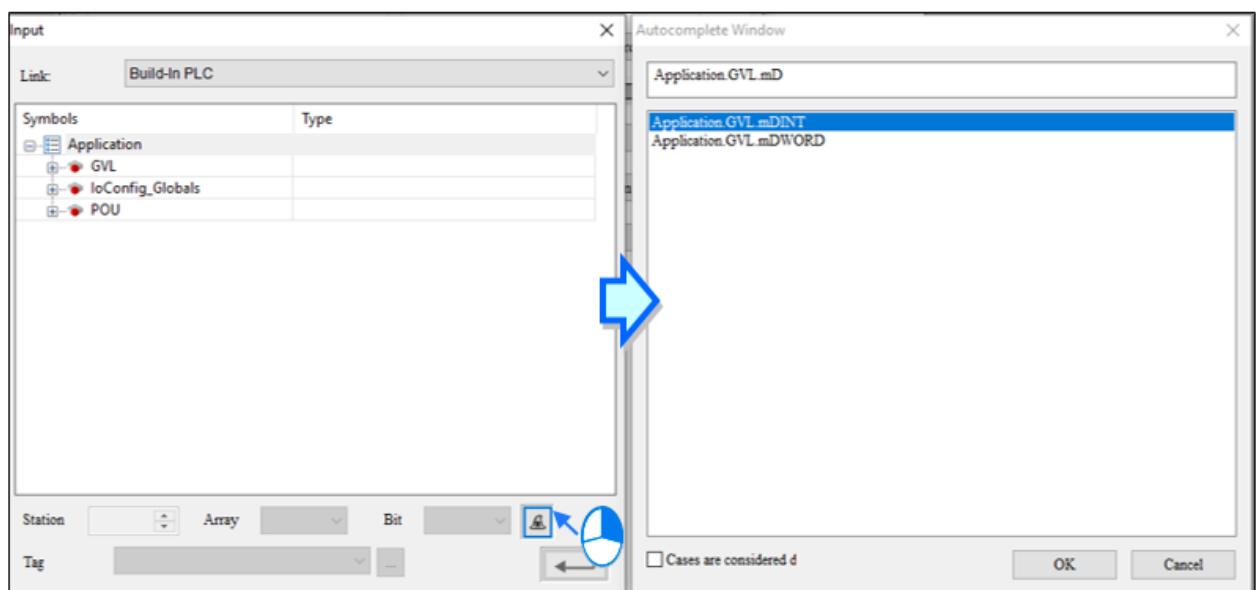


Figure 4 - 26: Smart input shortcut

9. Enter the **Application** string.

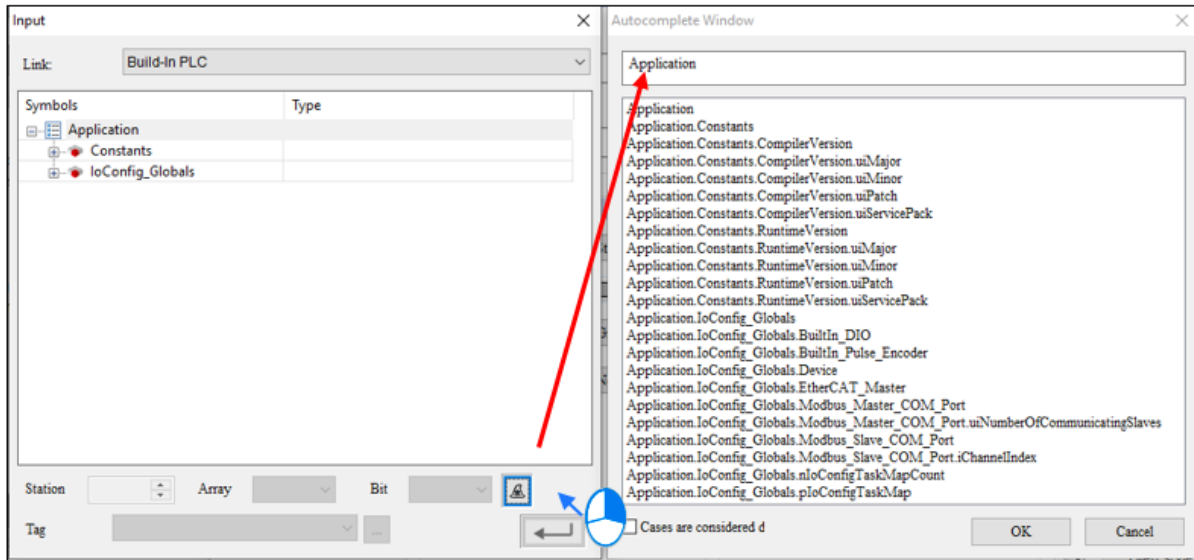


Figure 4 - 27: CODESYS TAG Smart input

10. Left-click on the TAG user want to use, then click **OK**.

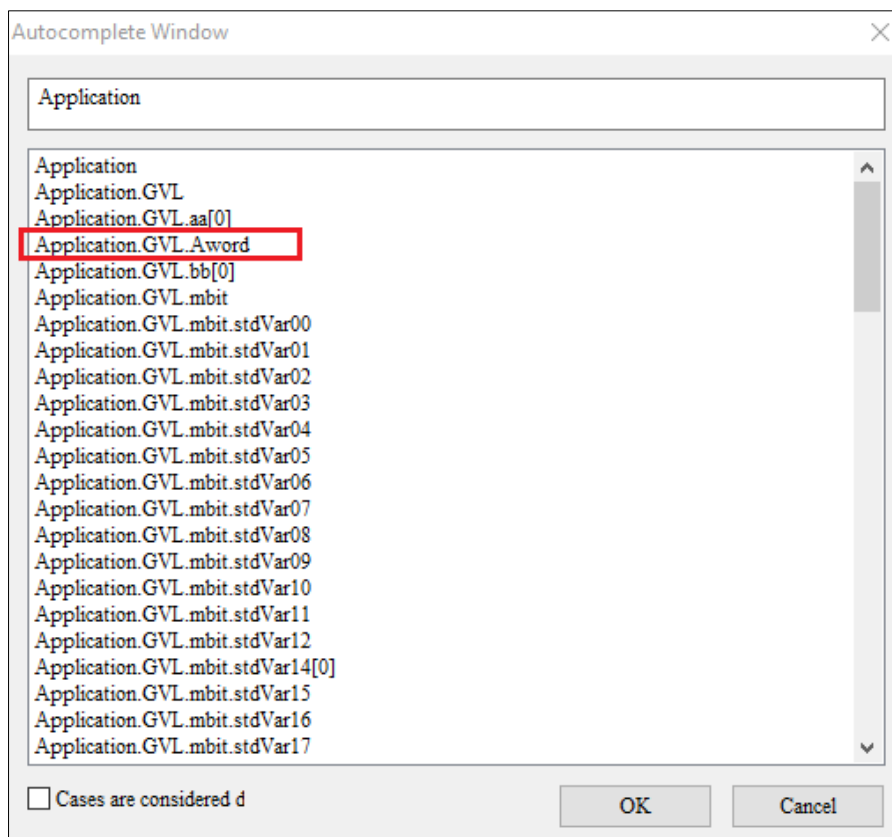


Figure 4 - 28: Tap the smart input option

Remark: If user don't check the case as a different option, it will filter out the initials TAG of the input letters regardless of case.

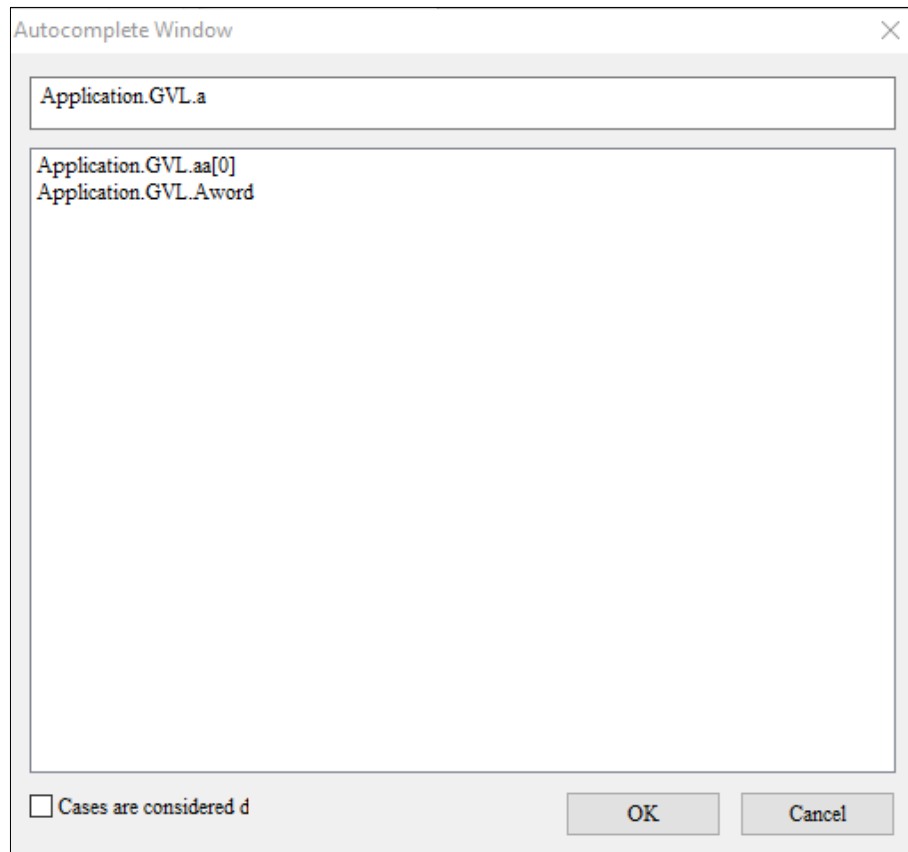


Figure 4 - 29: Uncheck size is considered different option

Conversely, if user check the box as the difference between upper and lower case, the first TAG with the same upper and lower case will be filtered and entered.

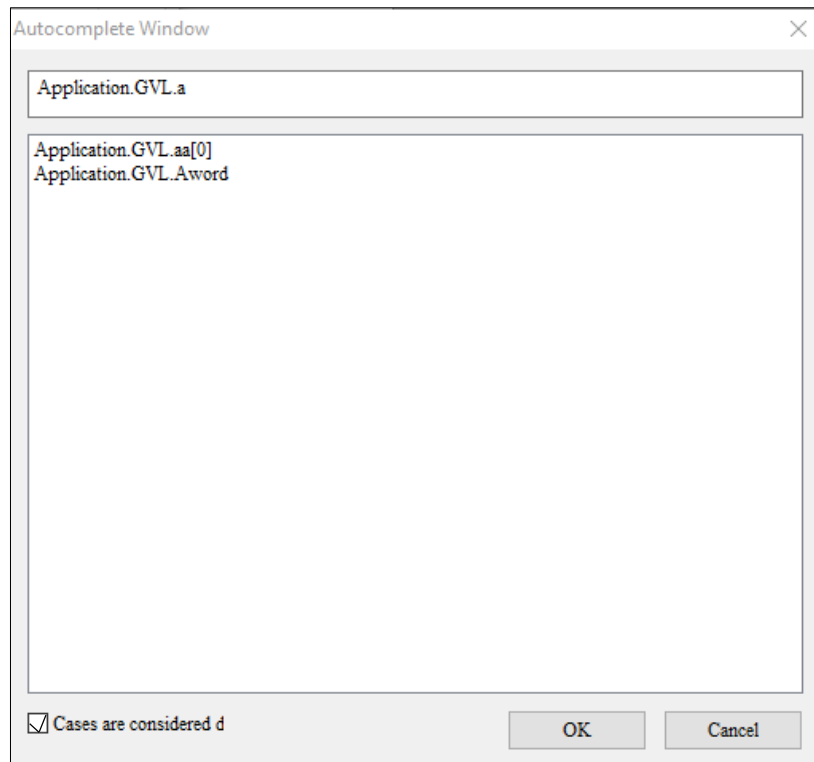


Figure 4 - 30: Check the size as different options

11. User can bring in the selected CODESYS Tag.

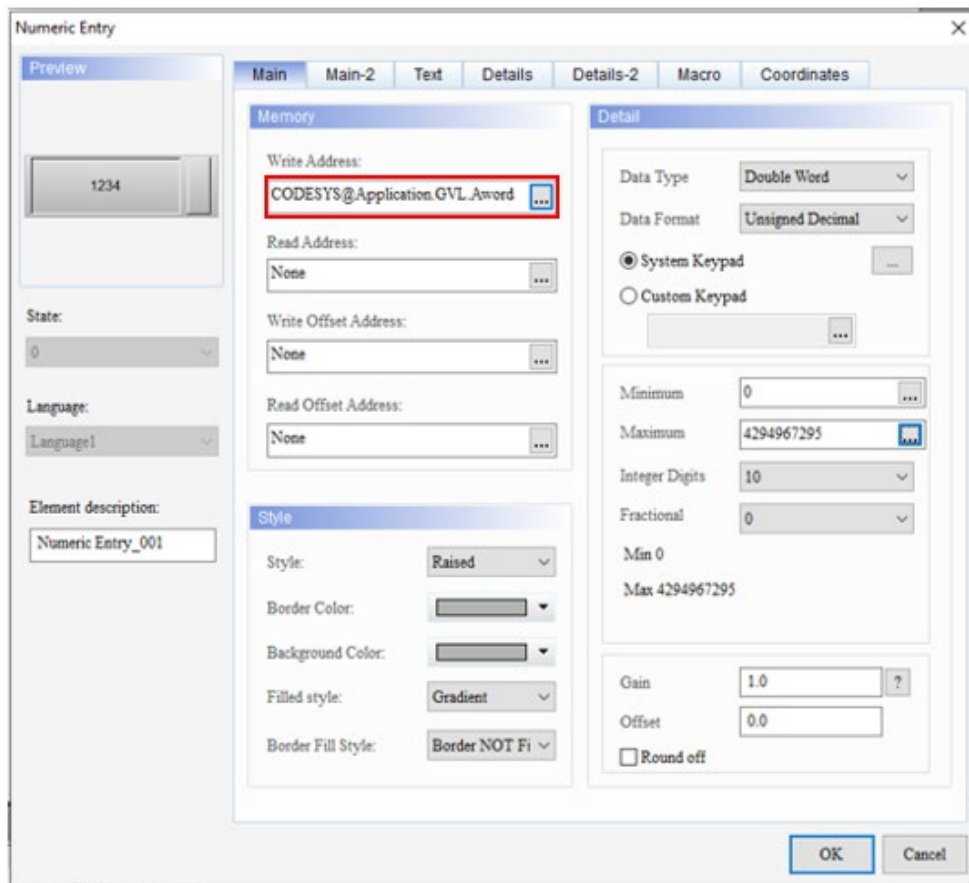


Figure 4 - 31: Automatically bring into component memory location

The following is an example of choosing DOP-100 Series:

1. Open a new file > select the desired model > click **Next**.

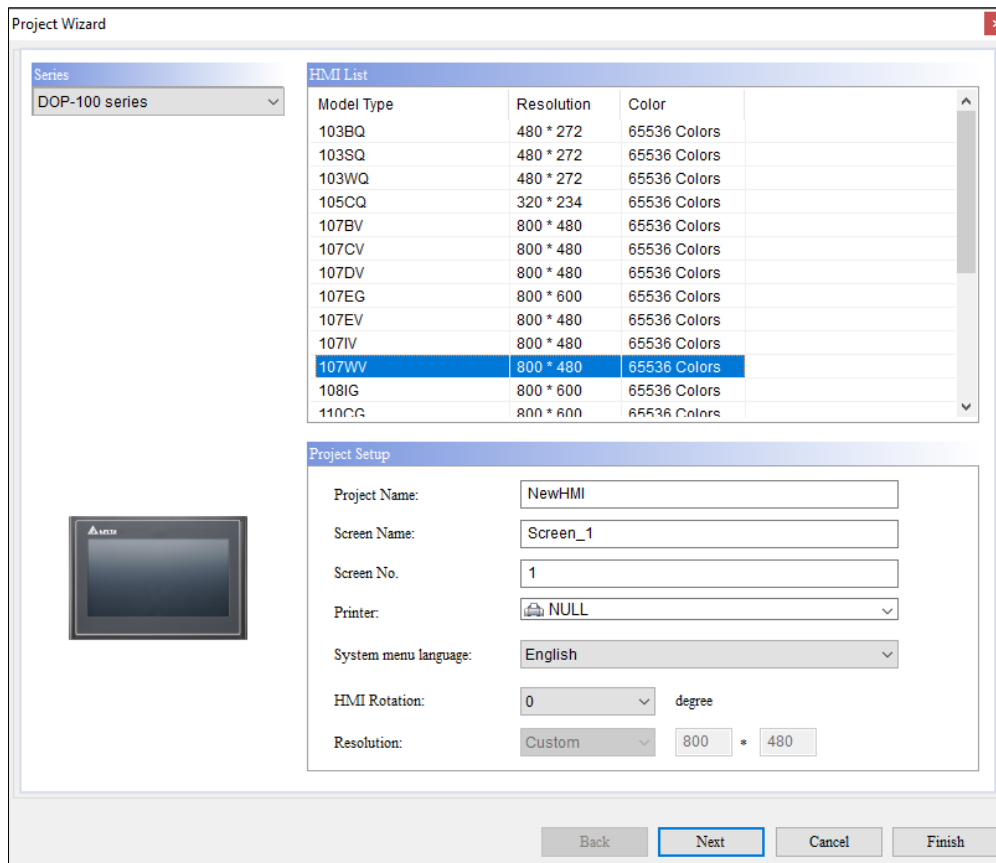



Figure 4 - 32: Open new file

2. ①Select Ethernet connection> ②  New network link> ③Select **CODESYS** in the controller drop-down menu> ④**Import**.

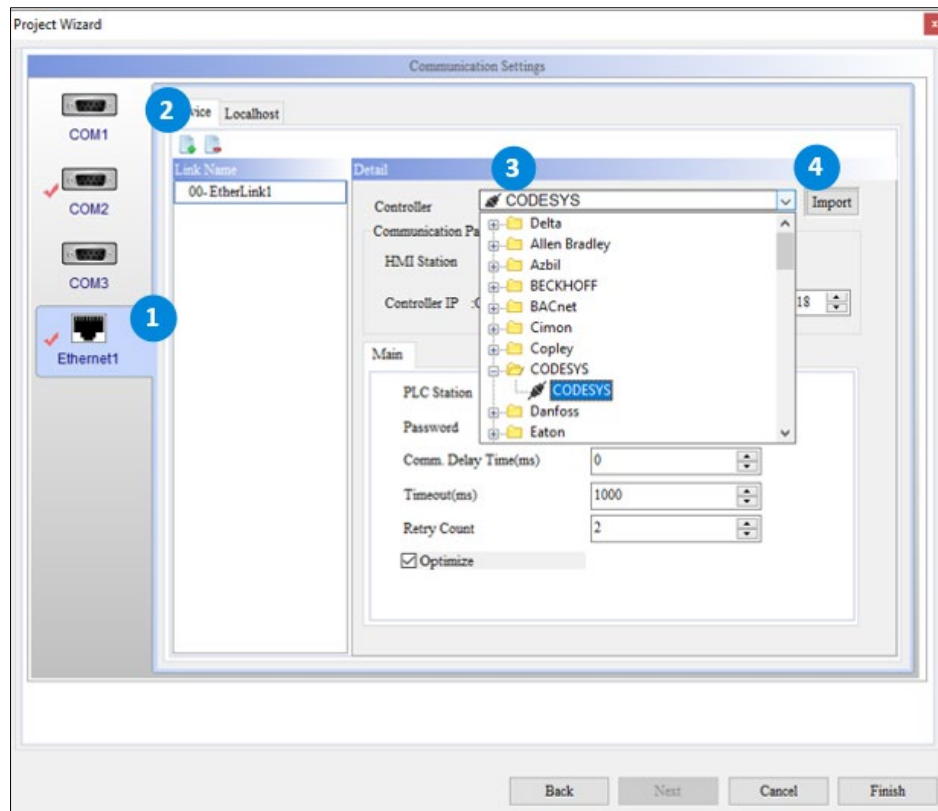


Figure 4 - 33: Import xml file

Result: The Tag list window pops up

3. In the Tag list window, click **Import**.

Result: Open window pops up.

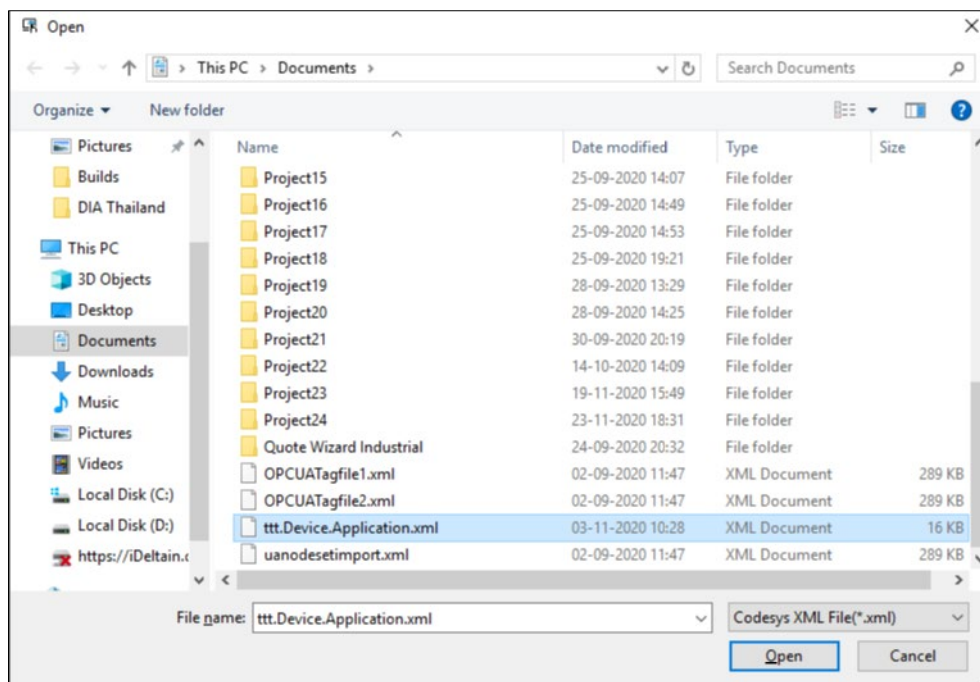


Figure 4 - 34: Select the xml file to be imported

4. Select the xml file to be imported and click to open.

Result: Link the xml file to the Tag List window.

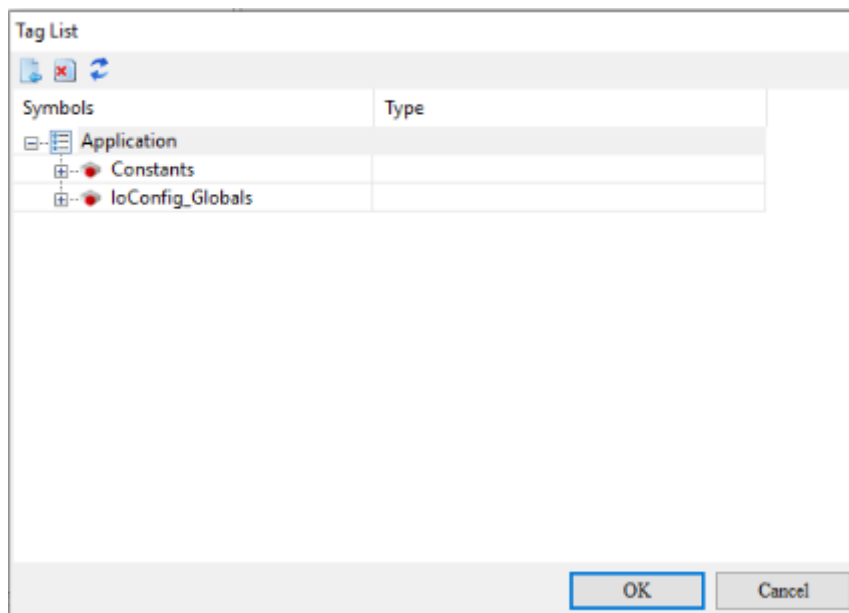


Figure 4 - 35: Link xml file

5. Go back to the Screen tab created at the beginning and add components.
6. Open the component and click Write to memory location.

7. In the input window, select **EtherLink1** in the connection name drop-down menu.

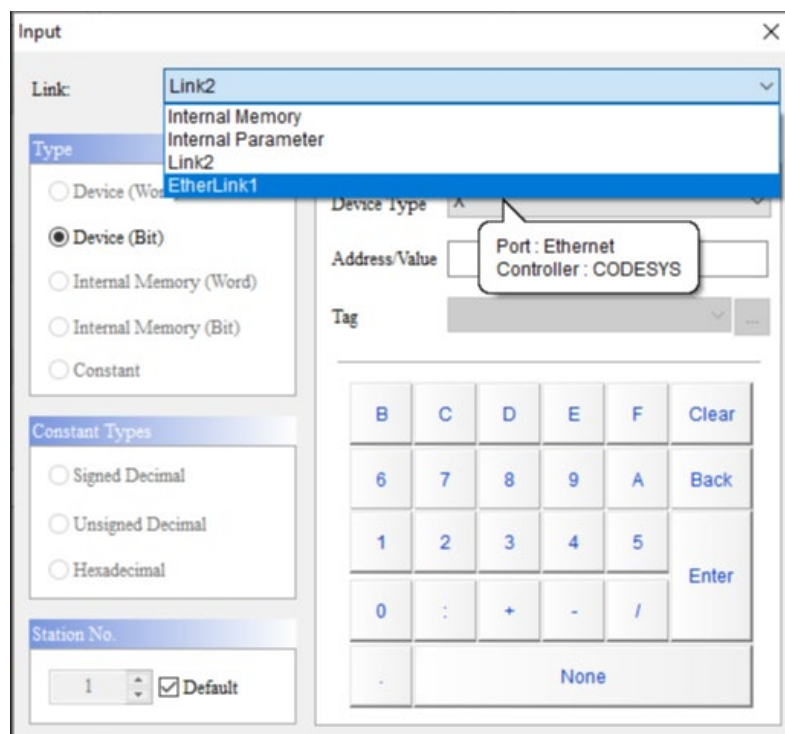






Figure 4 - 36: Select EtherLink1




Refer to step 8 in the PAC AX8_Linux_Series example at the beginning of this chapter.

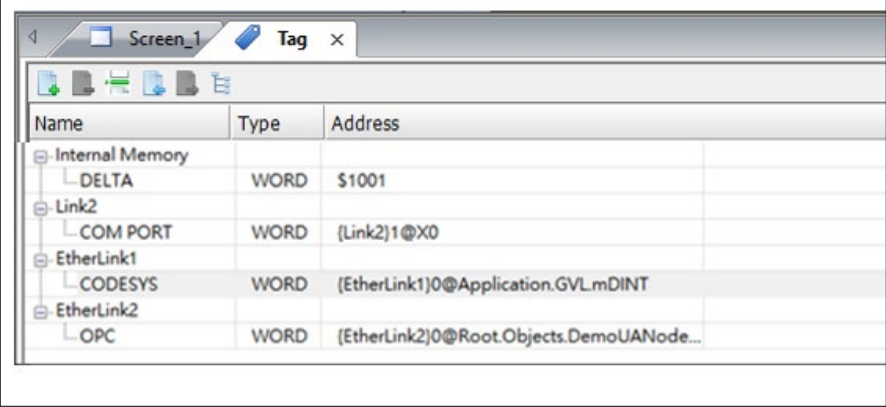
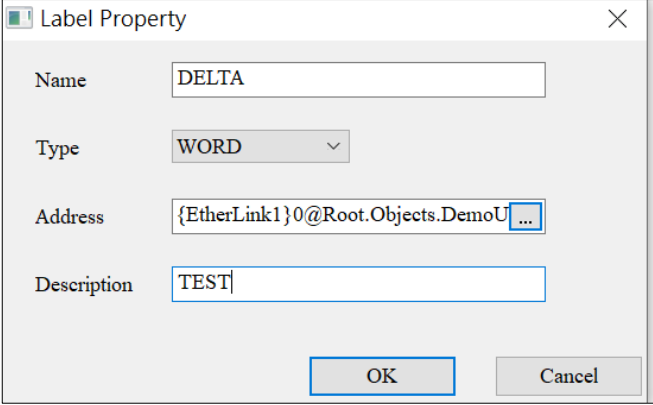
4.3 Data Code Table

Remark: Applicable for DOP-100 series and AX-8 series.

DIAScreen software provides the data code table function. Users can open the setting page from **Options > Tag table**. This function is used to help users to set the code of the memory address, including **CODESYS Tag** and **OPC UA Tag**, for example, set a certain address as \$100 = DELTA, then when user want to enter \$100 in the future, user can use DELTA to replace \$100. Please refer to the figure below.

Features	Description
	The label name and description can include uppercase English characters, traditional Chinese, simplified Chinese and numbers, but the label name should not begin with the number..
Delete label 	Click any column in the Tag table, and then click to delete the selected label from the Tag Table.
Insert Label 	Inserting a label will insert new data on top of the selected data row.
Import label 	<p>Click  icon to import CSV file which contains the variables created in DIADesigner.</p> <p>To export CSV from DIADesigner to DIAScreen, steps:</p> <ol style="list-style-type: none"> 1. Right-click the Global variable > Default_Tag_Table and select Export CSV file, as shown in the following figure. <div> <p>The screenshot shows the 'Project Explorer' window with a tree view. Under 'Controller_1 (AS300N-A)', the 'Global Variable' folder is expanded, and 'Default_Tag_Table' is selected. A right-click context menu is open over 'Default_Tag_Table', with 'Export CSV File' highlighted. Other menu items include Cut, Copy, Paste, Delete, Import, Export, Check, Compile, Upload, Download, Online, Offline, and Properties.</p> </div> <ol style="list-style-type: none"> 2. Export the CSV file. CSV file imported. Click Import label on the tool bar of Tag table in DIAScreen to open the open window. Select CSV file exported from DIADesigner. Click OK. The Tag Import Setting window opens as shown in the following figure,

Features	Description																				
	<div> </div> <p>3. User can select the COM Port, they want to import and set the station number. After setting, click OK. The DIADesigner variables is imported into DIAScreen as a tag, as shown in the figure below.</p> <div> <table border="1"> <thead> <tr> <th>No.</th> <th>Name</th> <th>Type</th> <th>Address</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OUT5</td> <td>BIT</td> <td>{Link2}0@Y0.5</td> <td></td> </tr> <tr> <td>2</td> <td>OUT6</td> <td>BIT</td> <td>{Link2}0@Y0.6</td> <td></td> </tr> <tr> <td>3</td> <td>OUT7</td> <td>BIT</td> <td>{Link2}0@Y0.7</td> <td></td> </tr> </tbody> </table> </div>	No.	Name	Type	Address	Description	1	OUT5	BIT	{Link2}0@Y0.5		2	OUT6	BIT	{Link2}0@Y0.6		3	OUT7	BIT	{Link2}0@Y0.7	
No.	Name	Type	Address	Description																	
1	OUT5	BIT	{Link2}0@Y0.5																		
2	OUT6	BIT	{Link2}0@Y0.6																		
3	OUT7	BIT	{Link2}0@Y0.7																		
<p>Export label</p> 	<p>Click  to open Save as window to export Labels</p>																				
<p>Sort by connection name </p>	<p>The data codes of various connections are classified in the form of a tree diagram for the convenience of users to read, as shown in the figure below.</p>																				

Features	Description
	 <p>If user add a tag to the category display page in the above figure, the tag Label property window will pop up, as shown in the figure below.</p> 

Appendix

Appendix A: Functions Supported by Models

A.1 Elements and Supported Models

The following table shows the elements and the supported models. The V indicates that the model supports the element.

Element	Model											
	TP04G	TP02G	TP04G-AL-C	TP04G-AL2	TP04G-BL-C	TP04G-BL-CU	TP04P	TP05G	TP08G	VFD-C Keypad	TP70P	
Static Text	V	V	V	V	V	V	V	V	V	V	V	V
Numeric/ASCII Display	V	V	V	V	V	V	V	V	V	V	V	V
Bit Lamp	V	V	V	V	V	V	V	V	V			
Word Lamp	V	V	V	V	V	V	V	V	V			
Static Bitmap	V	V	V	V	V	V	V	V	V	V	V	V
Dynamic Bitmap		V	V	V	V	V	V	V	V			V
Scale	V	V	V	V	V	V	V	V	V	V		
Bar Graph	V	V	V	V	V	V	V	V	V	V	V	V
Circle Meter	V		V	V	V	V	V	V	V			V
Message Display		V	V	V	V	V	V	V	V			V
Button	V	V	V	V	V	V	V	V	V	V	V	V
RTC Display	V	V	V	V	V	V	V	V	V	V	V	V
Multistate Indicator	V	V	V	V	V	V	V	V	V	V	V	V
Measurement	V	V	V	V	V	V	V	V	V	V		
Numeric Input	V	V	V	V	V	V	V	V	V	V	V	V
Curve	V		V	V	V	V		V	V			
X-Y Curve	V		V	V	V	V		V	V			
Alarm Current Setting												V
Alarm History Setting												V
Alarm Scroll Display Setting												V
Slider												V
Geometric Graphic	V	V	V	V	V	V	V	V	V	V	V	V

Delta Products Communication Device Setting	V										
Input List											V
ComboBox											V

A.2 Button Types and Supported Models

The following table shows the buttons and the supported models. The V indicates that the model supports the button.

Button Type	Model										
	TP04G	TP02G	TP04G-AL-C	TP04G-AL2	TP04G-BL-C	TP04G-BL-CU	TP04P	TP05G	TP08G	VFD-C Keypad	TP70P
Force ON	V	V	V	V	V	V	V	V	V	V	V
Force OFF	V	V	V	V	V	V	V	V	V	V	V
Pulse ON	V	V	V	V	V	V	V	V	V		V
Pulse OFF	V	V	V	V	V	V	V	V	V		V
Push ON/OFF	V	V	V	V	V		V	V	V		V
Momentary	V	V	V	V	V	V	V	V	V		V
Multi-State	V	V	V	V	V	V	V	V	V		V
Input Value	V	V	V	V	V	V	V	V	V		V
Constant Setting	V	V	V	V	V	V	V	V	V	V	V
Increase	V	V	V	V	V	V	V	V	V		V
Decrease	V	V	V	V	V	V	V	V	V		V
Page Jump	V	V	V	V	V	V	V	V	V	V	V
Password and Setting	V	V	V	V	V	V	V	V	V		V
Screen Scroll			V	V	V	V	V	V	V		
Clock Display Setting			V	V	V	V	V				V
PLC Link Setting							V				V
Recipe Write/Read								V	V		

A.3 Screen Setting Menu Items and Supported Models

The following table shows the Items on the **Local Screen Setting** menu and the supported models. The V indicates that the model supports the item.

Item	Model										
	TP04G	TP02G	TP04G-AL-c	TP04G-AL2	TP04G-BL-c	TP04G-BL-CU	TP04P	TP05G	TP08G	VFD-C Keypad	TP70P
Change Screen Condition	V	V	V	V	V	V	V	V	V		V
Function Key Setting	V	V	V	V	V	V	V	V	V		
Alarm Buzzer Setting	V	V	V	V	V	V	V	V	V		
Alarm LED Setting	V	V	V	V	V	V	V	V	V		
Write Screen ID Setting	V	V	V	V	V	V	V	V	V		V
Hide Screen Setting	V	V	V	V	V	V	V	V	V		
Screen Macro Setting								V	V		
Screen Color Setting											V

A.4 Global Setting Menu Items and Supported Models

The following table shows the Items on the **Global Setting menu** and the supported models. The V indicates that the model supports the item.

Item	Model										
	TP04G	TP02G	TP04G-AL-C	TP04G-AL2	TP04G-BL-C	TP04G-BL-CU	TP04P	TP05G	TP08G	VFD-C Keypad	TP70P
System Parameter Setting: Page Auto-Jump/Backlight Control	V		V	V	V	V	V	V	V		V
System Parameter Setting: Read/Write Block Setting			V	V	V	V	V	V	V		V
System Change Screen Setting	V	V	V	V	V	V	V	V	V		V
System Function Key Setting	V	V	V	V	V	V	V	V	V		
System Alarm Buzzer Setting	V	V	V	V	V	V	V	V	V		V
System Alarm LED Setting	V	V	V	V	V	V	V	V	V		
System RTC Setting	V		V	V	V	V		V	V		V
System Power ON Setting	V	V	V	V	V	V	V	V	V		
Global Macro Setting								V	V		
Recipe Setting								V	V		
Default Screen Color Setting											V

Appendix B: USB Driver

B.1 Installing USB Driver

This appendix describes how to install a USB driver in Windows 10. If user want to install a USB driver in another operating system, refer the instructions for the particular operating system for more information about the installation of the new hardware.

Follow these steps to install USB driver in the computer:

1. Make sure that the TP host is normally powered on, and connect the TP host to the USB port of the personal computer through the USB cable. At this time, the device driver installation wizard will appear on the screen. Click **Next**.

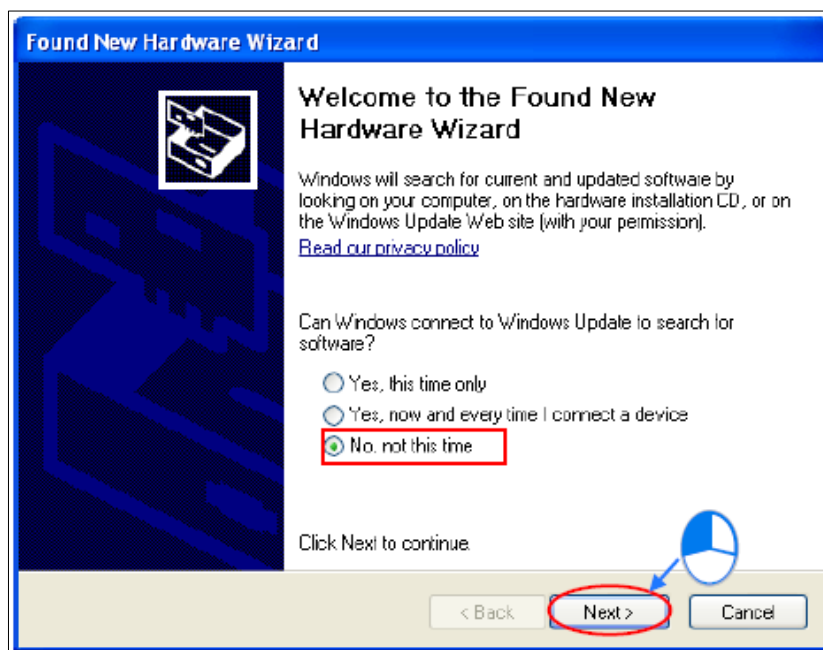


Figure B - 1: Device driver installation wizard

2. The installation is complete.

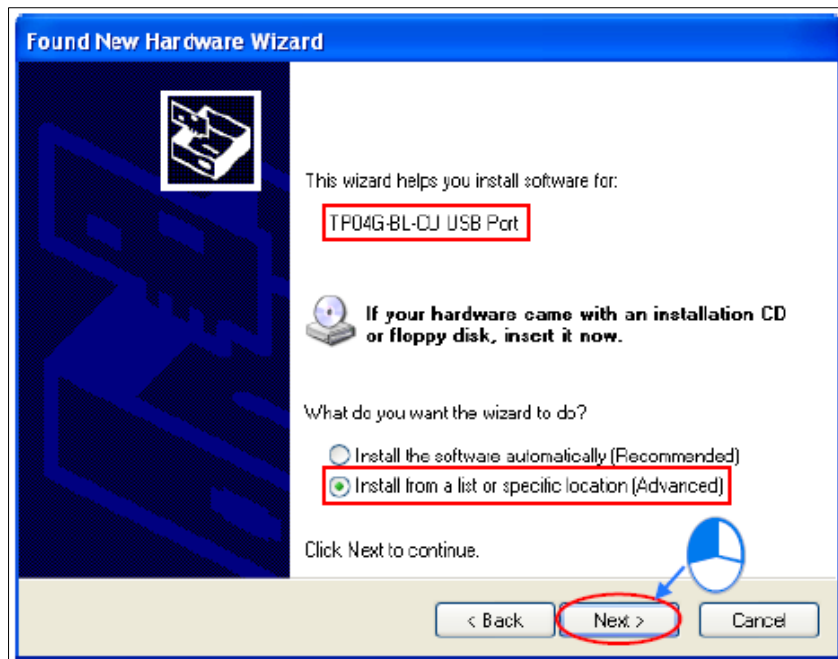


Figure B - 2: The installation is complete



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