

PMC-5151 Flash HMI Tools Quick Start

[Version 2.0.0]



ICP DAS CO., LTD.

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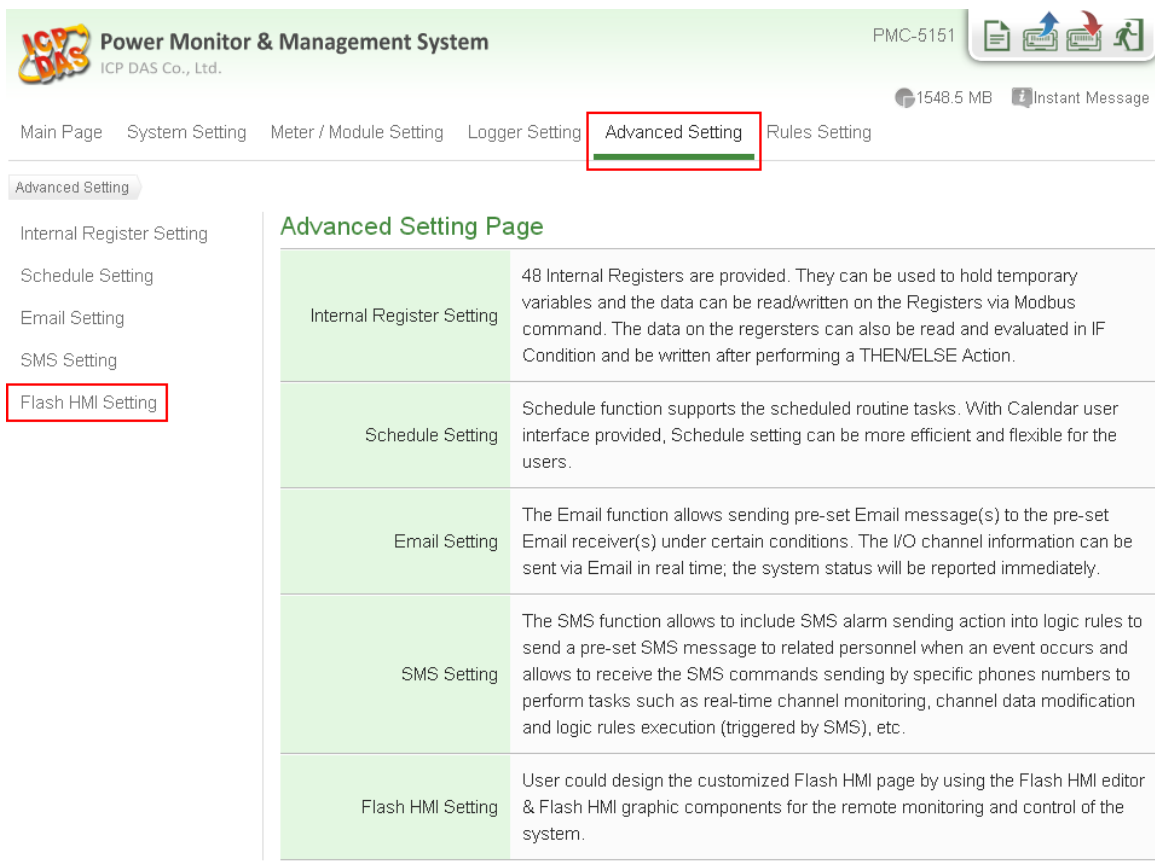
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1 Flash HMI Tools Introduction


Flash HMI Tools are designed for user to quickly implement specific HMI interfaces for power monitoring applications by browser. After implementing the Flash HMI project specifically designed for the application, it can be set as the default project. While the specific Flash HMI project is set as default, this HMI project could be launched under the “User-Define HMI” function option of the “Main Page”. The process could be simple and easy; no programming required.

1.1 Start the Flash HMI Tool

Select “Advanced Setting” →”Flash HMI Setting” to start the Flash HMI tool.

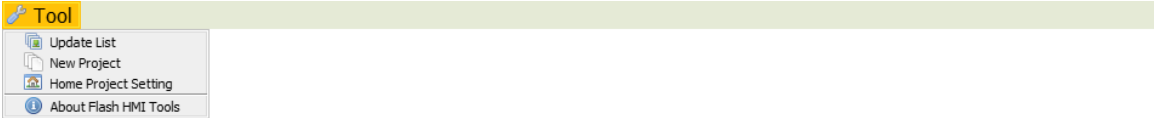


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Please note: Before launching Flash HMI Tools, remember to save the current un-saved settings () to PMC-5151, otherwise the Flash HMI Tools will load the old setting on PMC-5151!

1.2 The menu of Flash HMI Tool

The Following is the options of the Tool menu.



Menu Option	Description
Update List	Update the project list
New Project	Create and initialize the new HMI project
Default Project Setting	Assign the HMI project as default Flash HMI project on “Main Page”.
About Flash HMI Tools	Released date, Copyright announcement, etc.

1.3 Create a new project

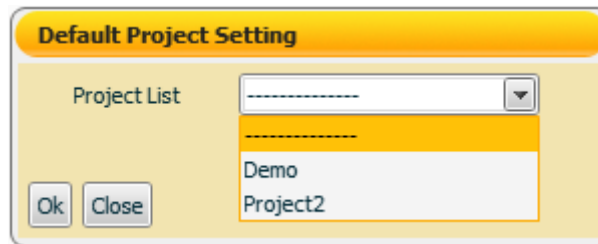
After click the “New Project”, the Project Setting window will be shown. Please refer to the following for the detailed description.



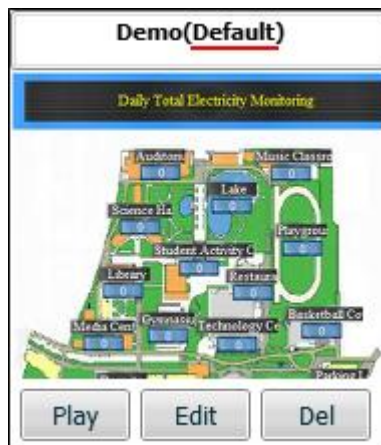
Project Name	Input the name of the project (Note: Supports English file name only, do not input symbols)
IP	Allows to set up the IP address, Port, Modbus ID, Timeout and Scan Rate for up to 16 PMC-5151. Please click on the checkbox in front of the IP list to enable IP connections.
Finish	Finish the settings of the project and get into the editing mode
Cancel	Cancel the settings of the project and close the project setting window.

1.4 Default Project Setting

After click the “Default Project Setting”, the Default Project Setting window will be shown. Please refer to the following for detailed description.

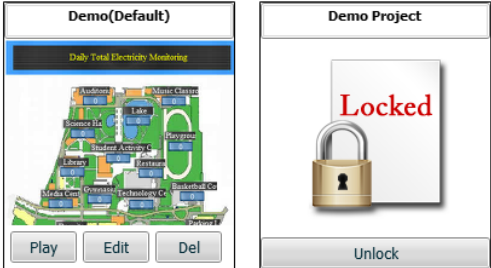
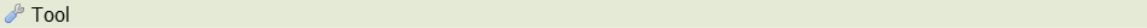


This function is used to set up the default Flash HMI project page to be loaded when the users select the “User-Define HMI” function option on the “Main Page”. To cancel the default project setting, select “-----” from the dropdown list and the “User-Define HMI” function option will be hidden on the “Main Page”. After the settings are completed, the words “(Default)” will be appended to the name of the project and will be displayed in the Project List, as shown below:



1.5 Project Management

After the projects are completed, the system administrator can select to Play/Edit/Delete specific projects. Currently the system allows to store up to 5 projects. If the previous editing wasn't closed appropriately and didn't return to the project list page (didn't finish and leave the edit session normally), the project will be locked, and click [Unlock] to continue the management operations of the project.

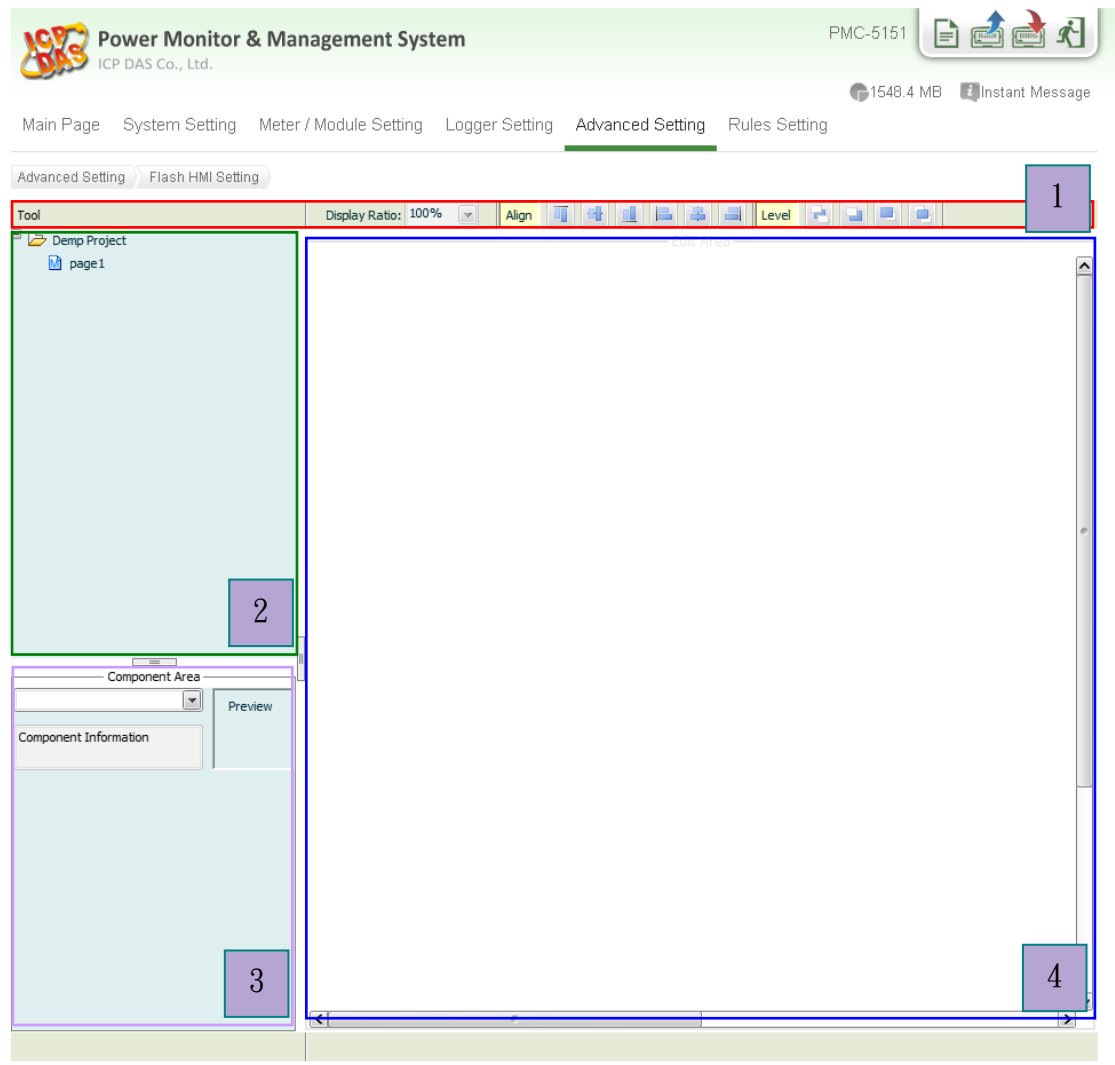


2 Flash HMI Editor

Click on “New Project” on the Tool menu or select the “Edit” button of the specific project to enter the Flash HMI Editor. The detailed description of the tool is as below.

2.1 Editor Interface

The Flash HMI Editor mainly includes four areas, as shown below:



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The first area is the **Tool menu**. It includes the file management, system message display, display ratio arrangement, Alignment/Level arrangement and return to the project list.

The second area is the **Project Management area**. It allows to perform HMI page management operation for the HMI project.

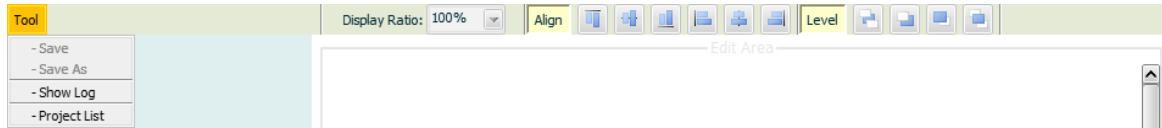
The third area is the **HMI Component Area**. It lists all Flash HMI components which you can use in the HMI pages.

The fourth area is **HMI page editor area**. It allows to edit and design the HMI pages.

Please refer to the following sections for detailed function description for each area.

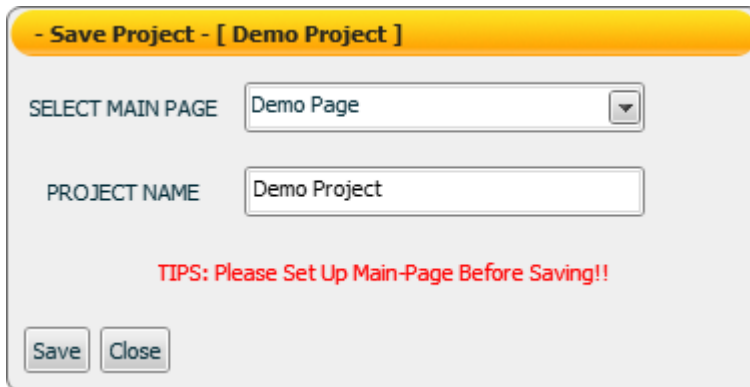
2.2 Tool menu

The Tool menu includes the following functions:



Menu	Description
Save or Save As	Save the project file to PMC
Show Log	Display the system information and error messages.
Display Ratio	Specify the display ratio of the editing HMI page
Align	Set up the alignment of the components
Level	Set up the level of the components
Project List	Quit the edit mode and return to the project list page. Note: After finish and save the HMI project, please remember to return to the project list page to avoid the project being locked due to inappropriate termination the editing session.

2.2.1 Save/Save As



Select the Save/Save items in the Tool menu, and the Project Save window will be displayed. To save a project, please select the main page; the main page will be the default HMI page showing up when the project is loaded to the system.

2.2.2 Show Log







Display the system information and error messages.

2.2.3 Display Ratio

Specify the display ratio of the editing page(200%, 100%, 75%, 50%, 25%, 5%)





2.2.4 Align

Set up the alignment of the components

	Top	Align the tops of the selected components with the top of the tallest component in the line.
	Horizontal Middle	Align the horizontal middles of the selected components with the middle of the tallest and lowest components.
	Bottom	Align the bottoms of the selected components with the bottom of the lowest component in the line.
	Left	Align the lefts of the selected components with the left margin of the leftmost component in the line.
	Vertical Middle	Align the vertical middles of the selected components with the middle of the leftmost and rightmost components.
	Right	Align the rights of the selected components with the right margin of the rightmost component in the line.

2.2.5 Level

Set up the level of the components

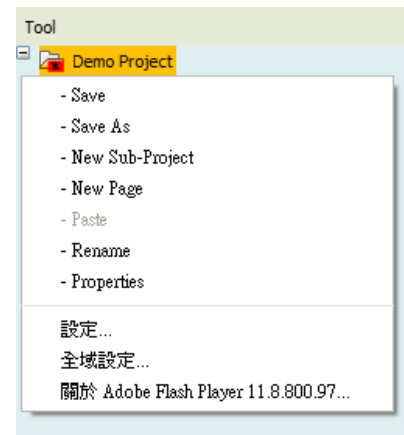
	Bottom	Move the selected component to the bottom level to make the selected component located beneath all other overlapped components.
	Lower	Move the selected component to one lower level
	Upper	Move the selected component to one upper level
	Top	Move the selected component to the top level to make the selected component located on the top of all other overlapped components.

2.3 Project Management Area

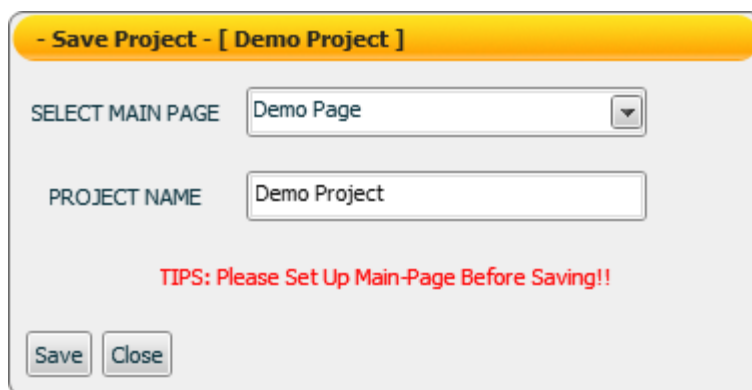
The Project Management area provides Flash HMI project management functions, and right click on the project to bring out the function menu, more detailed information will be given in later sections.

- **Save:** Save the HMI project.
- **Save As:** Save the HMI project to a new project
- **New Sub-Project:** Create a new group for the HMI pages.
- **New Page:** Create a new HMI page.
- **Paste:** Paste the content of a existed HMI page or Sub-Project to a new HMI page or new Sub-Project.
- **Rename:** Rename the project.
- **Properties:** Bring up the“Project Setting” window to set up IP, Port and Timeout interval, Scan rate, etc.

Configuration / Global Configuration / About Adobe Flash Player: Configuration and version information of Adobe Flash Player

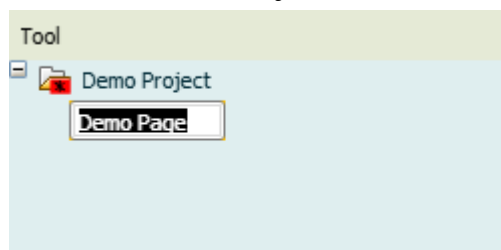


2.3.1 Save/Save As



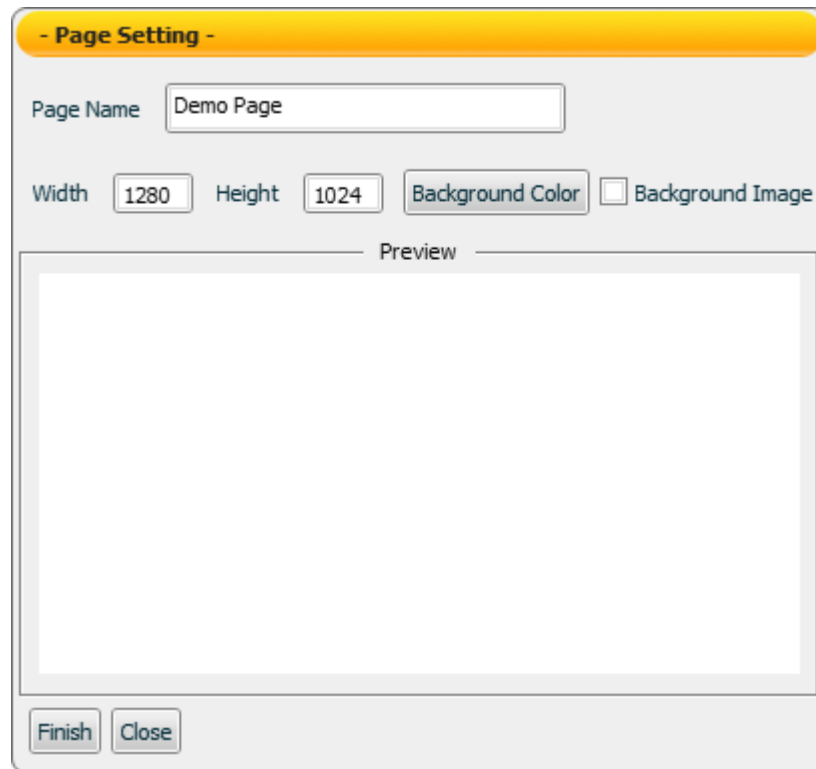
Before saving the project, please select the main page for the project, the main page will be the default page to be displayed when the project is loaded.

2.3.2 New Sub-Project



Right click on the project or group, select “New Sub-Project” to create a new sub-project under the project or group. The sub-project is for easy categorization and management of the edited HMI pages, when the project is played, the sub-project and groups will not be shown.

2.3.3 New Page



Right click on the project or group, select “New Page” to bring out the Page Setting window to create a new HMI page under the project or group. The settings are as follow:

- **Page Name:** Input a name for the HMI page.
- **Width:** Set up the width for the HMI page. The min. page width is 50 Pixel and the max. page width is 2880 Pixel. Default value will be the width of the display resolution.
- **Height:** Set up the height for the HMI page. The min. page height is 50 Pixel and the max. page height is 2880 Pixel. Default value will be the height of the display resolution.
- **Background Color:** Set up the background color for the HMI page.
- **Background Image:** To put an image in the background, check the Background Image box and a file dialog box will be brought up. Browse through the file dialog box to select the image file. Currently supported image format are: JPEG/GIF/PNG. (Please note: Avoid using image files with the same file name; the images may not be correctly displayed due to unexpected overwriting files may occur. When you finish page setting, make sure you click on “Finish” to apply changes to the page.)
- **Finish:** Complete the settings and leave the Page Setting window.
- **Close:** Close the project.

There are three ways to bring up the “Page Setting” window for page configuration:

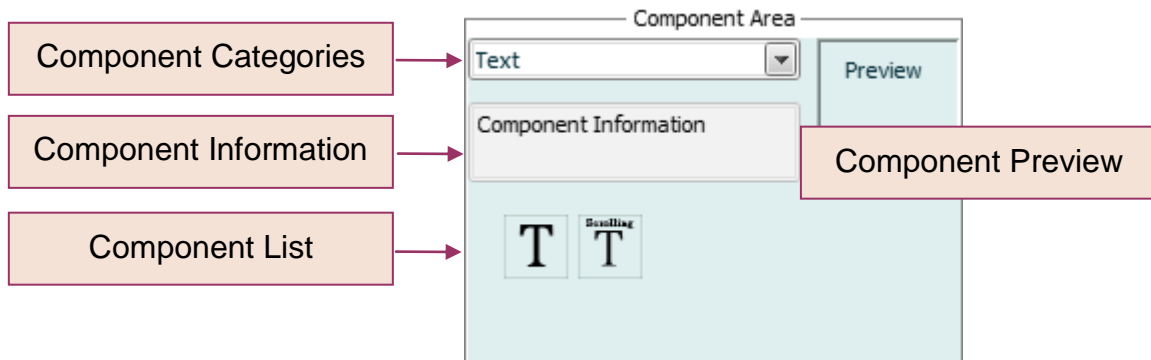
- ◆ In the **Project Management area**, right click on the page icon to bring up the menu, select “Properties” to bring up the “Page Setting” window.

- ◆ In the **HMI page editing area**, right click on the page to bring up the menu, select “Properties” to bring up the “Page Setting” window.

- ◆ In the **HMI page editing area**, double click anywhere on the page to bring up the “Page Setting” window.




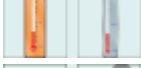


2.4 HMI Component Area

The HMI Component Area allows to add Flash HMI components to the HMI pages. Select the component you want to use by clicking on the component, and the component will be added to the HMI page editor area.



Select the component from the component categories, click on the component to add the component to the HMI page editor area. The current component categories are as follows:

■ Indicator Component

- Lamp 
- Motor 
- Tank 
- Thermo 
- Pipe 
- Valve 

■ Switch Component



■ Gauge Component



■ Meter Component



■ LED Component



■ Text Component



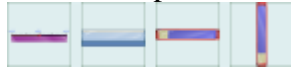
- System Component



- Animation Component



- Slider Component



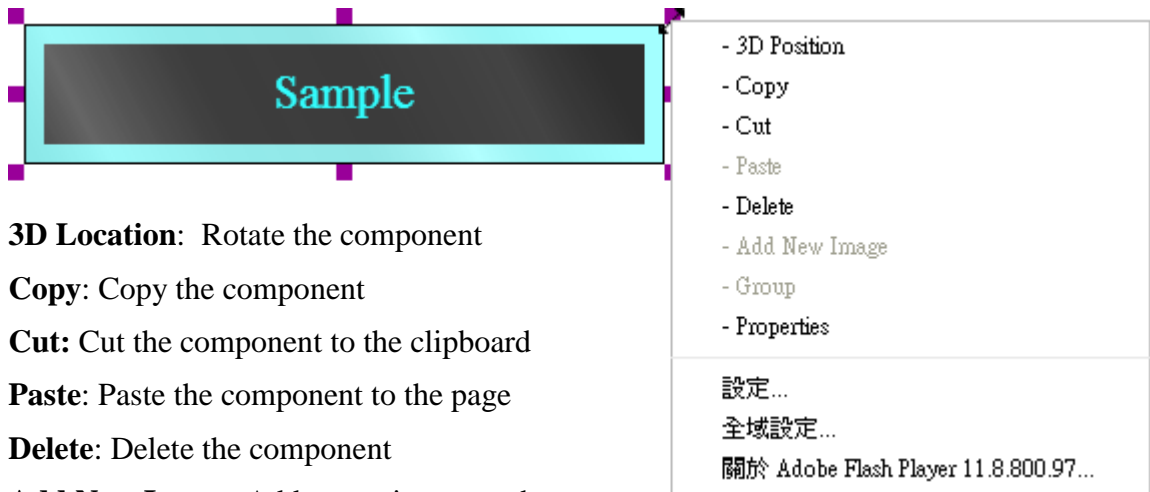
- Real-Time Trend Component



Please refer to [4.Flash HMI Component](#) for more detailed information of the HMI components.

2.5 HMI Page Editor Area

The HMI Page Editor area allows to edit the HMI page; in this area the user could freely add new HMI components or image pictures to the page, or cut/paste/copy the components or images to the page. To edit the component or page in the Editor area, right click on the component or the page to bring out the menu window to perform the following functions, for more detailed information, please refer to later sections.

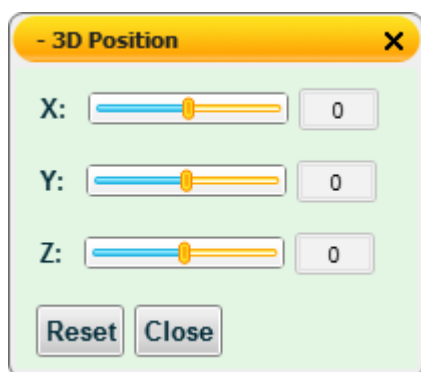


- **3D Location:** Rotate the component
- **Copy:** Copy the component
- **Cut:** Cut the component to the clipboard
- **Paste:** Paste the component to the page
- **Delete:** Delete the component
- **Add New Image:** Add a new image to the page
- **Group:** Group two or more components together as one unit
- **Properties:** Bring up the the “Project Setting” window of the HMI component.

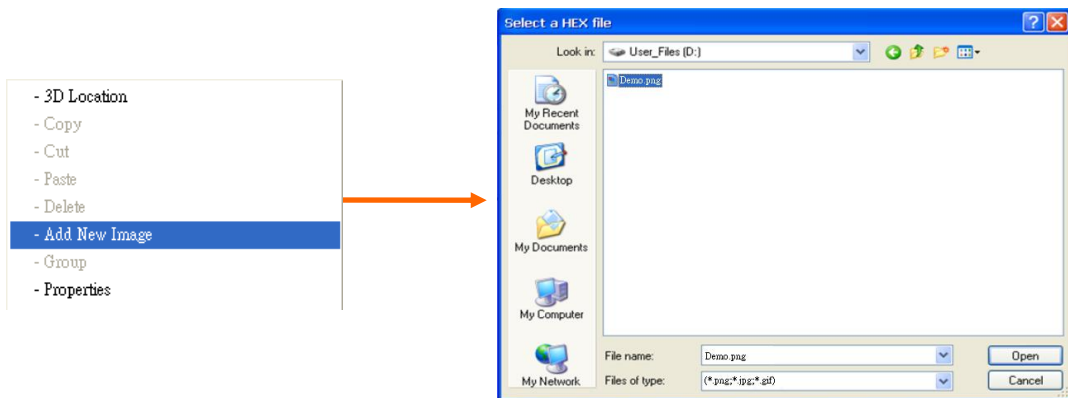
Configuration/Global Configuration/ About Adobe Flash Player: Configuration and version information of Adobe Flash Player

2.5.1 3D Location

The components or images can be rotated around X-axis/ Y-axis/ Z-axis. Click Reset to return to default settings.



2.5.2 Add New Image



Right click on the HMI page, select “Add New Image” and browse through the file dialog box to select the image file. Click “Open” to add the new image to the HMI page.

Please note: Avoid using image files sharing with the same file name; the images may not be correctly displayed due to unexpected overwriting files may occur.

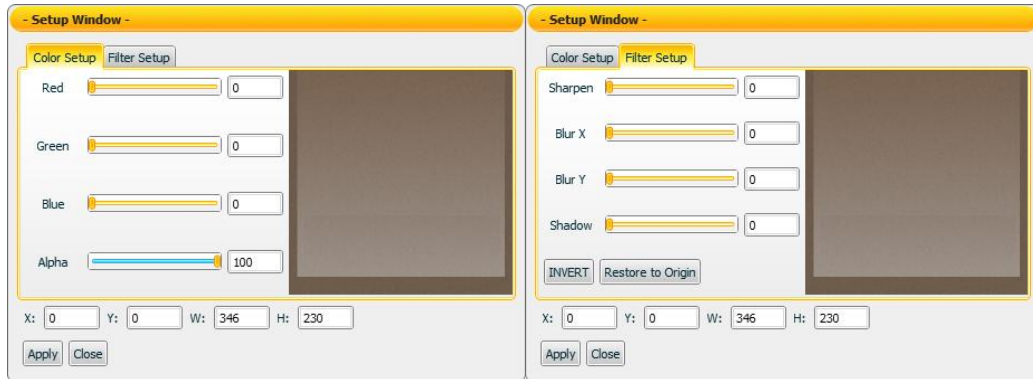
2.5.3 Group

Two or more HMI components can be grouped together and behave as one unit, for example: they can be moved together and resize together; the relative location of the individual elements will not be changed. The grouped components also can be copied, cut, deleted and arranged together. **(Please note: the grouped components can't be rotated.)**

2.5.4 Properties for Image



- Right click on the image and select “Properties”
- Click on the “Properties” option to bring up the Setup Window for “Color Setup” and “Filter Setup” for the image. You can modify the settings as follows to achieve various visual effects. After the settings are completed, click on “Apply” to make the change take effect. To restore the image to original status, please click “Restore to Origin” to remove all changes previously made to the image.

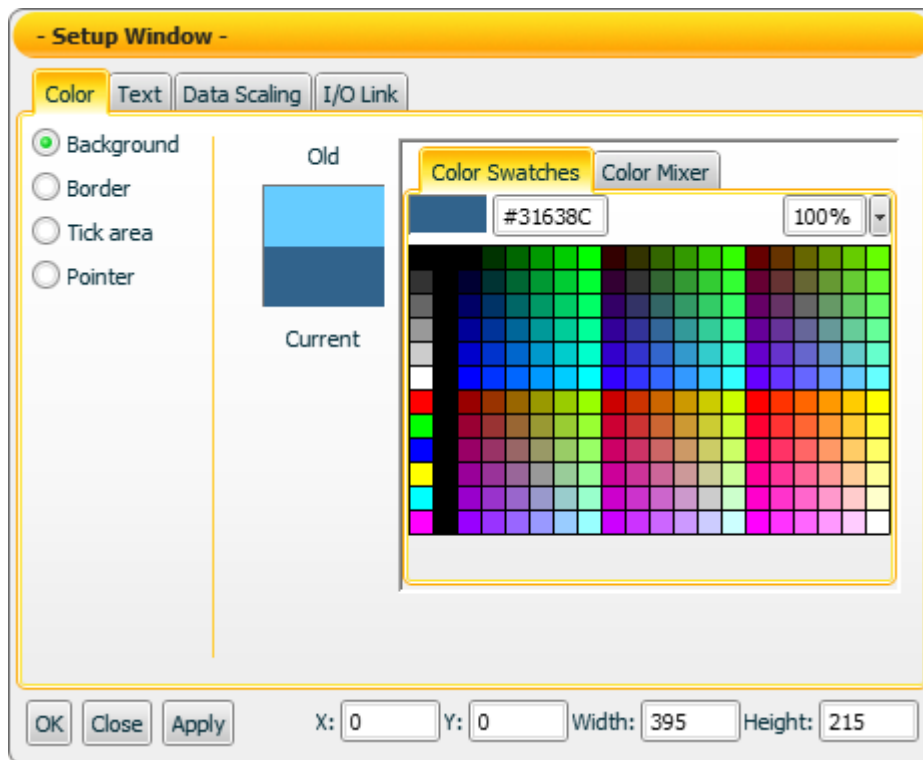


2.5.5 HMI Component Properties

This section will introduce the common settings of the HMI components, for more detailed information for each HMI components, please refer to [4.Flash HMI Component](#).

➤ General Setting (Using Meter as an example)

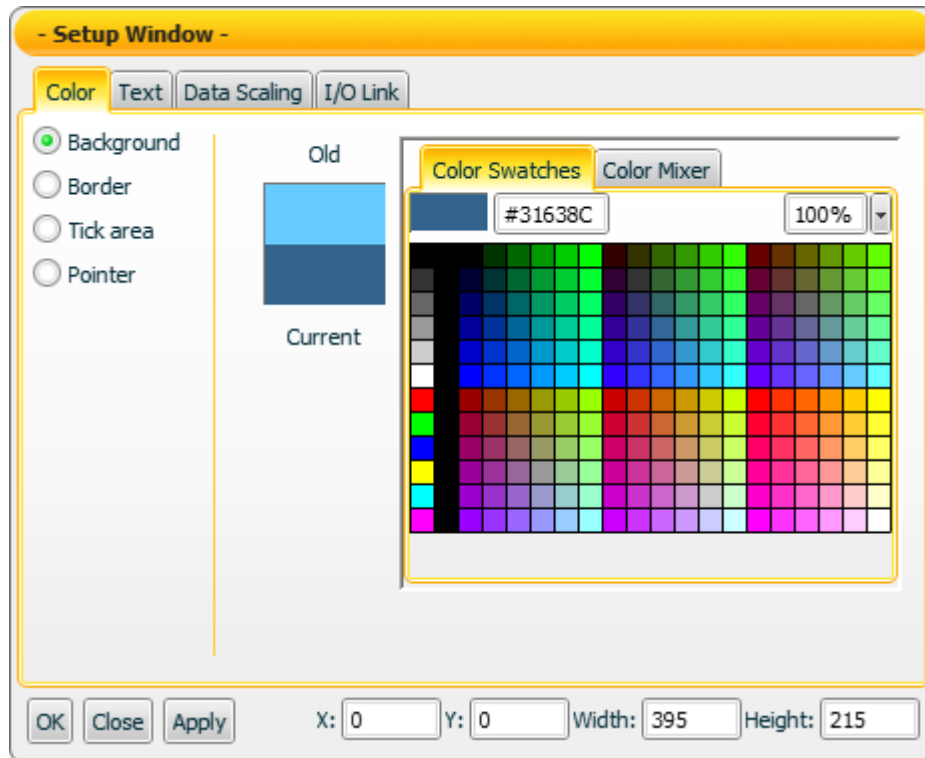
The General Setting allows to modify the Position, Width, Height and other setting of the component. To make the change take effect, please click on the “Apply” button each time after one change before continue to make other changes.



OK	Apply the settings to the component and close the Setup window
Apply	Apply the settings to the component
Close	Close the Setup window
X	X axis (leftmost value is 0, values increase from left to right, Units: Pixel)
Y	Y axis (topmost value is 0, values increase from top to bottom, Units: Pixel)
Width	The width of the component (Units: Pixel)
Height	The height of the component (Units: Pixel)

➤ Color Setting (Using Meter as an example)

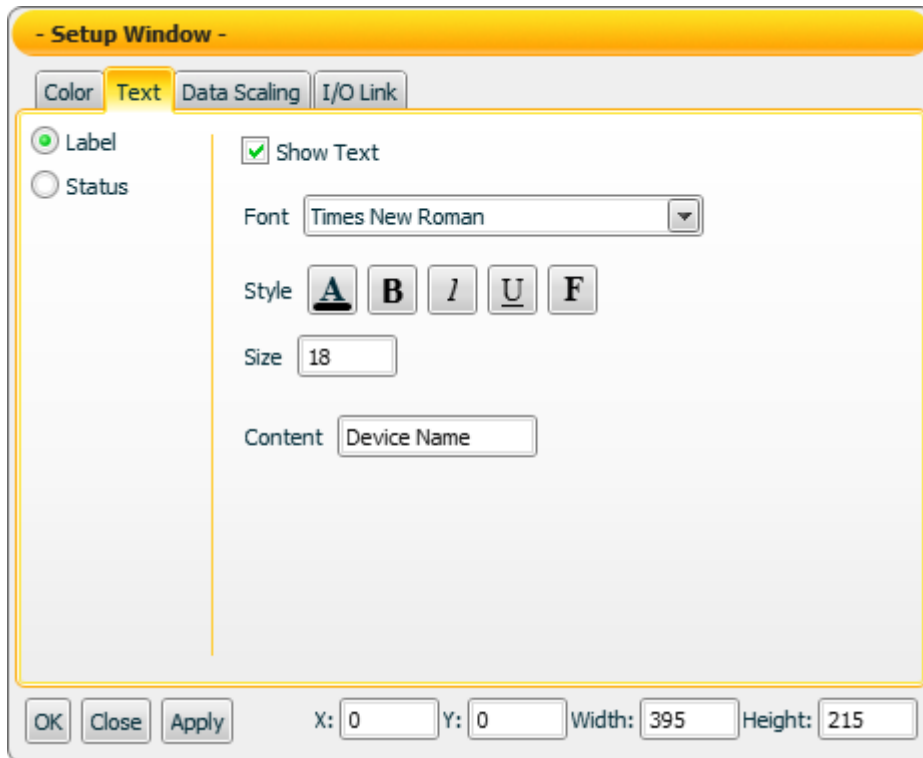
The Color setting allows to modify the color settings of the component. To make the change take effect, please click on the “Apply” button each time after one change before continue to make other changes.



Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

➤ Text Setting (Using Meter as an example)

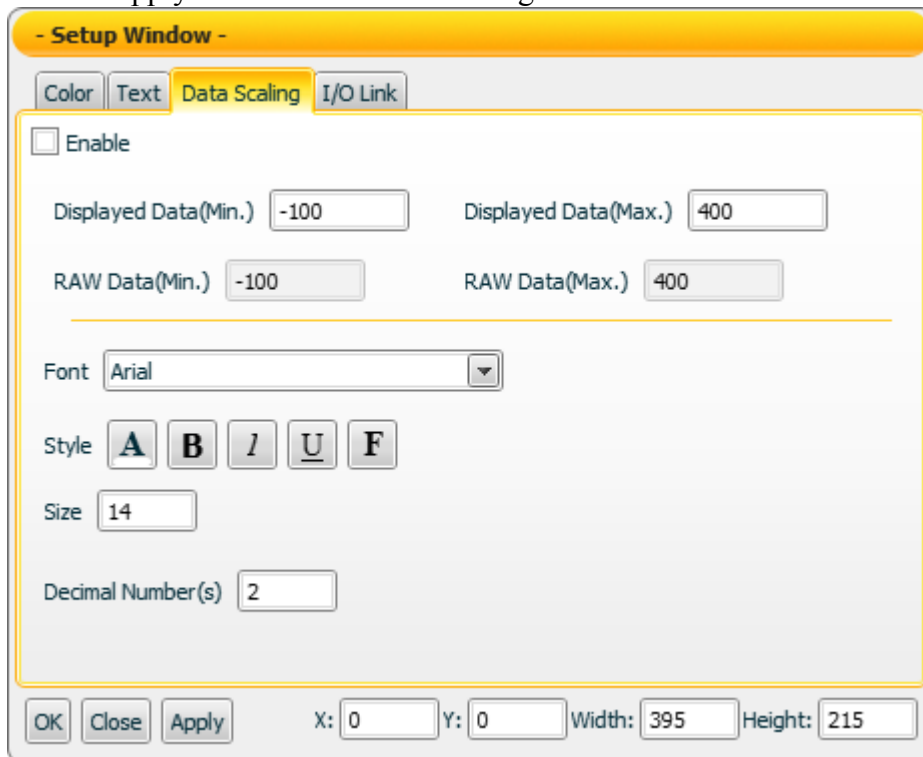
The Text setting allows to modify the text settings of the component. To make the change take effect, please click on the “Apply” button each time after one change before continue to make other changes.



Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type.</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type.</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label or Status.

➤ Data Scaling Setting (Using Meter as an example)

The Data Scaling setting allows to convert the input value to scaled value. Click on the “Apply” button to make the change take effect.



Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value that the component can display.
Displayed Data(Max.)	The maximum value that the component can display.
RAW Data(Min.)	The minimum raw value that the component can receive.
RAW Data(Max.)	The maximum raw value that the component can receive.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Decimal Number(s)	Set up the number of the decimal place for the displayed value.

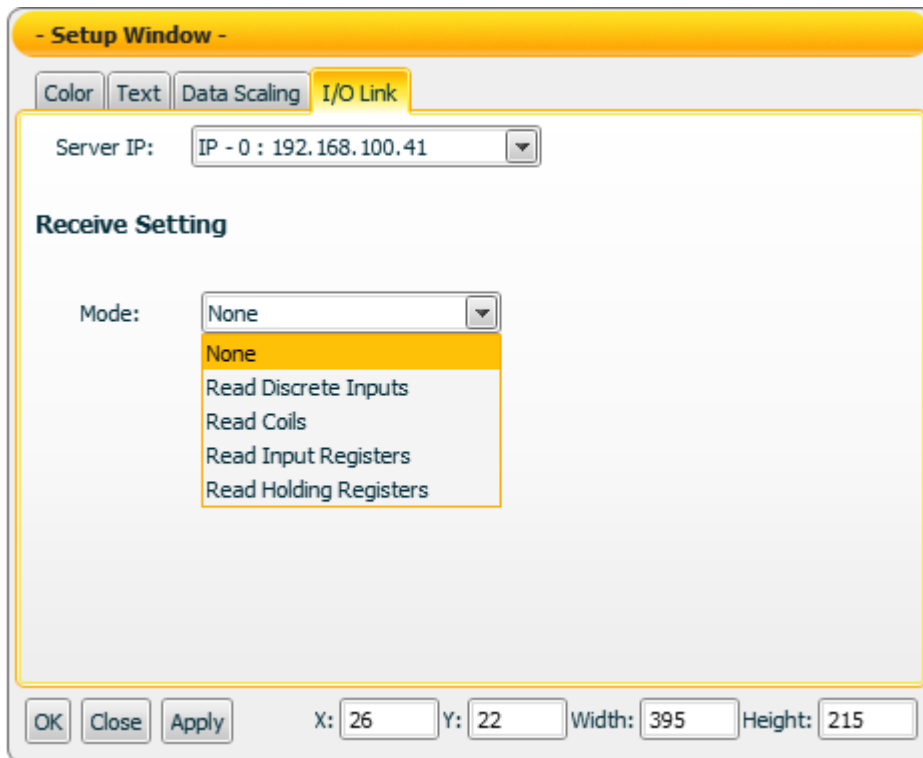
➤ I/O Link Setting

The I/O Link setting allows to set up the setting of the I/O data receive or send mode. Click on the “Apply” button to make the change take effect.

■ **Server IP**

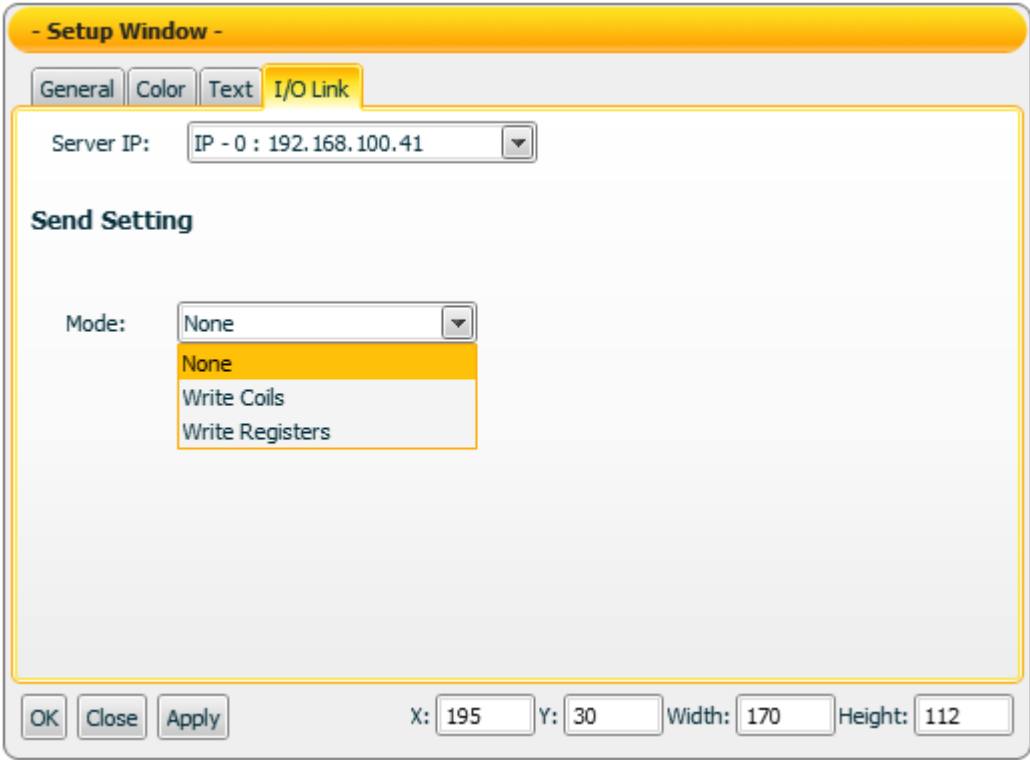
“Server IP” setting is the ip address of the PMC that the componet would receive the data from or send the data to.

■ **Data Receiving Setting**



Please select the receiving mode and setup the correct modbus address and type.

■ **Data Sending Setting**



Please select the sending mode and setup the correct modbus address and type.



3 Flash HMI Player

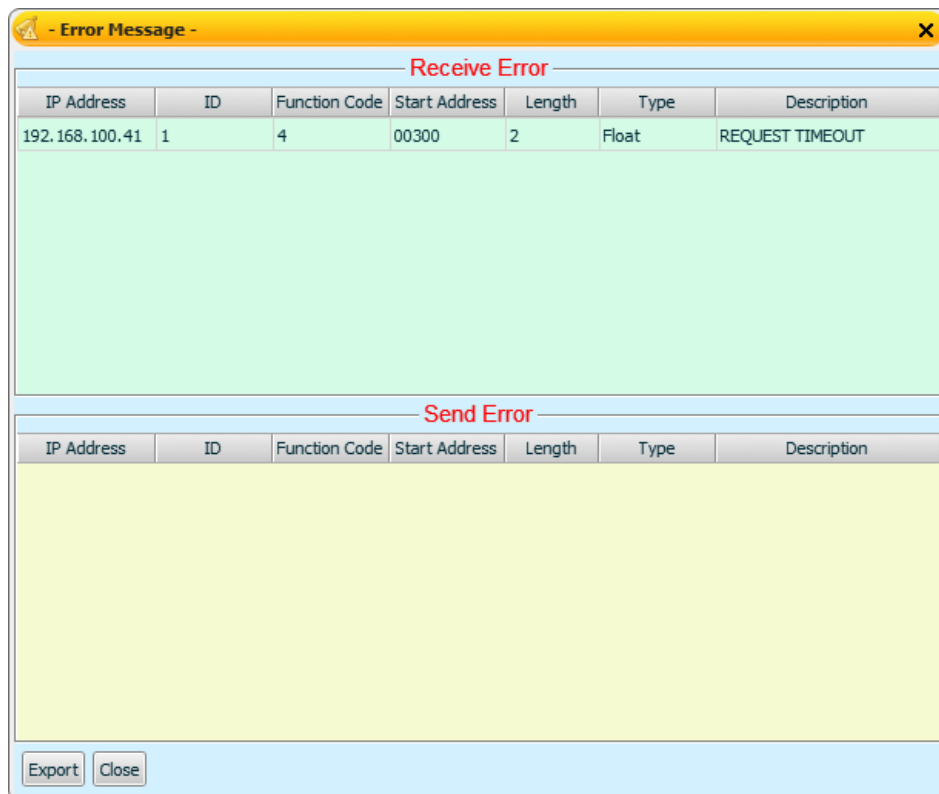
3.1 Player Menu



The menu of HMI player for **administrator** is shown as above. They provide the following functions:

- Project List:** Return to project list (this feature only apply to administrator)
- Show Log:** Display system information and error messages (this feature only apply to administrator)
- FullScreen:** Set the HMI page to be full screen mode.
- Change Page:** Select the display page
- Display Ratio:** Specify the display ratio of the HMI page
- Link Status:** Show current connection status

When the  icon is shown, indicates an error is occurred during the Data receiving/sending process. Click on the icon for more detailed information and the error information can be exported to a file, as shown below (this feature  only apply to administrator)



The menu of HMI player for general user is shown as below.











4 Flash HMI Component




4.1 Indicator Component



The Indicator component is used to receive the I/O channel data and display its corresponding status. In the component property page, there are properties such as Color, Text and I/O data link...etc. for user to set up. After complete the setting of the component properties, the component will show the status or value it receives. The categories and functions of Indicator are shown as below:







- Lamp



				
---	---	---	---	--
- Motor

		
---	---	---
- Tank

		
---	---	---
- Thermo

	
---	---
- Pipe

					
--	--	--	--	---	--
- Valve

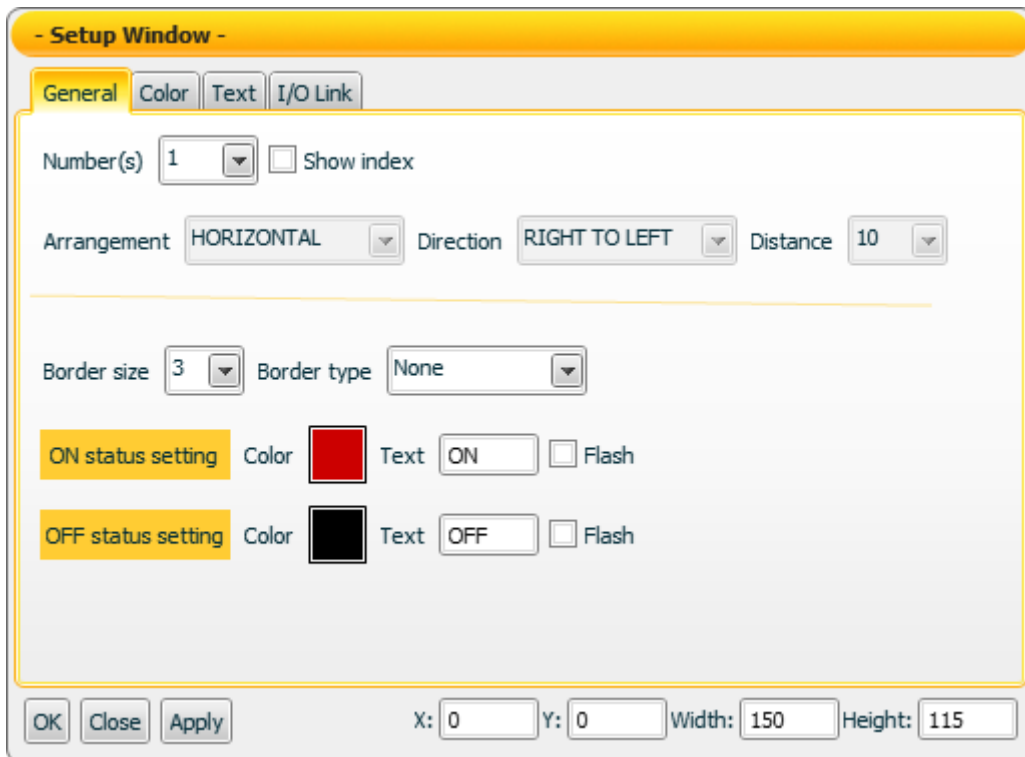
	
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4.1.1 Lamp Component



“General Setting”

On the “General Setting” tab page, you can set up the properties of the Lamp component as below. After the setting is completed, please click “Apply” button.

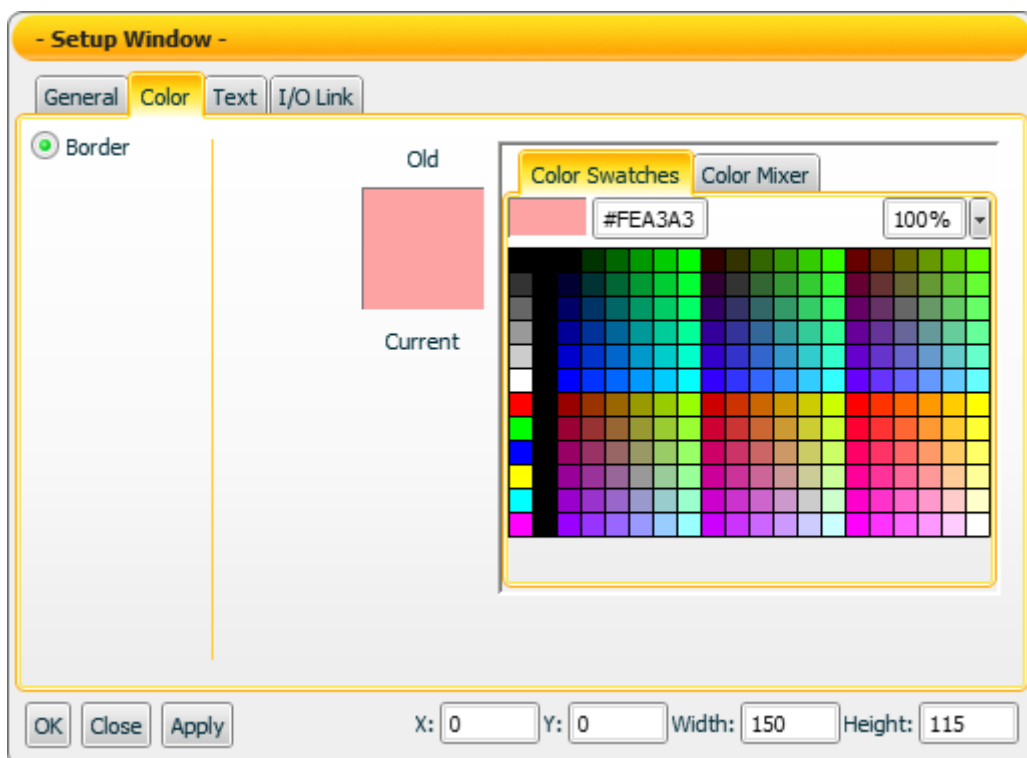


Number(s)	This component features Group function. Assign a number in the field, a group of the component items will be created, they can be used to display the Binary format value the component receives.
Show Index	If the total amount (Number) is 2 (or more), click the check box will show the index number for the component. The index number starts from 0.
Arrangement	If the total amount (Number) is 2 (or more), you can set up the arrangement of the components to be “Horizontal “or “Vertical”.
Direction	If the total amount (Number) is 2 (or more), you can set up the arrangement direction of the components. If the arrangement type of the component is “HORIZONTAL”, then the direction can be arranged as “Left to Right” or “Right to Left.” If the arrangement type is “Vertical”, then the direction can be arranged as “Up to Down” or “Down to Up”.

Distance	If the total amount (Number) is 2 (or more), you can set up the distance between the components. The unit is Pixel.
Border Size	Assign the border size of the component. The unit is Pixel.
Border type	Assign the border type of the component. There are three options as “None”, “Raised” and “Lowered”.
ON Status Setting	<p>Color : Set up the color to be shown when the component is in ON status.</p> <p>Text : Set up the text to be shown when the component is in ON status.</p> <p>Flash : Set up when the component is in ON status, the component will flash or not. Click the checkbox to enable the Flash operation.</p>
OFF Status Setting	<p>Color : Set up the color to be shown when the component is in OFF status.</p> <p>Text : Set up the text to be shown when the component is in OFF status.</p> <p>Flash : Set up when the component is in OFF status, the component will flash or not. Click the checkbox to enable the Flash operation.</p>

“Color Setting”

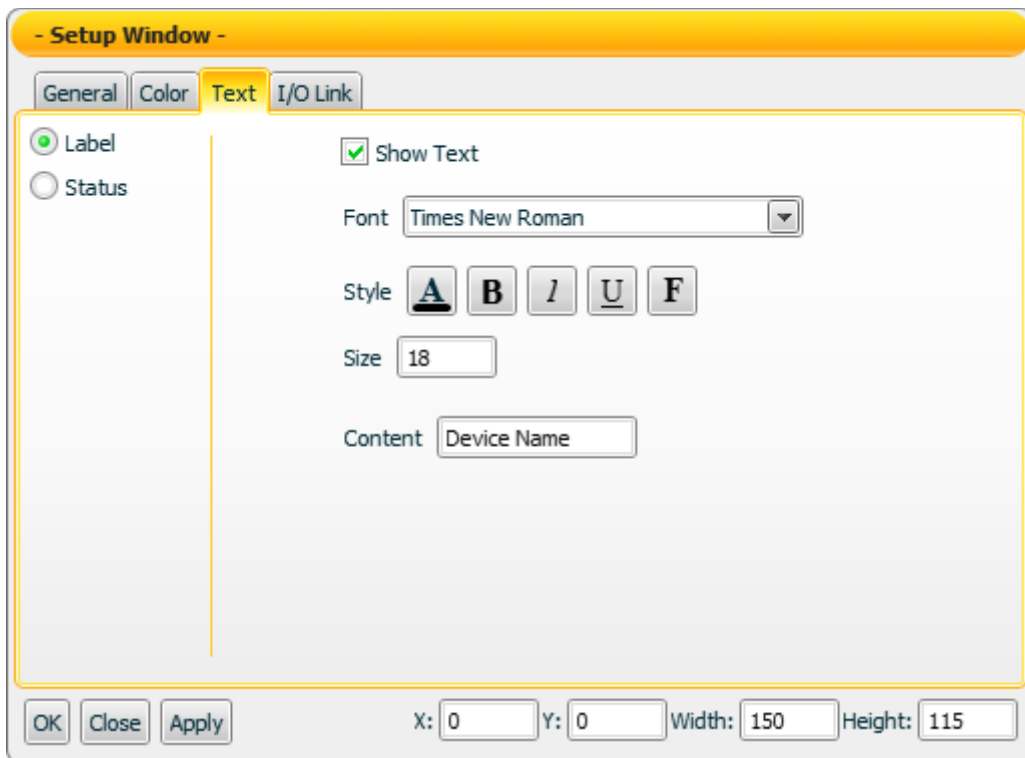
On the “Color Setting” tab page, you can set up the color of the Indicator component as below. After the setting is completed, please click “Apply” button.








Border	Select the color of the Border.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

On the “Text Setting” tab page, you can set up the text properties of the Lamp component as below. After the setting is completed, please click “Apply” button.

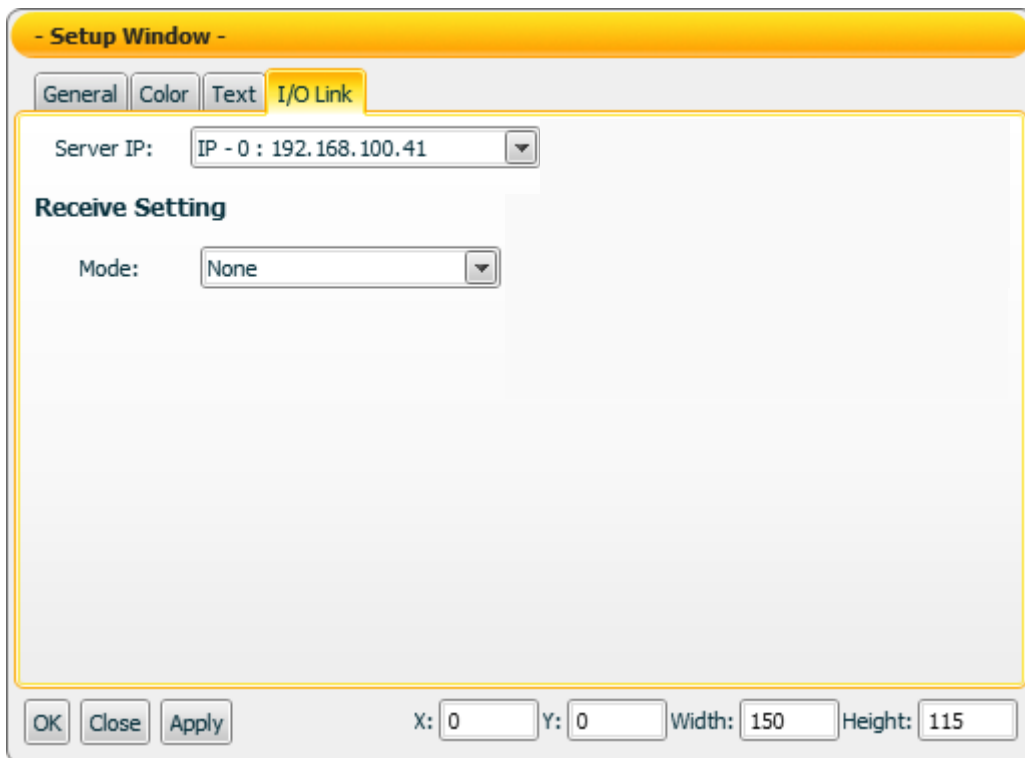


Label	Set up the Label text for the component ◦
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.

Style	 : Select the color for the text  : Set the text in bold type  : Add the underline for the text  : Set the text in italic type  : Set the text with aureole effect
Size	Assign the size for the text.
Content	Input the text content for Label.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Lamp component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data receiving description

In the General Setting section, if the total amount “Number” is assigned to be 1, then the data the component receives will be treated as a Boolean value. If the value the

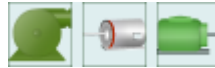
component receives is greater than (or equal to) 1, it will be in ON status; otherwise it will be in OFF status. If the data the component receives is not a number, then the data will be ignored and the status will not be modified.

If the total amount “Number” is assigned to be 2 (or more), then the data the component receives will be treated as a binary value. If the value the component receives is greater than the maximum binary value that the component is able to process, the value will be treated as the maximum binary value. If the value the component receives is smaller than the minimum binary value that the component is able to process, the value will be treated as the minimum binary value. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

“Example 1”: If the total amount “Number” is assigned to be 4, then there are 4 Indicators in the component. The index numbers for the Indicators will be Index0, Index1, Index2 and Index3. If the component receives a value 3, then the Index0 Indicator and the Index1 Indicator will be in ON status, the Index2 Indicator and the Index3 Indicator will be in OFF status.

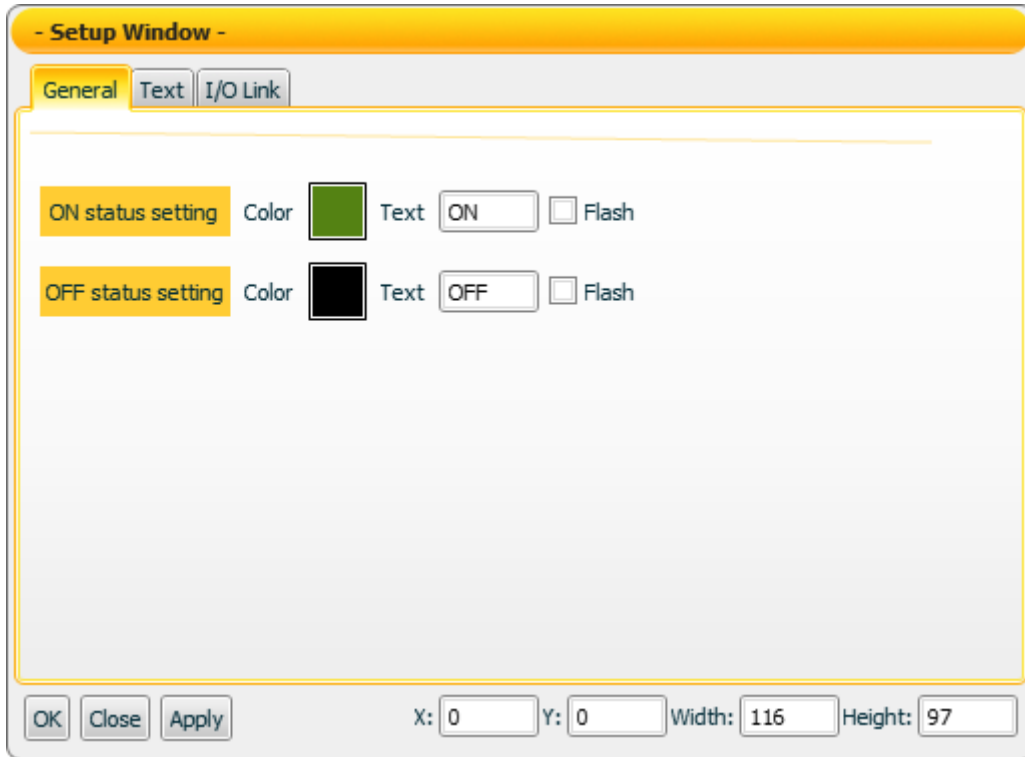
“Example 2”: If the total amount “Number” is assigned to be 4, then there are 4 Indicators in the component. With 4 Indicators, the data range the Indicator component can process is from 0 to 15. Therefore if the data the component receives is greater than 15; the value will be treated as 15. If the value the component receives the data is smaller than 0, the value will be treated as 0.

4.1.2 Motor Component



“General Setting”

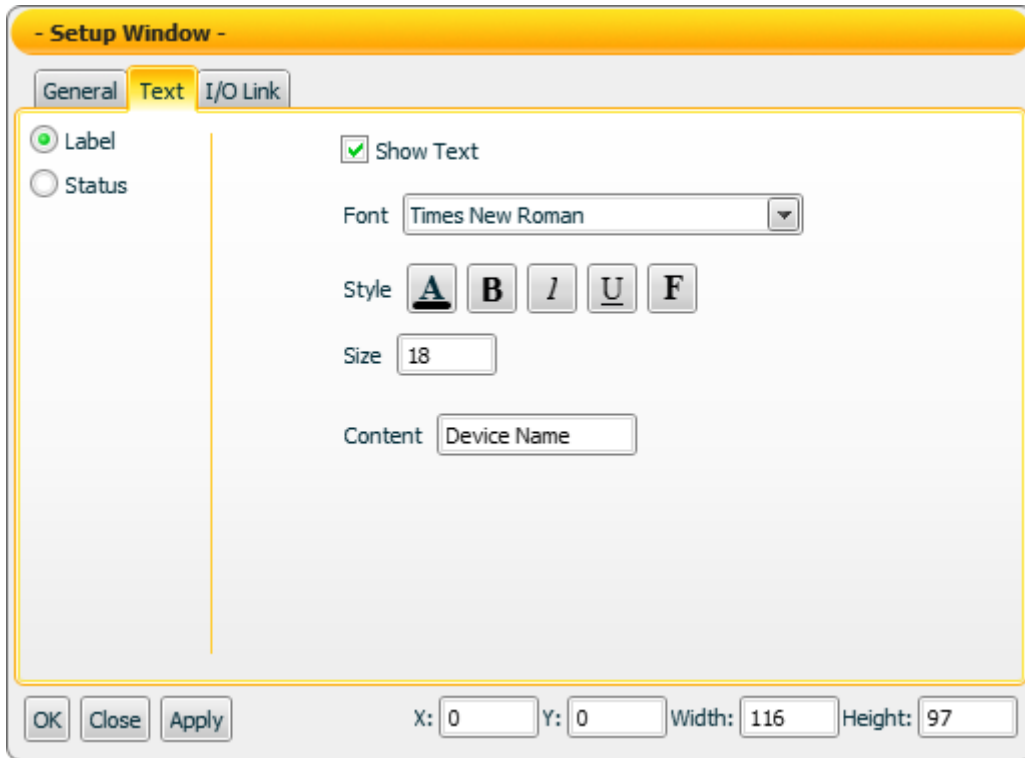
On the “General Setting” tab page, you can set up the properties of the Motor component as below. After the setting is completed, please click “Apply” button.








<p>ON Status Setting</p>	<p>Color : Set up the color to be shown when the component is in ON status.</p> <p>Text : Set up the text to be shown when the component is in ON status.</p> <p>Flash : Set up when the component is in ON status, the component will flash or not. Click the checkbox to enable the Flash operation.</p>
<p>OFF Status Setting</p>	<p>Color : Set up the color to be shown when the component is in OFF status.</p> <p>Text : Set up the text to be shown when the component is in OFF status.</p> <p>Flash : Set up when the component is in OFF status, the component will flash or not. Click the checkbox to enable the Flash operation.</p>

“Text Setting”

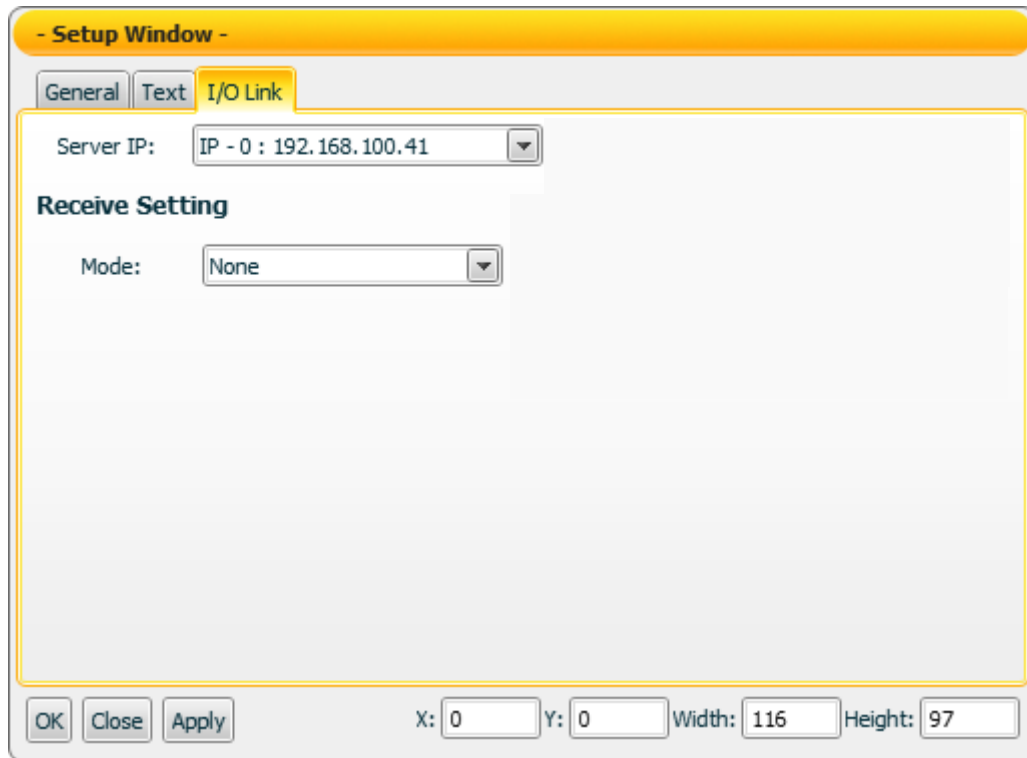
On the “Text Setting” tab page, you can set up the text properties of the Motor component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text for the component
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p> : Select the color for the text</p> <p> : Set the text in bold type</p> <p> : Add the underline for the text</p> <p> : Set the text in italic type</p> <p> : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Motor component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

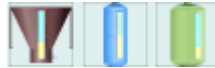
Data receiving description

The data the component receives will be treated as a Boolean value. If the value the component receives is greater than (or equal to) 1, it will be in ON status; otherwise it will be in OFF status.

“Example 1”: If the component receives a value 1, the Motor will be in ON status.

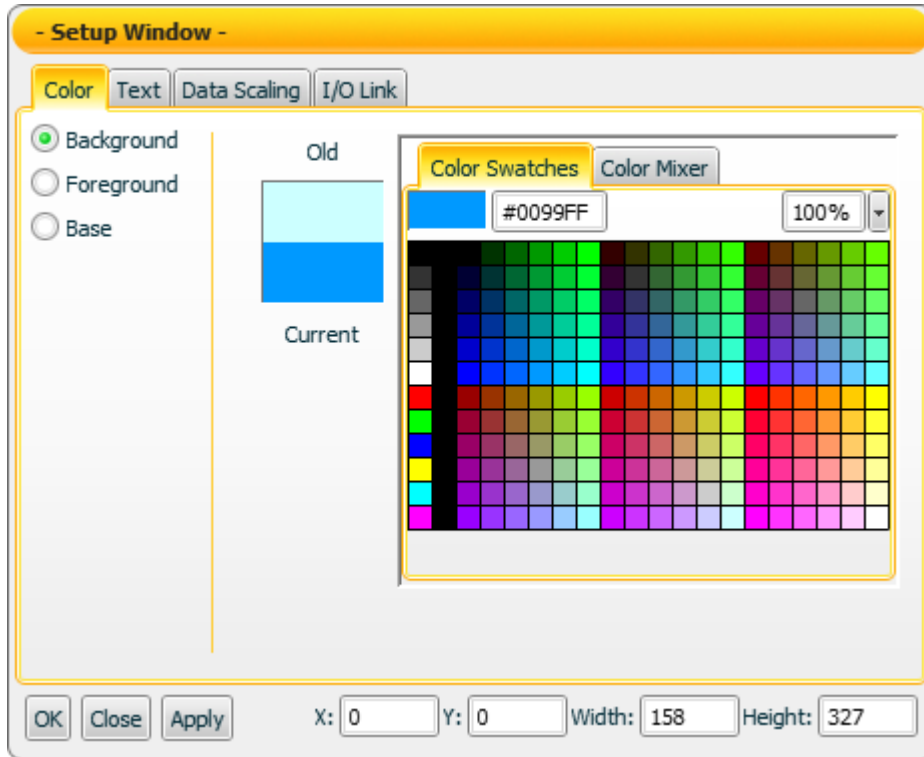
“Example 2”: If the component receives a value 0, the Motor will be in OFF status.

4.1.3 Tank Component



“Color Setting”

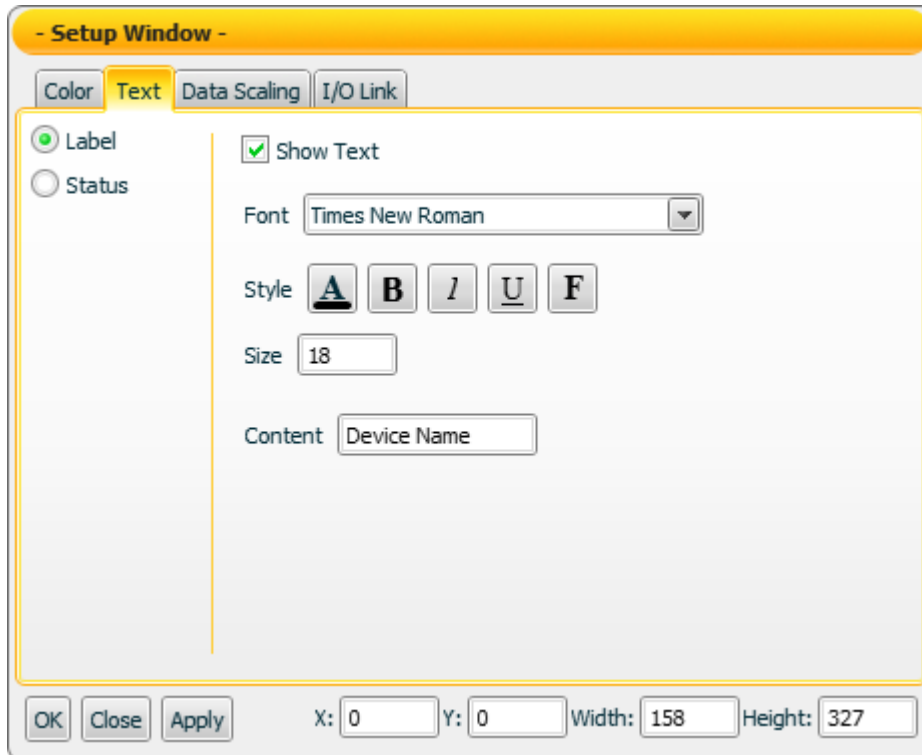
On the “Color Setting” tab page, you can set up the color of the Tank component as below. After the setting is completed, please click “Apply” button.



Background	Select the color of the Background.
Foreground	Select the color of the Foreground.
Base	Select the color of the Base.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

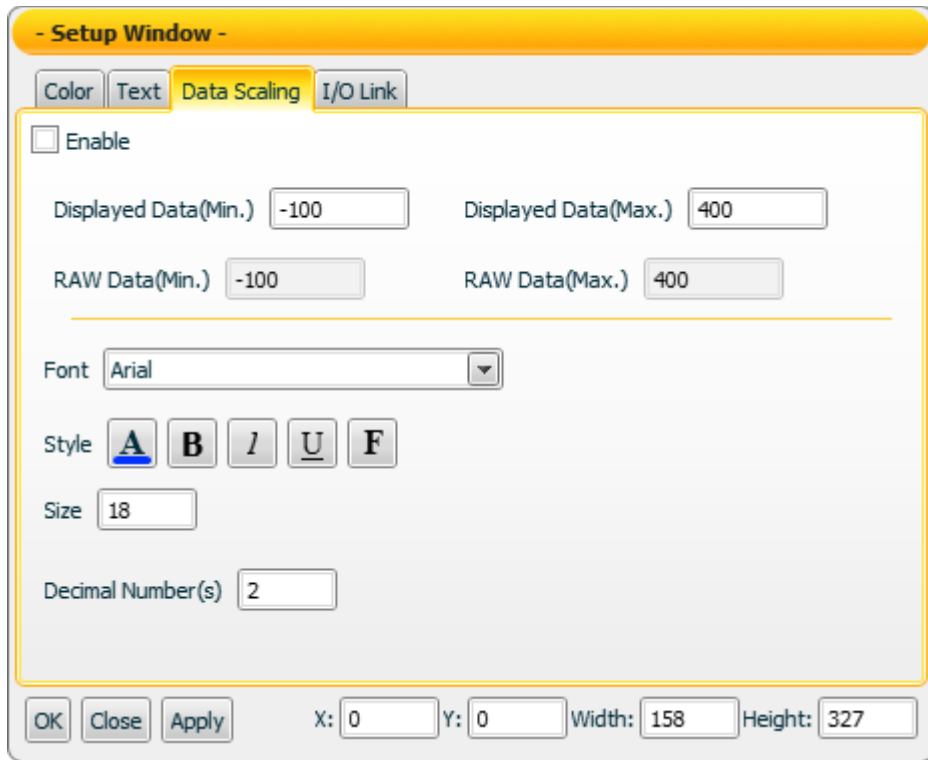
On the “Text Setting” tab page, you can set up the text properties of the Tank component as below. After the setting is completed, please click “Apply” button.








Label	Set up the Label text for the component ◦
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“Data Scaling Setting”

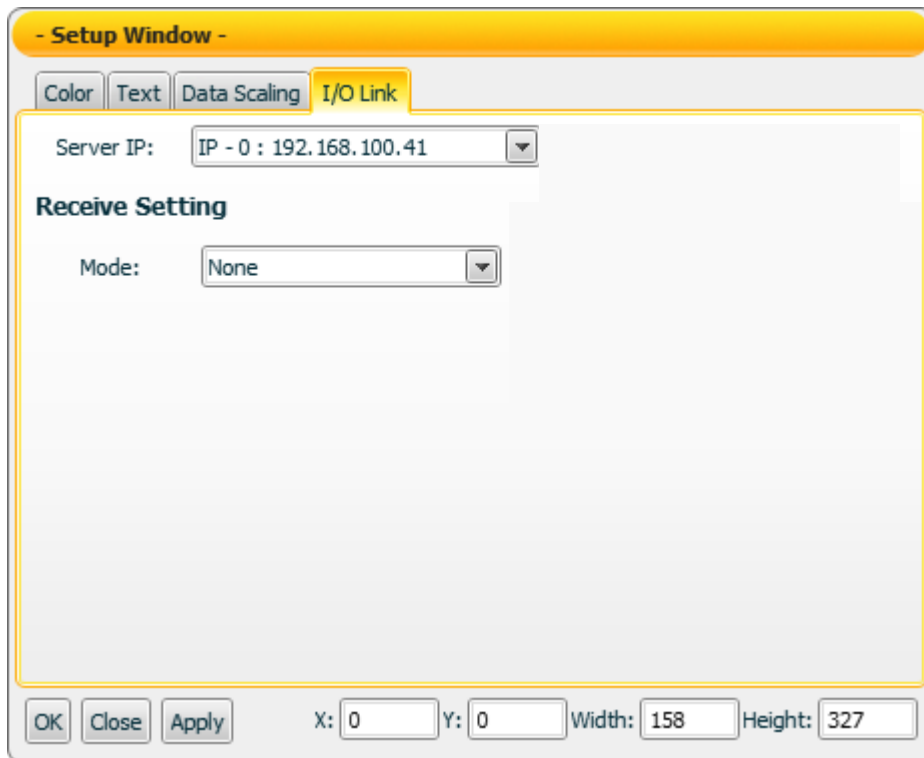
On the “Data Scaling Setting” tab page, you can set up the data scaling properties for the Tank component as below. After the setting is completed, please click “Apply” button.



Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value the component can display.
Displayed Data(Max.)	The maximum value the component can display.
RAW Data(Min.)	The minimum raw value the component can receive.
RAW Data(Max.)	The maximum raw value the component can receive.
Font	The Font setting for the text.
Style	<p> : Select the color for the text</p> <p> : Set the text in bold type</p> <p> : Add the underline for the text</p> <p> : Set the text in italic type</p> <p> : Set the text with aureole effect</p>
Size	Assign the size for the text.
Decimal Number(s)	Set up the number of the decimal place for the displayed value.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Tank component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data receiving description

This component only receives data that is number, and shows the data in string format. The initial string is N/A. If the data the component receives is smaller than the value of “Displayed Data(Min.)”, then it will display the value of “Displayed Data(Min.)”. If the data the component receives is greater than the value of “Displayed Data(Max.)”, then it will display the the value of “Displayed Data(Max.)”. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

For example, If the value of “Displayed Data(Max.)” is 400, and the value of “Displayed Data(Min.)” is -150 :

1. If the data the component receives is 410, the component will display 400.
2. If the data the component receives is 350, the component will display 350.
3. If the data the component receives is -200, the component will display -150.

You can click the “Enable” check box on the “Data Scaling Setting” tab page to enable the data scaling function. If the data the component receives is greater than the value of “RAW Data(Max.)”, then the data the component receives will be the value of “RAW Data(Max.)”. If the data the component receives is smaller than the value of “RAW Data(Min.)”, then the data the component receives will be the value of “RAW Data(Min.)”.

For example, if the measured raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, then you can complete the following setting.

- The value of Displayed Data(Max.) is 100.
- The value of Displayed Data(Min.) is 0.
- The value of RAW Data(Max.) is 65535.
- The value of RAW Data(Min.) is 0

Now the component will display the scaling value from the raw data of the physical device based on your setting. For example:

1. If the data the component receives is 65600, the component will display 100.
2. If the data the component receives is 65535, the component will display 100.
3. If the data the component receives is 32767.5, the component will display 50.
4. If the data the component receives is 0, the component will display 0.

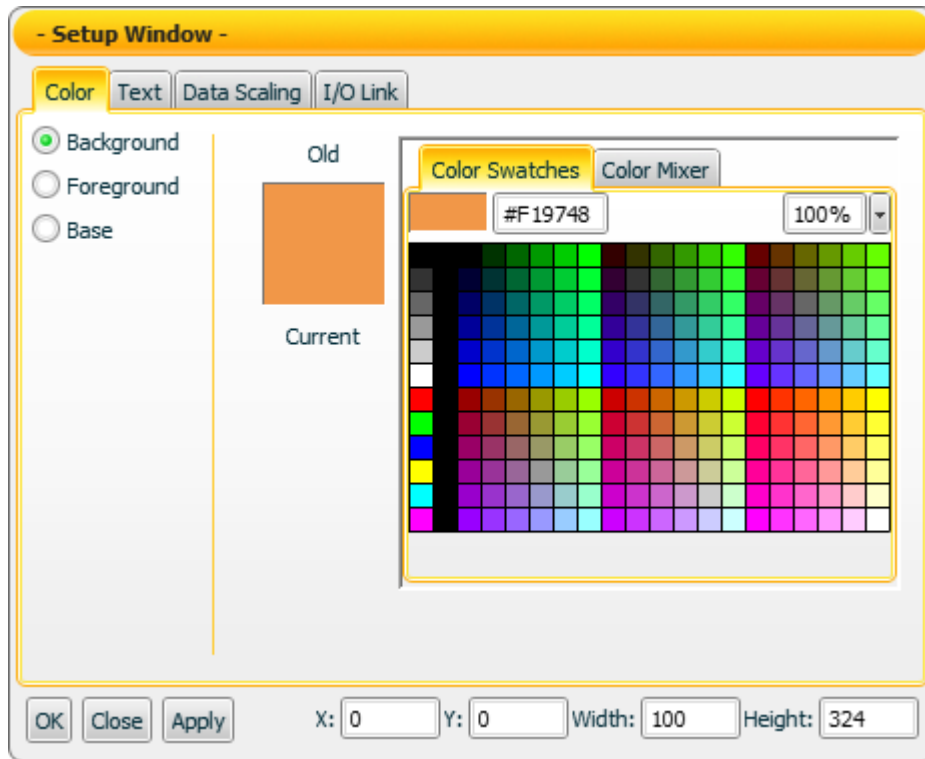
If the data the component receives is -10, the component will display 0.

4.1.4 Thermo Component



“Color Setting”

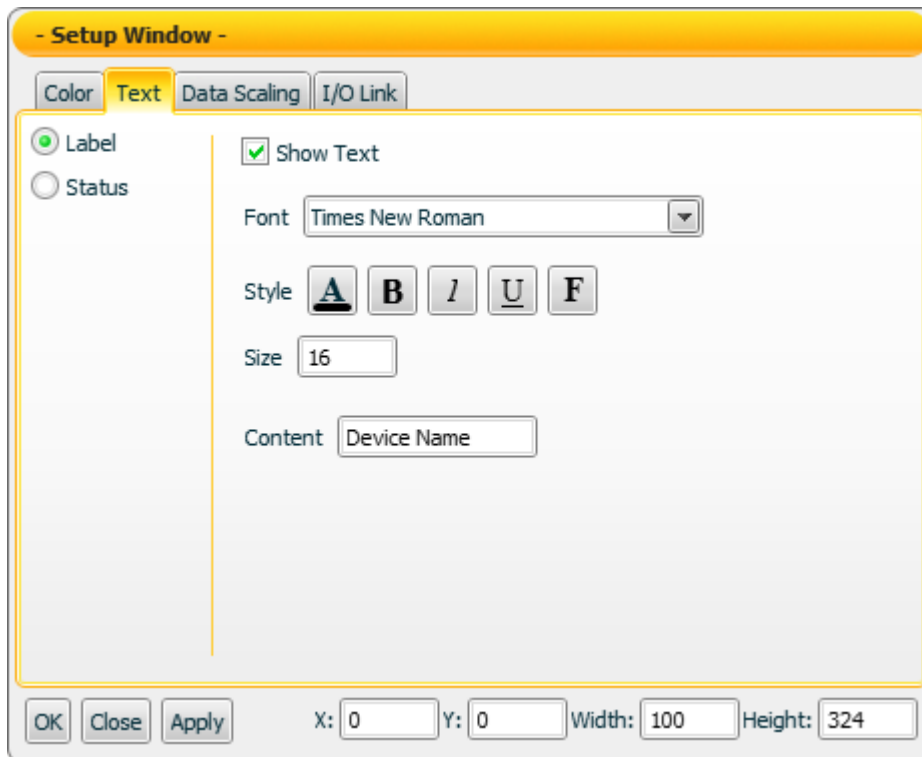
On “Color Setting” tab page, you can set up the color of the Thermo component as below. After the setting is completed, please click “Apply” button.








Background	Select the color of the Background.
Foreground	Select the color of the Foreground.
Base	Select the color of the Base.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

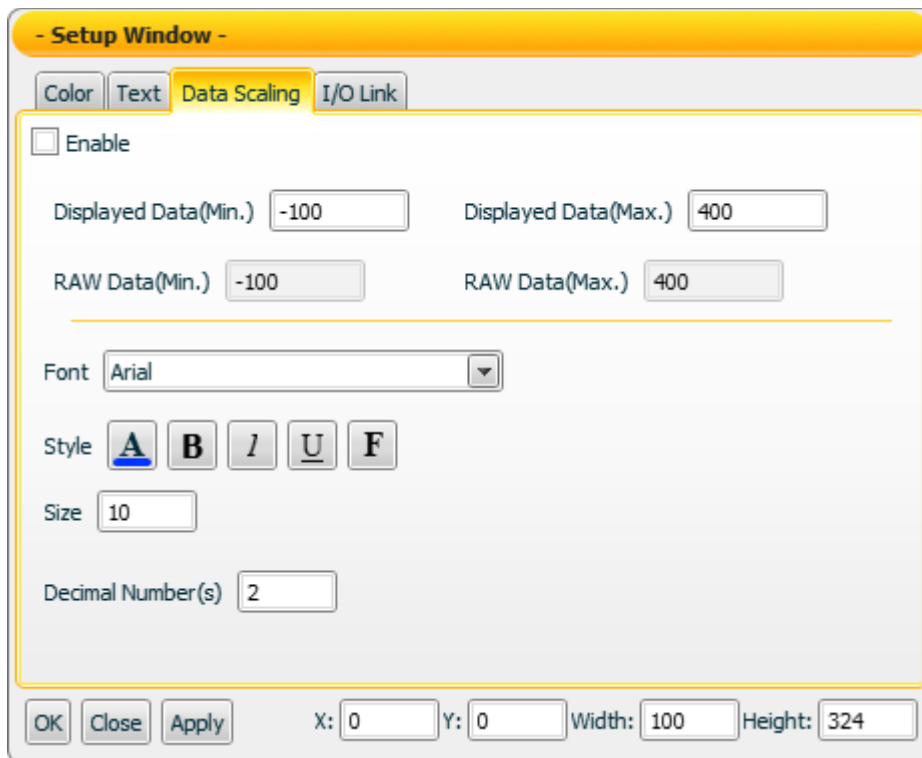
On “Text Setting” tab page, you can set up the text properties of the Thermo component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text for the component ◦
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p> : Select the color for the text</p> <p> : Set the text in bold type</p> <p> : Add the underline for the text</p> <p> : Set the text in italic type</p> <p> : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“Data Scaling Setting”

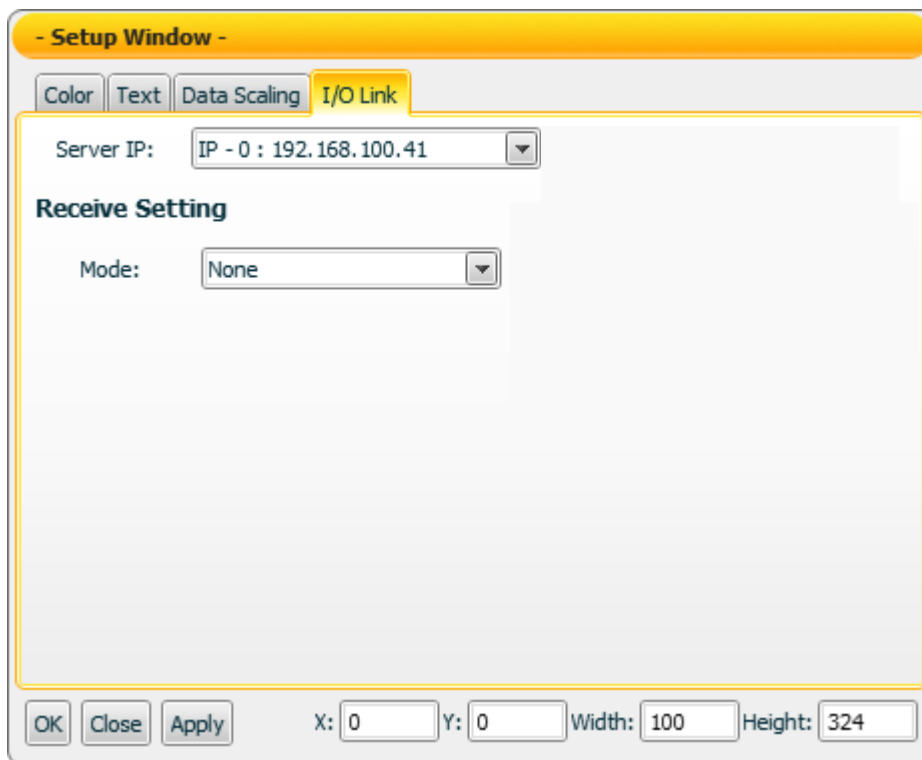
On the “Data Scaling Setting” tab page, you can set up the data scaling properties for the Thermo component as below. After the setting is completed, please click “Apply” button.



Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value the component can display.
Displayed Data(Max.)	The maximum value the component can display.
RAW Data(Min.)	The minimum raw value the component can receive.
RAW Data(Max.)	The maximum raw value the component can receive.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Decimal Number(s)	Set up the number of the decimal place for the displayed value.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Thermo component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data receiving description

This component only receives data that is number, and shows the data in string format. The initial string is N/A. If the data the component receives is smaller than the value of “Displayed Data(Min.)”, then it will display the value of “Displayed Data(Min.)”. If the data the component receives is greater than the value of “Displayed Data(Max.)”, then it will display the the value of “Displayed Data(Max.)”. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

For example, If the value of “Displayed Data(Max.)” is 400, and the value of “Displayed Data(Min.)” is -150 :

4. If the data the component receives is 410, the component will display 400.
5. If the data the component receives is 350, the component will display 350.

If the data the component receives is -200, the component will display -150.

You can click the “Enable” check box on the “Data Scaling Setting” tab page to enable the data scaling function. If the data the component receives is greater than the value of “RAW Data(Max.)”, then the data the component receives will be the value of “RAW Data(Max.)”. If the data the component receives is smaller than the value of “RAW Data(Min.)”, then the data the component receives will be the value of “RAW Data(Min.)”.

For example, if the measured raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, then you can complete the following setting.

- The value of Displayed Data(Max.) is 100.
- The value of Displayed Data(Min.) is 0.
- The value of RAW Data(Max.) is 65535.
- The value of RAW Data(Min.) is 0

Now the component will display the scaling value from the raw data of the physical device based on your setting. For example:

5. If the data the component receives is 65600, the component will display 100.
6. If the data the component receives is 65535, the component will display 100.
7. If the data the component receives is 32767.5, the component will display 50.
8. If the data the component receives is 0, the component will display 0.

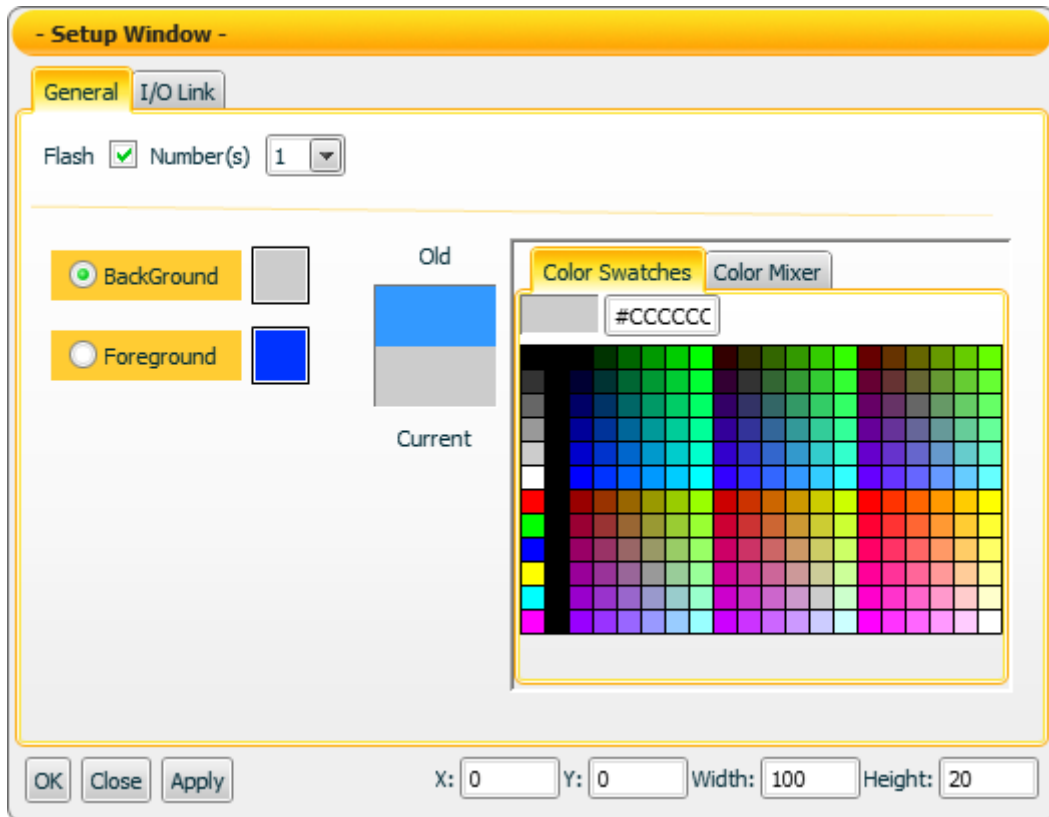
If the data the component receives is -10, the component will display 0.

4.1.5 Pipe Component(1)



“General Setting”

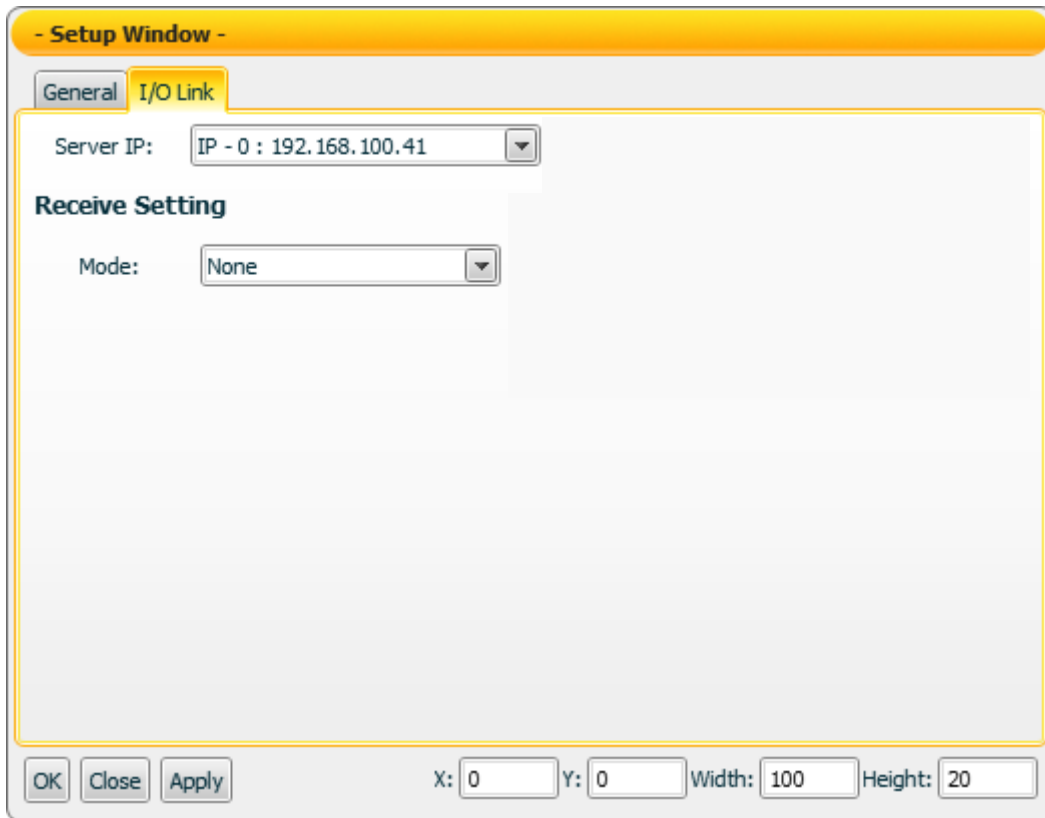
On the “General Setting” tab page, you can set up the properties of the Pipe component as below. After the setting is completed, please click “Apply” button.



Flash	Specify the component will flash or not when the component is in ON status. Click the checkbox to enable the Flash operation.
Number(s)	This component features Group function. Select how many number of this component will be created from the dropdown list, a group of the component items will be created.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.
Background	Select the color of the Background.
Foreground	Select the color of the Foreground.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Pipe component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data receiving description

The data the component receives will be treated as a Boolean value. If the value the component receives is greater than (or equal to) 1, it will be in ON status; otherwise it will be in OFF status.

“**Example 1**”: If the component receives a value 1, the Motor will be in ON status.

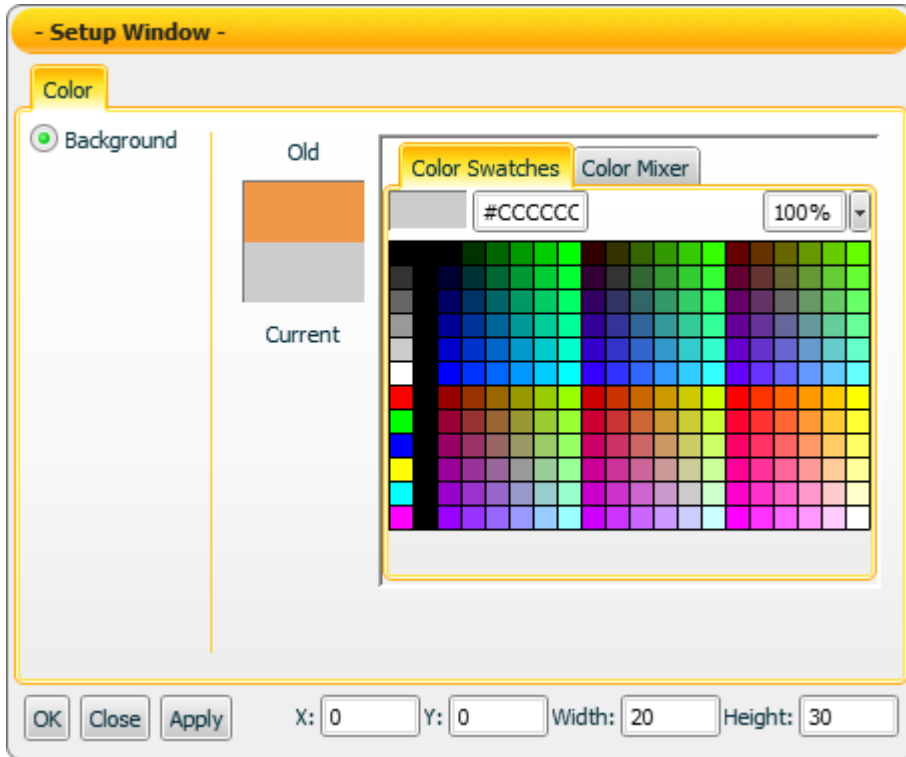
“**Example 2**”: If the component receives a value 0, the Motor will be in OFF status.

4.1.6 Pipe Component(2)



“Color Setting”

On “Color Setting” tab page, you can set up the color of the Pipe component as below. After the setting is completed, please click “Apply” button.



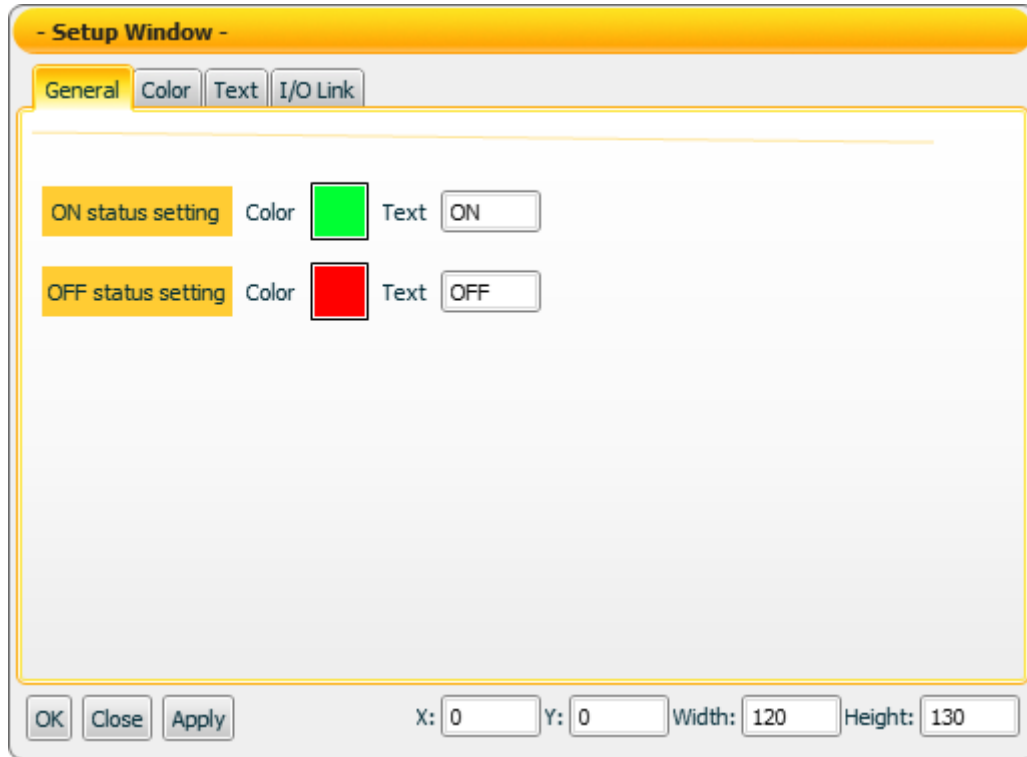
Background	Select the color of the Background.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

4.1.7 Valve Component



“General Setting”

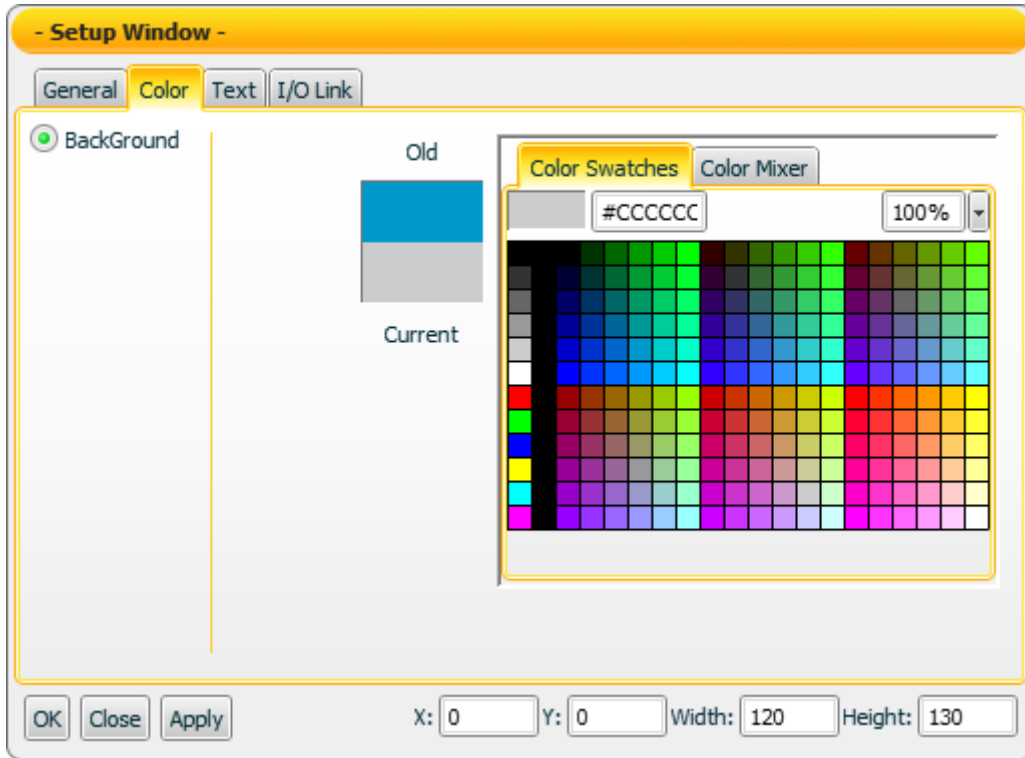
On “General Setting” tab page, you can set up the properties of the Valve component as below. After the setting is completed, please click “Apply” button.



ON Status Setting	<p>Color : Set up the color to be shown when the component is in ON status.</p> <p>Text : Set up the text to be shown when the component is in ON status.</p>
OFF Status Setting	<p>Color : Set up the color to be shown when the component is in OFF status.</p> <p>Text : Set up the text to be shown when the component is in OFF status.</p>

“Color Setting”

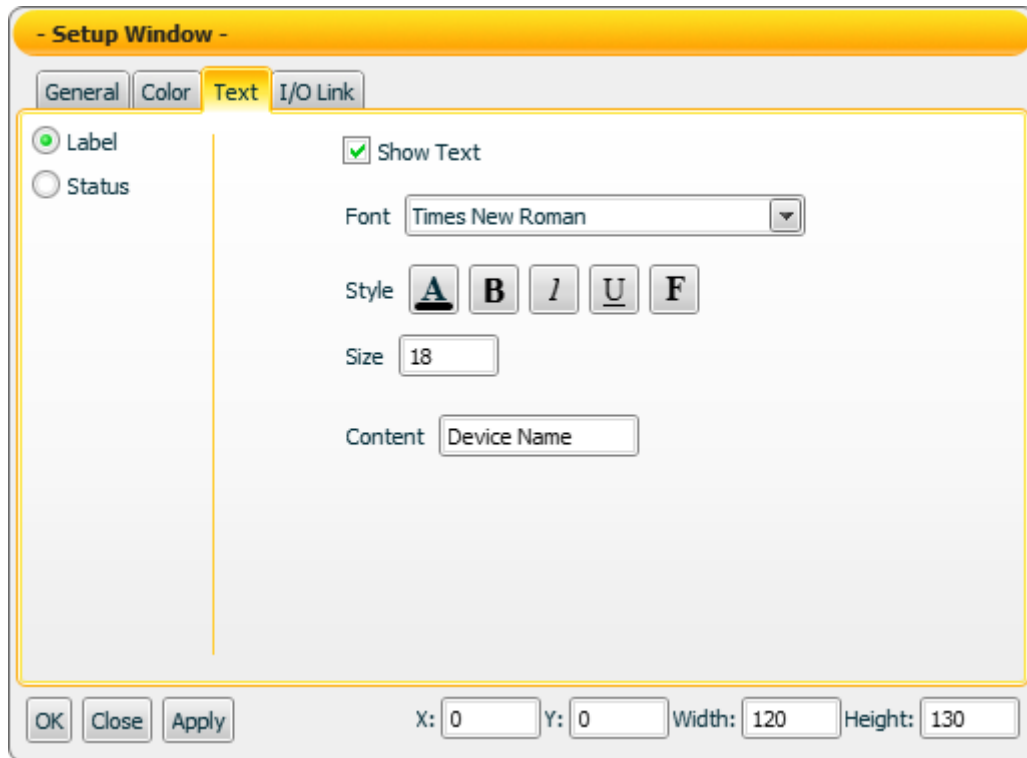
On “Color Setting” tab page, you can set up the color of the Valve component as below. After the setting is completed, please click “Apply” button.



Background	Select the color of the Background.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

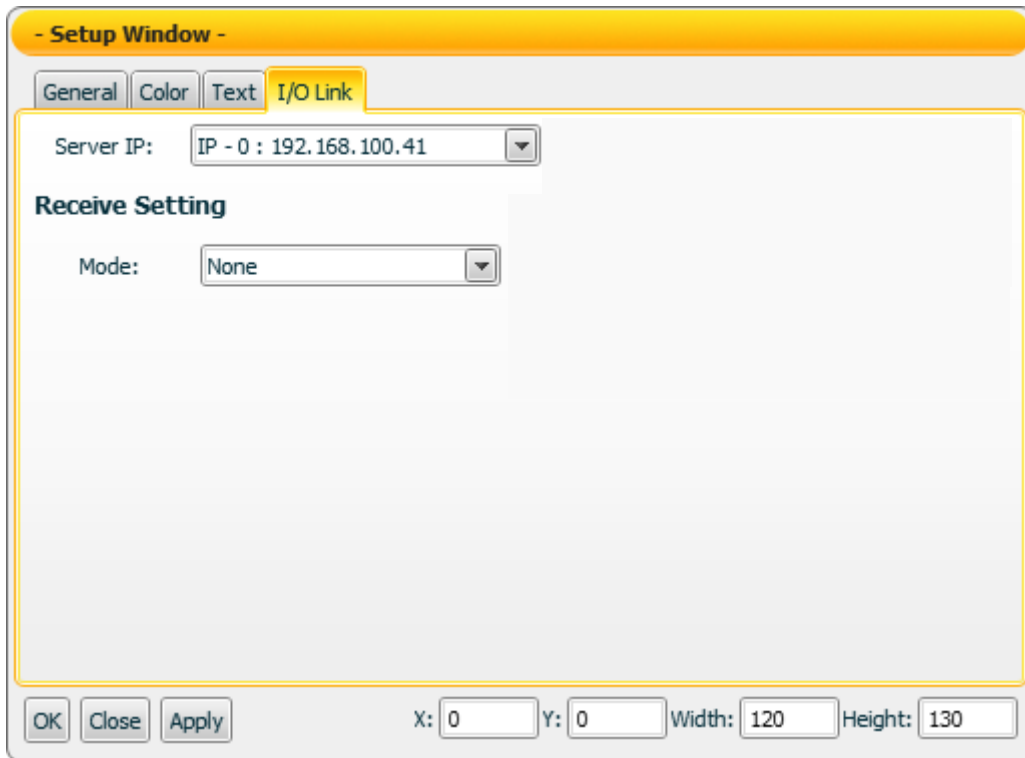
On “Text Setting” tab page, you can set up the text properties of the Valve component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text for the component ◦
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Valve component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data receiving description

The data the component receives will be treated as a Boolean value. If the value the component receives is greater than (or equal to) 1, it will be in ON status; otherwise it will be in OFF status.

“**Example 1**”: If the component receives a value 1, the Motor will be in ON status.

“**Example 2**”: If the component receives a value 0, the Motor will be in OFF status.

4.2 Switch Component



The Switch component is a status switchable component. It can be used to switch the TRUE/FALSE、YES/NO、ON/OFF status in HMI project. There are two operation modes for the Switch component: ON/OFF and PUSH. When the operation mode is in ON/OFF mode, you can click on the Switch component to change its status. If the component is in OFF status now, you can click on it to change to ON status, click on the component again, the component will return to OFF status. If the operation mode is set as PUSH mode, you can click on and hold down the button of the Switch component to change its status. If you hold down the button, it will remain in the new status until you release the button to return to its original status.

This component can be used to control physical devices or other UI components for DO operations. The properties setting page of the Switch component is shown as below.

“General Setting”

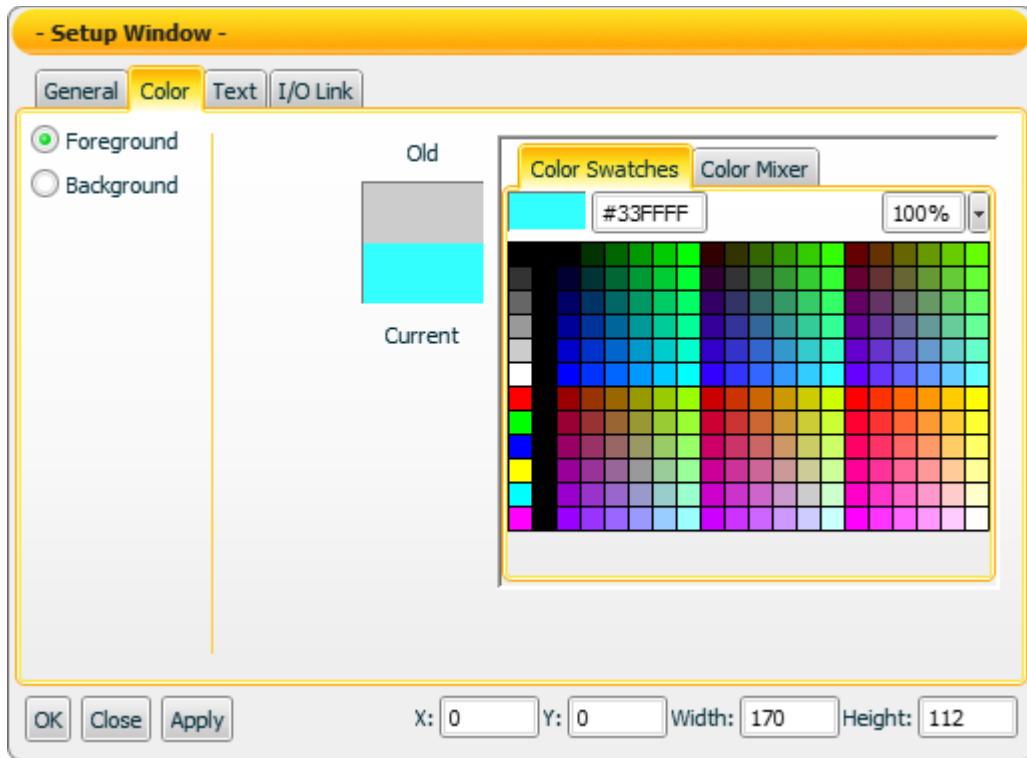
On the “General Setting” tab page, you can set up the properties of the Switch component as below. After the setting is completed, please click “Apply” button.

Number	This component features Group function. Assign a number in the field, a group of the component items will be created, they can be used to display the Binary format value the component sends.
Show Index	If the total amount (Number) is 2 (or more), click the check

	box will show the index number of the component. The index number starts from 0.
Arrangement	If the total amount (Number) is 2(or more), you can set up the arrangement of the components to be “Horizontal “or “Vertical”.
Direction	If the total amount (Number) is 2(or more), you can set up the arrangement direction of the components. If the arrangement of the component is “Horizontal”, then the direction can be arranged as “Left to Right” or “Right to Left.” If the arrangement is “Vertical”, then the direction can be arranged as “Up to Down” or “Down to Up”.
Distance	If the total amount (Number) is 2(or more), you can set up the distance between the components. The unit is Pixel.
Mode	There are two operation modes” ON/OFF and PUSH. Please refer to ” Data Sending description” for the detailed information.
”ON” text	Set up the text to be shown when the component is in ON status.
”ON” Value	If the total amount (Number) is 1, you can assign the value, and the value will be sent when the component is in ON status. Note : If the total amount (Number) is 2(or more), you can’t set up the value. Please refer to “Data Sending description“ for the detailed information.
”OFF” text	Set up the text to be shown when the component is in OFF status.
”OFF” Value	If the total amount (Number) is 1, you can assign the value, and the value will be sent when the component is in OFF status. Note : If the total amount (Number) is 2(or more), you can’t set up the value. Please refer to “Data Sending description“ for the detailed information.

“Color Setting”

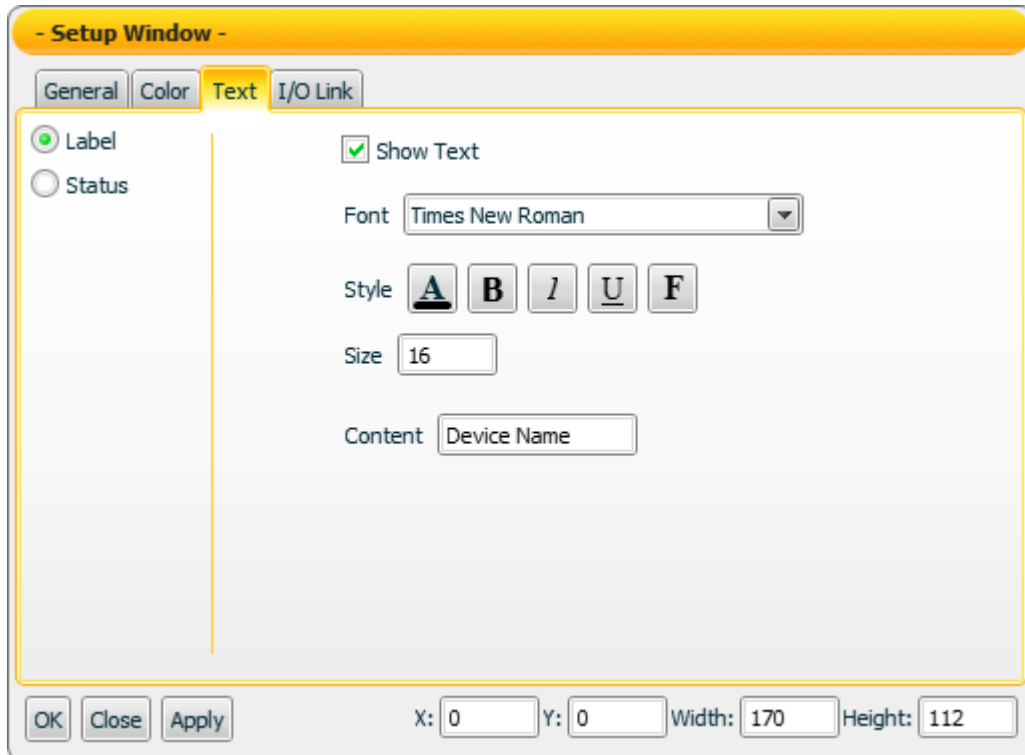
On the “Color Setting” tab page, you can set up the color of the Switch component as below. After the setting is completed, please click “Apply” button.








Foreground	Select the color of the Foreground.
Background	Select the color of the Background.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

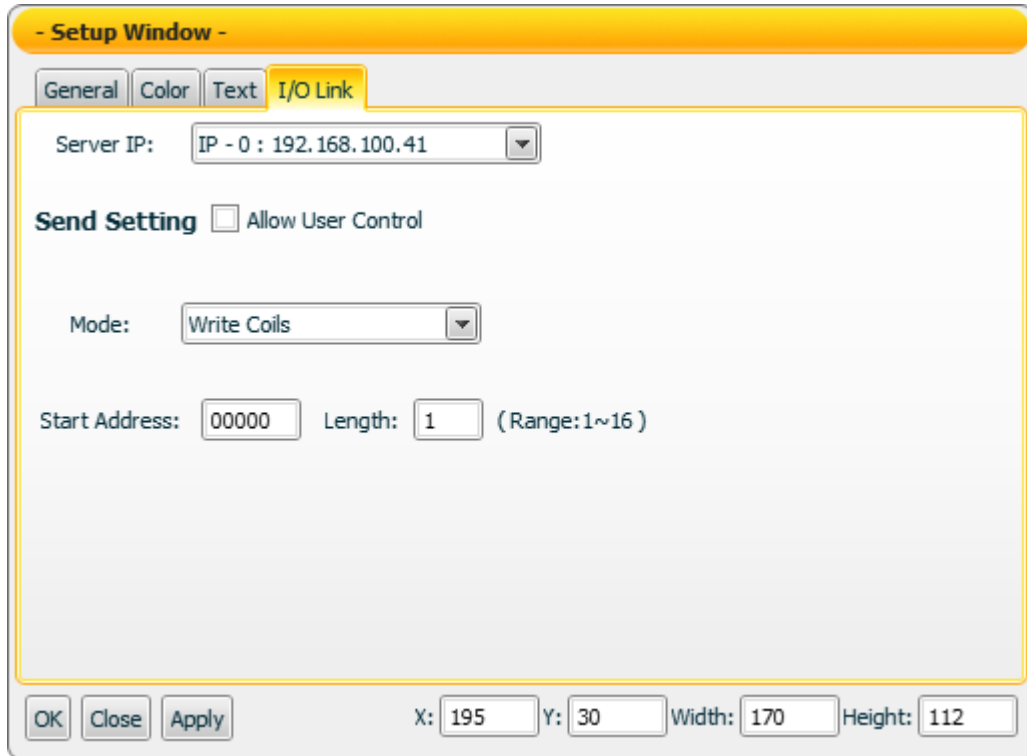
On the “Text Setting” tab page, you can set up the text properties of the Switch component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text for the component ◦
Status	Set up the properties for ON or OFF Status text of the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	 : Select the color for the text  : Set the text in bold type  : Add the underline for the text  : Set the text in italic type  : Set the text with aureole effect
Size	Assign the size for the text.
Content	Input the text content for Label.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Switch component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will send the I/O data to.
Allow User Control	If this function item is not enabled, only administrator is allowed to control this component: if it is enabled, both administrator and general user are allowed to control this component.
Send Setting	Input the I/O data sending parameters of Modbus (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data sending description

In the General Setting section, if the total amount “Number” is assigned to be 1, the data the component receives must be exactly the same as the ”ON” Value or the ”OFF” Value pre-set in “General Setting” for the component to switch its status. If the data the component receives is not exactly the same as the ”ON” Value or ”OFF” Value setting, the data will be ignored and the status will not be modified.

If the total amount “Number” is assigned to be 2 (or more), then the data the component receives will be treated as a binary value. If the value the component receives is greater than the maximum binary value that the component is able to process, the value will be treated as the maximum binary value. All Switches will be in ON status. If the value the component receives is smaller than the minimum binary value that the component is able to process, the value will be treated as the minimum binary value. All Switches will be in OFF status. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

“Example 1”: If the total amount “Number” is assigned to be 4, then there are 4 Switches in the component. The index numbers for the Switches will be Index0, Index1, Index2 and Index3. If the component receives a value 3, then the Index0 Switch and the Index1 Switch will be in ON status, the Index2 Switch and the Index3 Switch will be in OFF status.

“Example 2”: If the total amount “Number” is assigned to be 4, then there are 4 Switches in the component. With the 4 Switches, the data range the Switch component can process is from 0 to 15. Therefore if the data the component receives is greater than 15; the value will be treated as 15. If the data the component receives is smaller than 0, the value will be treated as 0.

Mode description

“ ON/OFF “Mode

In the General Setting section, if the total amount “Number” is assigned to be 1, then you can click on the Switch component to change its status, and the component will send out the ”ON” Value or ”OFF” Value based on its current status. The component will stay in current status until you click the component again, then the component will return to its original status and will send out the ”ON” Value or ”OFF” Value corresponding to its status.

If the total amount “Number” is assigned to be 2 (or more), then you can click on the Switch component to change its status, and the component will send out the binary value of the component for its corresponding status. The status of the component will stay in current status until you click the component again, and then the component will change its status and send out the new binary value of the component.

For example, if the total amount “Number” is assigned to be 4, then there will be 4 Switches in the component. The index numbers for the Switches will be Index0, Index1, Index2 and Index3. If you click the Index1 Switch and Index3 Switch to be ON status, then the binary format value of the component will be “1010”, and the decimal value of “1010” is 10. Therefore the value “10” will be sent out.

“ PUSH “Mode

In the General Setting section, if the total amount “Number” is assigned to be 1, then you can click on the Switch component to change its status. and the component will send out the ”ON” Value or ”OFF” Value based on its new status. If you hold down the mouse, the new status will stay in current status until you release the mouse, the component will be returned to its original status automatically, and will send out the corresponding”ON” Value or”OFF” Value.

If the total amount “Number” is assigned to be 2 (or more), then you can click on the Switch component to change its status, and the component will send out the binary value corresponding to its new status. If you hold down the mouse, the new status will stay in current status until you release the mouse, the component will be returned to its original status automatically, and send out the corresponding binary value.

For example, if the total amount “Number” is assigned to be 4, then there will be 4 Switches in the component. The index numbers for the Switches will be Index0, Index1, Index2 and Index3. If you click the Index3 Switch to ON status, and hold down the mouse, then the binary format value of the component will be “1000”, and the decimal value of “1000” is 8. Therefore the value “8” will be sent out. If you release the mouse, then the binary format value of the component will be “0000”, and the decimal value of “0000” is 0. Therefore the value “0” will be sent out.

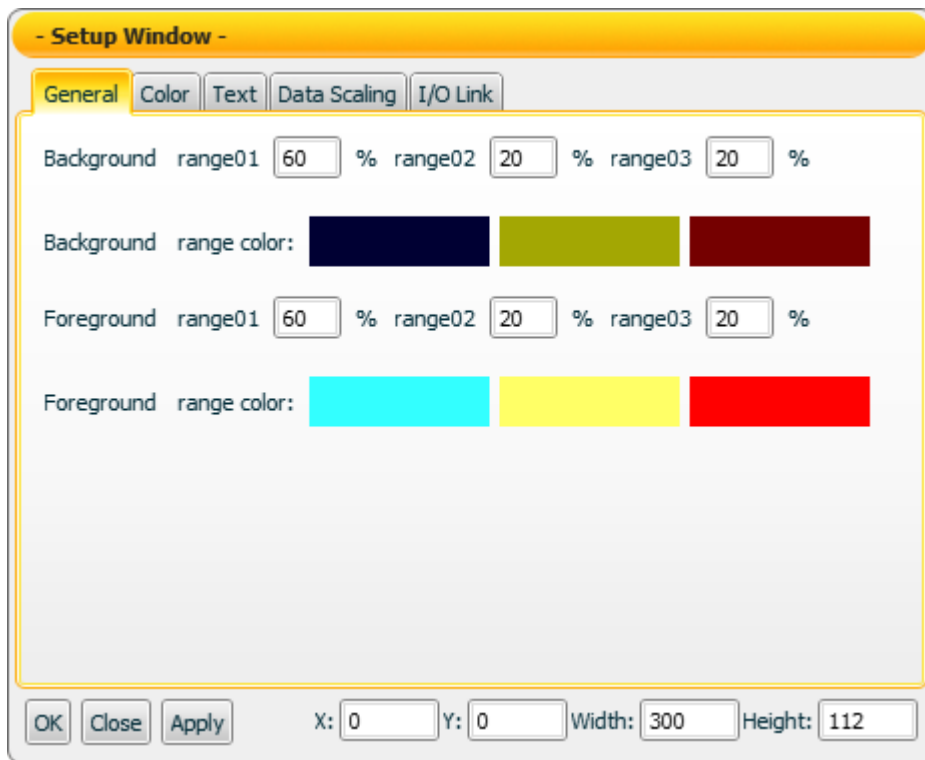
4.3 Gauge Component



The Gauge component is used to receive the AI (Analog Input) data from device. It is suitable for most SCADA applications. In the component property page, there are properties such as Maximum value, Minimum value, Color and I/O data link...etc for user to set up. After complete the setting of the component properties, the component will display the value it receives. This component is suitable for the display of AI (analog input) data. The properties setting page of the Gauge component is shown as below.

“General Setting”

On the “General Setting” tab page, you can set up the properties of the Gauge component as below. After the setting is completed, please click “Apply” button.

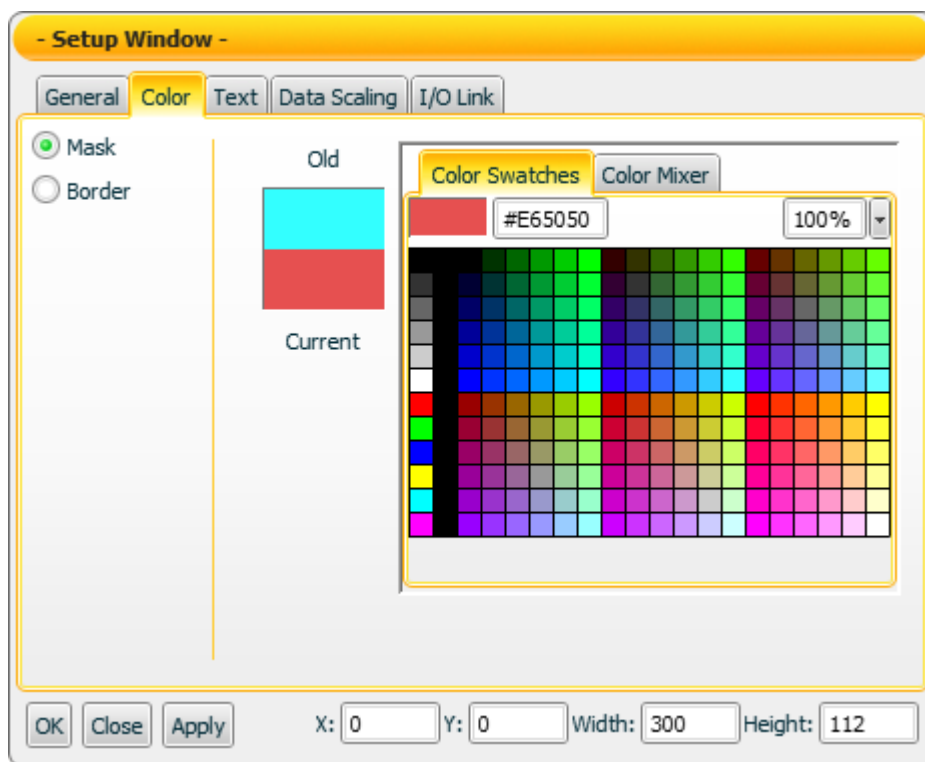


Background range 01	Assign the length for the percentage of “Background range 01” area.
Background range 02	Assign the length for the percentage of “Background range 02” area.
Background range 03	Assign the length for the percentage of “Background range 03” area.
Background range color	Select the color for the “Background range 01”, “Background range 02” and “Background range 03” area.
Foreground range 01	Assign the length for the percentage of “Foreground range 01” area.

Foreground range 02	Assign the length for the percentage of “Foreground range 02” area.
Foreground range 03	Assign the length for the percentage of “Foreground range 03” area.
Foreground range color	Select the color for the “Foreground range 01”, “Foreground range 02” and “Foreground range 03” area.

“Color Setting”

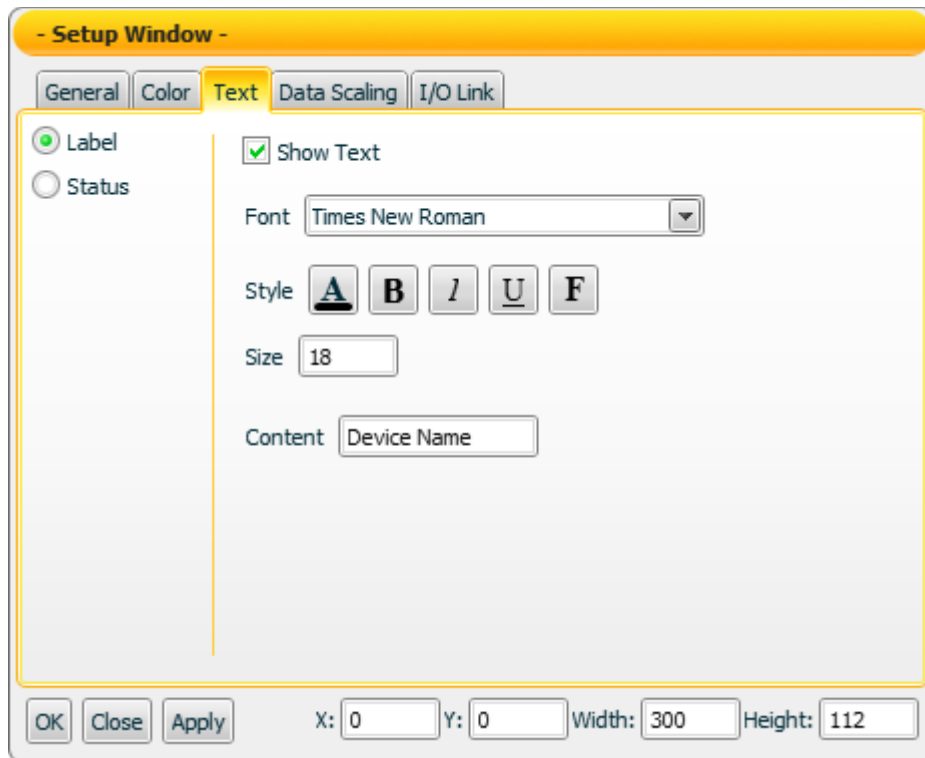
On the “Color Setting” tab page, you can set up the color of the Gauge component as below. After the setting is completed, please click “Apply” button.



Mask	Select the color of the Mask.
Border	Select the color of the Border.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

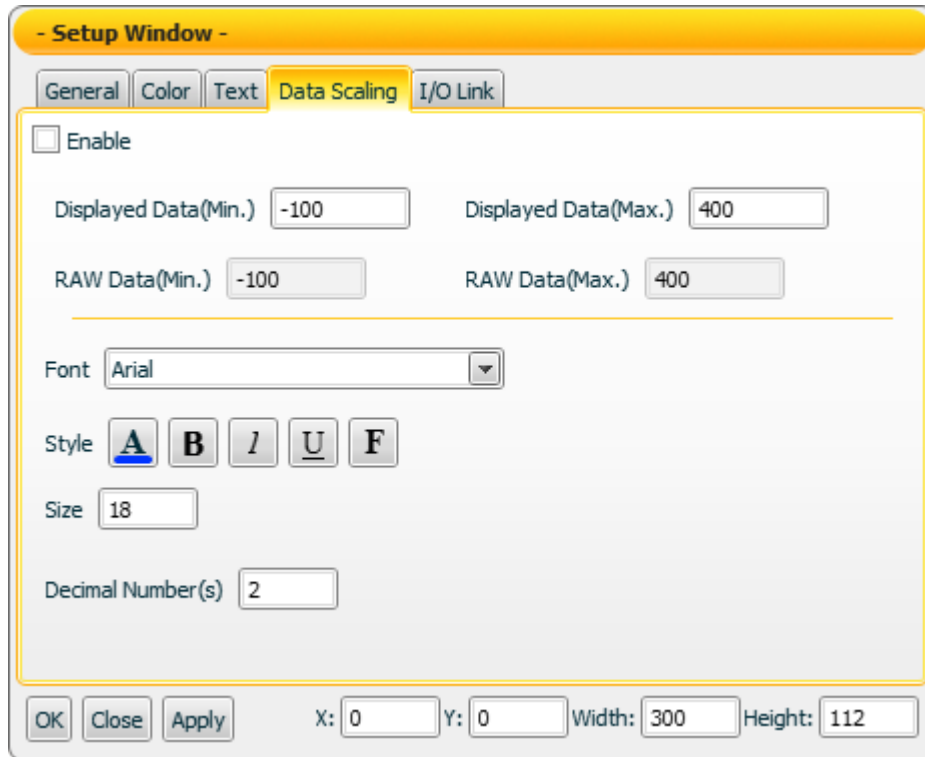
On the “Text Setting” tab page, you can set up the text properties of the Gauge component as below. After the setting is completed, please click “Apply” button.








Label	Set up the Label text for the component.
Status	Set up the properties for Status text of the component. Note: The setting in this section is only for the Color/Font properties setting of the text that the component receives through the I/O Link section setting. You can't input the Status text in the text field.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“Data Scaling Setting”

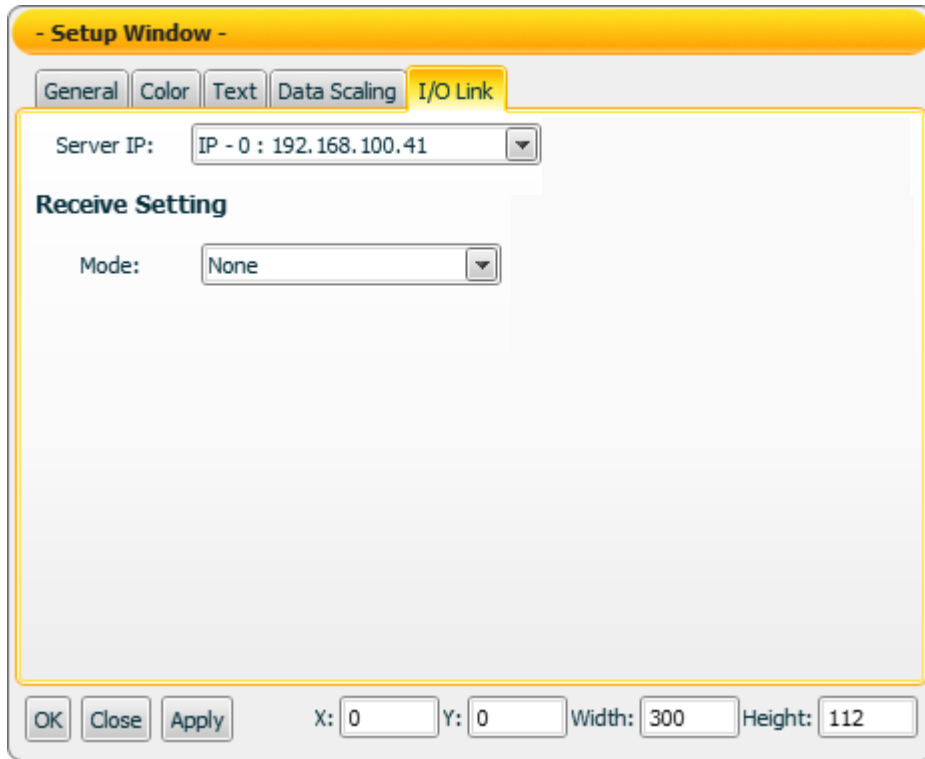
On the “Data Scaling Setting” tab page, you can set up the data scaling properties for the Gauge component as below. After the setting is completed, please click “Apply” button.



Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value the component can display.
Displayed Data(Max.)	The maximum value the component can display.
RAW Data(Min.)	The minimum raw value the component can receive.
RAW Data(Max.)	The maximum raw value the component can receive.
Font	The Font setting for the text.
Style	<p> : Select the color for the text</p> <p> : Set the text in bold type</p> <p> : Add the underline for the text</p> <p> : Set the text in italic type</p> <p> : Set the text with aureole effect</p>
Size	Assign the size for the text.
Decimal Number(s)	Set up the number of the decimal place for the displayed value.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Gauge component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data receiving description

This component only receives data that is number, and shows the data in string format. The initial string is N/A. If the data the component receives is smaller than the value of “Displayed Data(Min.)”, then it will display the value of “Displayed Data(Min.)”. If the data the component receives is greater than the value of “Displayed Data(Max.)”, then it will display the the value of “Displayed Data(Max.)”. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

For example, If the value of “Displayed Data(Max.)” is 400, and the value of “Displayed Data(Min.)” is -150 :

- If the data the component receives is 410, the component will display 400.

- If the data the component receives is 350, the component will display 350.
- If the data the component receives is -200, the component will display -150.

You can click the “Enable” check box on the “Data Scaling Setting” tab page to enable the data scaling function. If the data the component receives is greater than the value of “RAW Data(Max.)”, then the data the component receives will be the value of “RAW Data(Max.)”. If the data the component receives is smaller than the value of “RAW Data(Min.)”, then the data the component receives will be the value of “RAW Data(Min.)”.

For example, if the measured raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, then you can complete the following setting.

- The value of Displayed Data(Max.) is 100.
- The value of Displayed Data(Min.) is 0.
- The value of RAW Data(Max.) is 65535.
- The value of RAW Data(Min.) is 0

Now the component will display the scaling value from the raw data of the physical device based on your setting. For example:

- If the data the component receives is 65600, the component will display 100.
- If the data the component receives is 65535, the component will display 100.
- If the data the component receives is 32767.5, the component will display 50.
- If the data the component receives is 0, the component will display 0.
- If the data the component receives is -10, the component will display 0.

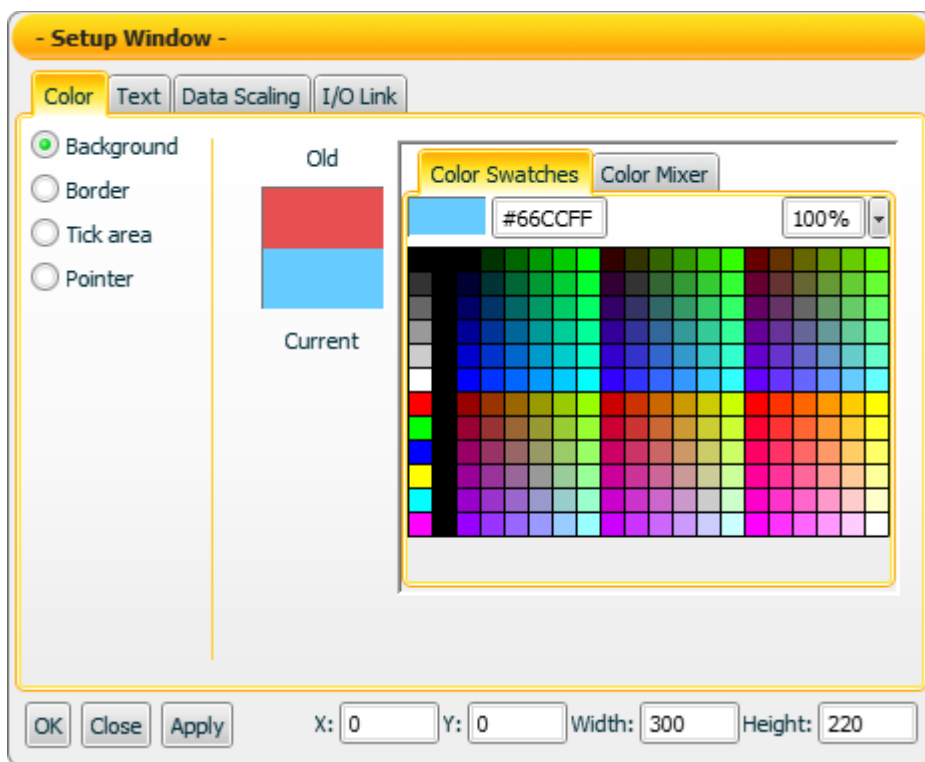
4.4 Meter component



The Meter component is used to receive the AI (Analog Input) data from device. It is suitable for most SCADA applications. In the component property page, there are properties such as Maximum value, Minimum value, Color and I/O data link...etc for user to set up. After complete the setting of the component properties, the component will show the value it receives. This component is suitable for AI (Analog Input) data display. The properties setting page of the Meter component is shown as below.

“Color Setting”

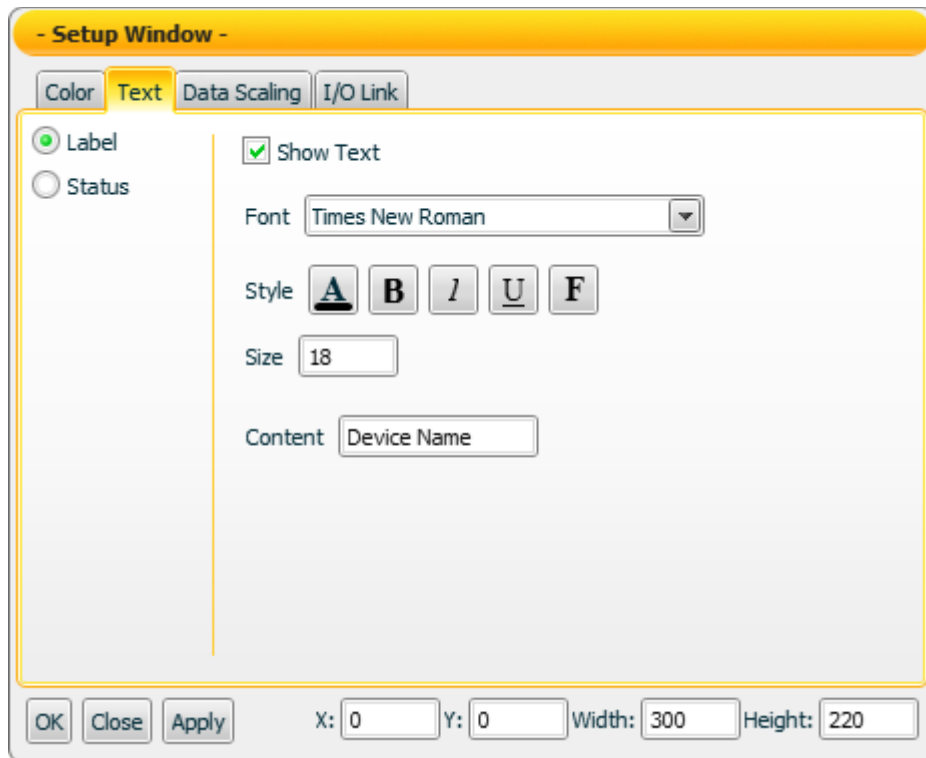
On “Color Setting” tab page, you can set up the color of the Meter component as below. After the setting is completed, please click “Apply” button.



Background	Select the color of the Background.
Border	Select the color of the Border.
Tick area	Select the color of the Tick area.
Pointer	Select the color of the Pointer.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

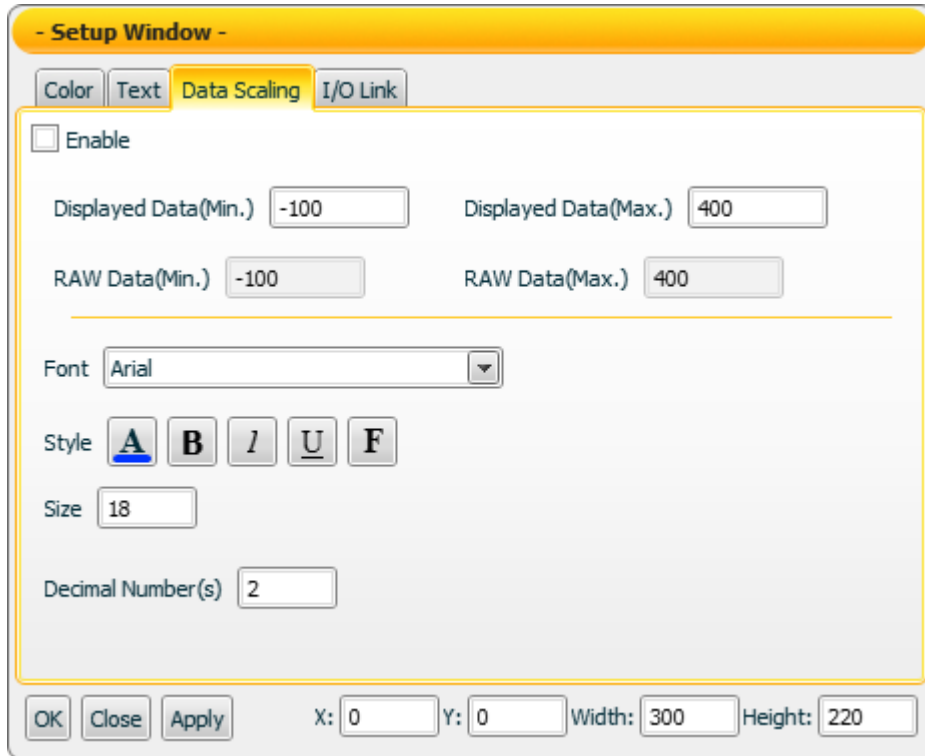
On the “Text Setting” tab page, you can set up the text properties of the Meter component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text properties of the component.
Status	Set up the properties for Status text of the component. Note: The setting in this section is only for the Color/Font properties setting of the text that the component receives through the I/O Link section setting. You can't input the Status text in the text field.
Show text	Enable the check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“Data Scaling Setting”

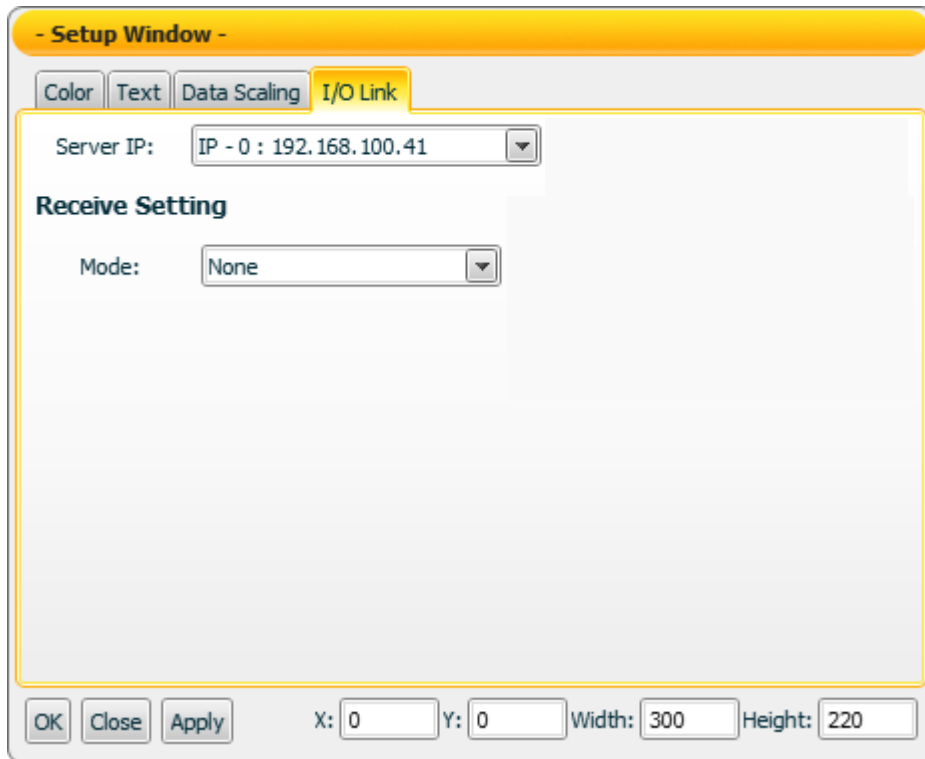
On the “Data Scaling Setting” tab page, you can set up the data scaling properties for the Meter component as below. After the setting is completed, please click “Apply” button.



Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value the component can display.
Displayed Data(Max.)	The maximum value the component can display.
RAW Data(Min.)	The minimum raw value the component can receive.
RAW Data(Max.)	The maximum raw value the component can receive.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Decimal Number(s)	Set up the number of the decimal place for the displayed value.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Meter component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data receiving description

This component only receives data that is number, and shows the data in string format. The initial string is N/A. If the data the component receives is smaller than the value of “Displayed Data(Min.)”, then it will display the value of “Displayed Data(Min.)”. If the data the component receives is greater than the value of “Displayed Data(Max.)”, then it will display the value of “Displayed Data(Max.)”. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

For example, If the value of “Displayed Data(Max.)” is 400, and the value of “Displayed Data(Min.)” is -150 :

1. If the data the component receives is 410, the component will display 400.
2. If the data the component receives is 350, the component will display 350.
3. If the data the component receives is -200, the component will display -150.

You can click the “Enable” check box on the “Data Scaling Setting” tab page to enable the data scaling function. If the data the component receives is greater than the value of “RAW Data(Max.)”, then the data the component receives will be the value of “RAW Data(Max.)”. If the data the component receives is smaller than the value of “RAW Data(Min.)”, then the data the component receives will be the value of “RAW Data(Min.)”.

For example, if the measured raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, then you can complete the following setting.

- The value of Displayed Data(Max.) is 100.
- The value of Displayed Data(Min.) is 0.
- The value of RAW Data(Max.) is 65535.
- The value of RAW Data(Min.) is 0

Now the component will display the scaling value from the raw data of the physical device based on your setting. Following is some examples.

1. If the data the component receives is 65600, the component will display 100.
2. If the data the component receives is 65535, the component will display 100.
3. If the data the component receives is 32767.5, the component will display 50.
4. If the data the component receives is 0, the component will display 0.
5. If the data the component receives is -10, the component will display 0.

4.5 LED Component

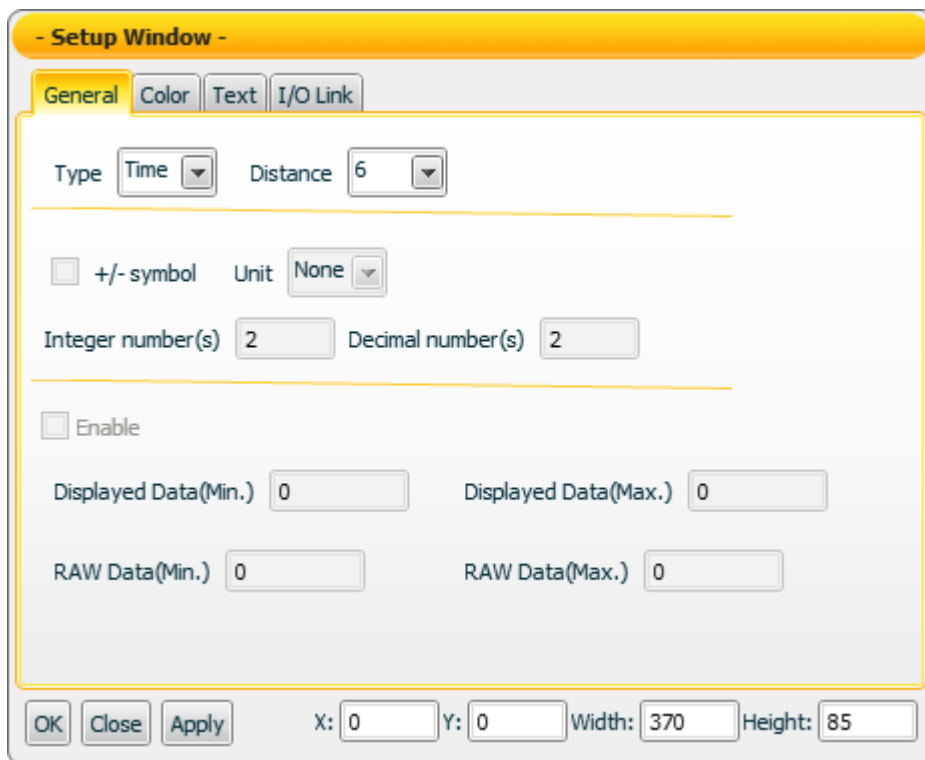


There are three display modes for LED component as Date (Year/Month/Day), Time (Hour: Minute: Second) and Text.

In the Date and Time mode, the component will display the local Date and Time information retrieved from the machine that the Flash HMI tools is launched. In the Text mode, the component will display the value it receives. The properties setting page of the LED component is shown as below.

“General Setting”

On the “General Setting” tab page, you can set up the properties of the LED component as below. After the setting is completed, please click “Apply” button.

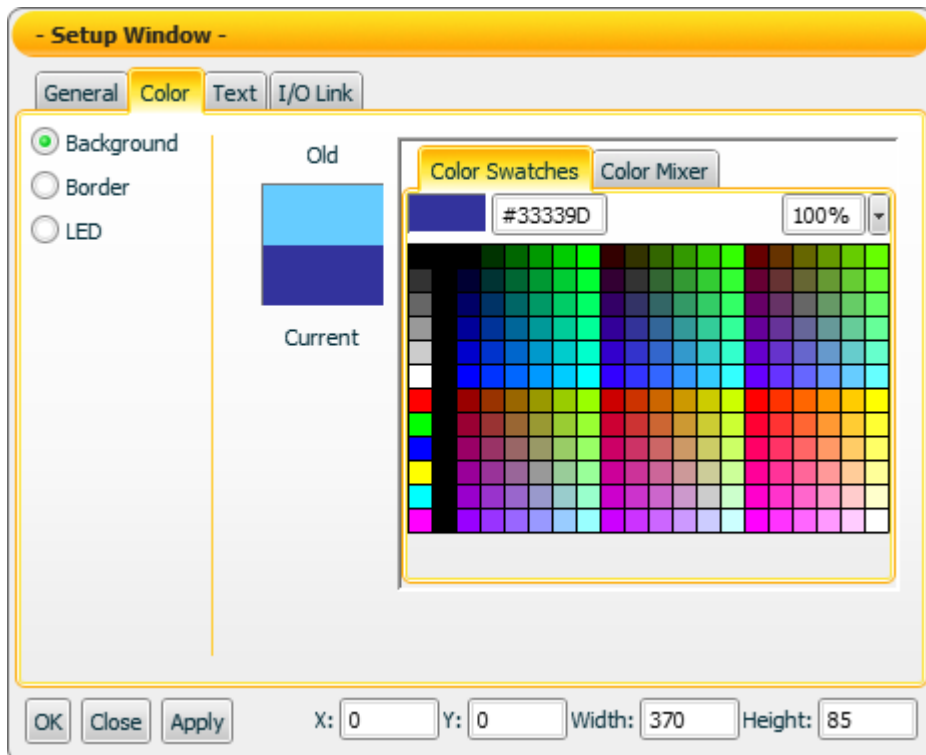


Type	There are three display modes for selection as Date (Year/Month/Day), Time (Hour: Minute: Second) and Text.
Distance	The distance between the number, unit and symbol. The unit is pixel.
+/- symbol	If you select Text mode in the “Type” field, then you can enable this item for the display of “+” or “-“ symbol.
Unit	If you select the Text mode in the “Type” field, then you can select C (Cullen) ,K (Kelvin) ,V (Voltage) ,H (Henry) ,A (Ampere) or % as the unit for the value

	display. You can also select “None” to disable the unit display.
Integer number(s)	If you select the Text mode in the “Type” field, then you can assign the number of integer place to be displayed for the value.
Decimal number(s)	If you select the Text mode in the “Type” field, then you can assign the number of decimal place to be displayed for the value.
Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value the component can display.
Displayed Data(Max.)	The maximum value the component can display.
RAW Data(Min.)	The minimum raw value the component can receive.
RAW Data(Max.)	The maximum raw value the component can receive.

“Color Setting”

On the “Color Setting” tab page, you can set up the color of the LED component as below. After the setting is completed, please click “Apply” button.

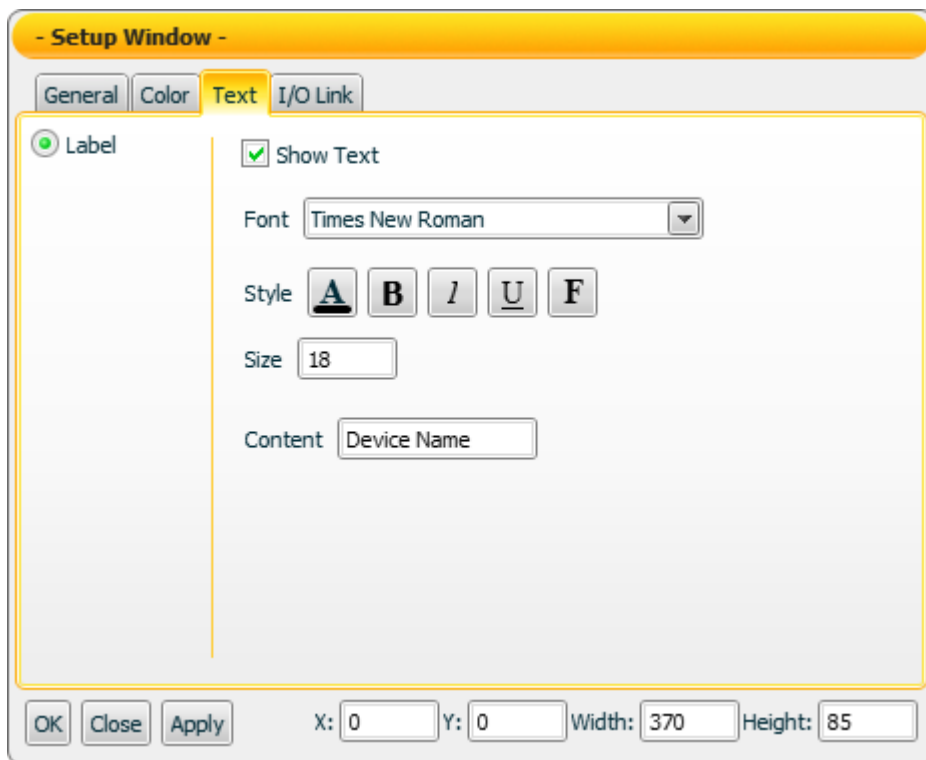


Background	Select the color of the Background.
Border	Select the color of the Border.
LED	Select the color of the LED.
Old	The color you select last time.

Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

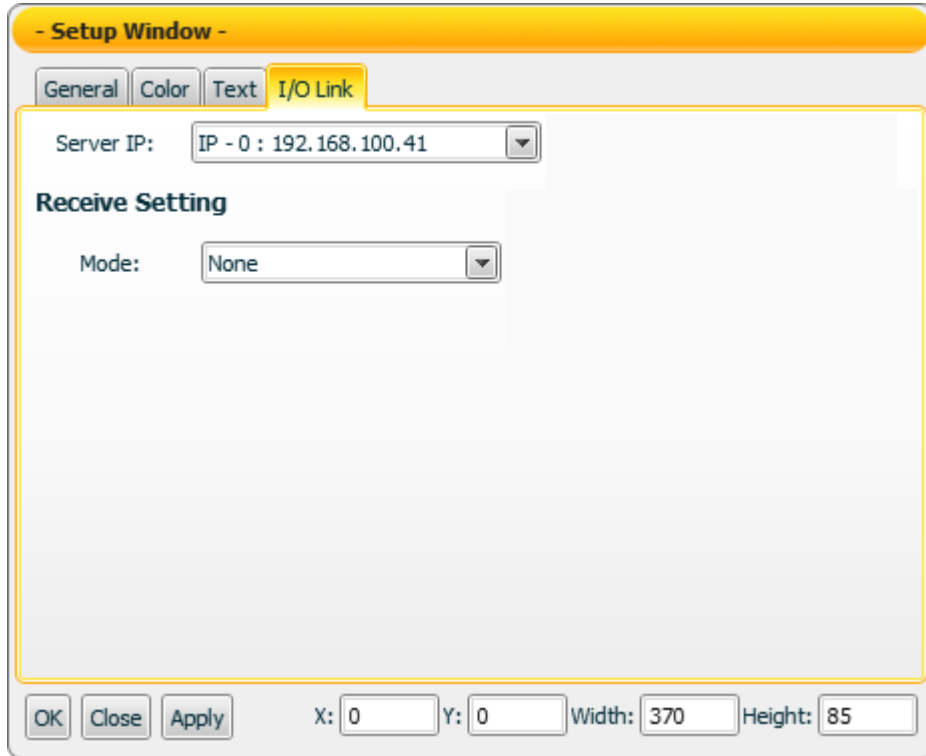
On the “Text Setting” tab page, you can set up the text properties of the LED component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text properties of the component.
Show text	Enable the check box to display the Label text.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the LED component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data receiving description

If you select Text mode in the “Type” field, the data the component receives will be shown. If the data the component receives is smaller than the minimum value that the component can accept, it will display the minimum value that the component can accept. If the data the component receives is greater than the maximum value that the component can accept, then it will display the maximum value that the component can accept. If the data the component receives is not a number, then the data will be ignored, and the status will not be modified.

The definition of the minimum and maximum value the component can accept:

- If you click the check box of “+/- symbol” to enable the item, then the maximum value the component can accept will be “+Integer place number.Decimal place number” and the minimum value the component can

accept will be “-Integer place number.Decimal place number”.

Therefore, if the Integer place number is 3 and Decimal place number is 2, then the maximum value the component can accept will be +999.99, and the minimum value the component can accept will be -999.99.

- If you disable the “+/- symbol” item, then the maximum value the component can accept will be “Integer place number.Decimal place number” and the minimum value which the component can accept will be 0.
Therefore, if the Integer place number is 3 and Decimal place number is 2, then the maximum value the component can accept will be 999.99, and the minimum value the component can accept will be 0.

You can click the “Enable” check box on the “General Setting” tab page to enable the data scaling function. If the data the component receives is greater than the value of “RAW Data(Max.)”, then the data the component receives will be the value of “RAW Data(Max.)”. If the data the component receives is smaller than the value of “RAW Data(Min.)”, then the data the component receives will be the value of “RAW Data(Min.)”.

For example, if the measured raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, then you can complete the following setting.

- The value of Displayed Data(Max.) is 100.
- The value of Displayed Data(Min.) is 0.
- The value of RAW Data(Max.) is 65535.
- The value of RAW Data(Min.) is 0

Now the component will display the scaling value from the raw data of the physical device based on your setting. For example.

1. If the data the component receives is 65600, the component will display 100.
2. If the data the component receives is 65535, the component will display 100.
3. If the data the component receives is 32767.5, the component will display 50.
4. If the data the component receives is 0, the component will display 0.
5. If the data the component receives is -10, the component will display 0.

Note : If the value of Displayed Data(Max.) exceeds the “+Integer number.Decimal number” or “Integer number. Decimal number” , then the actual Displayed Data(Max.) can’ t be displayed.

Example: If the Integer number is 2, then the maximum value the component can accept will be 99. Even you set the Displayed Data(Max.) as 100, the maximum value the component can show will be 99 instead of 100.



If you select Date and Time mode on the “Type” field of the “General Setting” tab page, then the component will display the Date and Time information retrieved from

the machine that the Flash HMI tools is launched and show the information.

4.6 Text component



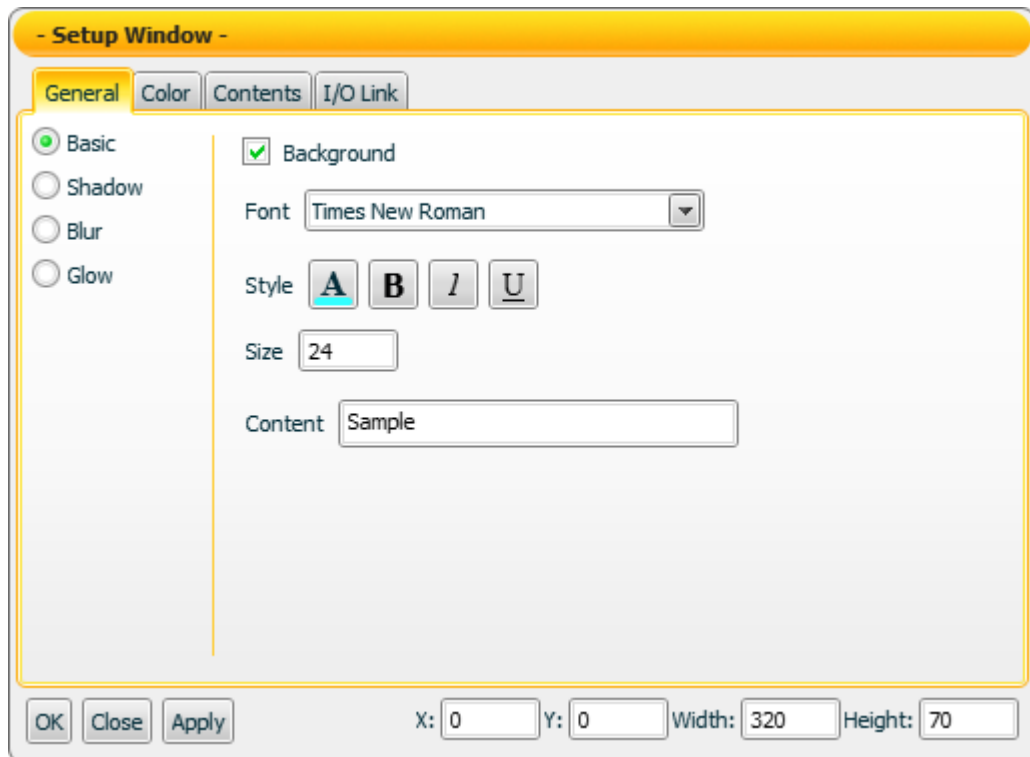
The Text component is used to receive and display the string or number data. You can assign different visual effect for the content of the Text component. There are two types of Text component as below. The properties setting page of the Text component is also shown as below.





	<p>Static text</p>	<p>Static text component include the filter effect. It allows to modify the shadow, blur and glow effect for the component. When the component receives the new data, the new content will be updated and displayed immediately.</p>
	<p>Scrolling text</p>	<p>Scrolling text component features the filter effect as well. It allows to modify the shadow, blur and glow effect for the component. Scrolling text features advanced functions such as: keep the old message, adjust the component moving speed, and the component moving direction. These properties allow to flexibly display the content of the component and is able to give the users better visual effect.</p>

4.6.1 Static Text component

“General Setting”->“Basic Setting”

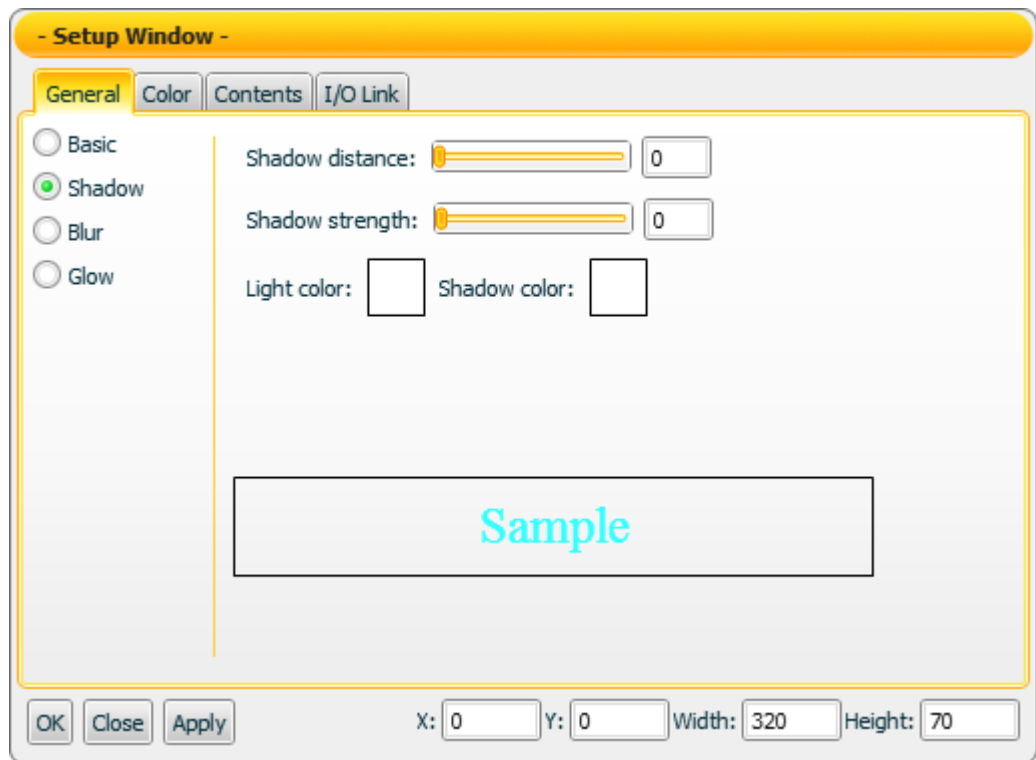
On the “Basic Setting” of the “General Setting” tab page, you can set up the properties of the Static Text component as below. After the setting is completed, please click “Apply” button.



Background	The default setting is to enable the display of the Background of the component. If you disable the function. The component will close the Background display function, and only display the content of the component.
Font	The Font setting for the text.
Style	 : Select the color for the text  : Set the text in bold type  : Add the underline for the text  : Set the text in italic type
Size	Assign the size for the text.
Content	Input the text content.

“General Setting”->“Shadow Setting”

In the “Shadow Setting” of the “General Setting” tab, you can set up the shadow properties of the Static Text component as below. After the setting is completed, please click “Apply” button.

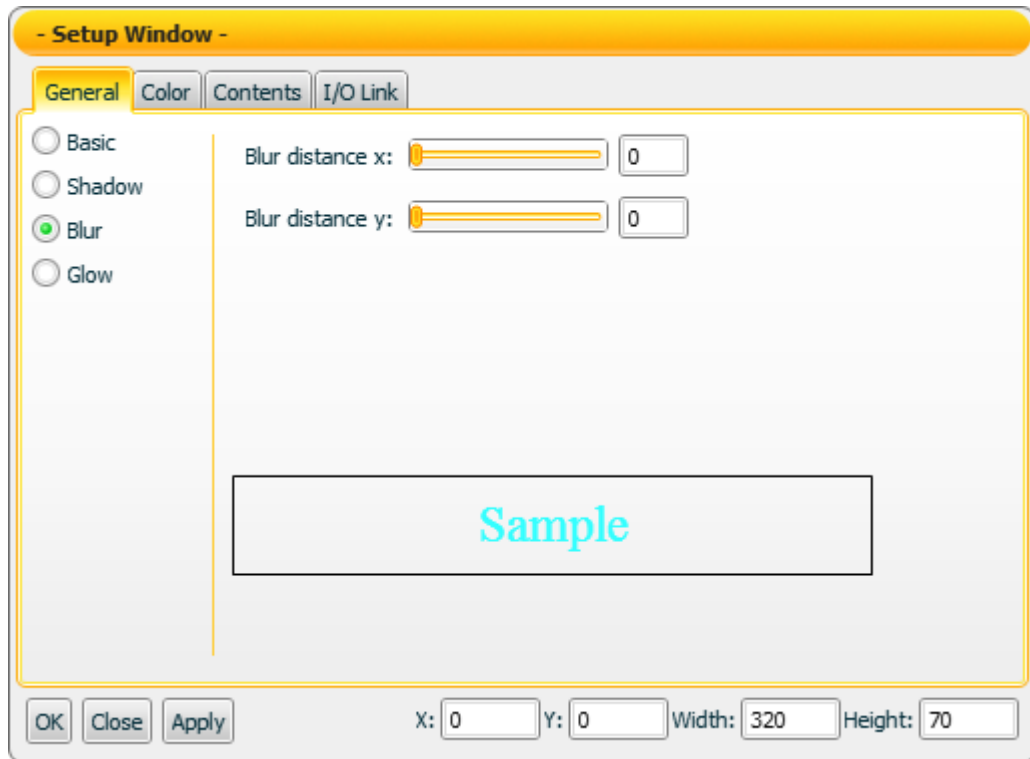


Shadow distance	Assign the distance between the shadow (or glow) effect text and the original text. The unit is Pixel.
Shadow strength	Assign the strength of the shadow (or glow) effect text.
Light color	Select the color of the light source.
Shadow color	Select the color of the shadow.

Note : After completing the color setting, please make sure to assign the Shadow distance and Shadow strength in this section as well. If the strength or distance is equal to 0, then the shadow effect will not take effect.

“General Setting”->“Blur Setting”

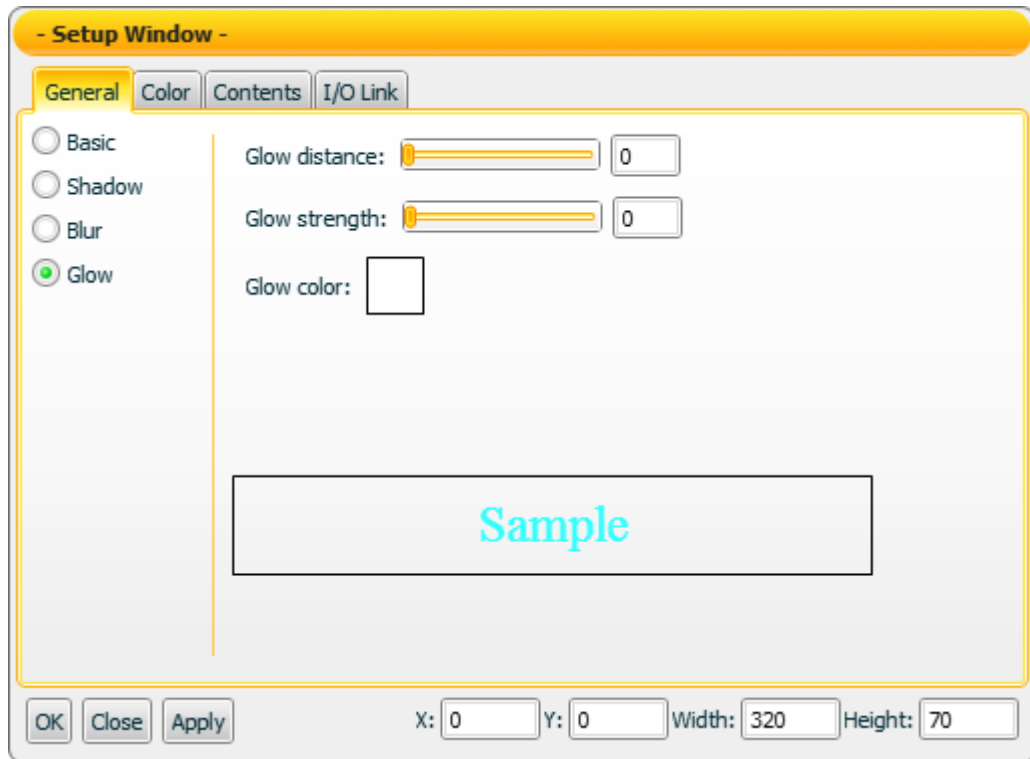
On the “Blur Setting” of the “General Setting” tab page, you can set up the blur properties of the Static Text component as below. After the setting is completed, please click “Apply” button.



Blur distance x	Assign the width of the blur effect in horizontal direction. The unit is Pixel.
Blur distance y	Assign the height of the blur effect in vertical direction. The unit is Pixel.

“General Setting”->“Glow Setting”

On the “Glow Setting” of the “General Setting” tab page, you can set up the glow properties of the Static Text component as below. After the setting is completed, please click “Apply” button.

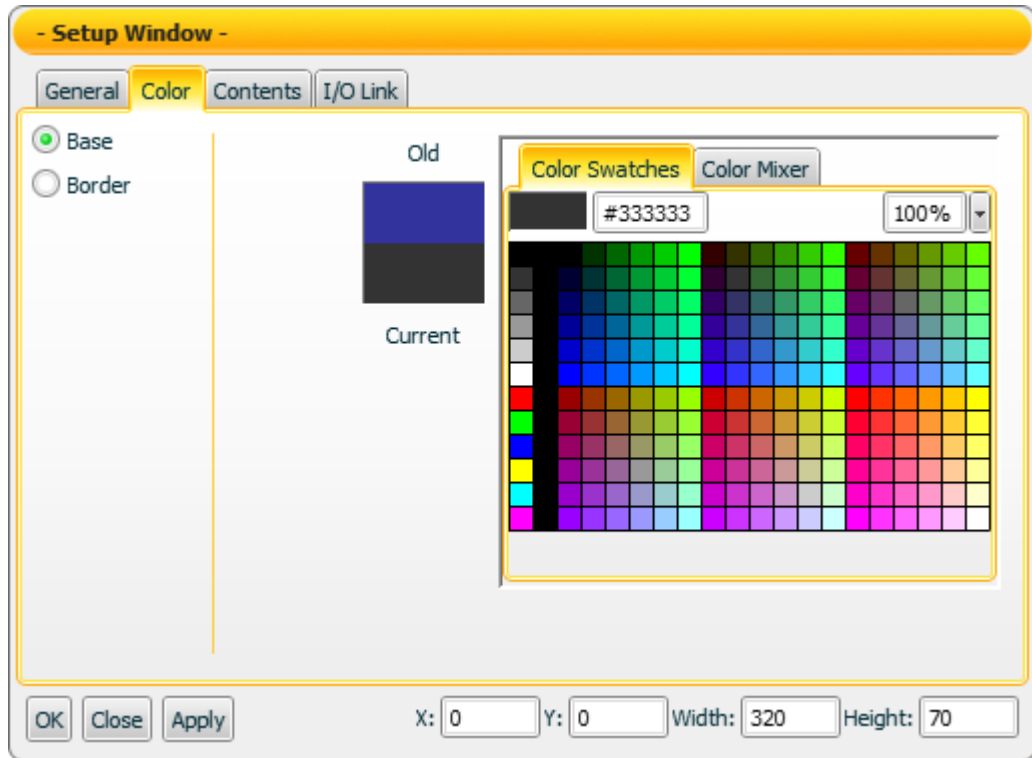


Glow distance	Assign the distance of the glow effect. The unit is Pixel.
Glow strength	Assign the strength of the glow effect.
Glow color	Select the color of the glow effect.

Note : After completing the color setting, please make sure to assign the glow strength and distance in this section as well. If the strength or distance is equal to 0, then the glow effect will not take effect.

“Color Setting”

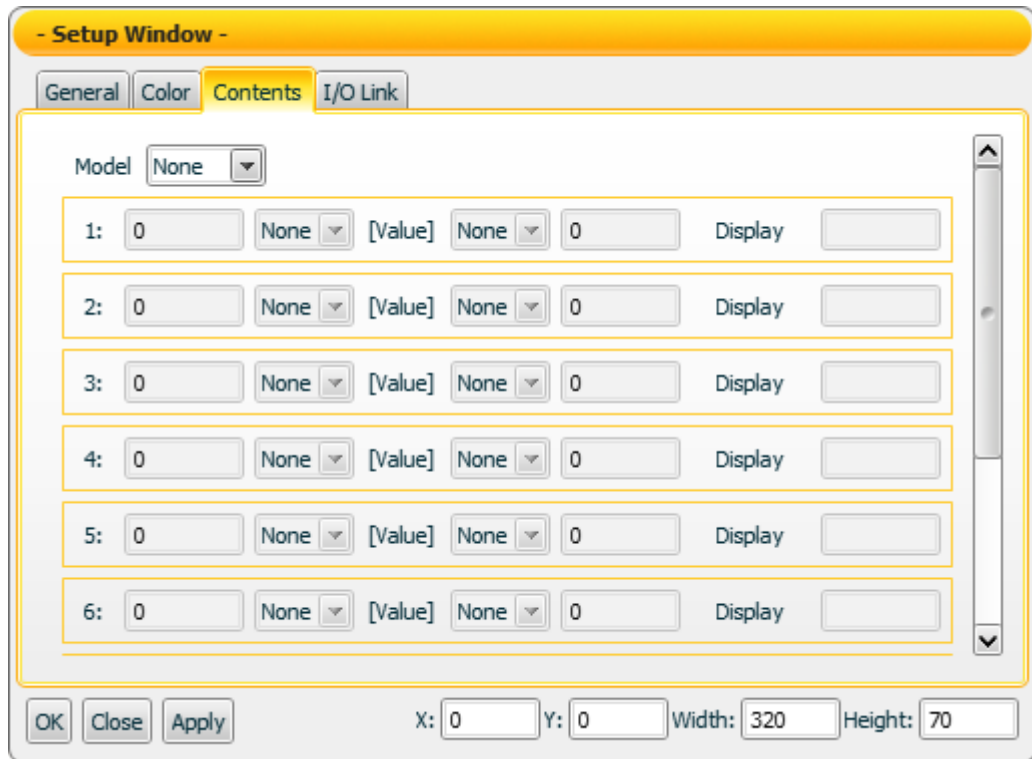
On the “Color Setting” tab page, you can set up the color of the Static text component as below. After the setting is completed, please click “Apply” button.



Base	Select the color of the Base.
Border	Select the color of the Border.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Contents Setting”

On the “Contents Setting” tab page, you can set up the display condition for the data contents of the Static text component as below. After the setting is completed, please click “Apply” button.

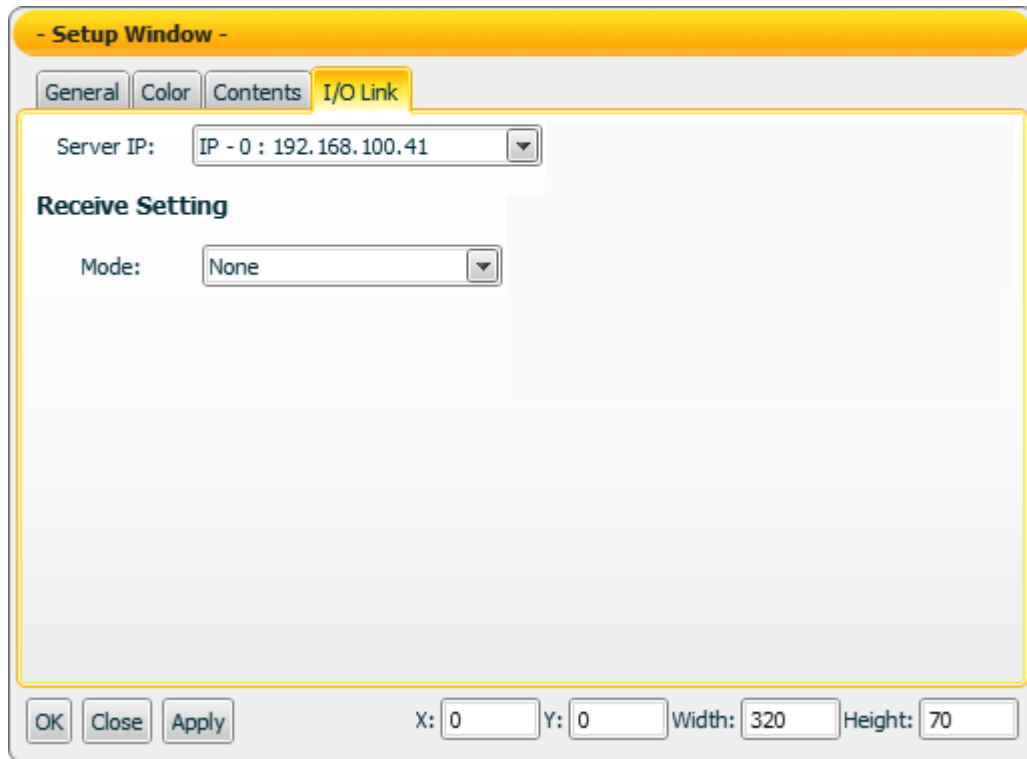


Mode	There are two mode: “None” and “Value” for selection. Select “None” to disable this function.
Display	Input the text to be shown when the condition is TRUE.

Note : If “Value” in Mode field is selected, it is required to complete at least one condition setting. If there is no condition setting existed, the “Contents Setting” function will be disabled.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Static text component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data receiving description

If you select “None” in Mode field, then the “Contents Setting” function will be disabled. The data the component receives will be treated as the string type data, and will be displayed immediately.

If you select “Value” in Mode field, then the “Contents Setting” function will be enabled. The data the component receives will be treated as the value data. You can set up the conditions (Up to 10 rules) and the corresponding strings to be displayed. The data the component receives will be evaluated and when the condition is TRUE, the corresponding string will be shown.

Example: input “1” in the left side data field of the first rule, select “<=“ in the left side operator, and input “ON” in the text field of the first rule. And then input “1” in

the right side data field of the second rule, select “<” in the right side operator, and input “OFF” in the text field of the second rule.

1. When the data the component receives is 2, this component will display ON.
2. When the data the component receives is 1, this component will display ON.
3. When the data the component receives is 0, this component will display OFF.

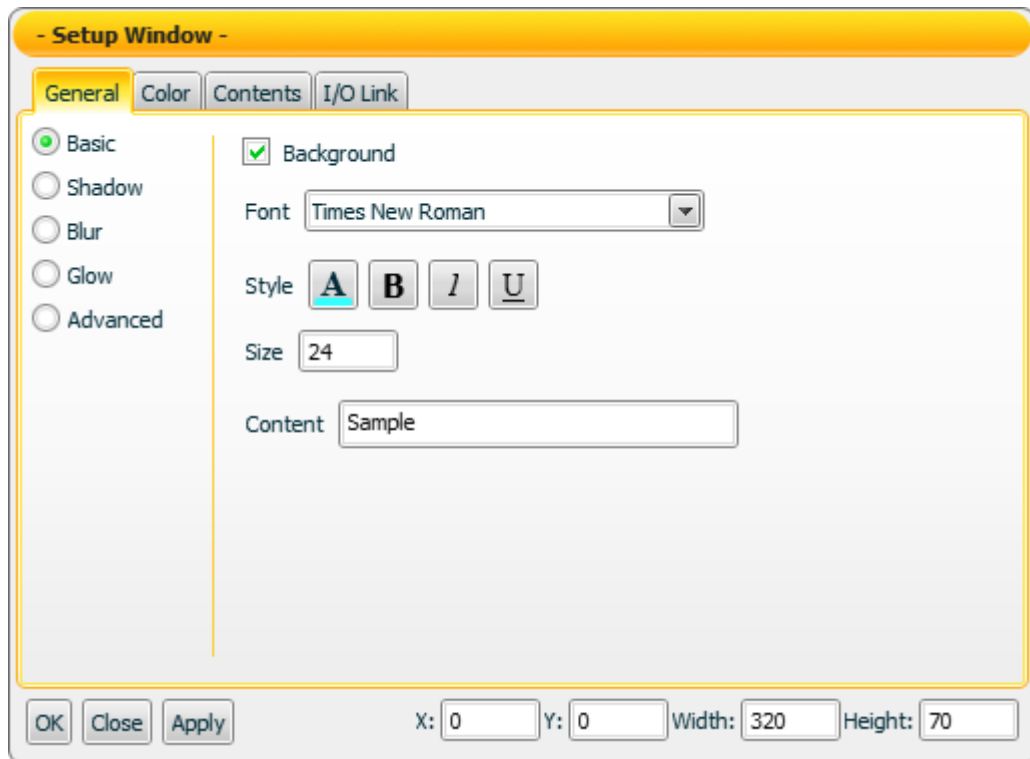
Model





1:	<input type="text" value="1"/>	<input "="" type="text" value="<="/>	<input type="text" value="[Value]"/>	<input type="text" value="None"/>	<input type="text" value="0"/>	Display	<input type="text" value="ON"/>
2:	<input type="text" value="0"/>	<input type="text" value="None"/>	<input type="text" value="[Value]"/>	<input type="text" value="<"/>	<input type="text" value="1"/>	Display	<input type="text" value="OFF"/>

4.6.2 Scrolling Text component

“General Setting”->“Basic Setting”

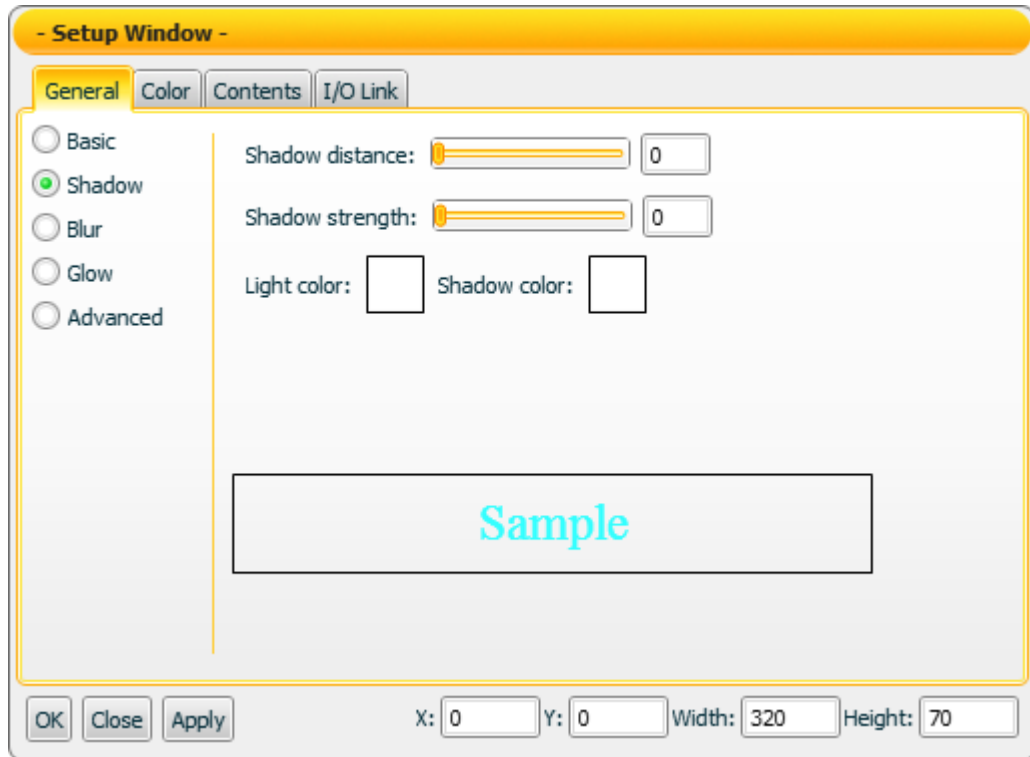
In the “Basic Setting” section of the “General Setting” tab page, you can set up the properties of the Scrolling text component as below. After the setting is completed, please click “Apply” button.



Background	The default setting is to enable the display of the Background of the component. If you disable the function. The component will close the Background display function, and only display the content of the component.
Font	The Font setting for the text.
Style	 : Select the color for the text  : Set the text in bold type  : Add the underline for the text  : Set the text in italic type
Size	Assign the size for the text.
Content	Input the text content.

“General Setting”->“Shadow Setting”

In the “Shadow Setting” section of the “General Setting” tab page, you can set up the shadow properties of the Scrolling text component as below. After the setting is completed, please click “Apply” button.

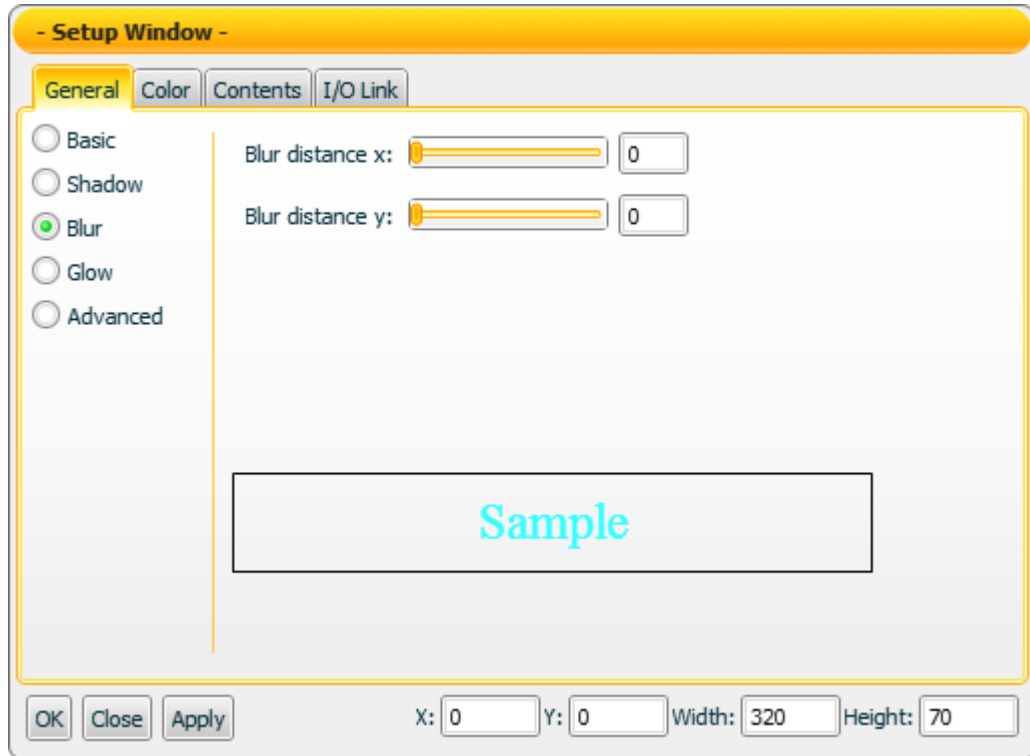


Shadow distance	Assign the distance between the shadow (or glow) effect text and the original text. The unit is Pixel.
Shadow strength	Assign the strength of the shadow (or glow) effect text.
Light color	Select the color of the light source.
Shadow color	Select the color of the shadow.

Note : After completing the color setting, please make sure to assign the Shadow distance and Shadow strength in this section. If the strength or distance is equal to 0, then the shadow effect will not take effect.

“General Setting”->“Blur Setting”

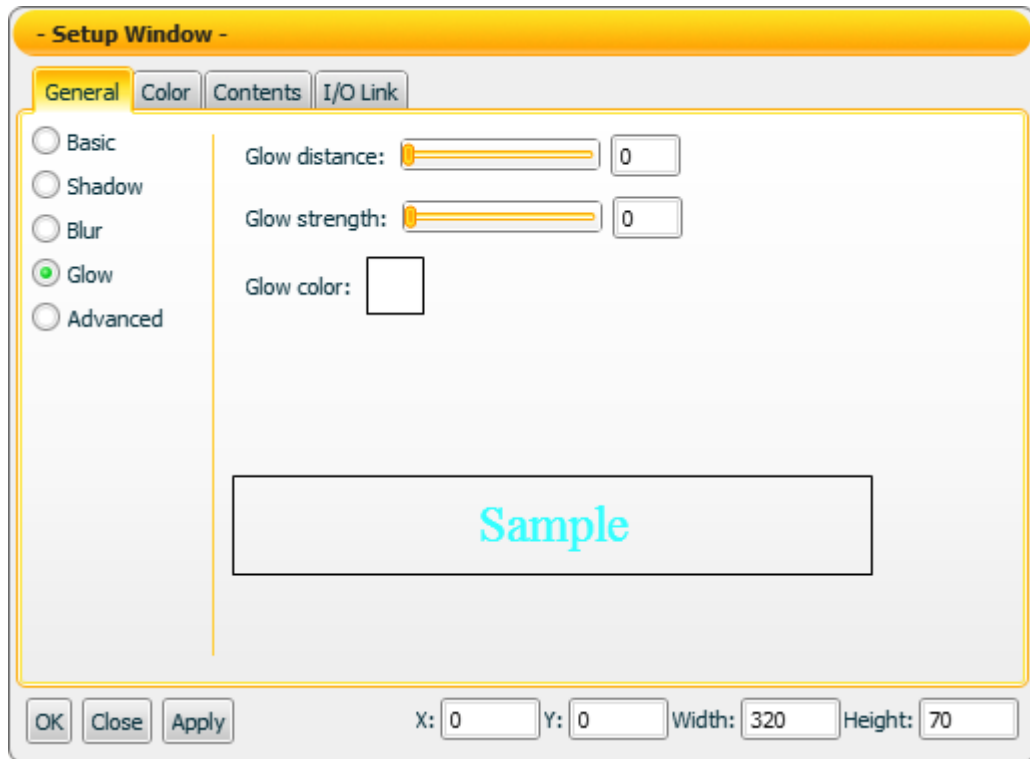
In the “Blur Setting” section of the “General Setting” tab page, you can set up the blur properties of the Scrolling text component as below. After the setting is completed, please click “Apply” button.



Blur distance x	Assign the width of the blur effect in horizontal direction. The unit is Pixel.
Blur distance y	Assign the height of the blur effect in vertical direction. The unit is Pixel.

“General Setting”->“Glow Setting”

In the “Glow Setting” section of the “General Setting” tab page, you can set up the glow properties of the Scrolling text component as below. After the setting is completed, please click “Apply” button.

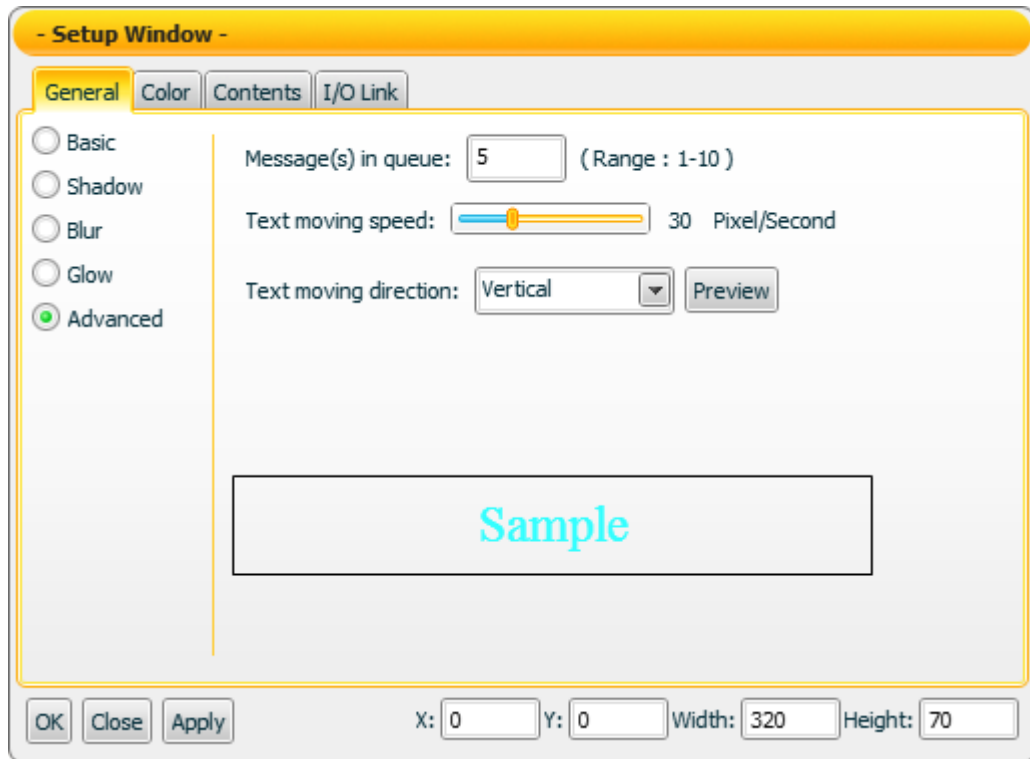


Glow distance	Assign the distance of the glow effect. The unit is Pixel.
Glow strength	Assign the strength of the glow effect.
Glow color	Select the color of the glow effect.

Note : After completing the color setting, please make sure to assign the glow strength and distance in this section. If the strength or distance is equal to 0, then the glow effect will not take effect.

“General Setting”->“Advanced Setting”

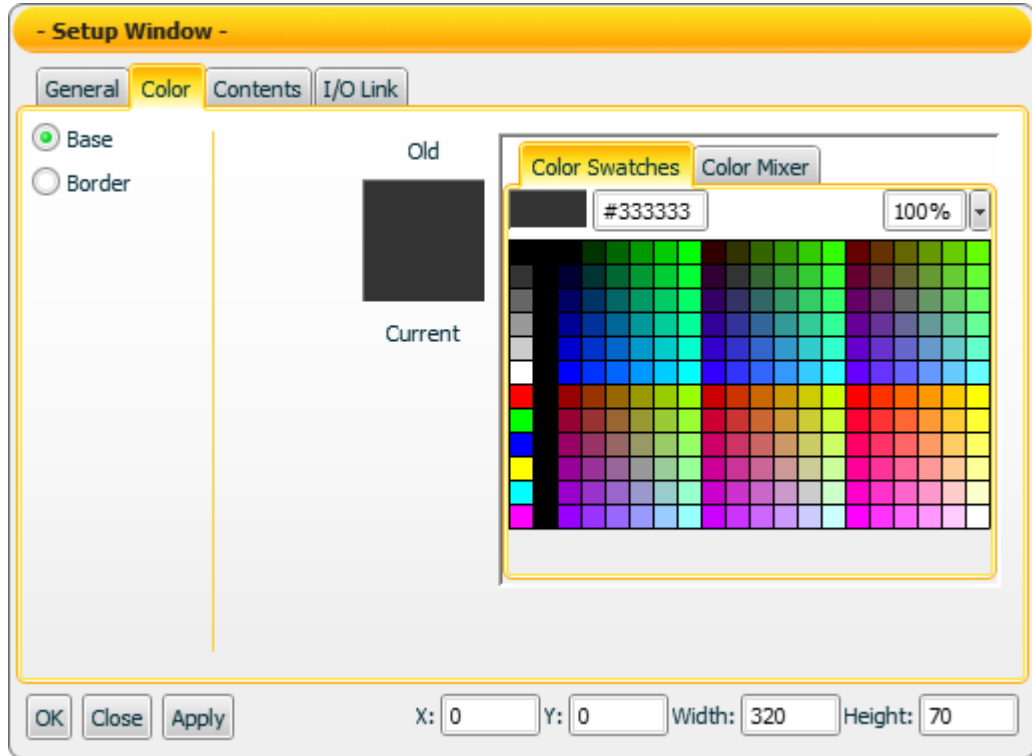
In the “Advanced Setting” section of the “General Setting” tab page, you can set up the advanced properties of the Scrolling text component as below. After the setting is completed, please click “Apply” button.



Message(s) in queue	Assign the number of previous messages to be kept in the message queue. The latest message and the messages in the queue will be shown cyclically. Example: If you assign 2 in the field, then the message queue will keep previous two messages. There will be totally 3 messages (the latest message and previous two messages in the queue) and will be shown cyclically. If you assign 0 in the field, then the message queue will not keep any message. It will display the latest message only.
Text moving speed	Assign the text moving speed. The unit is Pixel/Sec.
Text moving direction	Select the text moving direction to be “Horizontal “or “Vertical”.

“Color Setting”

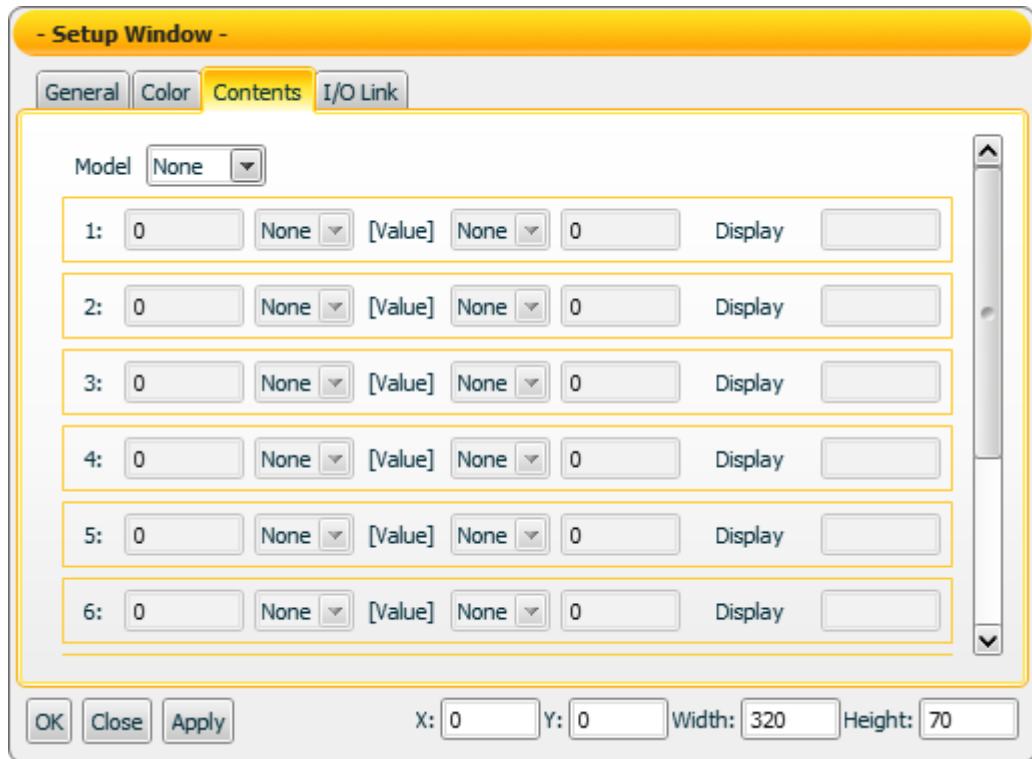
On the “Color Setting” tab page, you can set up the color of the Scrolling text component as below. After the setting is completed, please click “Apply” button.



Base	Select the color of the Base.
Border	Select the color of the Border.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Contents Setting”

On the “Contents Setting” tab page, you can set up the display condition for the data contents of the Scrolling text component as below. After the setting is completed, please click “Apply” button.

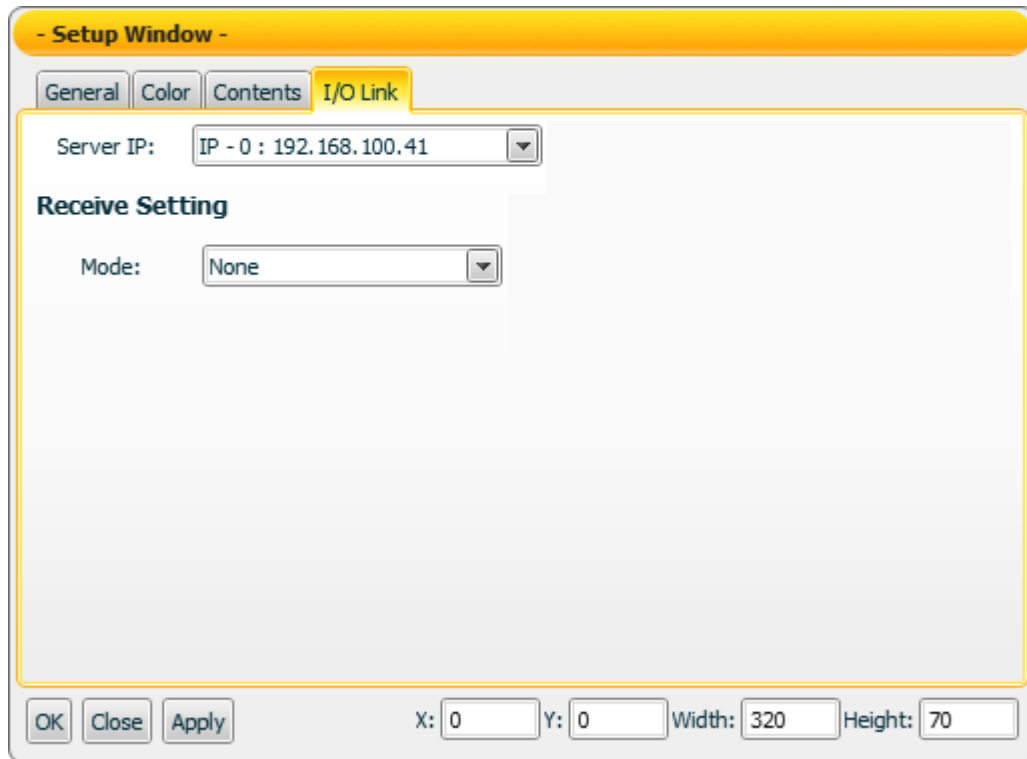


Mode	There are two mode: “None” and “Value” for selection. Select “None” to disable this function.
Display	Input the text to be shown when the condition is TRUE.

Note : If “Value” in Mode field is selected, it is required to complete at least one condition setting. If there is no condition setting existed, the “Contents Setting” function will be disabled.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Scrolling text component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data receiving description

If you select “None” in Mode field, then the “Contents Setting” function will be disabled. The data the component receives will be treated as the string type data. When the component receives the data, the contents in the message queue and the latest message will be updated. These message strings will be shown cyclically.

If you select “Value” in Mode field, then the “Contents Setting” function will be enabled. The data the component receives will be treated as the value data. You can set up the conditions (Up to 10 rules) and the corresponding strings to be displayed. The data the component receives will be evaluated and when the condition is TRUE, the corresponding string will be shown.

Example: Input “1” in the left side data field of the first rule, select “<=“ in the left side operator, and input “ON” in the text field of the first rule. And then input “1” in the right side data field of the second rule, select “<“ in the right side operator, and input “OFF” in the text field of the second rule.

1. When the data the component receives is 2, this component will display ON.
2. When the data the component receives is 1, this component will display ON.
3. When the data the component receives is 0, this component will display OFF.

Model

1:	<input type="text" value="1"/>	<input "="" type="text" value="<="/>	<input type="text" value="[Value]"/>	<input type="text" value="None"/>	<input type="text" value="0"/>	Display	<input type="text" value="ON"/>
2:	<input type="text" value="0"/>	<input type="text" value="None"/>	<input type="text" value="[Value]"/>	<input type="text" value="<"/>	<input type="text" value="1"/>	Display	<input type="text" value="OFF"/>

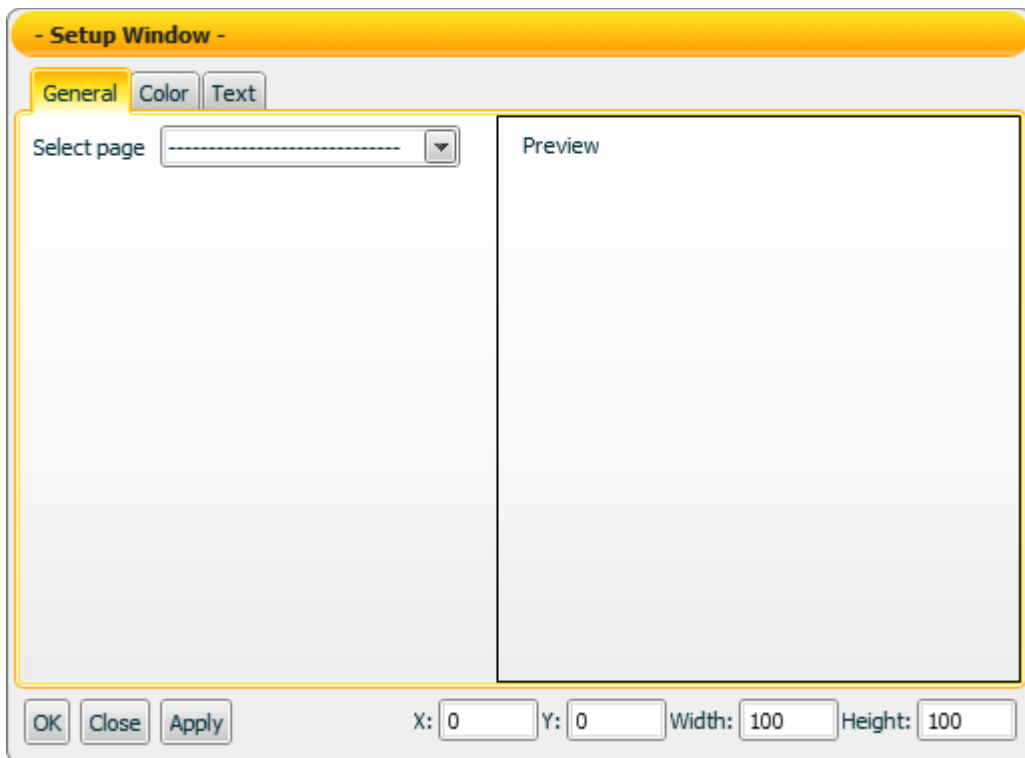
4.7 System Component



The System component is used to switch the screen page of the HMI project. You can click the component to switch to other screen pages depending on previous setting. The properties setting page of the System component is shown as below.

“General Setting”

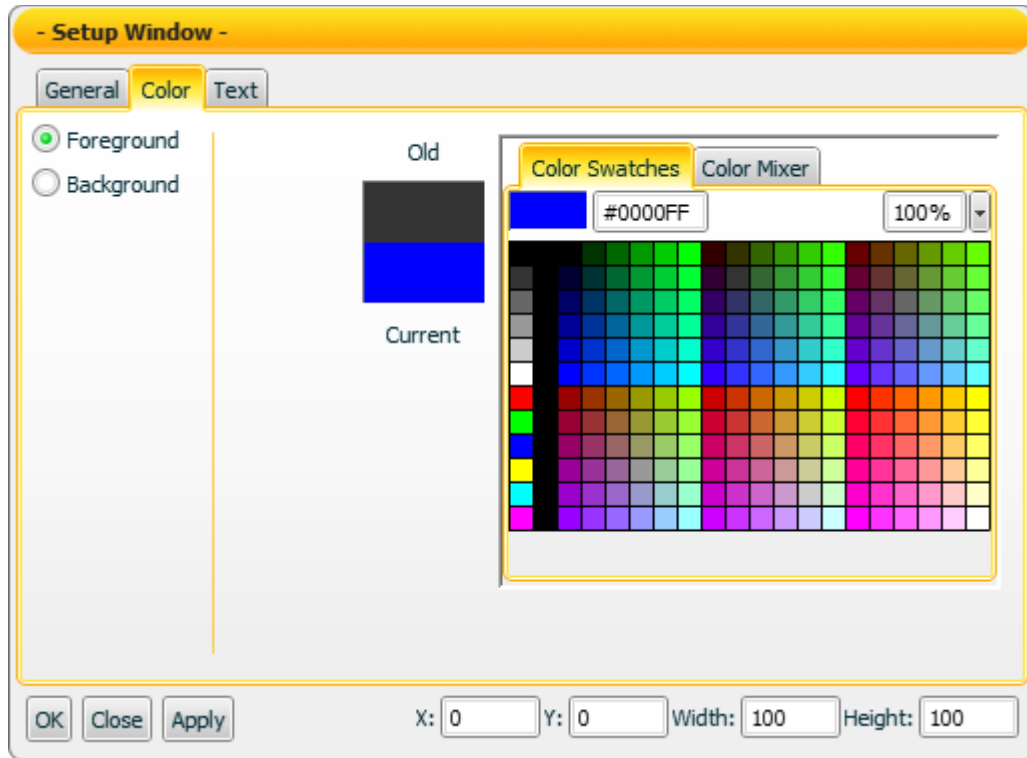
On the “General Setting” tab page, you can set up the properties of the System component as below. After the setting is completed, please click “Apply” button.



Select page	Assign the link of the screen page for the component. Select the HMI screen page you want to link to from the dropdown list.
PREVIEW	After selecting the HMI screen page to link to, the PREVIEW area will show the image of the screen page.

“Color Setting”

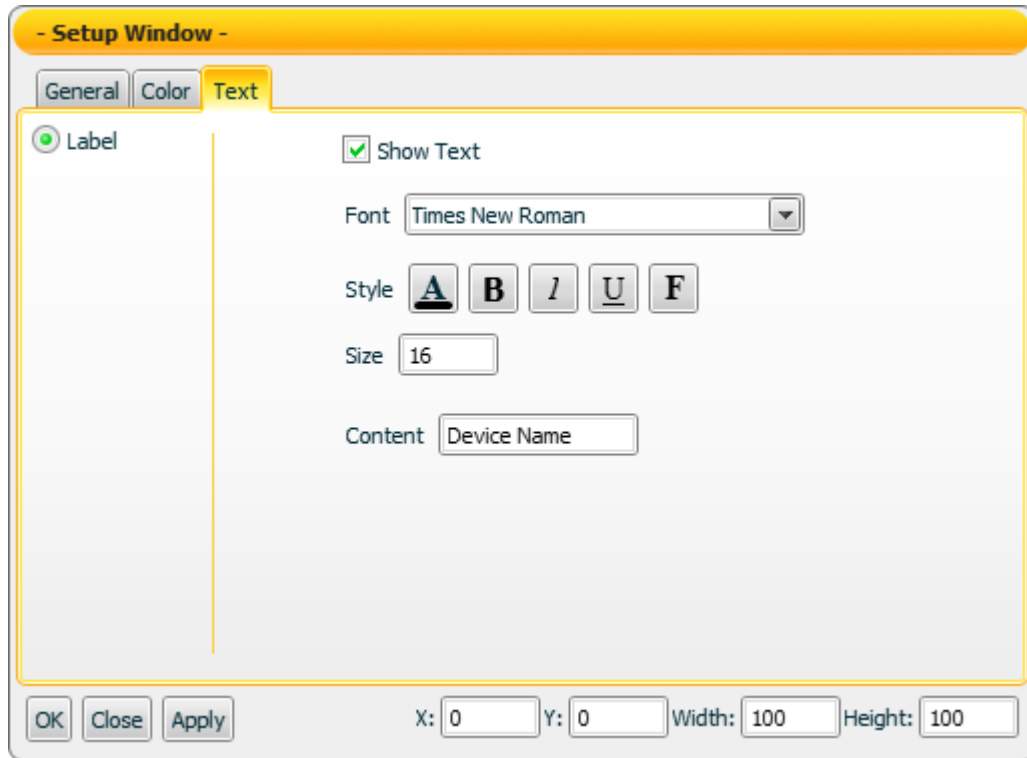
On the “Color Setting” tab page, you can set up the color of the System component as below. After the setting is completed, please click “Apply” button.



Foreground	Select the color of the Foreground.
Background	Select the color of the Background.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

On the “Text Setting” tab page, you can set up the text properties of the System component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text properties of the component °
Show text	Enable the Check box to display the Label text.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

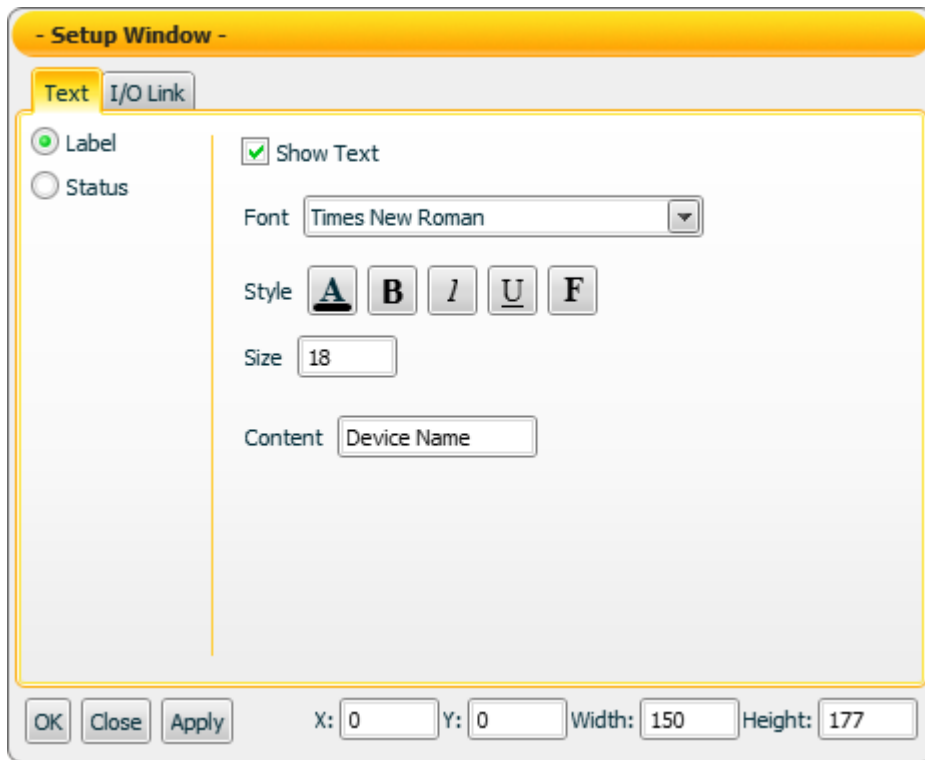
4.8 Animation Component








The Animation Component is a component to receive the data. It's similar to Indicator Component. However, the Indicator Component shows the change of status by showing different colors, the Animation Component will receive the data and show the change of the status by displaying dynamic animation accordingly. The settings of the Animation Component are shown as below:

“Text Setting”

On the “Text Setting” tab page, you can set up the text properties of the Animation component as below. After the setting is completed, please click “Apply” button.

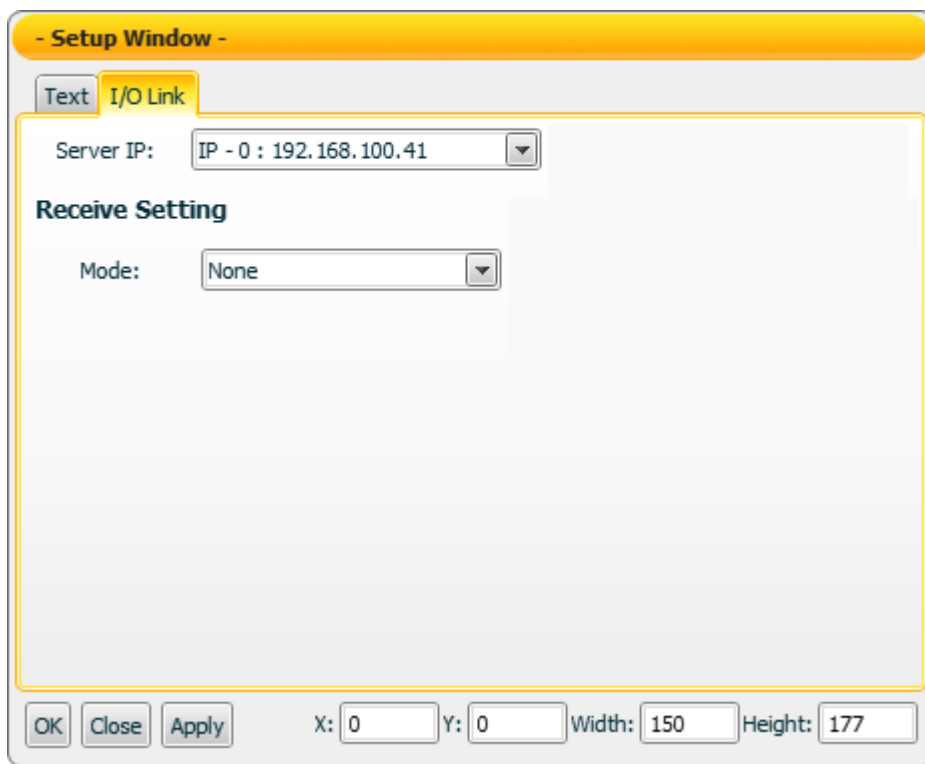


Label	Set up the Label text for the component ◦
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.

Style	 : Select the color for the text  : Set the text in bold type  : Add the underline for the text  : Set the text in italic type  : Set the text with aureole effect
Size	Assign the size for the text.
Content	Input the text content for Label.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Animation component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting→ I/O Link setting for more detailed information.	

Data receiving description

The data the component receives will be treated as a Boolean value. If the value the component receives is greater than (or equal to) 1, it will be in ON status; otherwise it will be in OFF status.

“Example 1”: If the component receives a value 1, the Motor will be in ON status.

“Example 2”: If the component receives a value 0, the Motor will be in OFF status.

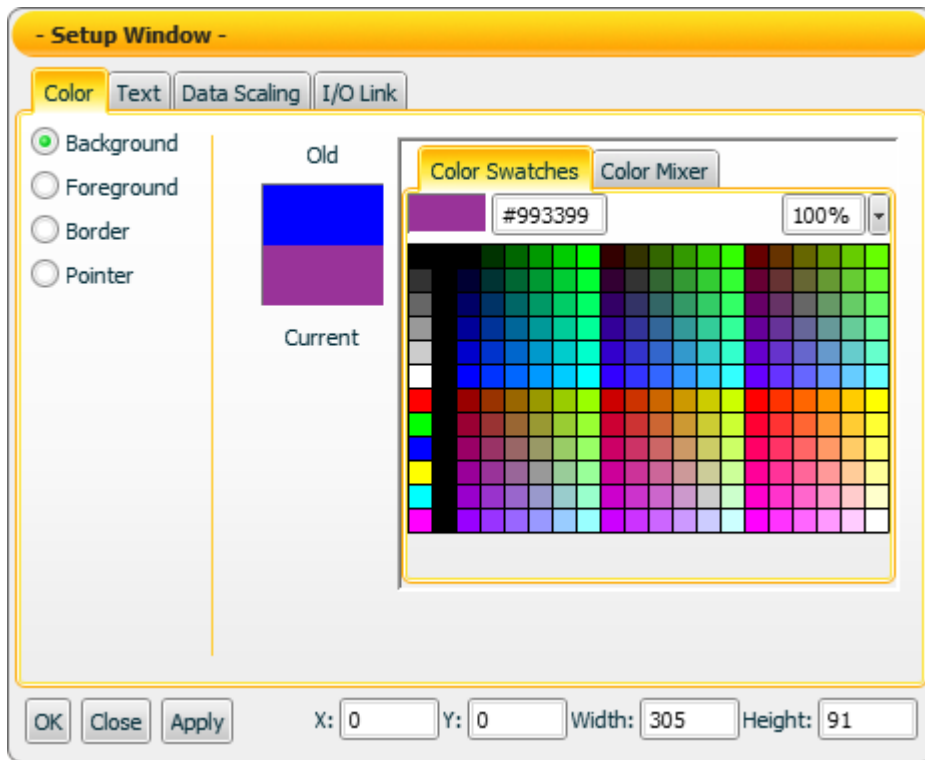
4.9 Slider Component



The Slider Component is used to graphically adjust the values by moving the pointer between the two ends of the slider scale. The value of the variable will be determined by the relative position of the pointer. For example, the user could move the pointer to modify the value; and then control the devices or perform output of other components. The settings of the slider Component is shown as below:

“Color Setting”

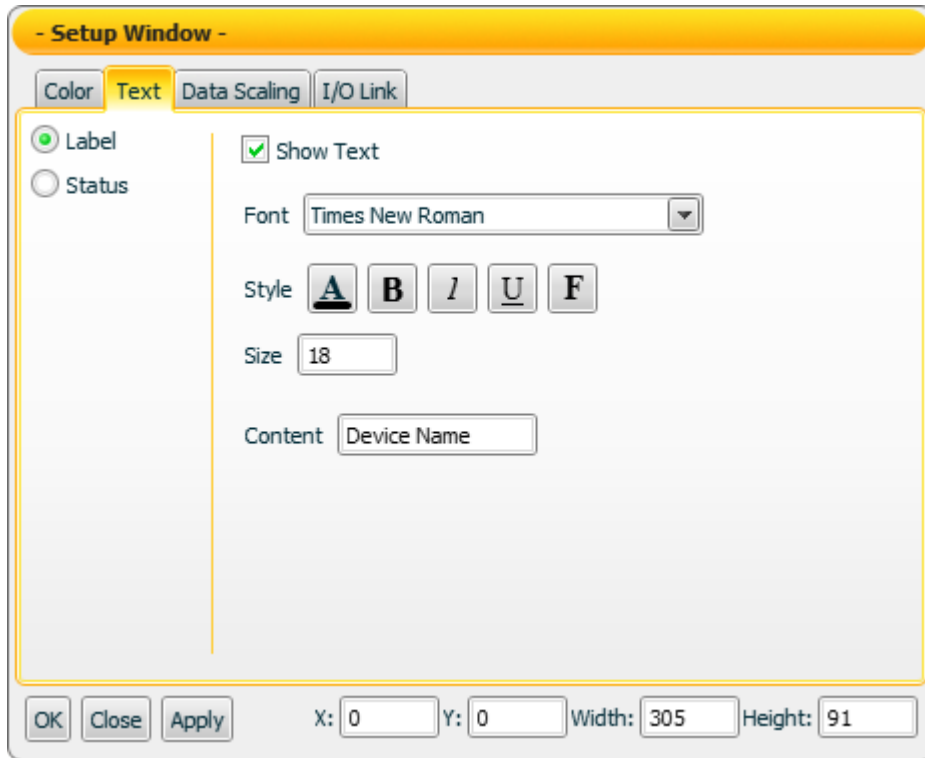
On the “Color Setting” tab page, you can set up the color of the Slider component as below. After the setting is completed, please click “Apply” button.



Background	Select the color of the Background.
Foreground	Select the color of the Foreground.
Border	Select the color of the Border.
Pointer	Select the color of the Pointer.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“Text Setting”

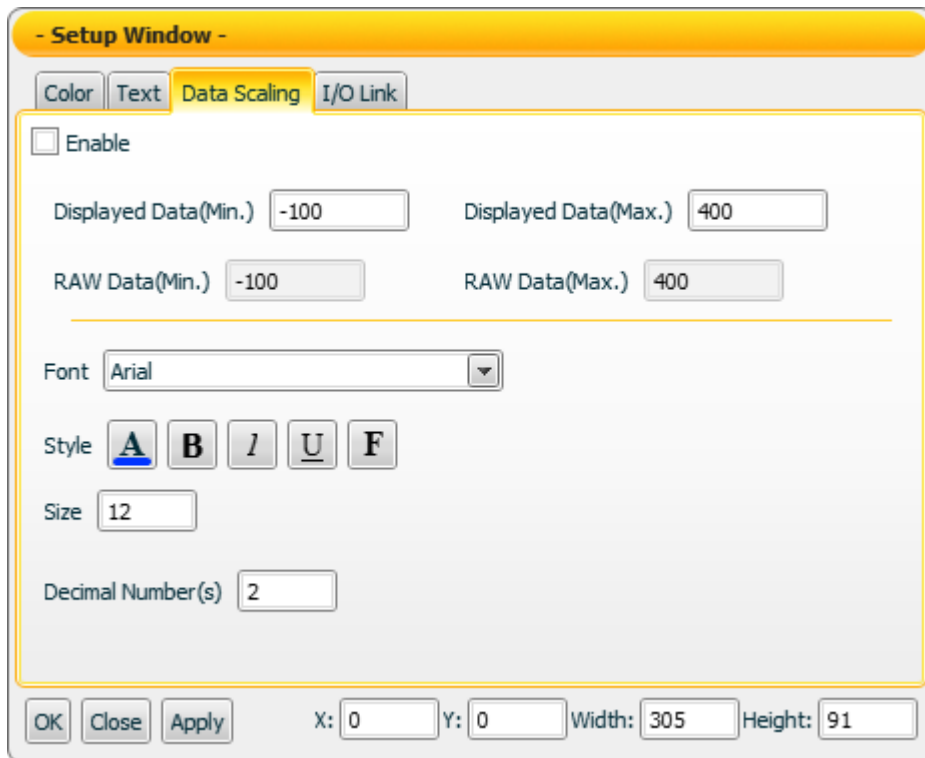
On the “Text Setting” tab page, you can set up the text properties of the Slider component as below. After the setting is completed, please click “Apply” button.



Label	Set up the Label text for the component ◦
Status	Set up the ON or OFF Status text for the component. Note : This section is only for the Color/Font properties setting of the text to be shown in ON status or OFF status. For the status text setting of the ON or OFF status, please go to “General Setting”.
Show text	Enable the Check box to display the text (Label or Status).
Font	The Font setting for the text.
Style	<p> : Select the color for the text</p> <p> : Set the text in bold type</p> <p> : Add the underline for the text</p> <p> : Set the text in italic type</p> <p> : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“Data Scaling Setting”

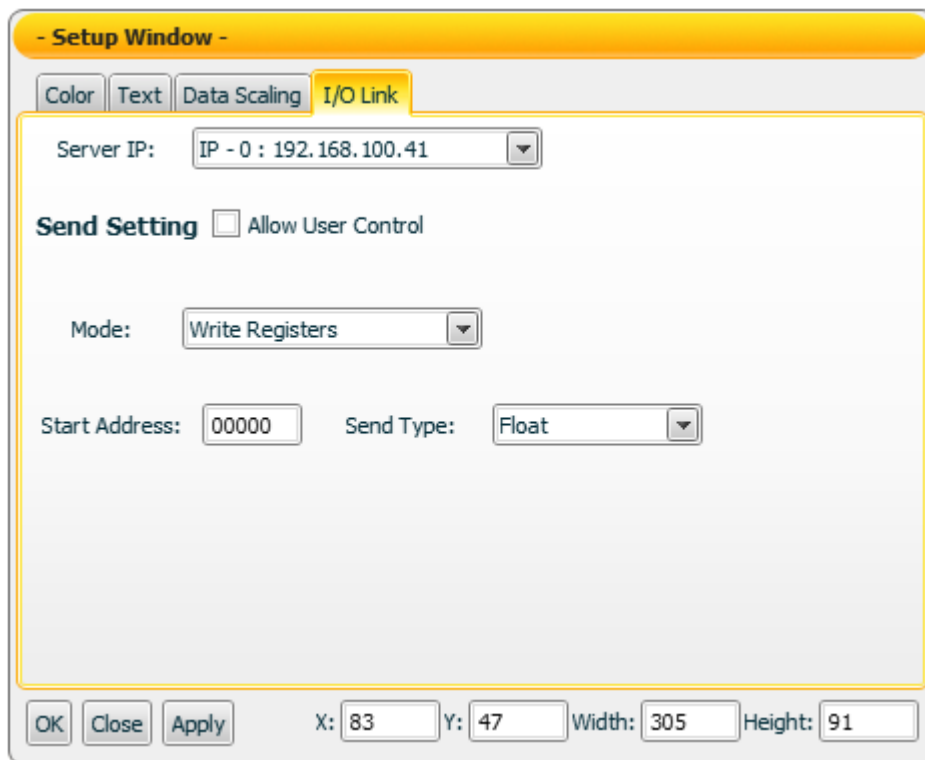
On the “Data Scaling Setting” tab page, you can set up the data scaling properties for the Slider component as below. After the setting is completed, please click “Apply” button.



Enable	Click the check box to enable the data scaling function.
Displayed Data(Min.)	The minimum value the component can display.
Displayed Data(Max.)	The maximum value the component can display.
RAW Data(Min.)	The minimum raw value the component can receive.
RAW Data(Max.)	The maximum raw value the component can receive.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Decimal Number(s)	Set up the number of the decimal place for the displayed value.

“I/O Link Setting”

On the “I/O Link Setting” tab page, you can set up the I/O link properties for the Slider component as below. After the setting is completed, please click “Apply” button.



Server IP	Input the IP of the PMC that the component will send the I/O data to.
Allow User Control	If this function item is not enabled, only administrator is allowed to control this component: if it is enabled, both administrator and general user are allowed to control this component.
Send Setting	Input the I/O data sending parameters of Modbus (such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data sending description

Drag the pointer of the Slider component via mouse to desired value, and then drop the mouse to set up the value and send this value to the address and the mode previously set in the “Send Setting” section.

You can click the “Enable” check box on the “Data Scaling Setting” tab page to enable the data scaling function.

- For example, if the raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, The value of Displayed Data(Max.) on component is 100.
- The value of Displayed Data(Min.) on component is 0.
- The value of RAW Data(Max.) on physical device is 65535.
- The value of RAW Data(Min.) on physical device is 0

Now the component will send the scaling value to the physical device based on your setting. For example:

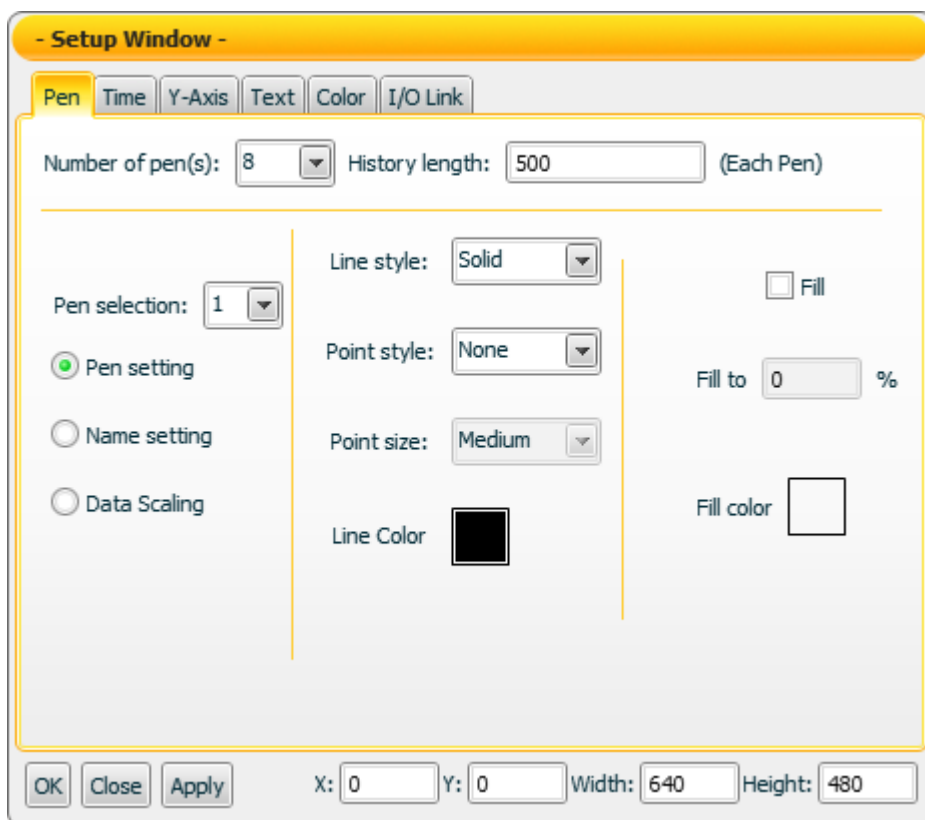
- If the setting data of the component is 100, the physical device will display 65535.
- If the setting data of the component setting is 50, the physical device will display 32767.5.
- If the setting data of the component setting is 0, the physical device will display 0.

4.10 Real-Time Trend Component

The Real-Time Trend Component will display the values received in a time range in graphic chart format; so that the user could easily view the variations of the real-time values and further analyze/monitor the trend. The settings of the Real-Time Trend Component are shown as below:

“Pen”->“Pen Setting”

In the “Pen Setting” function item, you can set up the properties for the pen as below. After the setting is completed, please click “Apply” button.

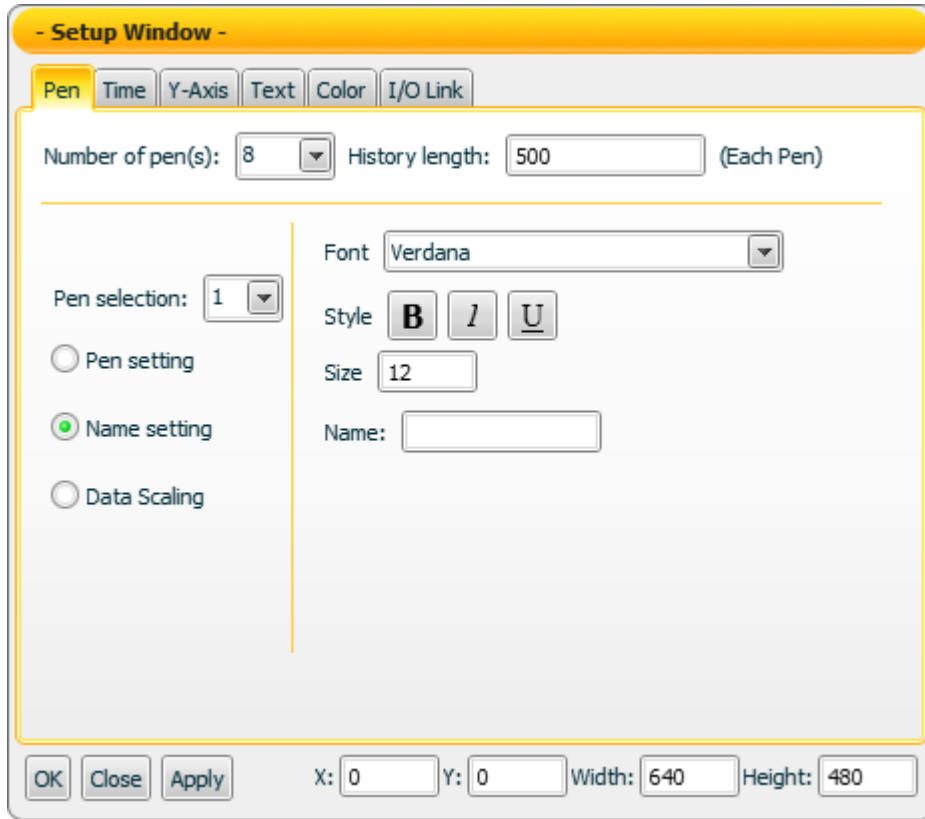


Number of pen(s)	The number of displayed pens for the trend.
History length(Each Pen)	The history points of each pen.
Pen selection	Select the pen for settings
Pen setting	Switich the setup panel to “Pen setting”.
Line style	Set up the line style.
Point style	Set up the point style.
Point size	Set up the point size (apply to “Dot” or “hollow dot” point styles only).
Line Color	Set up the line color.
Fill	Click the check box to enable the fill color function. The filling range percentage is the percentage set in the “Fill to” field.
Fill to	Set up the percentage of filling range of the pen to the assigned percentage value.

	<p>For example:</p> <ol style="list-style-type: none">1. The min. value of y axis is 1.2. The max. value of y axis is 11.3. The assigned filling percentage is 20%. <p>This pen will fill to the position “3” of the y axis. → $1 + (11-1) \times 20\% = 3$</p>
Fill color	Set up the filling color.

“Pen”->“Name setting”

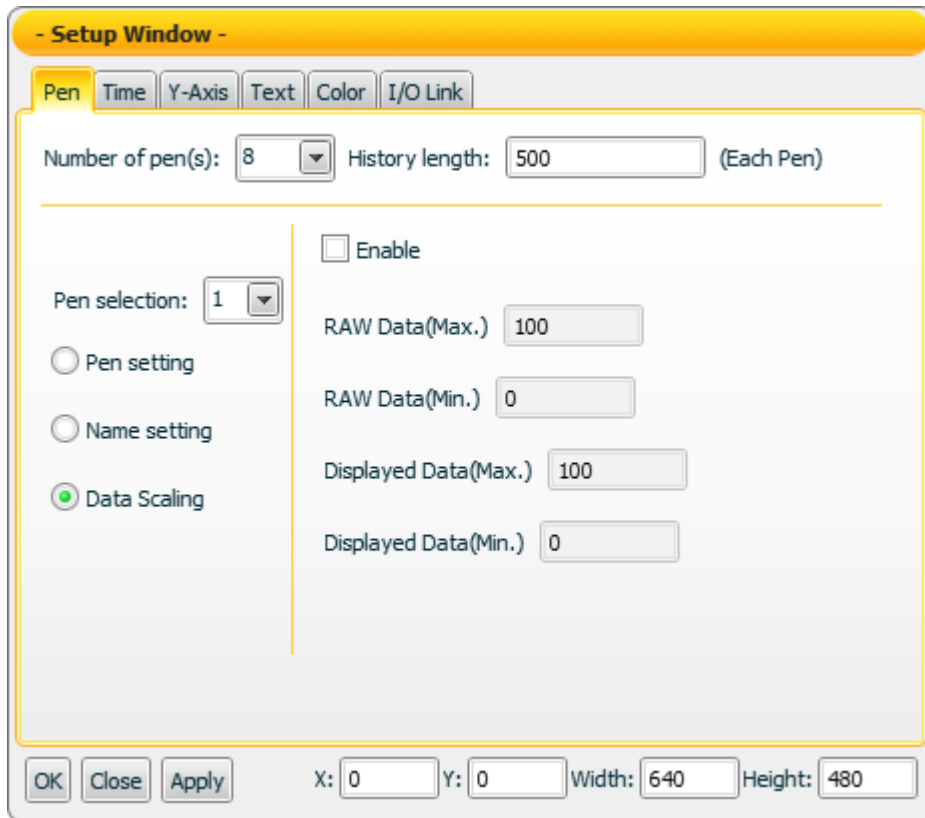
In the “Name Setting” function item, you can set up the name and its font style for the pen as below. After the setting is completed, please click “Apply” button.



Font	The Font setting for the text.
Style	<p>B : Set the text in bold type</p> <p><u>U</u> : Add the underline for the text</p> <p><i>I</i> : Set the text in italic type</p>
Size	Assign the size for the text.
Name	Input the name for the pen.

“Pen”->“Data Scaling”

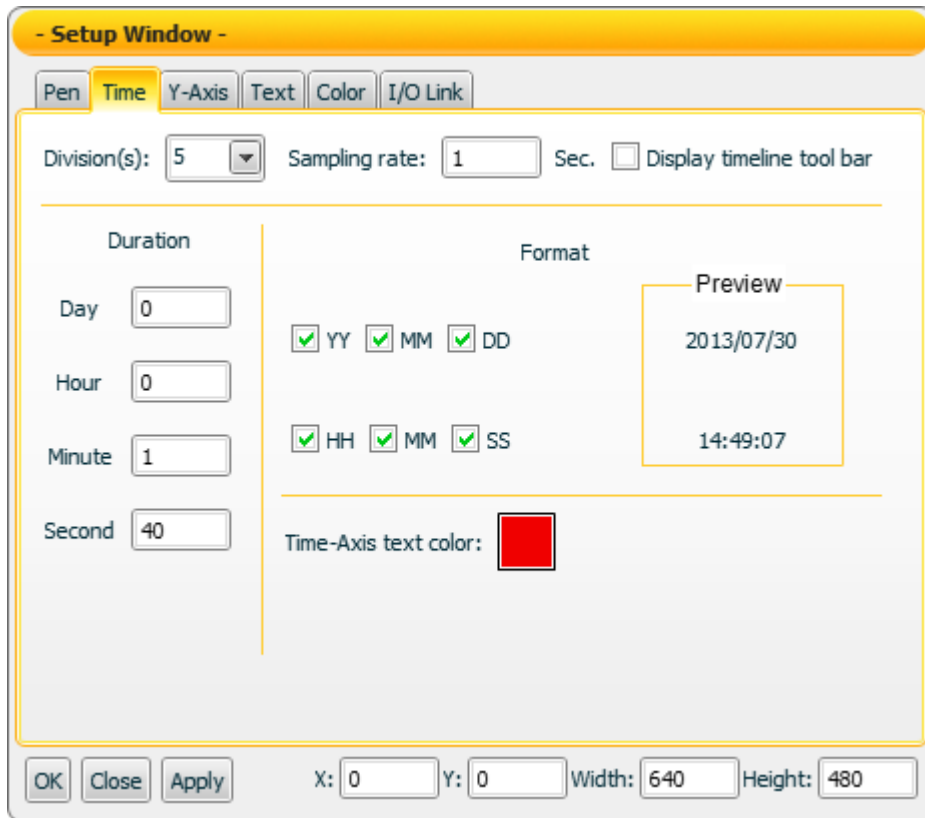
In the “Data Scaling” function item, you can set up the data scaling properties for the pen as below. After the setting is completed, please click “Apply” button.



Enable	Click the check box to enable the data scaling function.
RAW Data(Max.)	The maximum raw value the component can receive.
RAW Data(Min.)	The minimum raw value the component can receive.
Displayed Data(Max.)	The maximum value the component can display. (The setting of this value is disabled here; to set the value, please go to the “Y-Axis” function tab page.)
Displayed Data(Min.)	The minimum value the component can display. (The setting of this value is disabled here; to set the value, please go to the “Y-Axis” function tab page.)
<p>Please note: When the “Data Scaling” function is enabled, it applies to ALL pens. You can’t set the “Data Scaling” function is enabled for pen 1 & pen 2 and is disabled for pen 3 & pen 4 at the same time. You can set different data scaling ratio for each pen.</p>	

“Time Setting”

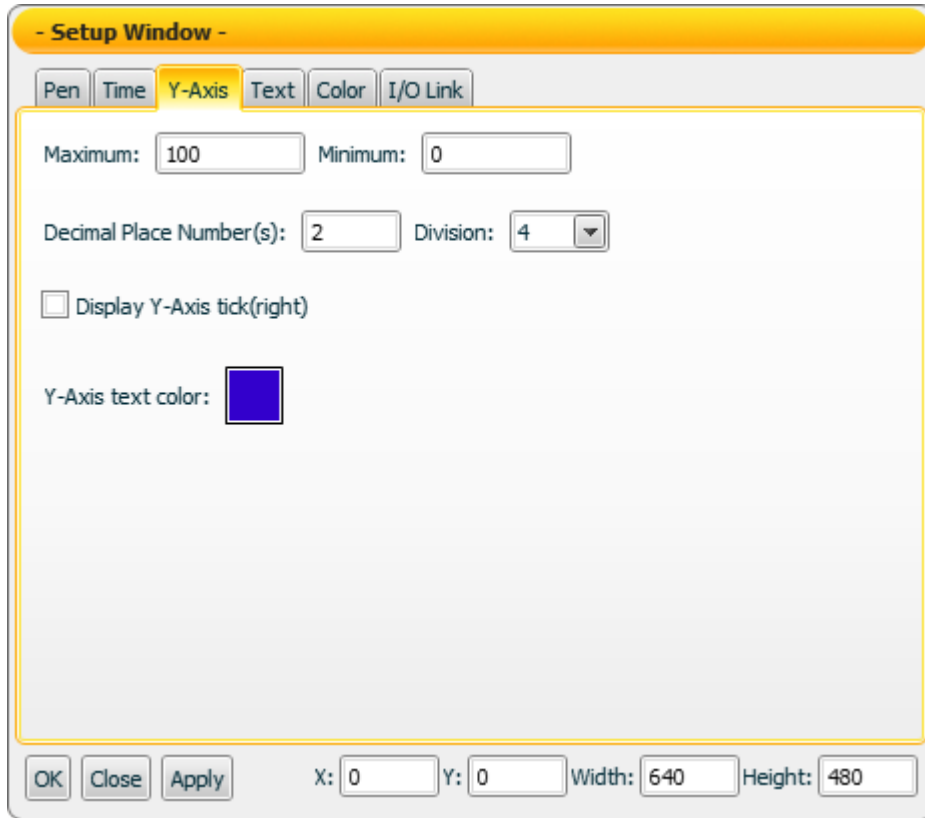
On the “time” tab page, you can set up the x-axis properties for the trend as below. After the setting is completed, please click “Apply” button.



Division(s)	Set up the divisions of time for the x-axis.
Sampling rate	Set up the sampling rate. The min. value is 1 second.
Display timeline toolbar	Enable the check box to show the controlling toolbar under the x-axis.
Duration	Set up the total time duration of the x-axis. For example: if the x-axis is divided into five parts (Division(s) = 5). And the duration is set as 1 minute and 40 seconds. The duration for each part of the x-axis is 20 seconds.
Format	Enable each check box to decide the displayed time format of x-axis.
Preview	To preview the time format in accordance with the “Format” setting.
Time-Axis text color	Set up the text color of the x-axis.

“Y-Axis Setting”

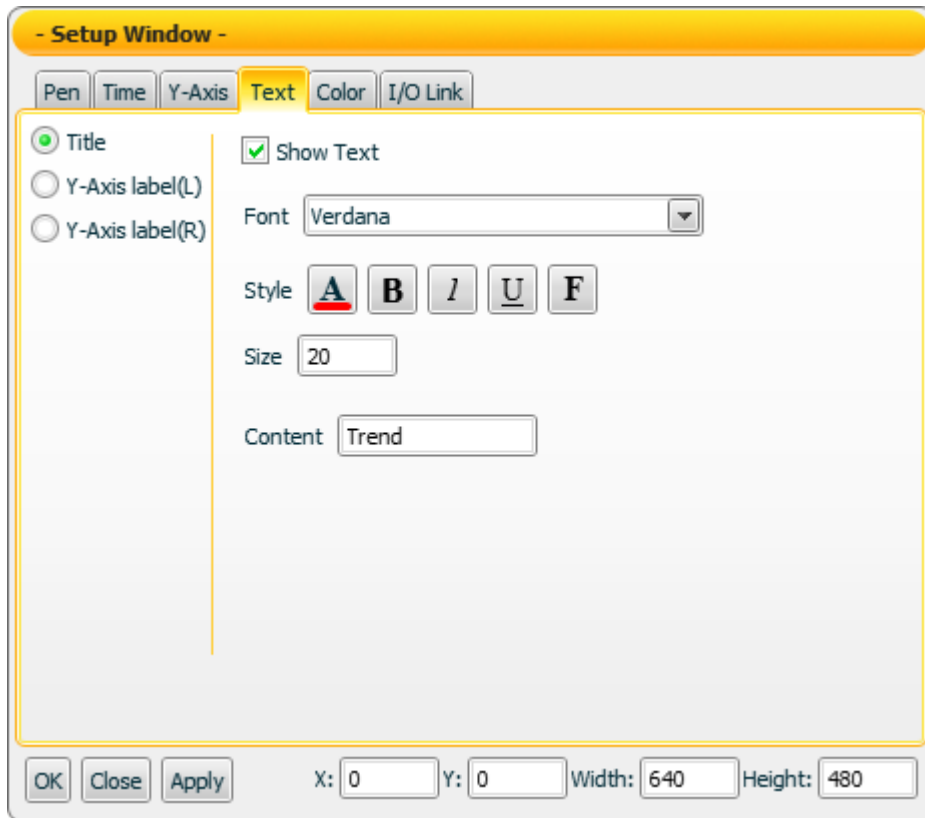
On the “Y-Axis” tab page, you can set up the y-axis properties for the trend as below. After the setting is completed, please click “Apply” button.



Maximum	The max. value of Y-Axis.
Minimum	The min. value of Y-Axis.
Decimal Place Number(s)	The number of decimal places of the value for the Y-Axis.
Division	The number of parts the Y-Axis will be divided.
Display Y-Axis tick(right)	Enable the check box to show the right side tick of the Y-Axis.
Y-Axis text color	The text color of the value for the Y-Axis ticks.

“Text Setting”

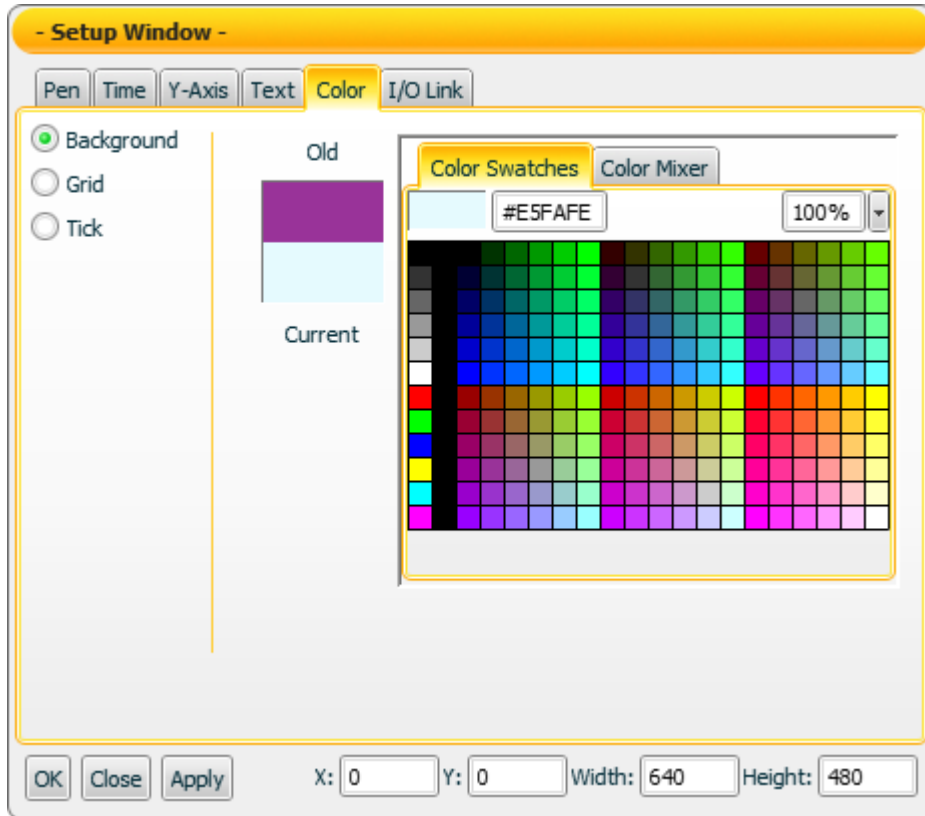
On the “Text” tab page, you can set up the text properties of the Trend component as below. After the setting is completed, please click “Apply” button.



Title	Set up the Title text for the trend.
Y-Axis label(L)	Set up the lable on the left side of the Y-Axis.
Y-Axis label(R)	Set up the lable on the right side of the Y-Axis.
Show Text	Enable the Check box to display the text.
Font	The Font setting for the text.
Style	<p>A : Select the color for the text</p> <p>B : Set the text in bold type</p> <p>U : Add the underline for the text</p> <p>I : Set the text in italic type</p> <p>F : Set the text with aureole effect</p>
Size	Assign the size for the text.
Content	Input the text content for Label.

“Color Setting”

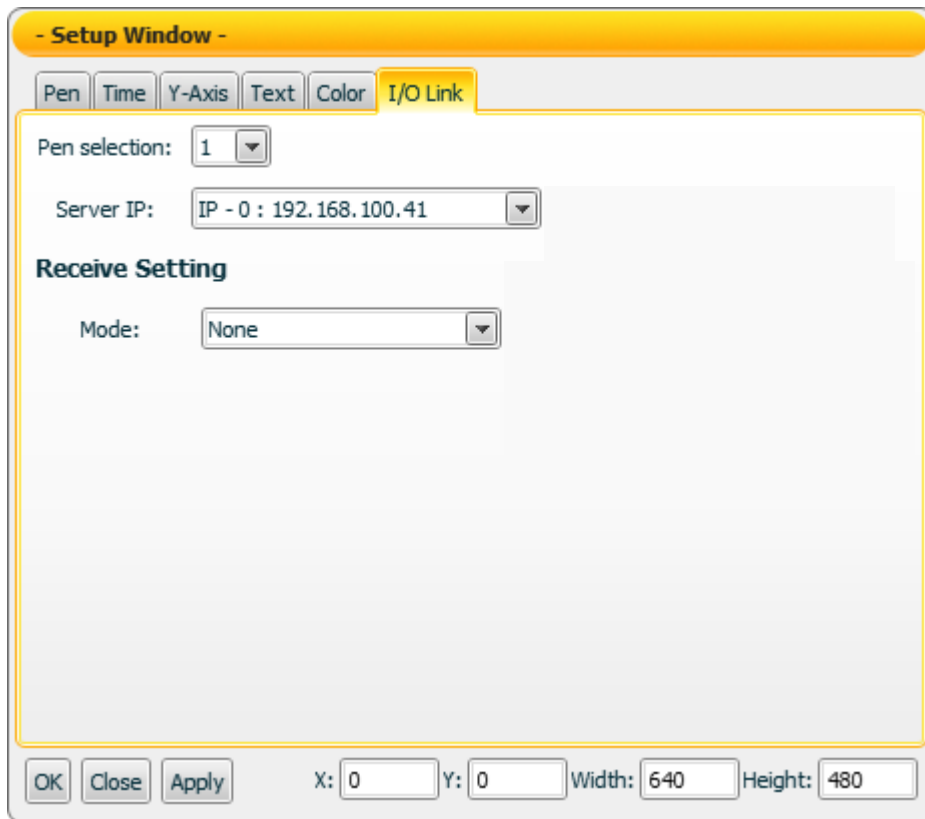
On the “Color” tab page, you can set up the color of the Trend component as below. After the setting is completed, please click “Apply” button.



Background	Select the color of the Background.
Grid	Select the color of the Grid.
Tick	Select the color of the Tick.
Old	The color you select last time.
Current	The color you currently select. This color will be applied to the component after you click “Apply” button.
Color Swatches	Provide pre-defined color pattern for selection.
Color Mixer	Provide Color Mixer tool for color adjustment.

“I/O Link Setting”

On the “I/O Link” tab page, you can set up the I/O link properties for the Trend component as below. After the setting is completed, please click “Apply” button.



Pen selection	Set up the selecting pen.
Server IP	Input the IP of the PMC that the component will receive the I/O data from.
Receive Setting	Assign the I/O data receiving parameters of Modbus TCP protocol (Such as: Mode, Start address & Length).
Please refer to Section 2.5.5 Component setting → I/O Link setting for more detailed information.	

Data receiving description

While the channel corresponding to the Pen is receiving the data, the pen will mark the value at the point of corresponding timeline. If the receiving value is larger or less than the max. or min. value of the Y-Axis, the max. or min. value of the Y-Axis will be modified automatically so that all data points can be shown on the trend.

You can click the “Enable” check box in the “Data Scaling” section on the “Pen” function tab page to enable the data scaling function. If the data the component receives is greater than the value of “RAW Data(Max.)”, then the data the component receives will be recorded as the value of “RAW Data(Max.)”. If the data the component receives is smaller than the value of “RAW Data(Min.)”, then the data the

component receives will be recorded as the value of “RAW Data(Min.).

(When the data scaling function is enabled, the values displayed will be in a fixed range so that the max. or min value of the Y-Axis will not be changed automatically.)

For example, if the measured raw data from the physical device is 0~65535 and you want the value to be shown in the range of 0~100 through linear interpolation, then you can complete the following setting.

- The value of Displayed Data(Max.) is 100.
- The value of Displayed Data(Min.) is 0.
- The value of RAW Data(Max.) is 65535.
- The value of RAW Data(Min.) is 0



Now the component will display the scaling value from the raw data of the physical device based on your setting. For example:

1. If the data the component receives is 65600, the component will display 100.
2. If the data the component receives is 65535, the component will display 100.
3. If the data the component receives is 32767.5, the component will display 50.
4. If the data the component receives is 0, the component will display 0.

If the data the component receives is -10, the component will display 0.

Play/Stop and Reset button description

While the “Display timeline toolbar” is enabled on the “Time” function tab page, the timeline toolbar will be shown. The toolbar only take effects when the project is launching in playing mode.

	<p>To control the drawing effects. Click the button “ ” to pause the drawing of the trend(the data receiving will still continue), and click the button “▶” to resume drawing.</p>
	<p>When the receiving value is larger than the max. value of Y-Axis or less than the min. value of Y-Axis. The trend will change the max. value or the min. value of Y-Axis automatically. Click the button “↺” can reset the value to the original default value of Y-Axis.</p>