Kinco®

Kinco DTools Pro Configuration editing software

User Manual

This manual is suitable for the Green series and Future series products

Please read this manual carefully before using this product

To ensure proper use of the product

上海步科自动化股份有限公司
Kinco Automation(Shanghai)Ltd.

Preface

First of all, thank you for choosing GREEN Series and FUTURE Series products!

Before using Green series and Future series products, please read this manual carefully and use the products properly based on full understanding to ensure the safety of relevant persons and equipment.

About this manual

This manual is written mainly for the use and design of Kinco DToolsPro configuration editing software (later referred to as "DTP"). The manual is available in both physical and electronic versions. The electronic version is included in the Kinco DToolsPro installation package and can be opened in the software 'Help' menu or through the 'Help' button in the component properties after the software is installed; Alternatively, it can be downloaded for free from the official Kinco website at https://en.kinco.cn/. Users who need a physical manual can contact their local product distributor to purchase one.

This manual may not be updated in time due to product improvement or other reasons. To ensure that product specifications and accessories are available in a timely and correct manner, we recommend that users pay attention to the information published on the official website of Kinco. Therefore, we do not notice the manual updates and software updates.

Scope of use

This manual provides operating instructions for Kinco DToolsPro to accompany the development of related products.

Suitable persons

This manual can be used as a reference for those who use the GREEN series and FUTURE series products manufactured by Kinco and have basic knowledge in the field of automation engineering and have experience with PCs using Microsoft related operating systems. If necessary, it can also be used as a reference for users, commissioning engineers, service technicians and maintenance technicians who have knowledge and ability to program in C language.

Symbols and terminology

- Safety symbols and terminology

Danger

Indicates that serious personal injury or even death will result if appropriate care is not taken.

Warning

Indicates that serious personal injury or even death will result if appropriate care is not taken.

Caution

Indicates that minor personal injury may result if appropriate care is not taken.

Attention

Indicates that an undesired result or state may occur if the corresponding prompt is not heeded.

Prohibition

Indicates relevant commands, processes or disassembly actions that are prohibited to ensure proper use of the product.

- General information symbols and terminology

Provides tips or additional information on the proper use of the product.

Indicates the links to related information in other manuals.

Indicates the items with explanatory, descriptive, footnotes.

Indicates suggestive content.

Indicates the links to related information in this manual.

- Terminology

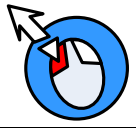
The terms used in this manual have the following meanings:

Terminology in this manual	Meaning
Kinco DToolsPro	Indicates the tool software for the Green Series and Future Series products manufactured by Kinco: Kinco DToolsPro configuration editing software.
HMI	Indicates Green Series and Future Series products manufactured by Kinco.
PLC	Programmable Logic Controller
PC	Personal Computer
External Storage Device	Indicates the standard USB memory device or SD card supported by the Green Series and Future Series products manufactured by Kinco.

➢ The following terms are distinct from formal trade names and trademarks:

Terminology in this manual	Formal trade names/trademarks:
Windows 7	Microsoft® Windows® 7 Operating System
Windows 8	Microsoft® Windows® 8 Operating System
Windows 10	Microsoft® Windows® 10 Operating System
Windows Server 2003	Microsoft® Windows Server® 2003 Operating System
Windows11	Microsoft® Windows® 11 Operating System

➢ The following terms are used when describing basic mouse operations

Terminology	Procedure	Illustrations
Left Click	Without moving the mouse, press the left mouse button and release.	

Right Click	Without moving the mouse, press the right mouse button and release.	
Double Click	Without moving the mouse, quickly press the mouse twice. This operation is valid only for the left mouse button.	
Dragging	Move the mouse while holding down the left button and release the left button at the target position.	
Hovering	Move the mouse to the specified position and pause.	
Input	Press the left mouse button in the input box, release it, and after the cursor blinks, type the text content from the keyboard.	
Operation	Click, right-click or double-click on a blank space with the mouse	

Product Support

- Technical Service Line

If you have questions during product selection or use, you can contact our technical staff by calling our technical service hotline: **400-700-5281**.

- Agents & Offices

If you have any questions about the products described in this manual, please contact your local Kinco Automation office and agent. For information on user training, please visit the company's website for relevant content or contact your local agent directly for training programs.

Contact us

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V1.0	Feb 2023	
V1.5	Aug 2023	

Catalog

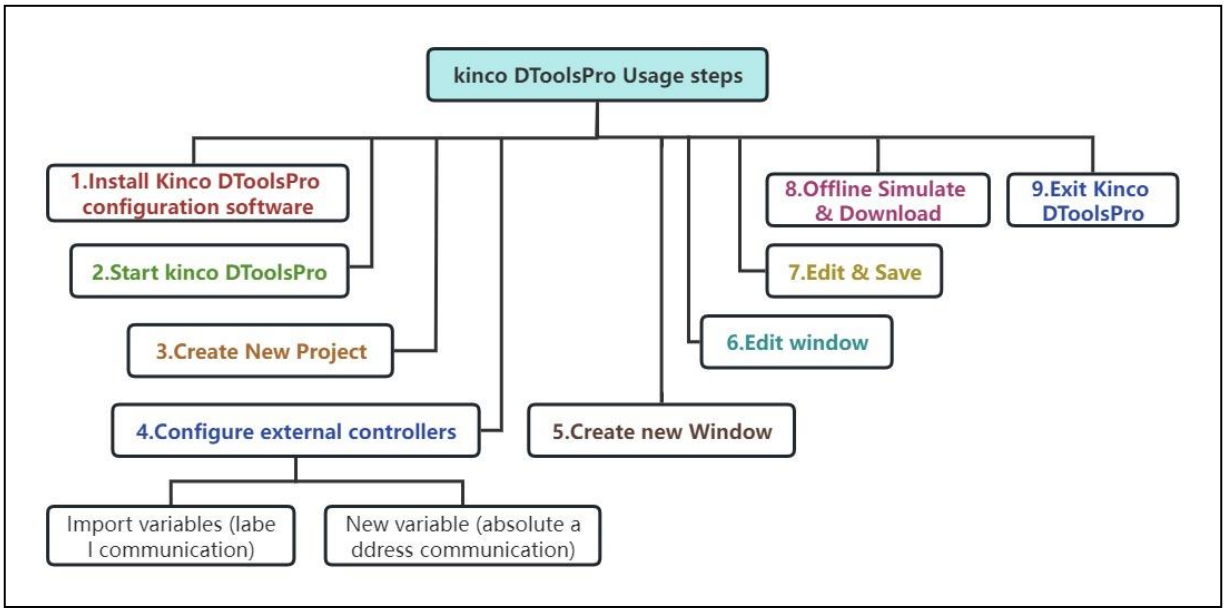
1 Overview

This chapter introduces the installation and uninstallation of Kinco DToolsPro configuration editing software.

1. 1 Software Overview

Kinco DToolsPro configuration editing software (hereinafter referred to as "DTP") is a special HMI configuration editing software developed by Kinco Automation (Shanghai) Co.,Ltd (referred to as "Kinco") for the Green Series and Future Series. The software provides a powerful integrated development environment for users. The products are widely used in various fields such as medical, chemical, electric power, printing, textile, food, national defense and engineering machinery, smart home, high-speed railroad, etc.

The steps for using Kinco DToolsPro are shown in the figure below:



1.2 Software Installation

1.2.1 Installation of Kinco DToolsPro

Take the simplified Chinese installation interface process as an example, the steps are as follows:

Double-click the "Setup.exe" file to run the installer.

❶ Go to the welcome screen

❷ Select the language of the installation interface.

❸ Select the installation directory, the software is installed to the root directory of "C:\" by default, and the "Kinco" folder is automatically created in the directory. If you want to customize the installation directory, click [Browse] to change the installation directory.

❹ Confirm installation

The software will give you an indication of Kinco DToolsPro's installation status, click [Install] to enter the software installation process.

❺ Successful installation

If the software is successfully installed, it will give a prompt that the installation is complete. Click [Finish] and the software installation is complete.

After the installation is complete, Kinco DToolsPro will create a complete startup directory in the [Start] menu, and Kinco DToolsPro (integrated environment) will be created on the operating system desktop.

During the above installation process, users can click [Cancel] to exit the installation. Please close your computer's firewall and anti-virus software before installation to avoid unsuccessful installation or subsequent use of the software features have defects.

1.2.2 Uninstallation of Kinco DToolsPro

Please exit the Kinco DToolsPro software before performing the uninstall.

❶ Launch the uninstaller

Method 1: Uninstall from the [Start] menu.

【Start】→【All Programs】→【Kinco】→【Kinco DToolsPro】→【Uninstall】

Method 2: 【Control Panel】→ Uninstall from【Add or Remove programs】

❷ Uninstallation process

Check "Remove", click [Next] to enter the uninstallation process. Among them:

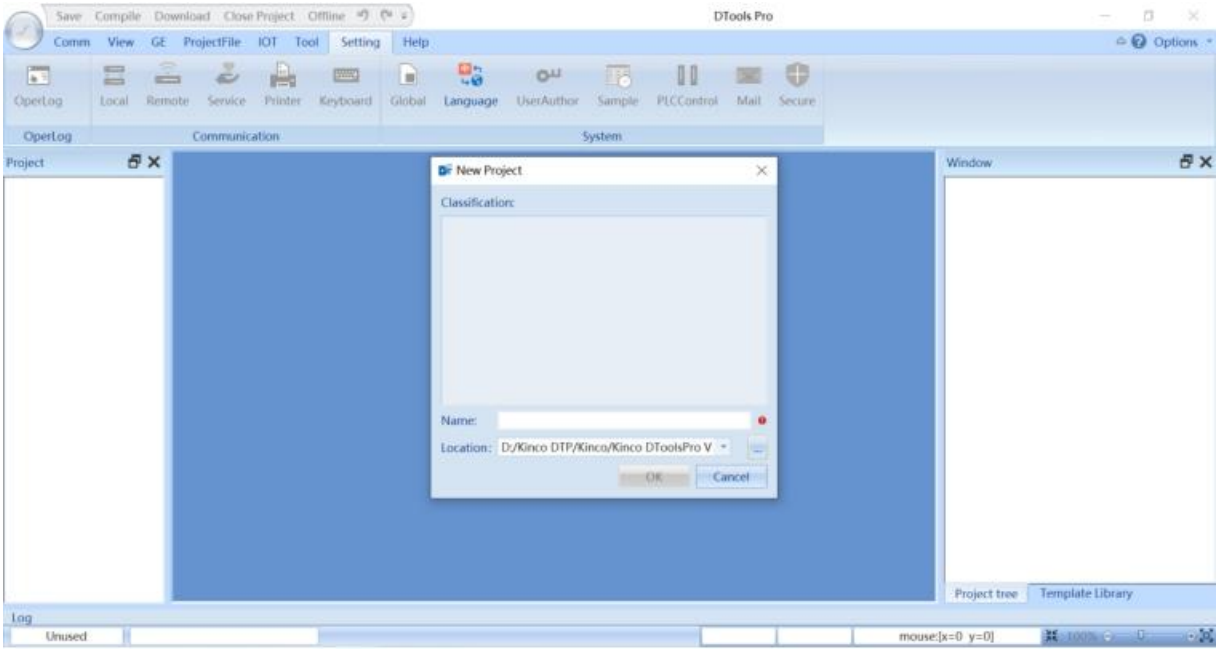
Modification	Advanced users, customize new function to be added or select installed **function** to be removed. Select this option to perform maintenance on the software.
Restoration	Reinstall the Kinco DToolsPro program. Select this option for software maintenance and updates.
Remove	Uninstall the Kinco DToolsPro program.

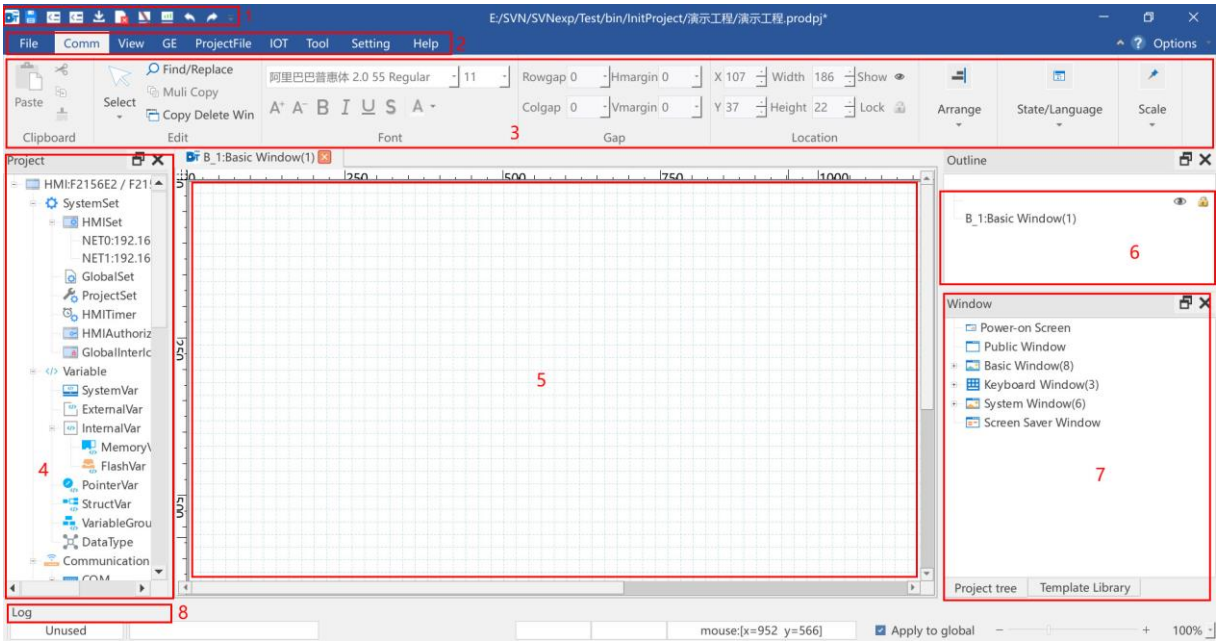
If there are additional files or folders in the Kinco DToolsPro installation directory, please delete them manually after the software has been uninstalled

2 Getting Started

2. 1 Interface layout

Double click to run into DTP software, users can see "New" and "Open other file", click "New" will pop up the new project dialog box, you can follow the instructions to enter the DTP interface.

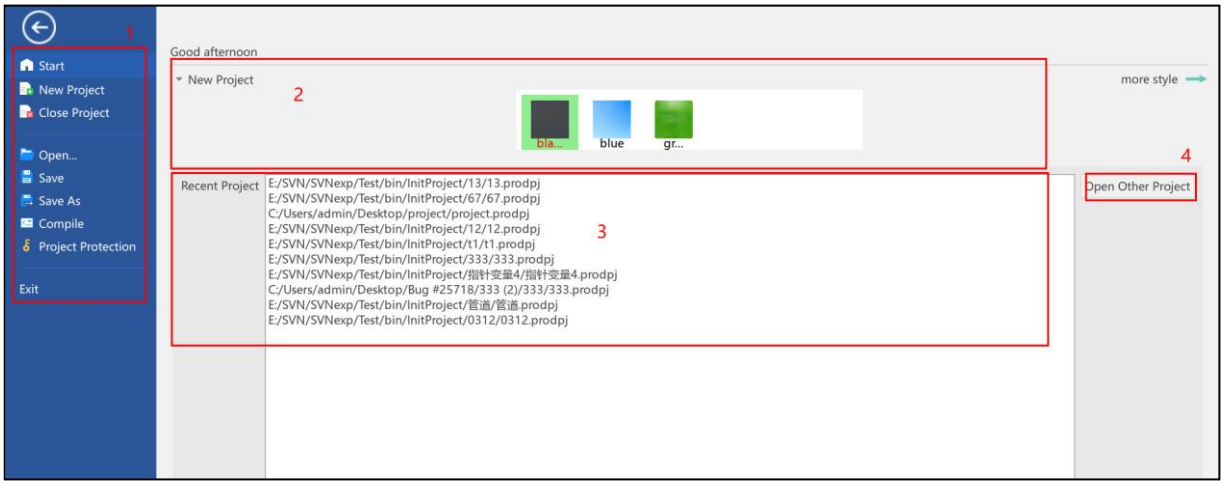


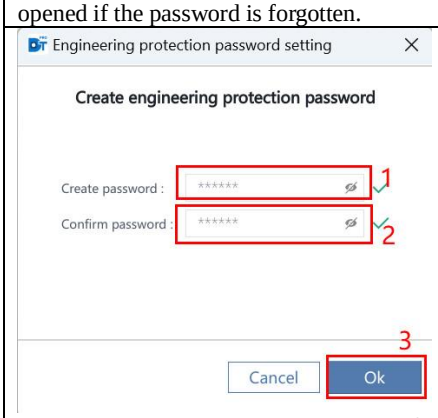


Interface layout description		
1)	Shortcut toolbar	To customize shortcut tools: ‘New’, ‘Open’, ‘Save’, ‘Compile’, ‘Download’ etc.
2)	Menu bar	Common, View, GE, Tool etc.
3)	Toolbar	Switch the detailed toolbar according to the actual menu selection.
4)	Project Tree	Functional organization tree of the project including communication、alarm、recipe、

	Macro、variable etc.
5) Screen editing area	Editing screen
6) Window Details	Display detailed space information of the current page.
7) Window	Display all current windows, create new windows, rename and delete windows.
8) Output information	Display output project compilation details

Click "File" in the menu bar to enter the file management interface;



Document Management Interface Layout Description		
1) Left toolbar	New, open, close, save, save as, compile all projects, etc.	
	Project Protection	You can set the password to open the project, and you need to input the set password when you open the project next time; Note: the project will not be opened if the password is forgotten.
		 Enter the creation password and the confirmation password, both passwords need to be consistent, click on OK
		Steps to change the project password are the same as above, enter the old password to enter the password change interface
2) Template style	New projects can choose from 3 color template styles	
3)Recently opened project list	Displays the project paths of the 10 most recently opened projects, making it easy for users to quickly open projects.	
4) Open other projects	For opening projects in other paths	

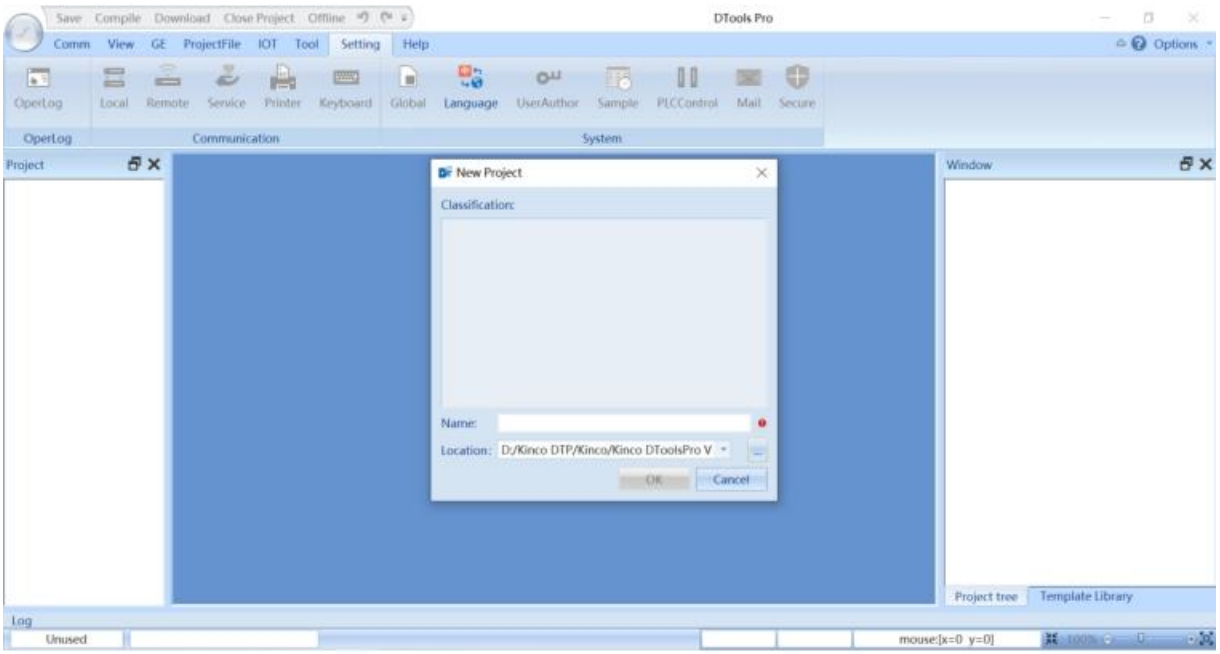
2.2 Project Configuration

Here we will briefly introduce the steps of the configuration project by creating the "button self-addition" example.

2.2.1 Create Project

Double-click the DToolsPro software icon on the desktop 

, Click "New project", as follows:



Enter the project name and select the project storage path, the default path is the software root directory "InitProject" folder, click confirm to enter the project configuration.

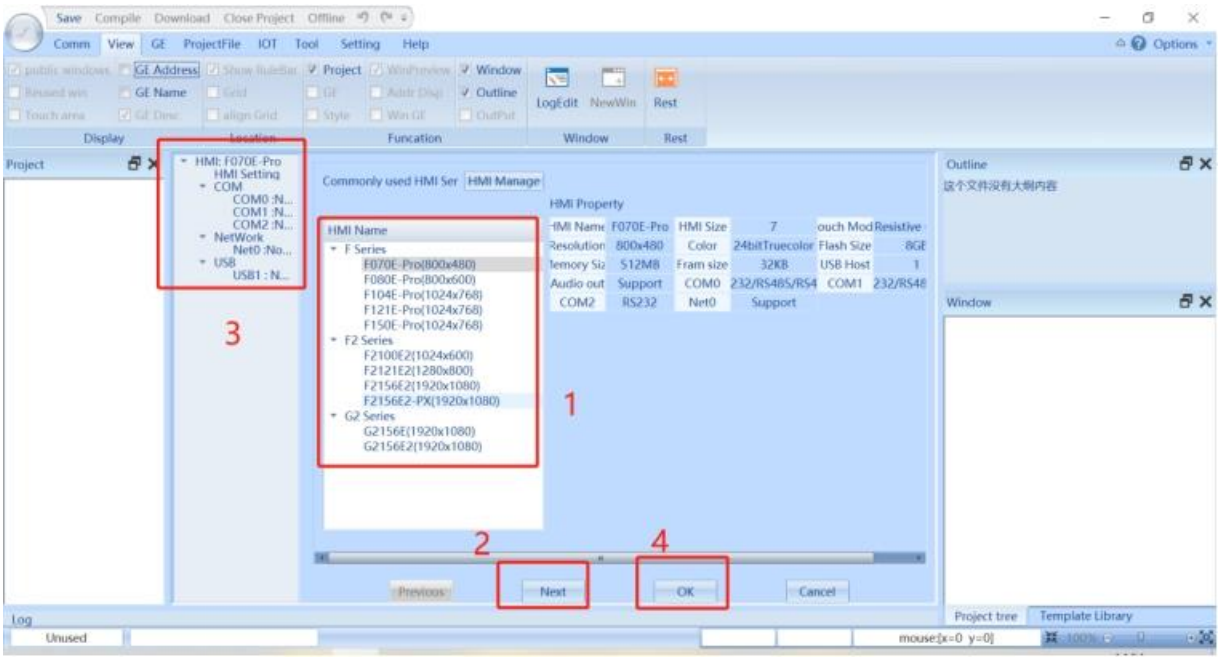
(1) Select the HMI model.

(2) Click "Next" to configure according to the navigation.

(3) You can choose COM, network port, USB for configuration directly without clicking next.

(4) Click "Confirm" to enter the project editing screen when the configuration is finished.

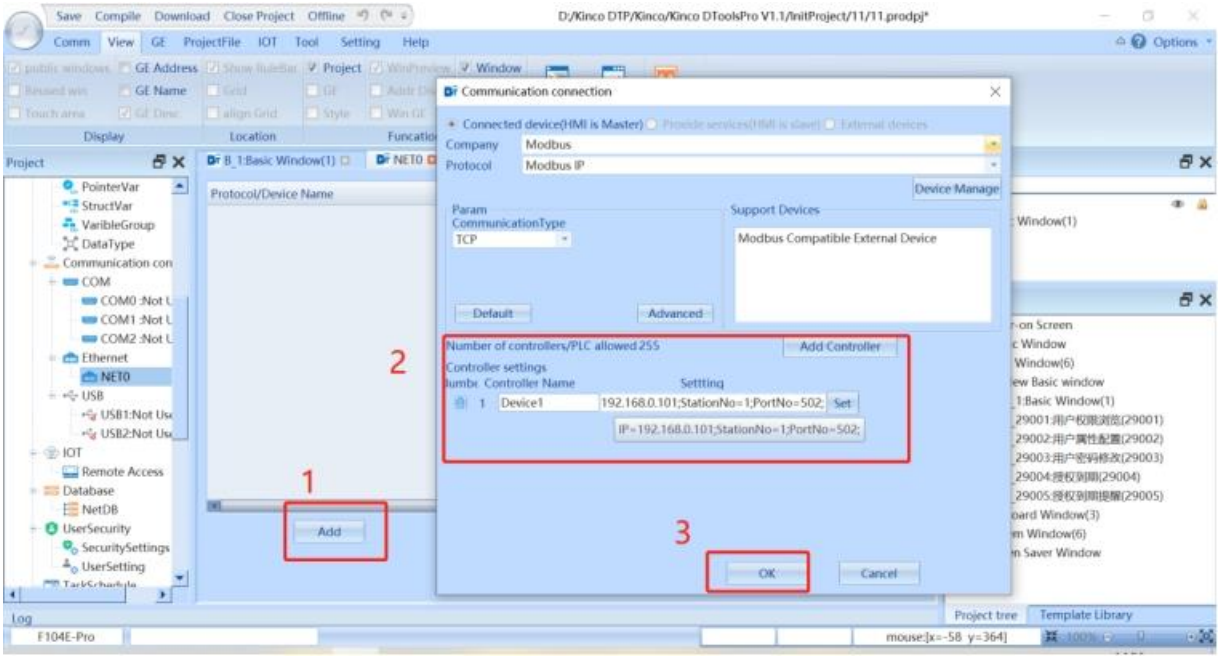
(5) After selecting the correct HMI model, you can also click "Confirm" directly, the COM and network port can be set in the project, this time to connect the "Modbus TCP" slave.



2.2.2 Connect external controllers

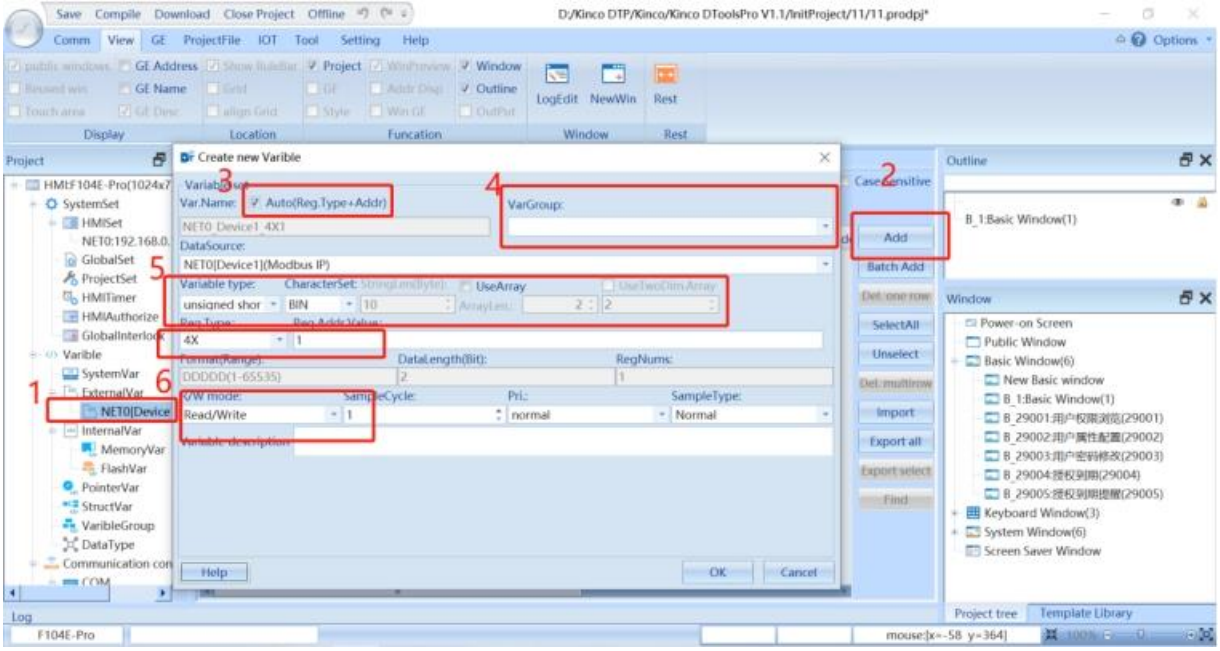
1. Project tree, select "Ethernet" - "Net 0", click "Add", select "Modbus IP "driver. Set the IP address and port number of the

device, and then click “OK”.



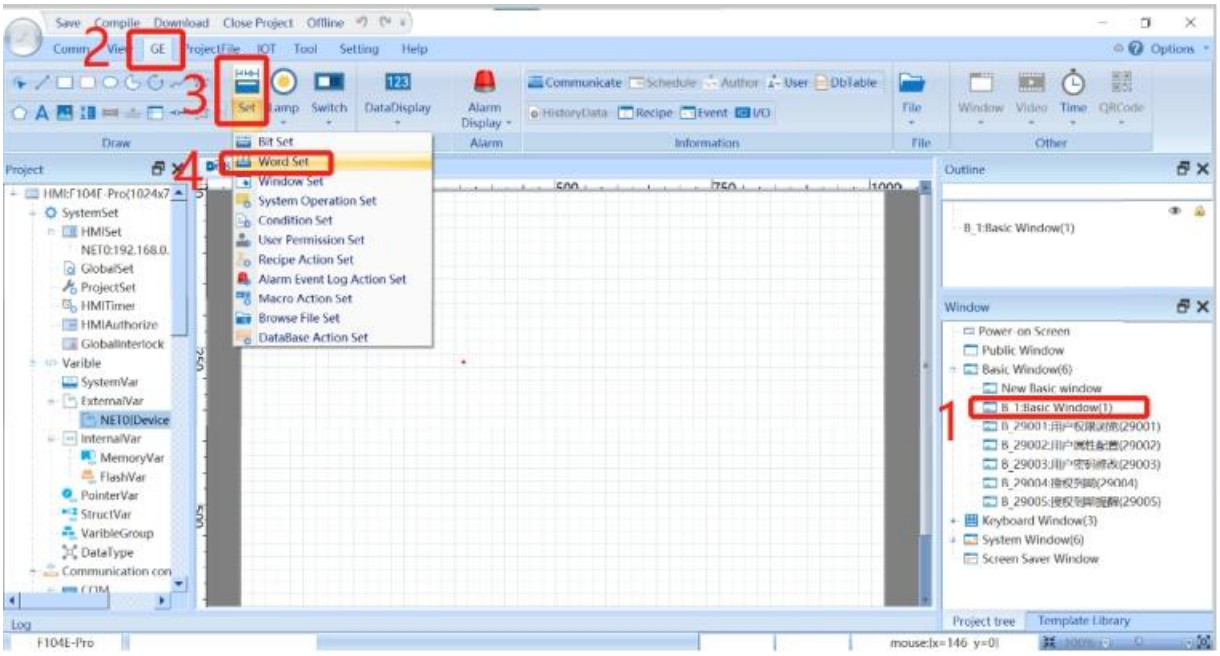
2.2.3 Create new variable

1. Click "External Variables", double-click "Device 1", select "Add", automatically generate variables by default, set variable group name (can be skipped), select data type, set data address, confirm it is correct, then click "OK".



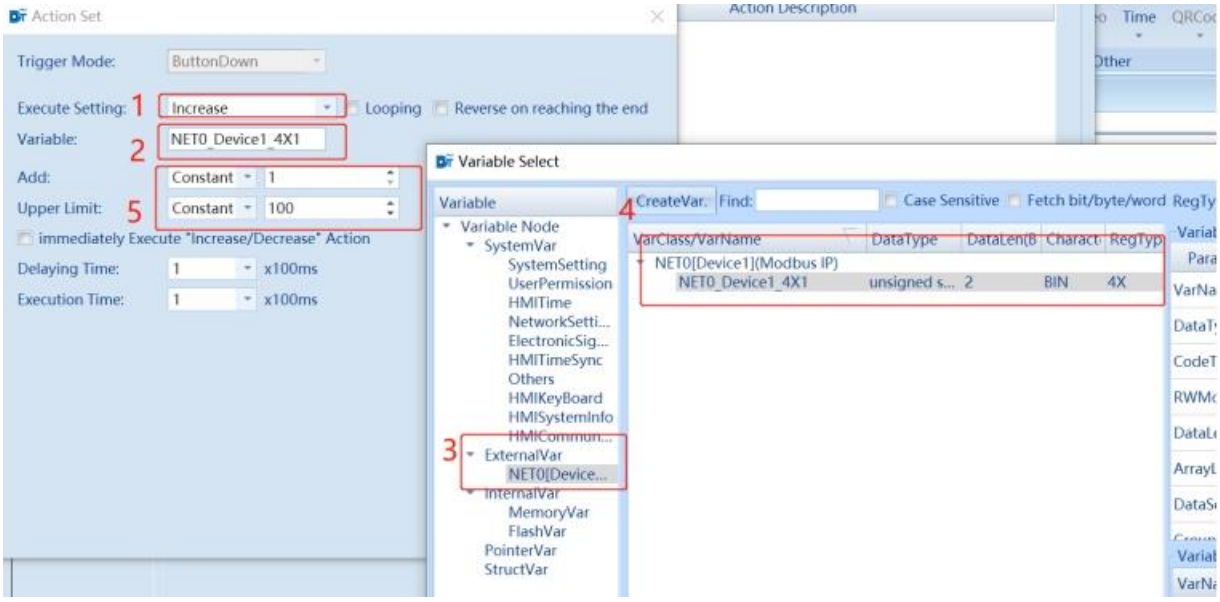
2.2.4 Configuration screen

1. Double click "Basic Window 1", the following screen will be displayed, click "GE" in the menu bar, select "Set" and then choose "Word set".



2. Set the data to be self-increasing, as follows:

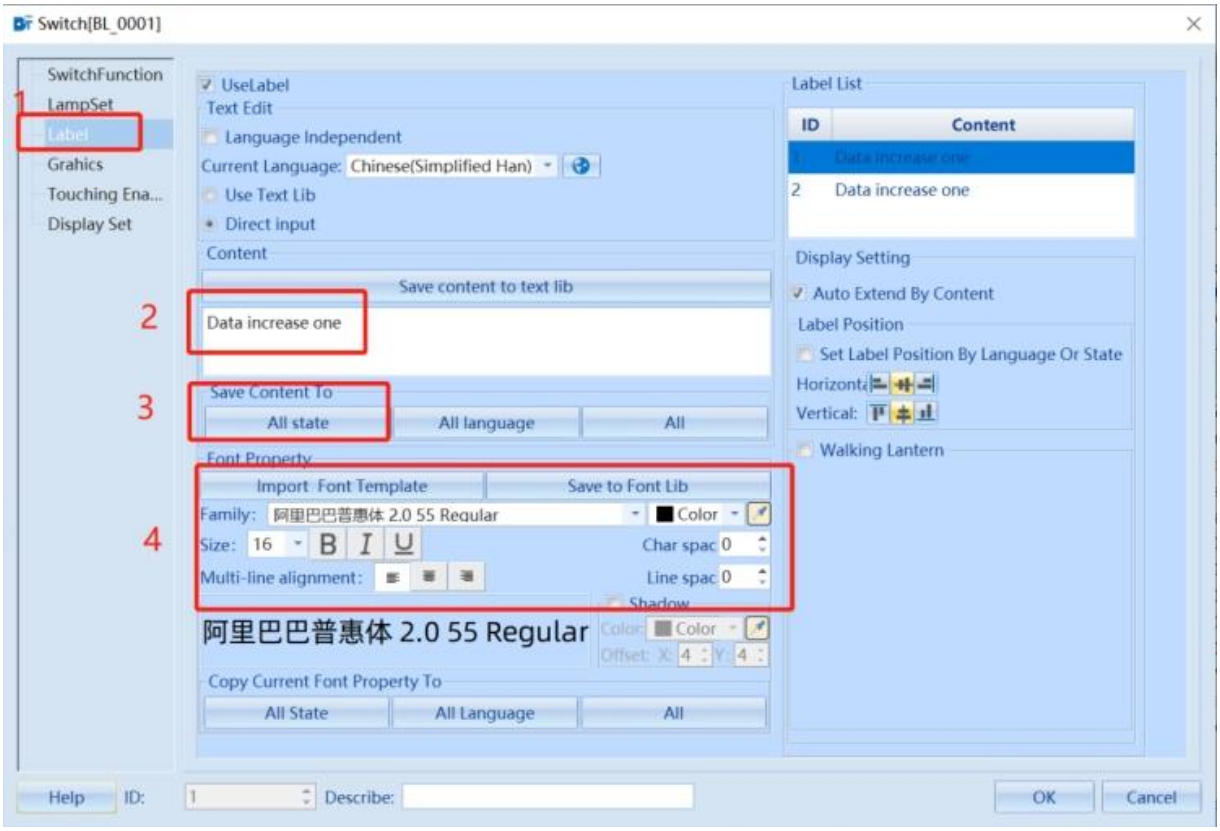
First, execute the setting to select the recurrence, select the variable (the variable selection window will pop up), select the external variable in order - Device 1 - confirm the variable to be bound (double click to confirm). Finally, set the additive value and the upper limit value, and click “OK”.

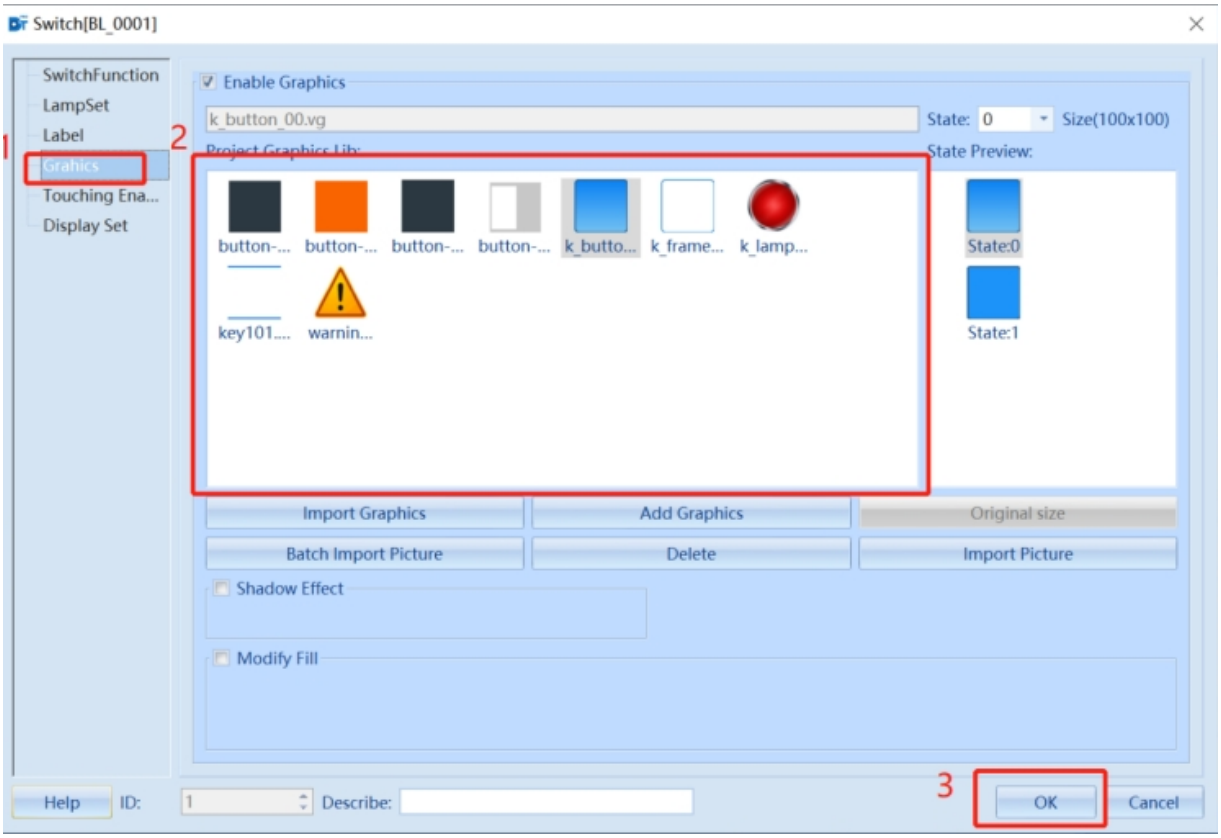


3. Set the button labels and graphics as shown in the following figure:

Click on the label, set the name to "Data increase 1", save content to All State, and finally set the font and font size.

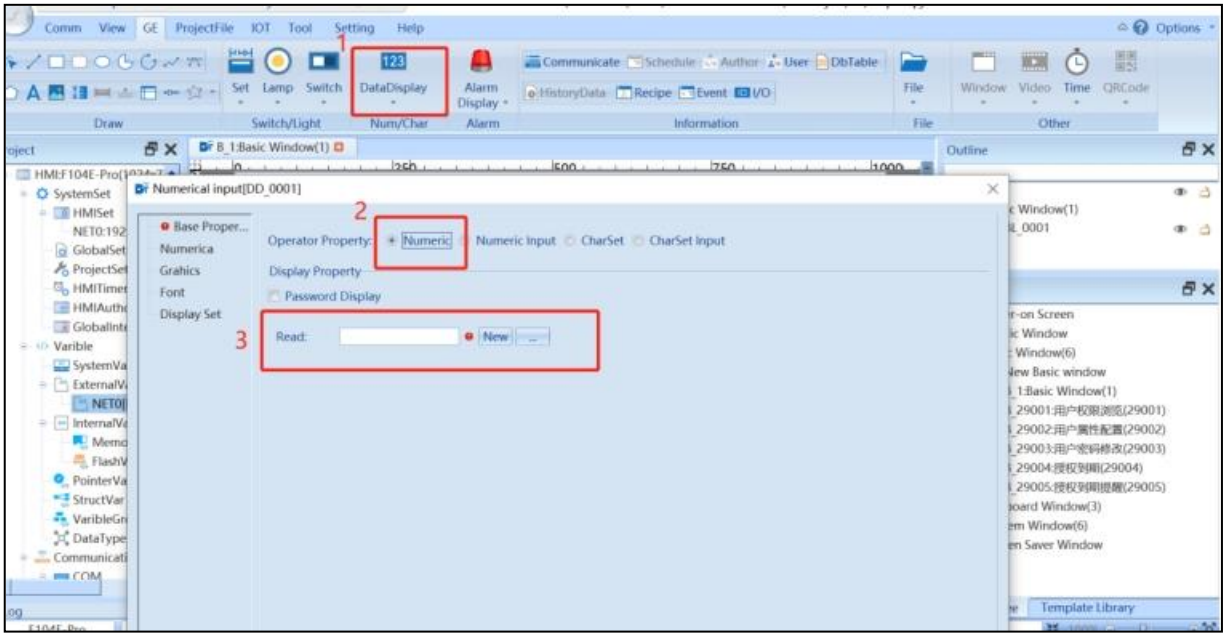
Click on the “Graphics”, select the graph, and click “OK”.



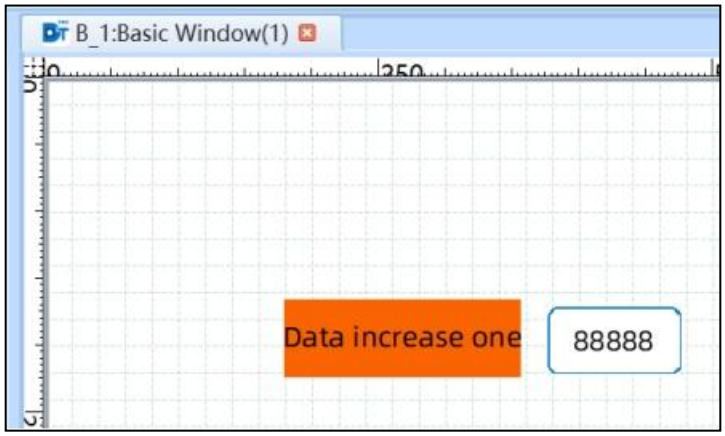


4. Set the data display

Select Toolbar “Data Display”, set the “Numeric”, and the variables to be displayed.

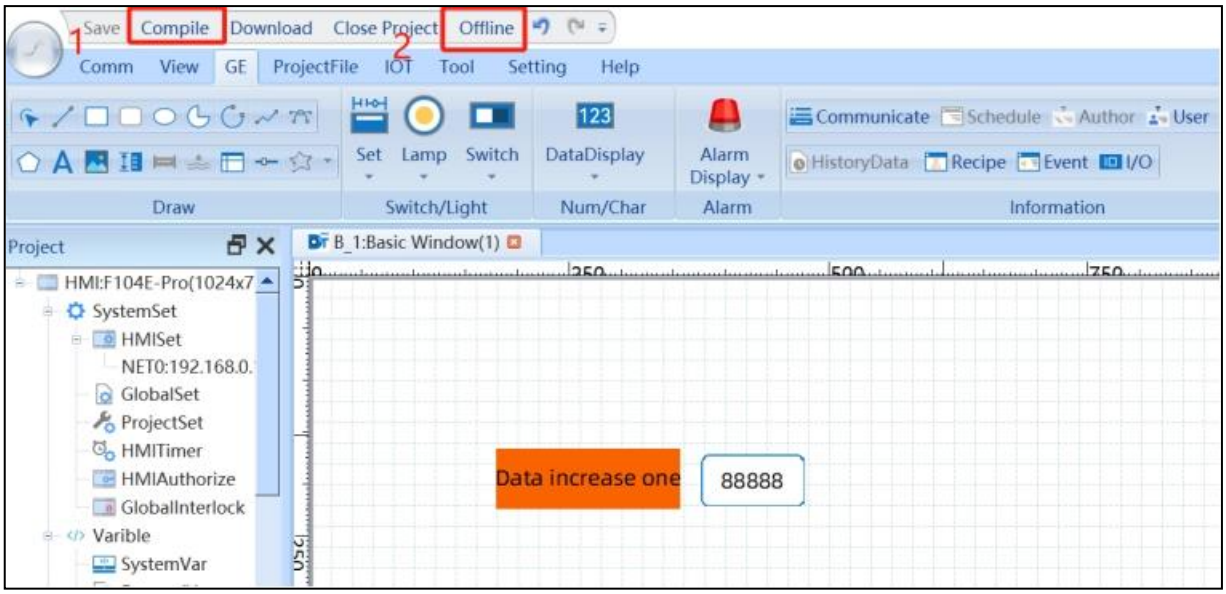


5. The screen after configuration

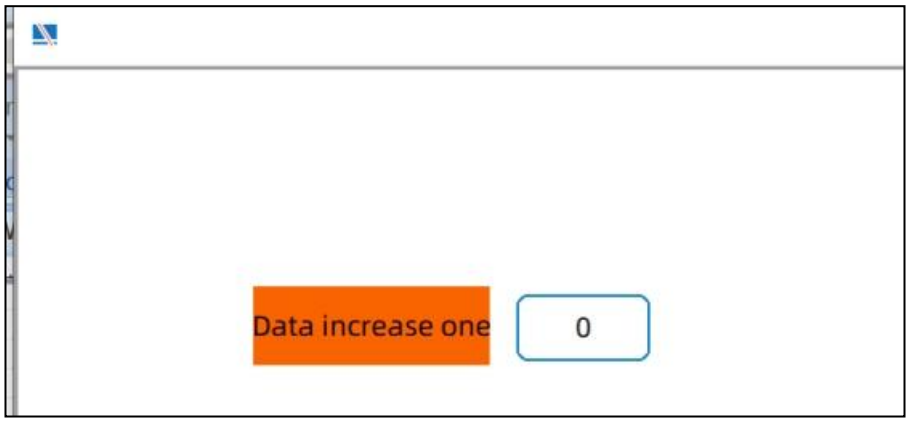


2.3 Offline Simulation

1. Click "Compile " in the shortcut toolbar, and after successful compilation, click "Offline" and "OK", as shown in the following figure:



2.Offline screen

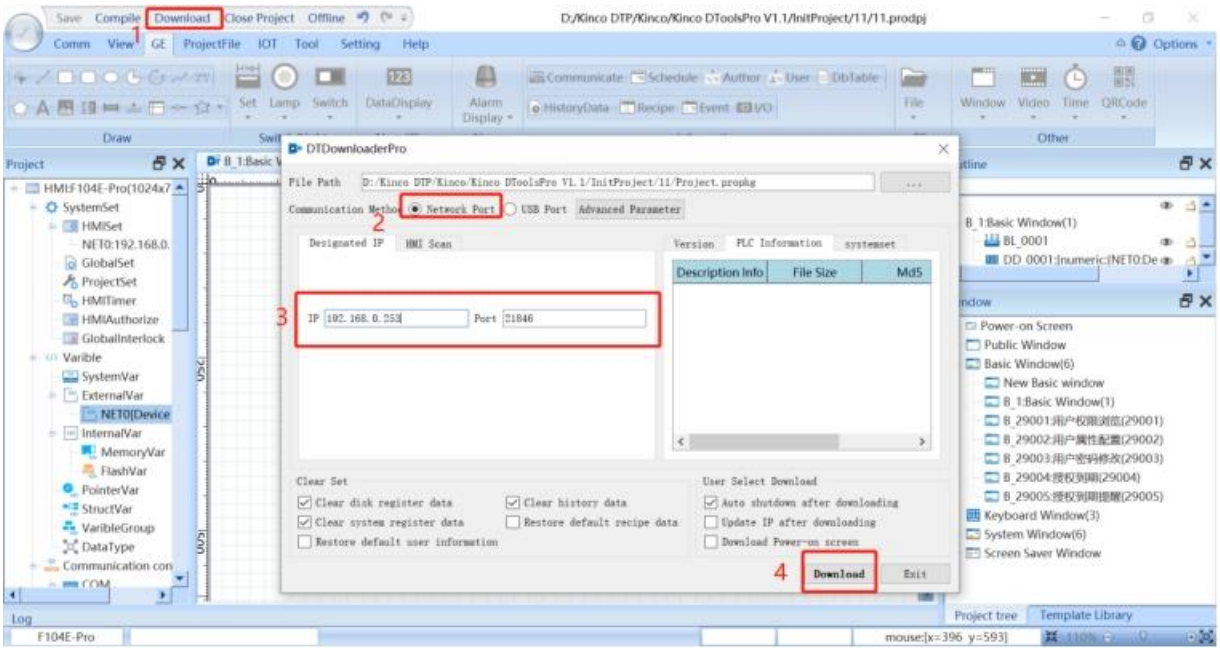


2.4 Download the project

2.4.1 Download project using computer

Select "Download" in the shortcut toolbar, select the network port in the pop-up window, then set the HMI device IP and port, and finally click “Download”.

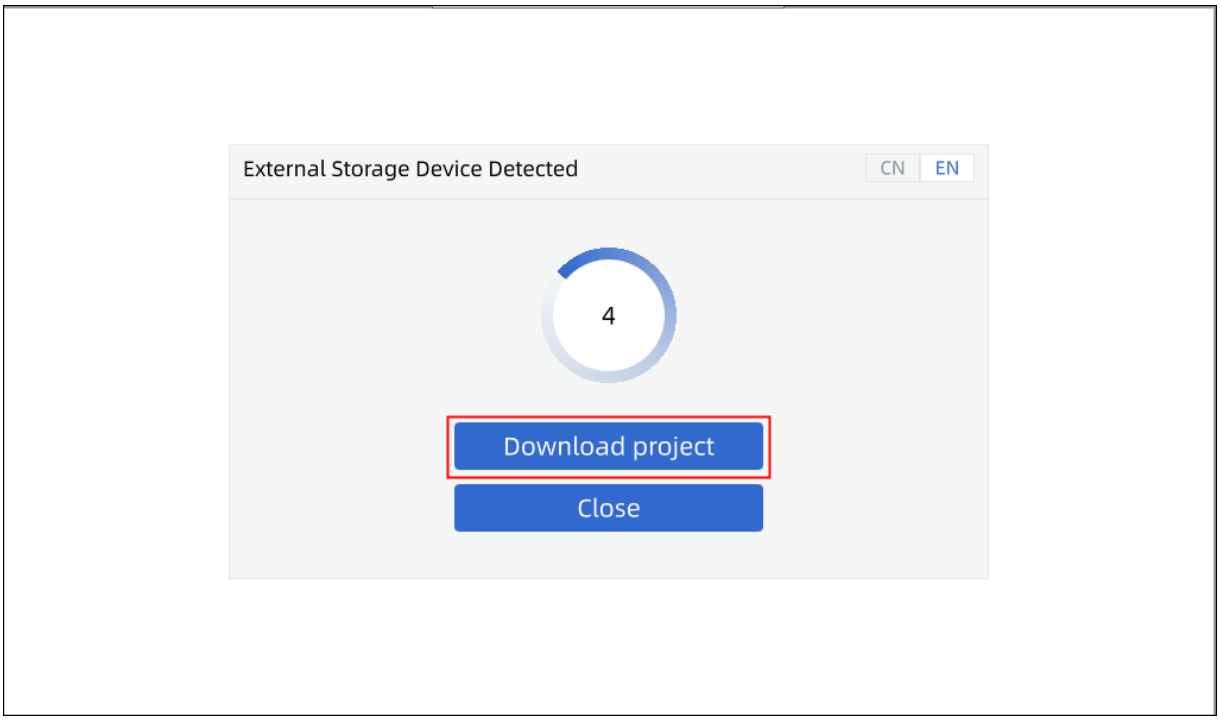
Note: The default IP address of HMI is: 192.168.0.253.



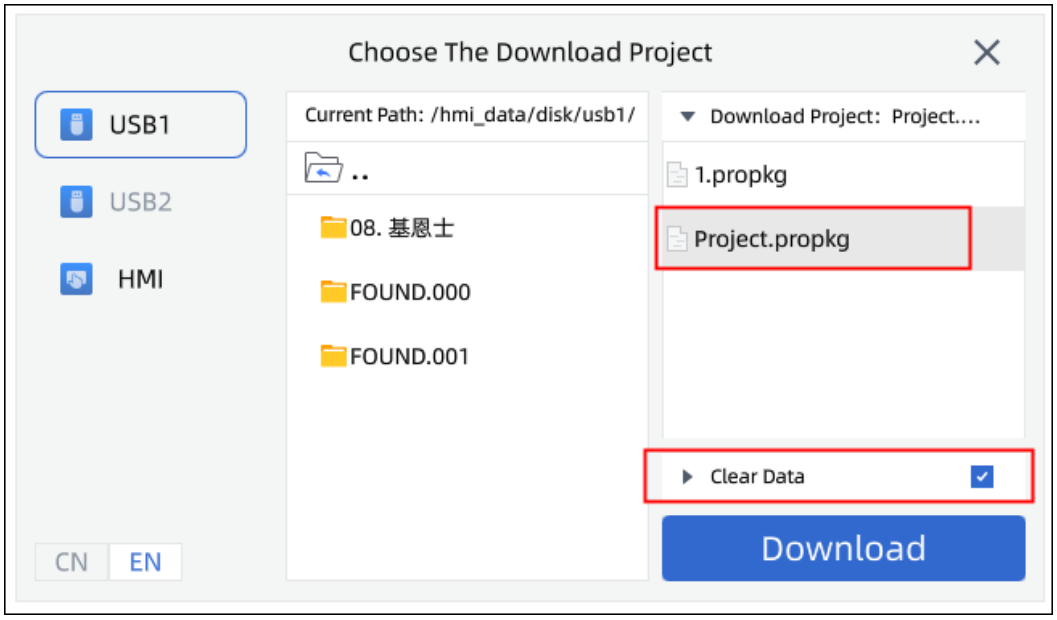
2. 4. 2 Download project using USB flash drive

Supported versions for USB download: servo version>=5277, gui version >=5405

After inserting the USB flash drive for 5 seconds, the following pop-up window will pop up.



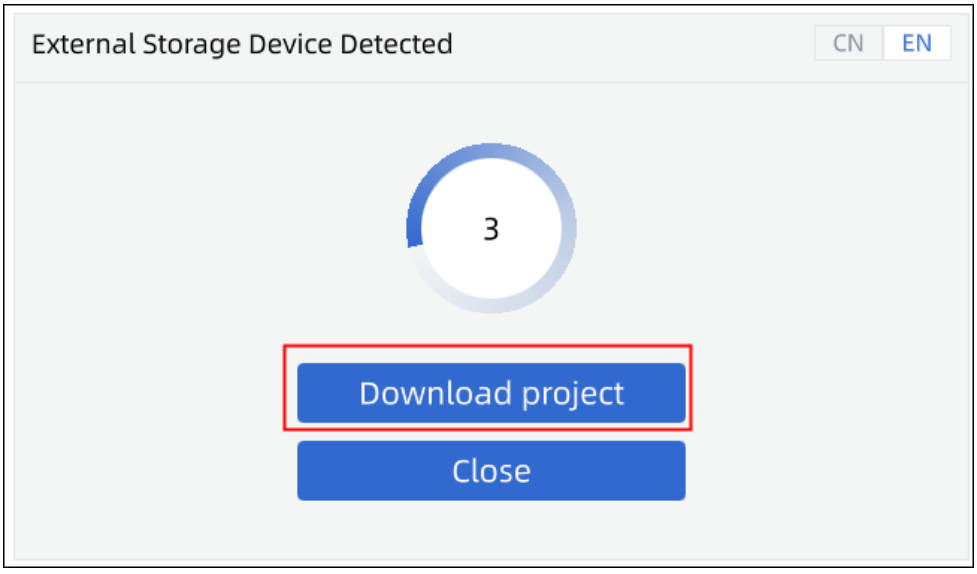
Click “download project”. When there are multiple .propkg files in the root directory of the USB disk, and more than one file is different from the HMI, project selection interface will pop up. After selecting the .propkg file to be downloaded, the “Clear data” item is default all checked, you can click to expand the setting check options. After setting, click to download.

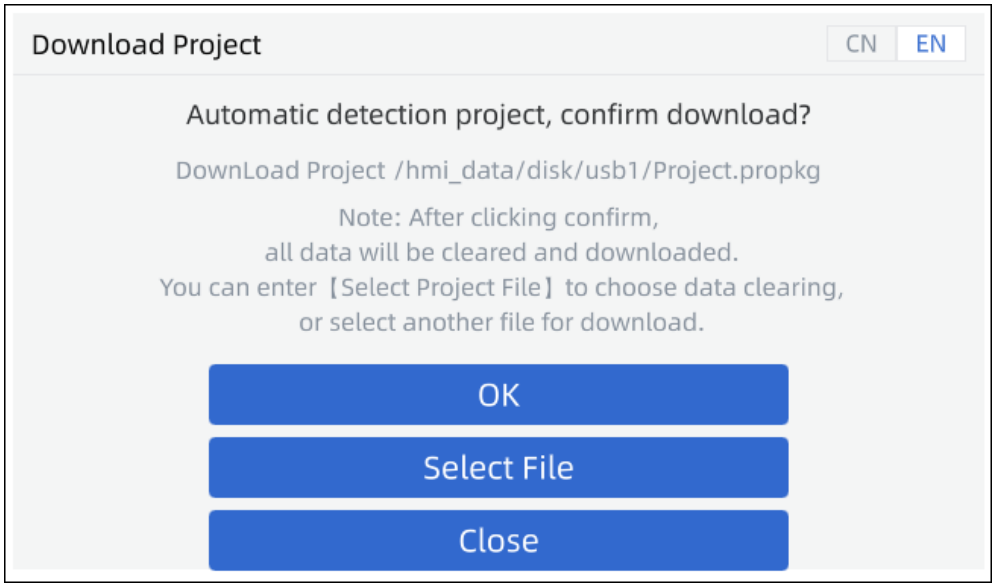


Note:

1.When the U disk is inserted to power up the screen/the computer downloads the project to the screen, the U disk download prompt box will not pop up. You need to manually remove and insert the USB flash to pop up the download prompt window.

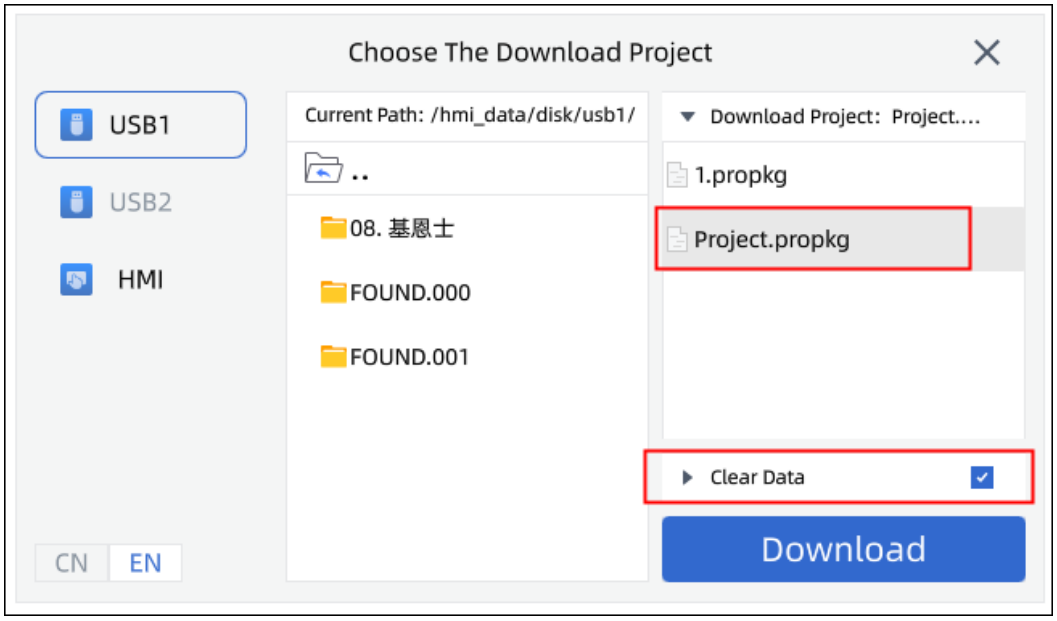
2. When there is only one .propkg file is different from the project file in the HMI, after clicking " Download project", a prompt will appear saying "Automatically detect the project, confirm downloading/xxxx. Propkg". Click "OK" to automatically download the project. Click "Select File" to enter the project file selection interface





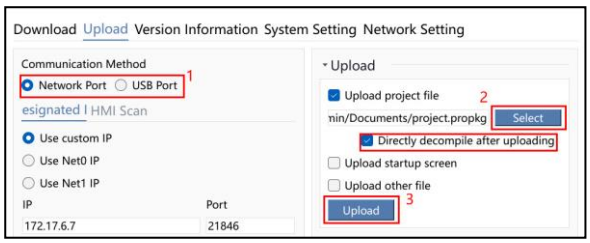
3.When the screen is the factory screen (after firmware update), insert a USB flash drive. If there is only one propkg file under the USB flash drive, the project file will be automatically downloaded directly

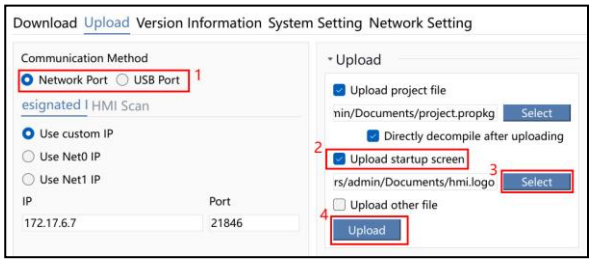
If there are multiple propkg files in the root directory of the USB flash drive, the download project selection interface will pop up.



2.5 Upload

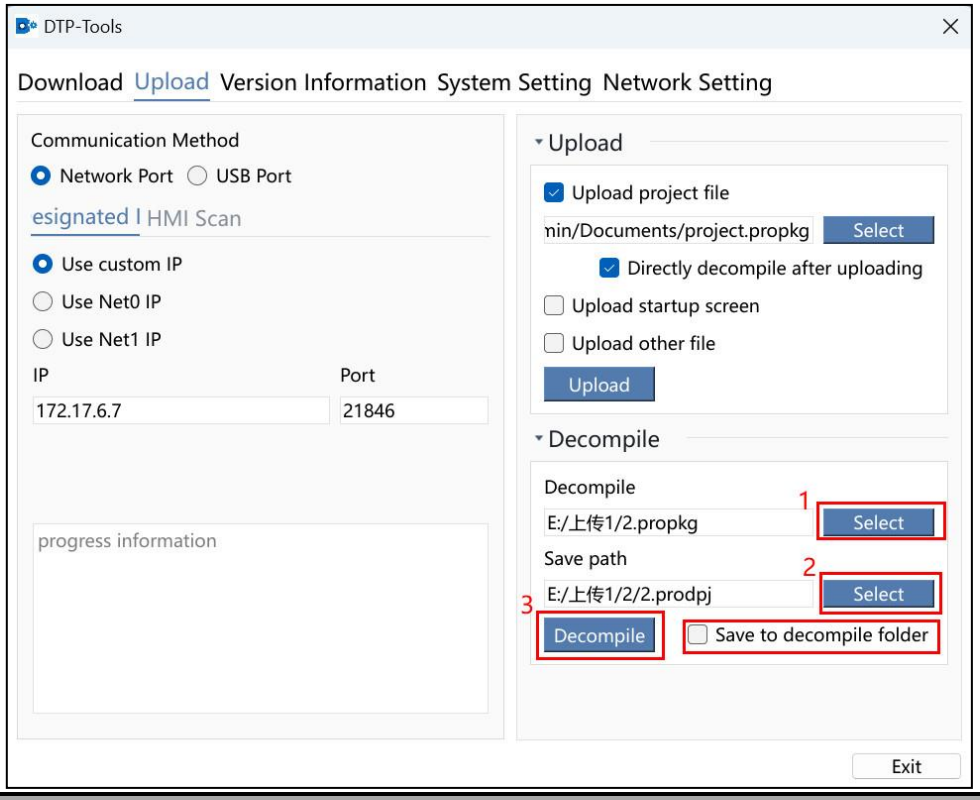
Upload project files, startup screens, and other files in the HMI to the PC for easy access and to provide decompiled files for decompilation operations.

Upload Setup Instructions		
Upload project file		1.Select upload method: network port or US
		2.Click "Select" to set the project name for the uploaded project (no project name suffix is allowed).
		3.You can choose whether to check "decompile directly after uploading" or not, please refer to 2.6 Decompile for detailed operation of decompile.
		4.The upload operation will be executed only when the project is allowed to be uploaded and the password is entered correctly, the default password of the

		project: 888888
Upload startup screen		1.Select upload method: network port or US 2.Manually check the box when uploading the startup screen (this box is unchecked by default) 3.Click "Select" to set the file name for the uploaded startup screen (no file name suffix is allowed).

2.6 Decompile

The configuration screen edited by Kinco DToolsPro is saved in the file format of .prodpj, and then compiled to generate the .propkg file required to run on the HMI and downloaded to the HMI, so the project file uploaded by the user from the HMI is a .propkg file, and if you want to open the editing of the project on the HMI by Kinco DToolsPro, you need to decompile the .propkg file to generate a project folder through the decompilation process, and the project folder contains files such as .prodpj, and then finally use Kinco DToolsPro to decompile a project folder containing .prodpj. If you want to use Kinco DToolsPro to open and edit the project on the HMI, you need to decompile the .propkg file to generate a project folder, and the project folder contains .prodpj and other files, and then use Kinco DToolsPro to open the .prodpj file for editing.

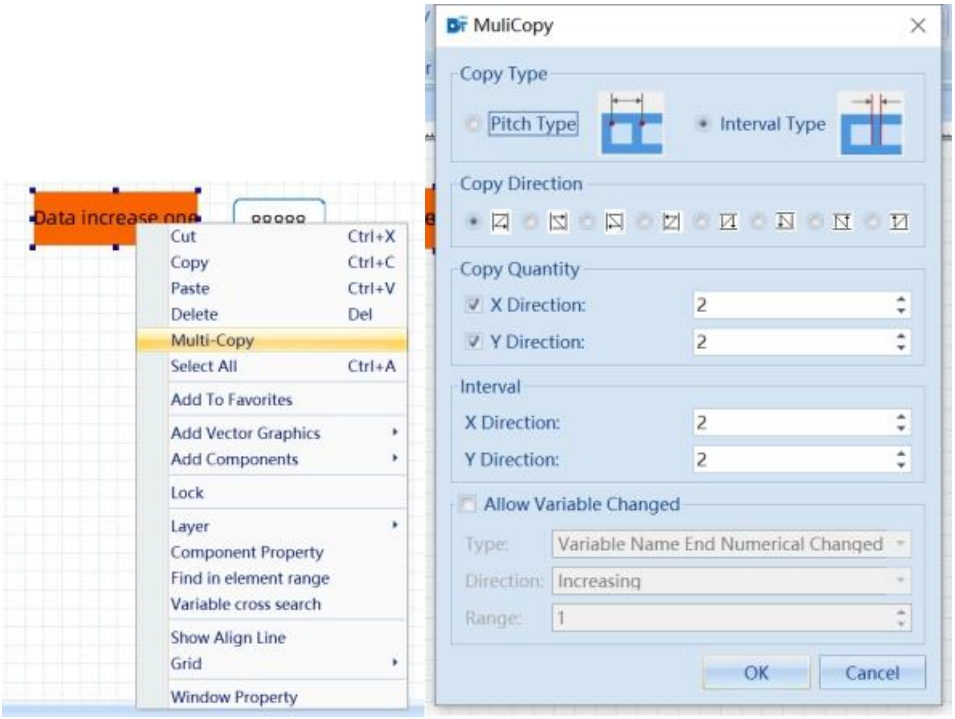


Instructions for decompiling settings	
Decompile	Click the "Select" button of decompile, select the project file to be decompiled.
	Click on the "Decompile" button to decompile the program.
	Allow the project to decompile and the password is correctly entered, then the decompile operation will be executed, the project's default password: 888888
Save path	Click the "Select" button of the save path, and select the save path of the folder to be decompiled.
Save to decompile folder	Show this option if the path to the decompile file is not empty
	After executing the decompile operation, a subfolder with the same name as the decompile file is generated under the current path of the decompile file ,this folder contains the folder of the project resources and the executable file of the host computer.

3 Basic Operations

3.1 Multiple replication

Right-click "Multi-Copy", you can set the copy type, quantity, spacing and interval according to the regularity to get multiple elements.

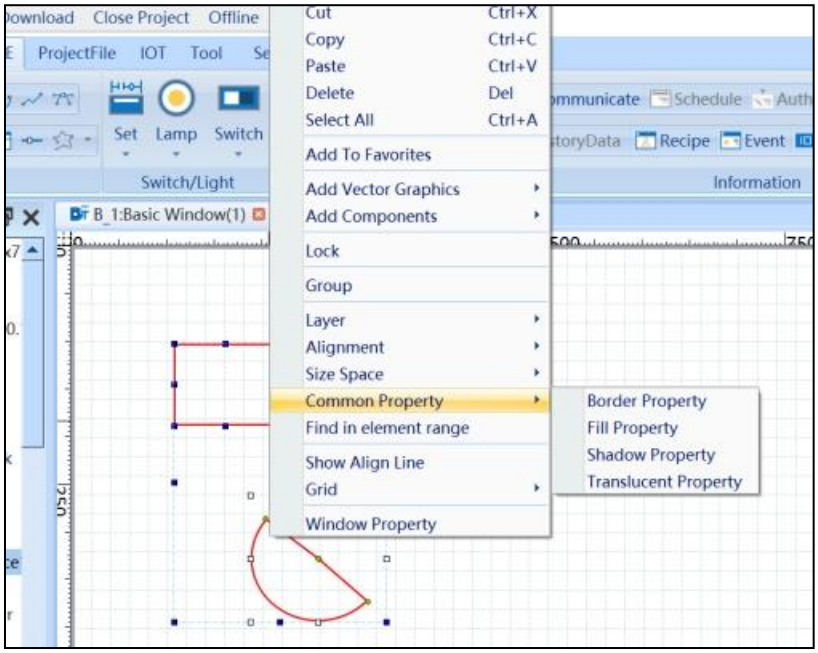


Multi-copy setup instructions		
Copy Type	Interval type	Start copying from the right outer frame of the component
	Pitch type	Start copying from the first point in the top left corner of the component
Copy Direction	Support 8 kinds of direction selection	The direction of address increment is the same as the direction of serial number increment
Copy Quantity	Number of copied elements.	You can set the number of duplicate elements in the X and Y directions, or set only one direction separately.
Interval	X/Ydirection	Spacing between copied elements, in pixels
Allow variable Changed	Variable Name End Numerical Changed	Incremental or decremental, ranging from 1 to 999
	Array Variable Index Changed	Incremental or decremental, ranging from 1 to 999
	Variable Offset Changed	Incremental or decremental, ranging from 1 to 999

3.2 Common Property

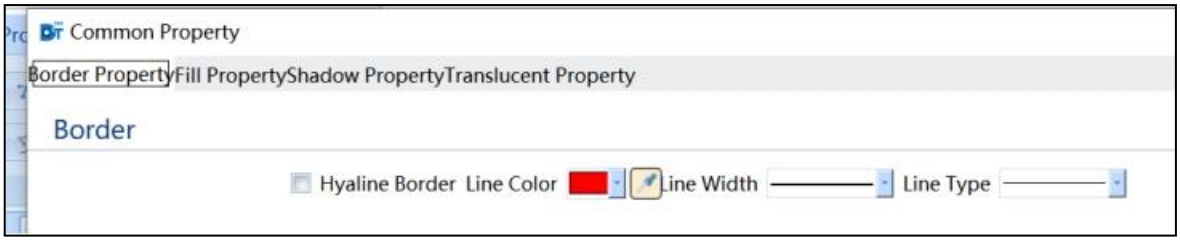
When the selected elements have the same property, you can set the selected elements to the same property at the same time through the public property interface and it will take effect in real time. After selecting a component, click the right mouse button on the public property, and the property displayed at this time is the common property of the selected component. These include border property, fill property, shadow property, translucent property, arrow property, label data, font property,

walking lantern,Touching Enabled Set and Display Set.



Note: Common property only supports basic operations on non-table elements. If there are elements in the selected component that do not support public property, the right mouse button will not display the public property item.

3.2.1 Border property



Description of the border property	
Hyaline Border	Effective when checked, i.e., elements that support transparent borders are displayed without borders when checked
Line color	Set the border color, the color picker can absorb all the colors on the computer screen at this time
Line Width	Set the line width of the border
Line Type	Set the line type of the border

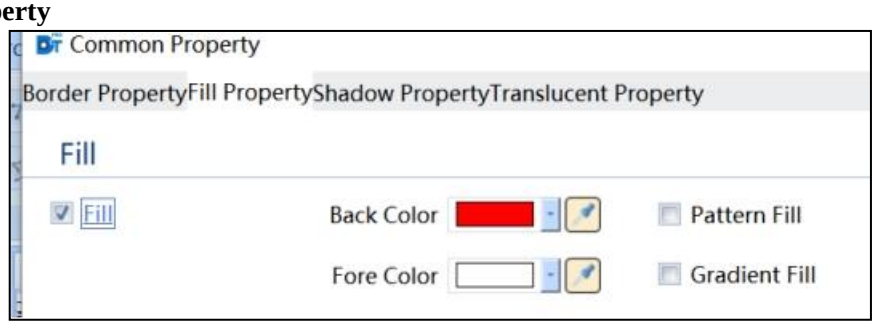
Note:

1. When the initial property of the selected elements are not consistent, the relevant items in the public property are not checked or displayed as empty

2. The text of the corresponding attribute will be underlined in blue after the attribute is modified

3. Properties will take effect immediately after modification

3.2.2 Fill Property

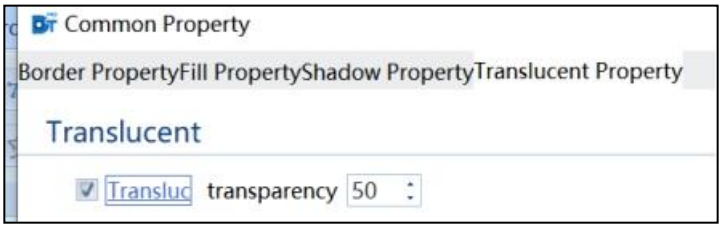


Description of fill property	
Fill	Effective when checked, that is, support for filling elements can be set after checking the fill style
Back Color	Set the background color of the fill, the color picker can absorb all the colors on the computer screen at this time
Fore Color	Set the fill foreground color, the color picker can absorb all the colors on the computer screen at this time
Pattern Fill	Effective when checked. It can combine background color, foreground color and select pattern style for filling
Gradient Fill	Effective when checked. It can be combined with background color, foreground color, gradient type, and gradient effect to fill

3.2.3 Shadow Property

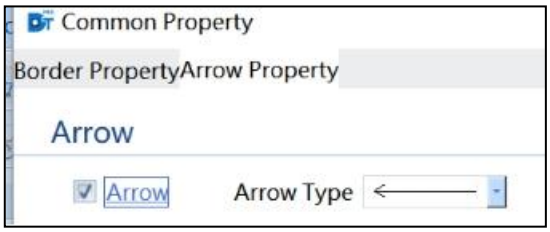
Description of shadow property	
Shadow Effect	Effective when checked, i.e. set the component shadow effect
Shadow Color	Set the component shade color, the color picker can absorb all the colors on the computer screen at this time
Shadow Offset	Set the component shading offset value. Offset value range: 0~16

3.2.4 Translucent Property



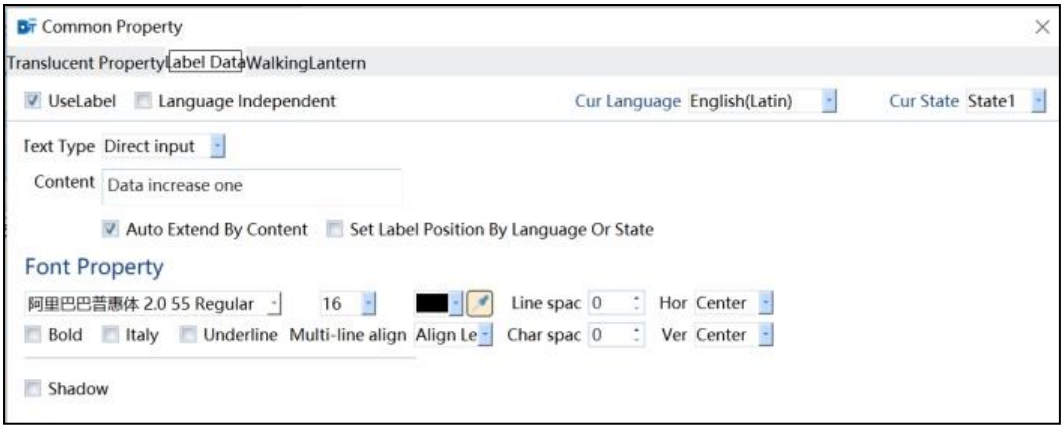
Description of Translucent Property	
Translucent	Effective when checked, you can set the translucent value of the component
Transparency	Set component translucency value, translucency value setting range: 0~99

3.2.5 Arrow Property



Description of Arrow Property	
Arrow	Effective when checked, you can set arrow properties for the elements that support arrow property
Arrow Type	Set component arrow style, translucent value setting range: 0~99

3.2.6 Label Data

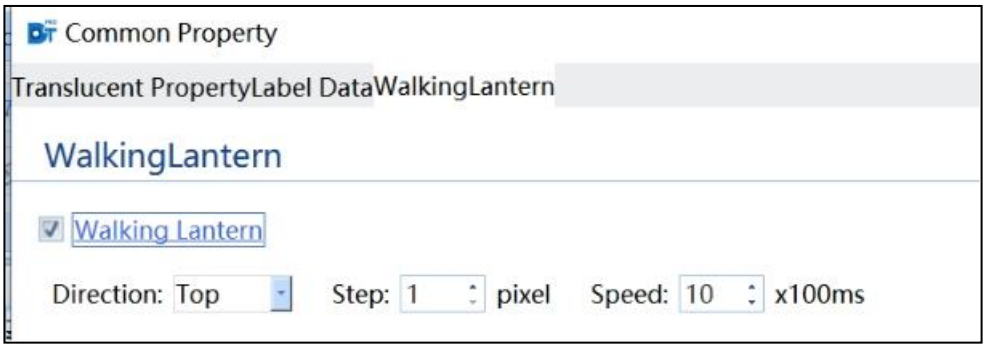


Description of Label Data	
Use Label	Effective when checked, you can set arrow property for elements that support arrow property
Language independent	Effective when checked, labels do not change with language switching
Current Language	Labels can be set in different languages
Current State	Set the current status of the configuration screen, which is consistent with [Status/Language] under General
Text Type	1. Can choose to directly input or associated text library, the following [content] display label data 2. Can choose the component size according to the content of automatic expansion 3. Can choose the language and state but with the setting of the label position
Font Property	Set font property such as label font, font size, color, etc.
Shadow	Effective when checked, you can set the label shadow, the range of the shadow is 0 ~ 16

3.2.7 Font Property

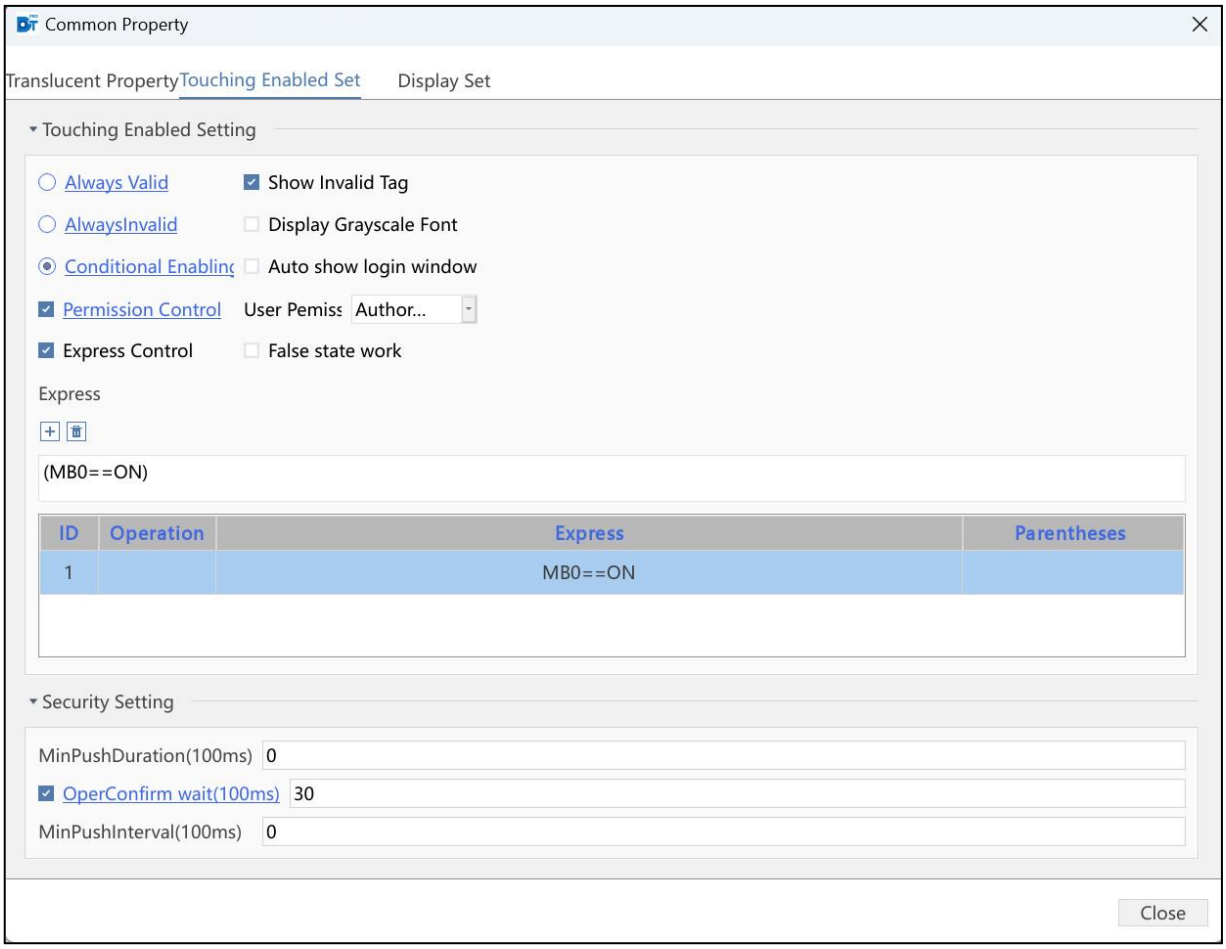
Font properties such as font, font size, and color can be set for the component.

3.2.8 Walking Lantern



Description of Walking Lantern	
Walking Lantern	Effective when checked. You can set the direction, step length, and speed of the Walking Lantern
Out of range is displayed as a walking lantern	Effective when checked. Labels beyond the component range are displayed as walking lantern
Other	1. When the initial property of the selected elements are not consistent, the relevant item in the public property is not checked or displayed as empty and the relevant font is displayed in black. 2. The text of the corresponding property is displayed in blue with underline after the property is modified 3. The property will take effect immediately after modification.

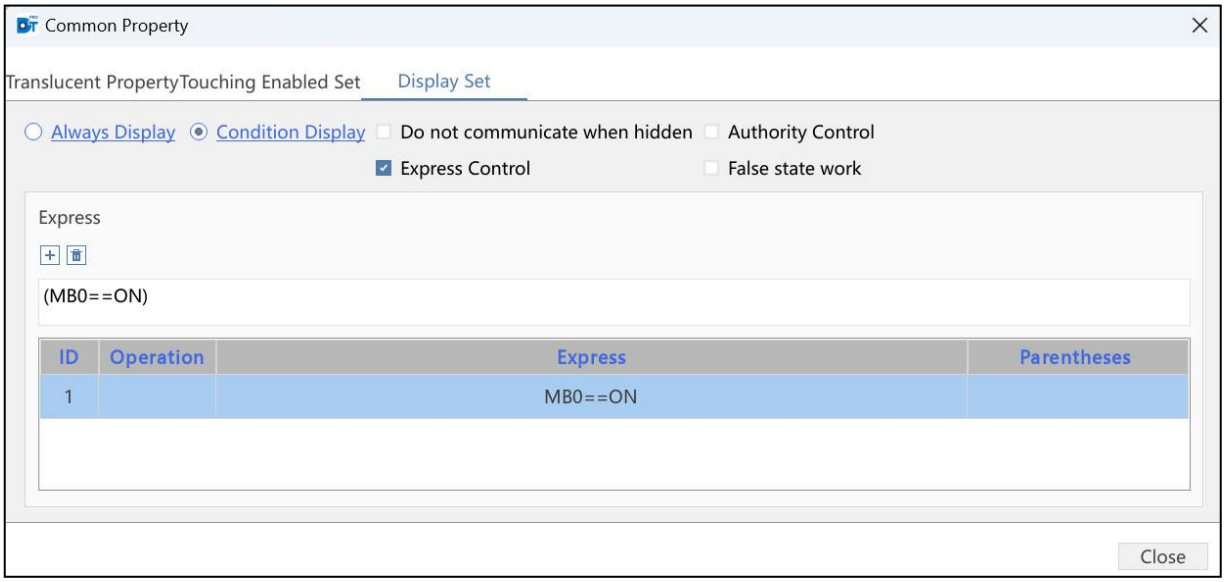
3.2.9 Touching Enabled Set



Touching Enabled Set Instructions		
Touching Enabled Set	Always Valid	Checking indicates that a touch in the active area of the current component can effectively write status values or data to the specified registers.
	Aways Invalid	Checked to indicate that status values or data cannot be validly written to the specified registers even if the current element is touched in the valid area of the touch.
	Conditional Enabling	Permssion Control: Check to indicate that the operator's user privileges must simultaneously satisfy the multiple privileges checked for the component in order to touch the current component and write status values or data to the specified registers.
		Auto show login window: Check this box to indicate that when the current user's permission ID does not meet the set permissions, the password input window provided by the system will be automatically popped up for the user to input the password in order to log in.
		Express Control: Check to indicate that the current element can be touched and the status value or data can be written to the specified register only when the status of the specified bit register or word register satisfies the set condition. (false status in effect means valid when the condition is not met)
Show Invalid Tag		Check this box to indicate that the component displays the invalid marker when the component is currently in the invalid touch state.
Display Grayscale Font		Check this box to indicate that the component label is grayed out when the current component is in the touch invalid state.
Security Setting	MinPushDuration	The current element must be pressed continuously for a period of time not less than the set time before the status value or data can be effectively written to the specified register. The minimum unit is 100 milliseconds, and 0 means that the minimum press time is not set.
	OperConfirm wait	The check box indicates that the HMI will automatically pop up the operation confirmation window when touching the current component, and the status value or data will be written to the specified register only when clicking "OK", and the operation will be canceled automatically when clicking "Cancel" or exceeding the set [Waiting Time] and the user does not confirm the operation with "YES". When "Cancel" is clicked or the set [Waiting Time] is exceeded and the user does not confirm with "YES", the

		operation will be canceled automatically. (You can add the ability to record the change of data in a register when pressed.)
	MinPushInterval	Minimum time interval between two operations of the same component, the minimum unit is 100 milliseconds, 0 means do not set the minimum time interval of the operation

3.2.10 Display Set

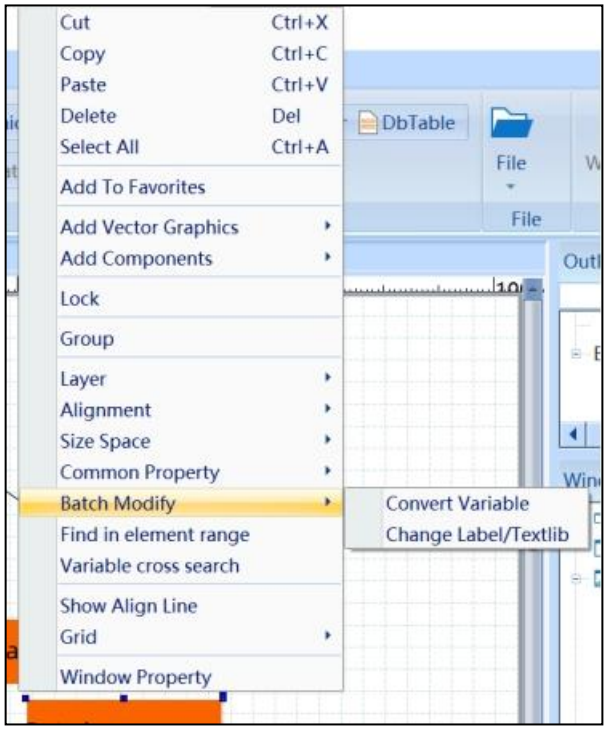


Display Set instructions		
Display Set	Always Display	Checked to indicate that the current component is always displayed
	Condition DisplayDo	Do not communicate when element is hidden: when the variable used by the element is an external variable, check this option and the element will not communicate when it is hidden
		False state workt: in case of an error status
		Authority Control: Check to indicate that the operator's user privileges need to meet the multiple privileges checked for the component in order for the current component to be displayed.
		Express control: check to indicate that the current component will be displayed only when the status of the specified bit register or word register satisfies the set condition (false status in effect indicates that it is displayed when the expression is not satisfied)

3.3 Batch Modify

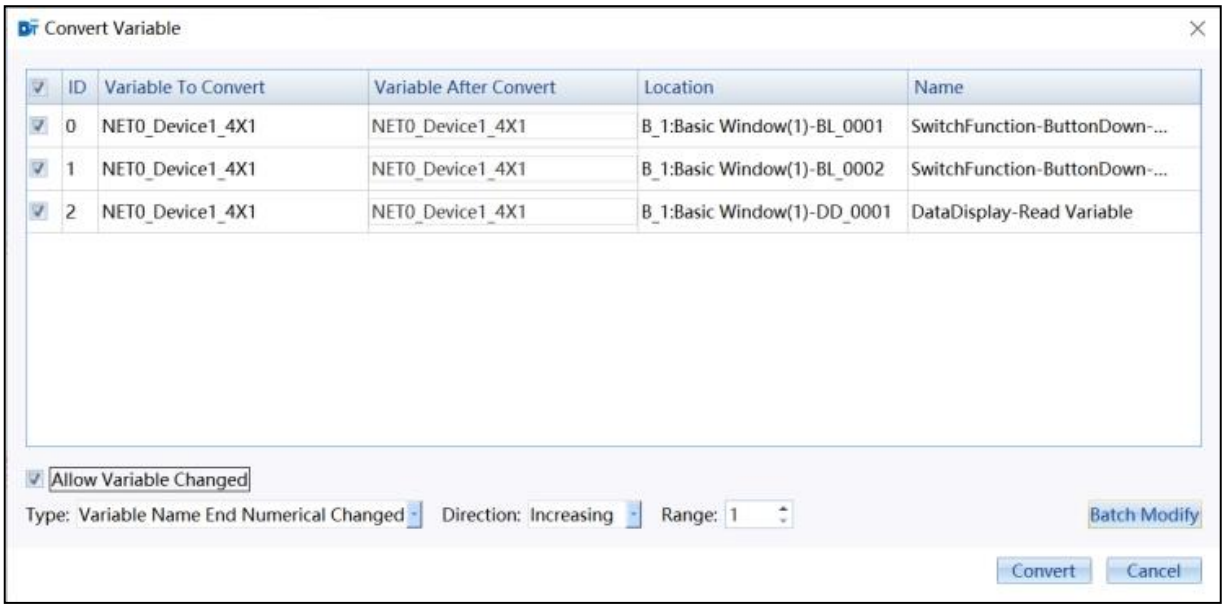
Batch Modify includes the Convert Variable function、Change Label/Text Lib、Touching Enabled Set and Display Set function. Select multiple elements, right-click, and you will see the "Batch Modify" option, you can choose "Convert Variable" or "Change Lable/Textlib".

If the selected component does not contain a label, right-click will only display the " Convert Variable " function.



3.3.1 Convert variable

Right-click on "Batch Modify" and select "Convert Variable" to bring up the boxes for converting variables, which contain variable information for all boxed elements.

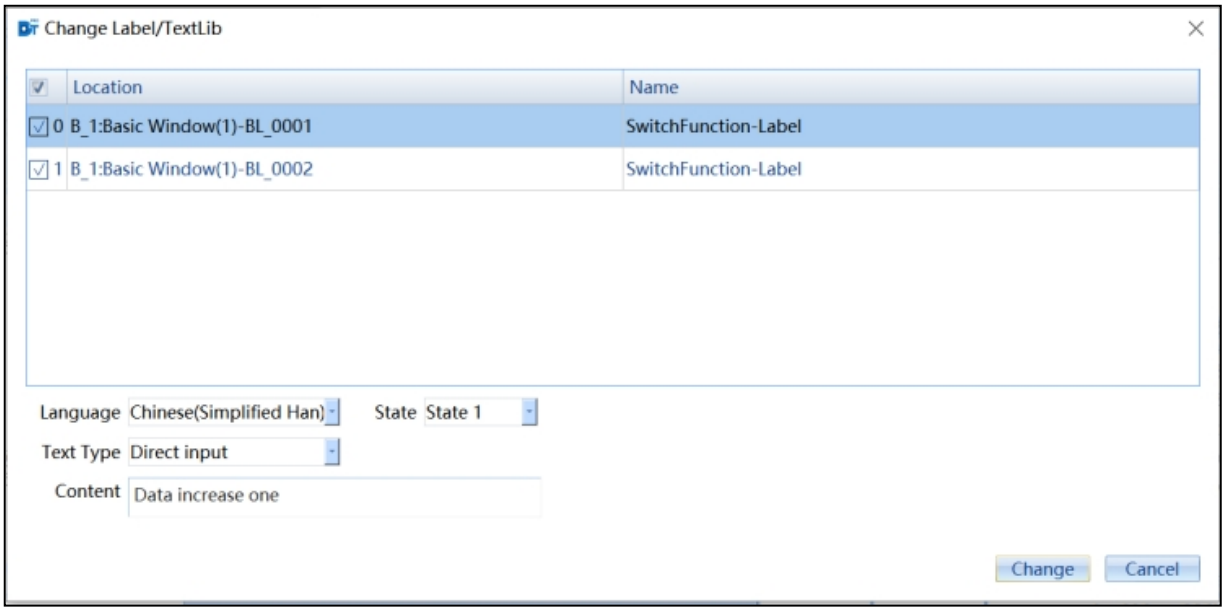


Description of Converting variable	
Variable to convert	Variables associated with the current component
Variable after convert	The initial variables are the same as “Variable to convert”. Clicking "Variable after convert" will bring up a variable selection box, which can be modified to other allowed variable types, and then click "Convert" to take effect.

Location	Location of the associated variable element
Name	Information about the component corresponding to the variable
Allow Variable Changed	Check multiple variables of the same type, and the "Allow Variable Changed" checkbox will appear at the bottom. The modification conditions include "Type", "Direction" and "Range", which are consistent with the "Allow Variable Changed" function in multiple replication, please refer to 3.1 Multiple replication for details.
Batch Modify	Check multiple variables with the same allowable variable type, and the "Batch Modify" button will appear at the bottom. After clicking it, the variable selection box will pop up, showing the allowable variable types. After you select the variables, you will modify the checked variables in batch according to the settings in "Allow Variable Changed".

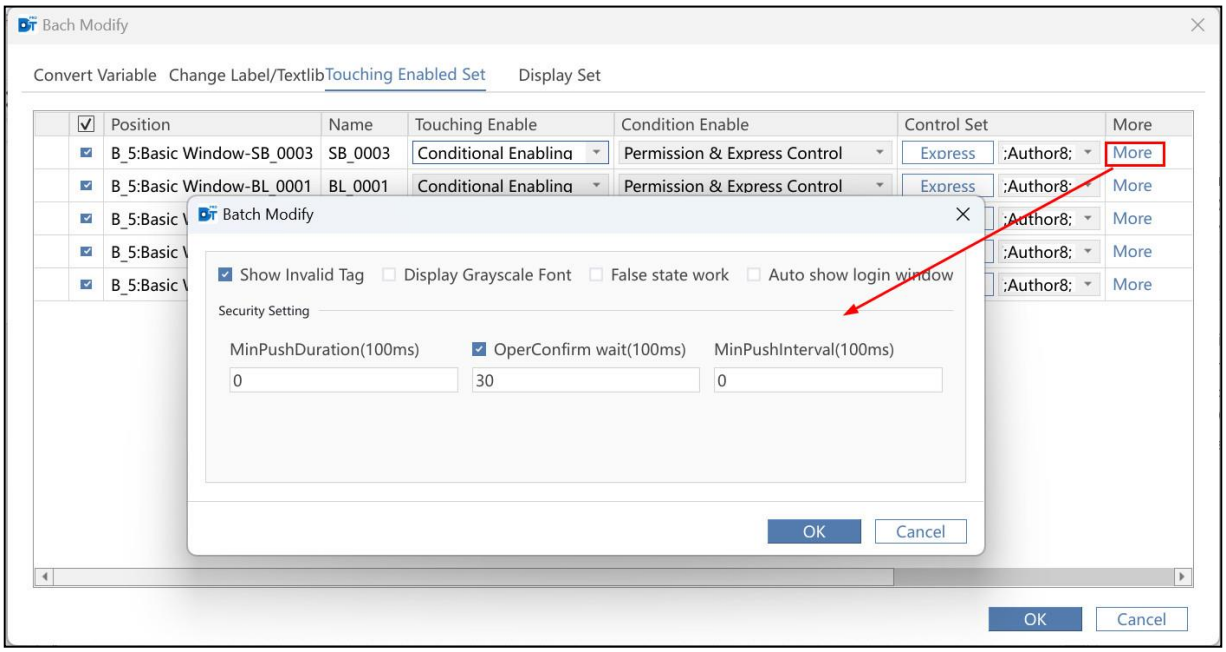
3.3.2 Change Label/TextLib

Right-click on "Batch Modify" and select "Change Label/TextLib" to bring up the box, which contains the label information for all boxed elements.



Description of changing Label/TestLib	
Location	The location of the component corresponding to this label
Name	Information about the elements corresponding to this label
Language	You can set the content of the component under each language. If the component is checked for language irrelevant, you can gray out the checkbox
State	You can set the content of each state of the component. if the component has only one state, this item is not displayed
Text Library	Text type select "Use Text Library" will show the current text library, you can select other text libraries.
Text Type	You can select "Direct Input" or "Use Text Library". Note that "Use Text Library" can only be selected if there is content in the project text library.
Content	You can modify the contents of the corresponding settings. If you select "Use Text Library", the text library content will be displayed.

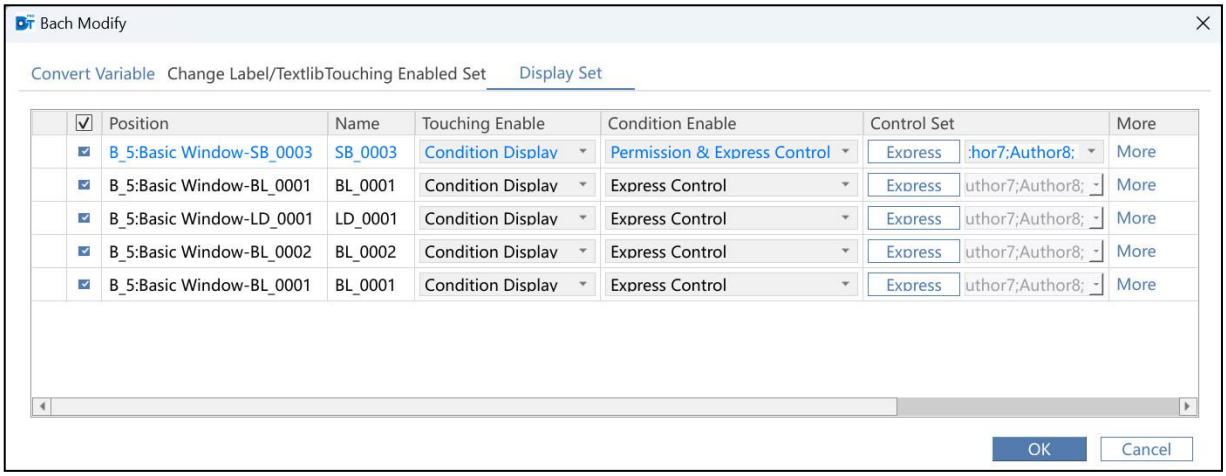
3.3.3 Touching Enabled Set



Touching Enabled Set Instructions			
Position	This label corresponds to the location of the component		
Name	Component information corresponding to this tag		
Touching Enable	Click on the drop-down box to select Always Active, Always Inactive and Conditionally Enabled		
Condition Enable	Permission Control		A check indicates that the operator's user privileges need to satisfy more than one of the component's checked privileges before the current component can be touched and status values or data can be written to the specified registers.
	Express Control		Check indicates that the current element can be touched and the status value or data can be written to the specified register only when the status of the specified bit register or word register satisfies the set condition. (false status in effect means valid when the condition is not met)
	Permission & Express Control		The current element can be touched and the state value or data written to the specified register only when both the permission control condition and the expression control condition are satisfied.
Control Set	Click the drop-down box to set expression control or permission control		
More	Click "More" to bring up the Logo Settings screen and Security Settings screen.		
	Show Invalid Tag		Check this box to indicate that the component displays the invalid marker when the component is currently in the invalid touch state.
	Display Grayscale Font		Check this box to indicate that the component label is grayed out when the current component is in the touch invalid state.
	Auto show login wirdow		Check the box to indicate that when the current user privilege ID does not meet the set permissions, the password input window provided by the system will automatically pop up for the user to enter the password to log in.
	Security Setting	MinPushDuration	The current element must be pressed continuously for a period of time not less than the set time before the status value or data can be effectively written to the specified register. The minimum unit is 100 milliseconds, and 0 means that the minimum press time is not set.
		OperConfirm wait	The check box indicates that the HMI will automatically pop up the operation confirmation window when touching the current component, and the status value or data will be written to the specified register only when clicking "OK", and the operation will be canceled automatically when clicking "Cancel" or exceeding the set [Waiting Time] and the user does not confirm the operation with "YES". When "Cancel" is clicked or the set [Waiting Time] is exceeded and the user does not confirm with "YES", the operation will be canceled automatically. (You can add the ability to record the change of data in a register when pressed.)
		MinPushInterval	Minimum time interval between two operations of the same component,

			the minimum unit is 100 milliseconds, 0 means do not set the minimum time interval of the operation

3.3.4 Display Set

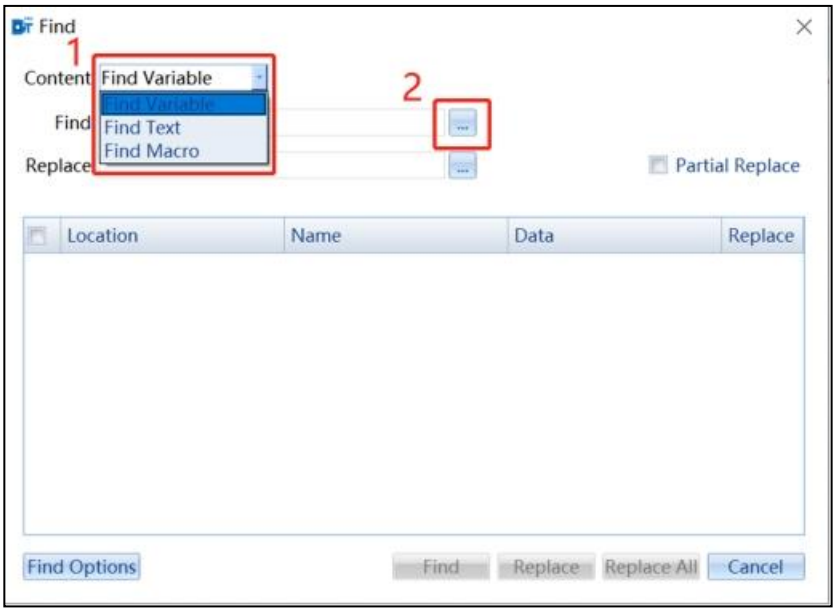


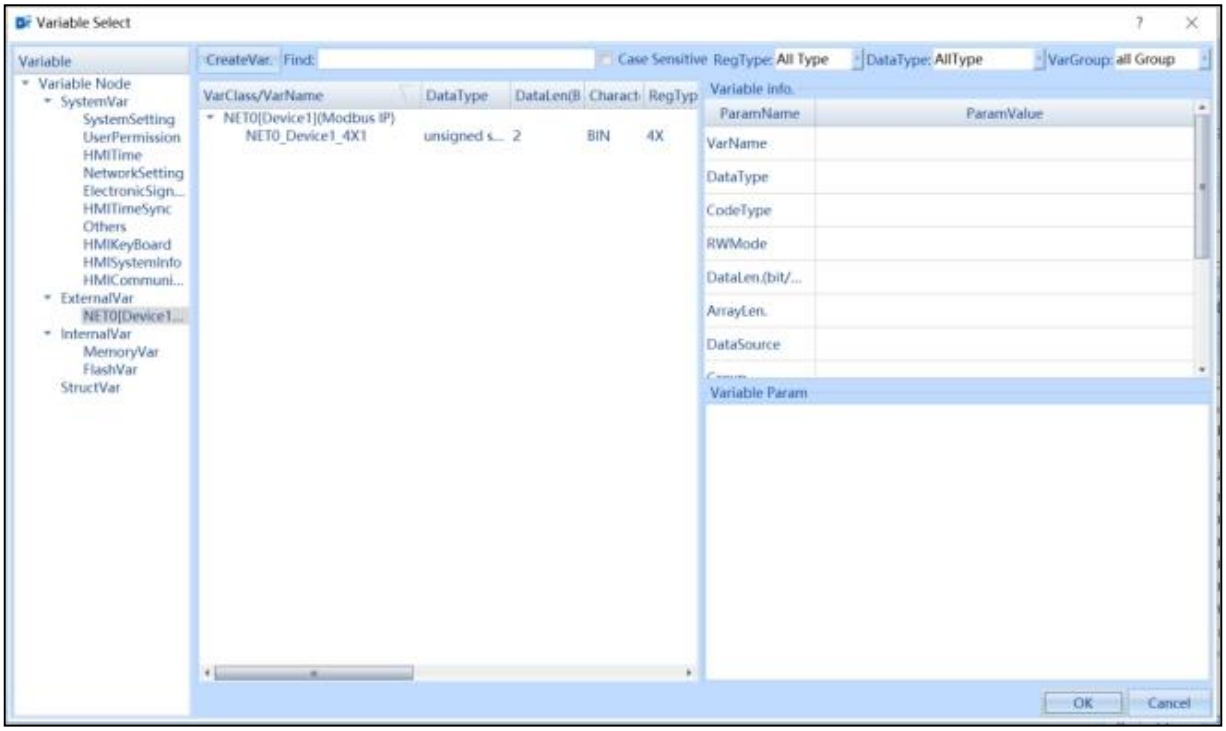
Display Set instructions		
Position	This label corresponds to the location of the component	
Name	Component information corresponding to this tag	
Touching Enable	Click on the drop-down box to choose between Always and Conditional Display	
Condition Enable	Permission Control	Checking indicates that the operator's user permissions need to satisfy more than one of the component's checked permissions in order for the current component to be displayed
	Express Control	Checked to indicate that the current component will be displayed only when the status of the specified bit register or word register satisfies the set condition (false status in effect indicates that the expression is displayed when it is not satisfied)
	Permission & Express Control	The current component is displayed when both permission control conditions and expression control conditions are met.
Control Set	Click the drop-down box to set expression control or permission control	
More	Do not communicate when hidden	When the variable used by the component is an external variable, check this option so that the component will not communicate when it is hidden.
	False state work	Effective on error status

3.4 Find/Replace

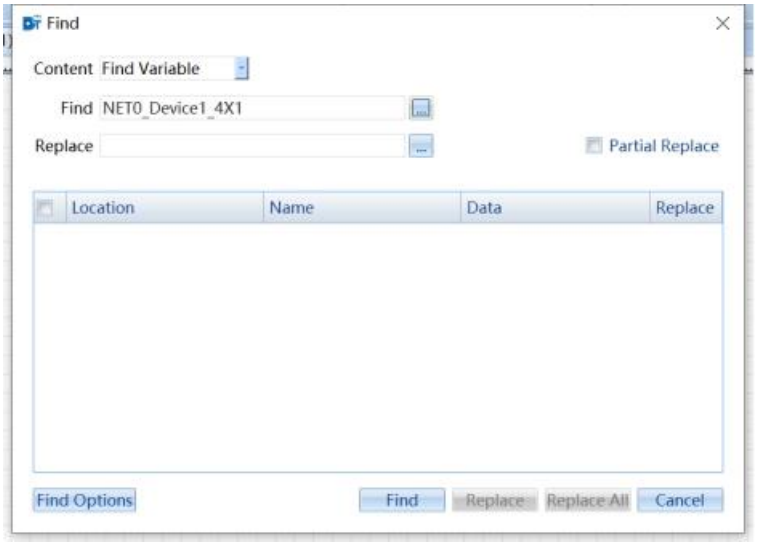
Click "Find/Replace" or hold down "Ctrl+F" to find and replace targets, variables, text and macros.

3.4.1 Find/Replace Variable



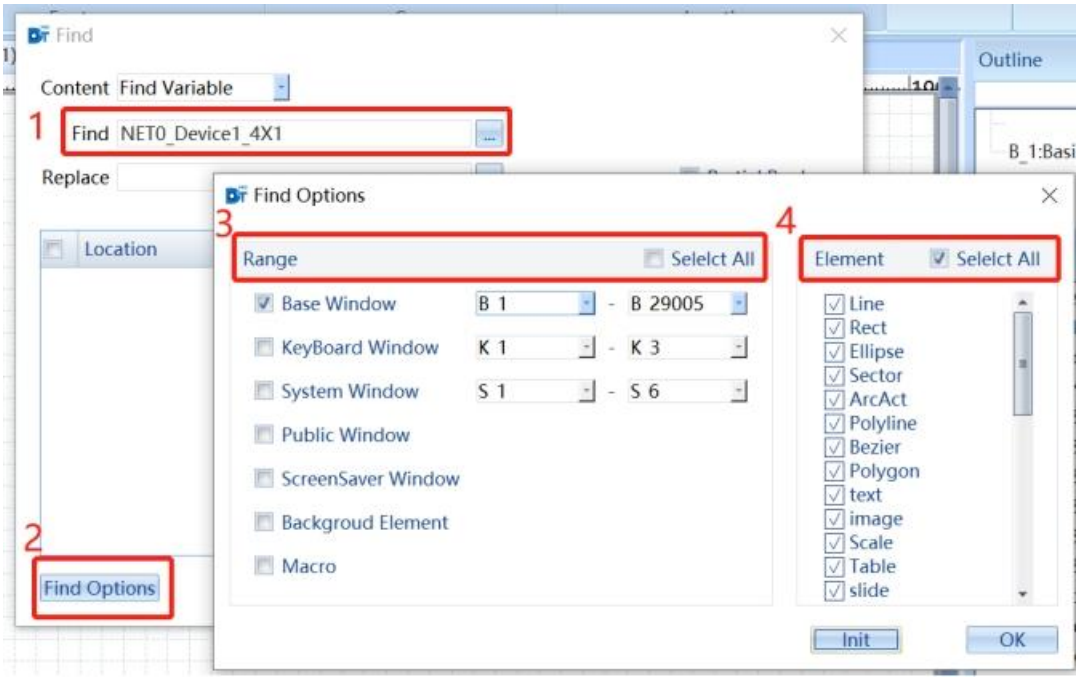


After selecting a variable, you can press the backspace key to expand all similar variables for re-selection.

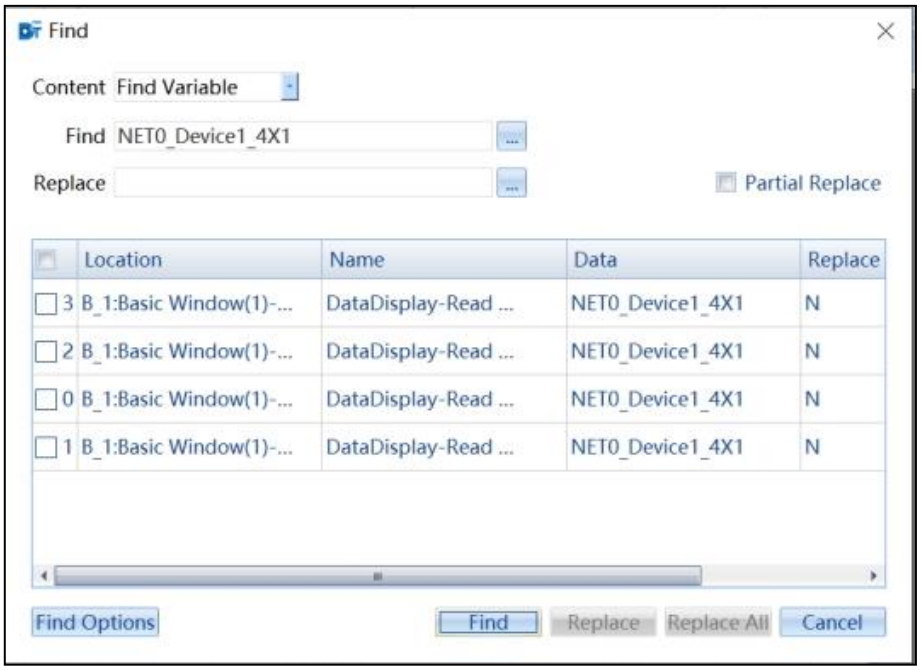


You can select the entire array or a specific array subscript.

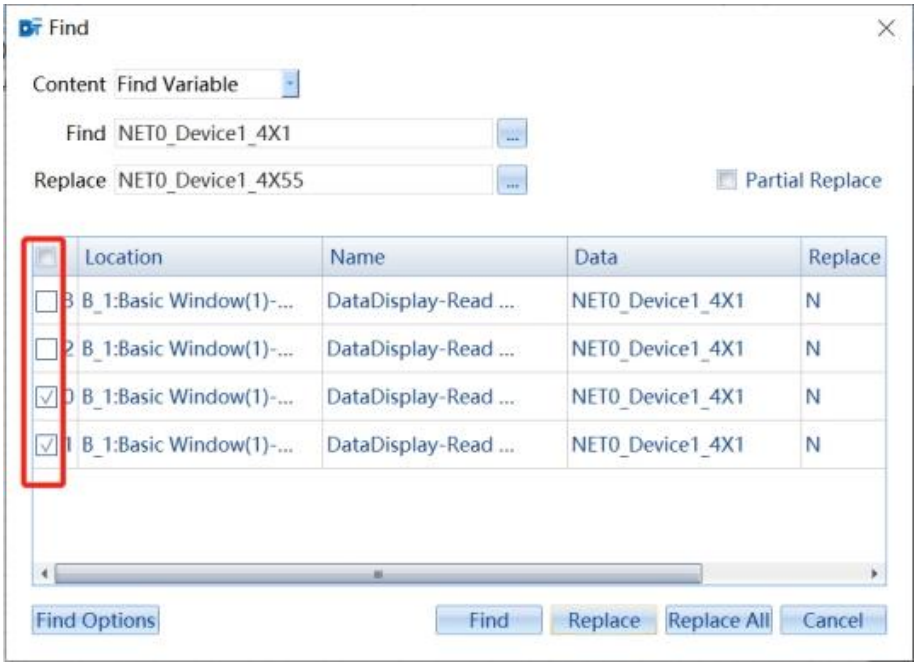
Click on ‘Find Options’to set the range condition and component condition checkbox to search. Click "Init" to restore the default search conditions.

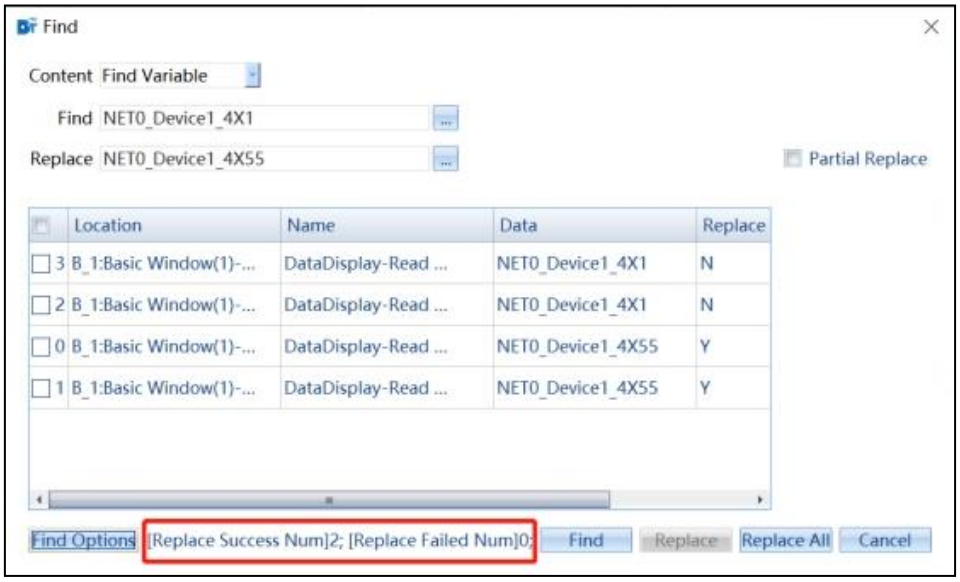


Double-click to find the corresponding item, the mouse cursor will automatically jump and select the component.



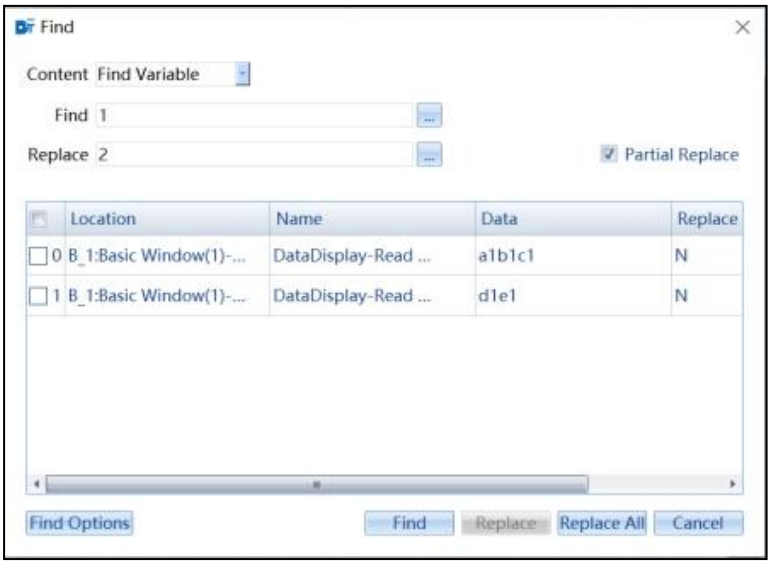
In the same operation, select the replacement address, check the variables to be replaced, click "Replace" to replace only the checked variables, and click "Replace All" to replace all the variables found with the target variables.

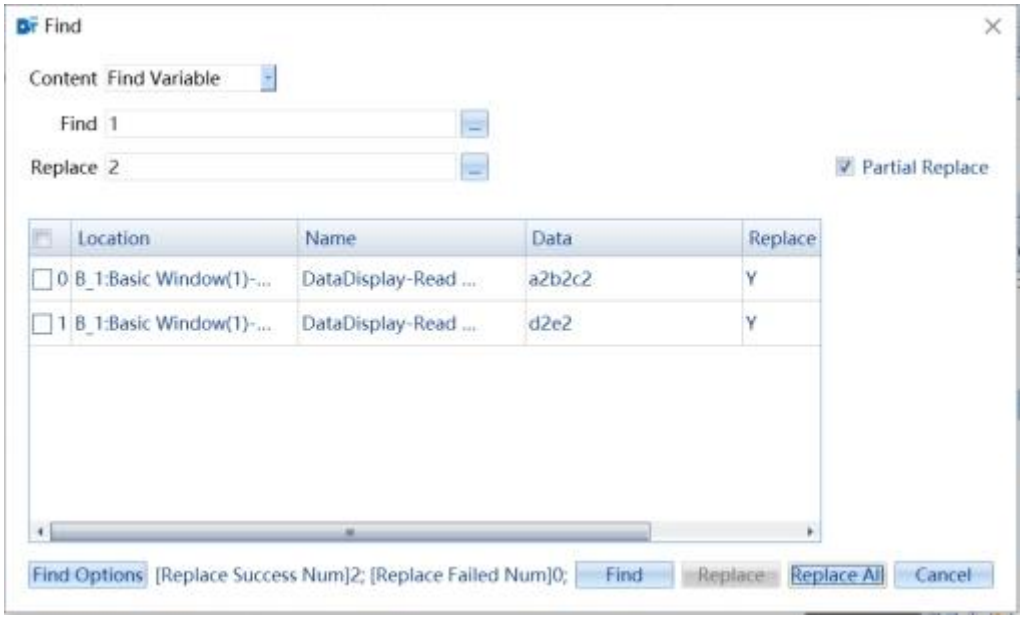




Partial replacement:

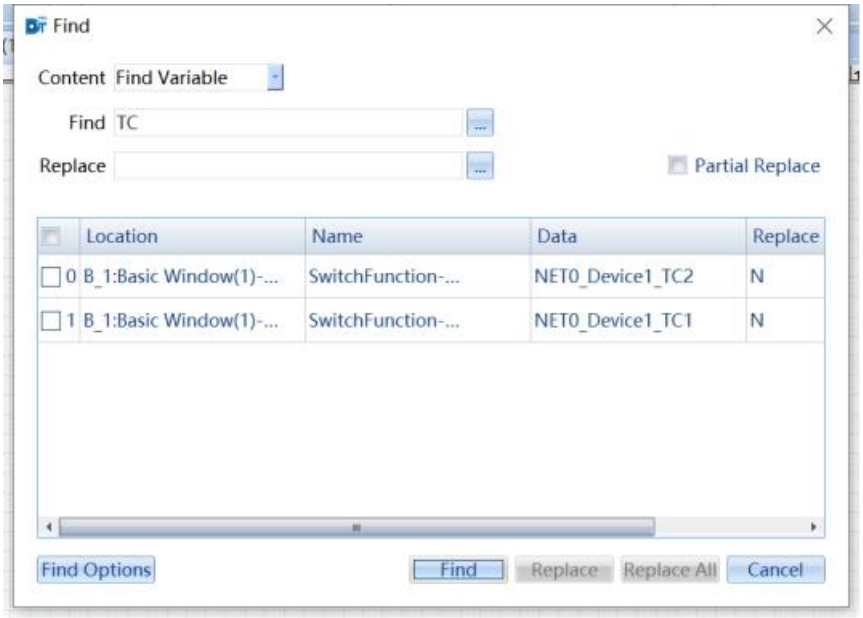
1. For a field with multiple recurrences, for example, the variable "a1b1c1", "d1e1" can be replaced by "a2b2c2". "d2e2", as shown in the following figure:

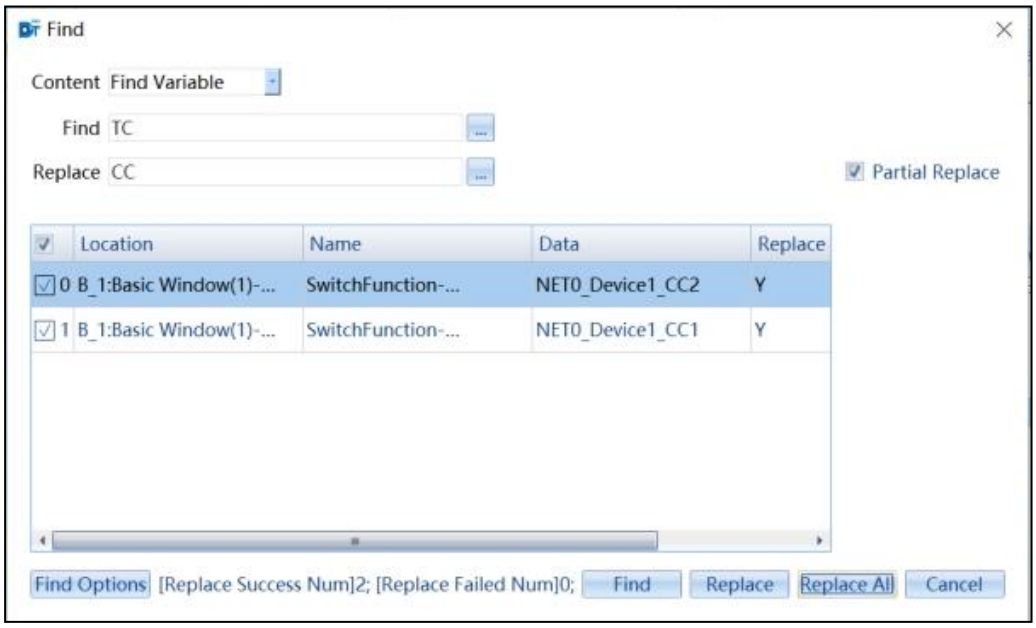




2. Batch replacement of entire register types:

For example, I want to replace all the "TC" register types in the screen with "CC" types. The address remains the same, only the register type is changed, as shown in the following figure:

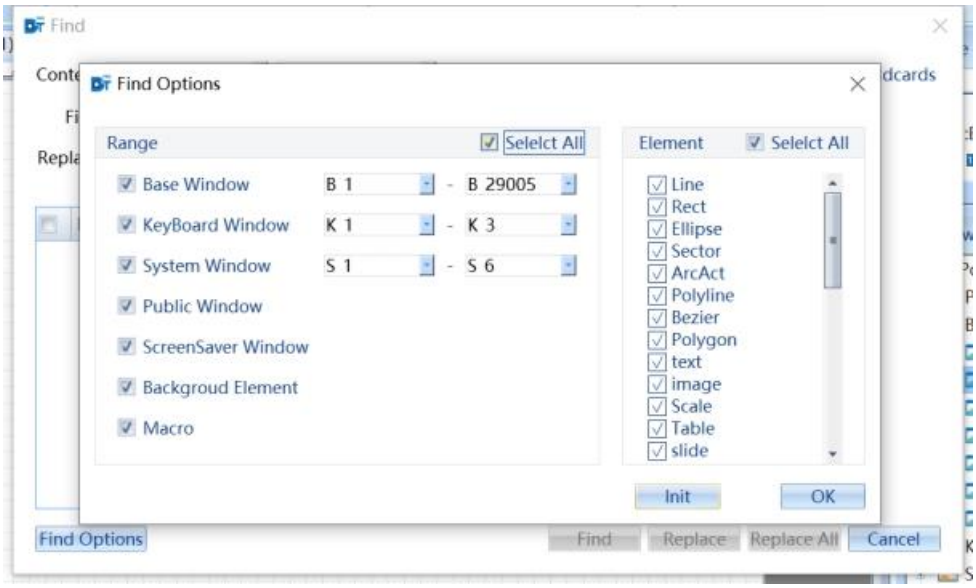


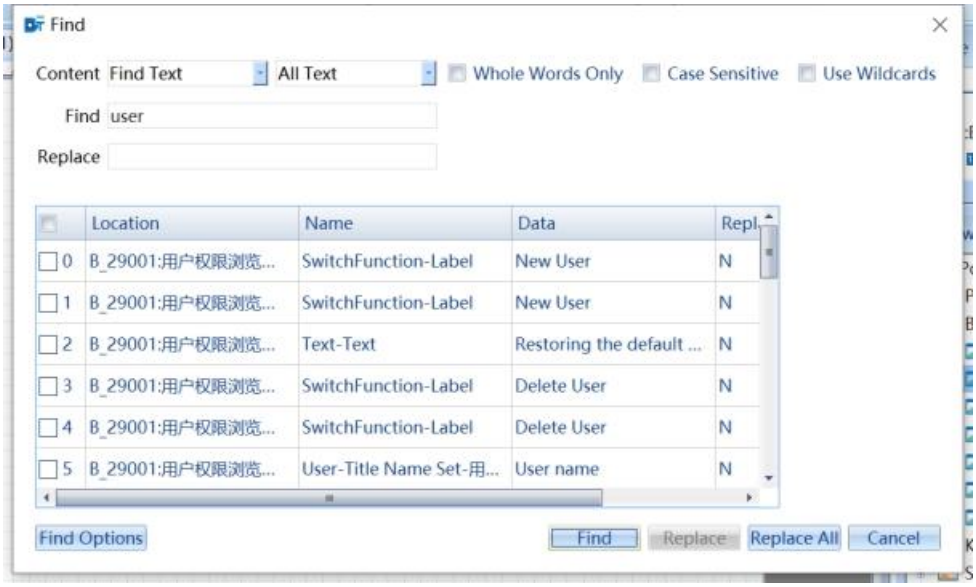


3.4.2 Find/Replace Text

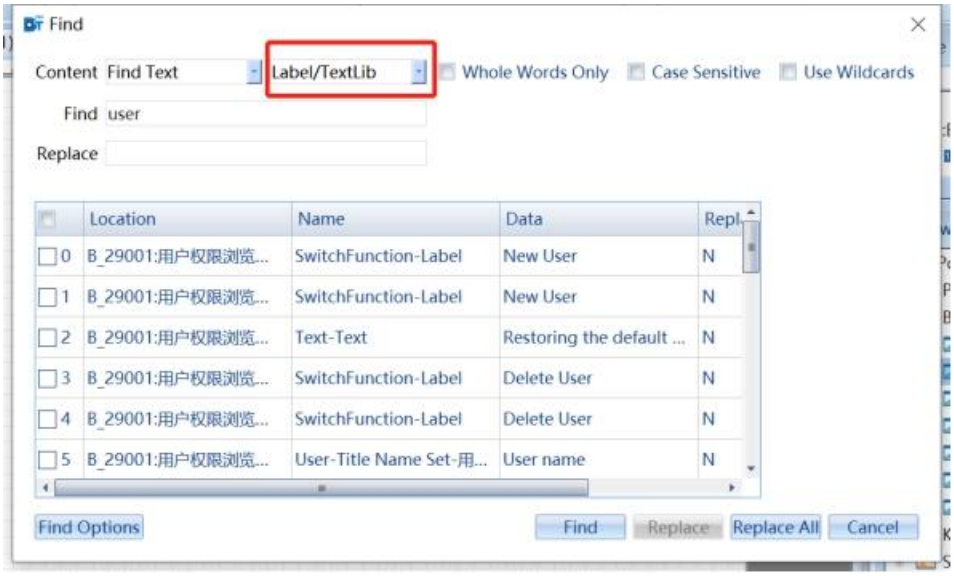
Search content can be selected from "All Text", "Label/TextLib", "Operational Data", with full text matching, case matching and wildcard matching.

1. All Text：Find all the texts that meet the search criteria.

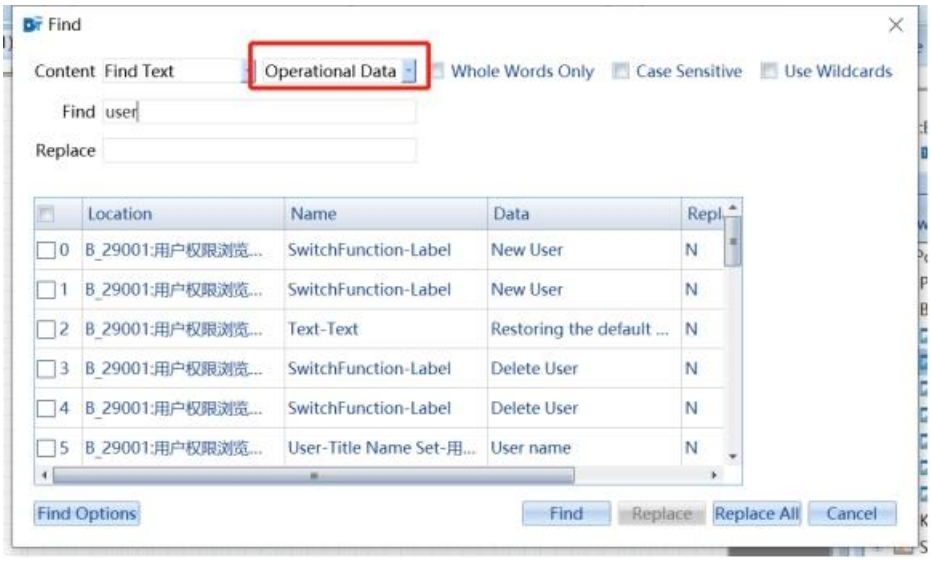




2. Label/TextLib: Find only static text, component label and content in text libraries.



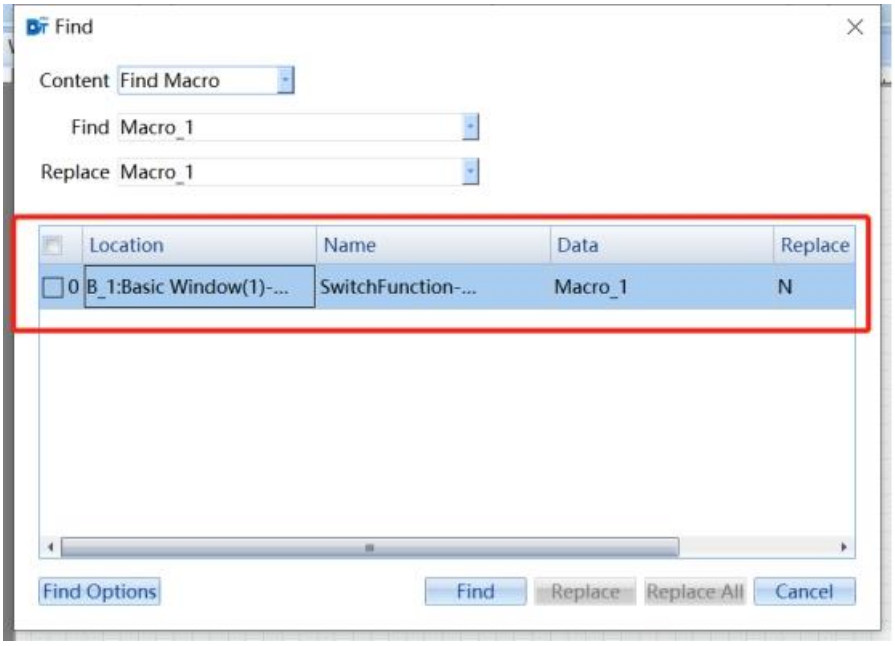
3. Operational Data: Find only the operational parameters set by the project, such as operation log settings, user settings, recipe settings, keyboard mapping, etc.



3.4.3 Find/Replace Macro

Select the drop-down for the macro you want to find.

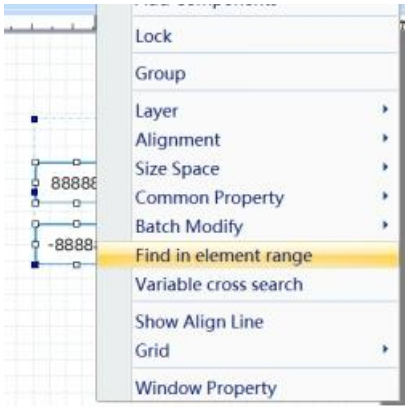
Click Find, double click and the software automatically jumps to the location.

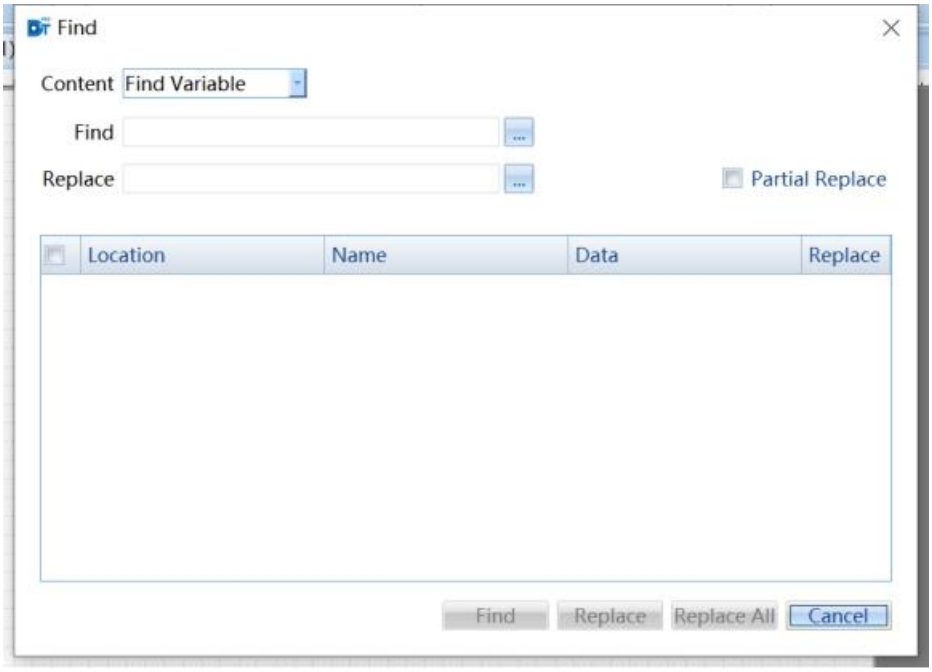


After setting the replacement macro, the replacement operation can be performed.

3.5 Find in element range

Select the multiple elements to be found on the screen and right-click on " Find in element range".

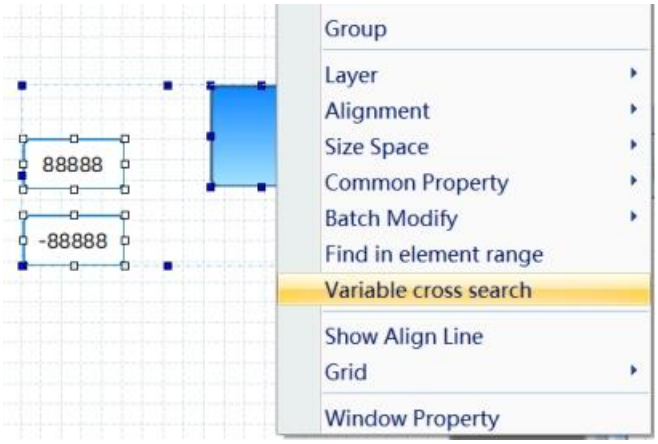


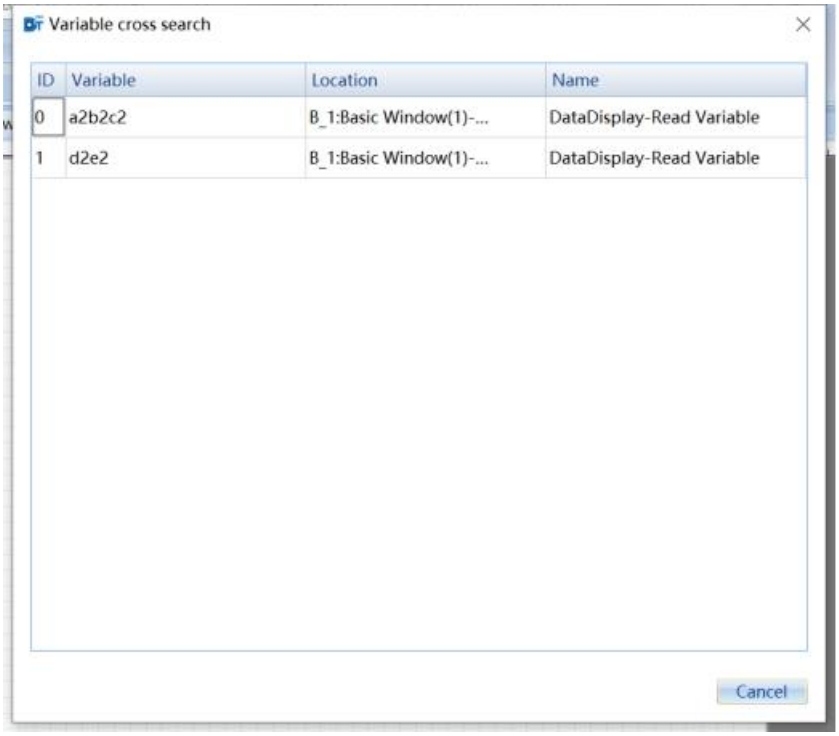


Refer to 3.4 - “Find/Replace” for step-by-step instructions

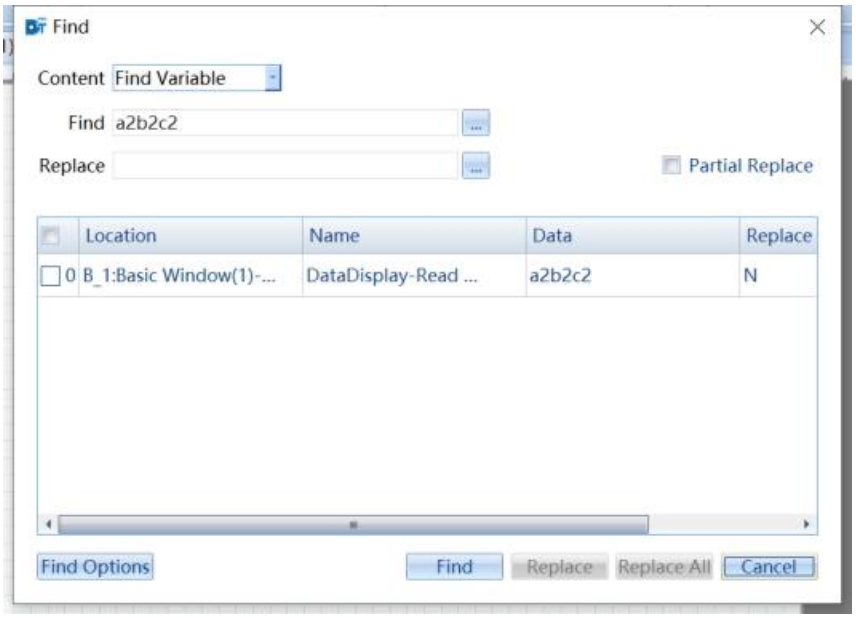
3.6 Variable cross search

Select multiple elements on the screen and right-click "Variable cross search" to display the address and location information of the selected component.





Double-click the cross-search variable to jump to the Find \ Replace screen, which has automatically looked up the so-called location information of the variable's appearance. Next, you can perform a replacement operation on it by double-clicking on the item found, and the mouse cursor automatically selects the component at its location.

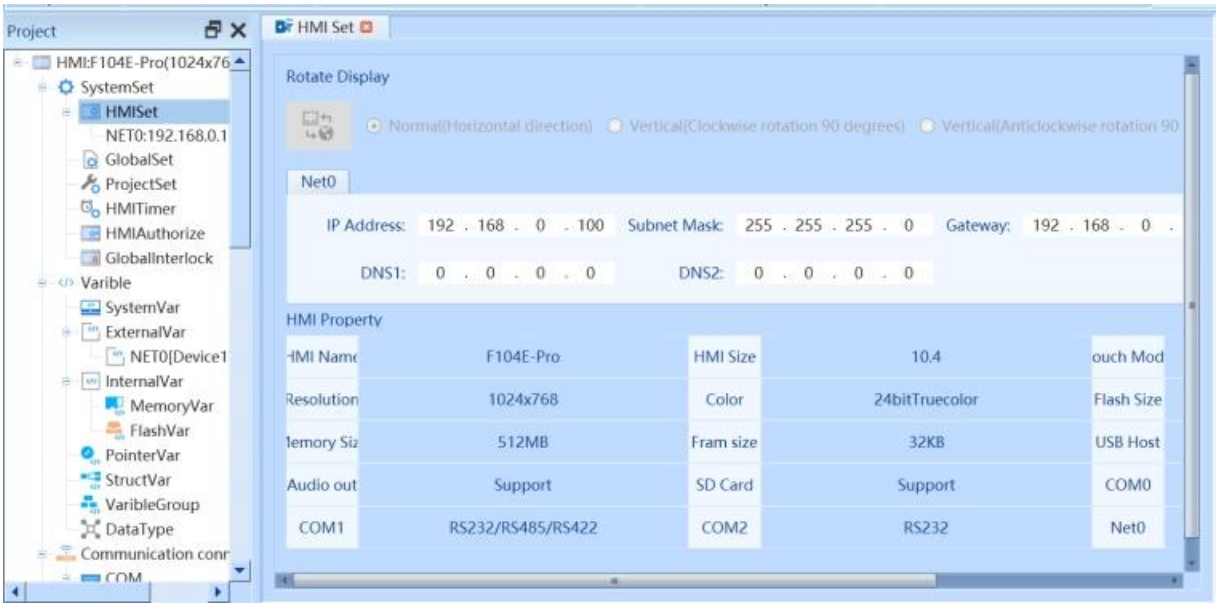


Refer to 3.4 - “Find/Replace” for step-by-step instructions for replacement.

4 System Set

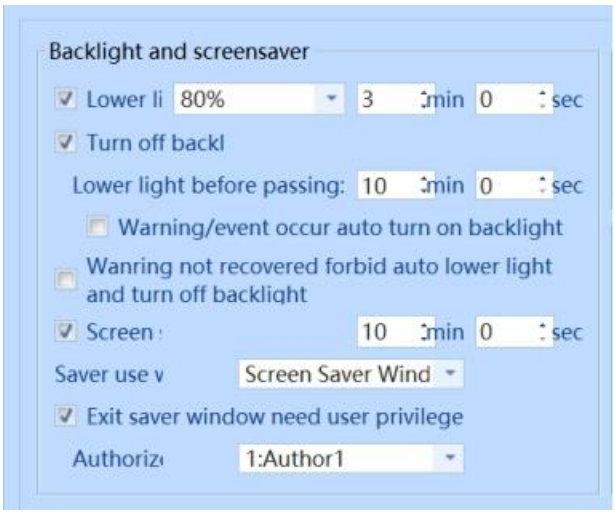
4.1 HMI Set

As shown in the figure below, the HMI settings mainly include network port settings and product descriptions. The IP address, subnet mask and gateway of the screen can be set in the network port setting. When downloading, check 'Download completed' to update the IP and it will take effect on the screen. The product description includes the model, size, resolution, memory size, etc. of the touch screen hardware used, making it convenient for users to view touch screen related parameters during use. At the same time, we can also view the communication type corresponding to the touch screen COM. The touch screen model shown in the following figure supports RS232/RS485/RS422 for COM 0 and 1, while RS232 is only supported for COM 2.



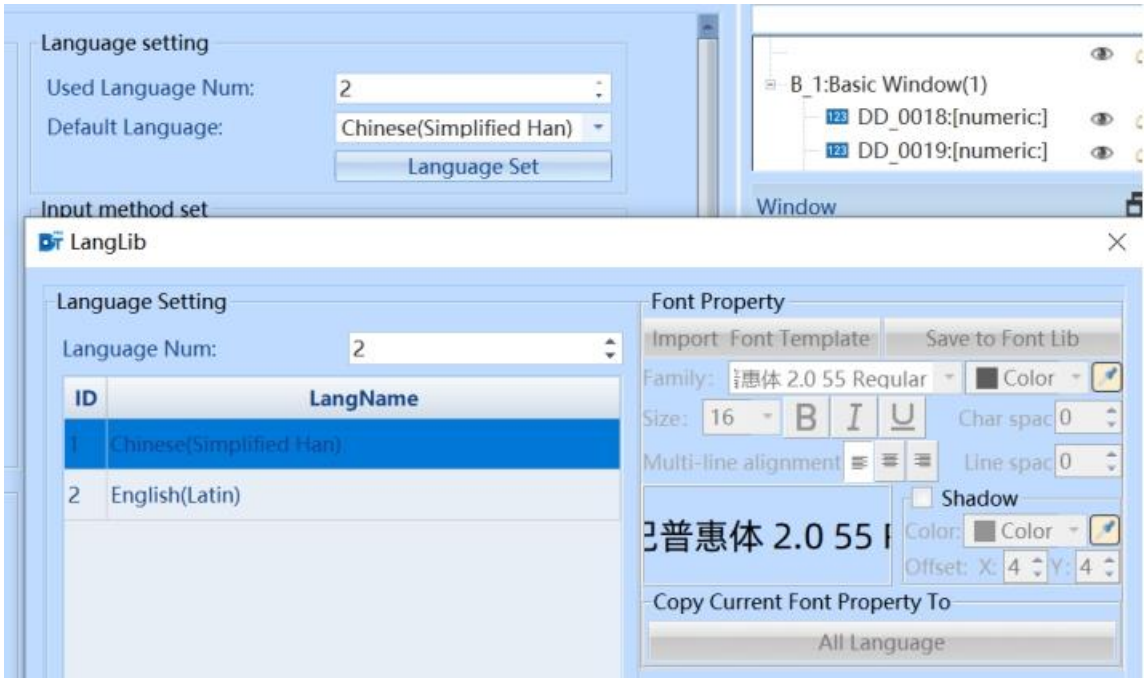
4.2 Global Set

4.2.1 Backlight and screensaver



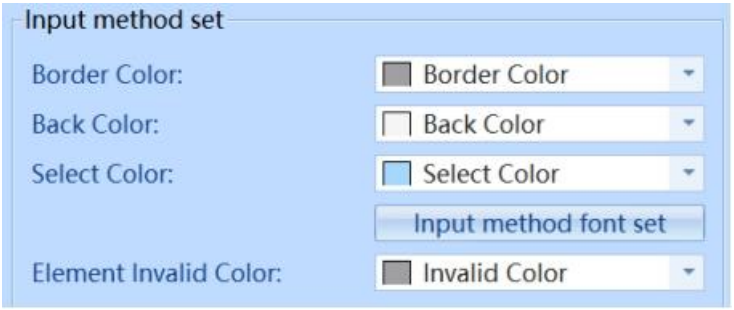
Setting instructions	
Lower light to	After not touching the screen for a period of time, the brightness of the screen is reduced to the specified brightness. As shown in the figure, if checked, the default value is 3 minutes without operation, and the brightness is reduced to 80%.
Turn Off Backlight	Backlight refers to when the duration of not touching the HMI screen is equal to this setting value, the HMI automatically turns off the screen backlight and enters the energy-saving state. When the HMI screen has touch operation again, it can end the energy-saving state and turn on the screen backlight. Turning off the backlight as shown in the figure can be used in conjunction with adjusting the brightness. It can be set to turn down the brightness and do not operate for a specified time before entering the backlight energy-saving state. The default time is 10 minutes.
Screen Saver	If you enter the screensaver state without operating for a specified time, you can set the screensaver interface by yourself. After checking the user permission required to exit the screensaver window, set the specify user permission, and check 'Exit the saver window need user privilege'.

4.2.2 Language Setting



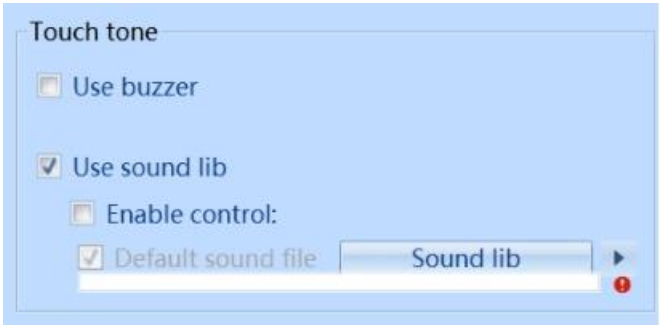
Language Setting Description	
This function needs to be combined with the language library. For specific attributes of the language library, please refer to Chapter19.3:Language Library.	
Used Language Num	Set the number of editable languages in the language library, up to 32 languages can be set
Default Language	After the HMI is powered on, the language displayed on the configuration interface is the language set here.

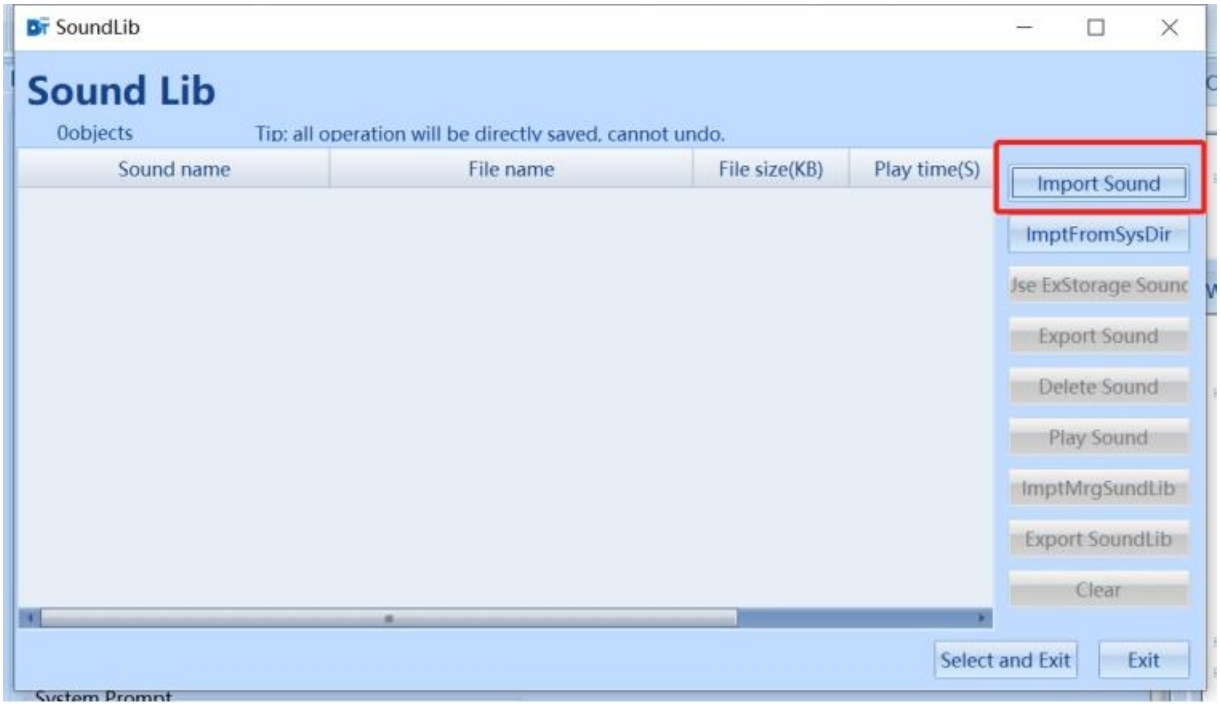
4.2.3 Input Method Set



As shown in the figure, set the border color, back color, select color, font, and element invalid color of the input method.

4.2.4 Touch tone and System Prompt

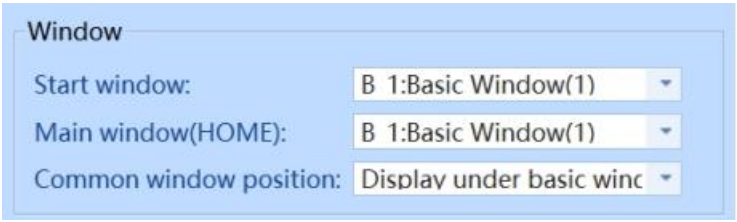




- Use buzzer: Set the HMI to enable touch beeping, and you can also control whether to turn it on by enabling it
- Using sound library： Set the HMI sound to enable the sound library. You can also control whether to turn on the sound library by enabling it. This feature needs to be used in conjunction with the sound library.
- Show System Prompt： Set the time for the system prompt to display, with a default of 10 seconds.

4.2.5 Window

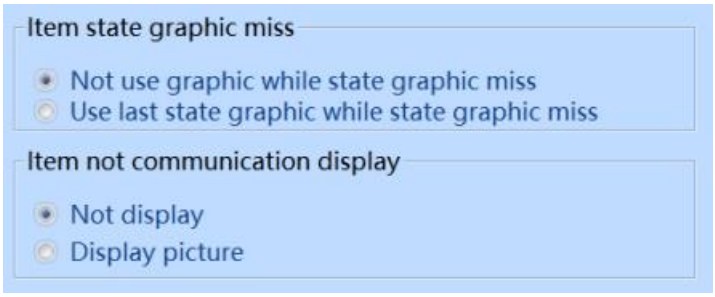
The difference between the use of the start window and the main window(HOME) is that the start window refers to the interface displayed after HMI startup, and users can set the window display after startup. There is an option in the window operation settings to quickly return to the main window of the project.



Setting description	
Start Window	HMI startup screen
Main Window	HMI main screen window
Common Window Position	Can be set to display above or below the basic window

4.3 Project Set

4.3.1 Item state graphic miss



Item state graphic miss Description	
Item state graphic miss	You can choose not to display the graphic when the graphic status is missing or to display the last status graphic. For example, when setting a control graphic, only state 1 has a corresponding graphic, then control state 2 and subsequent states can either not display the graphic or display the graphic of state 1.
Item not communication display	Can be set to not display or display images.

4.3.2 Use USB Default Input

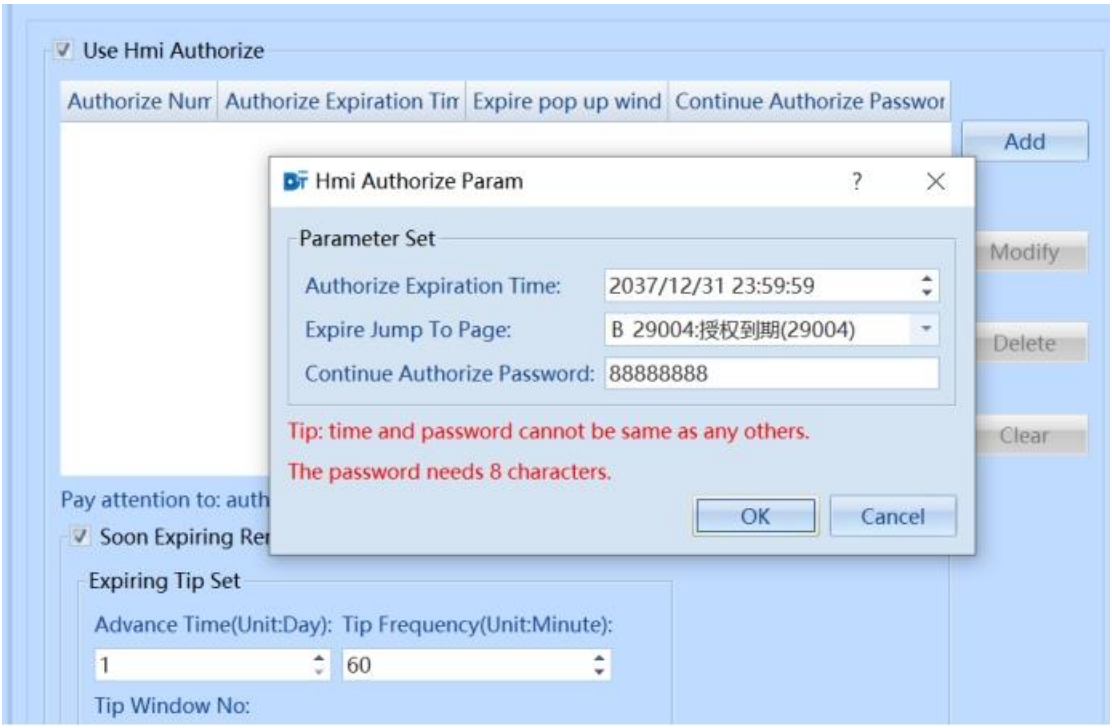
Use USB Default Input Description	
Use USB Default Input	If checked, the string read by the card reader or scan gun will be directly displayed in the specified variable; Unchecked, you need to manually select a character variable in the screen to receive display. Default not enabled
Notity write success	After enabling, successful writing will notify the execution of the specified action
Note: This feature is mutually exclusive with USB card swiping automatic login	

4.4 Clock Set

Clock set description	
HMI Time Zone	You can choose the time zone of the system time according to your needs. You can check the option to automatically set daylight saving time and make relevant settings, and you can also disable modifying the system time.
Use time synchronization	In distributed systems, due to physical dispersion, the system cannot provide a unified global clock for independent modules. In order to achieve the same time value for these clocks, time synchronization operations must be carried out. Check the box to perform the corresponding operation.

4.5 HMI Authorize

It can achieve the function of timed screen locking. When the HMI reaches the authorization expiration time, an expiration window will pop up. Only after entering the authorization password on the specified page can the HMI continue to be used normally. Otherwise, the HMI will continue to display the expiration pop-up window. The time judgment is based on the system time of the HMI. Once the authorization function is used, modifying the system time will not result in invalid authorization. At the same time, you can check the related content of the upcoming expiration reminder settings.



4.6 Global Inter Lock

When there is a PLC or multiple PLCs connected by multiple HMIs in the network, in order to prevent malfunction by multiple people, it can be set to only operate a single or a certain number of PLCs simultaneously.

Global interlock setting instructions	
To enable the global interlock function, it needs to be checked and enabled. It is not checked by default	
Device grouping	Interlocking restrictions can be applied between HMIs in the same group
Dynamic grouping	Modify the corresponding variable value to dynamically set grouping
Unlock remaining time	Every time the HMI is touched, the countdown starts at this time and automatically unlocks and releases touch control when it reaches 0
Authorization unlock prompt	After checking, the device that has obtained control will pop up an authorization application pop-up window sent by other devices
Occupied status touch prompt	When checked, when the main control is occupied by other devices, the touch HMI will pop up relevant information about the main control device (remaining time, name of the main control device)

Authorization unlocking prompt window: When the main control device pops up this window and clicks agree to authorize, the main control will be transferred to the device that initiated the application

There are three ways to release control:

1. Transfer authorization to the device initiating the application

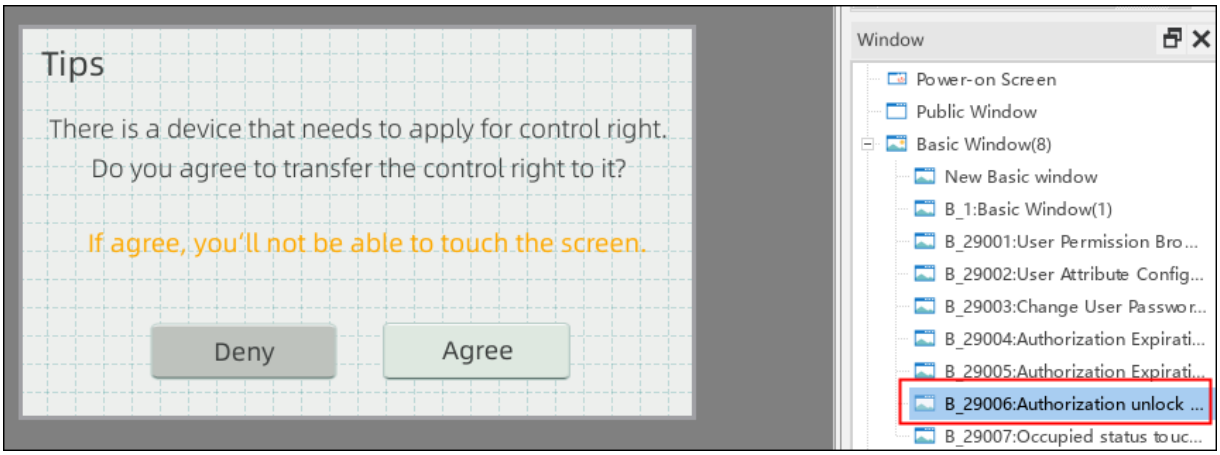
When the countdown to unlocking time reaches 0, control will be automatically released

3. Action Setting - Operation Control - Release Control Action Active Release

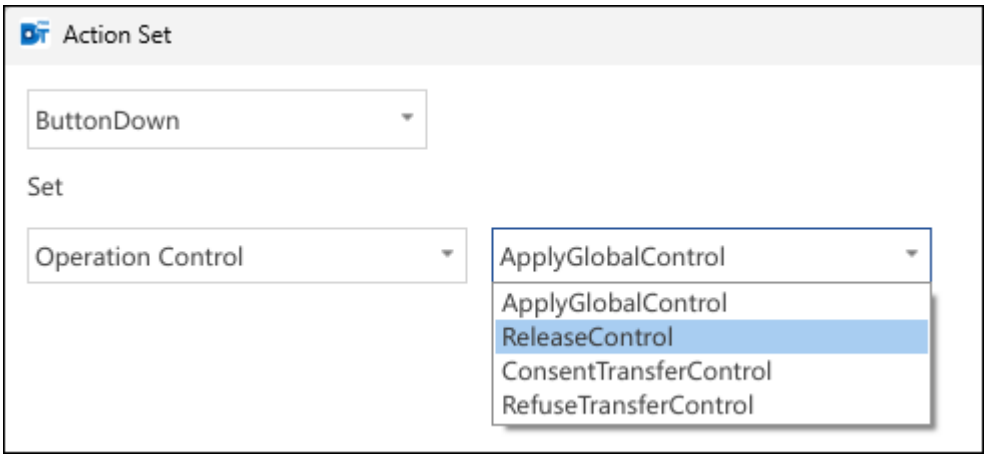
4. For devices that have obtained the initiative, if they go offline for more than 5 seconds (other devices show that the countdown time for unlocking the main control device is stuck for 5 seconds without changing), it will automatically determine that the device is offline and the offline device's permission will be automatically released. Other devices can operate to gain control; When the offline device's network is restored, it can automatically rejoin the interlock group and perform interlock operations normally

Attention: Users can create template windows for authorization unlocking and occupancy status touch prompts. It should be noted that closing windows cannot be added. After manually closing the pop-up window, it will no longer pop up when other

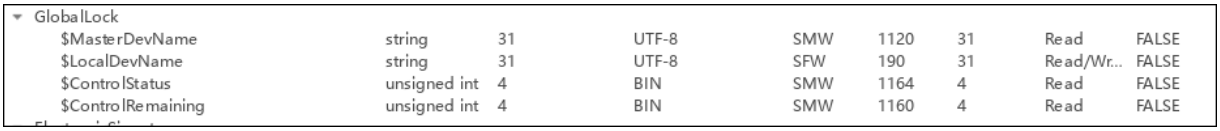
devices initiate authorization applications.



Related system actions:

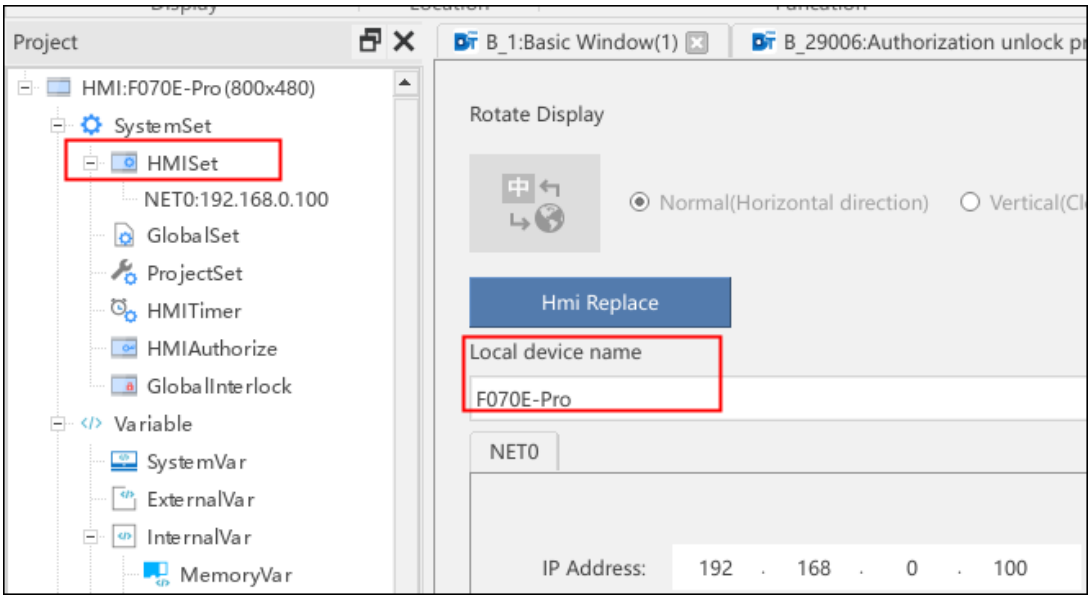


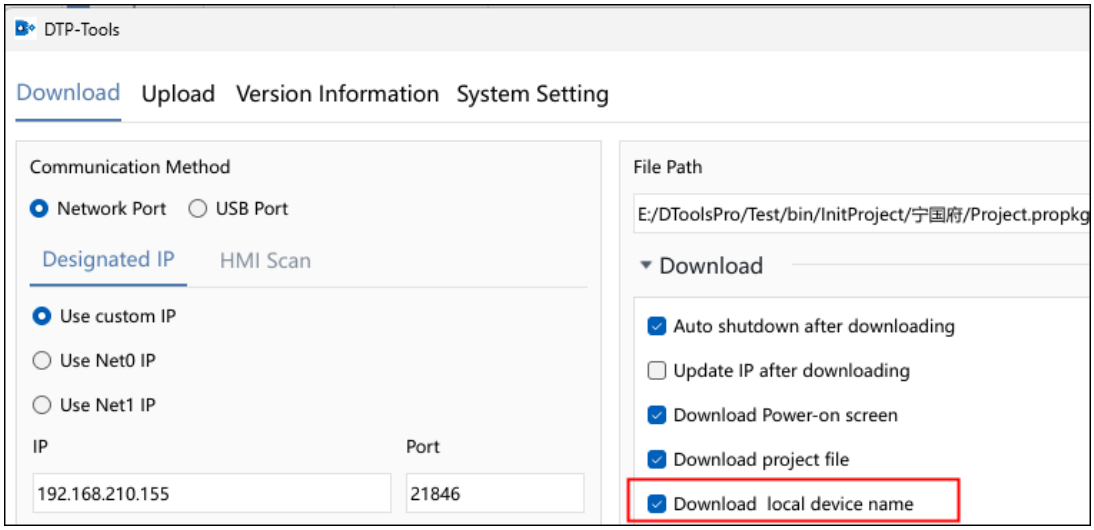
Related system variables:



GlobalLock								
$MasterDevName	string	31	UTF-8	SMW	1120	31	Read	FALSE
$LocalDevName	string	31	UTF-8	SFW	190	31	Read/Wr...	FALSE
$ControlStatus	unsigned int	4	BIN	SMW	1164	4	Read	FALSE
$ControlRemaining	unsigned int	4	BIN	SMW	1160	4	Read	FALSE

Local device name: Initially the HMI model, it can be edited in HMI settings or read and write operations can be performed on the screen. When downloading a project, check "Download Local Device Name" to update it, and leave it unchecked to keep the current name on the screen


Project
B_1:Basic Window(1)
B_29006:Authorization unlock pr
HMI:F070E-Pro(800x480)
SystemSet
HMISet
NET0:192.168.0.100
GlobalSet
ProjectSet
HMITimer
HMIAuthorize
GlobalInterlock
Variable
SystemVar
ExternalVar
InternalVar
MemoryVar
Rotate Display
Normal(Horizontal direction)
Hmi Replace
Local device name
F070E-Pro
NET0
IP Address:
192 . 168 . 0 . 100


DTP-Tools
Download
Upload
Version Information
System Setting
Communication Method
Network Port
USB Port
Designated IP
HMI Scan
Use custom IP
Use Net0 IP
Use Net1 IP
IP
Port
192.168.210.155
21846
File Path
E:/DToolsPro/Test/bin/InitProject/宁国府/Project.propkg
Download
Auto shutdown after downloading
Update IP after downloading
Download Power-on screen
Download project file
Download local device name

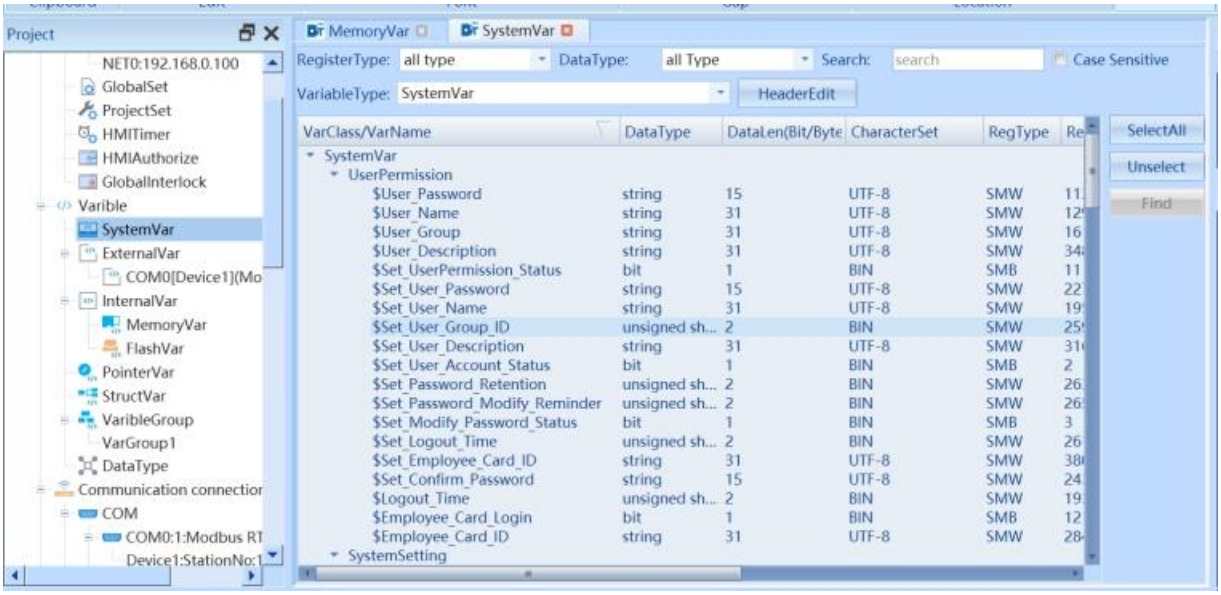
5 Variable

The word "variable" comes from mathematics and is an abstract concept in computer language that can store calculation results or represent values.

In DToolsPro software, elements or functional modules are associated with variable names, so variables used in project programs need to be first established in the variable table to define a variable name that is easy to identify and unique. Variables can be "external controller variables", "internal variables", or HMI "system variables" .

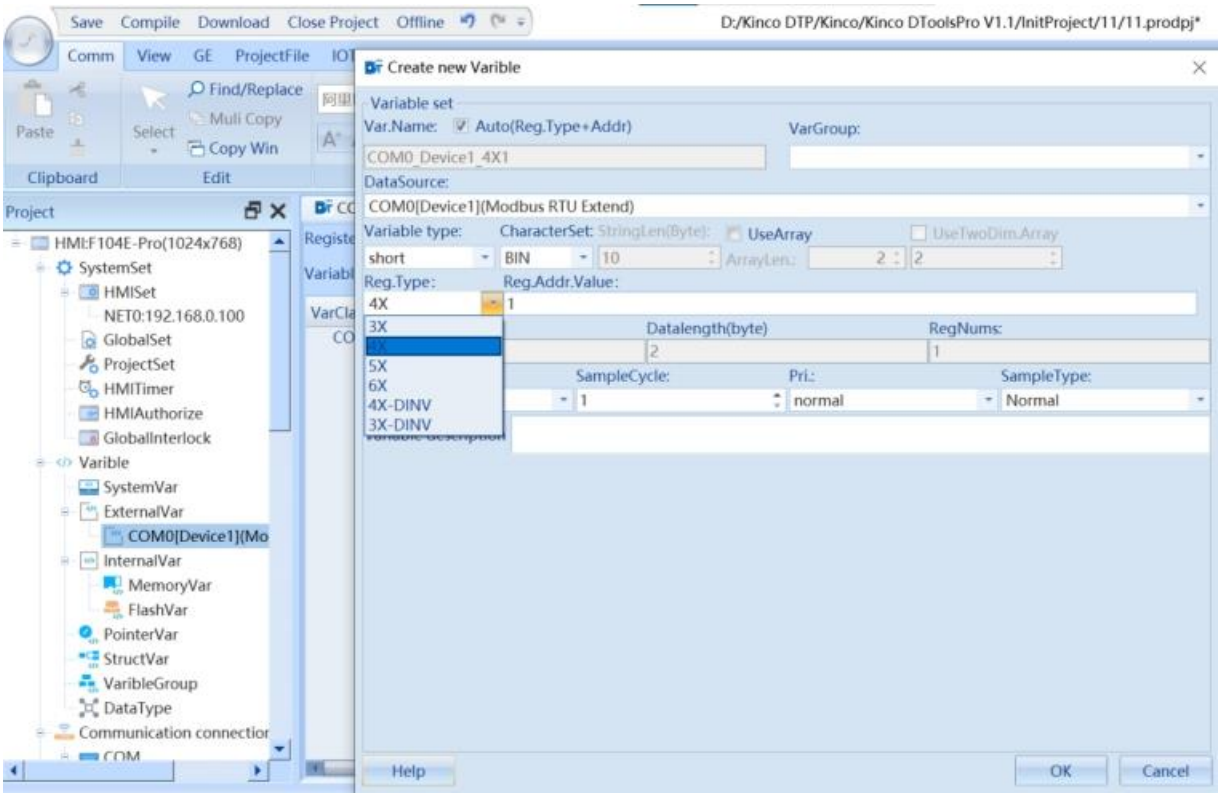
5.1 System Variable

System variables are used to monitor or access system parameters on the operation panel. The use of system variables is the same as that of controller variables, and can be associated with elements in the screen configuration, as well as in related functional modules or macro command scripts. System variables mainly include HMI time variables, user permissions, system information, and other variables that can be directly used.



5.2 External Variable

External controller variables refer to the variables used by the controller in communication with the operation panel, which are used to read real-time data of the controller end variables or make changes to the values of the control end variables. Please refer to the corresponding driver manual for specific establishment and support types.



As shown in the above figure, taking the Modbus RTU Extend protocol as an example, after adding the protocol, there will be multiple protocol directories under the external variables. Double click to enter the variable page, and click "Add" to see register types related to the controller, such as 3X and 4X, in the register type section. Select and add according to your needs.

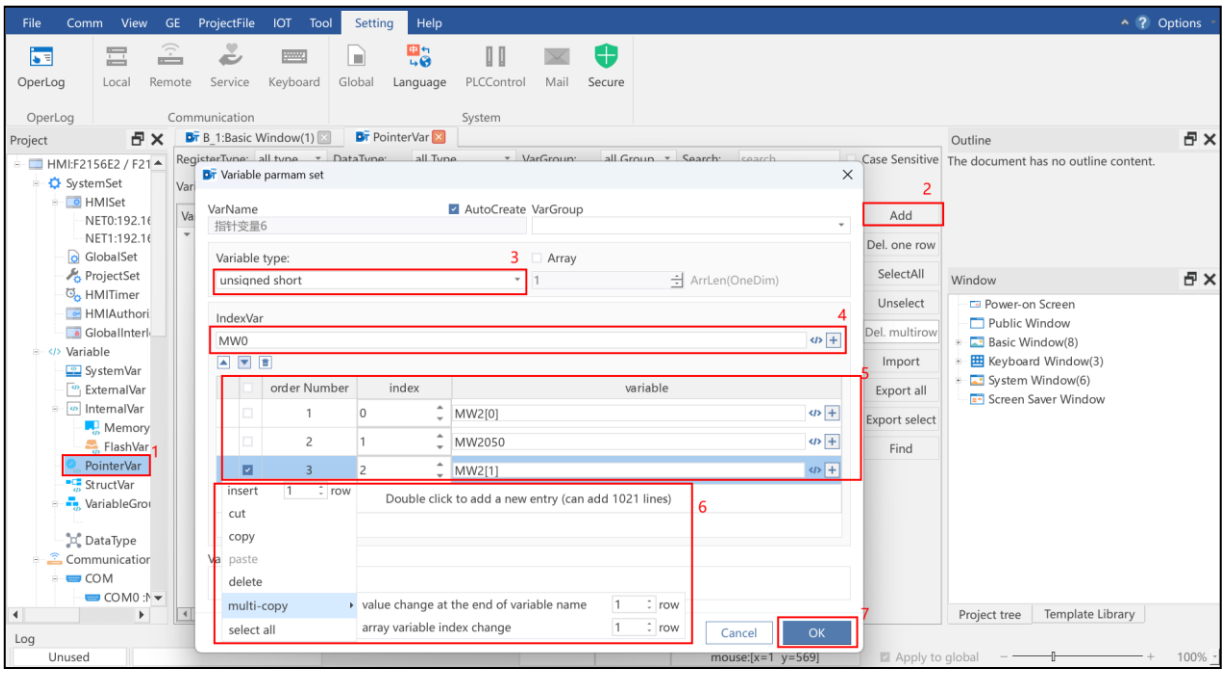
5.3 Internal variable

Internal variable can be used to calculate values that do not need to be processed in the controller, such as using only information displayed to the operator. The use of internal variables is the same as that of controller variables, and any number of internal variables can be created. Internal variables are divided into memory variables and flash variables, where flash variables are power down hold data.

5.4 Pointer Variable

Pointer variables can be used to store/point to variables corresponding to index values.

Pointer variable properties screen:



1.1. double-click to open the list of pointer variables;

2. click to add a new pointer variable;

3. Select the data type of the pointer variable;

4. Associate index variables (8-64 bit word variables are allowed to be associated);

5. Add the pointer variable:

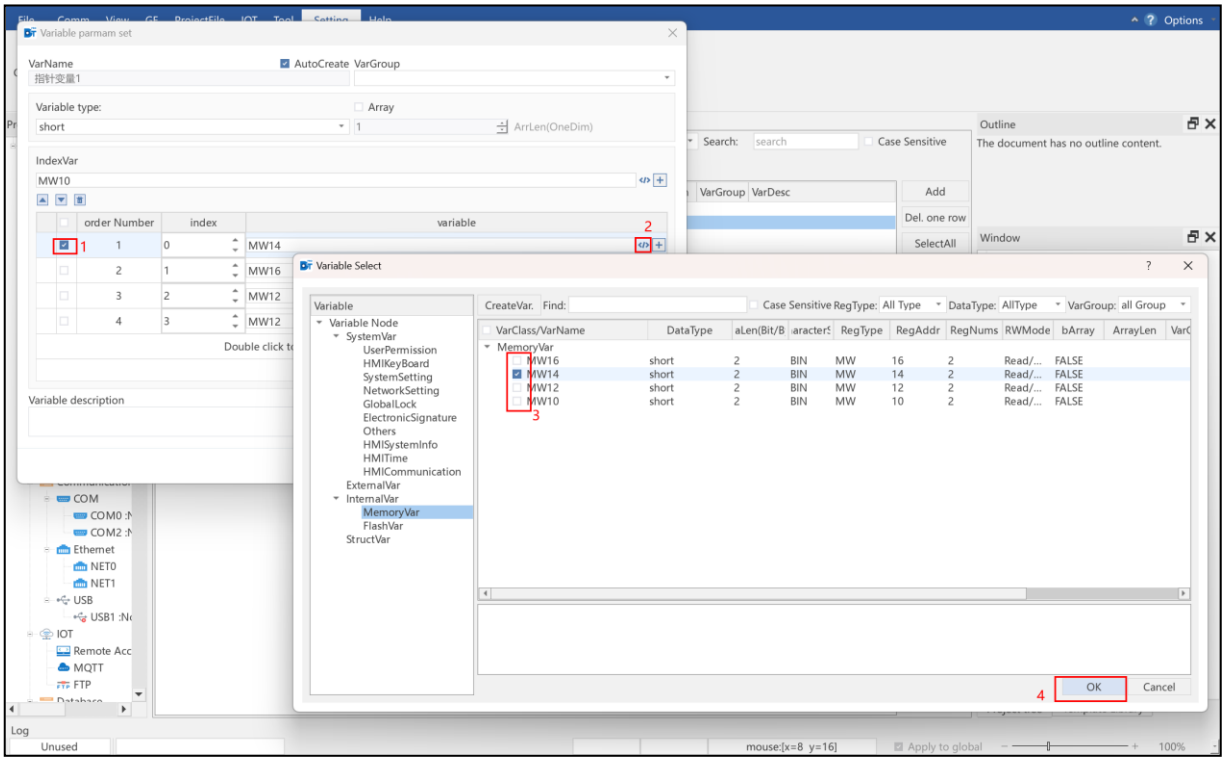
1. The data type of the added variable should be consistent with the data type of the pointer; if an array is checked, the length of the array should also be consistent;
2. The index value range of the variable: 0-2147483647; if the associated index variable range is smaller than the range, then refer to the maximum value of the variable, for example: associated 16-bit unsigned, the range of 0-65535; the index value is not allowed to repeat;
3. Add a maximum of 1024 number of entries

6. Right-click on a variable entry to insert, cut, copy, paste, delete, multi-copy, select all, and so on;

1. If there are multiple selections (whether consecutive or not) are treated as one whole selected line and inserted below;
2. Allow copy and paste operations between members of pointer variables or between members of pointer variables;
3. only supports the same data type or the same data type and the same length of the array between the copy and paste and other operations, does not meet the error will be reported;
4. Paste rules: select a line or select more than one line, according to the serial number to cover, the source selected lines is greater than the number of lines selected by the target, inserted in the target selected line below;
4. Multi-selected entries or do not meet the multiple copy specification (variable name does not end with a number at the end of the end), can not be multiple copy;

7. Click OK and the pointer variable is created successfully;

Variable selection window screen:



1. Check one or more variable entries to open the variable selection interface;

2. Display the variables allowed to be associated, keep the selected variables when switching the variable node Tab page, and add/modify all the selected variables when clicking OK;

3. After entering the variable selection window, the number of variables allowed to be checked is judged in real time, when there are more than 1024 entries, the variables are grayed out and cannot be checked;

4. Click the OK button to compare the modified items:

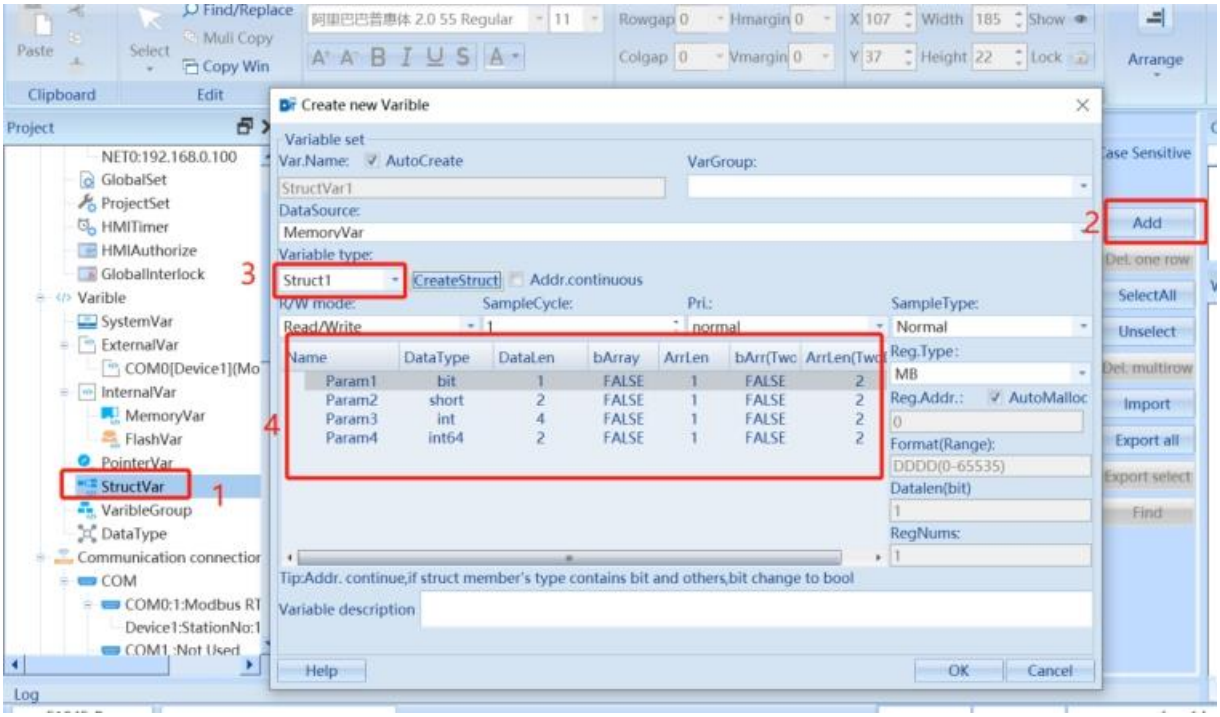
① The unchanged variables remain unchanged, and the changed variables are modified according to the serial number from the smallest to the largest;

② variable less than the previous checkbox, OK, clear the previously selected variable name, excess checkbox, according to the serial number from the smallest to the largest modified in the selected line below the insertion of the new

5. When multiple selection of pointer members associated with the same variable, if the variable has not changed, it will not change, if the variable has changed but the variable still exists, only the line with the smallest index value is retained

5.5 Structual Variable

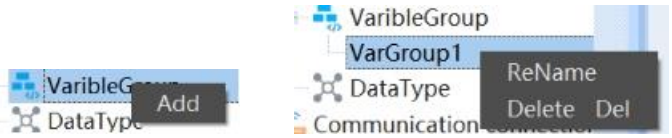
Structual variables consist of a set of different data called members (or domains, or elements), where each member can have a different type. Note: When creating structural variables for the first time in the project, the data type needs to be created first.

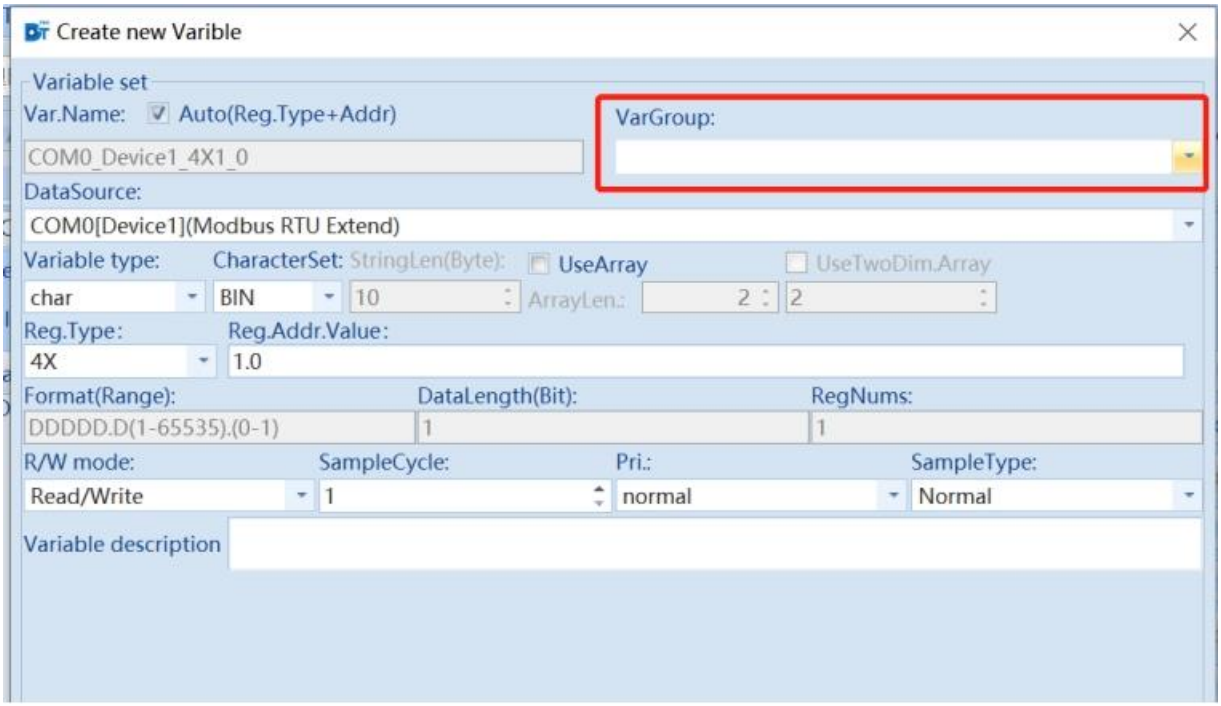


1. Double click to open the list of structural variables
2. Add structural variables
3. Select variable type
4. Display all members under the corresponding data type

5.6 Variable Group

Variables can be grouped and managed in the project production.





1. Right click on the parent node of the variable group to add a variable group.

2. Right click on the corresponding variable group to rename or delete it.

3. When adding variables from the variable list or opening variable properties, variable groups can be associated.

5.7 Data Type

Data type: Select the data type to be set, which can be an array. The supported types are listed in the table below.

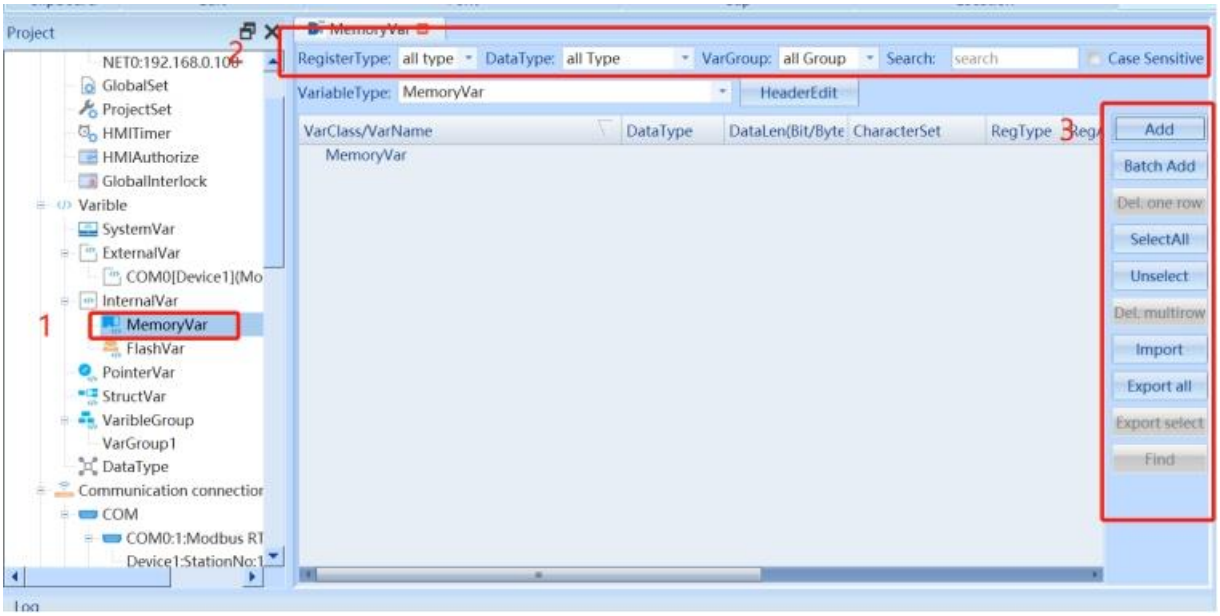
Character set: Numerical values can be set to BIN, BCD, LSB. The default string is UTF-8, and can be set according to the desired string type.

Data Type Name	Data Type	Data range
bit	Bit	0~1
Boolean value	BOOL	FALSE（0）~TRUE（Nonzero number）
8-bit signed integer	INT8	-128~127
8-bit unsigned integer	UINT8	0~255
16-bit signed integer	INT16	-32768~32767
16-bit unsigned integer	UINT16	0~65535
32-bit signed integer	INT32	-2147483648~2147483647
32-bit unsigned integer	UINT32	0~4294967295
64-bit signed integer	INT64	-2^63~2^63-1
64-bit unsigned integer	UINT64	0~2^64-1
Single-precision floating point	Float	3.4E-38~3.4E+38
Double-precision floating point	Double	1.7E-308~1.7E+308
Date	Date	
Date And Time	Date_And_Time	
Time of one Day	Time_of_Day	
Time	Time	
Long time	LTime	
Timestamp	Timestamp	
Character String	UTF-8、Unicode、Unicode（High and low byte swapping）、GB2312、GB2312（High and low byte swapping）、Extended ASCII code、Extended ASCII code（High and low byte swapping）	
Customized Structures		

5.8 Addition/deletion/use of variables

5.8.1 Adding variables

Taking adding memory variables as an example, select Internal Variables - Memory Variables/Flash Variables, click Add/Batch Add, and the following figure will pop up:

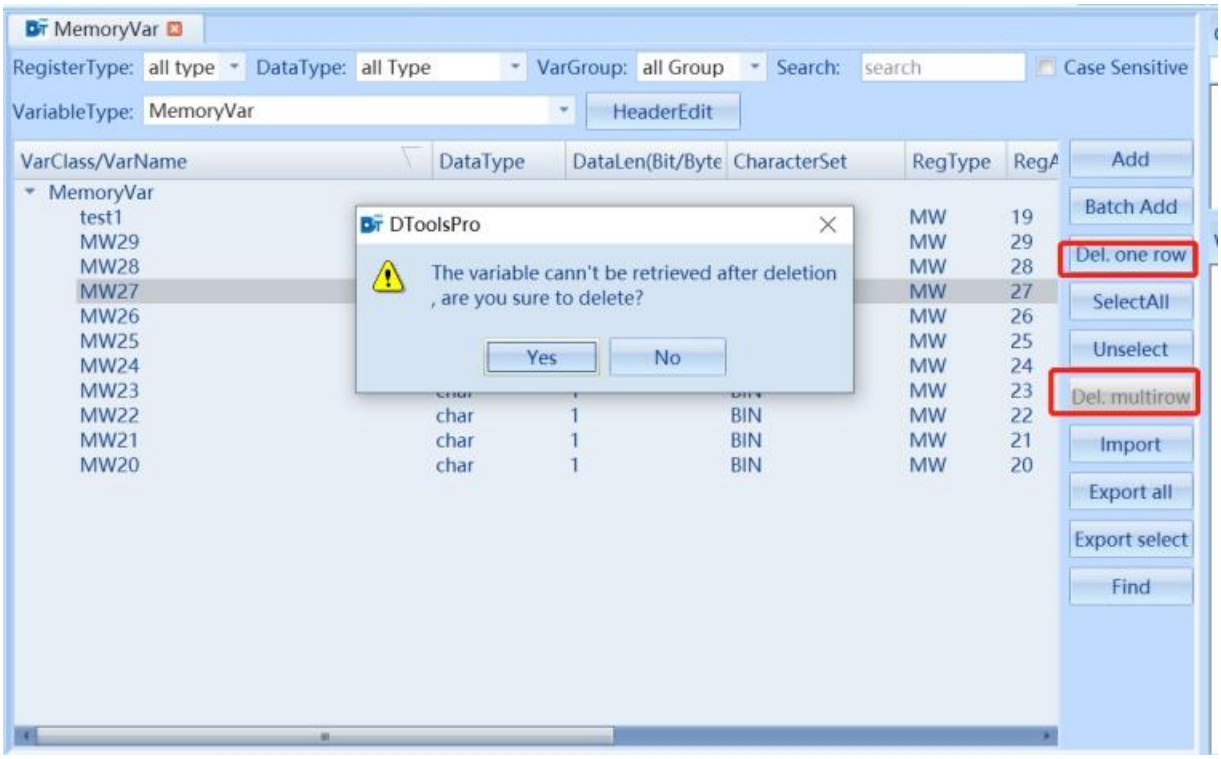


Name	Description	
Variable name	A unique variable identifier, with automatic generation checked by default (register type + address)	
Variable group	Set the group to which the variable belongs for easy subsequent filtering. It can be skipped and defaults to an empty group.	
Data source	Optional data sources include memory, disk, and external controller.	
Array	By default, it is not checked. After checking, the array length can be set, and a two-dimensional array can be checked. Please note that the array length is less than the number of available registers.	
Register Type	Set the data type according to the selected data source	
Register Address	Default automatic allocation, can be unchecked and the register address can be manually changed. Please note that the address cannot be duplicated.	
Read/Write mode	Set read-only/read write/write only attributes for variables.	
Variable Description	Explain the purpose of the variable	
Batch establishment	Command mode	1. Prefix and index id set 2. Register name and address
	Quantity	Number of variables created.
	Same name or address	1. Skip establishment 2. Delete reconstruction

5.8.2 Deleting Variables

Delete one row: Delete variables from the currently selected row.

Delete muti-row: Delete the selected variable. You can hold down Ctrl and click on the variable you want to delete, or you can click on Select All.



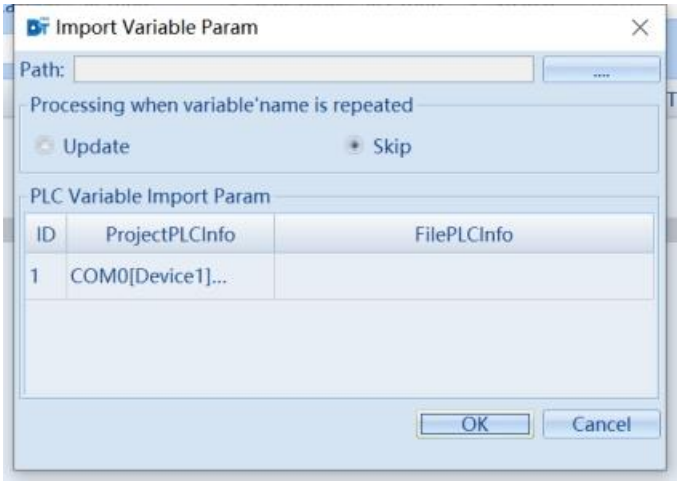
5.8.3 Export/import variable

Export: Export the currently created variables, including both export all and export selected items.

Import: Import a table of variables edited externally.

Note: The format of the imported table needs to have the DTP format. Otherwise, the import will NOT be successful.

First, choose the path to import the file, and then choose the method of handling duplicate variable names. The PLC variable import parameter is the external controller driver protocol that has already established a connection.



6 Communication Connection

The communication connection is mainly used for communication with external controllers, including COM, Ethernet port, and USB.

For the connection and parameter settings of each drive, please refer to the communication manual.

6.1 Equipment management

According to your own needs, set common communication protocols to facilitate and quickly establish communication connections with external controllers.

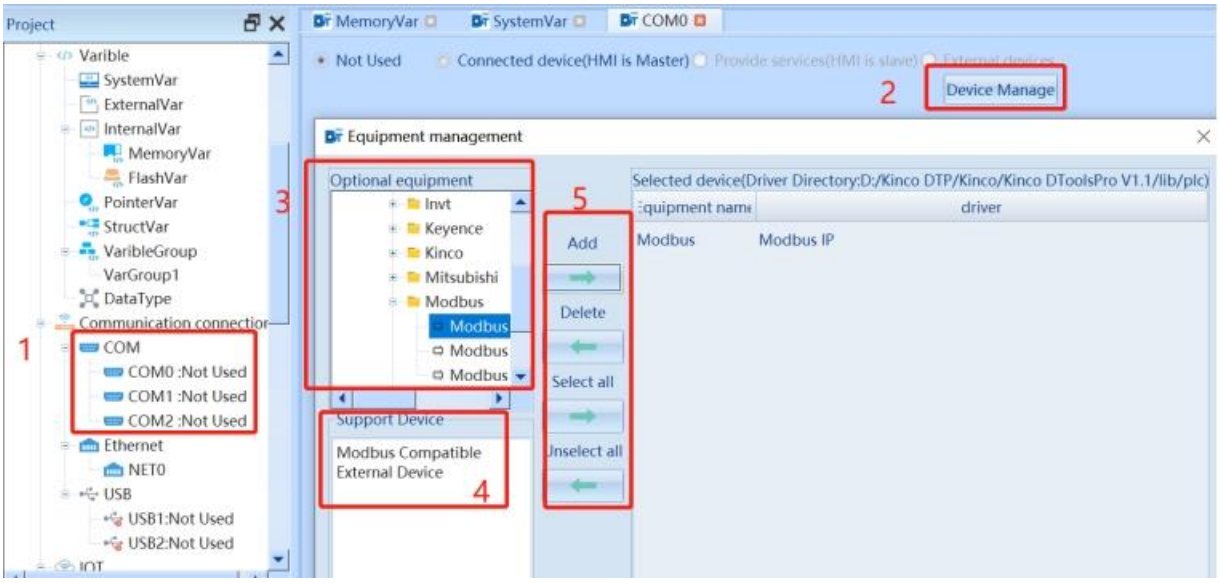
Select the corresponding communication connection method, taking COM as an example, double-click the corresponding COM port, click Common Device Management, and the following window will pop up:

Optional equipment: External controller protocols currently supported by HMI.

Support Device: PLC models supported by the currently selected protocol.

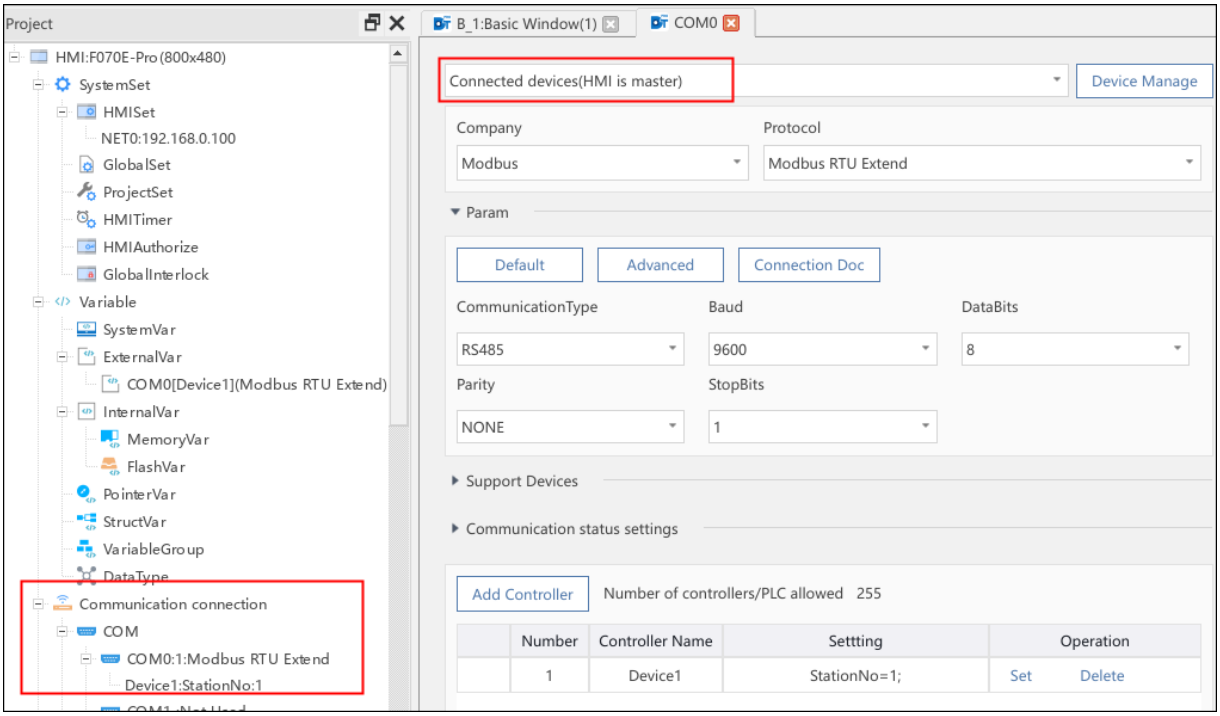
Selected Device: Display a list of commonly used devices selected, click "OK" to take effect.

NOTE: Unselect "SelectAll" will clear the selected devices, and it will take effect after clicking "OK".

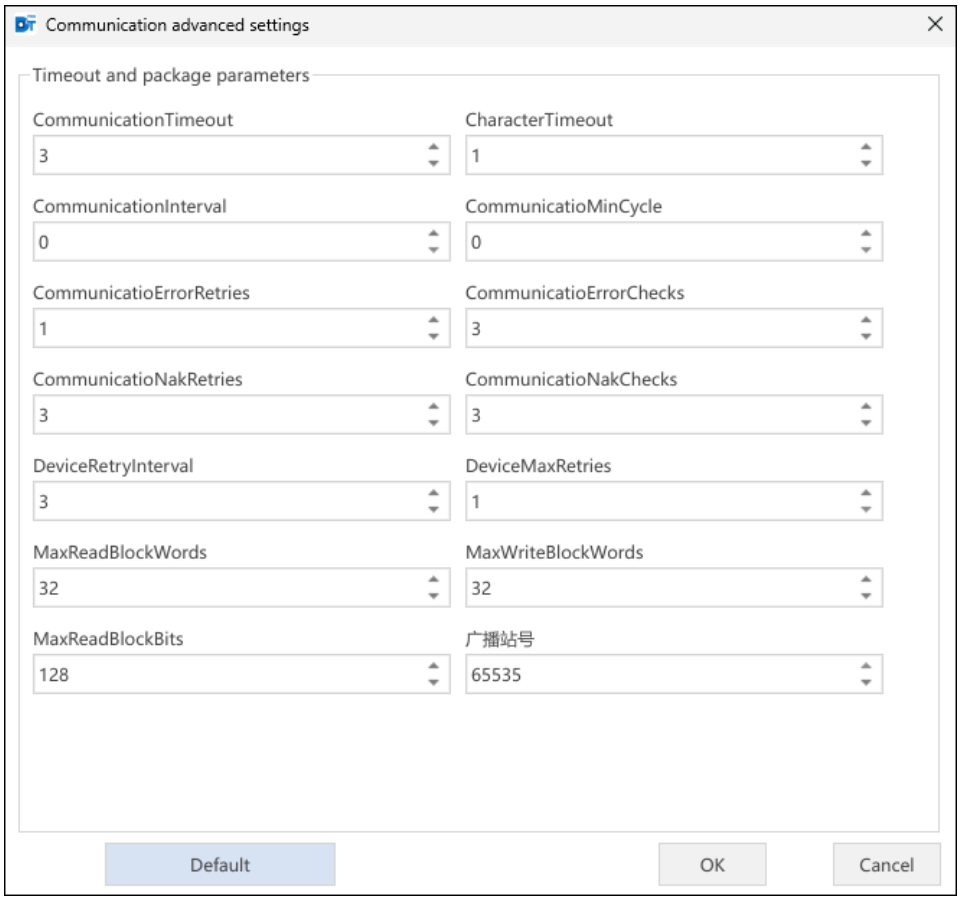


6.2 COM

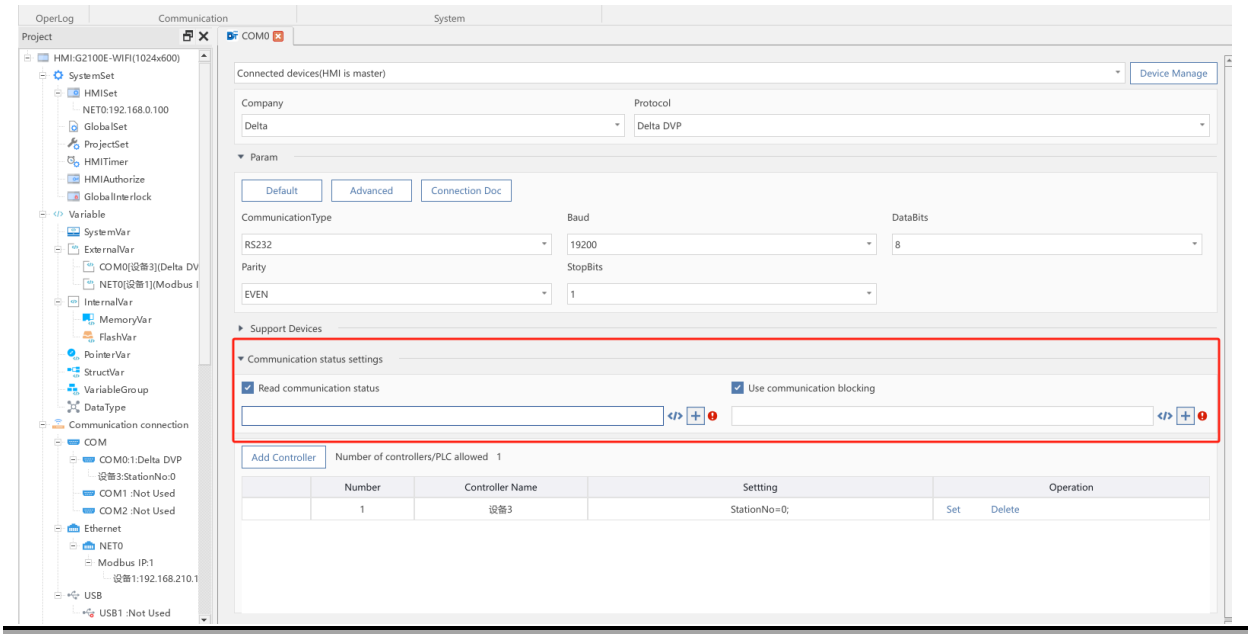
For applications related to various external driver protocols, please refer to the corresponding communication manual.



Parameter Setting Description	
Communication type	com0：RS232/RS422/RS485 com1：RS422/RS232/RS485 com2：RS232
Baud	Maintain consistency with connecting slave stations
Data Bits	Maintain consistency with connecting slave stations
Parity	Maintain consistency with connecting slave stations
Stop Bits	Maintain consistency with connecting slave stations
Default	Restore communication parameters to system default parameters

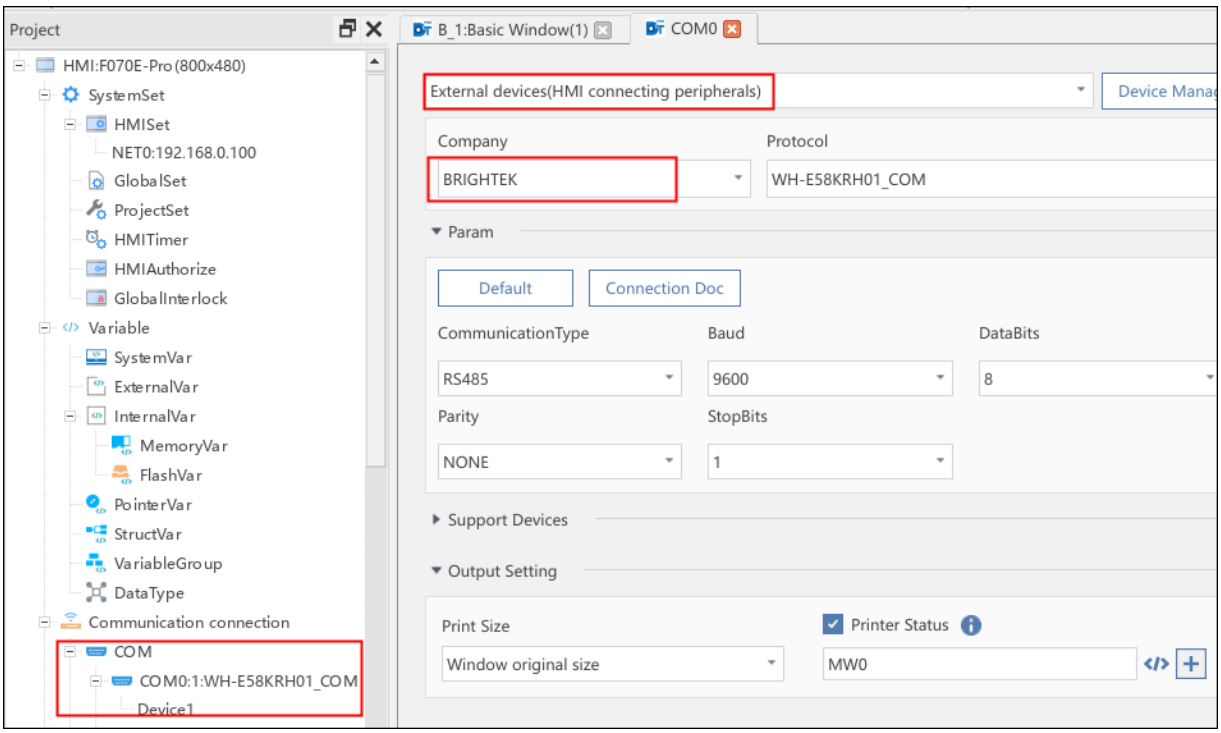


Advanced Parameter Description	
Communication Timeout	The time in seconds when the communication cannot receive correct message feedback
Character Timeout	The time, in milliseconds, between the end of one character (stop bit) and the end of the next character (stop bit)
Communication interval	In millisecond
Communication Error Retries	Number of requests after communication error
Communication Error Checks	Number of consecutive communication errors, triggering an error message
Communication Nak Retries	Number of consecutive repeated requests after communication timeout
Communication Nak Checks	Number of detections after communication timeout
Device Retry Interval	The time interval between each reconnection request after communication disconnection, in seconds.
Device Max Retries	Number of device reconnections after communication disconnection
Max Read Block Words	Indicates the maximum number of word registers per message read. Exceeding this word count will result in multiple requests being split
Max Write Block Words	Indicates the maximum number of word registers per message written. Exceeding this word count will result in multiple requests
Max Read Block Bits	Indicates the maximum number of bit registers per message read. Exceeding this word count will result in multiple requests being split
Broadcasting station number	As long as the device with the broadcasting station number sends a data frame, all connected devices that support the broadcasting station number can receive it, but do not reply.

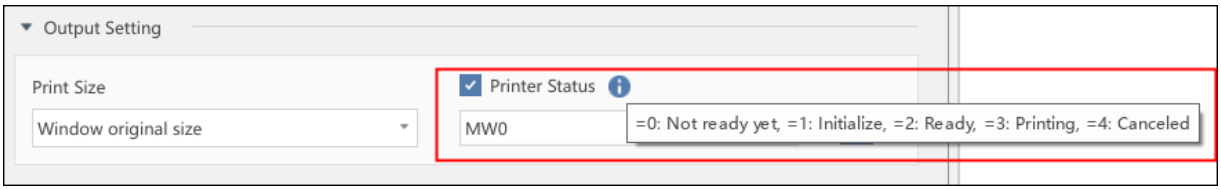


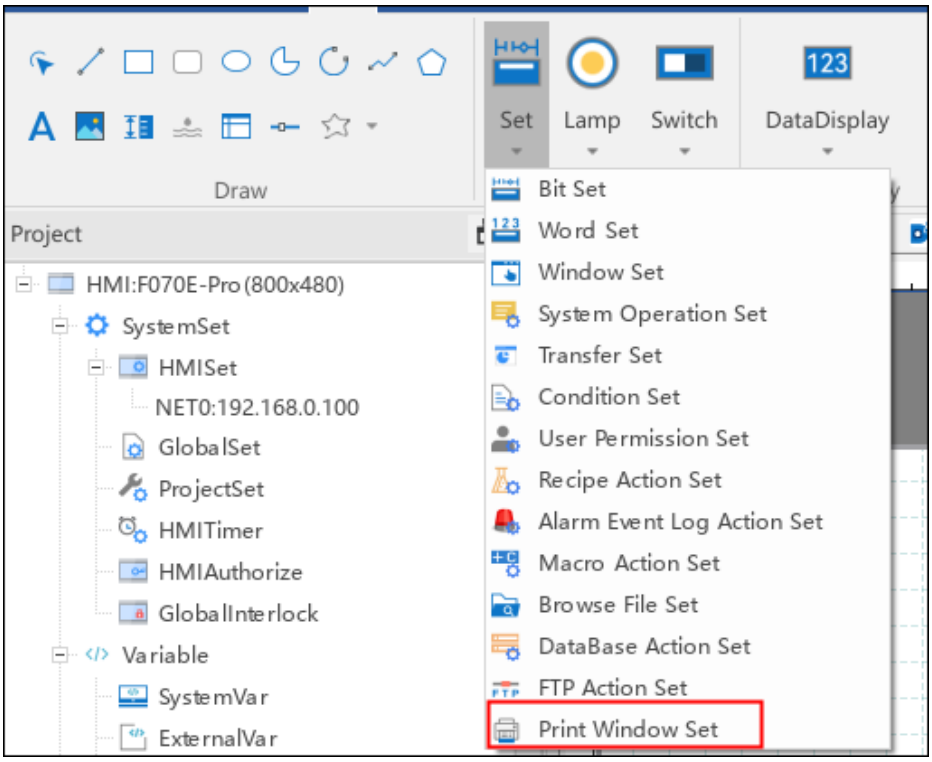
Communication status settings Description	
Read communication status	Only supports internal variables, bit/pool variables (bit wise), and supports unsigned integer variables (8-64); Supports non arrays and arrays (supports array elements and the entire array; multi-dimensional arrays do not cross dimensions); 0- No communication, 1- Communication;
	Array bit variable: The array index of the entire array represents the controller number; The array variable variable [0] represents the masking state of the controller with number 1; Variable [1] represents the communication status of the controller with number 2, and so on;
	Array word variable: For example, if the PLC protocol is associated with 10 controllers and an 8-bit unsigned array variable with an array length of 2 is selected, variable [0]. bit0 represents the communication status of the controller with the number 1; Variable [0]. bit1 represents the communication status of controller number 2, and so on. variable [1]. bit0 represents the communication status of controller number 9; Variable [1]. bit1 represents the communication status of controller number 10;
Use communication blocking	When the blocking state is 1, the communication state is 0, and the component effect is consistent with the current non communication (no error window pops up); When the blocking status is 0, the communication status is read in real-time; 0- Not blocking; 1. blocking;
	Only supports internal variables and disk variables;; Supports non arrays and arrays (supports array elements and the entire array; multi-dimensional arrays do not cross dimensions); Variable usage settings and communication status are similar

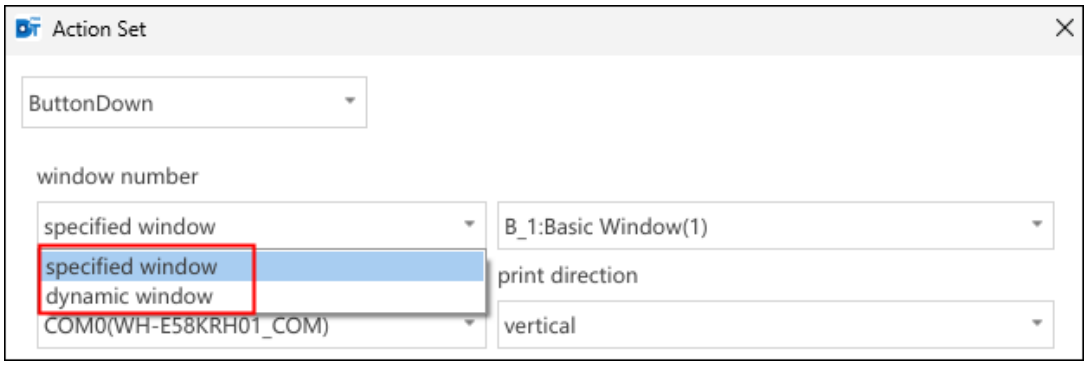
Serial port connect to external device (printers):



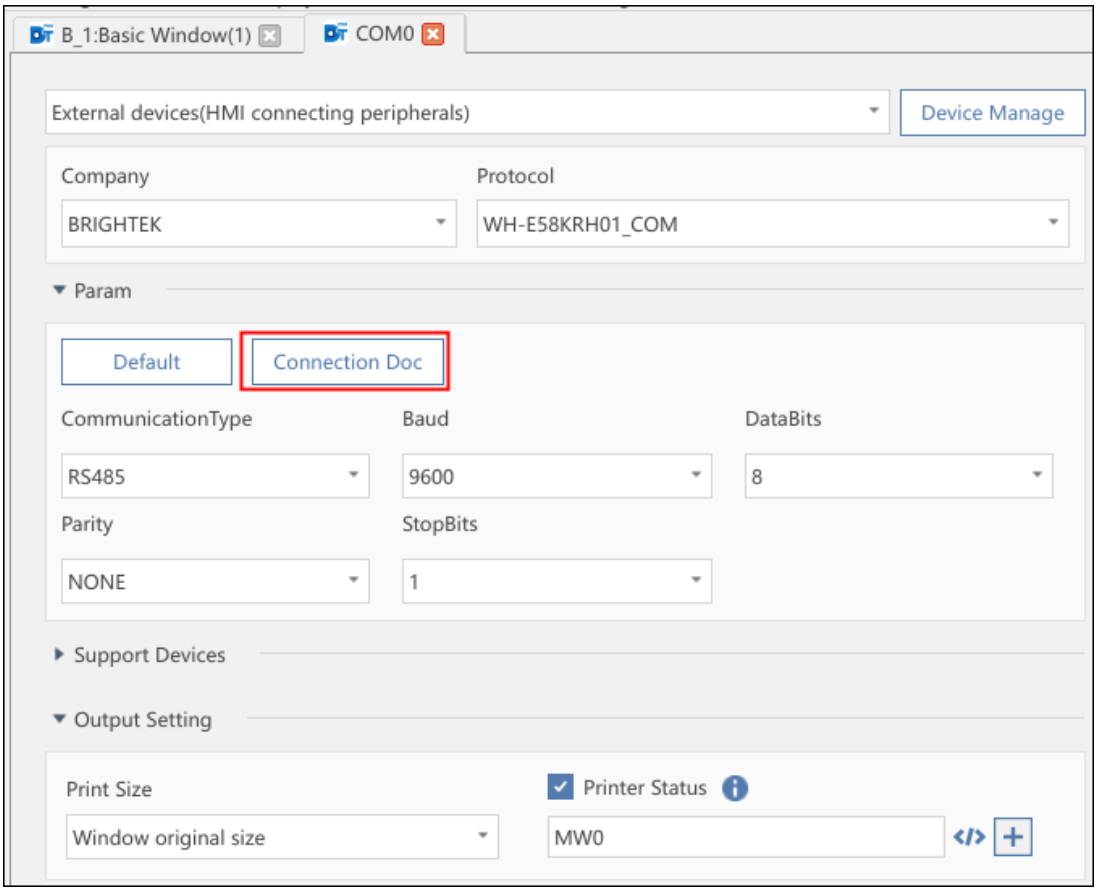
Printer status: After checking, the value of the corresponding register can be used to view the running status of the printer.







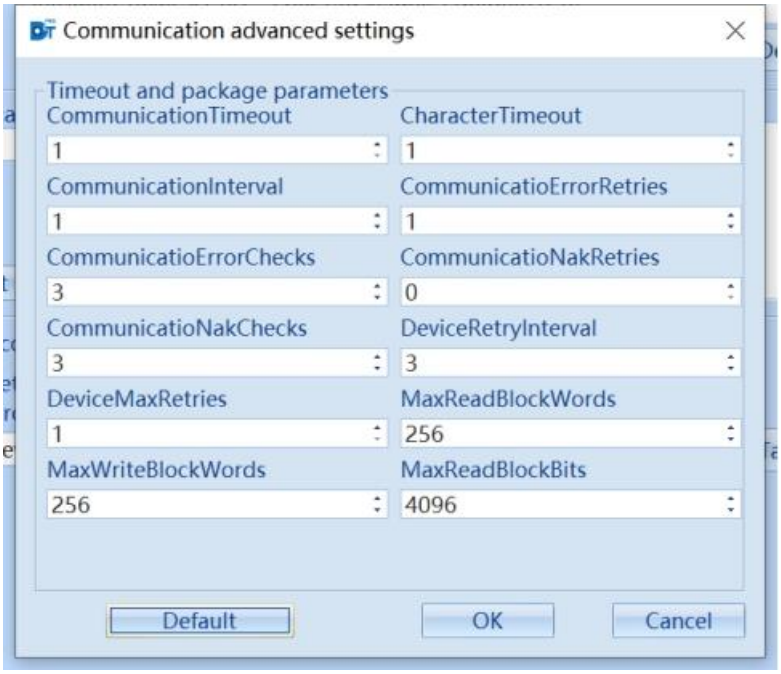
Supports printing of specified windows and dynamic windows. The dynamic window assigns the corresponding variable to the window number to be printed. For the printer connection manual, please refer to the "ConnectionDoc" for details.



6.3 Ethernet port

For the application of various external driver protocols, please refer to the corresponding reference manual

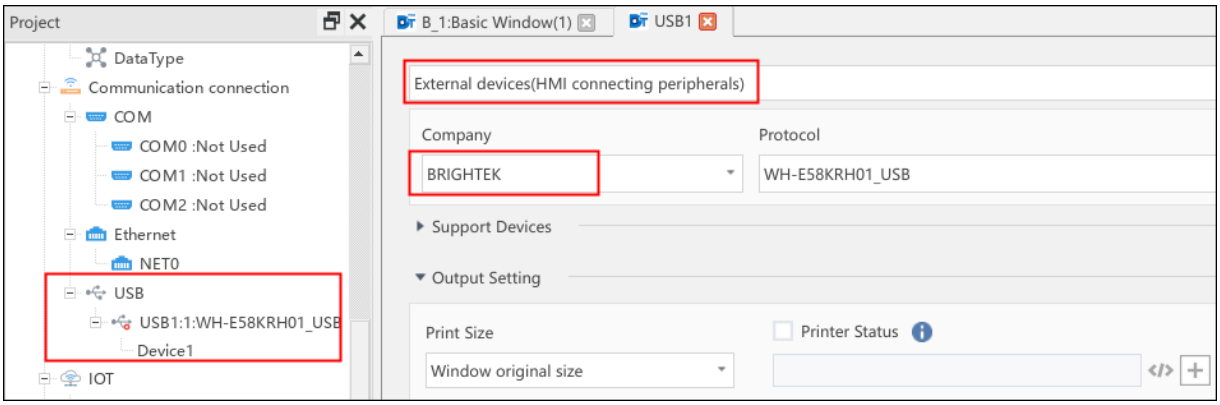
Communication method: UDP、 TCP



Advanced Parameter Description	
Communication Timeout	The time in seconds when the communication cannot receive correct message feedback
Character Timeout	The time, in milliseconds, between the end of one character (stop bit) and the end of the next character (stop bit)
Communication interval	In millisecond
Communication Error Retries	Number of requests after communication error
Communication Error Checks	Number of consecutive communication errors, triggering an error message
Communication Nak Retries	Number of consecutive repeated requests after communication timeout
Communication Nak Checks	Number of detections after communication timeout
Device Retry Interval	The time interval between each reconnection request after communication disconnection, in seconds.
Device Max Retries	Number of device reconnections after communication disconnection
Max Read Block Words	Indicates the maximum number of word registers per message read. Exceeding this word count will result in multiple requests being split
Max Write Block Words	Indicates the maximum number of word registers per message written. Exceeding this word count will result in multiple requests
Max Read Block Bits	Indicates the maximum number of bit registers per message read. Exceeding this word count will result in multiple requests being split

6.4 USB

Supports drive-free devices such as RFID,Barcode scanner and printers.


Project
B_1:Basic Window(1)
USB1
DataType
Communication connection
COM
COM0 :Not Used
COM1 :Not Used
COM2 :Not Used
Ethernet
NET0
USB
USB1:1:WH-E58KRH01_USB
Device1
IOT
External devices(HMI connecting peripherals)
Company
Protocol
BRIGHTEK
WH-E58KRH01_USB
Support Devices
Output Setting
Print Size
Printer Status
Window original size

7 Window Screen

"Window" is a fundamental element of an HMI project, and each screen is composed of several windows. With a window, various elements, graphics, and text can be placed on the HMI interface.

7.1 Types of windows

According to different functions or usage methods, windows can be divided into 6 types: Power-on screen, public window, basic window, keyboard window, system window, and screensaver window. The basic window can be used as a pop-up window or as an underlying window. The specific instructions are shown in the table:

Window Type	Description
Power-on screen	The screen displayed during HMI startup. Users can customize according to their needs.
Basic Window	The basic window is the most commonly used window. When using【Button】—【Switch Basic Window】or global control to switch basic windows, the current screen will be cleared (except for public windows), and the basic window to switch will be displayed on the current screen. When an element on the basic window calls a pop-up window, the basic window remains open, and the original information on the window is retained. The called pop-up window is attached to the current basic window, and all pop-up windows are parent-child windows. When switching from basic window N to basic window M, all sub windows on window N can be set to close or continue to be retained.
Public Window	The elements of this window will be displayed on other windows, but do not include pop-up windows. Usually, elements that are common to each window are placed in a public window.
Keyboard Window	This window is mainly used to set various keyboards and will be displayed on other windows.
System Window	This window is generally used to place multiple preset system operation windows, such as error prompts, user login, electronic signatures, and communication information.
Popup Window	Popup windows are all attached to the current basic window. You can set whether to automatically close child windows when the parent window is closed.
Screen Saver Window	When screen saver is enabled and HMI is not operated within the set time, this window will automatically pop up to prevent misoperation.
Bottom Window	This window is generally used to place common elements that multiple windows need to call. Using the underlying window eliminates the need to repeatedly edit the same elements. For example, background graphics, charts, titles, etc.

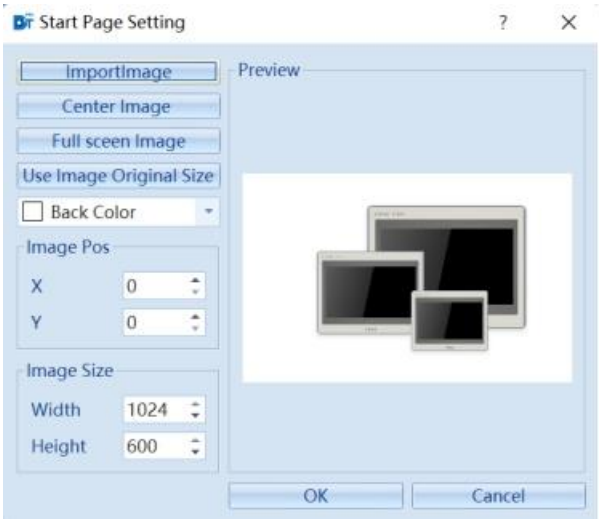
A screen can contain both basic and public windows, and each basic window can contain multiple bottom and pop-up windows.

There is a certain limit on the number of windows in each project, as shown in the table below:

Window Type	Default window number	Maximum number of supported windows
Power-on screen	--	1
Basic Window	1	Window number range: Basic window 1~30000
Public Window	--	1
Keyboard Window	40001	40001-40006
System Window	--	A single window can have up to 3 bottom windows
Popup Window	--	Unlimited until memory runs out
Screen Saver Window	30001	Window number range:30001-40000
Bottom Window	51001	1

7.2 Start Page Settings

The start page setting is the first setting when the screen is turned on, and users can set it according to their needs. The setting interface is shown in the following figure:



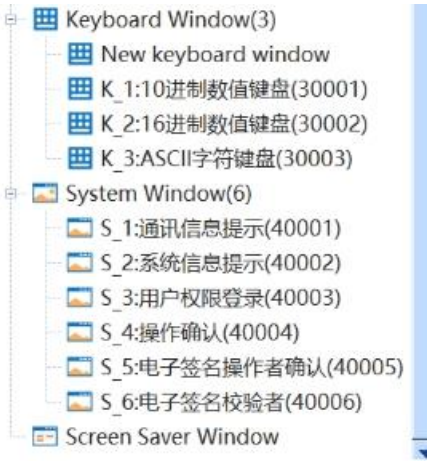
The specific setting instructions are shown in the table below:

Instructions for Start Page Setting	
Import image	Import startup screen images, supporting image formats of *. png *. jpg *. jpeg *. bmp
Center image	Click to put the image in the middle of the window
Full screen image	Click on it and let the picture spread all over the window
Use Image Original Size	After clicking, the image will be displayed in its original size on the window
Background Color	Select the background color of the window after selecting the image
Image position	Modify the coordinate position of the image on the window. The top left corner of the window is the origin position, the right is the X coordinate, and the bottom is the Y coordinate
Image Size	Modify the width and height of the image on the window, with horizontal width and vertical height

The X − coordinate plus width must be less than or equal to the screen width, and the Y − coordinate plus height must be less than or equal to the screen height.

7.3 System Window

After creating a new project, the project comes with 6 default system windows and 3 keyboard windows. You can see it in the project structure window, as shown in the following figure:



The specific description of the default window is shown in the table below:

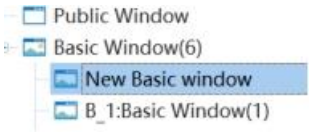
Window number	Window Name	Description
30001	Decimal numeric keyboard	Decimal numeric keyboard. Default pop-up numeric keyboard for decimal input
30002	Hexadecimal numeric keypad	Hexadecimal numeric keyboard. Default pop-up numeric keyboard for hexadecimal input
30003	ASCII character keyboard	String keyboard, default pop-up character keyboard for character input
40001	Communication Message Alert	Pop up message window when external controller error occurs
40002	System information prompt	System information prompt
40003	User permission login	Automatic pop-up window for user permission login. For more information on user permissions, please refer to 【11.2.2 User Permission Information】
40004	Operate Confirm	Automatic pop-up confirmation window for operation control
40005	Electronic signature operator confirmation	The electronic signature operator confirms the automatic pop-up window. For more information on electronic signatures, please refer to 【18. Electronic Signature】
40006	Electronic signature verifier	Electronic signature verifier confirmation automatic pop-up window

7.4 Editing Window

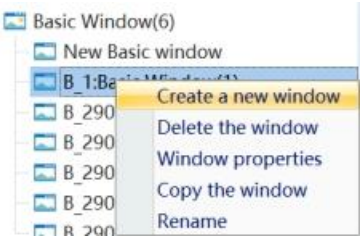
7.4.1 Create a new window

New projects have one window by default, and users can add several new windows in the following two ways.

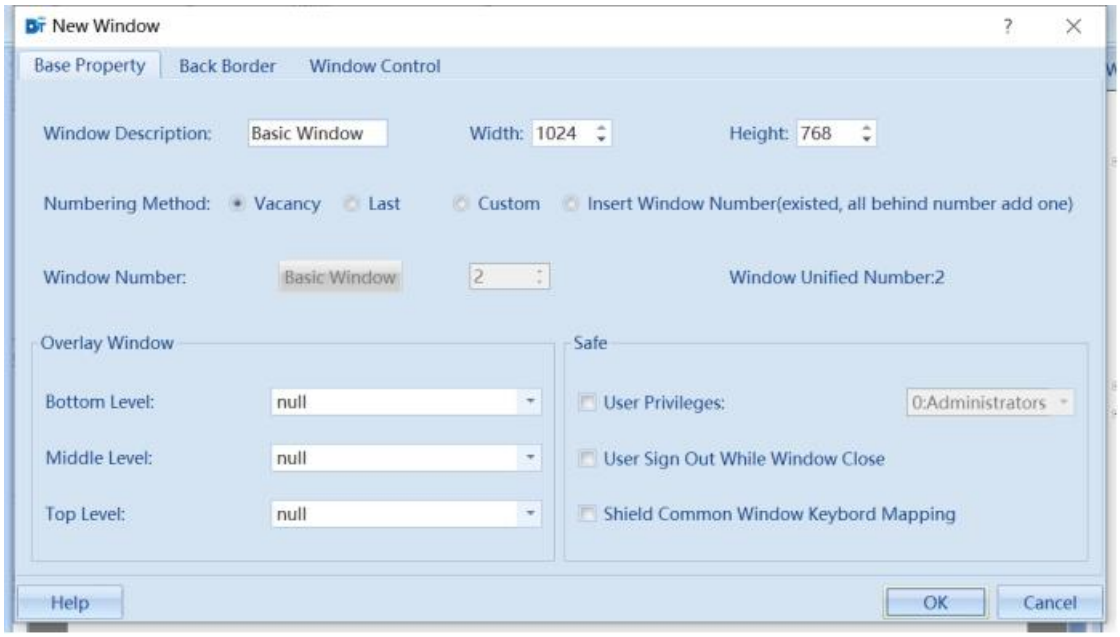
- Double click 【New Basic Window】 on the project management tree



- Click on the 【New Window】  icon in 【View】
- Right click on the project management tree window and select New Window as shown in the following figure:



Double Click【New Basic Window】, Menu - View【NewWindow】and right click on 'New Window' will automatically pop up the【New Window】page.



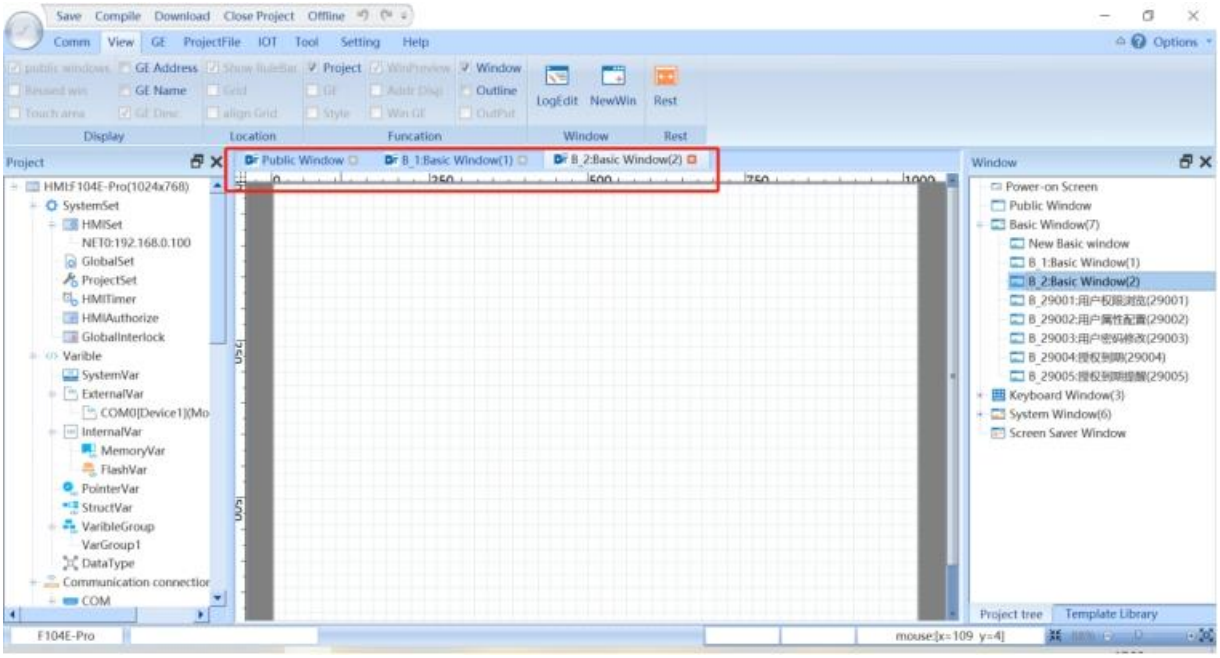
The specific description is shown in the table below:

Name		Description
Numbering Method	Vacancy	When the existing window numbers are not continuous, a new window can be inserted into the first vacant position automatically recognized by the system, and 【Vacancy】 is selected by default.
	Last	When creating a new window, the system will automatically set the window number to the maximum window number that currently does not exist.
	Custom	Create a new window at any location, with customizable window numbers ranging from 1 to 30000, but cannot be an existing window number.
	Insert Window Number	After selection, you can create a new window in any position, and the window number can be customized. If the defined number already exists, add 1 to the window after this number in sequence.
Window Number		Display the number of the new window. When the numbering method is selected as 【Vacancy】 or 【Last】, the window number will be grayed out and can only be modified by selecting【Custom】or【 Insert Window Number】.
Window Description		User defined or system default.

7.4.2 Open Window

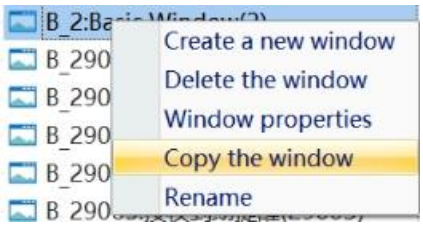
After creating a window, you can open it in the following ways:

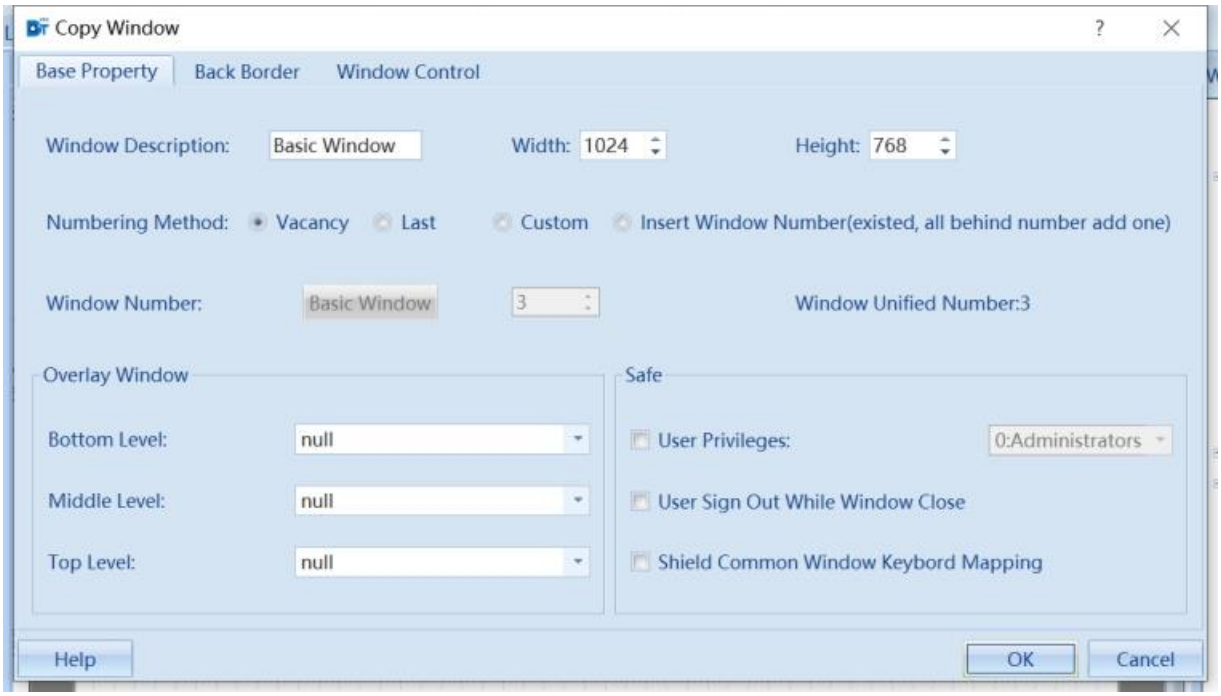
- Double-click the window you want to open in the window list of the 【Project Management Tree】
- You can click to switch above the already opened window, as shown in the following figure



7.4.3 Copy the Window/ Batch Copy Windows

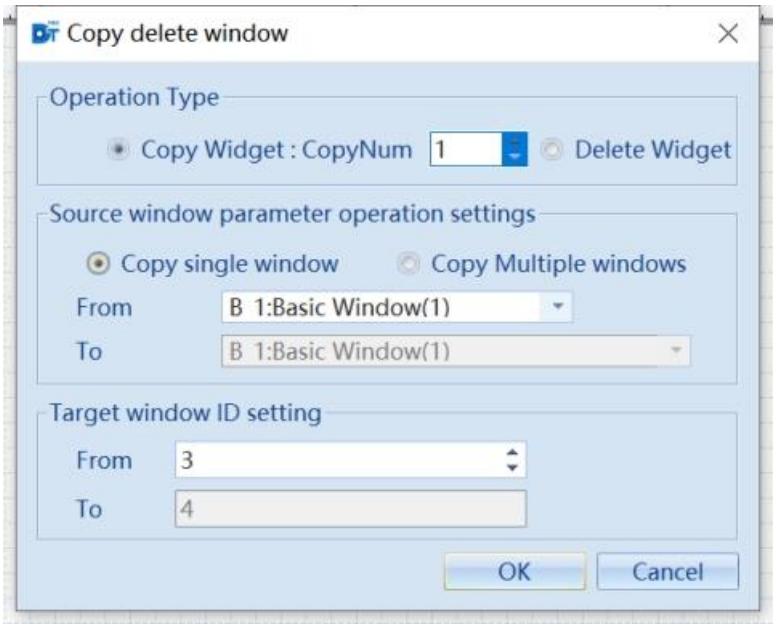
- Right click on the project management tree and select ‘copy window’ as shown in the following figure:





- In the Common menu of the project, select 【Copy Win】, as shown in the following figure:

Click on 【Copy Win】, as shown in the following figure:



The specific description is shown in the table:

Name		Description
Operation Type	Copy Widget: Copy Num	Select the copy window function and set the number of windows to be copied
Source Window parameter operation settings	Copy single window	Select a single window number to copy
	Copy multiple windows	Select the consecutive window numbers to be copied, from window M to window N, these several windows will be copied simultaneously
Target window ID setting		Set the starting window number for copying to. The target end window number is automatically generated by the system and cannot be changed

The target start window number can be an existing window number, but cannot be the window number being edited.

7.4.4 Delete the window/ Batch delete windows

- Delete the current window

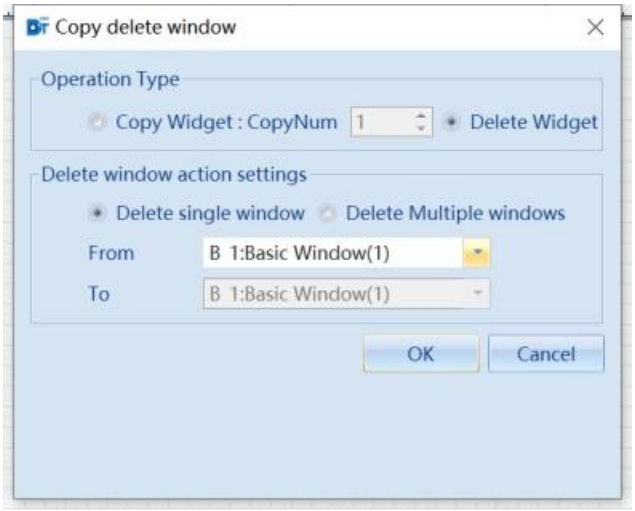
There are two ways to delete the current window:

- Click on the project management tree to select the window that needs to be deleted. Right click as shown in the following figure and select "Delete the window":

➢ Click to delete the window

- In the project common menu, select【Copy Win】, as shown in the following figure:

Click on【Copy delete window】and select the delete window as shown in the following figure:



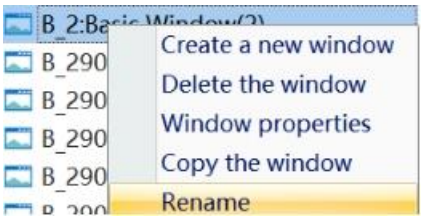
The specific description is shown in the table:

Name		Description
Operation Type	Delete window	Select Delete Window Function
Delete window action settings	Delete single window	Select the window number to delete
	Delete multiple windows	Select the window number to delete. From window M to window N, and these consecutive windows will be deleted

1. Once the window is deleted, all elements in the window will be deleted and cannot be restored. Use this function with caution
2. Keyboard window and system window cannot be deleted

7.4.5 Rename

The window description can be modified except when adding or modifying a window. Right click on the project management tree window and select "Rename" as shown in the following figure to directly modify the window description.

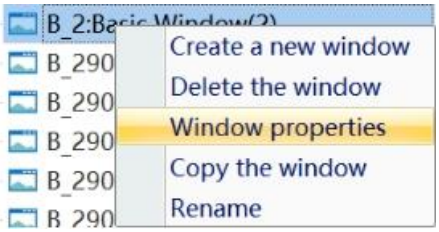


7.5 Window Properties

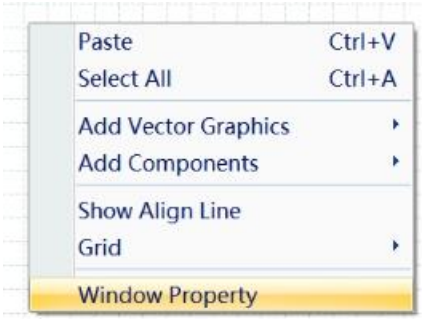
7.5.1 Open the Window Properties Page

Kinco DToolsPro software provides three ways to set window properties.

- Right click on the project management tree and select "window properties" as shown in the following figure:

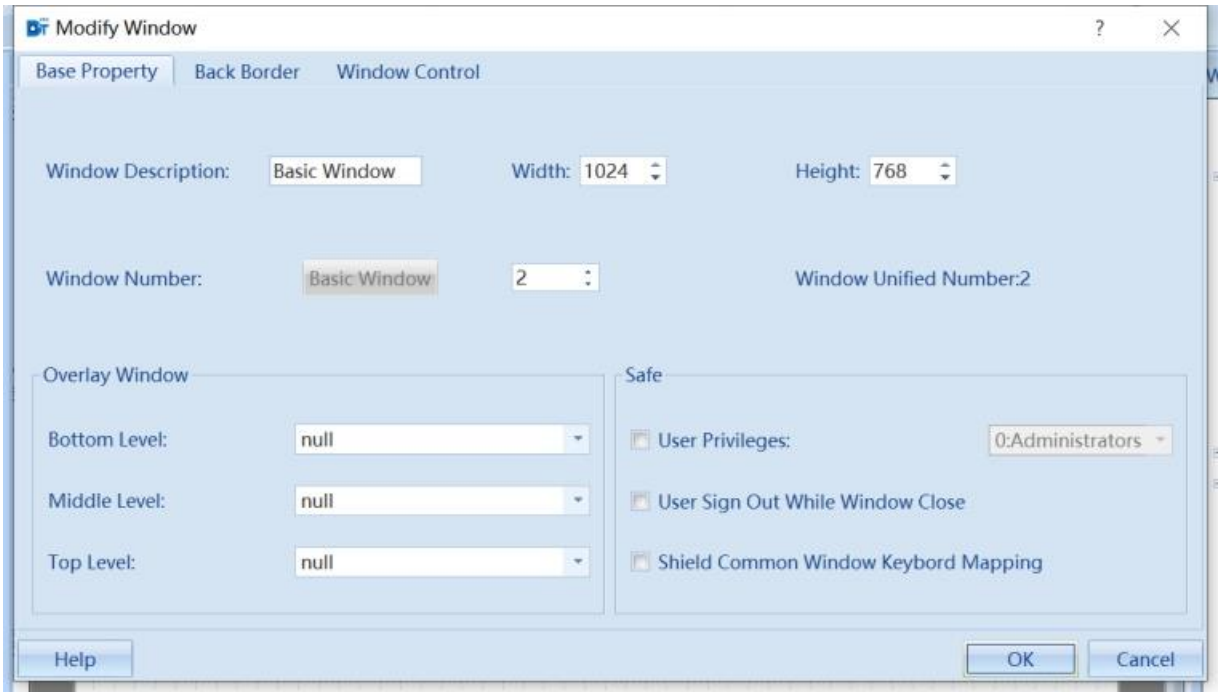


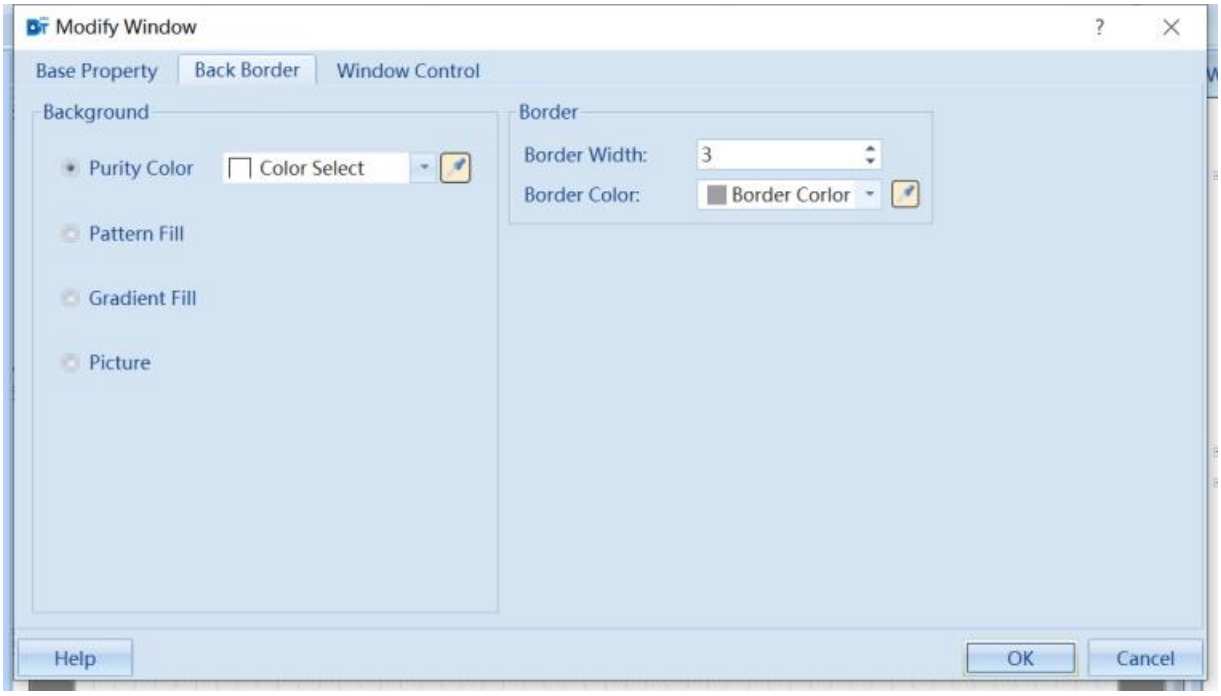
- Right click on any blank space within the window page to select "Window Property"

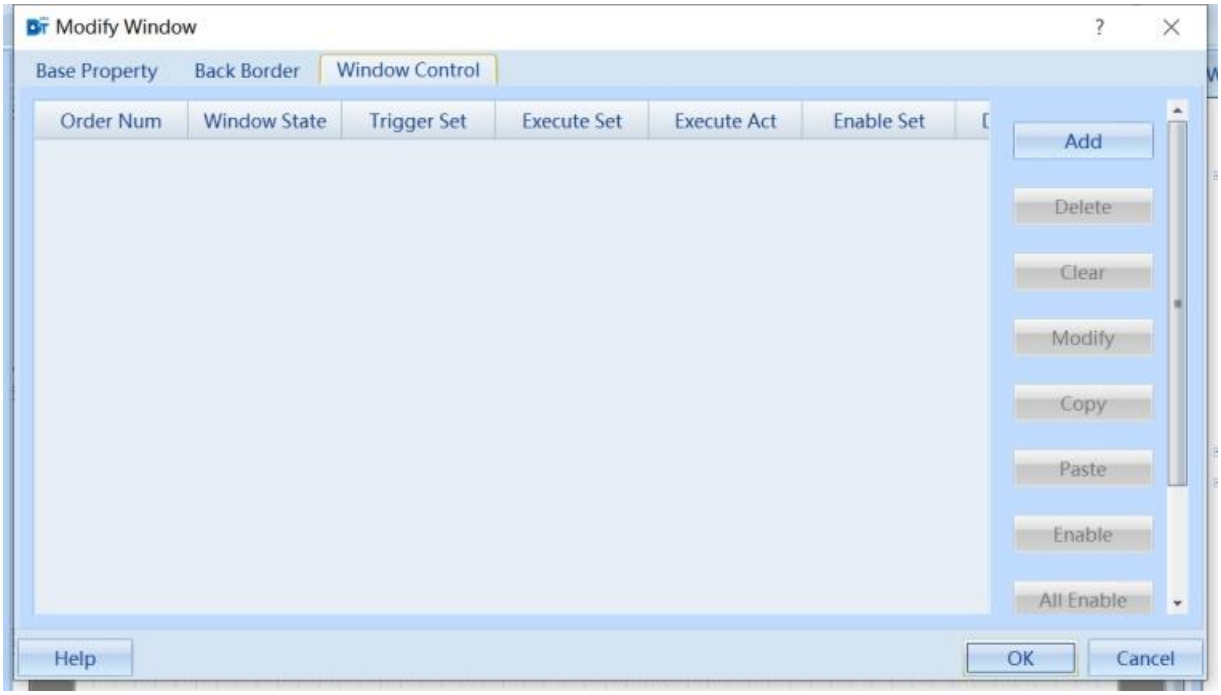


- Double click on any blank space within the window page to pop up "window properties".

7.5.2 Description of window property







The description of window properties is shown in the table:

Window Property Description	
Window Description	Each window can be named for easy differentiation
Width	Window width
Height	Window height
Window Number	The range of window numbers is 1-30000. The number can be set when creating a new window, and can be modified after creation
Overlay Window	Set the corresponding underlying window for the current window. The bottom window is placed at the bottom of the editing window as a background image. The underlying window must be a basic window that has already been created, typically placing components common to multiple windows on top of the underlying window
Safe	Set the security level of the current window
User Privileges	Set the user level of the window. Supports multi-privilege controlOnly users who meet this permission can log in and switch to this window
User Sign Out While Window Close	This function is used in conjunction with user permissions. After exiting this window, users who meet the permissions need to log in again before they can enter again
Shield Common Window Keyboard Mapping	This function is only valid for HMI with built-in buttons
Background	You can choose solid colors, pattern fills, gradient fills, or images as backgrounds. Images can be selected from a file or from a gallery
Border	Set the width and color of the border. The width range of the border is 0~16. When the border width is not 0, the border color selection is valid
Window Control	Trigger setting: The window status can be selected to execute when the window is opened/closed or when the window is running (consistent with the global control runtime setting). For more details, please refer to Chapter13-Global Control
	Action settings: consistent with global control
	Conditional enabling: consistent with global control

8 Elements (Components)

An/A element(component) is an object with which the user interacts to input or manipulate data. The user manipulates the object to perform a specific action. When using an element(component), the user needs to set the element properties according to the actual requirements. Different properties can directly affect the result of the elements' operation and execution. This chapter describes the properties of each element in detail.

8.1 Public settings

8.1.1 Creation and deletion of elements

（1）Create elements

Click on the 'element' menu, select the desired element from the toolbar, and the element's attribute box will pop up. After setting the corresponding properties, click the [OK] button in the properties dialog box and a "+" cursor will appear in the upper left corner of the configuration editing workspace. Move the mouse to the appropriate position and click the left mouse button to create and place it. Click the right mouse button to cancel the creation.

（2）Deleting elements

The created elements can be deleted in two ways:

- Delete by right-clicking

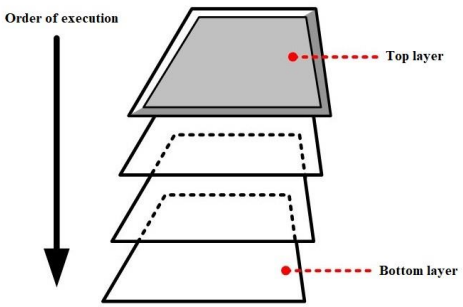
Select the element to be deleted, right-click, and then right-click 【Delete】 to delete the selected element.

- Delete through the Delete key on the keyboard

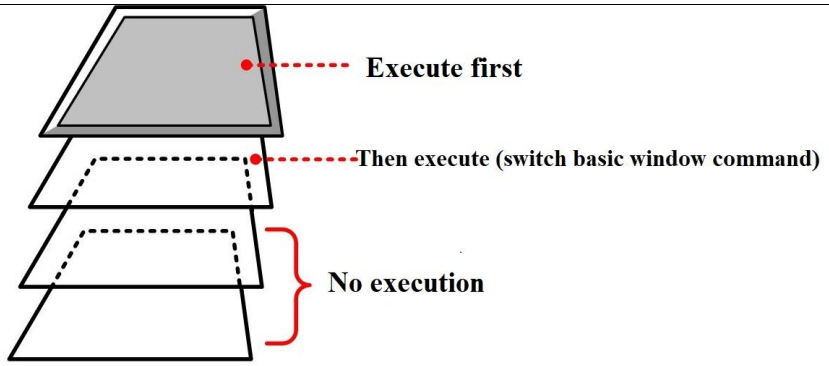
Select the element to be deleted, and then press the 【Delete】button on the keyboard to delete the selected element.

8.1.2 Execution order of elements

During the configuration design process, there may be situations where it is required to trigger multiple elements to execute corresponding operation commands with just one touch. In this case, multiple execution actions need to be added, and you can choose to execute them in sequence or all. Once there are touch actions, the superimposed actions will execute the operation commands according to the settings. The sequence of executing actions from top to bottom is uncertain. As shown in the following figure:



1. When encountering an element that executes the switch basic window command, after executing the switch basic window command, the commands for all components placed below that component will no longer continue to be executed.



2. Currently, only the switch function supports stacking actions

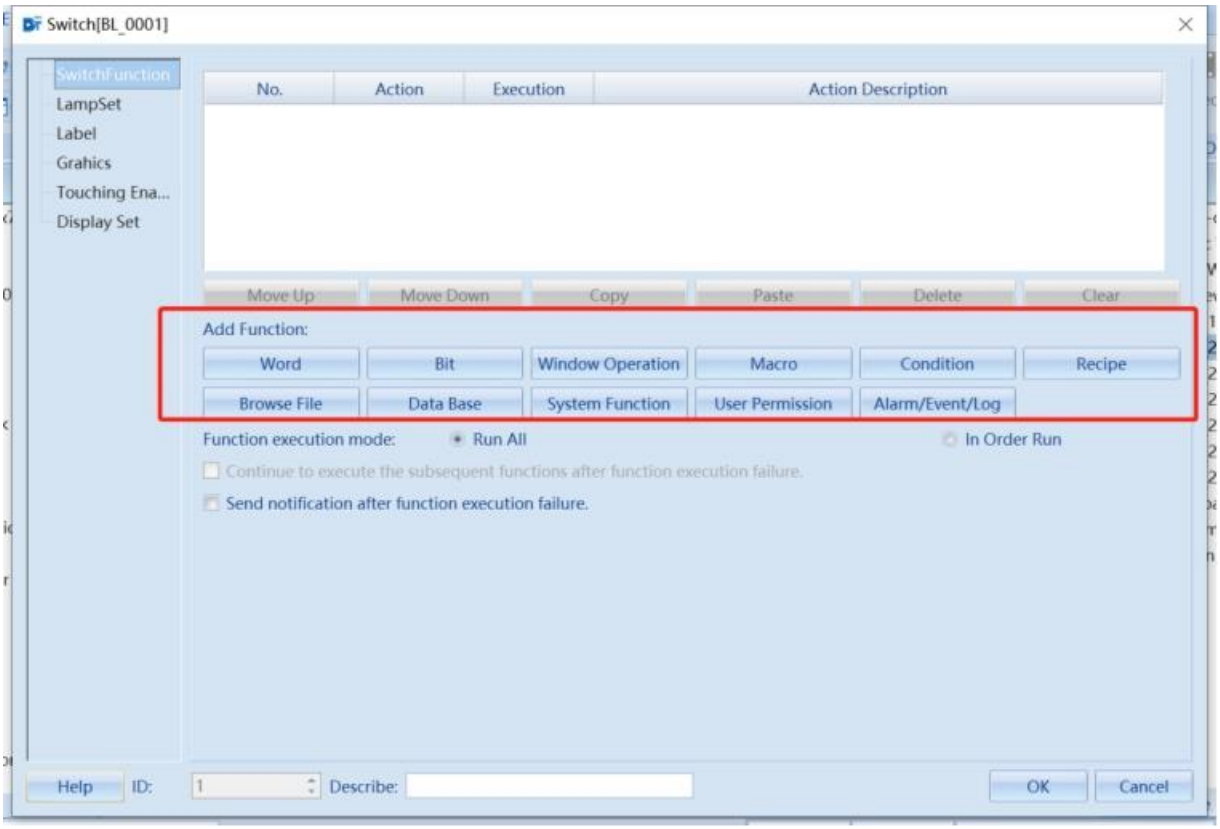
8.1.3 The way to open the property

In addition to automatically popping up during creation, the element properties dialog box can also be opened for created elements in the following two ways:

- Double-click the element directly to open the element property window.
- Select the element, right-click, select 【Component Property】to open the element property window.

8.1.4 Set switch functions

The GE (element)-Set page allows you to set multiple operating objects for elements.

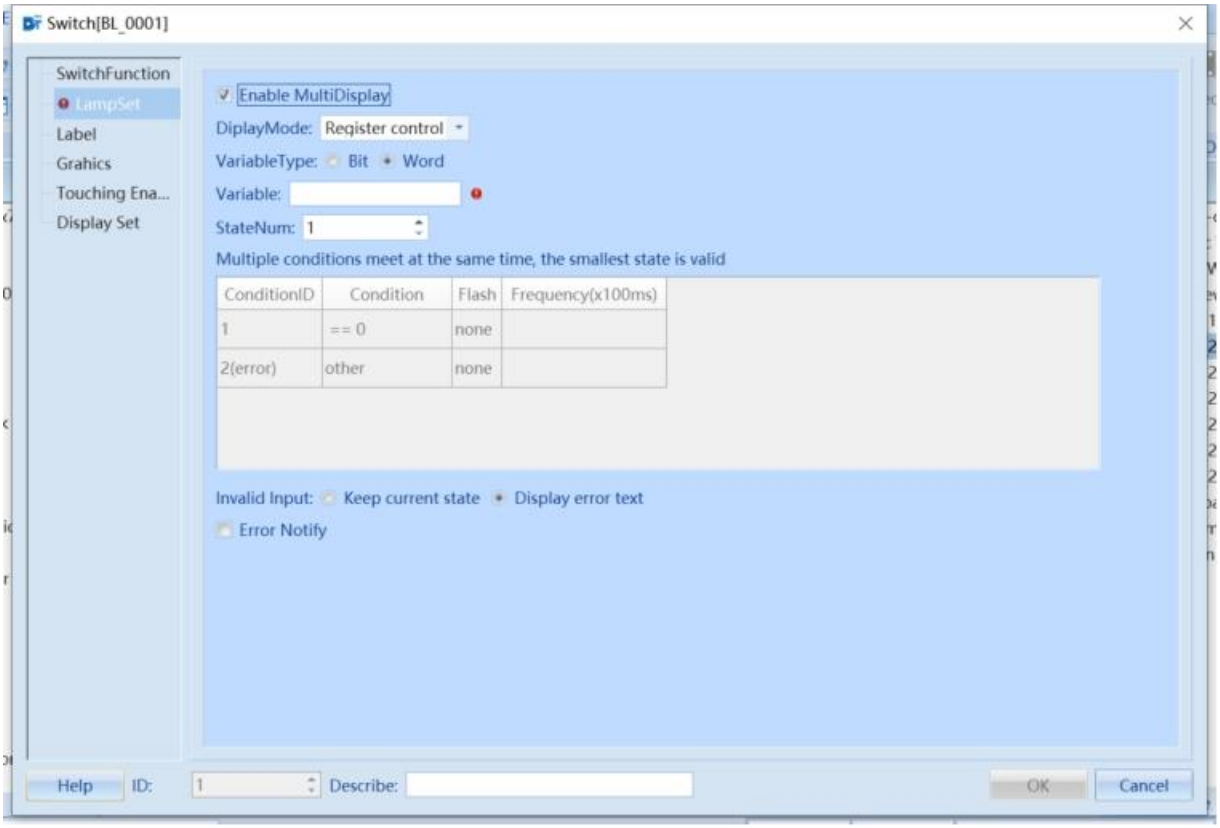


Description of Switch Function Settings	
Add function	Overlay and execute actions on switch functions
Function execution mode	Run All: All stacked execution actions are executed
	In Order Run: The stacked execution actions are executed sequentially from top to bottom
Continue to execute the subsequent functions after function execution failure	This option is only valid for sequential execution

Send notification after function execution failure	Trigger notification register: can be associated with bit/word status variables. If an action fails to execute, change the variable status according to the setting to indicate the failure
	Error Function Number Register: can be associated with word variables to display the function number where the error occurred on the set variable

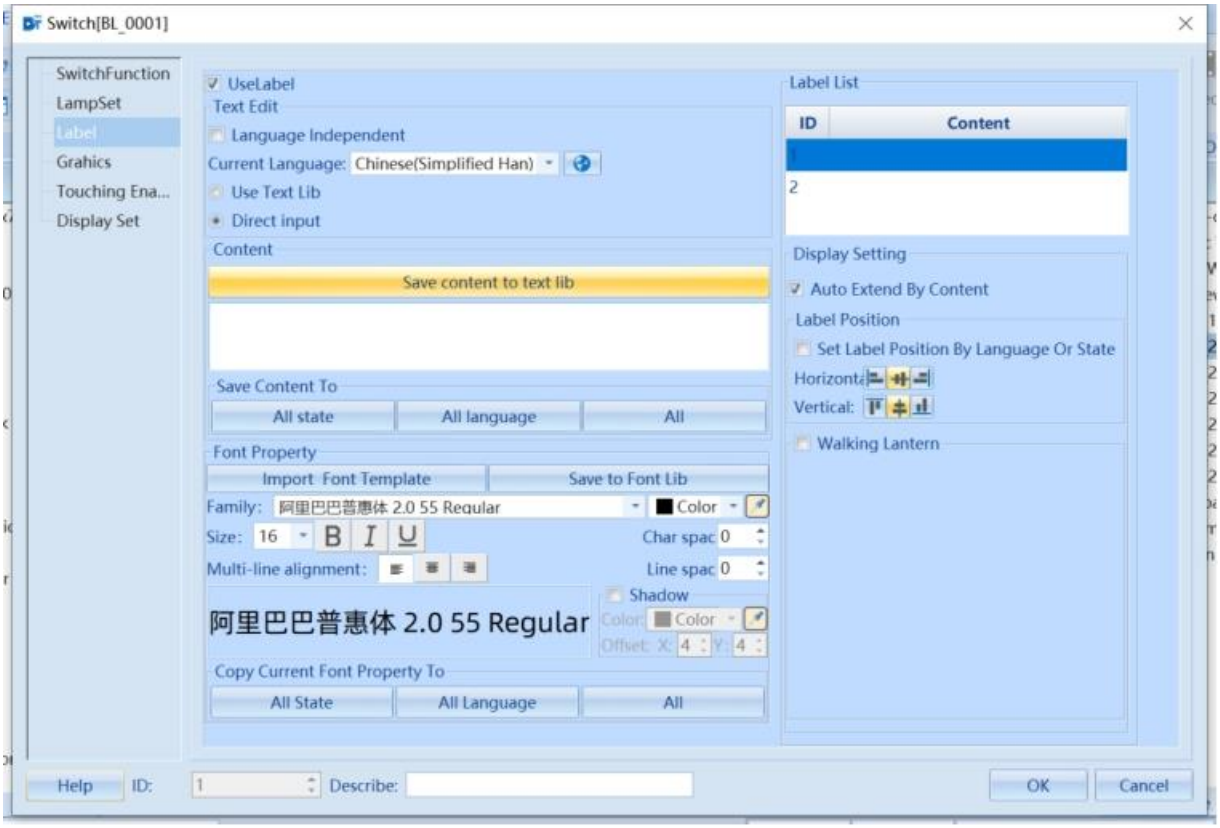
8.1.5 Lamp set function

The bit/word indicator light of the element can be set in the GE(element)-Set page.



Indicator light function description	
Enable MutiDisplay	Enable status indicator light
DisplayMode	Automatic loop and register control
VariableType	Supports Bits and Words
Multiple conditions meet at the same time, the smallest state is valid	Effective for word types
Invalid Input	Keep current state: When the input is invalid, keep the previous state of the incorrect input
	Display error text: Display the set error text when the input is invalid
Error Notify	It can be associated with a bit state variable, and in case of an error, set the bit variable to ON.

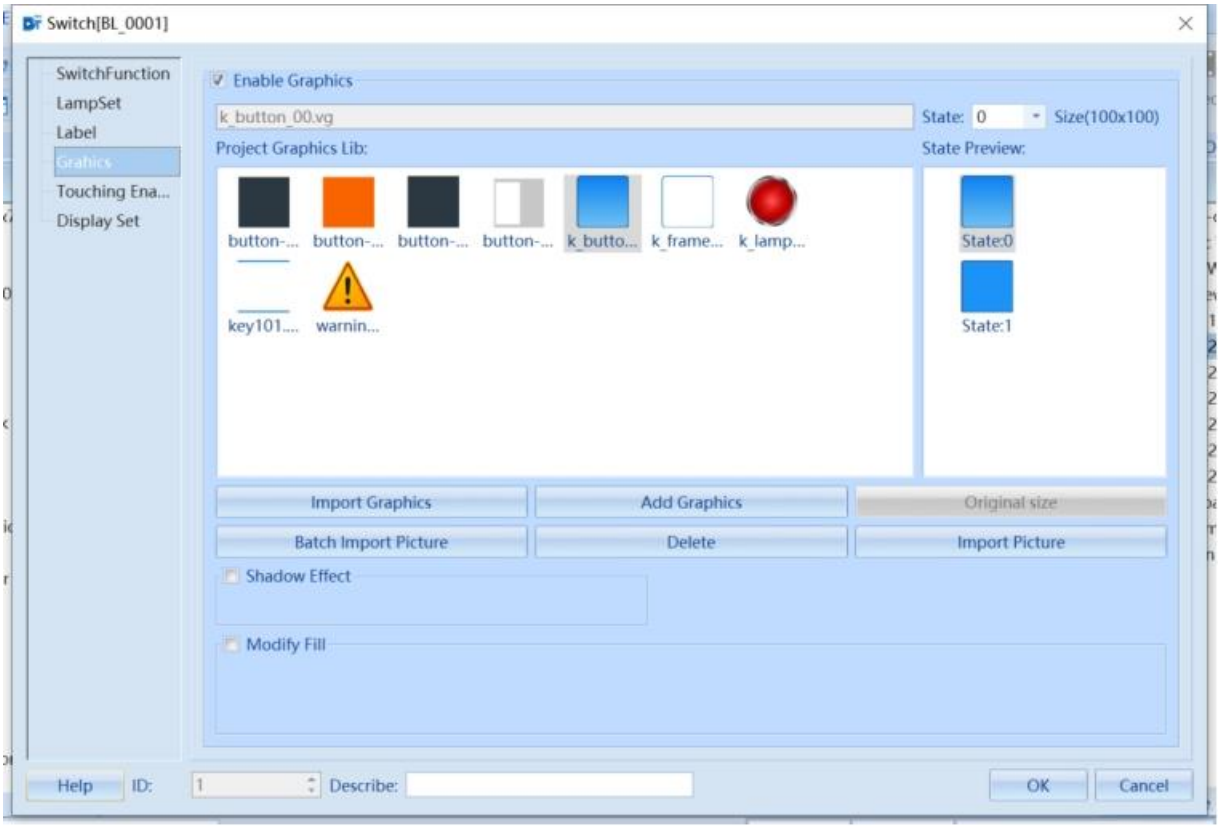
8.1.6 Label



Label setting instructions	
Enable labels after checking “UseLable”	
Language independent	After checking, it does not change with language switching and is not checked by default. When unchecked, select a different language to input text.
Use Text Lib	By default, it is not checked, and the text content entered directly is used. After checking, select the text library content to use.
Save Content To	All states: Synchronize the current text content to all states
	All languages: Synchronize the current text content to all languages
	All: Synchronize the current text content to all states and languages
Font Property	Import font templates: Use templates from the font library
	Save to Font Library: Saves the currently set font properties to the font library, making it easy to call directly the next time you use it
Copy Current Font Property To	Copy font attributes to the corresponding location, consistent with the function of saving content section
Label List	Display labels in the current language and multiple states
Display Setting	Automatic expansion of element size based on content: adaptive element size when label changes
	Label position: Set the alignment method for element positions of labels according to requirements
	Walking Lantern: scrolling mode after data display exceeds the range

8.1.7 Graphics Setting

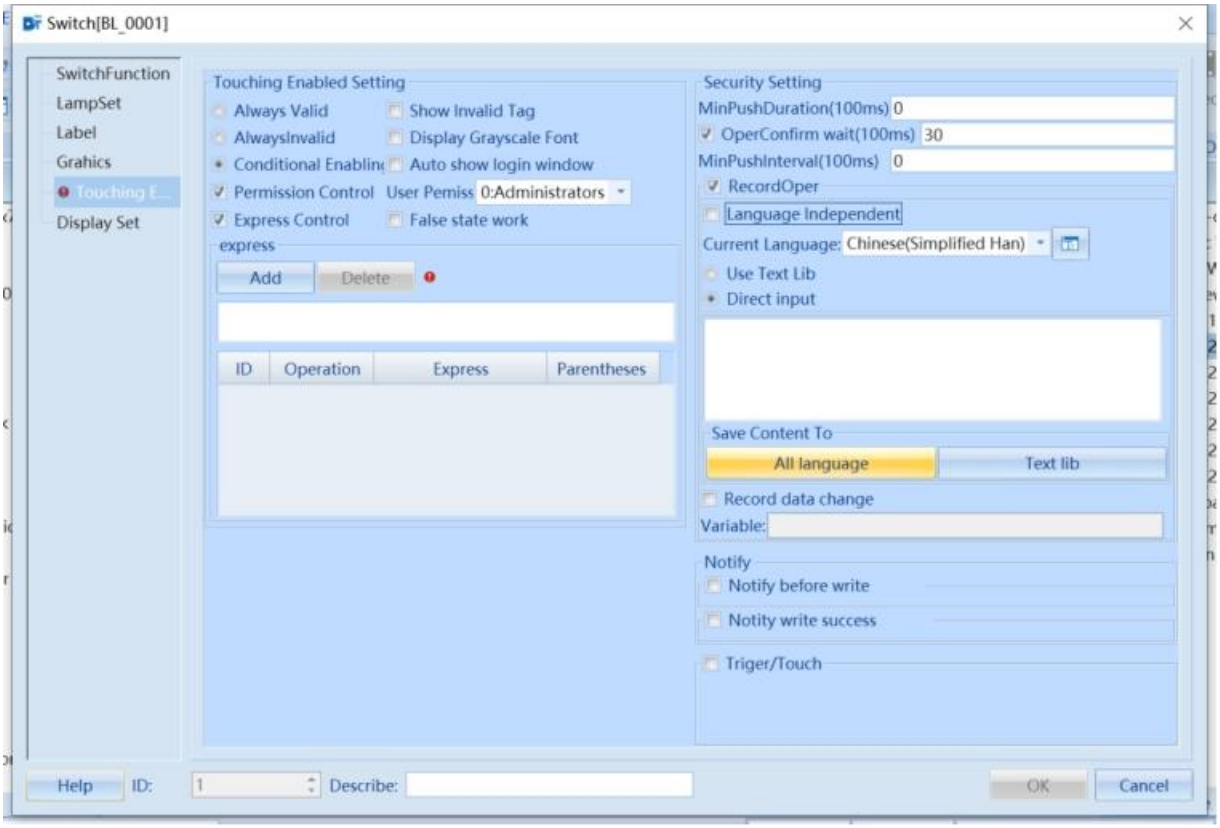
The graphics corresponding to the element status can be set on the【Graphics】 property page of the element, which can be vector maps or bitmaps.



Instructions for using graphic settings	
Enable Graphics：Check to enable graphics	
Import Graphics	Import the required graphics from the system library
Add Graphics	Add graphics outside of the system library
Original Size	Use the original size of the graphic
Batch Import Picture	Batch import of external images. Supported image formats include. jpg. jpeg. png. bmp
Delete	Delete the currently selected drawing
Import Picture	Import a single external image. Supported image formats include. jpg. jpeg. png. bmp
Shadow Effect	Add image shadow effect
Modify Fill	Modify the filling effect of the image

8.1.8 Operating condition setting

In the【Touching Enabled Setting】 property page of the element, you can set the operating conditions of the element and the operating time. You can also set the function to notify or trigger touch.

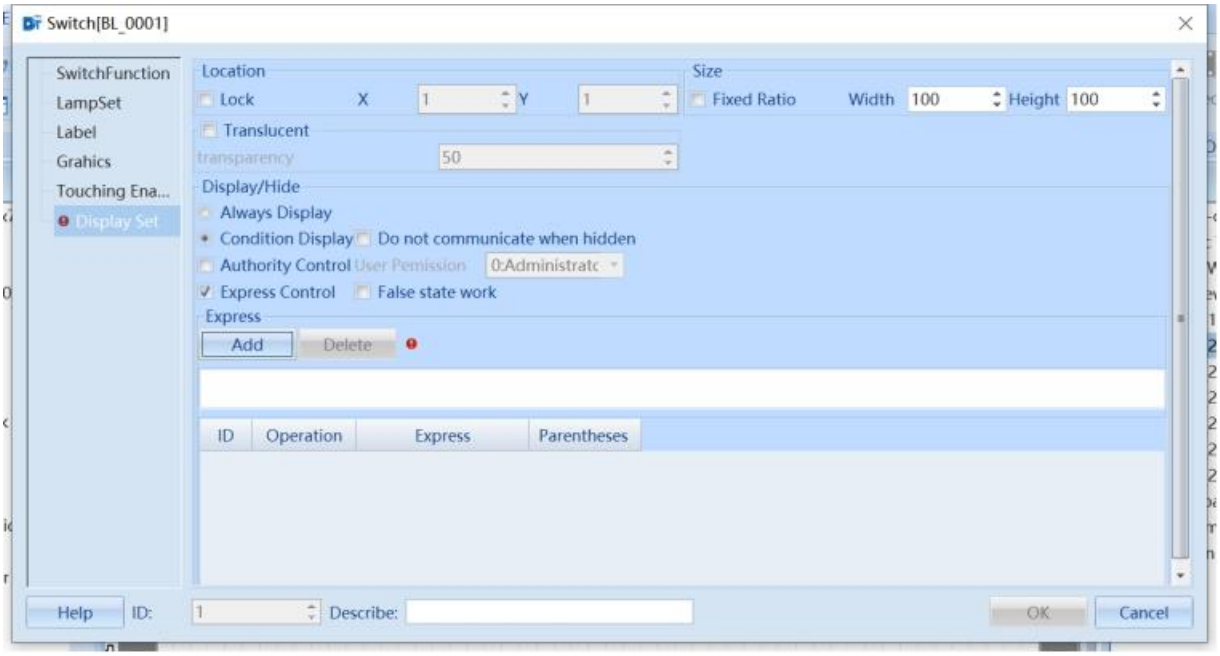


Instructions for Operating condition setting		
Touching Enabled Setting	Always Valid	Check to indicate that the status value or data can be effectively written to the specified register by touching the active area of the current element
	Always Invalid	Check to indicate that even in the current element touch effective area, touch cannot effectively write status values or data to the specified register
	Conditional Enabling	Permission Control: A check indicates that the operator's user privileges need to satisfy more than one of the component's checked privileges before the current component can be touched and status values or data can be written to the specified registers.
		Auto show login window: Check to indicate that when the current user's permission ID does not meet the set permissions, a password input window provided by the system will automatically pop up for the user to enter the password for login
		Express Control: Check to indicate that the current element can only be touched and the state value or data can be written to the specified register after the state of the positioning register or word register meets the set conditions. (False status indicates that it is valid when the condition is not met)
Show Invalid Tag		When checked, it indicates that the current element is in a touch invalid state, and the element displays an invalid flag.
Display Grayscale Font		Check to indicate that the element label is grayed out when the current element is in a touch invalid state.
Security Setting	Min push Duration	The current element needs to be continuously pressed for no less than the set time before the status value or data can be effectively written to the specified register. The minimum unit is 100 milliseconds, and a value of 0 indicates that the minimum press time is not set
	Oper Confirm wait	If checked, the HMI will automatically pop up an operation confirmation window when touching the current element. Clicking "OK" will write the status value or data to the specified register. If clicking "Cancel" or exceeding the set 【waiting time】 but the user does not confirm with "YES", the operation will be automatically cancelled. (It can be added to record data changes in a certain register during pressing)
	MinPushInterval	The minimum time interval between two operations on the same element, with a minimum unit of 100 milliseconds. A value of 0 indicates that the minimum time interval for operation is not set
	Record Oper	Check this option to indicate that the action event will be logged. The recorded operation events can be displayed through the operation log element and archived in CSV file format in external storage devices

	Notify	Notify before write	The specified action will be executed before the current operation is successfully executed
		Notify write success	The specified action will be executed after the current operation is successfully executed
		Triger/Touch	Mapping key or register corresponding operations

8.1.9 Display Set

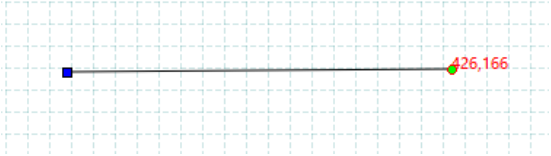
On the "Display Set" page of an element, you can set the display conditions, size, and position of the element.



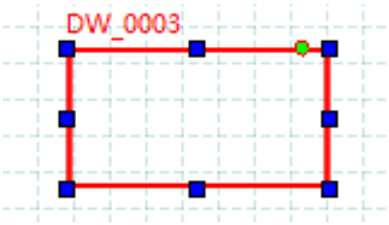
Display Settings Description		
Location	Lock	After checking, the element is locked. Once locked, the position of this element cannot be moved using the mouse or keyboard movement keys.
	X/Y	Coordinate value of the vertex at the top left corner of the element.
	Width/Height	The width and height of the element in pixels.
Translucent	After checking, the element translucency value can be set, ranging from 0 to 99	
Display/Hide	Always Display	Check to indicate that the current element remains displayed
	Condition Display	Permission control: Checking indicates that the operator's user permissions need to satisfy more than one of the component's checked permissions in order for the current component to be displayed
		Ex permission control: If checked, it indicates that the current element can only be displayed when the state of the positioning register or word register meets the set conditions (if the false state is valid, it indicates that the expression does not meet the requirements)

8.2 Plot

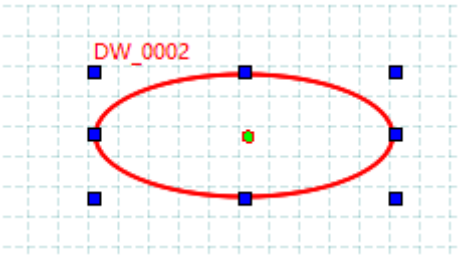
- Line: To draw lines, with one point at each end corner. Dragging it can directly modify the position of the line.



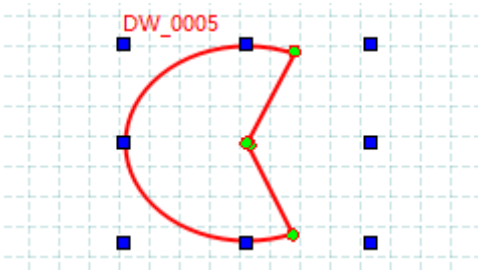
- Rectangle: It is a closed object that can be filled with background colors.



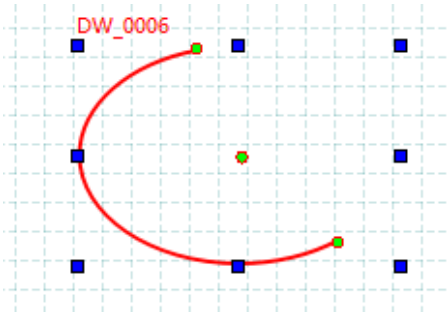
- Ellipse: It is a closed object that can be filled with background colors.



- Sector: Displayed as a percentage in a circular bar chart

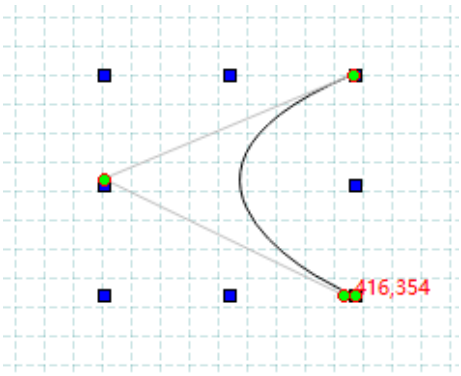


- Arc: Display the specified form in an arc

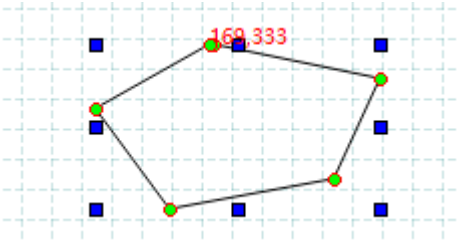


- Polyline: Consisting of interconnected segments. You can have any number of corners, each with a point. Drag directly to change its position. Although the starting and ending points may coincide on the same coordinate, the defined area cannot be filled.

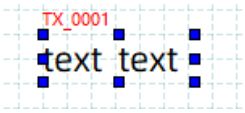
- Bezier: Display the Bezier curve. Each corner has a point. Drag directly to change its position.



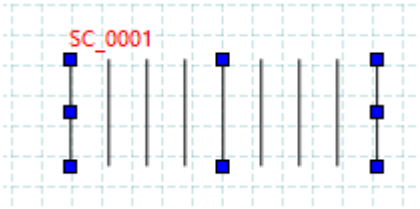
- Polygon: A closed object that can fill in background colors. Left click on a polygon in a simple control and form a cross cursor on the screen. Click on the left button and pull to create a polygon, and then click on the right button to end the creation. There is a point at each corner, which can be directly dragged to change the position of the polygon.



- Text: It can be used to add display text to other elements.

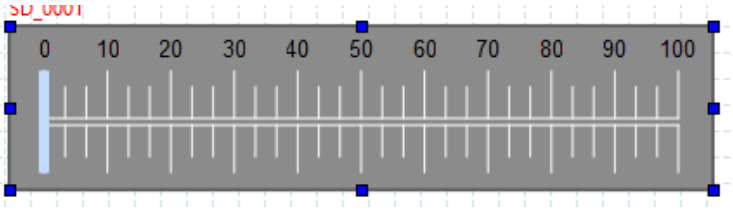


- Image: Click on 【Image】 to import graphics. The vector image is imported from the image library, and the external image is directly called for use when importing from a file.
- Scale: It can be used for labeling scaled quantities. In addition to using the built-in scale annotation, scale elements can also be used to label them.



- Table: It can be used to create options for displaying numerical values/text in a list format, enabling the alignment functionality of elements.

- Slide: It can be used to adjust the numerical value of a specified variable. If the value of a variable changes for other reasons, the slider of the slider component will also move to the actual value position of the variable. You can change the style so that the sliding direction can also be up, down, left, or right.



8.3 Switch/Light

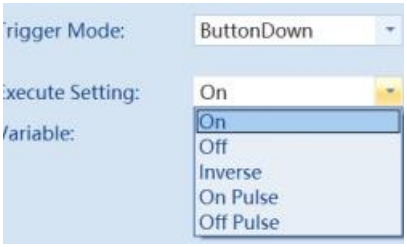
The switch/light elements include switch functions, indicator lights, and switching operations.

8.3.1 Switch Function

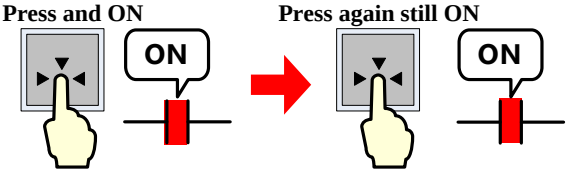
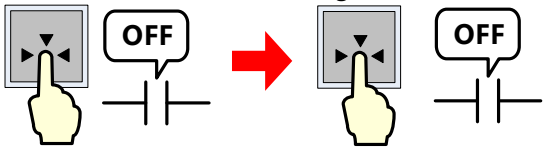
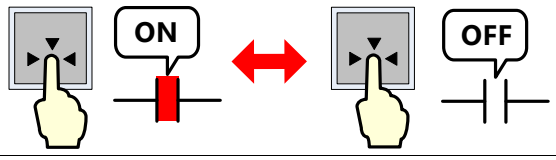
The switch functions include bit set, word set, window set, system operation set, condition set, user permission set, recipe action set, alarm event log action set, macro action set, browse file set, and database action set.

8.3.1.1 Bit Set

- Bit set: When an element is pressed or ejected, it will change the state (on/off) of the bit register address of the specified variable, and the displayed state of the component will not change based on the written state value.



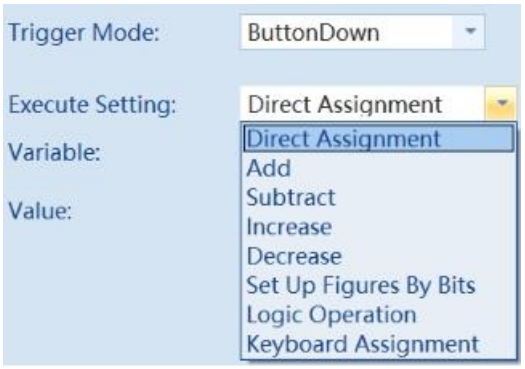
The description of bit setting function is shown in the table below

Type	Description
ON	Press once and the specified address is ON. If the button is released or pressed again, it remains ON. **Press and ON** **Press again still ON** 
OFF	Press once and the specified address is OFF. If the button is released or pressed again, it remains OFF. **Press and OFF** **Press again still OFF** 
Inverse	Press once for ON at the specified address and remain ON when the button is released. Press again for OFF and remain OFF after releasing the button until the next press. **Press and ON** **Press and OFF** 
Off Pulse	When the button is pressed, it is set to OFF and a negative pulse with a specified pulse width is generated. The pulse time ends and then it is set to ON. The pulse width can be set, and when pressed, it will generate the set pulse width. The PLC receives the OFF signal, with a minimum of 100ms. If the set value is too short, the PLC cannot reliably receive it due to communication or long scanning time, and the pulse width needs to be increased to the receiving time.

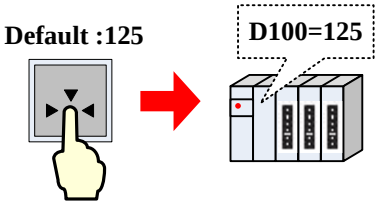
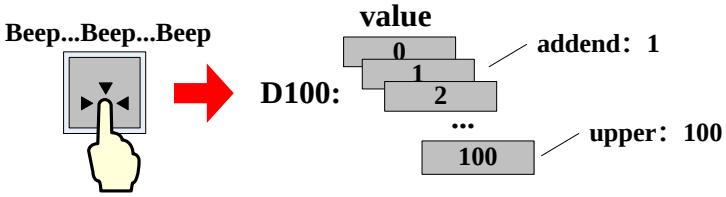
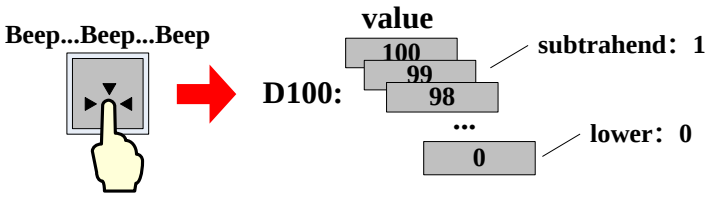
On Pulse	When the button is pressed, it is set to ON and a positive pulse with a specified pulse width is generated. The pulse time ends and then it is set to OFF. Pulse width can be set. When pressed, a set pulse width is generated, and the PLC controller receives an ON signal, with a minimum of 100ms. If the set value is too short, the PLC cannot reliably receive it due to communication or long scanning time, and the pulse width needs to be increased to the receiving time.

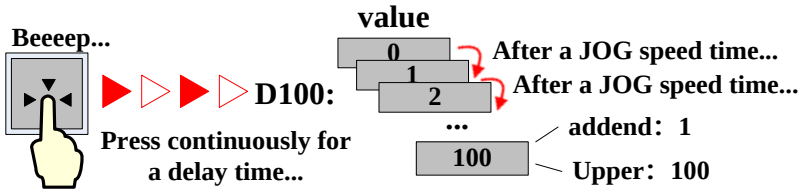
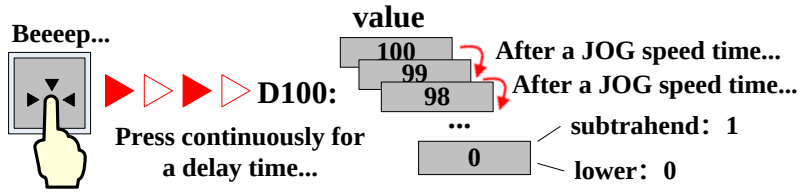
8.3.1.2 Word Set

- Word Set: When an element is pressed or ejected, the set value is written to the word register address of the specified variable, and the state displayed by the element does not change based on the written value.



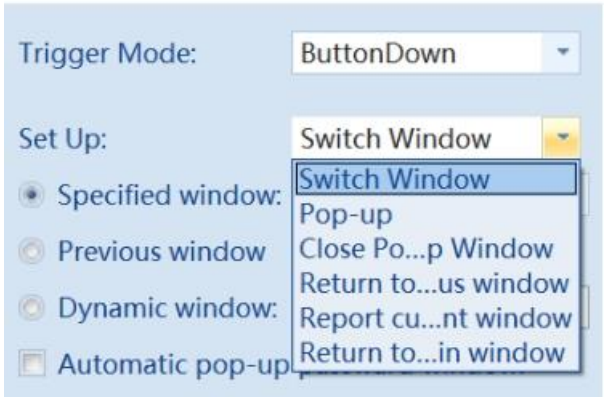
【Word Set】function is shown below, There are 8 ways for 【Execute Setting】.The description of each setting method is shown in the table below.

Type	Description
Direct Assignment	Set the constant function. Touch control element that can write the set value to a specified register. 
Add	Each press of this button will add an "addend" value to the value of the specified address. The result will not exceed the upper limit value. 
Subtract	Each press of this button will subtract the "subtrahend" value from the value of the specified address. The result will not be lower than the lower limit value. 
Increase	When this button is pressed and held for longer than the "lag time", the value of the specified address will be added to the "incremental value" for each "execution speed" time. The result will not exceed the upper limit value.

	 When 【immediately execute increase/decrease action】 is selected, every click will immediately add "Incremental Value" to the value of the specified address. If you press and hold this button, after each interval of the execution speed time, the value of the specified address will be added with the "incremental value" until it reaches the "upper limit value".
Decrease	When this button is pressed and held for longer than the "lag time", the value of the specified address will be subtracted from the "decreasing value" for each "execution speed" time. The result will not exceed the lower limit value.  When 【immediately execute increase/decrease action】 is selected, every click will immediately subtract "decreasing value" to the value of the specified address. If you press and hold this button, after each interval of the execution speed time, the value of the specified address will be subtracted with the "decreasing value" until it reaches the "lower limit value".
Set Up Figures by Bits	This attribute has two options: "plus" and "minus", and you can choose between them. This function can quickly and directly "add" or "subtract" the value of a specified bit, while the values of other bits remain unchanged.
Logic Operation	There are four modes of logical operation: AND, OR, XOR, and NOT, with one of the four options. The default operation is AND, the operand is constant by default, and the data format is hexadecimal. The data format is hexadecimal. It can also be a variable. The data type is the same as the set register data type.
Keyboard Assignment	By touching this element, numerical and string elements of the same variable can pop up corresponding keyboards to perform write operations.

8.3.1.3 Window Set

- Window Set: It can be used to switch to a specified window, switch to the previous window, switch to a dynamic window, and automatically pop up a password window, without requiring variable binding operations. You can directly operate elements to trigger and execute specified functions.



The 【Window Set】 function is shown below, and there are seven ways to 【Set Up】. The description of each setting method is shown in the table below.

Operation Type	Description	
Switch Window	Specified Window	Select the specified window and press to switch to the window interface

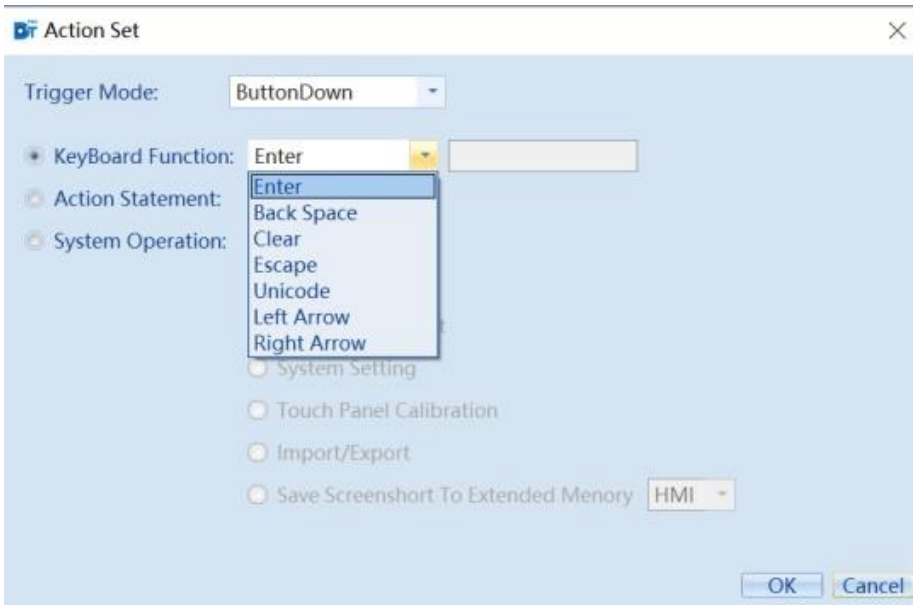
	Previous Window	Switch to the previous window	
	Dynamic Window	Bind dynamic window variables and switch windows based on their values	
	Automatic pop-up password window	If you do not have permission to switch to the target window, you can set the automatic pop-up password window	
Pop-up Window	Window No.	Specified Window	Pop up specified window
		Dynamic Window	Bind dynamic window variables and popup windows based on variable values
	Location	Center	Center the pop-up child window at the position of the parent window
		Specify Coordinates	Display according to the set XY value
		Use dynamic variable to display coordinates	Bind XY variables for dynamic position display
	Close pop-up window when parent window is closed	When checked, all pop-up windows on the current parent window end when the parent window is closed	
	Show title/Close button	Display the title bar and close button of the pop-up window, and the title bar can set relevant content on its own	
	Automatic pop-up password window	If you do not have the permission for this pop-up window, you can set the password window to automatically pop up	
Close Pop-up window	Close the current pop-up window	This setting is only valid when the current window is a pop-up window, which means closing the current window	
	Close the specified pop-up window	Select the specified window and press to close the specified pop-up window	
	Close the dynamic window	Bind dynamic window variables and close pop-up windows based on the variables	
Return to previous window	Press to return to the previous window, this setting has no effect on pop-up windows		
Pop-up window control bar	Only valid for pop-up windows		
Report Current Window	Bind variables to write the numerical value of the current basic window number into the variable		
Return to main window	Return to the main window interface, which can be modified in the global settings in the system setting.		

The description of the type of pop-up is as follows

Description of type of pop-up	
Pop-up window type refers to the relationship between a pop-up window and adjacent windows	
Monopolize	If 【Monopolize】 is checked, then when this window pops up, its parent window will be locked from further operations. And this popup window is always displayed at the top level of the parent window
Top	The window is located at the top of all windows, the pop-up window is of this type by default

8.3.1.4 System Operation Set

- System Operation Set: It can be used to design keyboard buttons, set action states, and system operations, without the need to bind variables for operation. It can directly trigger the specified functions of the components.

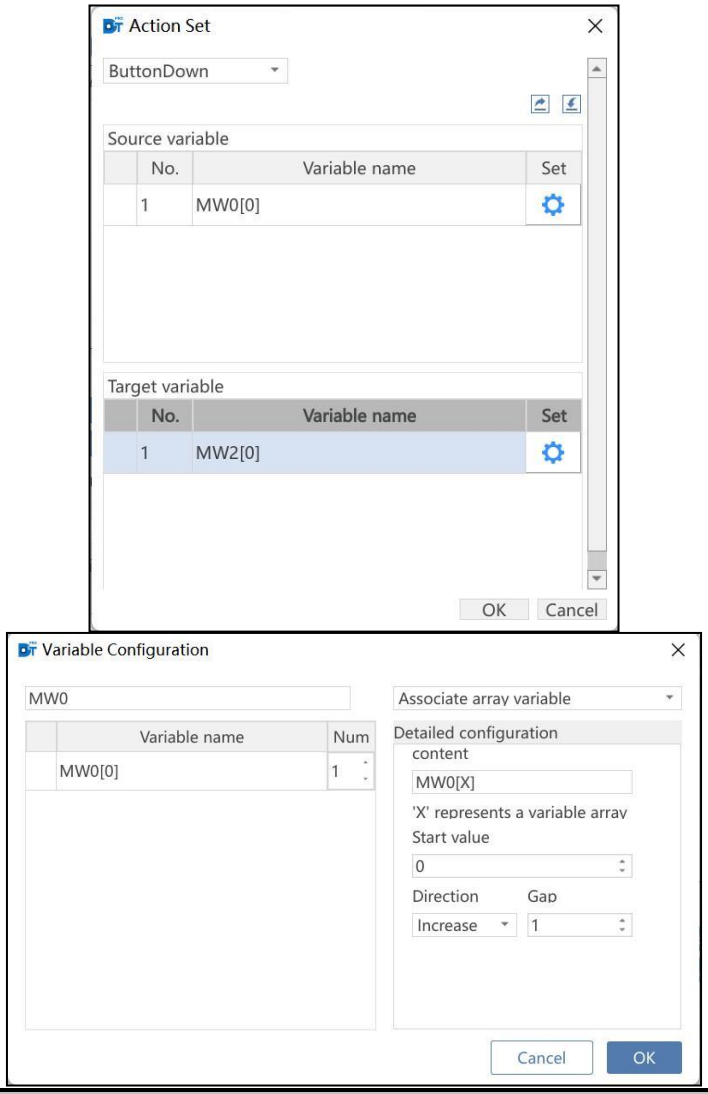


The description of system operation set is shown in the table below:

Operation type	Description	
Trigger Mode	Button Down	Execute action after pressing the button
	Button Up	Execute actions when the button pops up
Keyboard Function	Enter/Backspace	Enter and backspace operations used as keyboards
	Clear/Escape	Clear and cancel operations used as a keyboard
	Unicode	Used as a keyboard for Unicode encoding
	Left Arrow/Right Arrow	Left and right arrow keys on the keyboard
Action Statement	return	Execute return action
	delay	Carry out delay action according to the set delay time, and the unit of time is 100ms
System Operation	Shutdown	Turn off the touch screen
	restart	Restart the touch screen
	Turn off backlight	Turn off the backlight of the touch screen
	System setting	Enter system settings operation

8.3.1.5 Data transfer settings

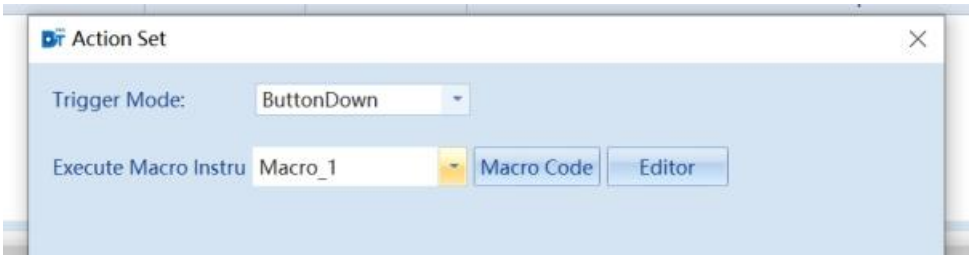
- Data transfer settings: realize batch transfer from source variable to target variable, commonly used for mutual data transfer between local screen and PLC.

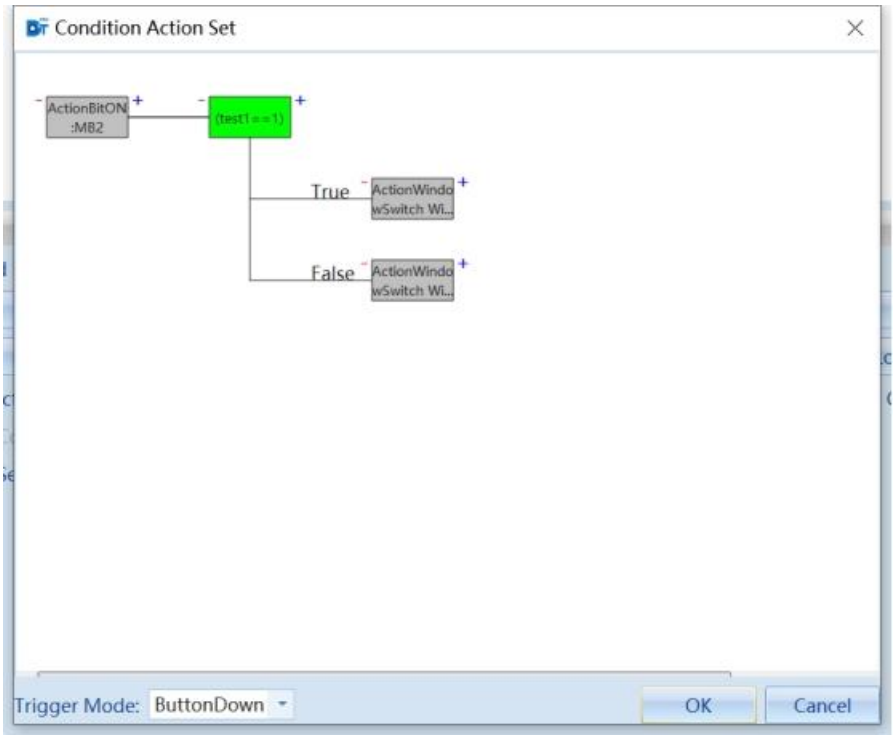


Description of data transmission properties	
Source Variable	Sets the source address for data transfer
Destination variable	Sets the destination address of the data transfer
Configuration	Click the Configure button to enter the variable detail configuration screen
Associated Variables	You can select "Associated non-array variables" or "Associated array variables"
Number	When associating an array variable, you can increase the quantity according to the parameters set in the "Quantity Detail Configuration". Note: The number of variables column content display range: 1-2048
Detailed configuration of quantity	If the associated is a two-dimensional array, the content part can be modified, for example, MW0[0][X], or MW0[X][0]
	Start value: indicates the value of X at the content. For example, if the starting value is 3, the first entry in the right variable column shows MW0[3]
	Direction: can be set to "Incremental" or "Decremental"
	Interval: The interval value of each row of the array variable. The interval range is from "start value" to "array length"
Import	Import a data transfer table with a default file name of "TransferList. xlsx" and a type of xlsx; The pop-up window is called "Import Data Transfer" (the file name can also be imported without the input suffix. xlsx)
Export	Export the current engineering data transmission data. The exported file name defaults to "TransferList" or can be named by yourself, with the type xlsx. The exported file exists in the software installation directory
	Two actions represent export data transfer and import data transfer, respectively.

8.3.1.6 Condition Set

- Condition Set: Configurable settings for simple "if" and "switch" macro commands to execute actions.



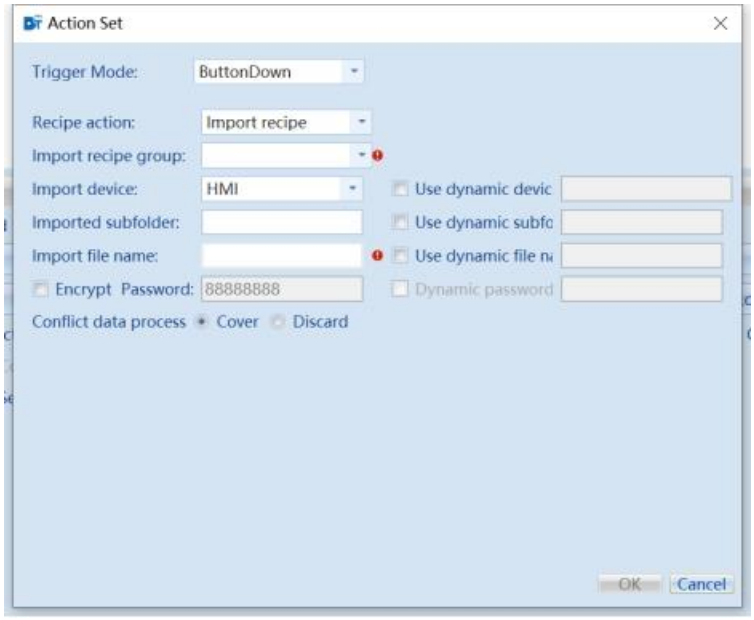


8.3.1.7 User Permission Set

- User Permission Set: It can be used to set permission actions, user variable addresses, and password variable addresses.

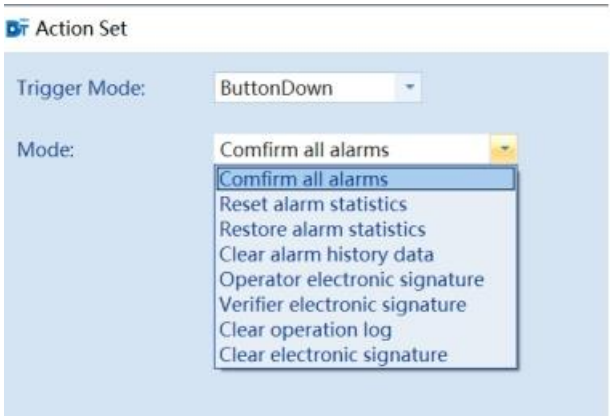
8.3.1.8 Recipe Action Set

- Recipe Action Set: It can be used to set recipe actions, import recipe groups, import devices, import sub folders, import file names, encrypt files and handle conflict data.



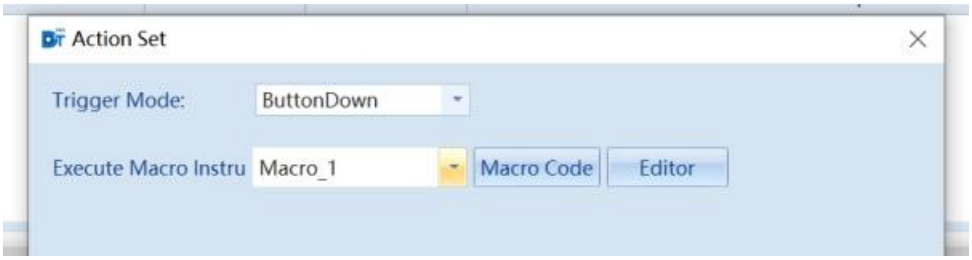
8.3.1.9 Alarm Event Log Action Set

- Alarm Event Log Action Set: can be used to perform operations such as "Confirm all alarms", "Reset alarm statistics", "Restore alarm statistics", "Clear alarm history data", "Operator electronic signature", "Verifier electronic signature", "Clear operation log" and "Clear electronic signature".



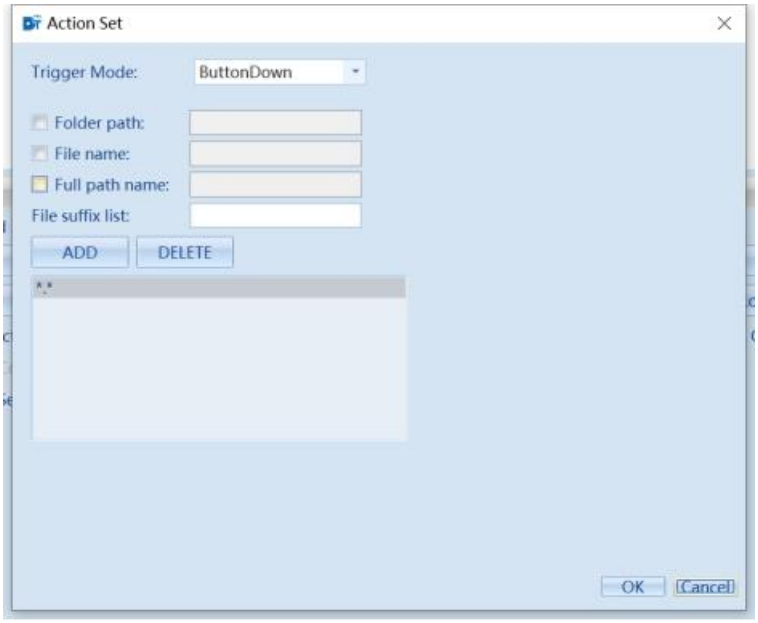
8.3.1.10 Macro Action Set

- Macro Action Set： Can be used to set the execution of a specified macro instruction.



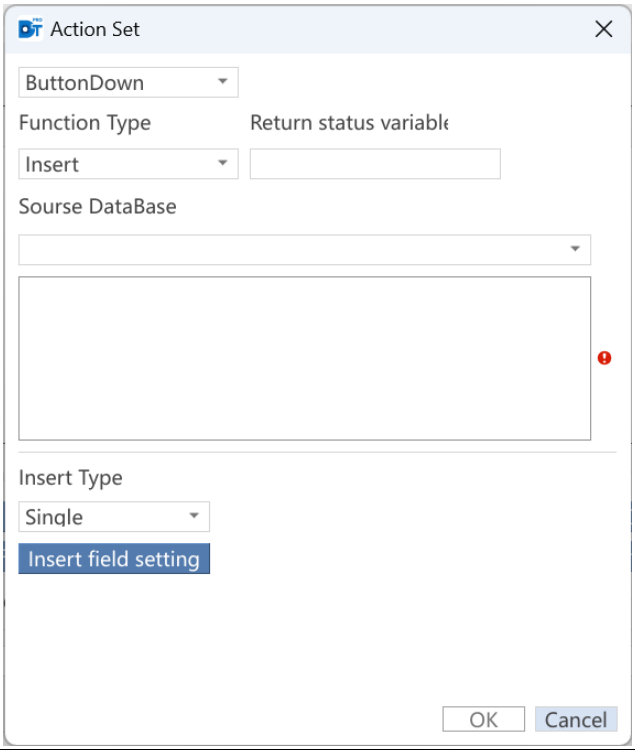
8.3.1.11 Browse File Set

- Browse File Set: Can be used to set the displayed folder path, file name, full path, and set file suffix.



8.3.1.12 Database Action Set

- Database Action Set: can be used to perform operations such as "insert", "modify", "delete", "query", "Import", "Export", "create a table", "delete a table", "clear table" and "user SQL" on existing databases.



Description of Database Action Interface			
Operation Type	Insert	Insert one or more rows of identical or different data	
		Insert Type	Contains both individual and batch inserts. Support variables during batch insertion
		Insert field setting	Select single or multiple inserted fields. When selecting batch and constant, the default input is multiple rows of the same data. The inserted data allows for fixed values and variable inputs. Variables can be array variables and non-array variables. Insert as a single data when it is a non-

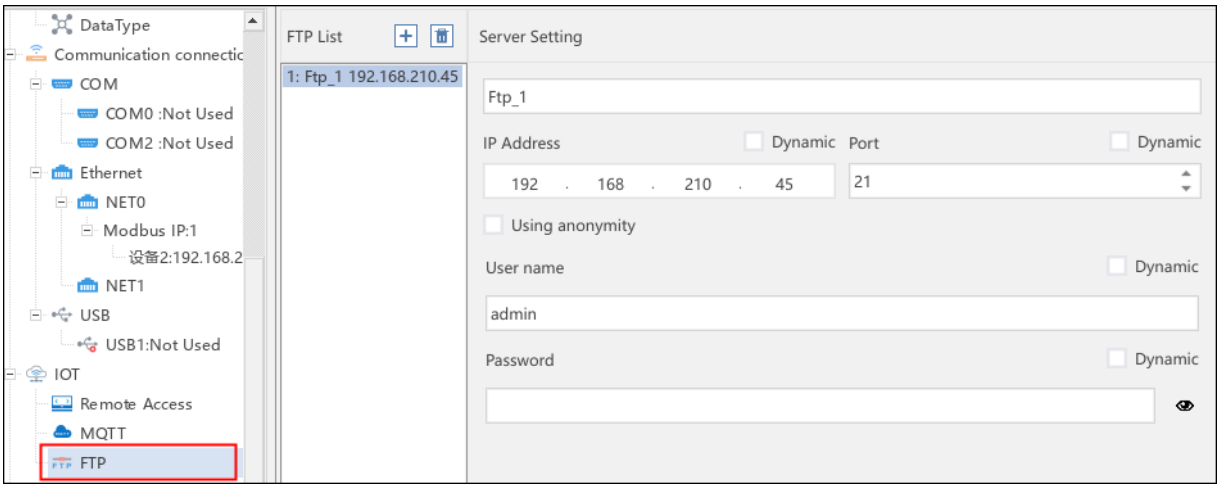
			array variable. When it is the entire array variable, insert it as the entire array data (the number of inserts must be less than or equal to the array length); When inserting a single array variable, insert the corresponding subscript data. The maximum number of inserts is 1000.	
	Modify	Modify one or more rows of data that meet the criteria. When no query criteria are selected, all data will be modified. And when applying this feature, at least one field must be selected for modification.		
		Modify Fields	Set the modified fields	
		Use modify condition	Fixed Query	Fixed query criteria
			Dynamic Query	Dynamic options: Only string variables are supported, such as the input option symbol '&'. Dynamic field: Only string variables are supported, such as input field name 'column1'. Dynamic condition: Only string variables are supported, such as the input symbol ">".
			View SQL	The set deletion conditions can be automatically generated into SQL statements
	Delete	Delete one or more rows of data that meet the criteria		
	Query	Output the options that meet the conditions to variables		
		Query	Use Query Condition	When selected, query according to criteria
			User order	Fixed sorting types are ‘from small to large’ and ‘from large to small’. Fixed sorting channels select title blocks, dynamic sorting types and dynamic sorting channel setting variables
			Use custom SQL statement	When customizing a statement, the fields to be queried must match the fields of the output variable and comply with SQL syntax. When using SQL statements, sorting and query criteria cannot be used
		Query Result Output	Row count variable	Returns the variable for the number of query rows
			According to row	The query field setting must be an array variable corresponding to the data
			According to column	1. Query report data into variables by row based on the selected fields 2. Query the number of report rows
	Import	Importing database data tables requires correct and existing file information to be set up for successful import		
		Import storage devices	Select the database table in the external storage device to import. You can check Use dynamic, associated word variable to set the import device dynamically	
		Import path	Set the subfolder name for importing database tables. You can check Use dynamic, associate string variable to set the folder name dynamically	
		Import filename	Set the file name of the imported database table, it can not be empty, and the file format should be added after the file name, such as file name.csv. You can check Use Dynamic, Associated String Variable to set the file name dynamically	
		Encrypted file	If the imported database form requires password, you need to check Encrypt file and set the correct password to import successfully. Dynamic password can be checked, and the associated string variable can set the password dynamically	

	Export	Exporting database data tables		
		Export storage devices	Export and save database data to an external storage device. You can check Use dynamic, associated word variable to dynamically set the export device	
		Export path	Sets the subfolder name for exporting database tables. You can check Use dynamic to set the folder name dynamically with the associated string variable. If the export is successful, the subfolder name will be generated in the folder corresponding to the export device in the path of "disk" in the project root directory, and this item can be empty	
		Export filename	Set the file name of the exported database table, which cannot be empty. This item can be empty. You can set the file name of the exported database table dynamically by checking the Use dynamic, associated string variable	
		Encrypted file	Check the box to export the file format is compressed, decompression of files need to enter a password to successfully decompress, if you do not check the [Encrypted files], the file format is exported in the [Export file format] option to set the file format, open the file directly	
		The export file names contains a timestamp	Check the box to include timestamps in the exported file names	
		Export title bar	Check the box to include the title bar in the exported file	
		Export file format	Set the file format of the exported database data, including CSV and PDF	
		Export	Export condition	Export that meets the export conditions
			Export order	Fixed sorting type is divided into small to large and large to small sorting, fixed sorting channel selection title bar, you can select the dynamic sorting type and dynamic sorting channel setting variables, the exported file in accordance with the settings of sorting
			Use custom SQL statement	When customizing statements to conform to SQL syntax, you can use dynamic statements, associated string variables to set statements dynamically. When using SQL statements, export sorting and export conditions cannot be used
	data transmission	Transfer data from the source database table to the target database table		
		All fields	Transfer all field data from the source database table to the corresponding fields in the target database table	
		Partial Fields	By default, all fields are selected, and the fields that need to be transferred can be set to transfer the data to the corresponding words in the target database table	
		Attention: 1. Currently, only local postgreSQL is supported for transferring to local postgreSQL 2. The field names and data types of the source and target database tables must be consistent 3.Both the source and target database tables have transfer words		
	Create a Table	Creating tables in a database remotely or locally		
	Delete a Table	Delete tables in remote or local databases		
	Clear Table	Clear data from tables in remote or local databases		
	User SQL	When customizing a statement, the fields to be queried must match the fields of the output variable and comply with SQL syntax		

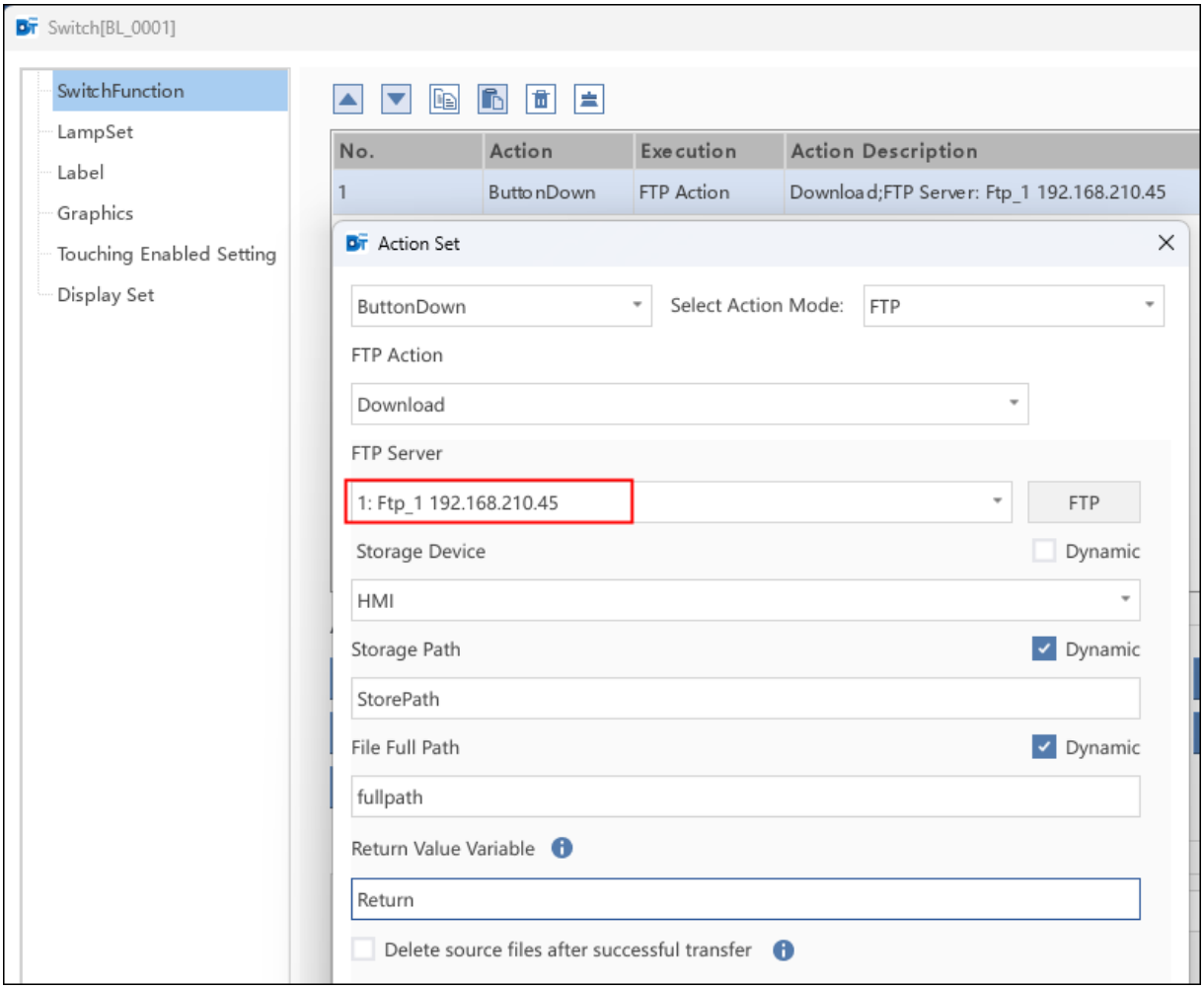
Return status variable	Status values indicating whether the operation was successful: 0: initialization, 1: success, 2: failure.
Source Data Base	The original database can be a local database or a remote database

8.3.1.13 Ftp Action Set

Server settings: Add an FTP server in the left engineering column [IOT] - [FTP] column, set the server's IP, port number, username, password, and refer to "9.3 FTP" for detailed settings



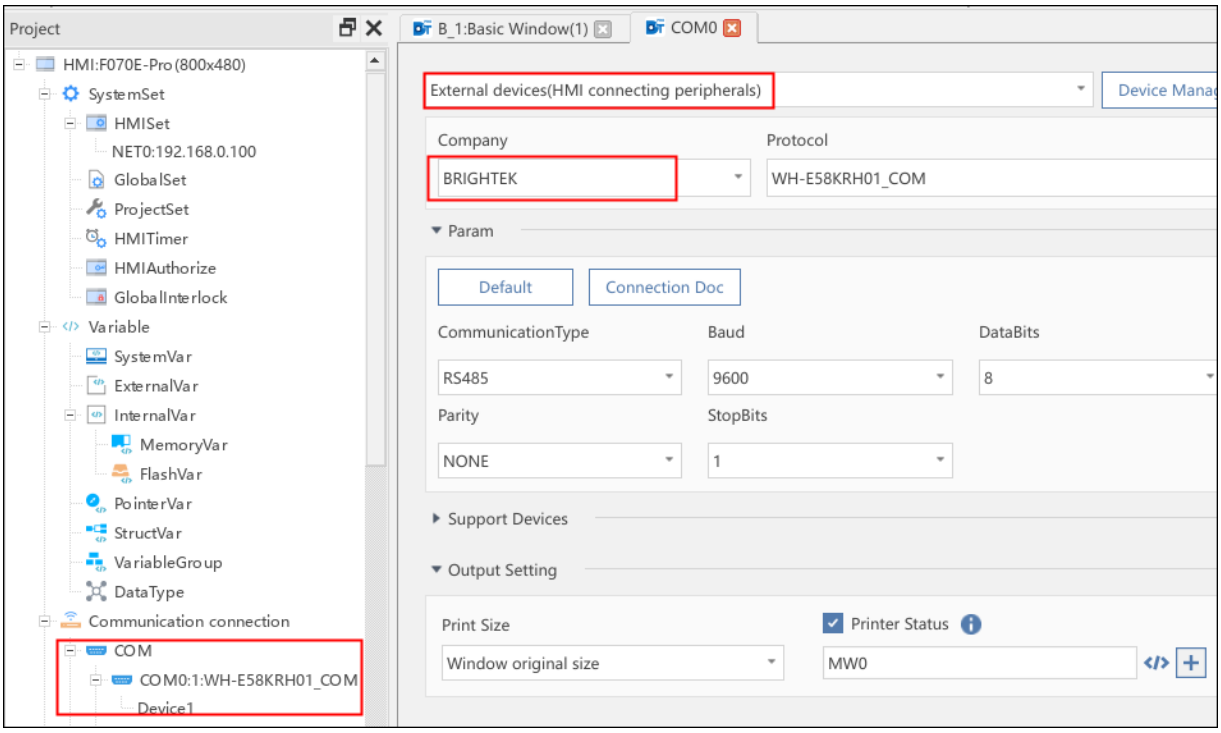
In the action settings, select the server in the FTP list above to support uploading and downloading actions

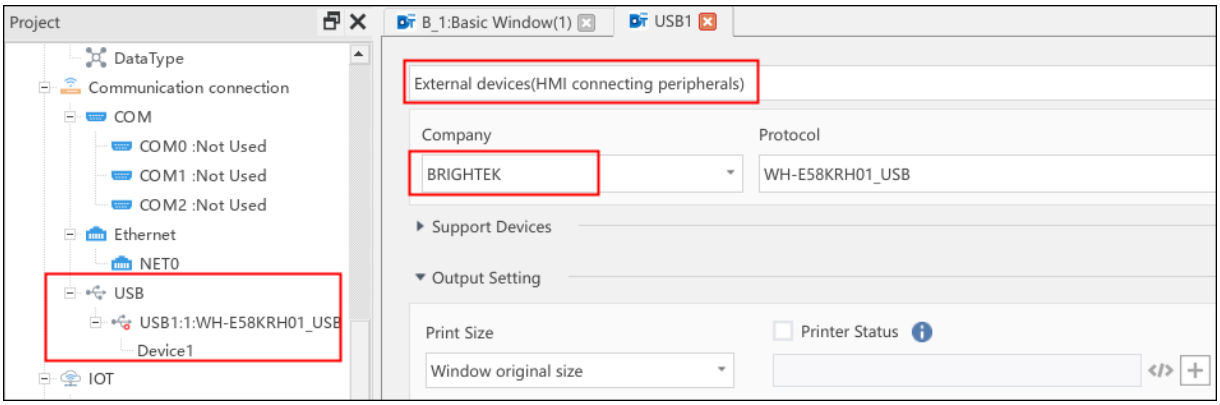


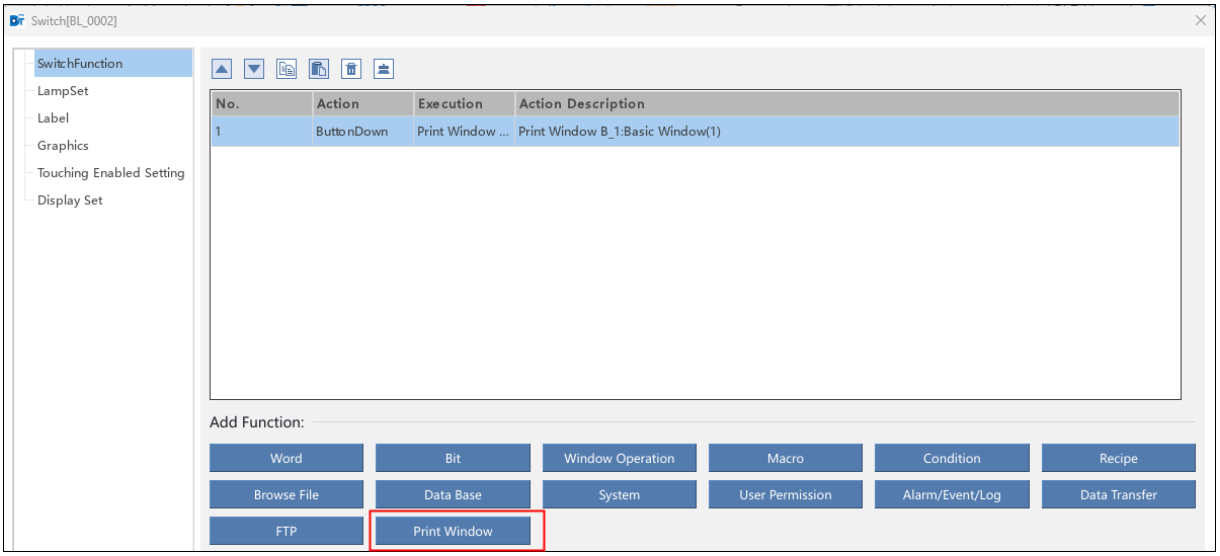
Description of Ftp Action Interface	
FTP Action	Support Dwonload、Upload
FTP Server	Select the server in the FTP list in the IOT- FTP column
FTP Download:	①Storage Device:You can choose to store the files to be downloaded locally on the HMI or USB1 ②Storage Path:Store in the specified folder on the HMI, and create a new one when the folder does not exist ③File Full Path:The full path of the source file ④Delete source files after successful transfer: Pay attention to whether the currently logged in user has write and delete permissions for the file on the server
FTP Upload:	①Storage Device:You can choose to upload files locally on HMI or in USB1 ②Upload Path:Upload to the specified folder path on the server ③File Full Path:The full path of the source file ④Delete source files after successful transfer:After successful transfer, the source file will be deleted
Return Value Variable	After executing the FTP action, return the execution result of the action 0 -- Initial 1 -- File Transfer Successful 2 -- Connection Error (Port Error, Address Error, Network Error) 3 -- Username or Password Error 4 -- Source/Destination Path/File Does Not Exist 5 -- Disk Space Full 8 -- Unknown Error

8.3.1.14 Print Window

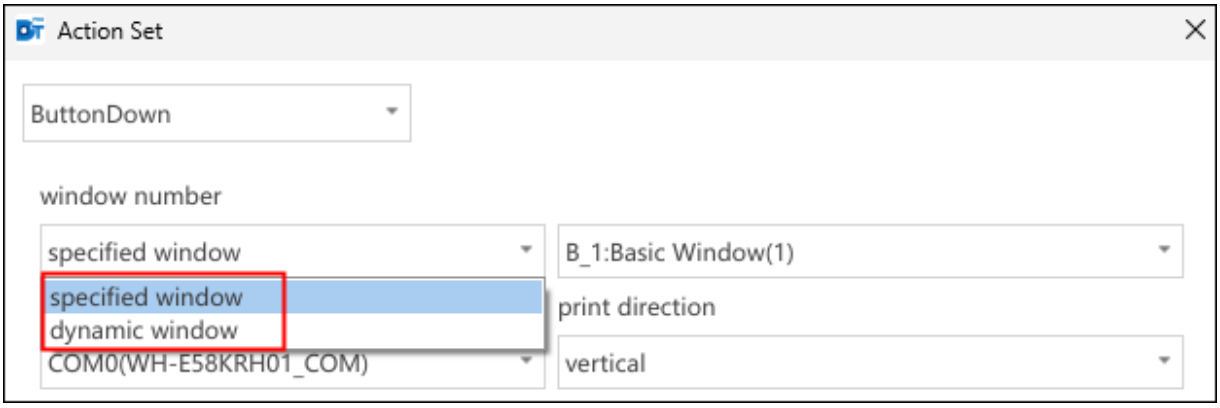
Serial port and USB port can be set to connect external printer devices

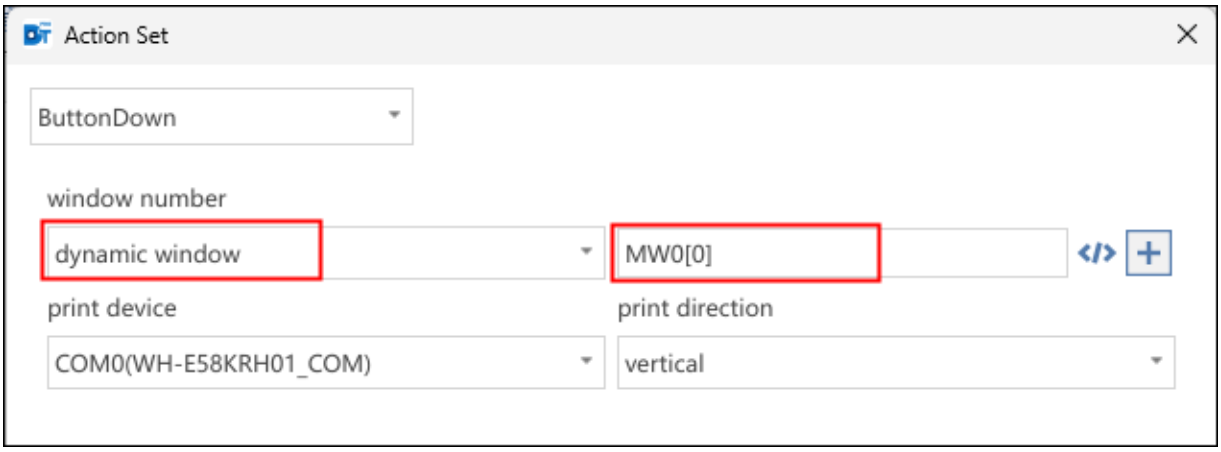






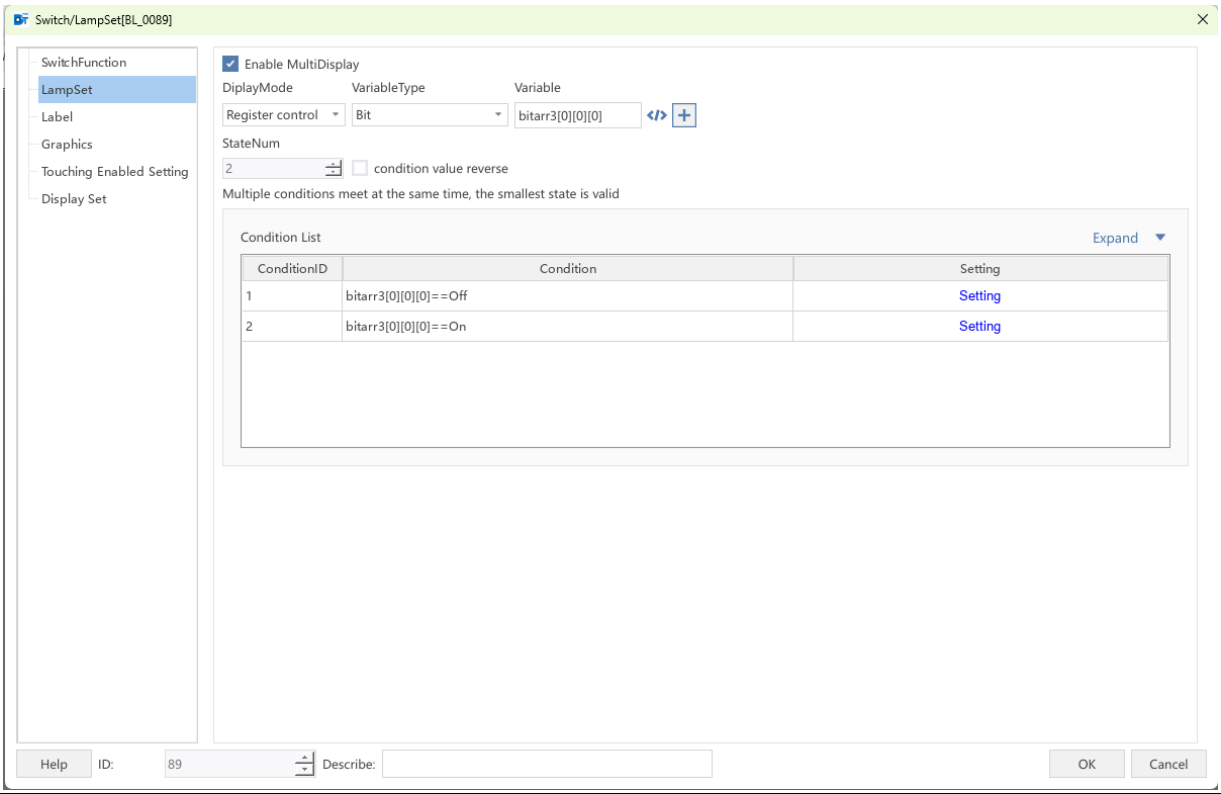
Supports printing of specified windows and dynamic windows. For dynamic windows, just assign the corresponding variable to the window number to be printed.





8.3.2 Lamp Set

Bitlamp: used to display the 0 and 1 states of the pointer variable register, and the displayed content can be both label text and graphics.

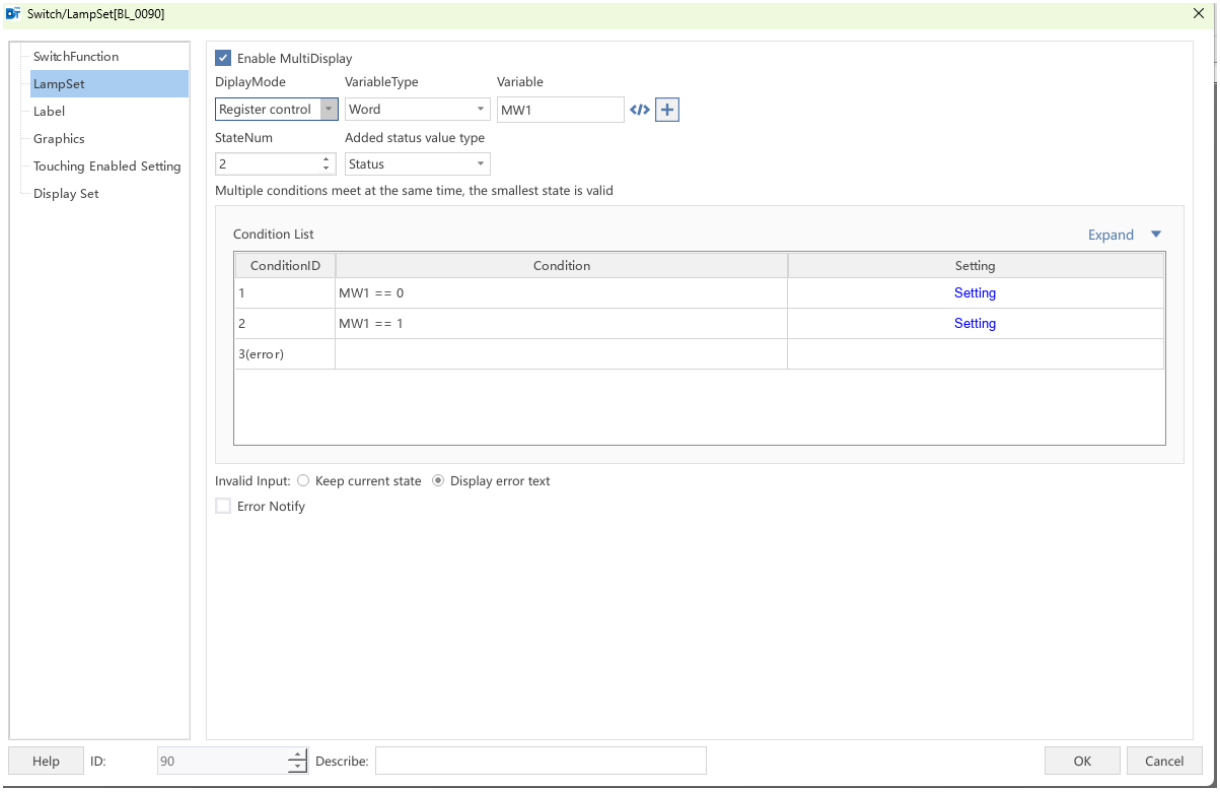


Bitlamp description

display mode	Register control	bit	Associated bit variables (including bit variables taken from words), displayed based on the status of the bit variables
		statenum	Set the number of status display components, default 2
		Condition value reverse	Not checked by default, the condition values in the list will be swapped after being checked; For example, when the default condition ID=1, MB0=OFF; When condition ID=2, MB0=ON. After checking 【Reverse Condition Value】, when condition ID=1, MB0=ON; When condition ID=2, MB0=OFF.
	expand	The "Flashing" and "Frequency" columns in the condition list have been changed to default hidden, and will be displayed in real-time when the extended column is selected; [Settings] column is checked by default, displaying values	
	Auto	statenum	Default 2, range 1-254, set the number of displayed

	circle(Independent of register control selection)		component states
		Frequency	Default 1, Range 1-99
		Conditional control circle	Circle control with correlated bitvariables

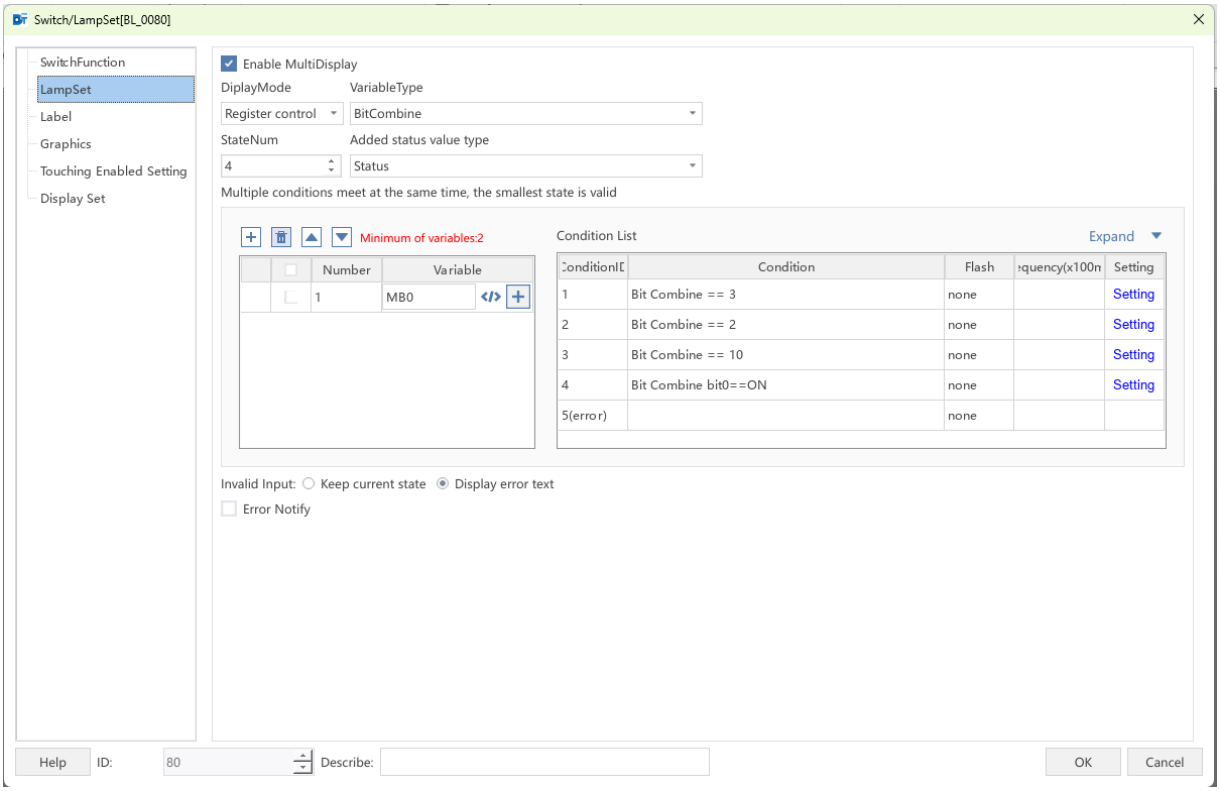
Wordlamp: will display the mapped status based on the value or offset of the specified word variable register, and the displayed content can be label text and graphics.



Wordlamp description			
display mode	Register control	word	Display the mapping status based on the value or offset of the word variable register
		statenum	Default 2, range 1-254, set the number of states for the word status display component
		added states Value types	When it is in "state", the new condition is in "state", and the value of the new condition is the maximum value+1; When it is already the maximum condition value, subsequent additions will remain at the maximum condition value; When it is "bit", the new condition is to take a bit, and the new offset value is the maximum offset value+1; When it is already the maximum offset value, subsequent additions will remain at the maximum offset value;
		invalid input	Keep current state: Continue to maintain current valid state when invalid input occurs
			Display error text: Display the text label in the error state, which can be bound to a positional variable or string variable for error notification. If the input is invalid, set the positional variable to ON or output the corresponding character content; Otherwise, it will be OFF or cleared
		multiple conditions meet at the same time,The smallest state is valid.	
	expand	The "Flashing" and "Frequency" columns in the condition list have been changed to default hidden, and will be displayed in real-time when the extended column is selected; [Settings] column is checked by default, displaying values	
	Auto circle(Independent of register control selection)	statenum	Default 2, range 1-254, set the number of displayed component states
		Frequency	Default 1, Range 1-99
		Conditional control	Circle control with correlated bitvariables

		circle	

BitCombine: arranged according to the serial number to form a binary system (with a large serial number corresponding to a high position and a small serial number corresponding to a low position), converted to an unsigned decimal system, and dis played with the corresponding status and label based on the decimal value or offset.



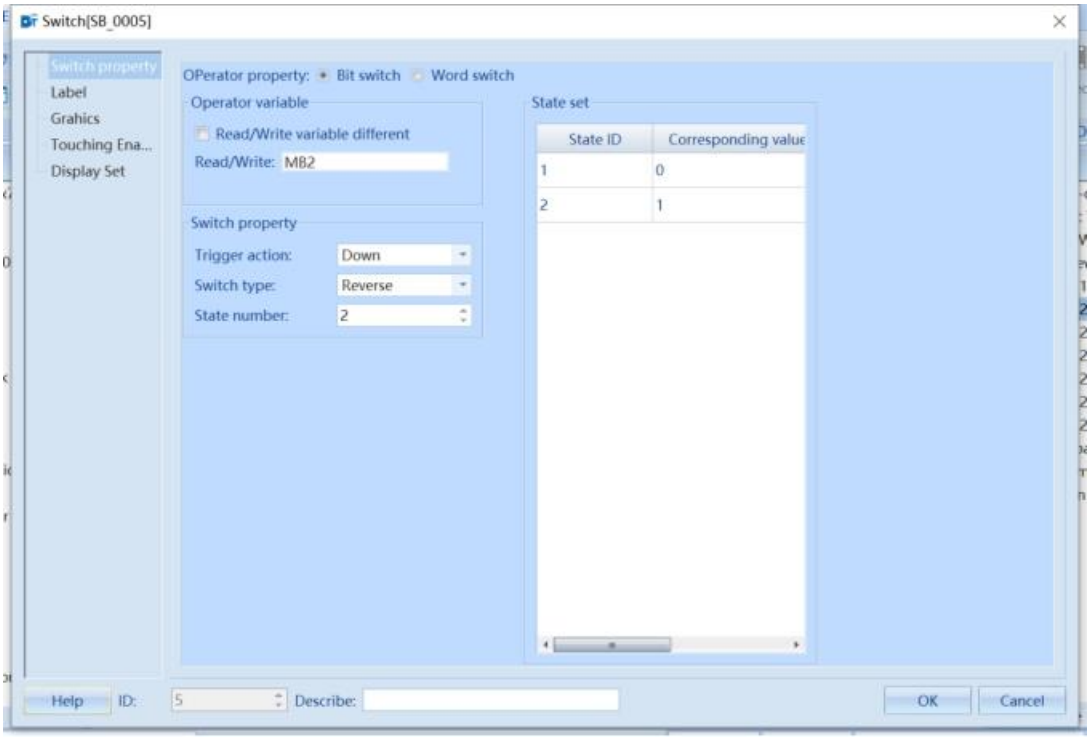
BitCombine description

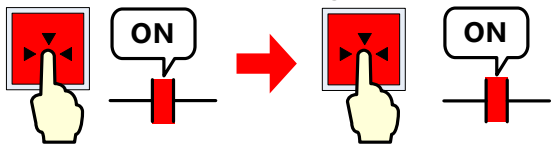
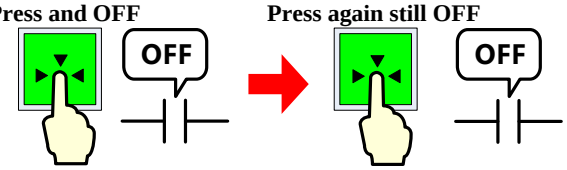
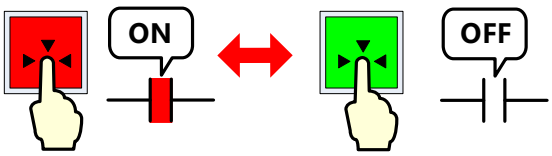
display mode	Register control	BitCombine	Display based on decimal system composed of bit combinations
		statenum	Default 2, range 1-254, set the number of states for the word status display component
		added states Value types	When it is in "state", the new condition is in "state", and the value of the new condition is the maximum value+1; When it is already the maximum condition value, subsequent additions will remain at the maximum condition value; When it is "bit", the new condition is to take a bit, and the new offset value is the maximum offset value+1; When it is already the maximum offset value, subsequent additions will remain at the maximum offset value;
		Condition List	Cannot be empty, associated with bit variables, supports a maximum of 64
			The binary digit corresponding to subtracting one from the number of states must be greater than or equal to the number of rows in the variable table
			the variable list (icon or right-click)Can add, insert, delete, copy, paste, etc.
		invalid input	Keep current state: Continue to maintain current valid state when invalid input occurs
			Display error text: Display the text label in the error state, which can be bound to a positional variable or string variable for error notification. If the input is invalid, set the positional variable to ON or output the corresponding character content; Otherwise, it will be OFF or cleared
		multiple conditions meet at the same time,The smallest state is valid.	
	expand	The "Flashing" and "Frequency" columns in the condition list have been changed to default hidden, and will be displayed in real-time when the extended column is selected; [Settings] column is checked by default, displaying values	
	Auto circle(Independent of register control	statenum	Default 2, range 1-254, set the number of displayed component states
		Frequency	Default 1, Range 1-99

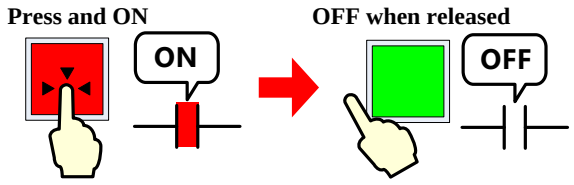
	selection)	Conditional control circle	Circle control with correlated bitvariables

8.3.3 Switch Operation

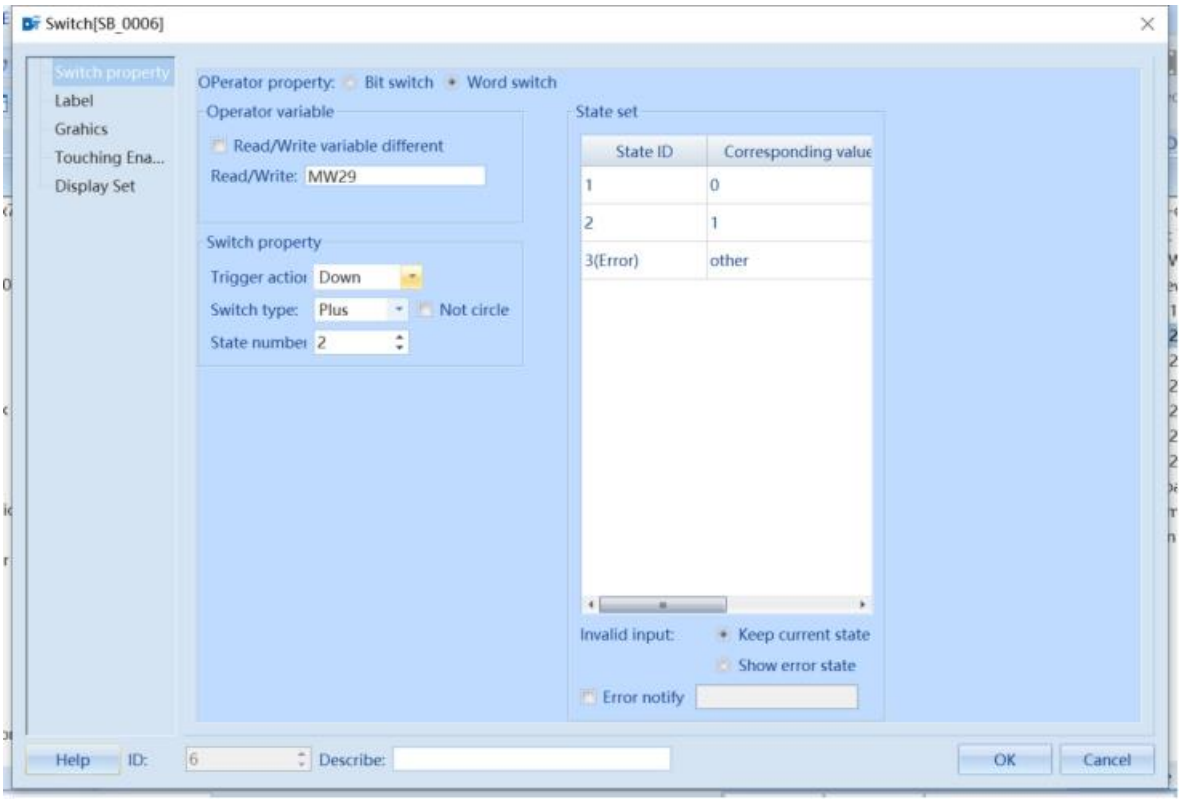
Bit switch: Bitwise operation can be performed on the bind variable, and the status displayed by the switch will be displayed according to the status of the read variable.

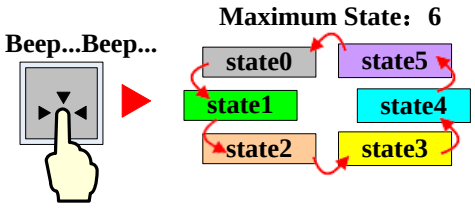
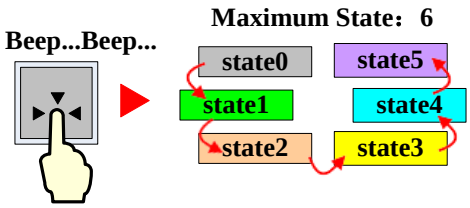


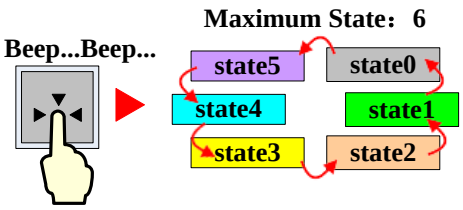
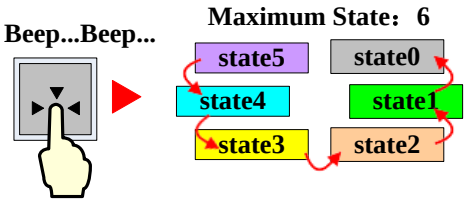
Description of types of Bit Switch	
Switch type	Setting Function Description
ON	Press once, the specified address status is ON. Release the button or press again, it remains ON. **Press and ON** **Press again still ON** 
OFF	Press once, the specified address status is OFF. Release the button or press again, it remains OFF. **Press and OFF** **Press again still OFF** 
Switch Property	Press once, the specified address is ON. Release the button, it remains ON. Press again to turn it off. After releasing the button, it remains OFF until the next press **Press and ON** **Press and OFF** 
Reset switch	The specified address state is ON only when this element is pressed. It turns OFF when released.

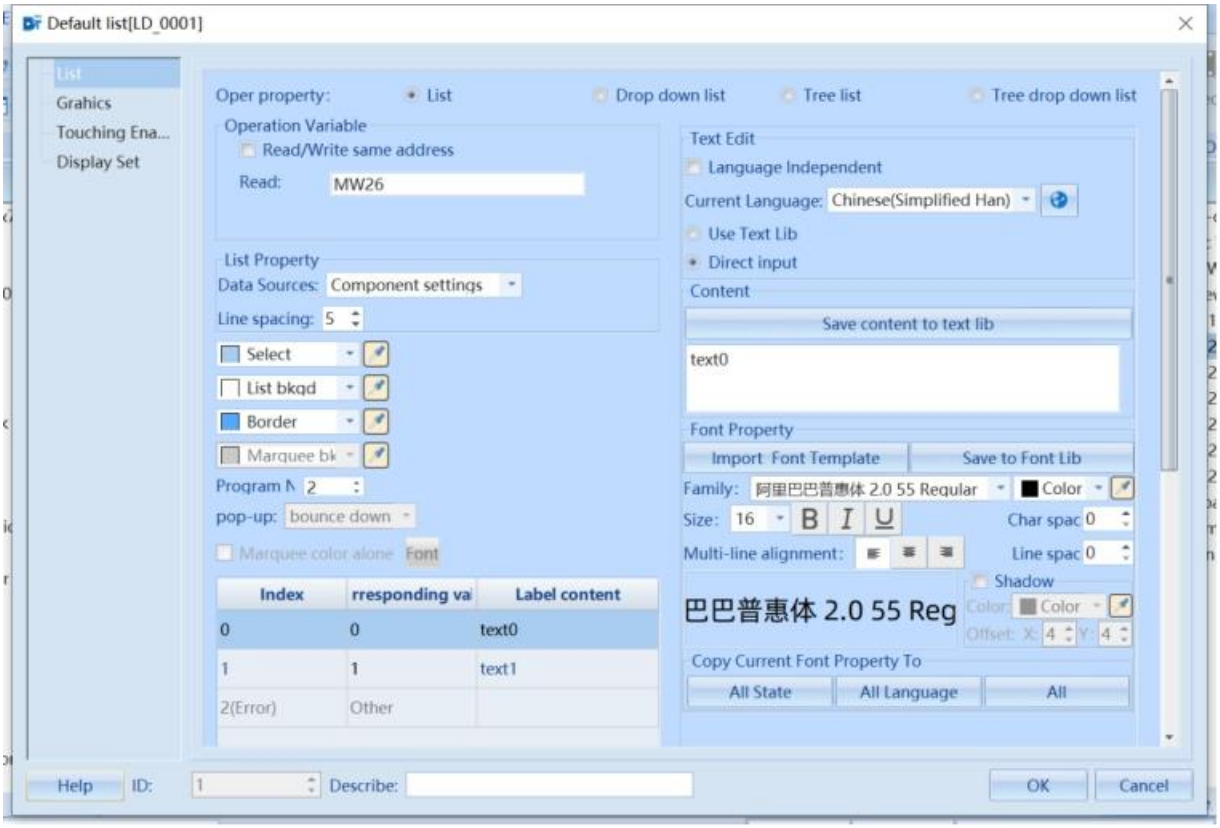
Word switch: Word operations can be performed on bind variables. During operation, the corresponding state mapped data can be written to the specified variable register.



Word switch description		
Control mode	Add	Each time this element is pressed, the status number is increased by 1. The specified write address will write the corresponding status mapping value, and the corresponding status graph will be displayed based on the value of the specified read address. Loop Mode:  Non-loop mode: 
	Subtract	Each time this element is pressed, the status number is decreased by 1. The specified write address will write the corresponding status mapping value, and the corresponding status graph will be displayed based on the value of the specified read address.

		Loop mode:  Non-loop mode: 

List: Display the set number of states in the form of a list, and indicate the currently selected state by the selected color. It includes four types: list, dropdown list, tree list, and tree dropdown list.



8.4 Data display

➢ Element attribute settings:

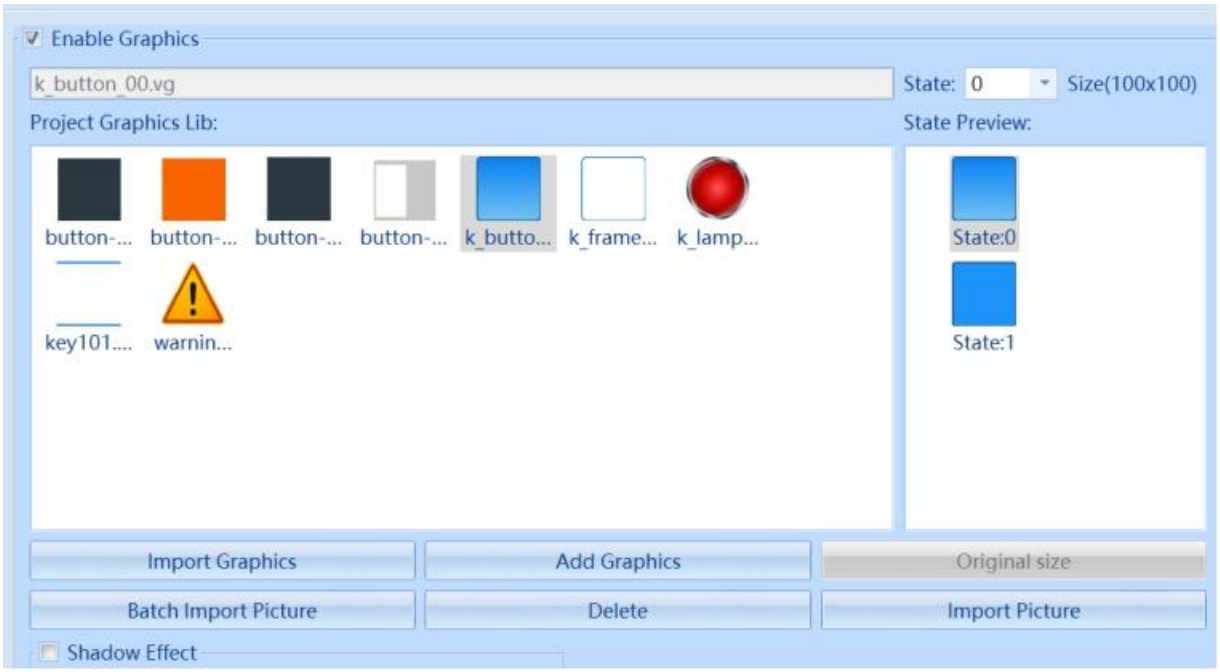
Description		
Password display	If checked, replace all numerical values with the * symbol	
data type	Binary	The data is displayed in binary (0,1) format, with adjustable integer bits. For example, 16-bit data range: 0-65535
	Signed Decimal	The data is displayed in the signed Decimal (0-9) format; For example, 16-bit data range: -32768~32767

	Unsigned Decimal	Data is displayed in unsigned Decimal (0-9) format; For example, 16-bit data range: 0~65535	
	Hexadecimal	The data is displayed in hexadecimal (0-F) format, with adjustable integer bits; For example, 16-bit data range: 0~65535	
	Percentage	When the data type is Floating-point arithmetic, optional percentage display	
Leading zero	When the number of digits obtained from input is less than the actual set number of digits, if checked, fill in "0" before the insufficient digits		
Display positive sign	When the data type is a signed Decimal number, if checked, a "+" sign will be displayed before the value		
Format	Set to numerical or custom format, (percentage data type can only be in numerical format)		
Integer/decimal places	Set the number of digits displayed before the decimal place and the number of digits displayed after the Decimal separator		
Max/Min value setting	Set the allowed data range for numerical input/display components. If "Variable" is checked, set the range for numerical input/display component data input/display as a variable and specify the register address for variable reading. The number of words in the register is related to the data width set by the component.		
Using Input Deviation Control	When the control variable is in the OFF state, user input is only limited by the maximum and minimum values; When the control variable is in the ON state, the user input is not only limited by the maximum and minimum values, but also by the deviation value. For example, if the deviation value is 5 and the configured minimum value is 0 and the maximum value is 100, then when the current value is 50, the input minimum value is 45 and the maximum value is 55. If the current value is 0, then the input range at this time is 0-5, because the deviation exceeds the minimum value range, the minimum value shall prevail.		
Upper/lower limit exceeding alarm	When the value of the specified variable is less than the lower limit value or greater than the upper limit value, the element will display the value in the current set color		
	flicker	When the value of a fixed variable is greater than the upper limit or less than the lower limit, the element value will flash to highlight the warning effect of exceeding the limit	
Enable numerical calculation	Scale conversion	It indicates that the displayed data is the data obtained after the original data is calculated in a certain proportion. After checking and using, it is necessary to set the 【minimum and maximum proportional values】. You can directly set a constant or use variables	
	Zoom Conversion	It indicates that the displayed data is the data obtained after the original data is scaled to a certain scale. After checking and using, it is necessary to set the 【Gain】 and 【Offset】, which can be directly set as a constant or variable	
	Sub macro conversion	Write to PLC value	Indicates that the displayed data is written to the PLC value according to the data obtained after the sub-macro operation.
		HMI display value	Indicates that the displayed data is the data obtained from the original data after the sub-macro operation.
	Logical calculation	The value after operation is equal to the monitored value and the data after constant/variable operation	
	shift	After calculation, the value is equal to the specified number of digits moved left/right by the monitoring value	

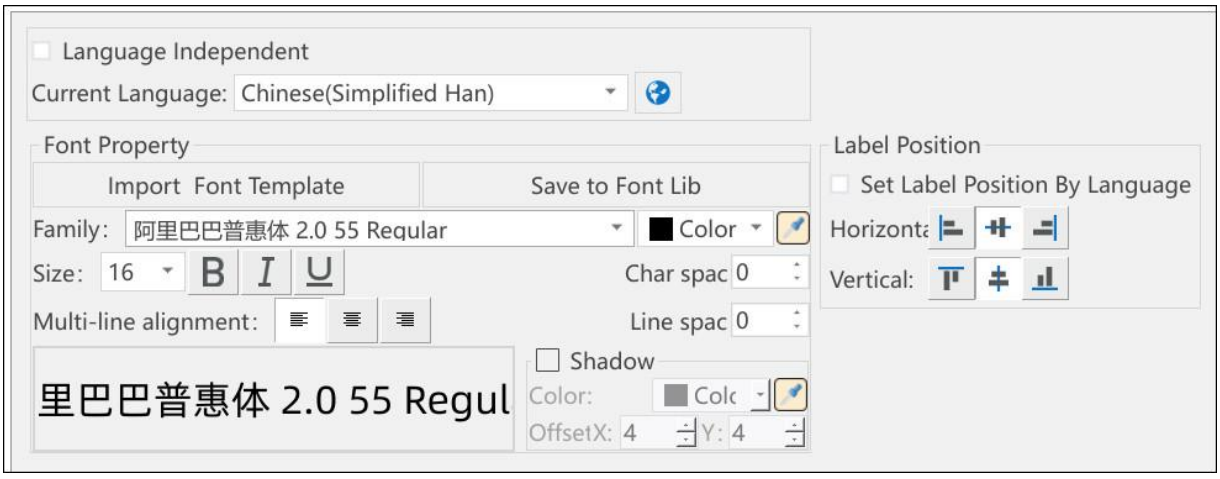
※ For signed/unsigned Decimal and hexadecimal numbers, after the number of decimal places is set, the original data is moved to the left to display the corresponding Decimal separator position. However, the data actually written to the register is still the original data.

Character Property Description	
Single line display	The newline character in the string is displayed as a space, and the ASCII code (LF) of the newline character is 10 (0xA)
Multiline display	Set the total number of displayed lines, the number of displayed lines, and the number of characters per line

- Graphics: Can be used to set whether the control uses graphics and shadow effects.

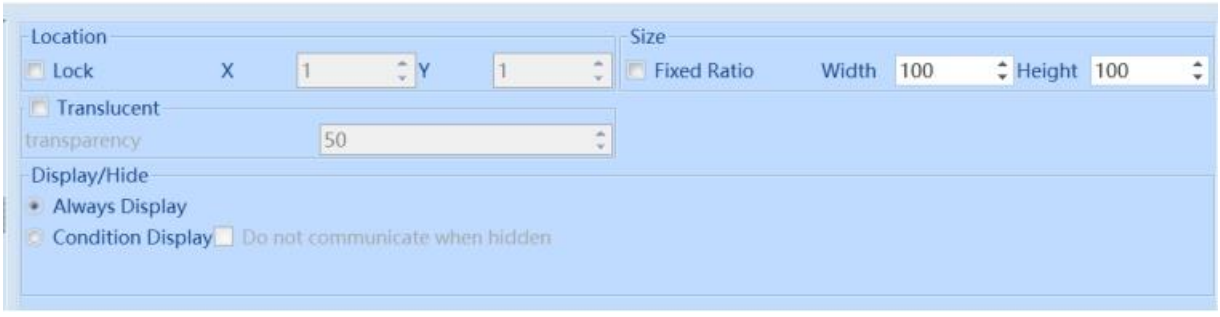


➢ Font property setting: Can be used to set the font of the label content displayed by the control.

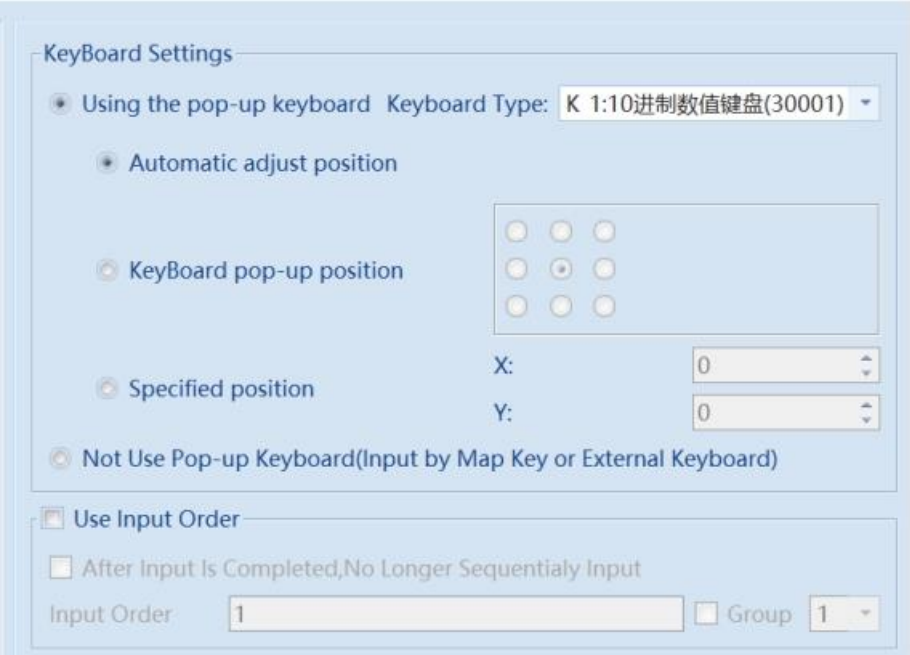


Description of font properties	
Language Independent	Checked by default, unchecked to set font properties for different languages.
Set Label Position By Language	Uncheck the language-independent display box to set the horizontal or vertical position of labels in different languages.

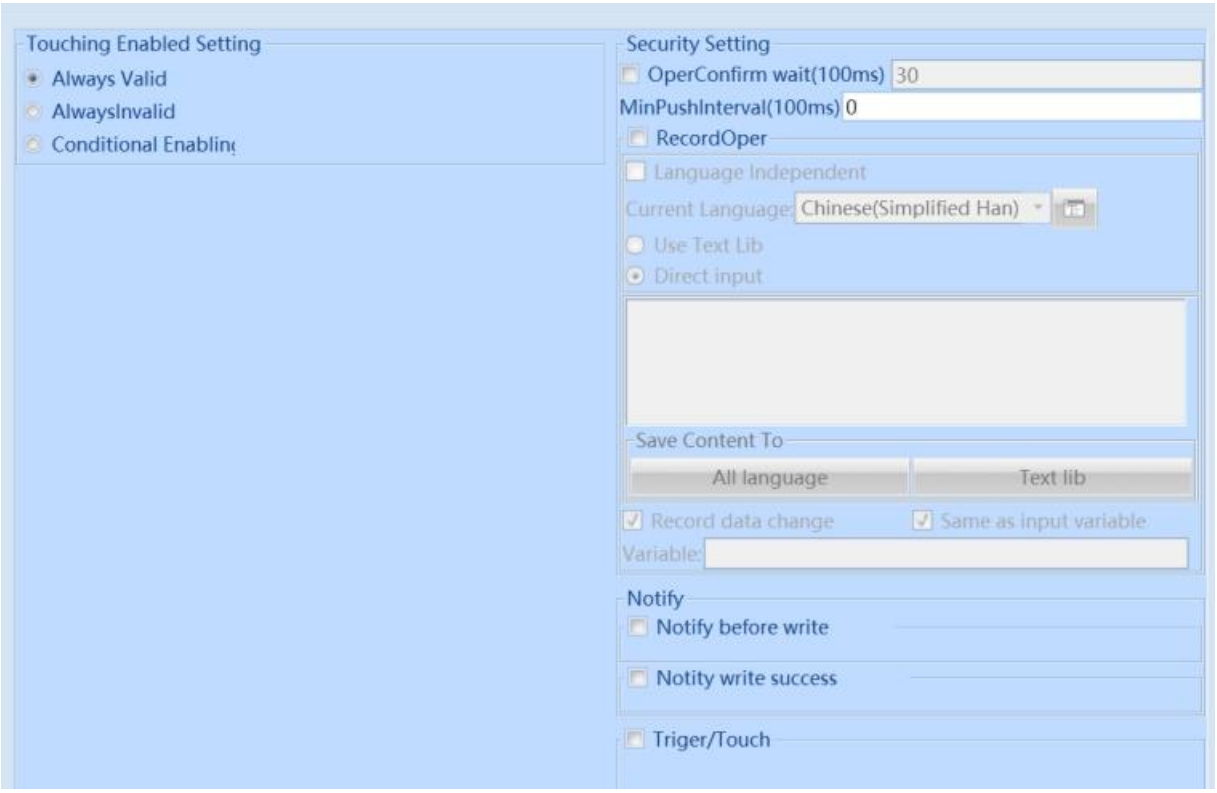
➢ Display setting: Can be used to set the location, size, and display/hide of the control.



- Keyboard setting property: This property is only valid for numerical input and character input components. Used to set whether to pop up the keyboard, the type and position of pop up, and whether to enable the "Use Input Order" function..



- Touching Enabled Setting Property: This property is only valid for numerical input and character input elements. This can be used to set control touch enable, security settings, notification functions, trigger touch functions, etc.



Data Display Description	
Numerical display	Display the data in the specified variable register in numerical form on the HMI.

Numerical input	Write data in numerical form from the HMI into the specified variable register, and assign values to the specified variable register by popping up the keyboard.
Character display	Parse the data within the specified variable in ASCII code and display it as a string on the HMI.
Character input	Parse the data into ASCII characters and write it as a string from the HMI to the specified variable register. At the same time, you can also assign values to the specified variable register by popping up the keyboard.

8.5 Alarm browsing

Alarm browsing components are components used to display user alarm information. Kinco DToolsPro provides components for displaying alarms, including alarm bar, current alarm, alarm history, and alarm statistic. Users can choose to use these components based on their functions and actual needs.

1. If there is a need to export background alarm information, it is necessary to check 【Enable Alarm Record】 and 【Export Record】 in 【Project】 - 【Event/Alarm】- 【Alarm Setting】 in advance. Please refer to Chapter14: Alarm Setting for specific attribute descriptions of alarm settings.
2.The alarm information displayed in the alarm bar, current alarm, and other components should be established in advance in the 【Project】 - 【Event/Alarm】 - 【Alarm Information Table】.
3. The current alarm cannot save historical information, and only displays unrecovered alarm information. After the alarm is restored, it disappears.
4. Alarm history can save historical information and query function to query alarm history. In addition, it can display not only unrecovered event information, but also recovered event information.

8.5.1 Alarm Bar

The alarm bar is a one-way walking lantern. Scroll to display the alarm information content that has been established in the 【Alarm Information Table】 and the current state meets the triggering conditions. Please refer to Chapter14.3:Alarm Information Table for specific attribute descriptions of alarm settings.

##	22-09-29	11:22:29

1. In the "Alarm Property" dialog box of the "Alarm Bar" component, corresponding properties can be set.

Alarm Bar - Alarm Description	
Alarm Type	Current component alarm type
Alarm Group	For specific attribute descriptions of alarm groups, please refer to Chapter 14 【Alarm Setting】
Include subordinate alarm groups	Include subordinate alarm groups
Alarm Level	For specific attribute descriptions of alarm levels, please refer to Chapter 14 【Alarm Setting】
Include higher levels	Contains higher levels
Sort Order	Gray display, invalid settings
Language independent	If checked, the selection box after "Display Language" is invalid, and the component defaults to using the first language
Show title bar	If checked, the alarm bar component will be displayed with a title bar. In addition, the settings related to the font of the title bar will also be displayed. There will be no explanation here for the time being. For instructions, please refer to the alarm attribute description in 8.5.2 【Current Alarm】
List font set	Set the relevant properties of the list font
Set font by column	If checked, the data table in the alarm properties will display the "Column Font Settings" content. Double click on the corresponding "Font Settings" to set the font properties of the corresponding column
Preset text set	It includes two options: 【Input Direct】 and 【Use Text Lib】: ① When selecting 【Input Direct】, you can directly input the title name in the corresponding area of the 'Title Bar Name Setting' column ② When checking 【Use Text Lib】, you can select the name of the text library in the corresponding area of the 'Title Bar Name Setting' column. This item is only valid when 【Show Title Bar】 is checked

Display language	Set the language of the title bar. When 【Language Independent】 is not checked and 【Show Title Bar】 is checked, it is valid
Data column dynamic show	Check to control whether the corresponding data column is displayed by setting a bit of the word variable to ON or OFF
Move up	When selecting the row in the data table, click 【Move Up】 to move the selected row up. The 【Move Up】 button is valid except for selecting the first row of the data table
Move down	When selecting a row in the data table, click 【Move Down】 to move the selected row down. The 【Move Down】 button is valid except for selecting the last row of the data table
Default Sort	Restore to the original sorting of the data table
Dynamic set by column	If checked, the "Dynamic Display" column will appear in the data table of the alarm property. By first checking and then selecting the bit variable, you can control whether the corresponding data column is displayed through the state of this bit variable
Alarm Status Display	Set trigger colors and confirm colors. The color picker can absorb all colors on the computer screen at this time
Alarm Display type	Fixed to display the same alarm in different states on a single line, cannot be modified
Marquee Moving Mode	When setting the alarm information trigger, display the movement mode of the alarm bar component
Step size	Move the displayed alarm information by the number of pixels moved each time. The unit is pixels. The larger the step size value, the faster the movement display speed
Frequency	The time interval between the last moved pixel and the next moved pixel of the displayed alarm information. The unit is 0.1 seconds. The higher the value, the slower the movement display speed

2. In the "Table Property" dialog box of the "Alarm Bar" component, corresponding properties can be set.

Alarm Bar - Table Property Description	
Current Page/Total Pages	【Alarm Bar】 component Invalid
Page Up/Down Switch Button	Alarm components other than alarm bars are valid
Display grid line	Set display borders, row split lines, and column split lines
Border line type	Set the border line type
Border line width	Set border line width
Border color	Set the color of the outer frame, and the color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Split Line type
Separator line width	Set Split Line type
Sprt Color	Set the split line color. The color picker can absorb all the colors on the computer screen at this time
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Row gap	set row gap
Column gap	set column gap
Date Format	Set the format of the alarm message date
Date Separator	Set the separator of the alarm message date
Show 4-digit year	If this option is checked, the date of the alarm message will be displayed with 4 digits of the year, otherwise it will be displayed with 2 digits.
Time Format	Set the format of alarm message time

3. In the "Display Set" dialog of the "Alarm Bar" component, you can set the corresponding properties.

Alarm bar-display set description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Translucent	Set display borders, row split lines, and column split lines
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are

	hidden, and false status takes effect ① Authority control:Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.5.2 Current Alarm

Current alarm is used to display the alarm information content that has been established in the 【Alarm Information Table】 and the current state meets the triggering conditions. When the variable state of the alarm switches back to a non-alarm state, the alarm information will disappear, otherwise it will be displayed continuously. Please refer to Chapter14.3 – Alarm Information Table for the establishment of an alarm information table.

No.	Alarm content	Trigger date	Trigger time	larm cumulative numbe
1	##	23-06-05	18:21:07	1

1. In the "Alarm Property" dialog box of the "Current Alarm" component, corresponding properties can be set.

Current Alarm – Alarm Property description	
Alarm type	The alarm type of the current component
Alarm Group	For specific attribute descriptions of alarm groups, please refer to Chapter 14 【Alarm Setting】
Include subordinate alarm group	If this option is checked, the alarm component will display the lower-level alarm groups of the currently selected alarm group. If it is not checked, only the alarm information of the currently selected alarm group will be displayed. It is checked by default
Alarm level	For specific attribute descriptions of alarm levels, please refer to Chapter 14 【Alarm Setting】
Include higher levels	If this option is checked, the alarm component will display the superior alarm level of the currently selected alarm level. If it is not checked, only the alarm information of the currently selected alarm level will be displayed. It is checked by default
Sort Order	Set the sorting method for displaying alarm information on alarm components
Language independent	If checked, the selection box after "Show language" is invalid. The first language is used by default for the component
Show Title Bar	If checked, the alarm bar component will be displayed with a title bar. It is checked by default.
Title font set	Click to set the title bar font related properties, this is only valid when 【Show Title Bar】 is checked.
List Font same as title	If checked, the font properties of the list are the same as those of the title bar.
List font set	Set the related properties of the list font
Set font by column	If checked, the data table in the alarm properties will display the "Column Font Settings" content. Double click on the corresponding "Font Settings" to set the font properties of the corresponding column
Preset text set	It includes two options: 【Input Direct】 and 【Use Text Lib】: ① When selecting 【Input Direct】, you can directly input the title name in the corresponding area of the 'Title Bar Name Setting' column ② When checking 【Use Text Lib】, you can select the name of the text library in the

	corresponding area of the 'Title Bar Name Setting' column. This item is only valid when 【Show Title Bar】 is checked
Display language	Set the language of the title bar. When 【Language Independent】 is not checked and 【Show Title Bar】 is checked, it is valid
Data column dynamic show	Check to control whether the corresponding data column is displayed by setting a bit of the word variable to ON or OFF
Dynamic set by column	If checked, the "Dynamic Display" column will appear in the data table of the alarm property. By first checking and then selecting the bit variable, you can control whether the corresponding data column is displayed through the state of this bit variable
Output select row data to var	Check to set output variables for the data column, and the 【Trigger Variable】 and 【Trigger Type】 are valid. Click on any alarm information on the alarm component, and when the trigger variable meets the set trigger type, the content of the data column will be displayed in the corresponding output variable
Move up	When selecting the row in the data table, click 【Move Up】 to move the selected row up. The 【Move Up】 button is valid except for selecting the first row of the data table
Move down	When selecting a row in the data table, click 【Move Down】 to move the selected row down. The 【Move Down】 button is valid except for selecting the last row of the data table
Default sort	Restore to the original sorting of the data table
Alarm Status Display	Set trigger colors and confirm colors. The color picker can absorb all colors on the computer screen at this time
Alarm Display Type	Fixed to display the same alarm in different states on a single line, cannot be modified
Confirm Mode	Set the method for confirming alarm information, including clicking, double clicking, and long pressing
Unconfirm Alarm Blink Cycle	Set the frequency of the unconfirmed alarm flashing cycle, in 0.1s

2. In the "Table Property" dialog box of the "Current Alarm" component, corresponding properties can be set.

Current Alarm - Table Property Description	
Show browser control	Check the browse control box on the alarm component that will display the setting icon, including the total number of entries, current/total pages, and the content of the up/down page switch button (provided all three options are checked)
Total entries	The total number of alarm messages for the current alarm component
Current/total page	The current page displayed by the alarm component and the total number of pages of the current alarm information. It is valid when the 【Show browser control】 and 【 Pagination display 】 are checked
Page down/up button	Used for flipping up and down alarm information. It is effective when checking the 【Show browser control】 and 【 Pagination display 】
Display grid line	Set display borders, row split lines, and column split lines
Border line type	Set the border line type
Border line width	Set border line width
Border color	Set the color of the outer frame, and the color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Split Line type
Separator line width	Set Split Line type
Sprt Color	Set the split line color. The color picker can absorb all the colors on the computer screen at this time
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the

	computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Set the background color for separating rows between two rows
Select color	Set the color of the selected alarm message. The color picker can absorb all the colors on the computer screen at this time
Row gap	Set data table row spacing
Column gap	Set data table column spacing
Date Format	Set the format of the alarm message date
Date Separator	Set the separator of the alarm message date
Show 4-digit year	If this option is checked, the date of the alarm message will be displayed with 4 digits of the year, otherwise it will be displayed with 2 digits.
Time format	Set the format of alarm message time
Content exceeds table width	When the alarm content exceeds the width of the table, truncation or scrolling can be checked. If set to scrolling, you can set the step size and speed of scrolling
Total entries	Display the total number of alarm messages for the current alarm component using variables
Single page entry num	Use a constant to set the number of entries for displaying alarm information on each page. It is valid when selecting【 Pagination display 】
Dynamic entries num	Use a constant to set the number of entries for displaying alarm information on each page. It is valid when selecting【 Pagination display 】
Export device	Export and save the alarm information displayed by the current alarm component in an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the name of the sub folder for exporting alarm information. If this item is blank, the alarm information will be saved in the "tar" folder of the project root directory by default
Use dynamic subfolder	Dynamically setting the name of a subfolder using string variables
Trigger var	Set variables that trigger export
Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for exporting alarm information, with a default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name do not include export time	If checked, the exported file name does not include the export time
Export file format	The file format for exporting alarm information, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encrypt】 is not checked, the exported file format is the file format set in the 【Export File Format】 option and can be opened directly
Password	Dynamically setting the password for file encryption using string variables

3. In the "Display Set" dialog box of the "Current Alarm" component, corresponding properties can be set.

Current Alarm - Display Set Description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Translucent	Set display borders, row split lines, and column split lines
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.5.3 Alarm History

Alarm history is used to display the alarm information content that has been established in the 【Alarm Information Table】 and the current state meets the triggering conditions. Alarm history can display real-time alarm information and query historical information. Please refer to Chapter 14.3: Alarm Information Table for the establishment of an alarm information table.

No.	Alarm content	Trigger date	Trigger time	Confirm date	Confirm time	Recovery date
1	##	23-06-05	18:24:24	23-06-05	18:24:24	23-06-05

1. In the "Alarm Property" dialog box of the "Alarm History" component, corresponding properties can be set.

Alarm History - Alarm Property Description	
Alarm type	The alarm type of the current component
Alarm Group	For specific attribute descriptions of alarm groups, please refer to Chapter 14 【Alarm Setting】
Include subordinate alarm group	If this option is checked, the alarm component will display the lower-level alarm groups of the currently selected alarm group. If it is not checked, only the alarm information of the currently selected alarm group will be displayed. It is checked by default
Alarm level	For specific attribute descriptions of alarm levels, please refer to Chapter 14 【Alarm Setting】
Include higher levels	If this option is checked, the alarm component will display the superior alarm level of the currently selected alarm level. If it is not checked, only the alarm information of the currently selected alarm level will be displayed. It is checked by default
Sort Order	Set the sorting method for displaying alarm information on alarm components
Language independent	If checked, the selection box after "Display language" is invalid. The first language is used by default for the component
Show Title Bar	If checked, the alarm bar component will be displayed with a title bar. It is checked by default.
Title font set	Click to set the title bar font related properties, this is only valid when 【Show Title Bar】 is checked.
List Font same as title	If checked, the font properties of the list are the same as those of the title bar.
List font set	Set the related properties of the list font
Set font by column	If checked, the data table in the alarm properties will display the "Column Font Settings" content. Double click on the corresponding "Font Settings" to set the font properties of the corresponding column

Preset text set	It includes two options: 【Input Direct】 and 【Use Text Lib】: ① When selecting 【Input Direct】, you can directly input the title name in the corresponding area of the 'Title Bar Name Setting' column ② When checking 【Use Text Lib】, you can select the name of the text library in the corresponding area of the 'Title Bar Name Setting' column. This item is only valid when 【Show Title Bar】 is checked
Display language	Set the language of the title bar. When 【Language Independent】 is not checked and 【Show Title Bar】 is checked, it is valid
Data column dynamic show	Check to control whether the corresponding data column is displayed by setting a bit of the word variable to ON or OFF
Dynamic set by column	If checked, the "Dynamic Display" column will appear in the data table of the alarm property. By first checking and then selecting the bit variable, you can control whether the corresponding data column is displayed through the state of this bit variable
Output select row data to var	Check to set output variables for the data column, and the 【Trigger Variable】 and 【Trigger Type】 are valid. Click on any alarm information on the alarm component, and when the trigger variable meets the set trigger type, the content of the data column will be displayed in the corresponding output variable
Move up	When selecting the row in the data table, click 【Move Up】 to move the selected row up. The 【Move Up】 button is valid except for selecting the first row of the data table
Move down	When selecting a row in the data table, click 【Move Down】 to move the selected row down. The 【Move Down】 button is valid except for selecting the last row of the data table
Default sort	Restore to the original sorting of the data table
Alarm Status Display	Set trigger color, unrecovered confirmation color, confirmation color, and recovery confirmation color, and the color picker can absorb all colors on the computer screen at this time
Alarm Display Type	The display method of alarm information includes "one line shows different states of the same alarm" and "multiple lines show different states of the same alarm". ① One line shows different states of the same alarm: Display the triggering, recovery, and confirmation states of the same alarm on the same line; ② Multiple lines show different states of the same alarm: Display the triggering, recovery, and confirmation states of the same alarm in different rows. When this option is selected, you can check whether to display the triggering, confirmation, and recovery states. By default, all three states are checked and one of them has to be checked
Confirm Mode	Set the method for confirming alarm information, including clicking, double clicking, and long pressing
Unconfirm Alarm Blink Cycle	Set the frequency of the unconfirmed alarm flashing cycle, in 0.1s

2. In the "Alarm Query" dialog box of the "Alarm History" component, corresponding properties can be set.

Alarm History - Alarm Query Description	
Query Function	If unchecked, it means using the alarm browsing function to display all alarm information
	If checked, it indicates that the current component is using the query function
Query states variable	Used to determine whether the query function is allowed. If the status is 1, the query is allowed; If the status is 0, query is prohibited and real-time browsing of all alarm information is enabled
Query trigger variable	When the query trigger variable meets the conditions set by the trigger method, execute the query function once
Trigger type	Trigger method for querying trigger variables

3. In the "Table Property" dialog box of the "Alarm History" component, corresponding properties can be set.

Alarm History - Table Property Description

Show browser control	Check the browse control box on the alarm component that will display the setting icon, including the total number of entries, current/total pages, and the content of the up/down page switch button (provided all three options are checked)
Total entries	The total number of alarm messages for the current alarm component
Current/Total page	The current page displayed by the alarm component and the total number of pages of the current alarm information. It is valid when the 【Show browser control】 and 【 Pagination display 】 are checked
Page down/up button	Used for flipping up and down alarm information. It is effective when checking the 【Show browser control】 and 【 Pagination display 】
Show Filter Button	Clicking will pop up a filtering window for the settings. Effective after checking 【show browser control】
Display grid line	Set display borders, row split lines, and column split lines
Border line type	Set the border line type
Border line width	Set border line width
Border color	Set the color of the outer frame, and the color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Split Line type
Separator line width	Set Split Line type
Sprt Color	Set the split line color. The color picker can absorb all the colors on the computer screen at this time
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Set the background color for separating rows between two rows
Select color	Set the color of the selected alarm message. The color picker can absorb all the colors on the computer screen at this time
Row gap	Set data table row spacing
Column gap	Set data table column spacing
Date Format	Set the format of the alarm message date
Date Separator	Set the separator of the alarm message date
Show 4-digit year	After checking, the year can be displayed in 4 digits, otherwise it will be displayed in 2 digits. For example, for the year 2008, it displays "2008" if 【Show 4-digit year】 is selected; If 【Show 4-digit year】is not selected, only 2 digits will be displayed, i.e. '08'
Time format	Set the format of alarm message time
Content exceeds table width	When the alarm content exceeds the width of the table, truncation or scrolling can be checked. If set to scrolling, you can set the step size and speed of scrolling
Total entries	Use word variables to display the total number of alarm messages for the current alarm component
Pagination display	Set alarm information to be displayed on multiple pages
Single page entry num	Use a constant to set the number of entries for displaying alarm information on each page. It is valid when selecting 【 Pagination display 】
Export device	Export and save the alarm information displayed by the current alarm component in an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the name of the sub folder for exporting alarm information. If this item is blank, the alarm information will be saved in the "data" folder of the project root directory by default
Use dynamic subfolder	Using string variables to dynamically set sub folder names

Trigger var	Set variables that trigger export
Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for exporting alarm information, with a default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name do not include export time	If checked, the exported file name does not include the export time
Export file format	The file format for exporting alarm information, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encryption】 is not checked, the exported file format is set in the 【Export File Format】 option. Simply open the file
Dynamic Password	Dynamically setting the password for file encryption using string variables

4. In the "Display Set" dialog box of the "Alarm History" component, corresponding properties can be set.

Alarm History - Display Set Description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Translucent	Set display borders, row split lines, and column split lines
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control:Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are external, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.5.4 Alarm Statistic

Alarm statistics are used to count the cumulative number of alarm messages that have been established and triggered in the 【Alarm Information Table】. Please refer to Chapter 14.3: Alarm Information Table for the establishment of an 【alarm information table】.

No.	Alarm content	Alarm cumulative time	Alarm cumulative number
1	##	1	1

1. In the "Alarm Property" dialog box of the "Alarm Statistic" component, corresponding properties can be set.

Alarm Statistic - Alarm Property Description	
Alarm type	The alarm type of the current component
Alarm Group	For specific attribute descriptions of alarm groups, please refer to Chapter 14 【Alarm Setting】
Include subordinate	If this option is checked, the alarm component will display the lower-level alarm groups of the

alarm group	currently selected alarm group. If it is not checked, only the alarm information of the currently selected alarm group will be displayed. It is checked by default
Alarm level	For specific attribute descriptions of alarm levels, please refer to Chapter 14 【Alarm Setting】
Include higher levels	If this option is checked, the alarm component will display the superior alarm level of the currently selected alarm level. If it is not checked, only the alarm information of the currently selected alarm level will be displayed. It is checked by default
Sort Order	Set the sorting method for displaying alarm information on alarm components
Language independent	If checked, the selection box after "Display language" is invalid. The first language is used by default for the component
Show Title Bar	If checked, the alarm bar component will be displayed with a title bar. It is checked by default.
Title font set	Click to set the title bar font related properties, this is only valid when 【Show Title Bar】 is checked.
List Font same as title	If checked, the font properties of the list are the same as those of the title bar.
List font set	Set the related properties of the list font
Set font by column	If checked, the data table in the alarm properties will display the "Column Font Settings" content. Double click on the corresponding "Font Settings" to set the font properties of the corresponding column
Preset text set	It includes two options: 【Input Direct】 and 【Use Text Lib】: ① When selecting 【Input Direct】, you can directly input the title name in the corresponding area of the 'Title Bar Name Setting' column ② When checking 【Use Text Lib】, you can select the name of the text library in the corresponding area of the 'Title Bar Name Setting' column. This item is only valid when 【Show Title Bar】 is checked
Display language	Set the language of the title bar. When 【Language Independent】 is not checked and 【Show Title Bar】 is checked, it is valid
Data column dynamic show	Check to control whether the corresponding data column is displayed by setting a bit of the word variable to ON or OFF
Dynamic set by column	If checked, the "Dynamic Display" column will appear in the data table of the alarm property. By first checking and then selecting the bit variable, you can control whether the corresponding data column is displayed through the state of this bit variable
Output select row data to var	Check to set output variables for the data column, and the 【Trigger Variable】 and 【Trigger Type】 are valid. Click on any alarm information on the alarm component, and when the trigger variable meets the set trigger type, the content of the data column will be displayed in the corresponding output variable
Move up	When selecting the row in the data table, click 【Move Up】 to move the selected row up. The 【Move Up】 button is valid except for selecting the first row of the data table
Move down	When selecting a row in the data table, click 【Move Down】 to move the selected row down. The 【Move Down】 button is valid except for selecting the last row of the data table
Default sort	Restore to the original sorting of the data table
Alarm Display type	Fixed to display the same alarm in different states on a single line, cannot be modified

2. In the "Table Property" dialog box of the "Alarm Statistics" component, corresponding properties can be set.

Alarm Statistic - Table Property Description	
Show browser control	Check the browse control box on the alarm component that will display the setting icon, including the total number of entries, current/total pages, and the content of the up/down page switch button (provided all three options are checked)
Total entries	The total number of alarm messages for the current alarm component
Current/Total page	The current page displayed by the alarm component and the total number of pages of the current alarm information. It is valid when the 【Show browser control】 and 【 Pagination

	display】 are checked
Page down/up button	Used for flipping up and down alarm information. It is effective when checking the 【Show browser control】 and 【 Pagination display 】
Show Filter Button	Clicking will pop up a filtering window for the settings. Effective after checking 【show browser control】
Display grid line	Set display borders, row split lines, and column split lines
Border line type	Set the border line type
Border line width	Set border line width
Border color	Set the color of the outer frame, and the color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Split Line type
Separator line width	Set Split Line type
Sprt Color	Set the split line color. The color picker can absorb all the colors on the computer screen at this time
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Set the background color for separating rows between two rows
Select color	Set the color of the selected alarm message. The color picker can absorb all the colors on the computer screen at this time
Row gap	Set data table row spacing
Column gap	Set data table column spacing
Date Format	Set the format of the alarm message date
Date Separator	Set the separator of the alarm message date
Show 4-digit year	After checking, the year can be displayed in 4 digits, otherwise it will be displayed in 2 digits. For example, for the year 2008, it displays "2008" if 【Show 4-digit year】 is selected; If 【Show 4-digit year】is not selected, only 2 digits will be displayed, i.e. '08'
Time format	Set the format of alarm message time
Content exceeds table width	When the alarm content exceeds the width of the table, truncation or scrolling can be checked. If set to scrolling, you can set the step size and speed of scrolling
Total entries	Use word variables to display the total number of alarm messages for the current alarm component
Pagination display	Set alarm information to be displayed on multiple pages
Single page entry num	Use a constant to set the number of entries per page that display alarm information. Valid when checked for 【Pagination Display】
Dynamic entry num	Use the word variable to set the number of entries for displaying alarm information on each page, which is valid when 【Display by Page】 is checked
Page num	Use the word variable to set the total number of pages for the current alarm message. Valid when checked for 【Pagination Display】
Current Page	Use word variables to control the current page displayed by the alarm component. Valid when checked for 【Pagination Display】
Export device	Export and save the alarm information displayed by the current alarm component in an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the name of the sub folder for exporting alarm information. If this item is blank, the alarm information will be saved in the "tar" folder of the project root directory by default
Use dynamic subfolder	Using string variables to dynamically set sub folder names

Trigger var	Set variables that trigger export
Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for exporting alarm information, with a default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name do not include export time	If checked, the exported file name does not include the export time
Export file format	The file format for exporting alarm information, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encryption】 is not checked, the exported file format is set in the 【Export File Format】 option. Simply open the file
Dynamic Password	Dynamically setting the password for file encryption using string variables

3. In the "Display Set" dialog box of the "Alarm Statistic" component, corresponding properties can be set.

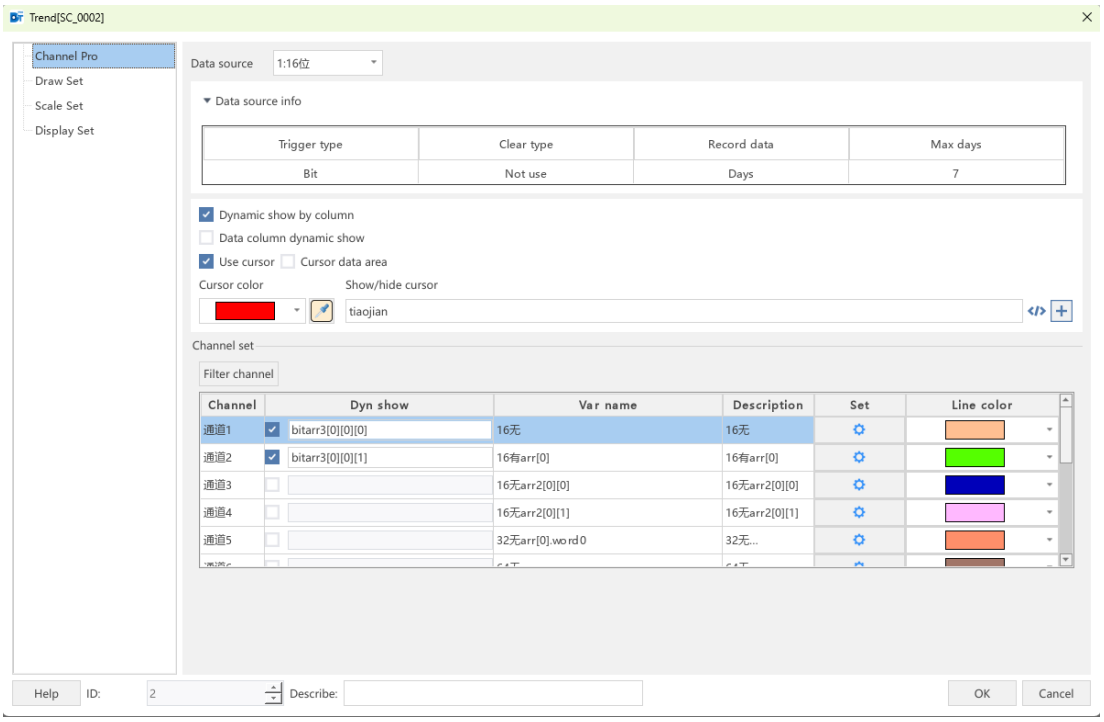
Alarm Statistic - Display Set Description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Translucent	Set display borders, row split lines, and column split lines
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.6 Chart

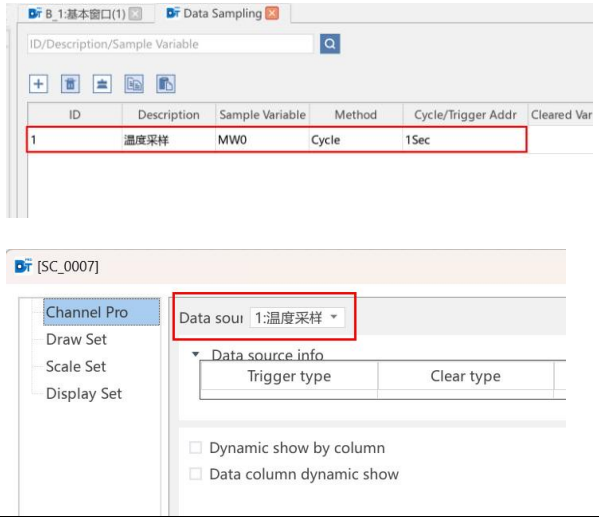
8.6.1 Trend

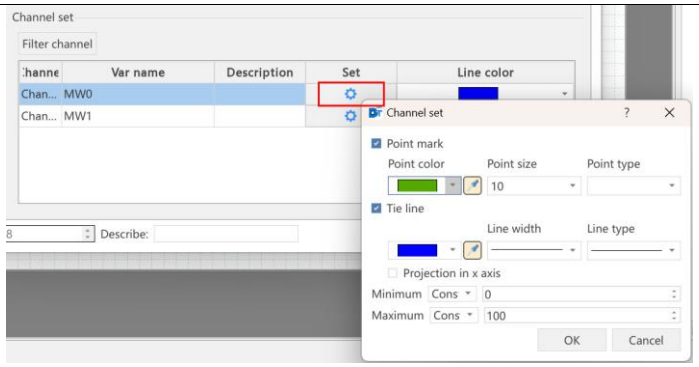
Display the background data of data sampling in the form of curve Run chart, and refer to "Data Sampling" for background settings of data sampling

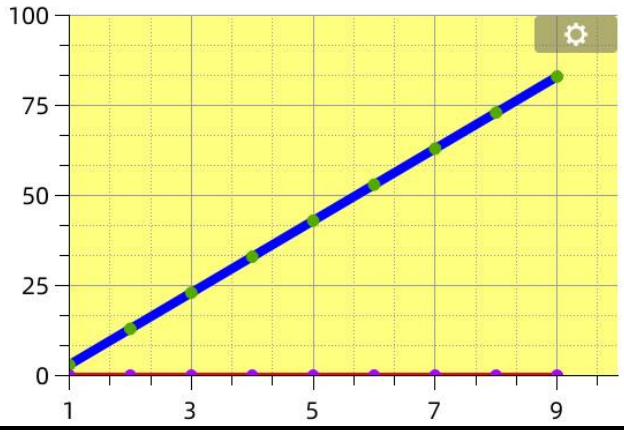
[Trend] interface



8.6.1.1 Channel Properties

Trend - Channel Properties Description	
Data sources	Select sampling entries added in data sampling 
Dynamic show by column	Use bitwise variables to individually control column display, display when 0, hide when 1
Data column dynamic show	Using the bit control of a word variable to display the column, the first column is displayed when bit0 is 0, hidden when bit1 is 1, bit1 controls the second column, and so on
Use cursor	Cursor color: set the color of the cursor and display area
	Show/hide cursor: bit variable control, show when 1, hide when 0
	Cursor data area: After checking, you can set the sampling point data of the cursor
Filter Channel	By default, select all and manually filter/cancel the corresponding channel display
Curve Settings	Can set the drawing point/curve attributes of the channel





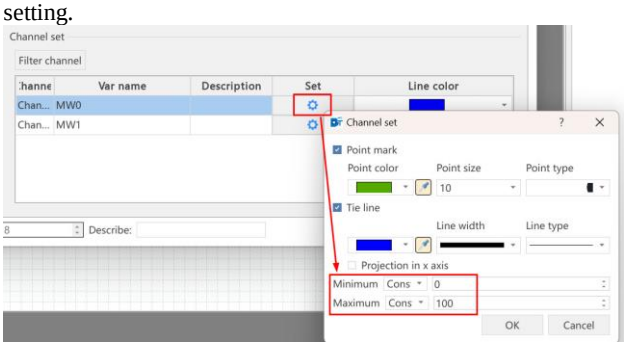
8.6.1.2 Draw Settings

Trend - Draw Settings Description	
Display mode per screen	Screen show point number: Set the number of sampling points that can be displayed on the current page of the curve.
	Screen show time range: control the curve data in the time period displayed on the current page according to the constant/variable (minutes).
Background color	Background color settings for curves
Use scale	The variable is an integer that controls the zoom-in/zoom-out ratio of the curve.

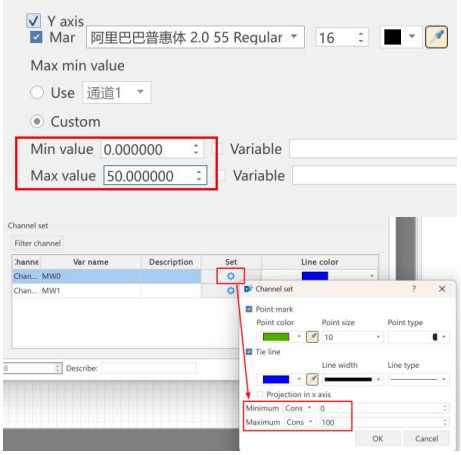
8.6.1.3 Scale Settings

Trend - Scale Settings Description			
Scale settings	X-axis	Main scale number:Setting of the number of main scales of the X-axis of the curve; main scale length: setting of the length of the main scale line	
		Second scale number: check the box to set the number of X-axis subscales and the length of the subscales.	
	Y-axis	Main scale number:Setting of the number of main scales of the Y-axis of the curve; main scale length: setting of the length of the main scale line	
		Second scale number: check the box to set the number of Y-axis subscales and the length of the subscales.	
	Axis scale color	Setting the color of X/Y axis scale lines	
	Show gridlines	Check the box to set the grid color of the X/Y axis main scale inside the curve.	
Label settings	X-axis	Marker: Check the box to display the X-axis scale label, set the font, size and color.	
		Scale display method	Using point scale values: The scale displayed on the X-axis is the serial number of the sampling point "1, 2, 3...".
			Use the time scale value: the scale displayed on the X-axis is the corresponding date of the sampling point, time
	Y-axis	Marker: Check the box to display the Y-axis scale label, set font, size, color, integer/decimal digits.	
		Max min value	Use channel: select the corresponding channel to control the upper and lower Y-axis scale value, the maximum and minimum value of the channel can be set as constant/variable control in the channel property

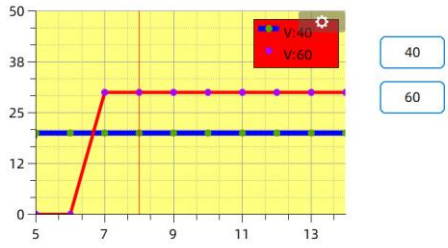
setting.



Customize: Constants/variables can be set to control the upper and lower Y-axis scale values: for example, the maximum value of the Y-axis scale is set to 50 and the minimum value to 0, while the maximum value of the channel is 100 and the minimum value is 0:



When the sampling value of the channel is 40, then the position of the point in the curve occupies 40% of the Y-axis, where the scale value is 20, and if the sampling value is 60, then it occupies 60% of the Y-axis scale,where the scale value is 30,as follows



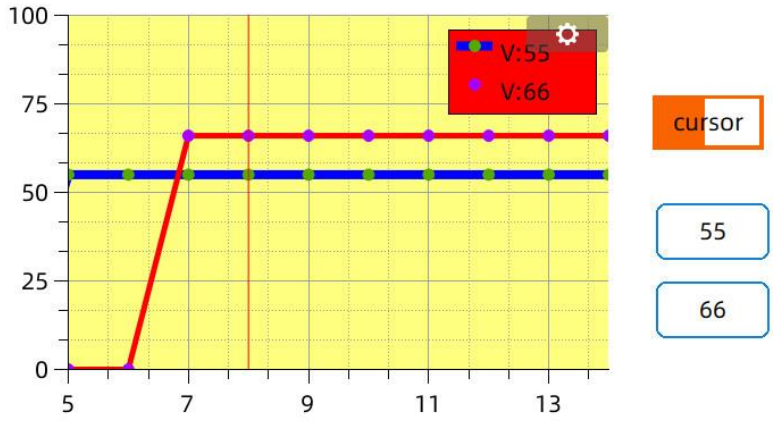
8.6.1.4 Display Settings

Trend - Display Settings Description	
location	Sets whether the position of the component is locked or not
Fixed Ratio	Set the size of the component to calculate the corresponding width or height proportionally. Proportion is the ratio of width and height before [Fixed Ratio] is ticked.
Translucent	Check Enable to set the component's semi-transparency.
Display/Hide	Always display: check to indicate that the current component is always displayed Conditional display: Includes permission control, expression control, no communication when element is hidden and False status in effect. ①Privilege control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ②Expression control: check to indicate that the current component can be displayed only when the state of the specified bit variable or word variable satisfies the set condition ③Do not communicate when hidden: when the variable used by the component is an external variable, check this option and the component will not communicate when it is hidden.

	④False state work: Effective in error status

8.6.1.5 Operating effect

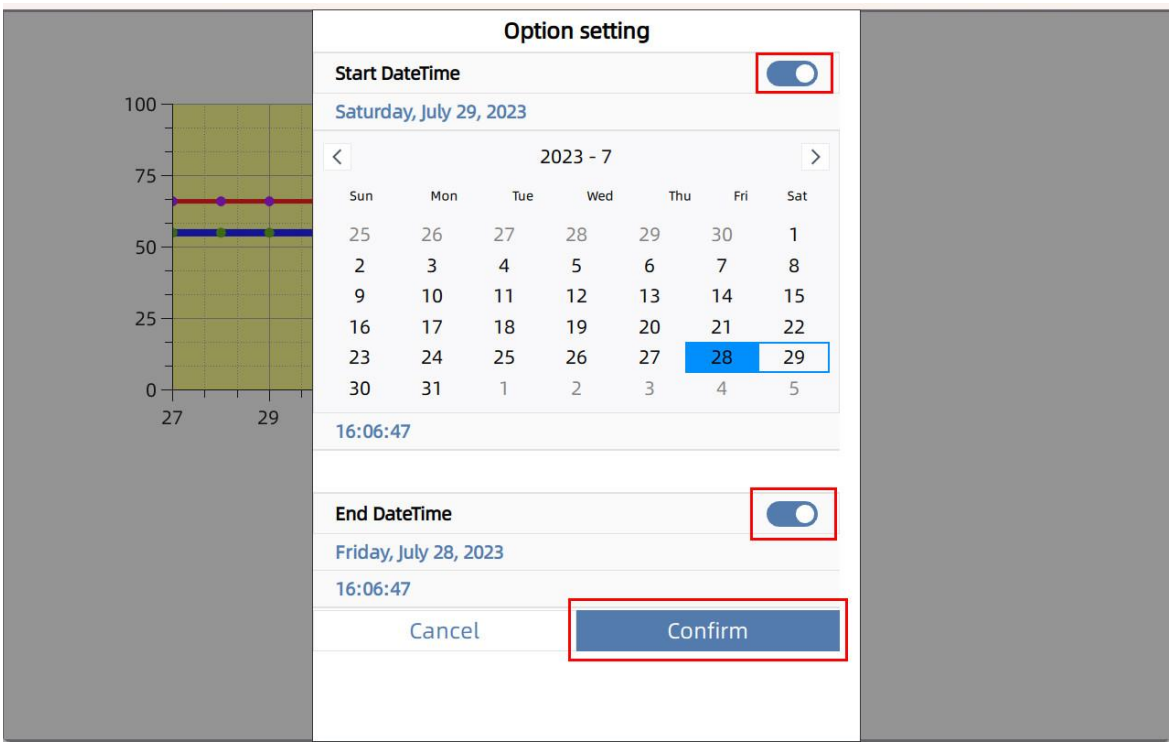
Offline simulation effect:



8.6.1.6 Trend Chart Search

1. View the recent history curve: you can directly drag the curve to the left to view the history curve, double-click the control can be restored to the real-time curve.

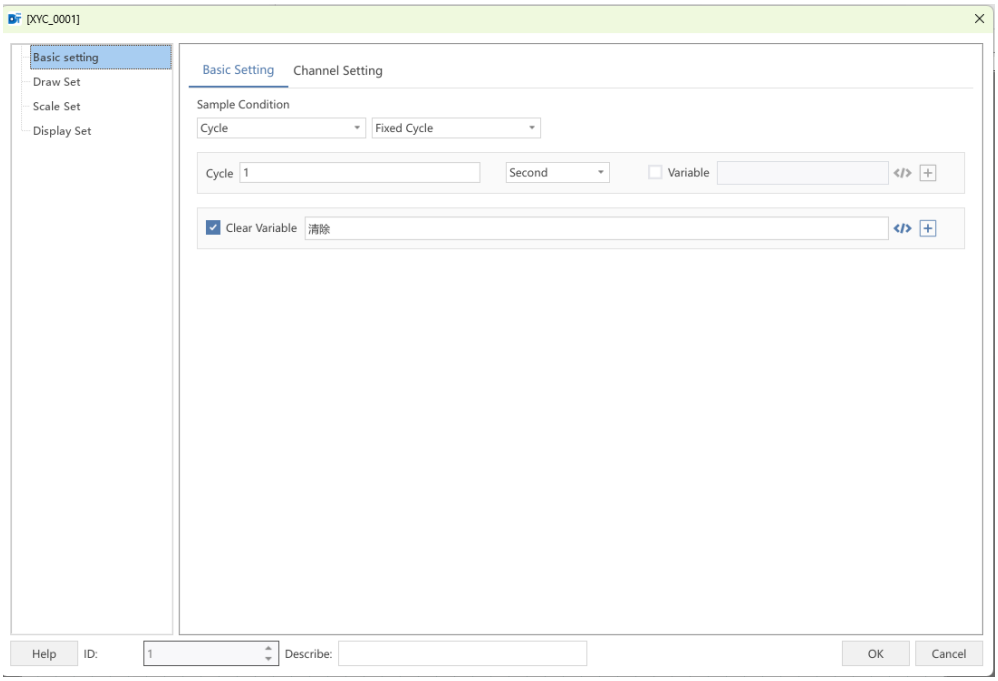
2. View the curve in a certain period of time: open the gear at the top right of the control, turn on the start/end time, click on the confirmation after setting to display the curve in the period of time, double-click on the control, or manually close the start/end date buttons, can be restored to the real-time curve.



8.6.2 XY CHart

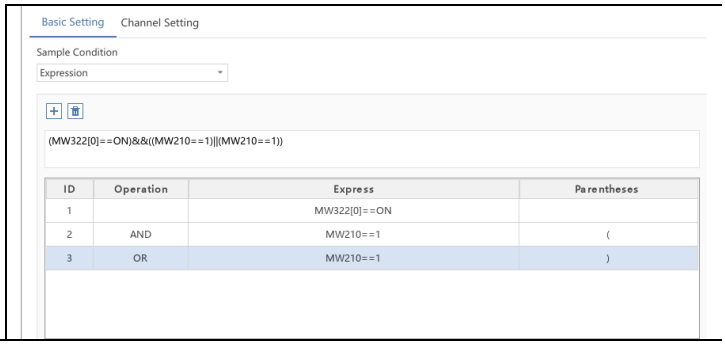
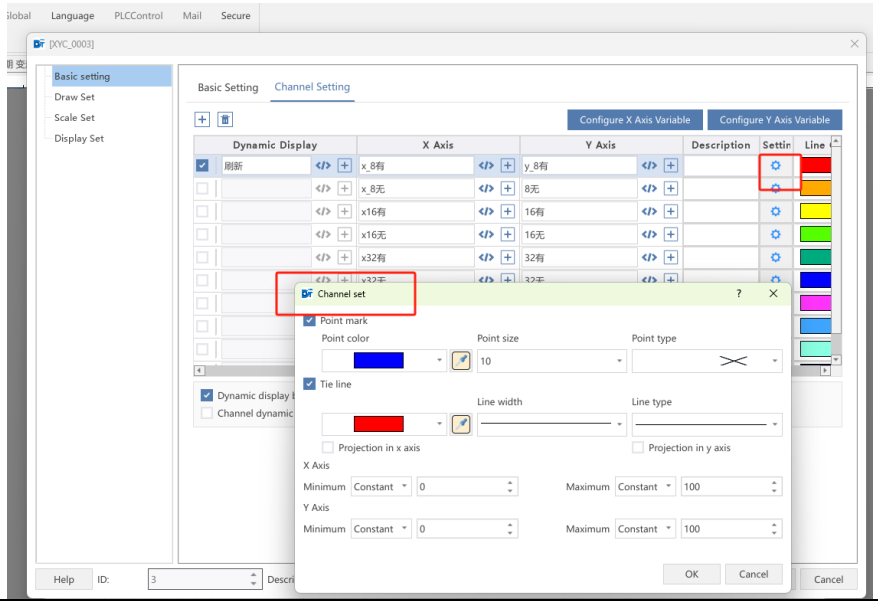
The sampled data is displayed in the form of curves

【XY chart element】 Interface



8.6.2.1 Basic Set

Basic set description		
sample	Cycle sample: fixed Cycle	The unit of the parameter can be s or ms, indicating that the interval is sampled once. Period range 1-4294967295; Select variables to select 8-64 unsigned integer variables
	Cycle sample: fixed Time	1. Limit the maximum number of samples only within a given time and sampling period 2. The start time must be smaller than the end time. Both the start time and the end time are time-type data 3. The unit of sampling period is S or MS, and the minimum unit of sampling period is 100ms; The period can also be set as a variable, optionally 8-64 unsigned integer variable 4. The maximum number of samples is (end time - start time)*10,(time is changed to milliseconds).
	Bit state change sample	Optional bit variables (word taking bits is also supported), support OFF<->ON, OFF->ON, ON->OFF, OFF->ON automatic reset, ON->OFF automatic reset five ways, meet the trigger sampling once
	Word-value change sample: Collect when changes occur	Specifies that a data collection is performed whenever the word variable changes
	Word-value change sampling:comply with variable range acquisition	If the value of the specified word variable changes between two consecutive times within the specified range, a data collection is performed; Word variable, optional 8-64 integer variable; Range: 0-Select the absolute value of the type range; When "Variables" is checked, 8-64 unsigned integer variables can be selected; If it's 0, it's the same as sampling when something changes;
	Expression sample	Bit: ON, OFF, logical not
		Word: equal, less than, greater than, less than or equal to, greater than or equal to, not equal to (variable or constant)
		Note: Multiple conditions can be modified by double clicking the action column AND OR by double clicking the bracket column ()

	
clean	Optional bit variable, support word taking bits, ON triggers clearing, after clearing automatically reset to OFF
Dynamical display by channel	Use a bit variable to separately control column display, display when 0, hide when 1
Channel Dynamical display	Using the bit control column of the word variable, the first column is displayed when bit0 is 0, hidden when it is 1, bit1 controls the second column, and so on
Channel property setting	1. Set different colors, sizes and types of dots after the dot marker is turned on 2. After the connection line is opened, set the different color, width and type of the line 3. Set the projection to X/Y 4. Set the maximum and minimum value of a channel 
variable configure	1.X axis, Y axis separately configure variables, support 8-64, single/double floating point number types, channel variables can be selected non-array variables and array subscripts, structure member variables 2.X/Y variable configuration is mainly used to configure array variables. After the number of configurable channels and detailed configuration are determined, the channel list automatically generates a new channel row down (not a new one is generated at the bottom, but an insert is generated under the row), and the variable of the other axis is empty and displays a red exclamation mark

8.6.2.2 Draw Set

Draw Set property description	
Screen show Point number	Points per screen: Set the number of sampling points that can be displayed on the current page of the curve
Background color	Curve background color Settings

8.6.2.3 Scale Set

Scale setdescription		
Scale set	X/Y axis	Number of main scales: the number of main scales on the X/Y axis of the curve is set; Main scale length: Set the length of the main scale line

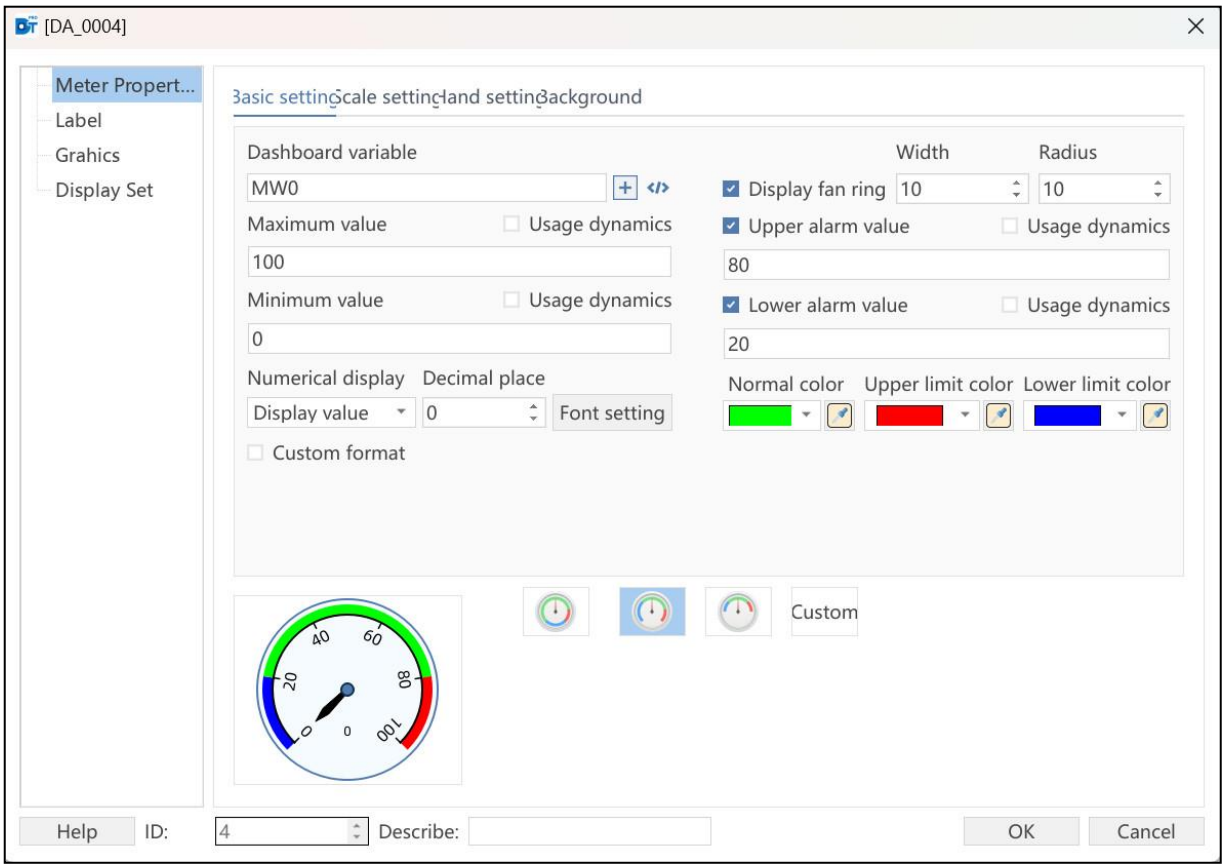
		Number of sub-scales: After checking, you can set the number and length of sub-scales on the X/Y axis of the curve	
	Axis Scale Color	Set the color of the X/Y axis	
	scale line	Display grid unchecked, do not display X/Y axis scale; After checking, you can set the grid color of the X/Y axis main scale in the curve	
Label set	X/Y axis	Mark: Unchecked, XX/ Y-axis label will not be displayed; Check the back curve to display X/Y axis label, set font, size, color, integer/decimal places	
		Max min value	Use channel: Select the corresponding channel to control the upper and lower scale values of the X/Y axis, and the maximum and minimum values of the channel can be set to constant/variable control in the channel property Settings
			Custom: Constant/variable can be set to control the upper and lower limits of the X/Y axis scale values: For example, the maximum value of the Y axis scale line is set to 50 and the minimum value is 0, while the maximum value of the channel is 100 and the minimum value is 0: When the sampling value of the channel is 40, then the position of the point in the curve occupies 40% of the Y-axis, that is, the scale value of 20; if the sampling value is 60, then it occupies 60% of the Y-axis scale line, that is, the scale value of 30

8.6.2.4 Display Set

Meter-Display Setting Instructions	
Lock	Sets whether the position of the component is locked or not
Fixed ratio	Set the size of the component to calculate the corresponding width or height proportionally. Proportion is the ratio of width and height before [Fixed Aspect Ratio] is ticked
Translucent	Check Enable to set the component's semi-transparency.
Display/Hide	Always display: check to indicate that the current component is always displayed Conditional display: Includes permission control, expression control, no communication when element is hidden and False status in effect. ①Privilege control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ②Expression control: check to indicate that the current component can be displayed only when the state of the specified bit variable or word variable satisfies the set condition ③Do not communicate when hidden: when the variable used by the component is an external variable, check this option and the component will not communicate when it is hidden. ④False state work: Effective in error status

8.6.3 Meter

8.6.3.1 Meter Properties



Meter - Description of Meter Properties		
Basic settings	Dashboard variable	Supports 8-64 bit numeric variables, single/double precision floating point numbers
	Numerical display	Display value: displays the current value of the dashboard variable; you can set the number of decimal places and tick the custom format, (the number of decimal places ranges from 0 to 8, default 0)
		Show percentage: calculates the percentage of the current value between the minimum and maximum values, the pointer points to the corresponding angle of the sector
		Font setting: you can set the font for numerical display
	Minimum and Maximum value	Default input static value, the range of the static value should be within the range of the dashboard variable (judging by the variable type), the maximum value is greater than the minimum value
		Usage dynamics: can be ticked to use dynamic variables (support 8-64 bit numerical variables, single/double precision floating point numbers), the scale changes with the dynamic variable value in real time; dynamic minimum value is greater than the maximum value, the scale label still shows the last time, does not change; if the variable value is entered more than the maximum value, the meter needle points to the maximum value, if you tick the alarm for exceeding the limit, then it will show the corresponding alarm colors (the same with the minimum value)
	Display fan ring	Default tick display, can set fan ring width and radius Width: default 10, range 1-10 Radius: default 10, range 1-10
	Upper/lower	Upper and lower alarm limits can be set by ticking the box, default is not ticked.

	limit alarm value	When both are static values, lower limit value < upper limit value < maximum value, minimum value < lower limit value < upper limit value
		Can be set to dynamic variables (supports 8-64 bit numeric variables, single/double precision floating point numbers)
		Fan ring normal colour can be set, when the corresponding upper/lower limit alarm is ticked, the corresponding alarm colour can be set, otherwise hidden
Scale setting	Scale	Default tick box to show
		Master scale: default 6, range 2-100
		Secondary scale: default 0, range 0-100
		length: i. Simultaneous control of the length of the primary and secondary scales ii. 60 per cent of the length of the secondary scale to the length of the primary scale. iii. Default 6, range 1-10
		Scale color: the colour of the scale can be set
		Outer frame: ticked by default, when ticked, a layer of frame is applied to the outside of the scale.
	Scale label	Default tick box to show
		Label decimal place: Displays the scale label value, default 0, range 0-8
		Radius: default 10, range 1-10
		Font setting: you can set the font of the scale label
Hand Setting	Pointer	Pointer style, pointer colour and frame colour can be set (when a graphic is selected for the pointer style, the pointer colour becomes a graphic selection button, and a graphic from the graphic library can be selected as the pointer).
		Pointer length: default 70%, range 1-100
		Pointer width: default 10%, range 1-10
	Axis	Default check Show Axis, you can set Axis Style, Axis Colour, Frame Colour (when the Axis Style selects a graphic, the colour becomes a graphic selection button, you can select a graphic in the graphic library to be the Axis)
		Radius: default 6, range 1-10
Background	Background color	Background colour can be set; Background colour can be set to transparent
	Frame color	Frame colour can be set; Frame colour can be set to transparent
	Whole circle	Ticked by default; When unchecked, the background colour range is the current angle of the sector; when checked, the background colour range is the whole circle.
	Smooth animation	Default unchecked When unchecked, the dial pointer moves in a jogging motion; when checked, it moves in a sliding motion.
Preview	Preview effect	When the parameters in the dashboard are modified, the preview effect is updated in real time, and when the title or graphic is updated, it is refreshed when it returns to the dial properties (parameters: maximum and minimum values, upper and lower alarm limits, scale related, needle related, title related, graphic related, angle related, background related); if a dynamic variable is ticked, then the preview effect maintains the effect of the last static value)
	Angle	Preset 1: Display dashboard 360 degree style
		Preset 2: Display dashboard 270 degree style
		Preset 3: Display dashboard 180 degree style

		Custom: Start angle and rotation angle can be modified i. Starting angle range 0-359, rotation angle range 1-360 ii. When the rotation angle is 360, the display will be rounded. iii. Start angle default 225, rotation angle default 270 iv. Clockwise or anti-clockwise selectable

8.6.3.2 Label

Dashboard labeling is consistent with component labeling settings, see 8.1.6 for details

8.6.3.3 Graphics

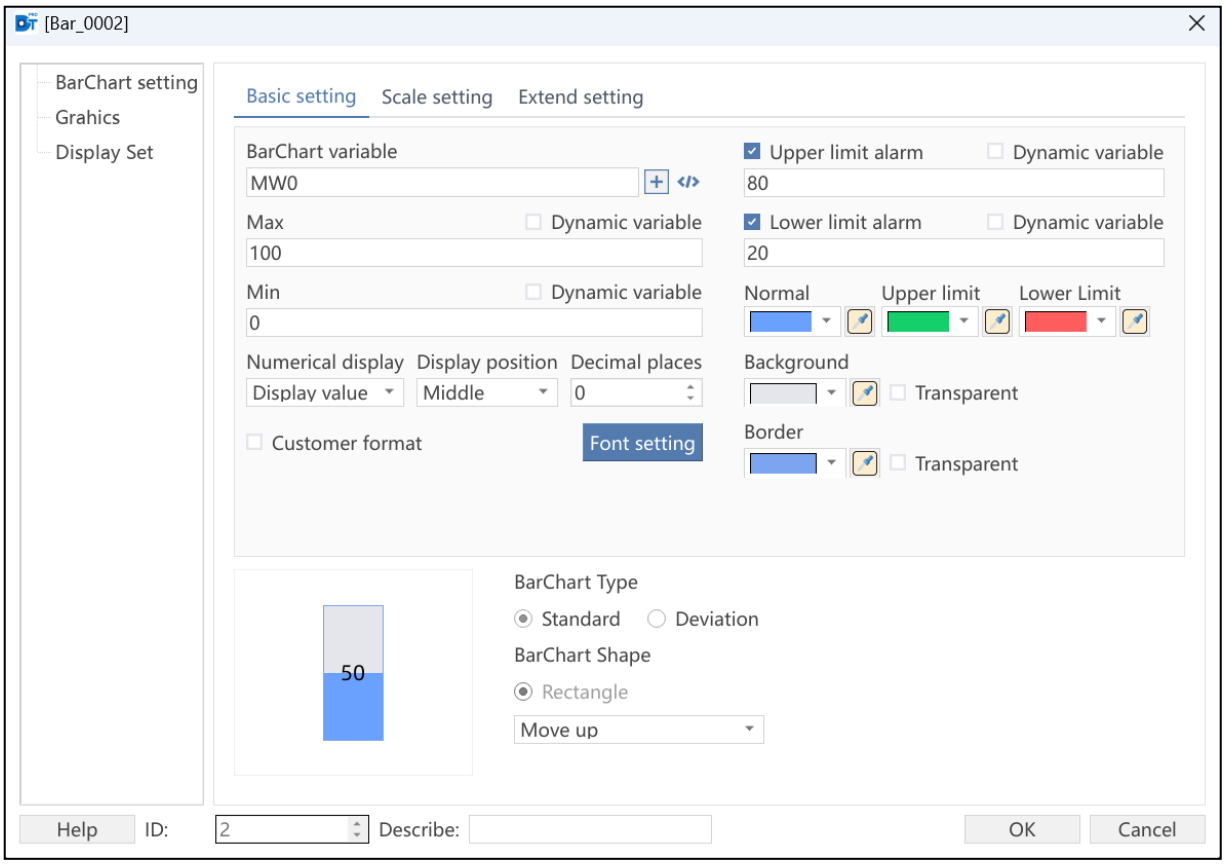
Meter-Graph Setup Instructions	
Enable graphics: check Enable graphic, when checked, it will be displayed under "Background", at the bottom, when using other graphic, the fill range will be square.	
Import Graphics	Import the required graphics from the system library
Add Graphics	Adding graphics beyond the system gallery
Original size	Use the original dimensions of the graphic
Batch Import Picture	Batch import external images, supported image formats are .jpg .jpeg .png .bmp
Delete	Delete the currently selected graphic
Import Image	Import a single external image, support for image formats are .jpg .jpeg .png .bmp
Shadow Effect	Possibility to add shadow effects to pictures
Modify Fill	Possibility to modify the filling effect of the picture

8.6.3.4 Display Set

Meter-Display Setting Instructions	
Lock	Sets whether the position of the component is locked or not
Fixed ratio	Set the size of the component, the default check box [Fixed Ratio], the width and height are equal.
Translucent	Check Enable to set the component's semi-transparency.
Display/Hide	Always display: check to indicate that the current component is always displayed Conditional display: Includes permission control, expression control, no communication when element is hidden and False status in effect. ①Privilege control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ②Expression control: check to indicate that the current component can be displayed only when the state of the specified bit variable or word variable satisfies the set condition ③Do not communicate when hidden: when the variable used by the component is an external variable, check this option and the component will not communicate when it is hidden. ④False state work: Effective in error status

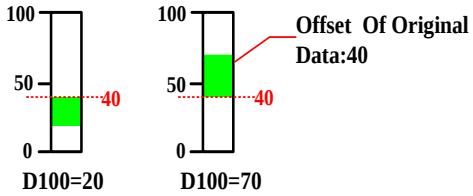
8.6.4 Bar Chart

8.6.4.1 Bar Chart setting

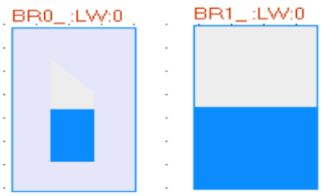


Bar Chart-Description of bar chart attributes		
Basic setting	Bar chart variable	Supports 8-64 bit numeric variables, single/double precision floating point numbers, and array variables
	Numerical display	Display value:Displays the current value of the dashboard variable; static value 50 is displayed on Configuration and Preview; decimal places can be set and custom format ticked, (decimal places are limited to a maximum of 8 according to the type of variable, the default display is 0)
		Display percent:Calculates the percentage of the current value between the minimum and maximum values, 50% is displayed by default on Configuration and Preview, decimal places are hidden, custom formatting is available
		Display none:Hide display position, decimal places, custom formatting, font settings after selection
	Display position	Optional [Middle], [Top], [Bottom], [Left], [Right],default middle, the position will not change with the change of the normal colour of the stick figure
	Font setting	You can set the font of the numerical display
	Max/Min	Default input static value, the range of the static value should be within the range of the bar graph variable (judging by the variable type), the maximum value is greater than the minimum value
		Use dynamic: you can separately tick the use of dynamic variables (need to be consistent with the type of bar graph variables, support for 8-64-bit numerical variables, single/double-precision floating-point numbers), the scale with the dynamic variable value changes in real time; dynamic minimum value is greater than the maximum value, the scale labels are still displayed on the last time, does not change; if the value of the variable is entered more than the maximum value, the normal colour of the bar graph is displayed

		to the maximum value, and if you tick the alarm for the overrun, then the corresponding display of the alarm colour (the same with the minimum value)
	Upper/lower limit alarm	Upper and lower alarm limits can be set by ticking the box, default unchecked
		When both values are static, lower limit value < upper limit value < maximum value, minimum value < lower limit value < upper limit value
		an be set as dynamic variables (must be consistent with the bar graph variable type, support 8-64 bit numeric variables, single/double precision floating point numbers)
		The corresponding alarm colour can be set only after the corresponding upper/lower alarm is checked, otherwise it is hidden
	Normal	Set the normal state colour of the bar graph
	Background	Set the background colour of the bar graph, transparent can be ticked
	Border	Set bar graph frame colour, transparent can be ticked
Scale setting	Scale	Default unchecked
		Number of primary scales: default 3, range 2-100, number of secondary scales: default 5, range 0-100
		Length: i.Control the length of main scale and sub-scale at the same time. ii.The length of the secondary scale is 60% of the length of the main scale. iii.Default 20 (length of main scale), range 1-999
		Scale colour: you can set the colour of the scale
		Display position: when the direction of bar graph drawing is [move up], [move down], the display position can be selected as left or right; when the direction of bar graph drawing is [move left], [move right], the display position can be selected as top or bottom
	Scale label	Default unchecked, only after ticking the scale can tick to show the scale label
		Label Decimal Digits: display the value of the scale label, the number of digits is limited according to the variable type of the bar graph, the maximum number of digits is not more than 8 by default 0
		Font Settings: set the font of the scale labels
		Font colour: you can set the colour of the scale label, the same as the colour in the font settings
Extend setting	smooth animation	Default unchecked
		When unchecked, the normal colour of the bar graph will move in a bouncing motion; when checked, it will move in a sliding motion
	target value	Default unchecked
		Target value: set the target value, the range is limited according to the type of bar graph variable
		Target value colour: ticked by default when target value is selected; indicates the colour of the filled area of the bar chart when the value of the bar chart variable is within the range of the target value; at least one of them should be ticked together with the style, and both can be ticked at the same time
		Allowable error: set the range of the target value, the range of error value is limited according to the type of bar chart variable
		Style: default check box when target value is selected, you can set the style and colour, used to indicate the target value range; at least one of the target value and the target value colour can be checked at the same time
previews	Preview effect	When the parameters in the bar graph are modified (parameters: basic settings, scale settings, extended settings), the preview effect will be updated in real time, if the dynamic variables are ticked, the preview effect will keep the effect of the last static value
	BarChart type	Standard: shows the relationship between the current value of the bar graph variable and the set range

		Deviation: display the offset between the current value of the bar graph variable and the original data, check the deviation type to display the input box of the original data, and the range of the original data is restricted according to the maximum and minimum values, the display effect is as follows: 
	BarChart shape	Drawing direction can be selected [Move Up], [Move Down], [Move Left], [Move Right], default [Move Up]

8.6.4.2 graphics

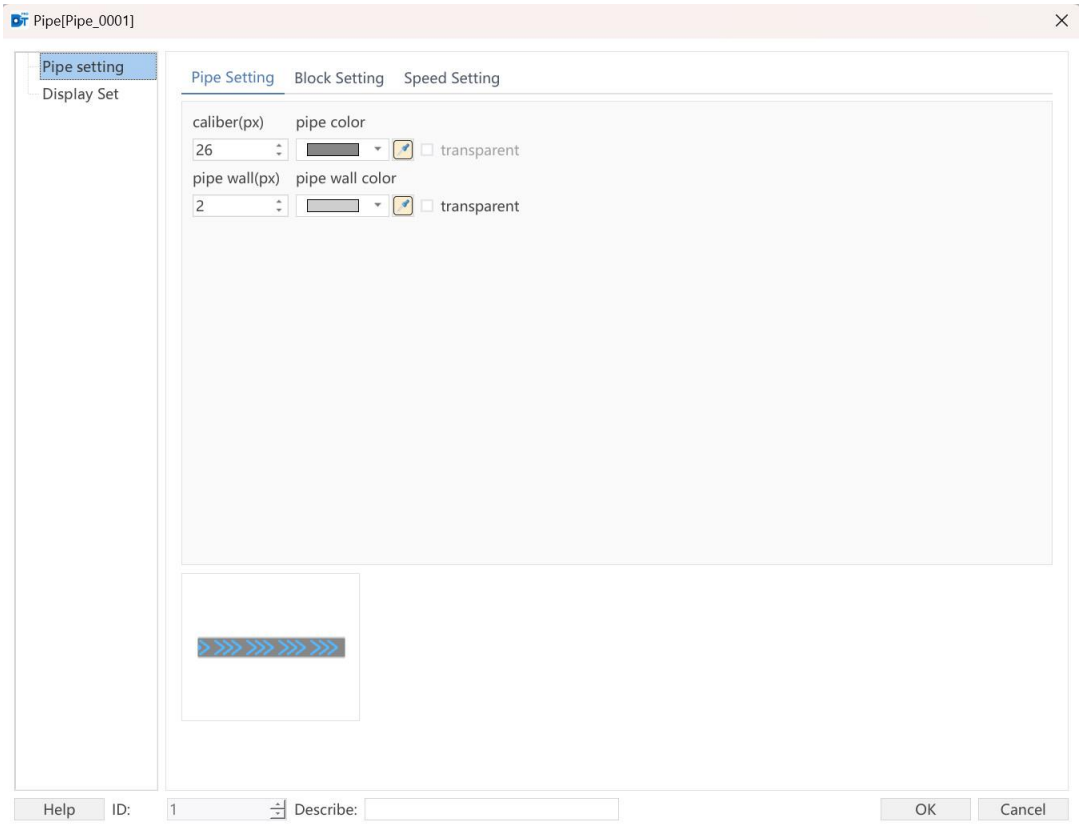
Bar Chart-Graphic Description	
Enable Graphics: unchecked by default, check Enable Graphics, the graphic is displayed in the upper layer of the bar graph (excluding the outer frame), when the graphic is similar to the boiler this kind of middle skeleton graphic, the sliding change of the colour of the bar graph is only displayed in the skeleton, the effect is as follows:  	
Import Graphics	Import required graphics from the system library
Add Graphics	Adding drawings outside of the system library
Original size	Use the original size of the graphic
Batch Import Picture	Batch import of external images in .jpg .jpeg .png .bmp format
Delete	Delete the currently selected graphic
Import Picture	Import a single external image, supported image formats are .jpg .jpeg .png .bmp
Shadow Effects	Add a shadow effect to a picture
Modify Fill	Modify the fill effect of a picture

8.6.4.3 Display Set

Meter-Display Setting Instructions	
Lock	Sets whether the position of the component is locked or not
Fixed ratio	Set the size of the component to calculate the corresponding width or height proportionally. Proportion is the ratio of width and height before [Fixed Aspect Ratio] is ticked
Translucent	Check Enable to set the component's semi-transparency.
Display/Hide	Always display: check to indicate that the current component is always displayed Conditional display: Includes permission control, expression control, no communication when element is hidden and False status in effect. ①Privilege control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ②Expression control: check to indicate that the current component can be displayed only when the state of the specified bit variable or word variable satisfies the set condition ③Do not communicate when hidden: when the variable used by the component is an external variable, check this option and the component will not communicate when it is hidden. ④False state work: Effective in error status

8.6.5 Pipe

8.6.5.1 Pipe setting



Pipeline - Pipeline Property Description		
Pipe Setting	pipe caliber	Default 26, pipe caliber must be greater than or equal to [block width + (pipe wall * 2)].
	pipe colour	Pipe colours can be set, and colours can be modified using the colour picker.
		The Transparent tick box for pipe colour is greyed out by default, when the wall colour is ticked Transparent, it is allowed to set the tick box for Pipe Colour Transparent.
	Pipe wall	Default 2, pipe wall must be less than or equal to [(pipe caliber- flow block width)/2].
	Pipe wall colour	Possibility to set the colour of the tube wall, colour can be modified using the colour picker
		Transparency can be ticked
Block Setting	length	Default 32, range 1-255
	width	Default 16, block width must be less than or equal to [pipe caliber - (pipe wall * 2)].
	spacing	Default 8, range 1-255
	style	Available in 3 styles
	color	Flow block colours can be set and colours can be modified using the colour picker.
		Transparency can be ticked
	dynamic Colour	Default unchecked, ticked to allow the setting of 5 dynamic colours
		When the value of a dynamic variable is equal to the index value, the flow block fills with the colour corresponding to the index of the table.
	relverse flow	Default unchecked, defines the default flow direction based on the direction of drawing
		Static reverse and dynamic reverse selectable
		When [Static Reverse] is selected the flow block flows in the opposite direction.
		Select [Dynamic Reverse], the variable can be associated with Bit, Boolean, Word Fetch, Byte Fetch, Double Word Fetch, Quad Word Fetch, and reverse flow when set to ON.
Speed	flow velocity	This drop-down box is for static flow rate, divided into 1-10 levels, the larger the

Setting		level, the faster the flow rate
	dynamic stop flow effect	It is unchecked by default, and when unchecked, flows according to the static flow rate or the dynamic flow rate by default;
		Check to select bits and expressions
		When bit type: can be associated with Bit, Boolean, Word Fetch, Byte Fetch, Double Word Fetch, Quad Word Fetch.
		When ticked, the flow block will flow at static or dynamic flow rate when OFF or the expression is false, and will stop flowing when ON or true.
	dynamic flow velocity	Default unchecked. When checked, set the current flow rate and maximum flow rate. Flow rate level=|current flow rate|/|maximum flow rate|*10
preview	Preview effect	When the parameters in the pipeline are modified (parameters: pipeline, flow block, flow rate), the preview is updated in real time.
		Show only a section of the horizontal pipeline to preview the effect of the parameters

8.6.5.2 Explanation of pipeline drawing in the configuration window

Pipeline-Configuration Window Pipeline Drawing Instructions		
Individual pipeline drawing	After selecting the pipeline, the mouse becomes cross-shaped, click on the canvas to generate nodes, nodes connected into a line, the right mouse button to click on the first to open the properties window, complete the attribute settings click on the OK button to close the window, the line becomes the default pipeline-like (to create a component success)	
	The angle of pipe corners should not be less than 90°.	
	Drag nodes to change pipe direction and length	
Multi-stage pipeline mapping	Move the mouse to the node (at the intersection of the mouse and the centre line) and right-click: "Add Vector Graphic" and "Add Component" are displayed:	1) Add pipes: ① The mouse becomes the drawing state, automatically defines the cross node as the first node of the new pipeline, and the node where the mouse clicks for the first time is the second node of the new node. ② Added piping elements: default property parameters remain the same as those of the piping being added ③ "New pipeline" moves with cross nodes
		2) Add other components: ① Place the component with the node as the coordinate centre ②Elements can be moved in the central axis of the pipeline where the nodes intersect
	Move the mouse to the axis, right click: "Add Vector Graphic" and "Add Component" are displayed: add as many as you like and insert the component at the vertical intersection of the mouse and the axis.	
Other	Each pipe is a separate pipe element, and the nodes of the pipes form cross nodes when they are close together (adsorption relationship)	
	There is also an adsorption relationship between the pipe and the element, which is automatically vertically centred when the element is close to the pipe node or central axis (allowing movement out of adsorption)	
	Only the picture, switch/light element can form an adsorption relationship with the pipe	
	When there is an adsorption relationship between the element and the pipe, the element loses its locking function, the locking is ineffective and the grey is placed.	

8.6.5.3 **Display Set**

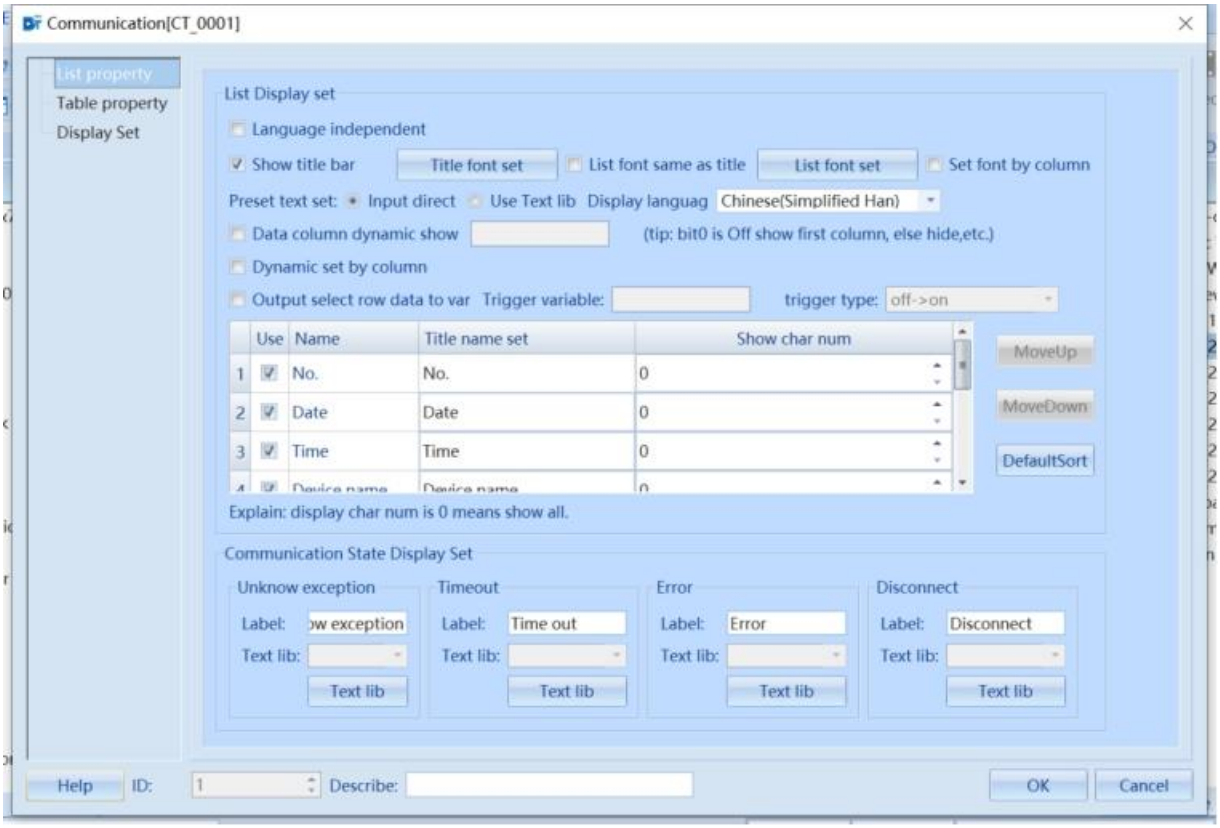
Piping-Display Setup Instructions	
Translucent	Check Enable to set the component's semi-transparency.
Display/Hide	Always display: check to indicate that the current component is always displayed Conditional display: Includes permission control, expression control, no communication when element is hidden and False status in effect. ①Privilege control: checking indicates that the operator needs to have the set privileges to display the current component. ②Expression control: check to indicate that the current component can be displayed only when the state of the specified bit variable or word variable satisfies the set condition ③Do not communicate when hidden: when the variable used by the component is an external variable, check this option and the component will not communicate when it is hidden.

	④False state work: Effective in error status

8.7 Information

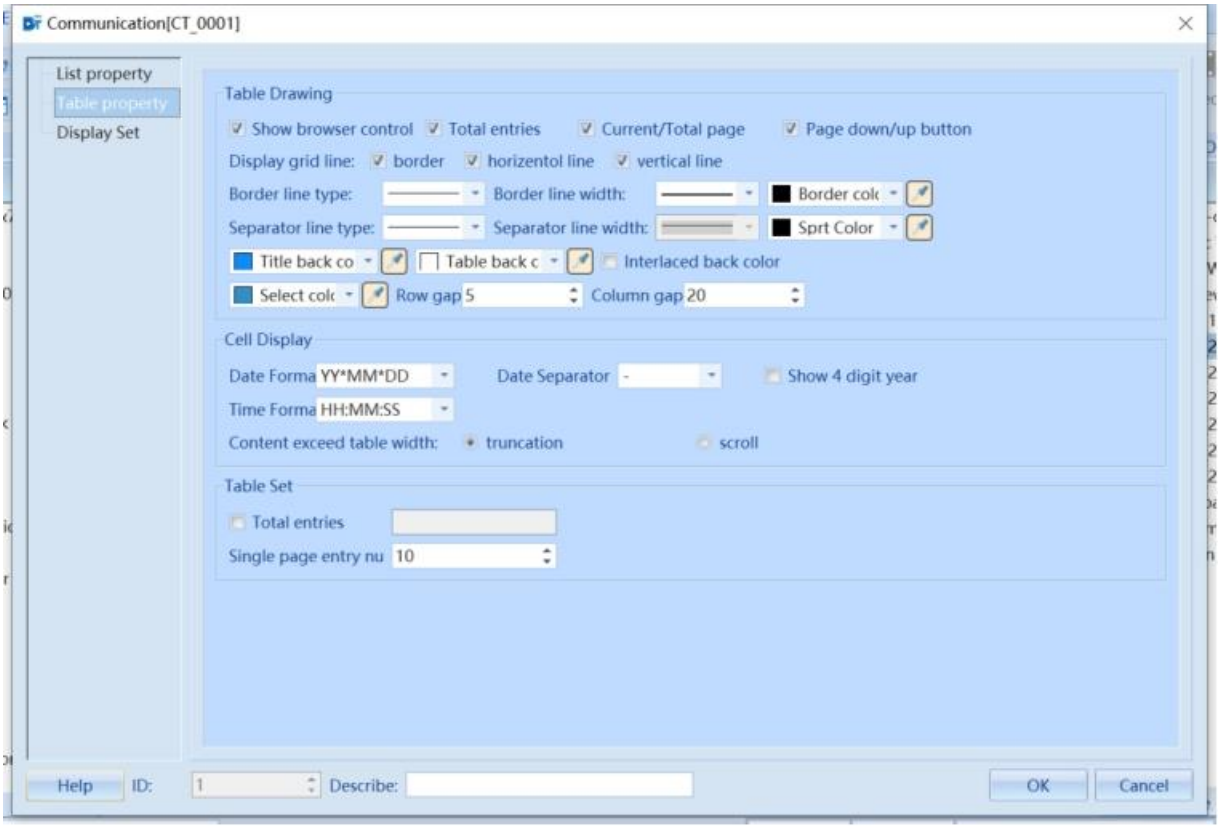
8.7.1 Communication

The “communication” here refers to editing the communication prompt information window, as shown in the following figure. There are three sections: list property, table property, and display set.



List Property Description		
List Display set	Language independent	Effective after checking. Table title bar does not change with language switching
	Show title bar	Effective after checking. Show Title Bar Content
	List font same as title	Effective after checking. Keep the font in the table consistent with the title bar
	Set font by column	Effective after checking. Set fonts separately for each column
	Preset text set	You can choose to directly input text labels. If you want to use a text library label, you need to check the text library
	Data column dynamic show	Using the bit control of a word variable to display the column, the first column is displayed when bit0 is 0, hidden when bit1 is 1, bit1 controls the second column, and so on
	Dynamic set by column	Use bitwise variables to individually control column display. Display when variable is 0, hide when variable is 1
	Output select row data to var	Respectively correspond to column bind variables and output the selected row data to the bind variables
Communicate State Display Set	Unknown	Label setting when unknown exceptions occur in communication. Text library is available
	Timeout	Label setting when communication timeout occurs. Text library is available
	Error	Label setting in case of communication error. Text library is available

	Disconnect	Label setting when communication is not connected. Text library is available

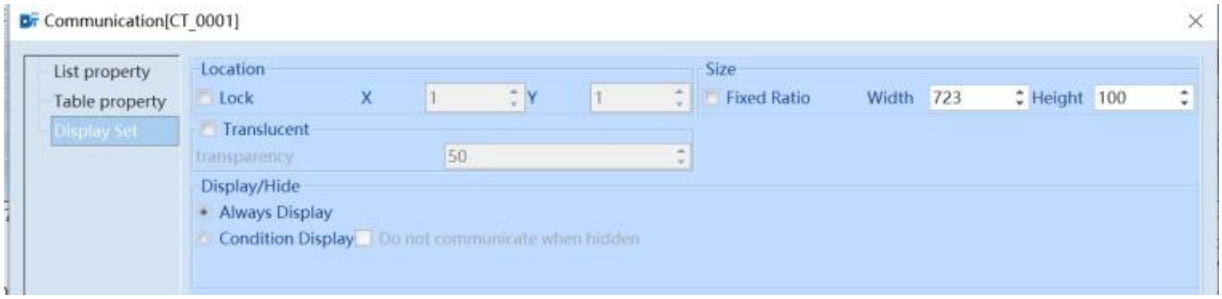


- Table Property: mainly used to set table drawing, cell display, etc.

Check whether to display the browsing control box, whether to display the border, row and column split lines, as well as the types, width and color of the line.

Set the background color of the title bar, table, selected color, row spacing, and column spacing. If the interlaced background color is checked, you can also set the interlaced background color;

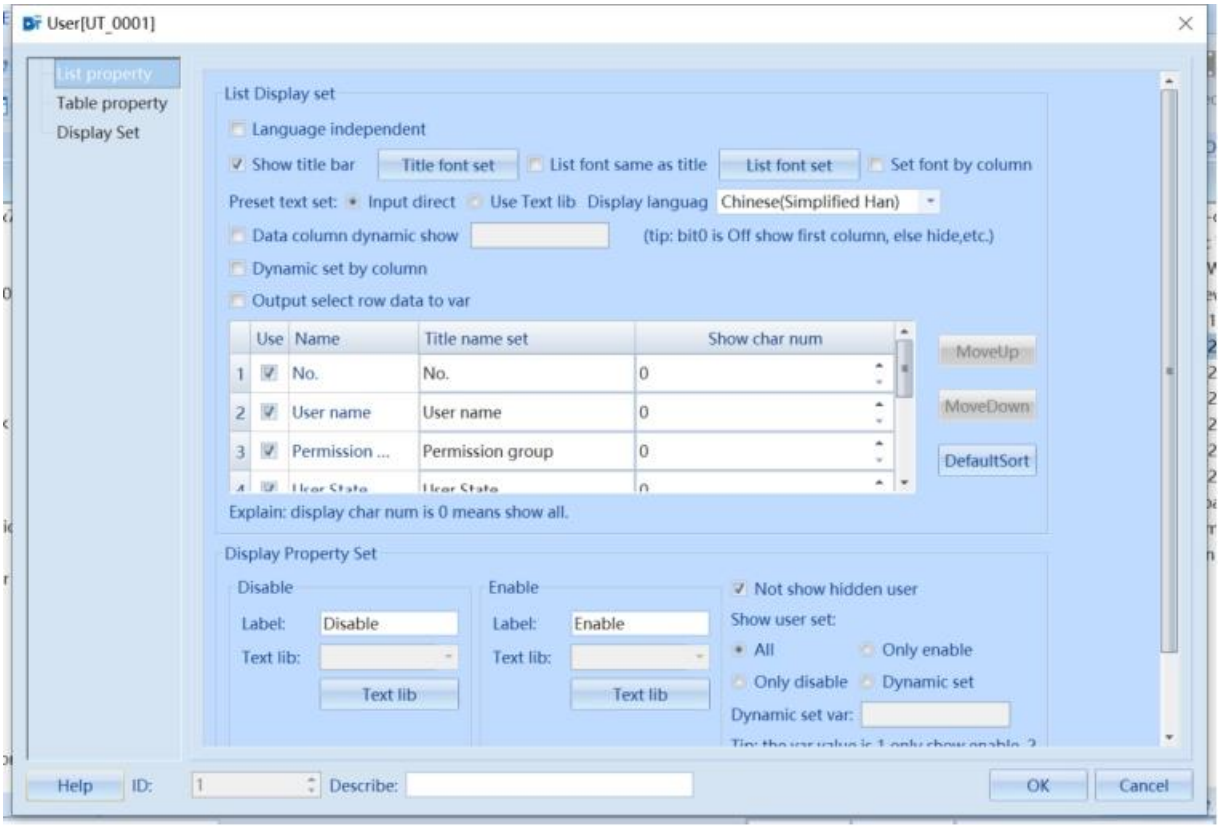
Table setting variables, including total number of entries, number of displayed entries per page, etc.



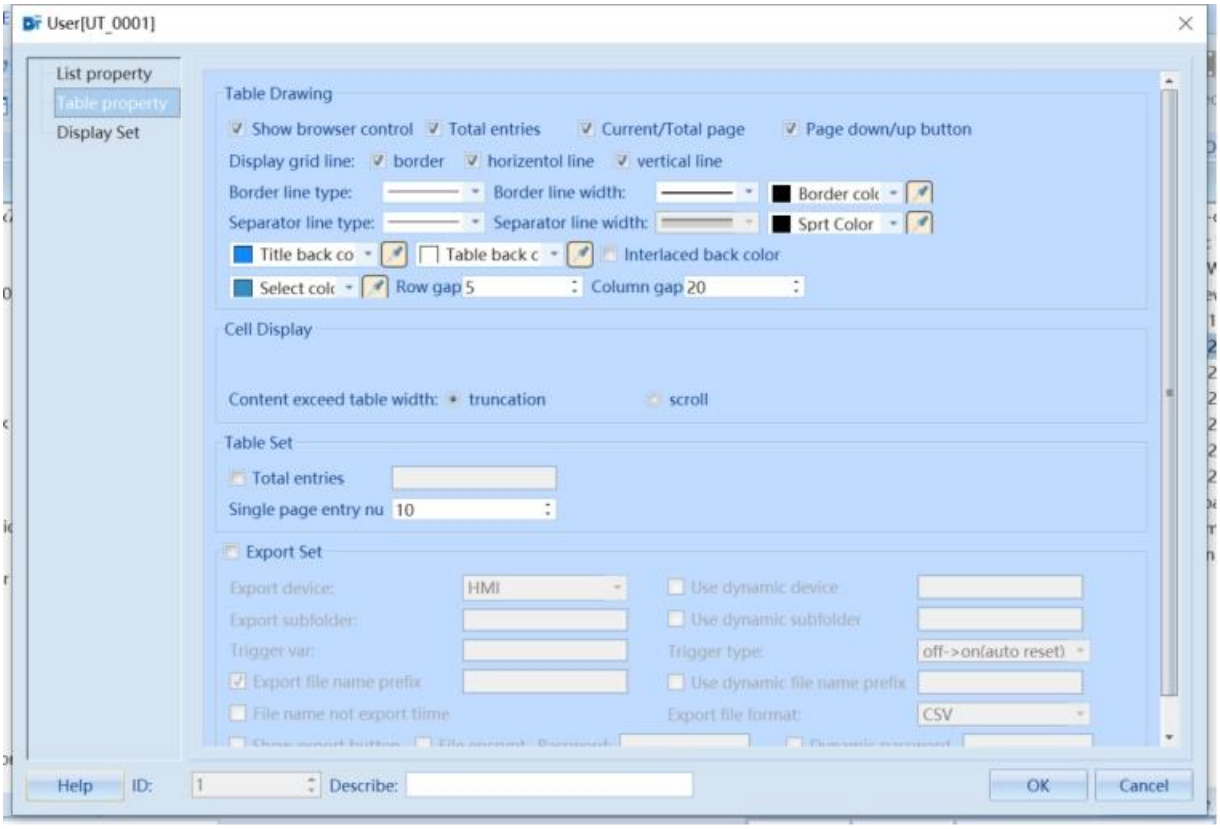
- Display set: modify the position and size of the table, etc.

8.7.2 User

Components that display user information in a table format during configuration

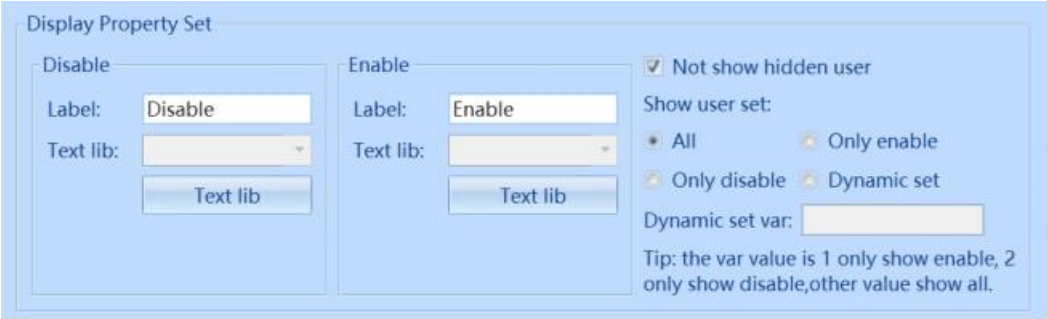


8.7.2.1 List Property



List Property Description

Language independence	Effective after checking. List title bar does not change with language switching
Show Title Bar	Effective after checking. Show Title Bar Content
List font same as title	Effective after checking. Keep the font in the list consistent with the title bar
Set Font by Column	Effective after checking. Set fonts separately for each column
Preset Text Set	You can choose to directly input text labels. If you want to use a text library label, you need to check the text library
Data column dynamic show	Use the bit control column display of word variables. When bit0 is 0, the first column is displayed, when it is 1, it is hidden, bit1 controls the second column, and so on
Dynamic set by column	Use bitwise variables to individually control the column display. Display when the variable is 0, hide when the variable is 1
Output selected row data to var	Respectively correspond to column bind variables and output the selected row data to the bind variables



List Display Property Description	
Disable	Set the status label for disabled users. Text library labels can be used.
Enable	Set the status label of the enabled users. Text library labels can be used.
Not show hidden user	Effective after checking. Do not display hidden user information
Show user set	Select the category for displaying user information. When “only enable” is checked, only users with enabled status will be displayed. “All” are checked by default

8.7.2.2 Table Property

Table drawing and cell display

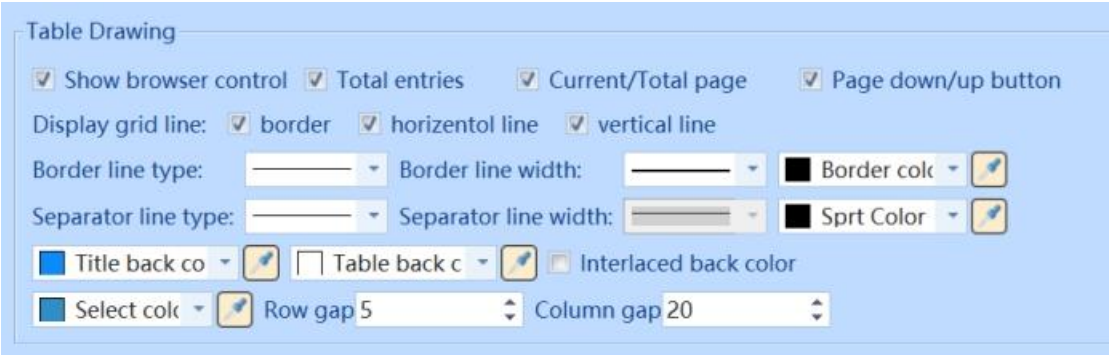


Table drawing and cell display description	
Show browser control	If checked, a browsing control box with a setting icon will be displayed on the user component
Total entries	Display the total number of users for the user component. Effective after checking the 【Display browsing control box】
Current/Total page	Display the current page and total number of pages of the user component. Effective after checking the 【Display browsing control box】

Page down/up button	Users on each page can be displayed by clicking the up and down switch button. Effective after checking the 【Display browsing control box】
Display grid line	Set display borders, row separators, and column separators
Border line type	Set the border line type
Border line width	Set border line width
Border line color	Set the outer frame color. The color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Separation Line type
Separator line color	Set the color of the separator line. The color picker can absorb all the colors on the computer screen at this time
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Check to take effect. Set the background color for separating rows between two rows
Select color	Set the color of the selected user information, and the color picker can absorb all colors on the computer screen at this time
Row gap	Set data table row spacing
Column gap	Set data table column spacing
Content exceeds table width	Truncation: Exceeding content is truncated
	Scroll: Content scrolling displays all

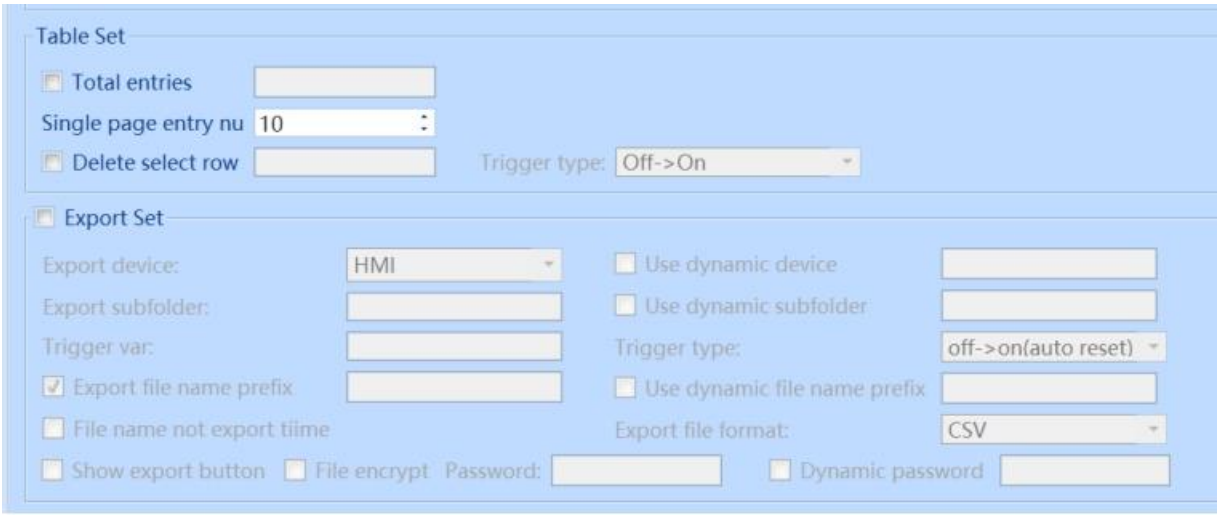
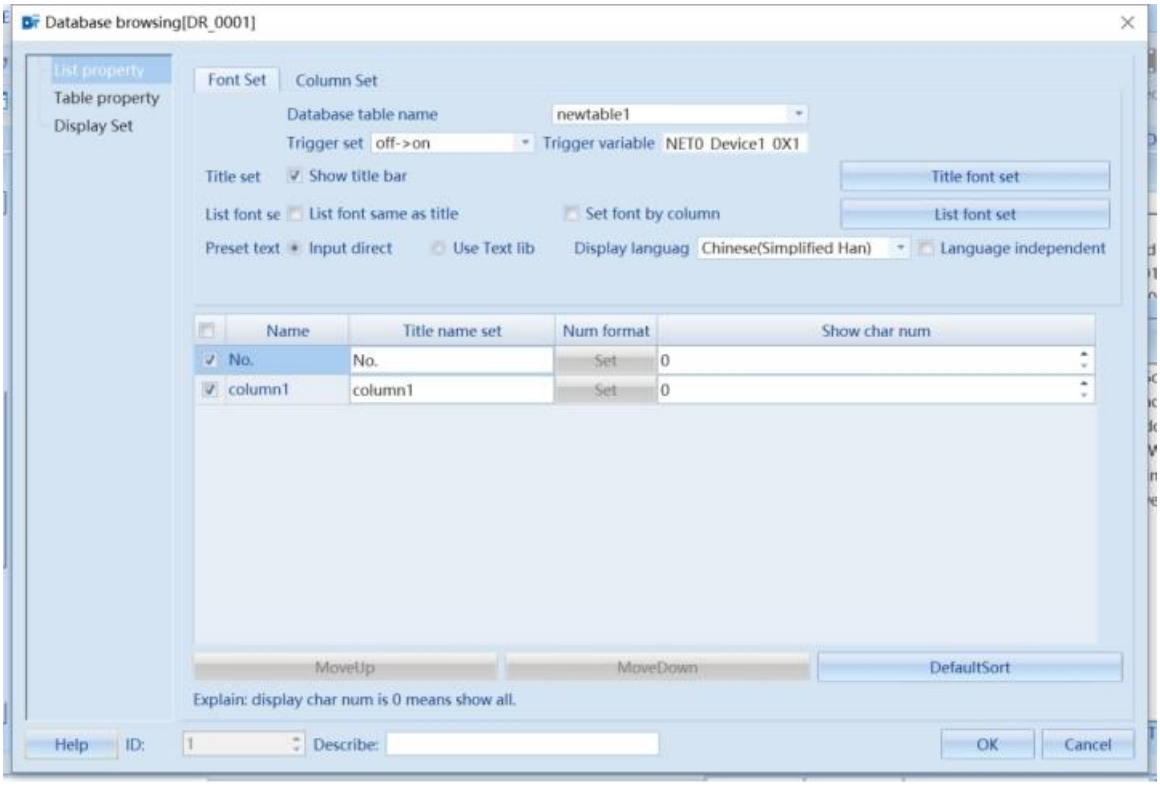


Table Set and Export Set Instructions	
Total entries	Display the current total number of users using word variables
Single page entry num	Set the number of users displayed on each page
Export device	Export and save the displayed user components to an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the sub folder name for exporting user information. User information is saved by default in the "data/doc" folder of the project root directory
Use dynamic subfolder	Using string variables to dynamically set sub folder names
Trigger variable	Set variables that trigger export

Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for the exported user, and the default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name not export time	If checked, the exported file name does not include the export time
Export file format	Set the file format for exporting recipes, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encrypt】 is not checked, the exported file format is the file format set in the 【Export File Format】 option. Simply open the file
Password	Use string variables to dynamically set the password for file encryption, which is valid when 【File Encryption】 is checked

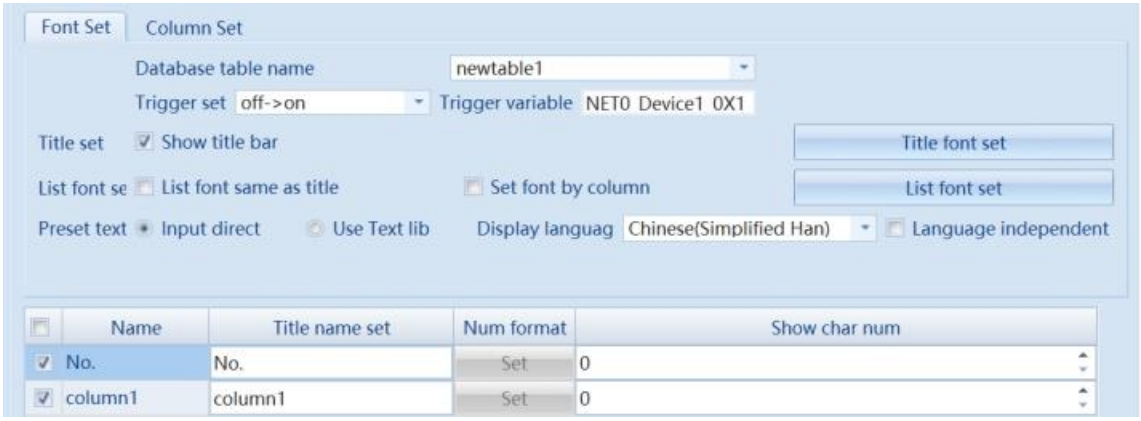
8.7.3 Database table

The database table component displays the content in the database in the form of reports. Used in conjunction with Chapter 8.3.1.11 Database Action Settings and Chapter10.1 Network Database.



8.7.3.1 List property set

- **Font Set**



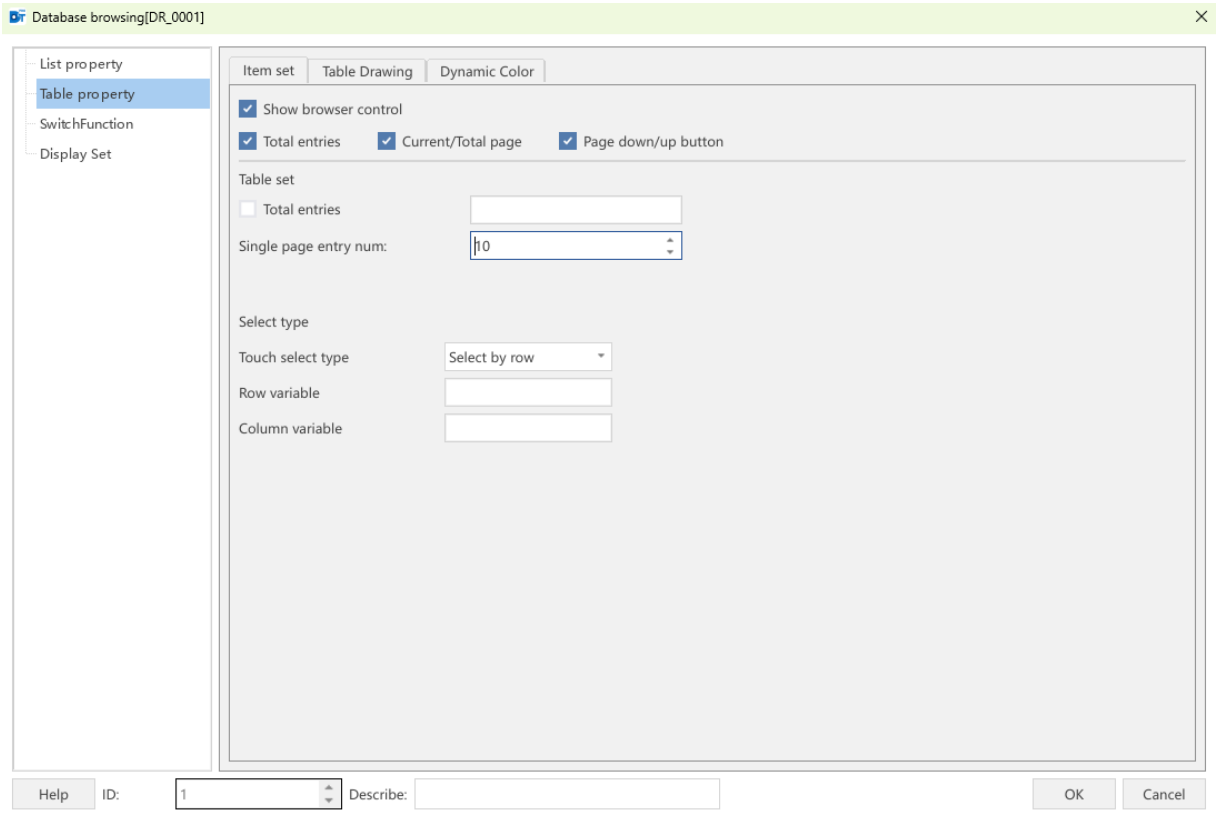
List Property Set- Font Set description		
Database table name	Select the required database tables in both local and remote databases	
Trigger set	When the set bit variable meets the conditions, query the data.	
	off->on	Only when the state of the positioning variable changes from off to on will the query data be triggered
	on->off	Only when the state of the positioning variable changes from on to off will the query data be triggered
	off<->on	Only when the state of the positioning variable changes, will the query data be triggered
	off->on (automatic reset)	The query data is only triggered when the state of the positioning variable changes from off to on. Automatically reset the positioning variable state after triggering
	on->off (automatic reset)	The query data is only triggered when the state of the positioning variable changes from on to off. Automatically reset the positioning variable state after triggering
Language independent	Effective after checking, the table title bar does not change with language switching.	
Title font set	Effective after checking, displaying the content of the title bar	
List font set	List font same as the title	Effective after checking. Keep the font in the table consistent with the title bar
	Set Font by Column	Effective after checking. Set fonts separately for each column
Preset text	You can choose to directly input text labels. If you want to use a text library label, you need to check the text library	

- Column Set

List Property Set-Column Set Description	
Dynamic set (Data column)	Use the bit control column display of word variables. Display the first column when bit0 is 0, and hide it when bit0 is 1; Bit1 controls the second column, and so on
Dynamic set (Column)	Use bitwise variables to individually control column display. Display when variable is 0, hide when variable is 1
Output select row data to var	Respectively correspond to column bind variables and output the selected row data to the bind variables
Num format	Field types include 8-bit signed numbers, 8-bit unsigned numbers, 16-bit signed numbers, 16-bit unsigned numbers, 32-bit signed numbers, 32-bit unsigned numbers, 64-bit signed numbers, 64-bit unsigned numbers, single precision, and double precision. Support setting numerical format display separately. Please refer to 8.4 Data Display for details of the numeric format

8.7.3.2 Table Property

- Item Set



Item Set description	
Show browse	If checked, the browsing control box with the setting icon will be displayed on the database table
Total entries	The total number of entries in the current database table. Valid when [Show Browsing Control Box] is checked
Current/Total page(s)	The current page of the table and the total number of pages are displayed.
Page down/up	Pages can be scrolled up and down
Table set – Total entries	When the variable is checked and associated, the total number of entries is output to the variable.
Single page entry num	Set the number of entries per page to be displayed
Trigger select type	It is divided into select by row and select by cell
Row variable	A numeric variable, that holds the number of rows
Column variable	A numeric variable that holds the number of columns

- Table Drawing

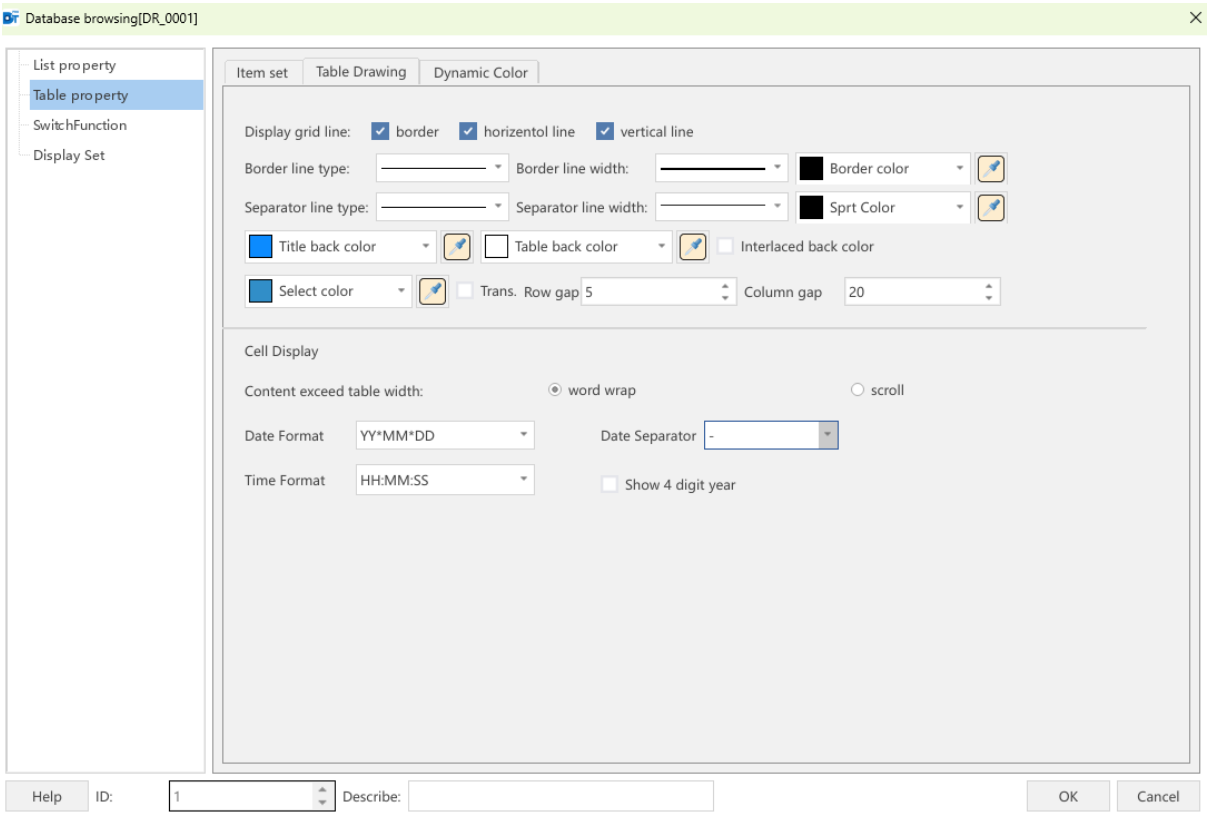
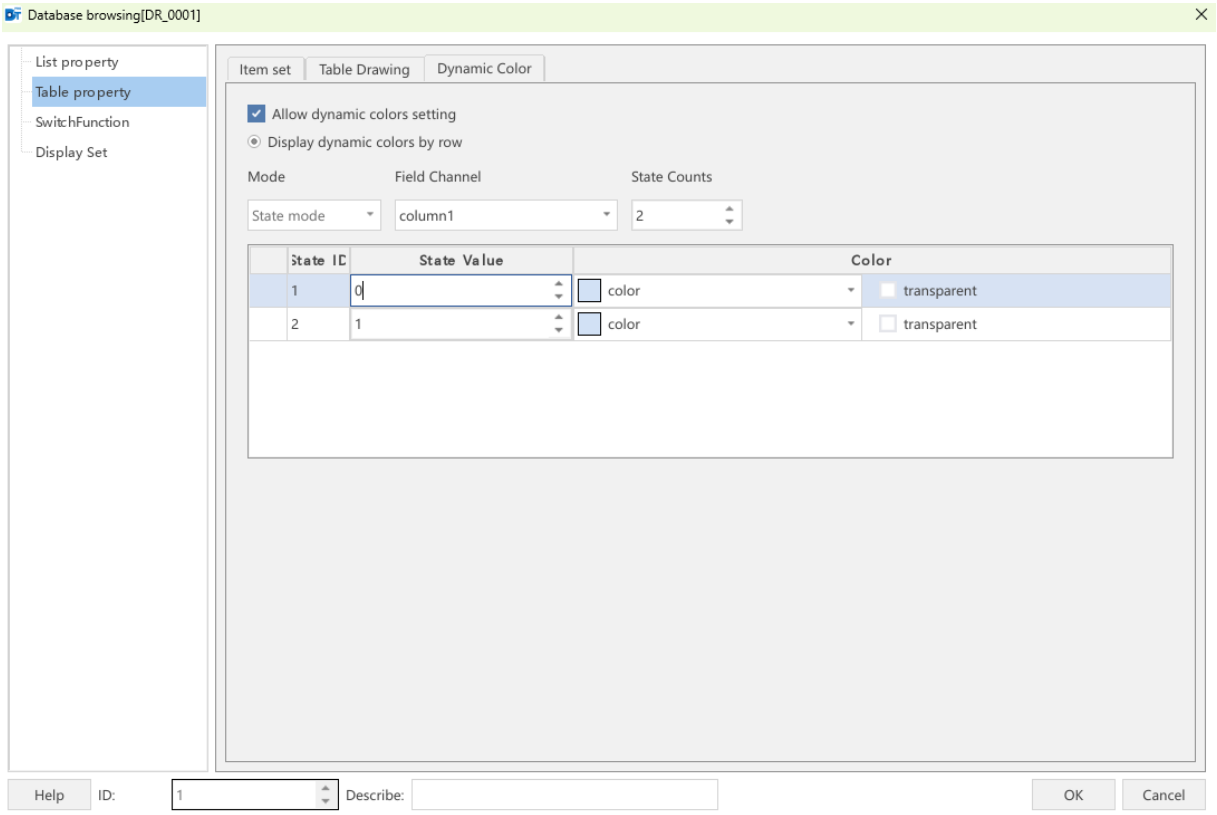


Table Drawing description	
Display grid line	Set display borders, row separators, and column separators
Border line type	Set the border line type
Border line width	Set border line width
Border line color	Set the outer frame color. The color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Separation Line type
Separator line width	Setting separator line width is currently not supported
Separator line color	Set the color of the separator line. The color picker can absorb all the colors on the computer screen at this time
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Check to take effect. Set the background color for separating rows between two rows
Select color	Set the color of the selected user information, and the color picker can absorb all colors on the computer screen at this time
Row gap	Set data table row spacing
Column gap	Set data table column spacing
Date format	Format the date contained in the field
Date separator	Set the separator for the date contained in the field
Show 4-digit year	After checking, the year can be displayed in 4 digits, otherwise it will be displayed in 2 digits. For example, for the year 2008, it displays "2008" if 【Show 4-digit year】 is selected; If 【Show 4-digit year】is not selected, only 2 digits will be displayed, i.e. '08'
Time format	Format the time contained in the field

- Dynamic Color



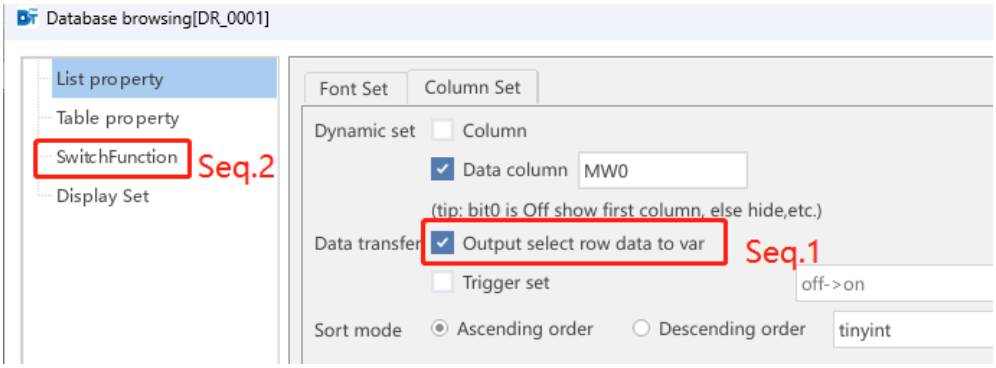
Dynamic Color description	
Allow Dynamic color Settings	If this parameter is selected, dynamic colors are allowed
Display Dynamic colors by row	Display the dynamic colors of the Settings by row
Mode	state mode
Field Selection	The field cannot be empty. The field type can be bits, 8-64 bits, or floating point. Other types of the above types cannot be selected
State Counts	1. If the field is a bit, there are 2 rows by default. The number of states is 1 and 2; The status values are 0 and 1; 2. Floating-point and word, the default has 1 line, the number of states is 1; The status value is 0; Change the number of states, the default state value is [state ID-1], the range is determined according to the field type;
State ID	The default value cannot be modified
State Value	1. If the field is a bit, there are 2 rows by default. The number of states is 1 and 2; The status values are 0 and 1; 2. Floating-point and word, the default has 1 line, the number of states is 1; The status value is 0; Change the number of states, the default state value is [state ID-1], the range is determined according to the field type;
Color	When the data in a field is equal to the status value, the corresponding status value color is displayed in the row to which the field belongs

8.7.3.3 Switch Function

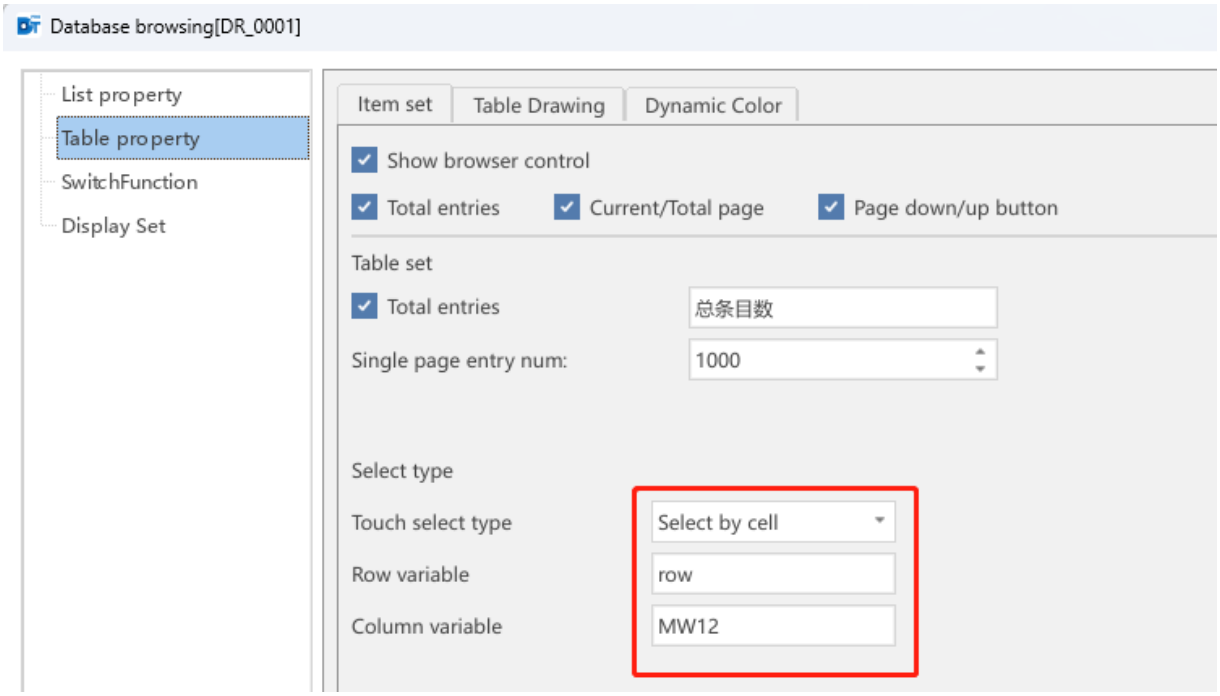
Touching any area of the database table component can trigger the actions set in the touch "SwitchFunction" attribute, and can execute corresponding bit trigger actions, database actions, etc., including complete switch functions.

Note:

1.When using 'Output Selected Row Data to Variables' at the same time, priority is given to executing the action of outputting the selected row, followed by executing the switch function action

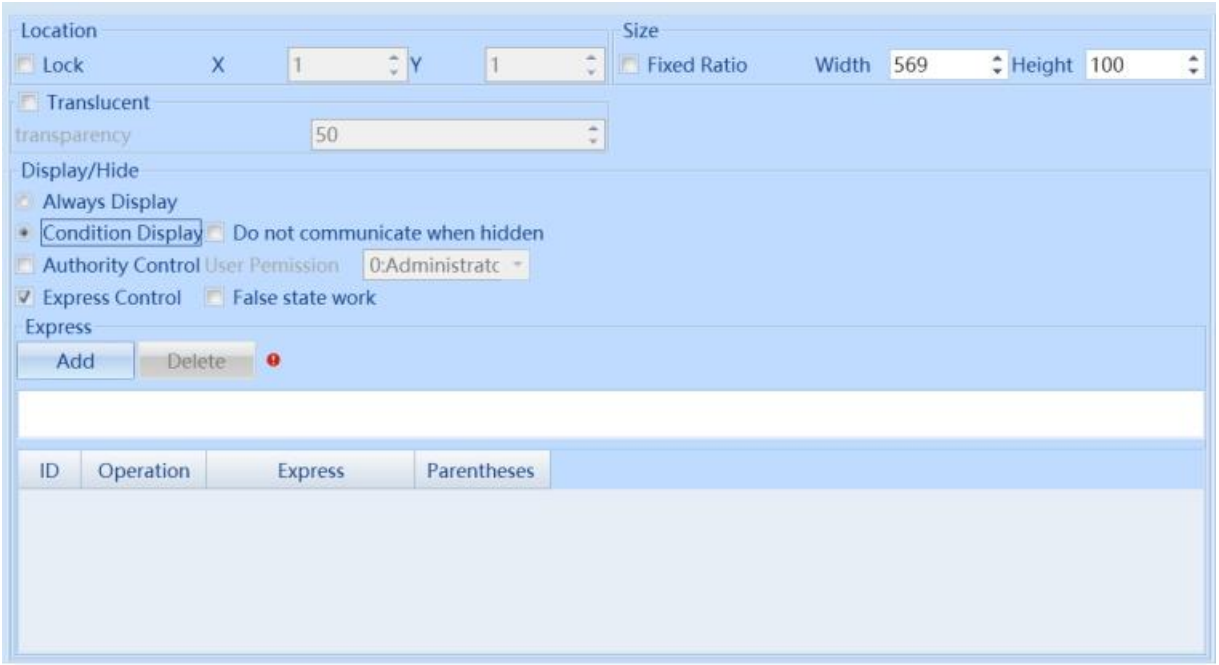


2.When selecting by row/by cell, assign values to the row and column variables. When the variable values change, automatically selecting the row and column will also trigger the switch action of the touch database table browsing component



For the introduction of "Switch Functions", refer to the directory "8.1.4 Switch Functions". Click to jump to the introduction of "8.1.4 Set switch functions"

8.7.3.4 Display Set

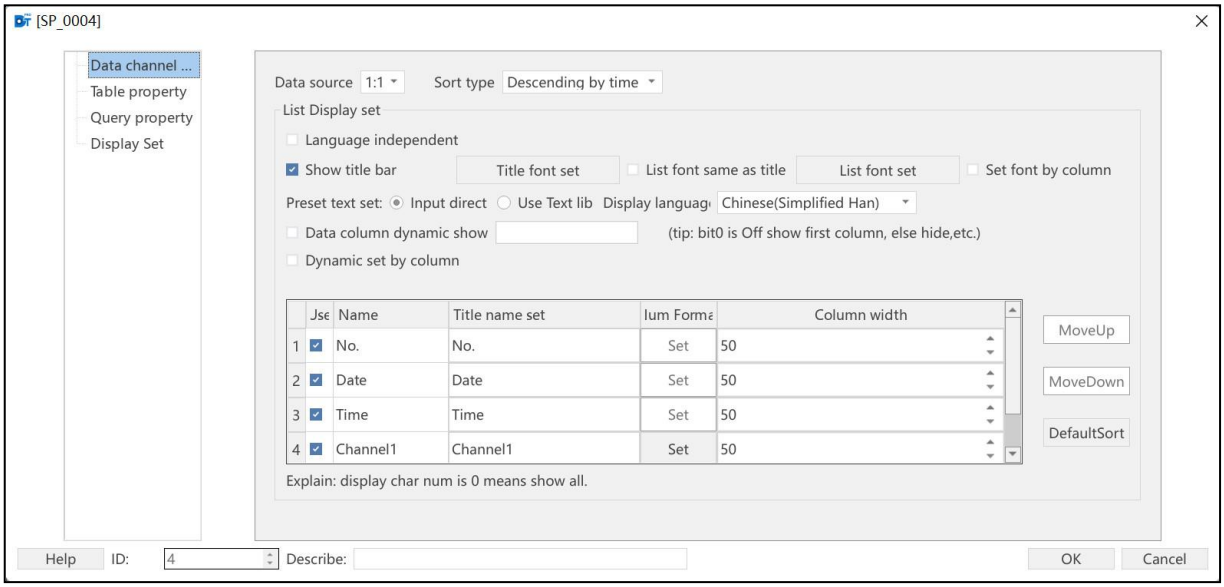


Display set description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control:Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

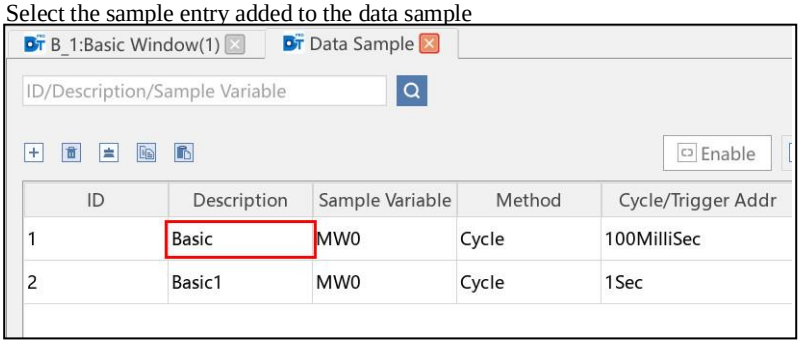
8.7.4 History data

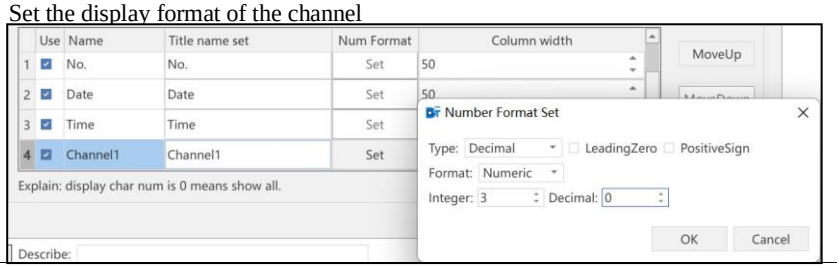
History data is used to display the data of the data sampling background, which can be set up for real-time data reading, historical data query reading, data export and other functions.

【Historical Data Components】screen

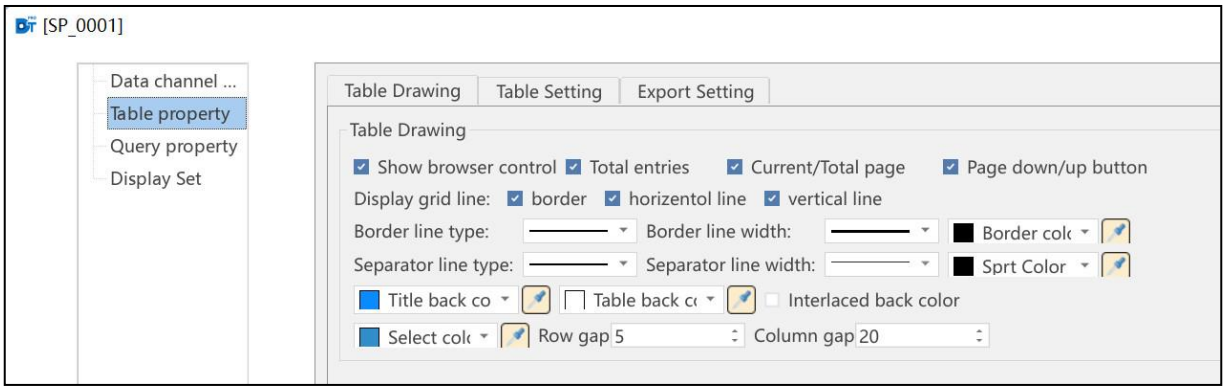


8.7.4.1 Data Channel Properties

Historical Data - Description of Data Channel Properties	
Data source	Select the sample entry added to the data sample  
Sort type	Set the sorting method for historical data display on the current component
Language independent	The checkbox is valid, the selection box after "Show language" is invalid and the component shows the default language
Show title bar	Check to take effect, the component displays the content of the title bar, the default check
Title font set	Set the title bar font related properties, this is only valid when 【Show Title Bar】 is checked
list font as title	Checked to take effect, the list font properties and title bar font properties consistent
List Font Set	Set the properties related to the list font
Set font by column	Check to take effect, the event properties of the data table will appear in the "column font settings" content, you can set the font properties of each column separately
Preset text set	You can choose to enter the text label directly, if you want to use the text library label need to check the text library
Display Language	Set the title bar language, 【Language is not relevant】 is unchecked, 【Show title bar】 is valid when checked
Dynamic columns dynamic show	Use the bits of the word variable to control the column display, bit0 is 0 to show the first column, 1 to hide, bit1 to control the second column, and so on
Dynamic set by column	Use bit variables to individually control column display, show when 0, hide when 1
Move up	When the data table row is selected, click 【Move Up】 to move up the selected

	row. Except for the first row of the data table is selected, the 【Move Up】 button is valid
Move down	When a data table row is selected, click 【Move Down】 to move down the selected row. Except for the last row of the data table is selected, the 【Move Down】 button is valid
Default Sort	Restore to the original sorting of the data table
Numerical format	Set the display format of the channel 
Display characters	The number of characters displayed can be set

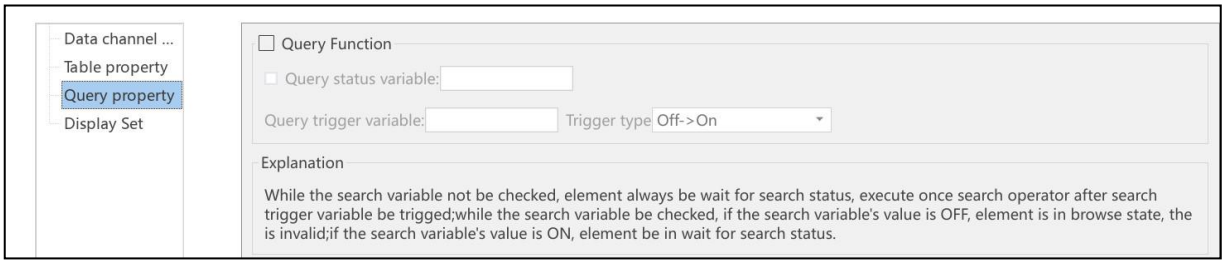
8.7.4.2 Table Property



Historical Data - Table Property Descriptio		
Table Drawing	Show Browse Control	Check the browsing control box that displays the settings icon on the history data component, containing the total number of entries, the current page/total pages, and the content of the up/down page toggle button (provided all three options are checked)
	Current Page/Total Pages	The current page and the total number of pages of current data information displayed in the history data element are valid when 【Show Browse Control】 and 【Paging Display】 are checked.
	Page up/down switch button	Used to page up and down the history data, effective when 【Show Browse Control】 and 【Paging】 are checked
	Show Spacer	Set the display outer frame, row dividers and column dividers
	Border line type	Set the outer frame line type
	Border line width	Set the outer frame line width
	Border color	Set the color of the outer frame, the color picker can absorb all the colors on the computer screen at this time
	Separator line type	Set separator line type
	Separator line width	Set separator line type
	Separator color	Set the separator color, the color picker can absorb all the colors on the computer screen at this time
	Title background color	Set the background color of the title bar, the color picker can absorb all the colors on the computer screen at this time
	Table background color	Set the table background color, the color picker can absorb all the colors on the computer screen at this time
	Interlaced background color	Set the background color of the line separating two rows
	Selected colors	Set the color of the selected history data, the color picker can absorb all the colors on the computer screen at this time
	Row spacing	Set data table row spacing

	Column spacing	Set data table column spacing
Table setting	Date Format	Set the format of the sampling information date
	Date separator	Set the separator for the date of the sampling information
	Display 4-digit year	Check the year to display 4 digits, otherwise display 2 digits. Such as 2008, then display "2008"; unchecked, then only display 2 digits, that is, "08"
	Time Format	Set the format of the historical data time
	Display content beyond the table width	When the content of historical data exceeds the width of the table, you can check Truncate or Scroll. If set to scroll, you can set the scrolling step and speed
	Total number of entries	Use the word variable to display the total number of data entries for the current historical data
	Number of entries per page	Use constants to set the number of entries per page to display historical data
export setting	Export Devices	Export and save the data displayed by the current historical data element to an external storage devic
	Using dynamic devices	Dynamically set the export device using string variables
	Export subfolder	Set the name of the subfolder for exporting history data, if this item is empty, the history data will be saved in the "data" folder in the project root directory by default.
	Using dynamic subfolders	Set subfolder names dynamically using string variables
	Trigger variables	Set the variables that trigger the export
	Trigger Ty	Set the trigger type of the trigger variable
	Export file name prefix	Set the file name prefix for exporting historical data, the file name defaults to a combination of date and time
	Use dynamic file name prefixes	Dynamically set file name prefixes using string variables
	File name does not include export time	Check this box to exclude the export time from the export file name
	Export file format	Export historical data in file format, including CSV and PDF
	Show Export button	The Export button will be displayed on the component if it is checked
	File Encryption	If 【File Encryption】 is unchecked, the exported file format is the file format set in the 【Export File Format】 option, and you can open the file directly.
	Dynamic Password	Dynamically set the password for file encryption using string variables

8.7.4.3 Query Function

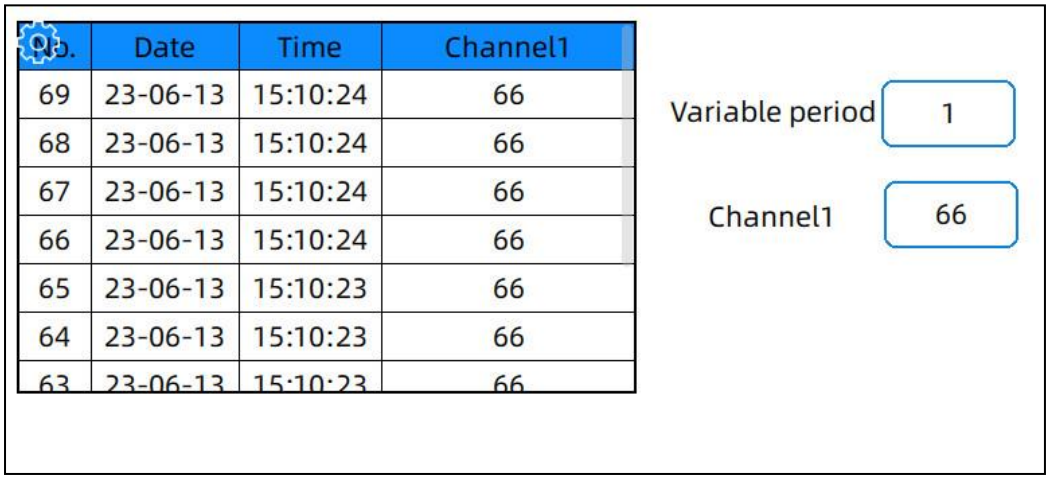


Historical data-query setting instructions	
Using the query function	Check the historical data query function as needed Unchecked: all historical data can be displayed without query, real-time data is displayed Check: Open the query function, and display the corresponding historical data after the query is triggered
Query status variables	The query status variable can be used to toggle whether the query is enabled or not, ON to enable, OFF to display all
Query Trigger Variables	The query status variable is unchecked, and a query is executed after the query trigger variable meets the trigger method.
	The query status variable is checked, and when the status variable is ON, the query trigger variable will execute a query after meeting the trigger mode; when the status variable is OFF, the query function is disabled, and all the historical data will be displayed

8.7.4.4 Display Set

Historical data - Display setting instruction	
Location	Set whether the position of the component is locked or not
Size	Set the size of the component to calculate the corresponding width or height in proportion. The ratio is the ratio of width and height before 【Fixed Ratio】 is checked
Display/Hide	Show all the time: Check to keep the current component displayed all the time Conditional display: including permission control, expression control, no communication when the component is hidden and False state is in effect ① Permission Control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ②Expression control: Checking indicates that the current component can be displayed only when the state of the specified bit variable or word variable meets the set conditions. ③No communication when the component is hidden: When the variable used by the component is an external variable, check this option, the component will not communicate when it is hidden. ④False status takes effect: When the error status takes effect

Off-line simulation effects:

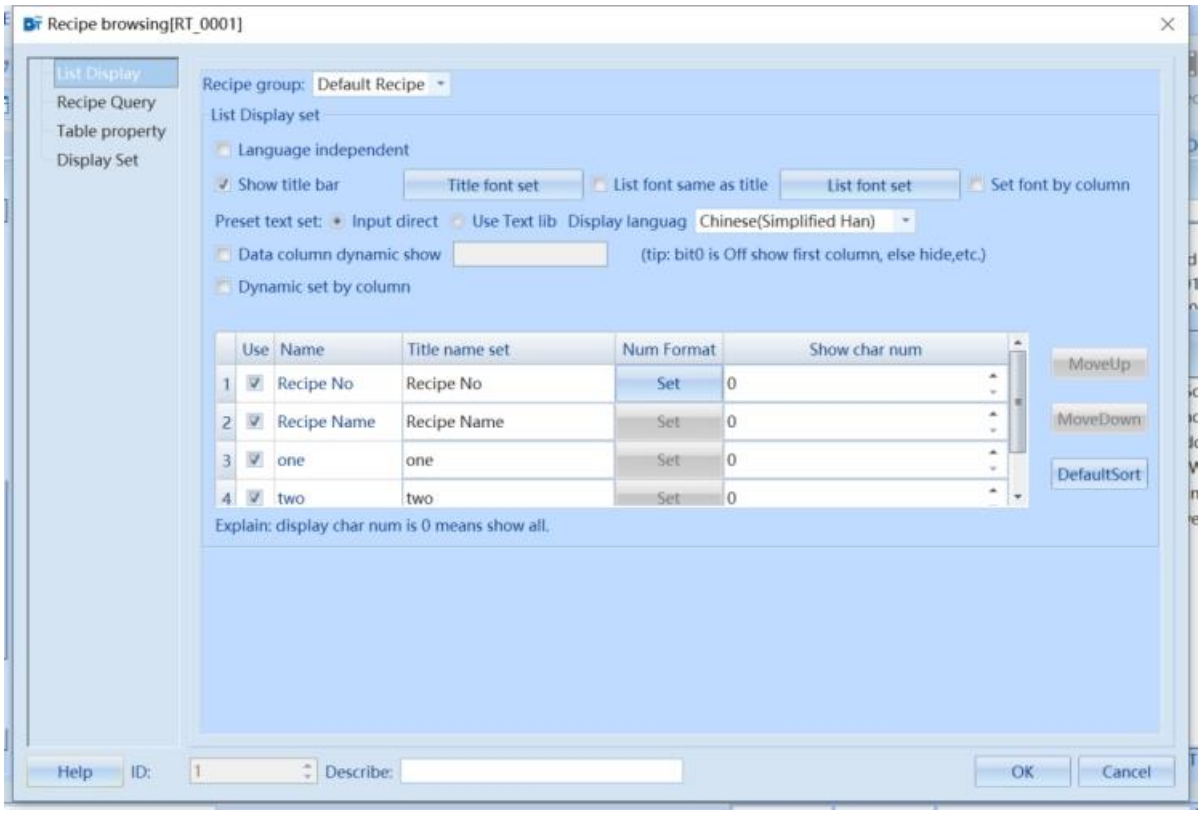


8.7.5 Recipe

As shown in the following figure, the recipe in the information list is a recipe display component that needs to be used in conjunction with the recipe setting function in the project. The recipe group in the figure below is set by yourself in the recipe setting in the project list. This control is only for recipe display. Select the desired recipe group to set accordingly. Please refer to Chapter 16: Recipe for the recipe settings.

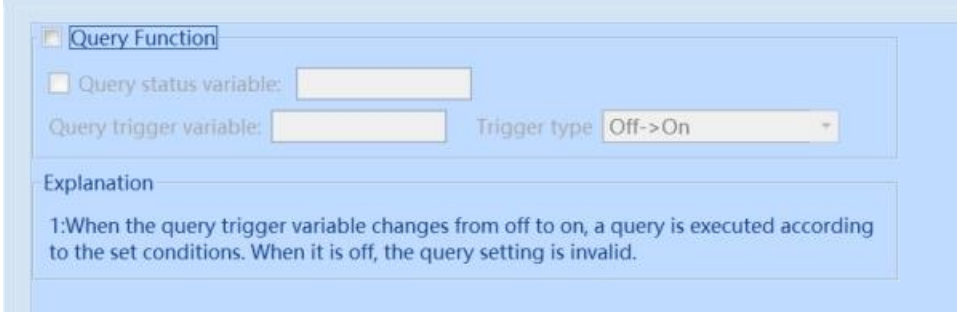
The recipe components mainly include four sections: list display, recipe query, table property, and display set.

8.7.5.1 List Property



List Property description	
Language independent	Effective after checking. The table title bar does not change with language switching
Show title bar	Effective after checking. Display the content of the title bar
List font same as title	Effective after checking. Keep the font in the table consistent with the title bar
Set font by column	Effective after checking. Set fonts separately for each column
Preset text set	You can choose to directly input text labels. If you want to use a text library label, you need to check the text library
Data column dynamic show	Use the bit control column display of word variables. When bit0 is 0, the first column is displayed, when it is 1, it is hidden, bit1 controls the second column, and so on
Dynamic set by column	Use bitwise variables to individually control the column display. Display when the variable is 0, hide when the variable is 1
Output the data of the selected row to variable	Respectively correspond to column bind variables and output the selected row data to the bind variables

8.7.5.2 Recipe query



Recipe query description

Query function	Check the formula query function as needed Unchecked: Display all recipe data without querying Check: Enable query function
Query status variable	The query status variable can be used to switch whether to enable the query. It is enabled when it is ON and all are displayed when it is OFF
Query trigger variable	When the query status variable is not checked, execute a query once the trigger variable meets the trigger method
	Check the query status variable, and when the status variable is ON, execute a query once the trigger variable meets the trigger method. When the status variable is OFF, the query function fails and all recipe data is displayed

8.7.5.3 Table Property

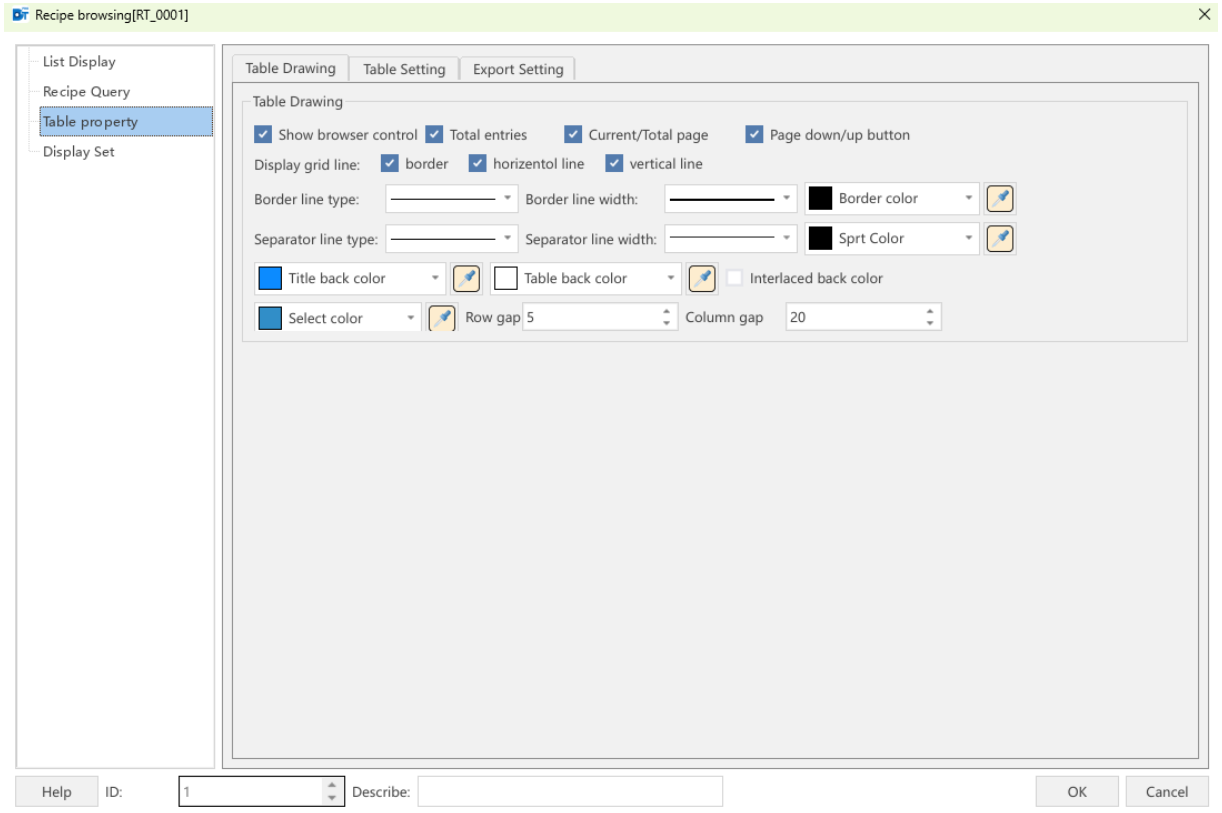


Table Drawing description	
Show browser control	If checked, a browsing control box with a setting icon will be displayed on the recipe component
Total entries	The total number of recipes for the current recipe element. Effective when checking 【Show browser control】 box.
Current /Total Page	If this parameter is selected, the current page count and total page count are displayed
Page down/up button	if this parameter is selected, the up-down switch button is displayed
Display grid line	Set Displaysof the outer frame, row divider, and column divider
Border line type	Set the border line type
Border line width	Set border line width
Border color	Set the color of the outer frame, and the color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Split Line type
Separator line width	Set Split Line type
Sprt Color	Set the split line color. The color picker can absorb all the colors on the computer screen at this time

Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Set the background color for separating rows between two rows
Select color	Set the color of the selected event information. The color picker can absorb all the colors on the computer screen at this time
Row gap	Set data table row spacing
Column gap	Set data table column spacing
Total entries	Use word variables to display the total number of recipes for the current recipe component
Delete Selected Rows	Use the state control of bit variables to delete the currently selected event information. When checked, the 【Trigger Type】 is valid
Export device	Export and save the displayed recipe of the current recipe component in an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the name of the sub folder for exporting event information. If this option is blank, the event information will be saved in the "data" path of the project root directory by default during offline simulation. On screen, it is saved in the "disk/hmi" path by default
Use dynamic subfolder	Dynamically setting the name of a subfolder using string variables
Trigger var	Set variables that trigger export
Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for exporting the recipe, with a default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name do not include export time	If checked, the exported file name does not include the export time
Export file format	Set the file format for exporting recipes, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encrypt】 is not checked, the exported file format is the file format set in the 【Export File Format】 option and can be opened directly
Dynamic password	Dynamically setting the password for file encryption using string variables

- Table setting

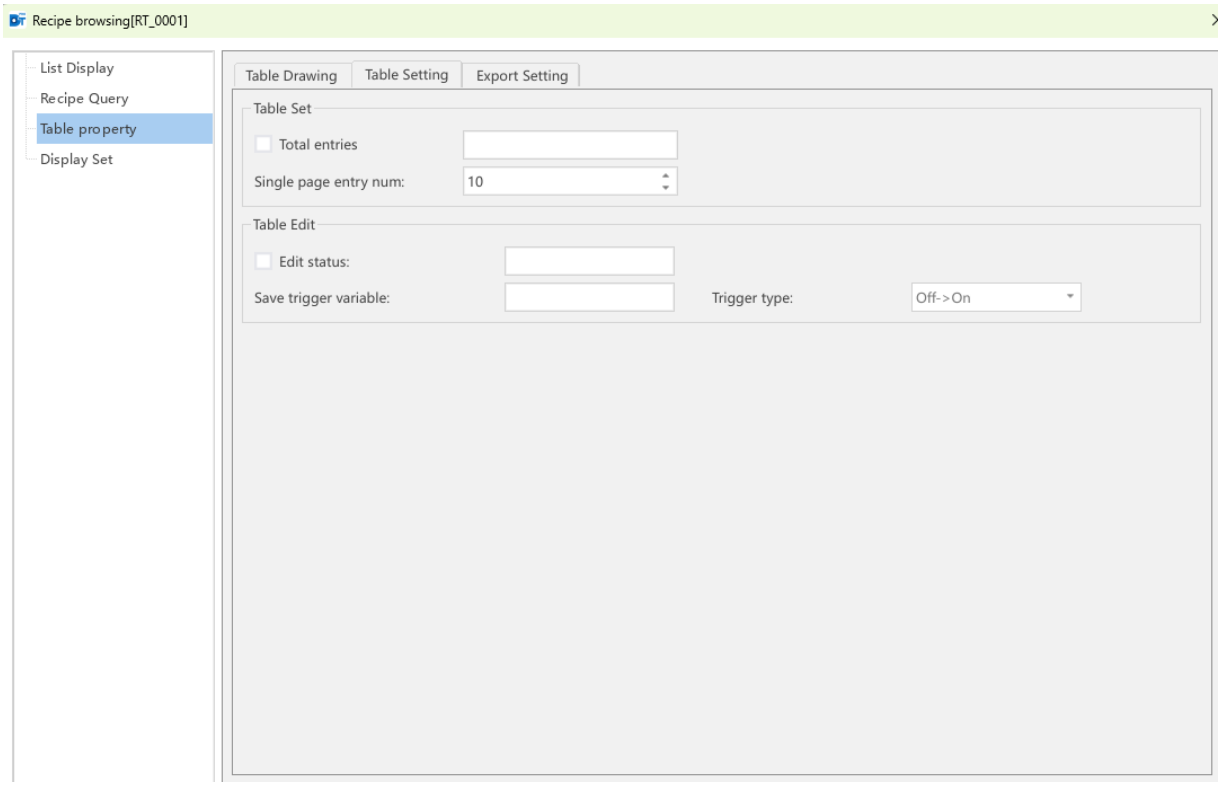
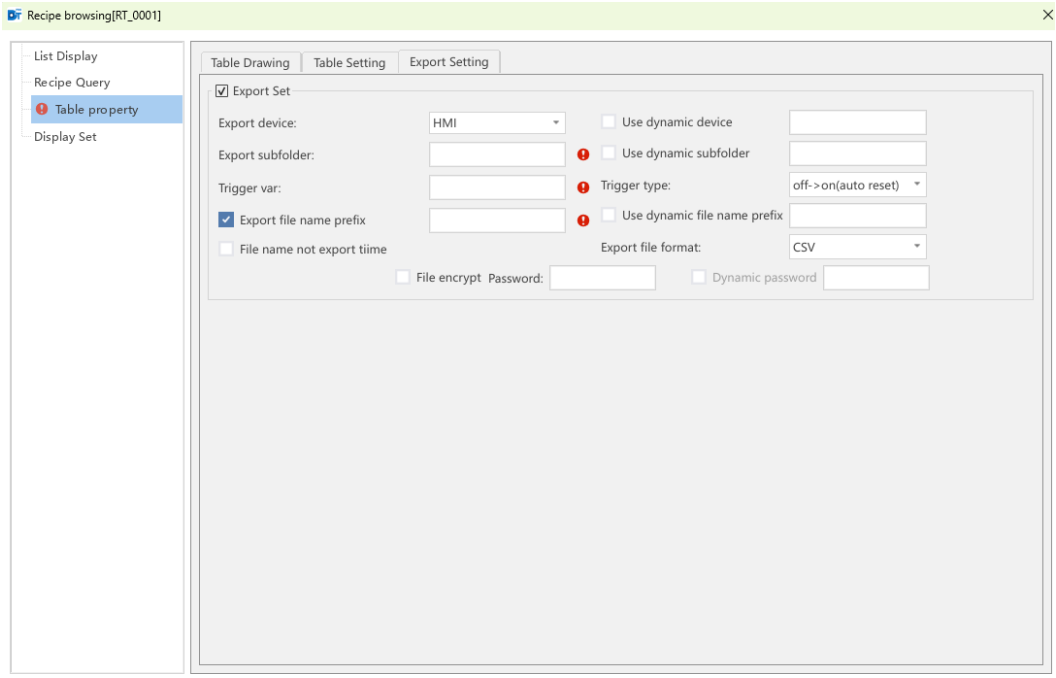


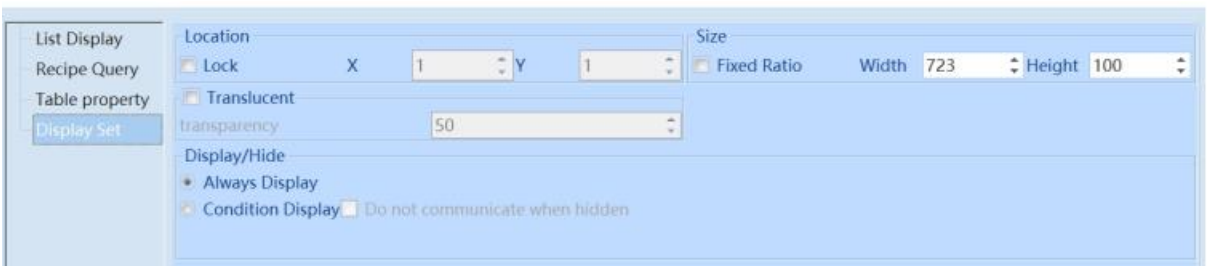
Table setting description	
Total Entries	When checked, the total number of recipes for the current recipe component is displayed;
Single page entry num	Number of recipe data pieces displayed per page
Edit status	bit variable, enter the edit state when it is 1, click the cell to change the table content; Exit edit status for 0 to restore cell content and clear edit content;
Save trigger variable	bit variable, when the trigger condition is met, save the change table content and exit the editing state;

- Export Setting



Export Setting description	
Export device	Export and save the displayed user components to an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the name of the subfolder to which the recipe data is exported. If this parameter is empty, it will be saved in disk/hmi for offline simulation. On the screen, it is saved under /hmi_data/disk/hmi
Use dynamic subfolder	Using string variables to dynamically set sub folder names
Trigger variable	Set variables that trigger export
Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for the exported user, and the default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name not export time	If checked, the exported file name does not include the export time
Export file format	Set the file format for exporting recipes, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encrypt】 is not checked, the exported file format is the file format set in the 【Export File Format】 option. Simply open the file
Dynamic password	Use string variables to dynamically set the password for file encryption, which is valid when 【File Encryption】 is checked

8.7.5.4 Display Set

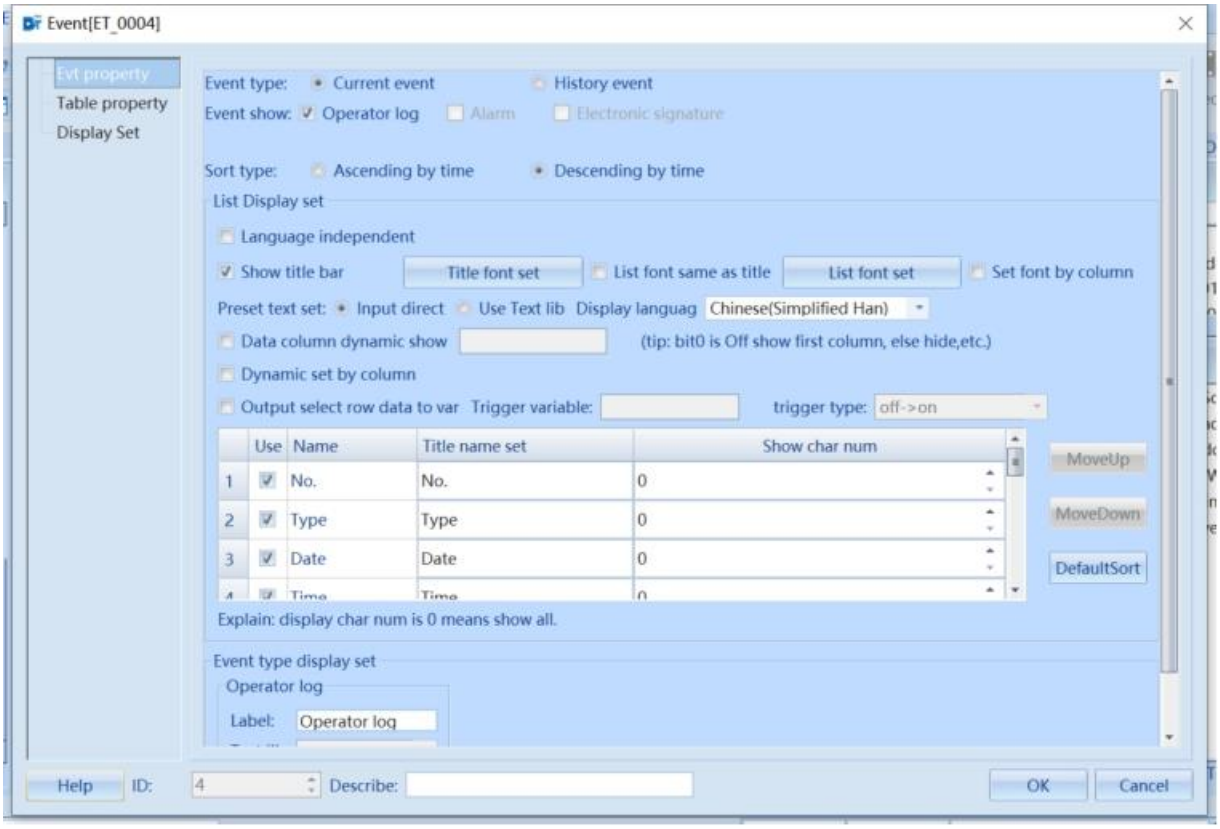


Display set description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.7.6 Event

Events can be recorded and displayed in the form of a table to display the user's actions on the HMI. The types of event display include operation logs, alarms, and electronic signatures. For specific registration settings, please refer to Chapter 14 Event/Alarm, Chapter 17 Operation logs, and Chapter 18 Electronic signature.

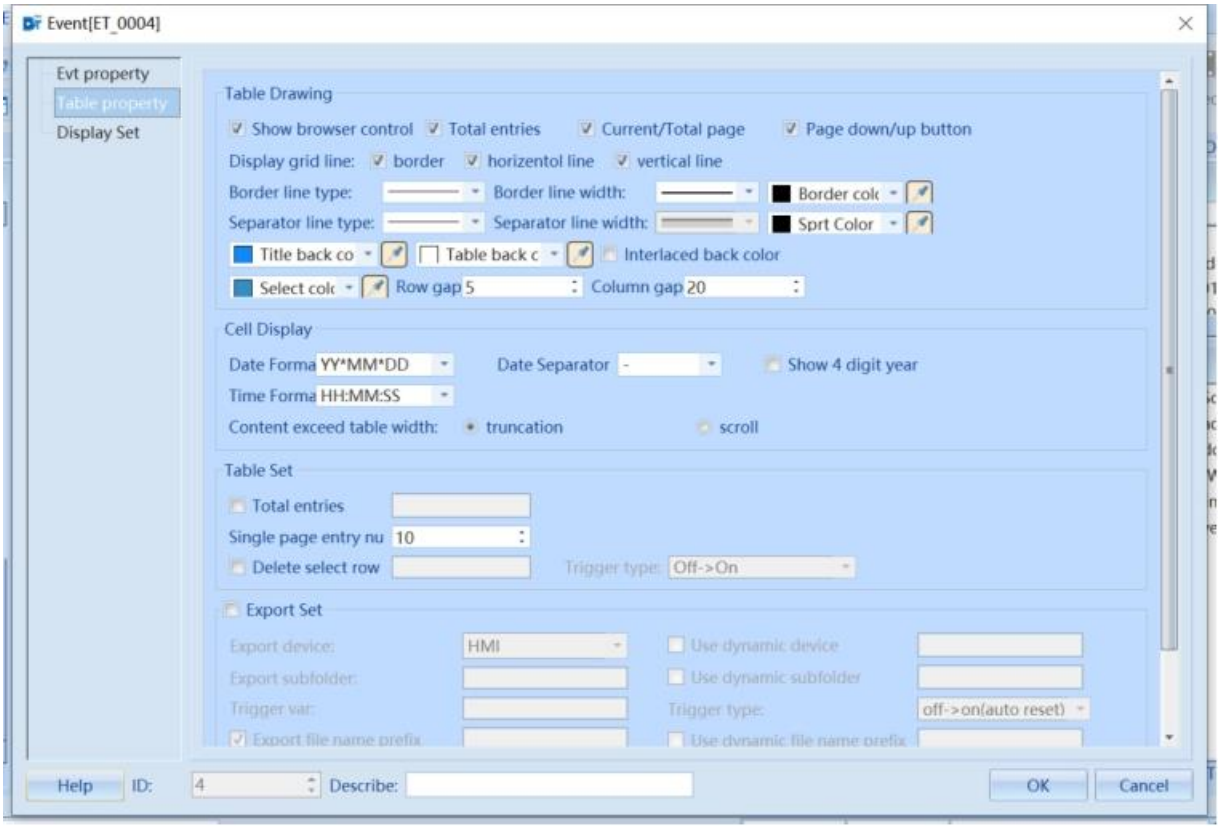
1. In the 【Event Property】 dialog box of the Event component, corresponding properties can be set.



Event - Event Property Description	
Event Type	Can select current or historical events
Event show	Effective after checking. To set the category for event display, it is necessary to open the

	corresponding record in the corresponding category
Sort type	Set the sorting method for event display on the current component
Language independent	Effective after checking. The selection box after 'Display Language' is invalid, the component displays the default language
Show Title Bar	Effective after checking. The component displays the title bar content. Checked by default
Title Font Set	Set the relevant properties of the title bar font, which is only valid when 【Show Title Bar】 is checked
List font same as title	Effective after checking. The font properties of the list are consistent with those of the title bar font
List Font Set	Set the relevant properties of the list font
Set Font by Column	Effective after checking. The data table in the event attributes will display the "Column Font Settings" content, and font attributes can be set separately for each column
Preset text set	You can choose to directly input text labels. If you want to use a text library label, you need to check the text library
Display Language	Set the language of the title bar. When 【Language Independent】 is not checked and 【Show Title Bar】 is checked, it is valid
Data column dynamic show	Use the bit control column display of word variables. When bit0 is 0, the first column is displayed, when it is 1, it is hidden, bit1 controls the second column, and so on
Dynamic set by column	Use bitwise variables to individually control the column display. Display when the variable is 0, hide when the variable is 1
Output select row data to var	Respectively correspond to column bind variables and output the selected row data to the bind variables. The display of variables takes effect based on the 【trigger type】 set by the 【trigger variable】.
Move Up	When selecting the row in the data table, click 【Move Up】 to move the selected row up. The 【Move Up】 button is valid except for selecting the first row of the data table
Move Down	When selecting a row in the data table, click 【Move Down】 to move the selected row down. The 【Move Down】 button is valid except for selecting the last row of the data table
Default sort	Restore to the original sorting of the data table
Event Type Display Set	Set the text content displayed in the "Type" column of the event table. When the "Type" column of the event table is checked, it is valid. You can modify the label content or use a text library

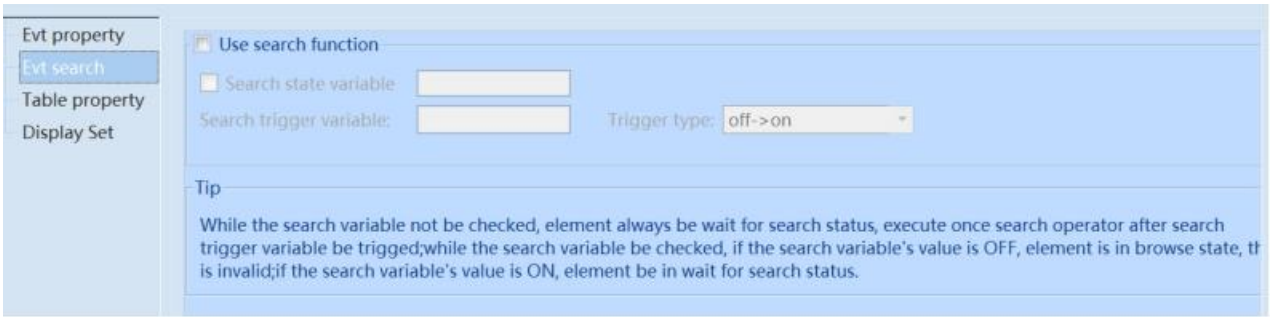
2. In the "Table Property" dialog box of the "Event" component, corresponding properties can be set.



Event - Table Property Description	
Show browser control	If checked, a browsing control box with a setting icon will be displayed on the event component
Total entries	The total number of event information for the current event component. Effective when checking 【Show browser control】
Display grid line	Set display borders, row split lines, and column split lines
Border line type	Set the border line type
Border line width	Set border line width
Border color	Set the outer frame color. The color picker can absorb all the colors on the computer screen at this time
Separator line type	Set Split Line type
Sprt Color	Set Split Line type
Title background color	Set the background color of the title bar. The color picker can absorb all the colors on the computer screen at this time
Table background color	Set the table background color. The color picker can absorb all the colors on the computer screen at this time
Interlaced background color	Effective after checking. Set the background color for separating rows between two rows
Select Color	Set the color of the selected event information. The color picker can absorb all colors on the computer screen at this time
Row gap	Set the row spacing of the data table
Column gap	Set column spacing for data tables
Date Format	Format the date of event information
Date Separator	Set the date separator for event information
Show 4-digit year	After checking, the year can be displayed in 4 digits, otherwise it will be displayed in 2 digits. For example, for the year 2008, it displays "2008" if 【Show 4-digit year】 is selected; If

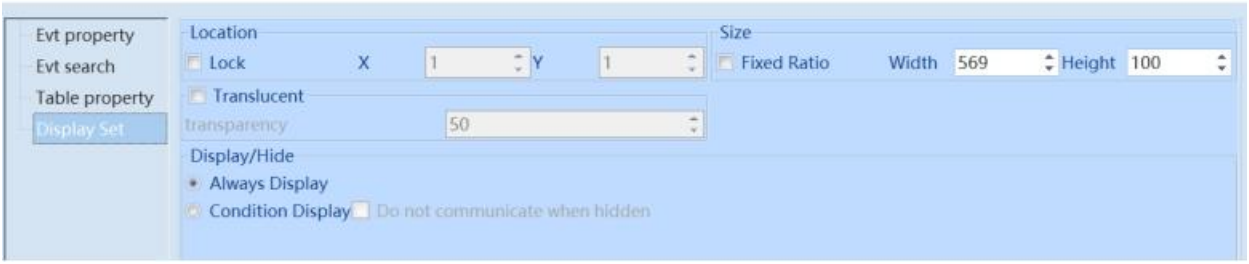
	【Show 4-digit year】 is not selected, only 2 digits will be displayed, i.e. '08'
Time format	Format the time of event information
Content exceeds table width	When the event content exceeds the width of the table, truncation or scrolling can be checked. When set to scroll, the step size and speed of scrolling can be set
Total entries	Use word variables to display the total number of event information for the current event component
Delete selected row	Use the state control of bit variables to delete the currently selected event information. When checked, the [Trigger Type] is valid
Export device	Export and save the event information displayed by the current event component in an external storage device
Use dynamic device	Dynamically setting export devices using string variables
Export subfolder	Set the sub folder name for exporting event information. If this item is blank, the event information will be saved in the "data/doc" folder of the project root directory by default
Use dynamic subfolder	Dynamically setting the name of a subfolder using string variables
Trigger var	Set variables that trigger export
Trigger type	Set the trigger type of the trigger variable
Export file name prefix	Set the file name prefix for exporting event information, with a default combination of date and time for the file name
Use dynamic file name prefix	Using string variables to dynamically set the file name prefix
File name do not include export time	If checked, the exported file name does not include the export time
Export file format	Set the file format for exporting event information, including CSV and PDF
Show export button	If checked, the export button will be displayed on the component
File encrypt	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encrypt】 is not checked, the exported file format is the file format set in the 【Export File Format】 option and can be opened directly
Dynamic password	Dynamically setting the password for file encryption using string variables. Effective when selecting 【file encrypt】

3. When the event type is a historical event, corresponding properties can be set in the "Event" component - "Evt search" dialog box.



Description of Historical Event Query	
Use search function	Select the event type as Historical Event to have this feature as needed
Search state variable	The query status variable can be used to switch whether query is allowed, and is allowed when it is ON
Search trigger variable	Bind variables. Execute the query after the variable meets the triggering method

4. In the "Display Set" dialog box of the "Event" component, corresponding properties can be set.

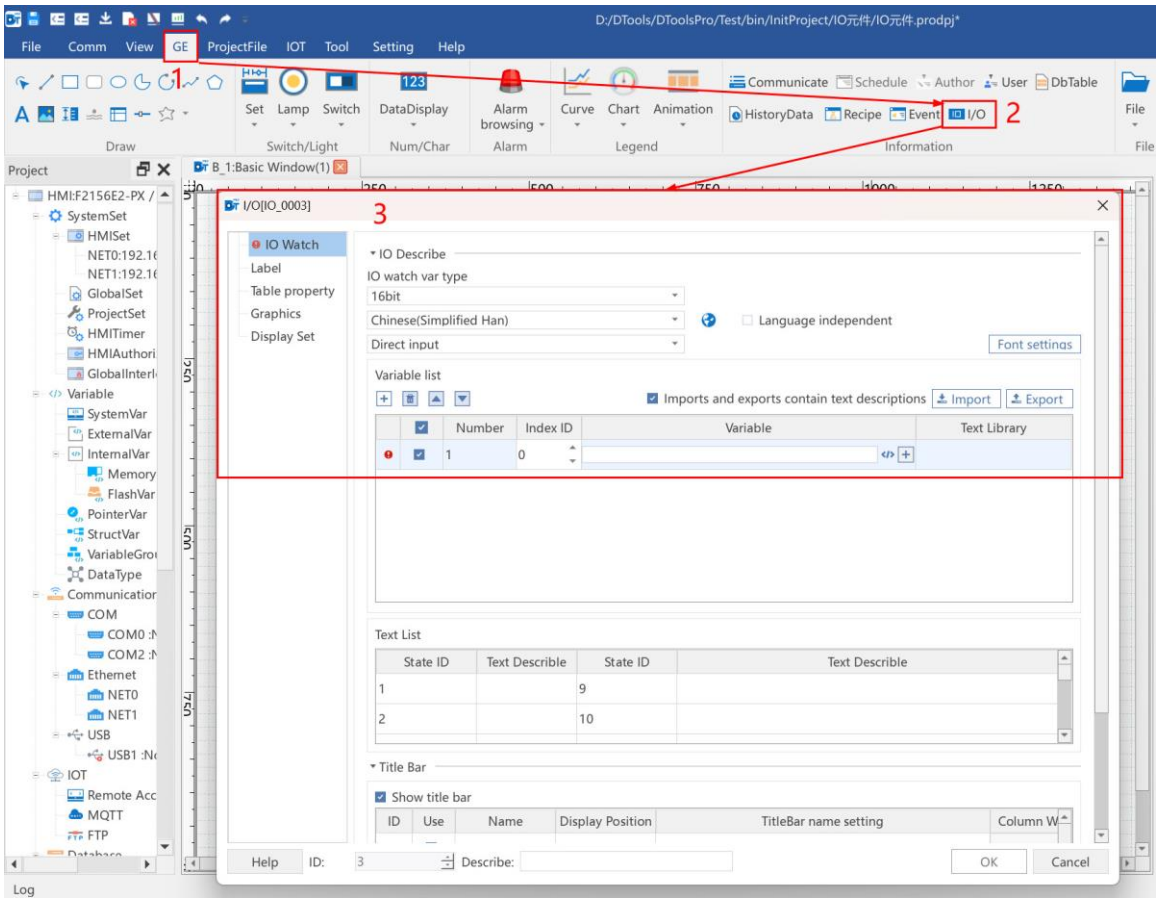


Event - Display Set Description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control:Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

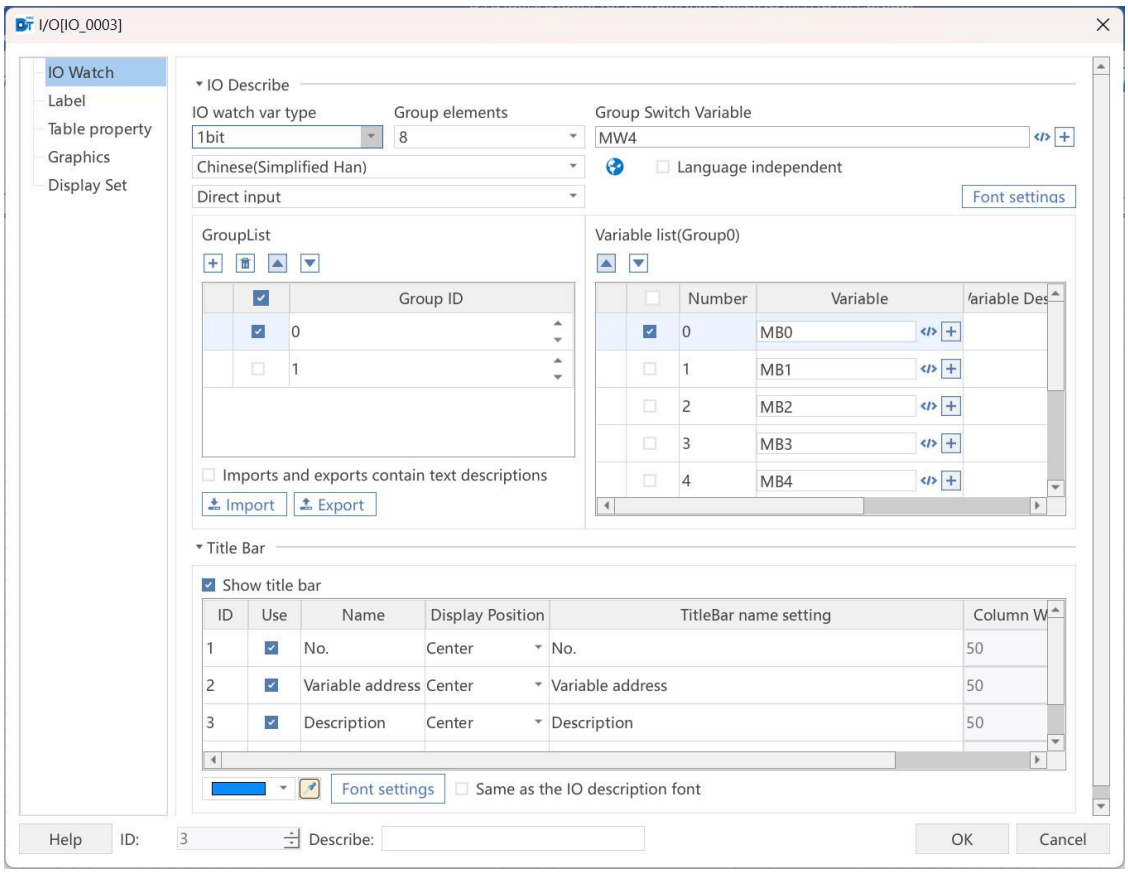
8.7.7 I/O

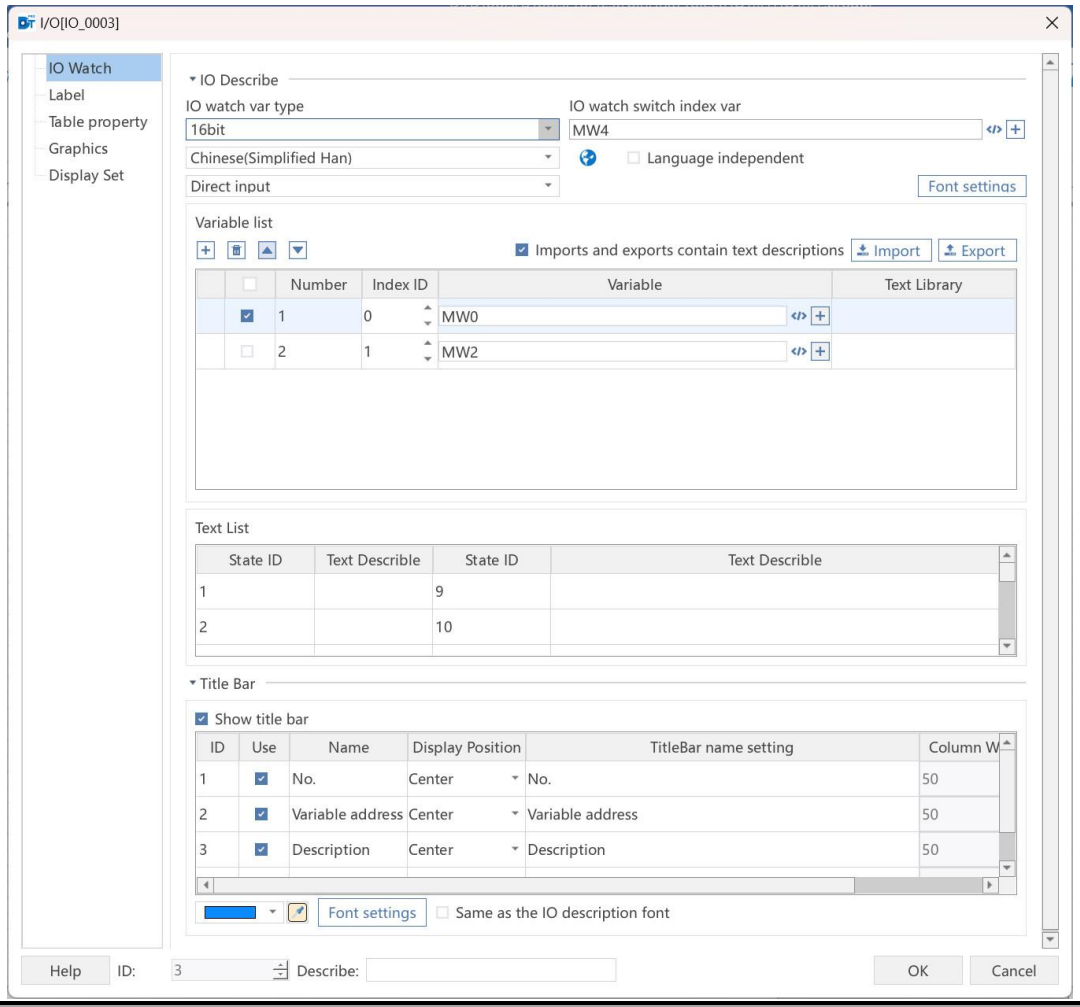
I/O components are controls to view the bit status and description of label variables of byte or word length type. It is often used to monitor the status of PLC input and output points and their corresponding functions, and it is also possible to add multiple variables and switch the displayed content by modifying the value of the index variable.

When configuring, you can use "Component"(GE) → "Information" → "I/O" to set the component.



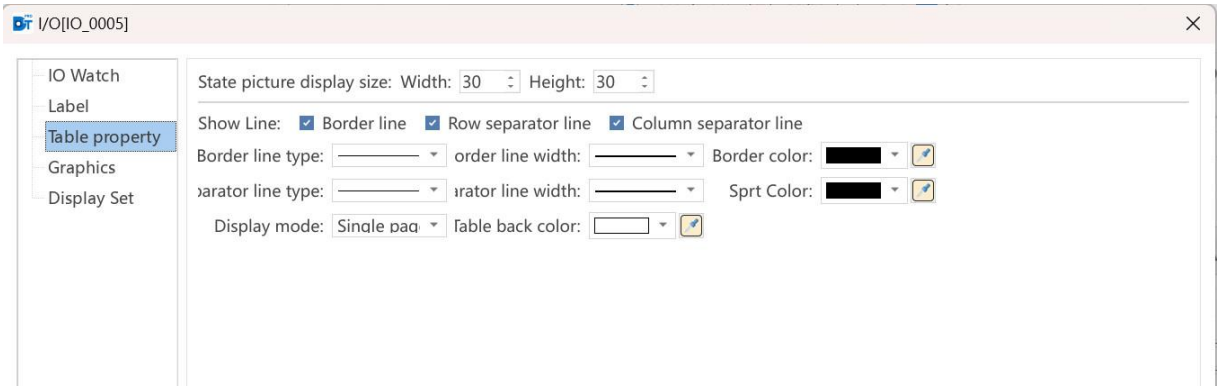
8.7.7.1 I/O Display





IO display description		
IO watch variable type		Set monitoring data type, support 1-bit, 8-bit, 16-bit, 32-bit integer type
1-bit	Group elements	When the monitor data type is 1 bit, the number of group elements can be set, and the number of group elements can be selected as follows: 8, 16, or 32.
	Group Switching Variables	The value of the monitored variable corresponds to the group ID of the variable.
	Group list	The number of group limits ranges from 1 to 1024.
	Variable list	Bind the monitored variable and set the description of the corresponding bit of the variable.
8-32 位	IO Watch switching index variables	When monitoring multiple variables, it is used to switch the display contents, and the value of the monitored variable corresponds to the index ID of the variable.
	Variable list	Binding of monitored variables
	Text list	Setting the description of the corresponding bit of the variable, supporting the export of CSV files, and then importing them after modifying the format.
Language independent		Not checked by default. Variable description changes with language switching
Directly input/Use text library		Manually input variable description content or use text to display description content
Font Settings		Setting the text description font
Import Export Include Text Description		Ticked by default, when ticked, import/export includes variable descriptions, when unchecked, import/export does not include text descriptions.
Title bar		Optional whether to display the title bar, the default check box; do not display the title bar, the column settings inside the description of the column is not displayed
Title bar font settings		You can set the title bar font separately; you can also tick the box to make the font consistent with the description; after ticking the box, the title font setting button disappears, and the title bar font is consistent with the variable status description font.

8.7.7.2 Table property

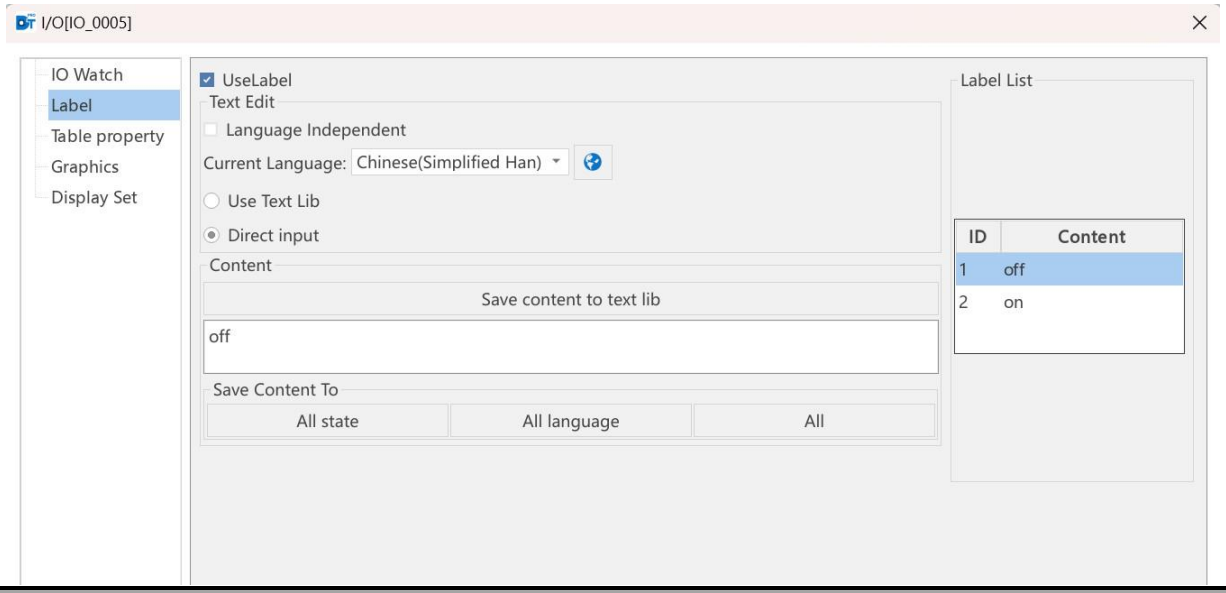


1. When 【Enable graphics】 is checked in the 【graphic】 property page, the width and height of the graphic can be adjusted. The minimum value is 1, the maximum value does not exceed the list width. if it exceeds, it is displayed as maximum.

2. Set control table properties, line color, and background color. You can also switch between single/double page display modes

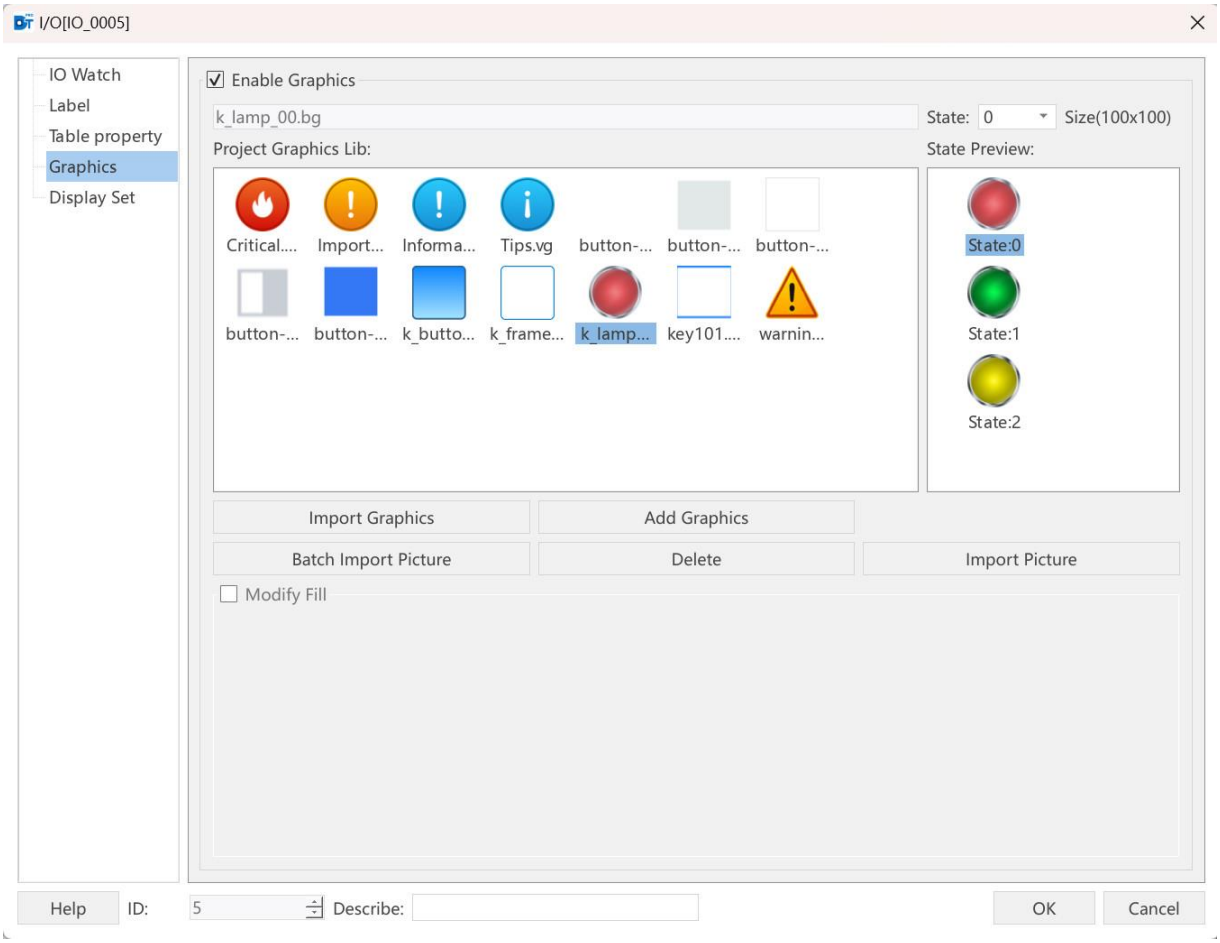
8.7.7.3 Label

The label setting page is used to set the content in the "Status" column and supports the use of a text library.



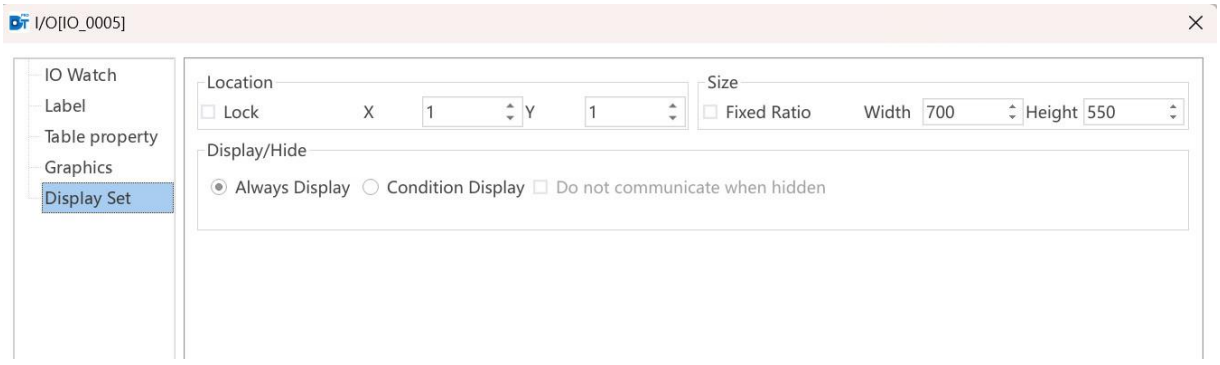
Label set description		
Enable Label after checking 【Use Label】		
Text Edit	Language independent	After checking, it does not change with language switching. It is not checked by default. When unchecked, different languages can be selected for text input
	Use Text Lib	Not checked by default, input directly using text. After checking, select the content of the text library to use
	Direct input	Directly input content
Content	Save Content To	All state: Synchronize the current text content to all states
		All language: Synchronize the current text content to all languages
		All: Synchronize the current text content to all states and languages
	Save content to text lib: Save the currently set text to the text library for easy access when using it next time	

8.7.7.4 Graphics



Description for using graphic settings	
Use Graphics: Check 【Enable graphics】	
Import Graphics	Import the required graphics from the system library
Add Graphics	Add graphics outside of the system library
Batch Import Picture	Batch import of external images, supporting image formats such as. jpg. jpeg. png. bmp
Delete	Delete the currently selected drawing
Import Picture	Import a single external image, supporting image formats such as. jpg. jpeg. png. bmp

8.7.7.5 Display Set



Display Set Description	
Lock	Set whether the position of the component is locked

Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.8 File

8.8.1FIile List

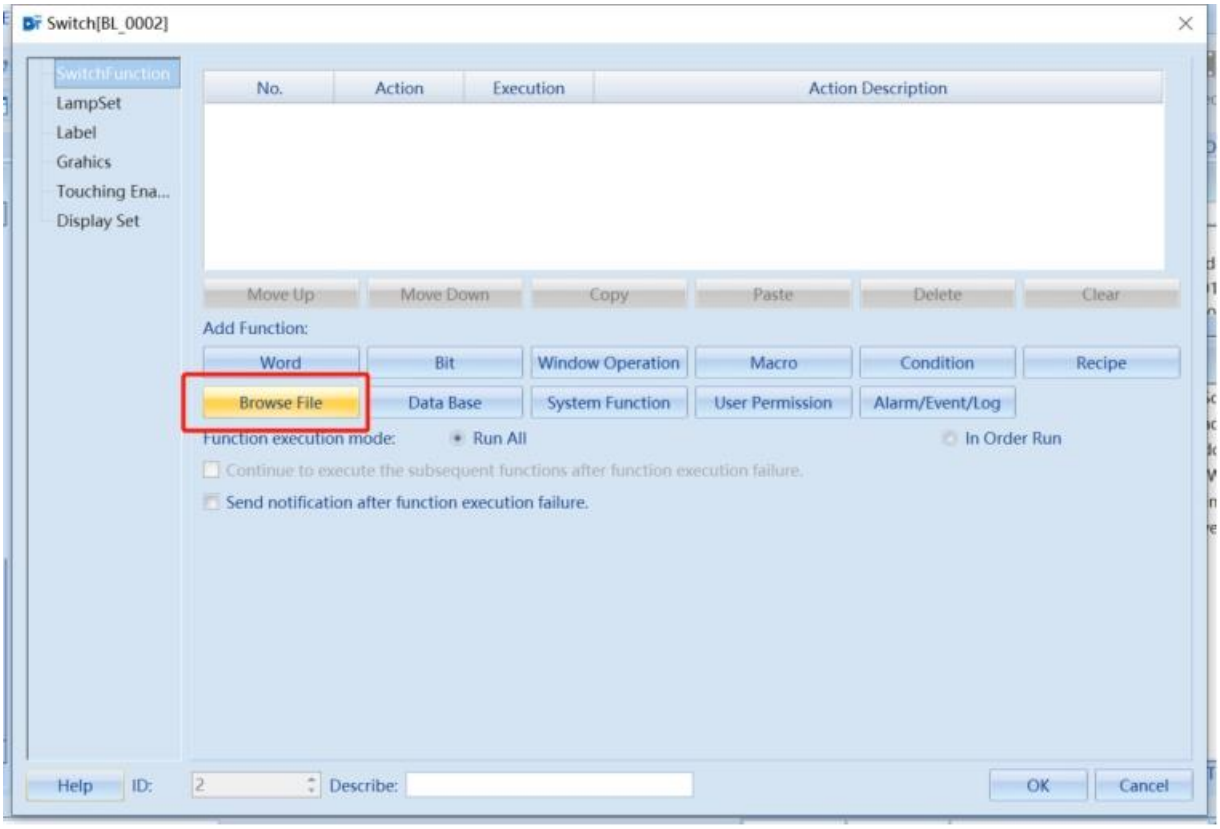
8.8.2 File In/Out

8.8.3 FTP

Can be used to access FTP files from other screens or computers, supports offline simulated access

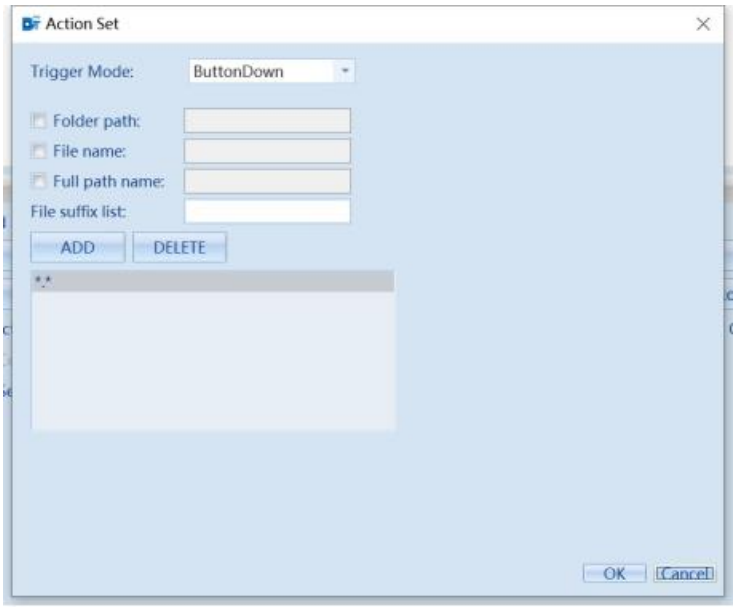
8.8.4 Browse File

File browsing can be directly selected in the switch function, and then the corresponding triggering method can be set



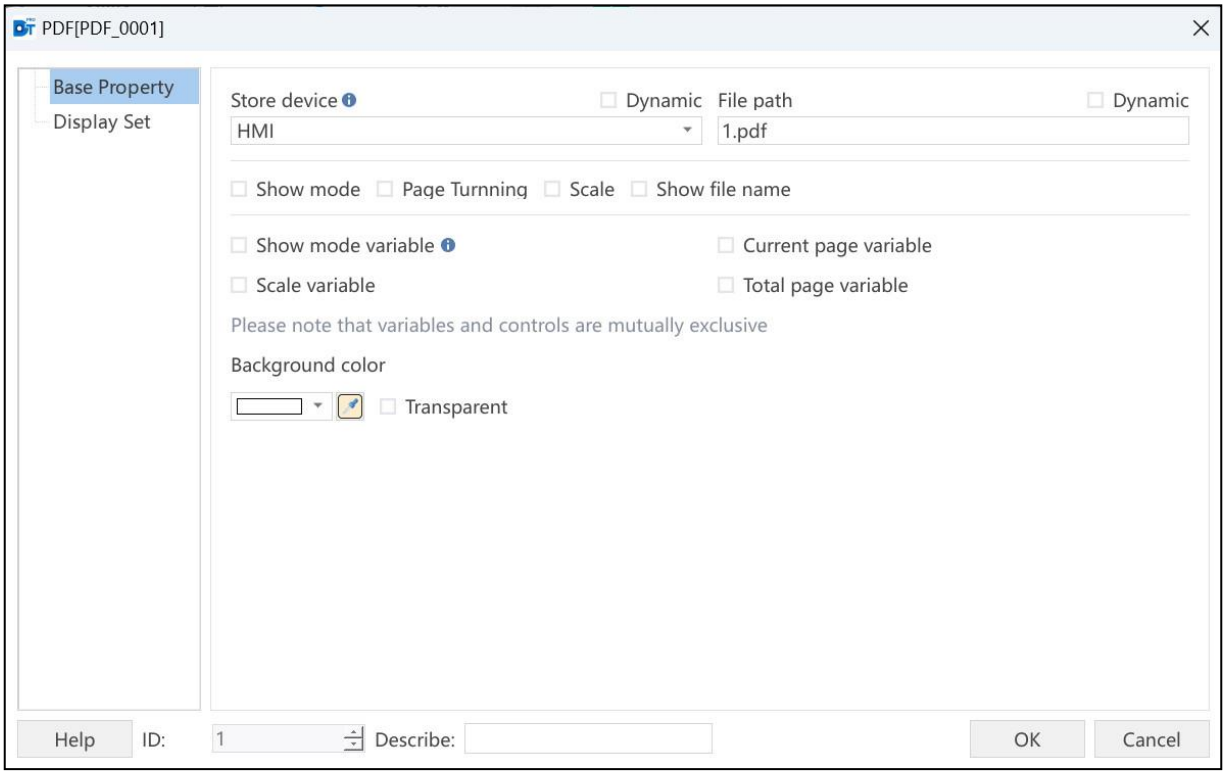
As shown in the following figure, corresponding variables can be established to display folder path, file name, and full path. File suffixes can be added and removed according to requirements. If you want to view CSV files, add the suffix of the *.csv file. *. * indicates that all file types can be displayed by default. The browsing function facilitates users to search for imported

and exported files.



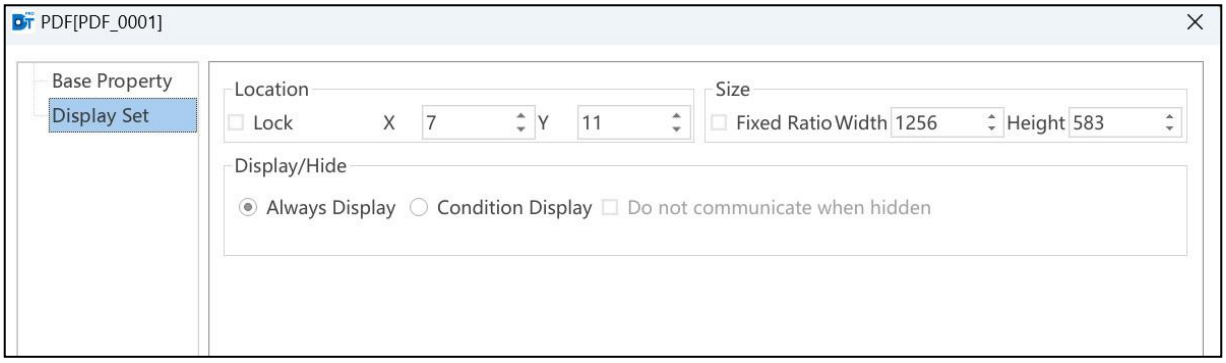
8.8.5 Browse PDF File

Browse PDF File is used to display PDF documents in external storage devices, according to the screen model to support HMI, U disk, SD card documents, to facilitate the user to view PDF files; can be used with the FTP transfer function and document browsing to open the file.



Browse PDF File - Base Property Description	
Store device	Read the corresponding device under the pdf file, note: the PDF document has a password protection or permissions, does not support the browsing
	Dynamic storage device can be set, 1 for HMI; 2 for SD card; 3 for USB1; 4 for USB2
File path	Input the complete path of the file under the device, support the input of multi-level path (need to input the file name suffix, example: file / 1.pdf)

	Support dynamic full path, variable input the correct path to read and open the device under the pdf file, the variable is a string type Note: Dynamic full path and display file name controls are mutually exclusive.
Show mode	 Show actual size fit, width fit and height fit controls
	Support to check the display mode variable. Note: 0 means size fit; 1 means height fit; 2 means width fit;
Page Turnning	 Display up/down page, current page number and total page number controls, support manual input of the current page number;
	Support checking current page and total pages variables, the current page and total pages are read automatically after the file is opened;
Scale	 Scaling display of pdf files, range: 100%~300%
	Supports checking the scaling variable, range: 100~300; inputting a value beyond this range is invalid;
Show file name	Show the current open file name, click on the drop-down box to display other pdf files under the same level path;
Background color	Set the background area color, support check transparent color



Browse PDF File - Display Set Description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

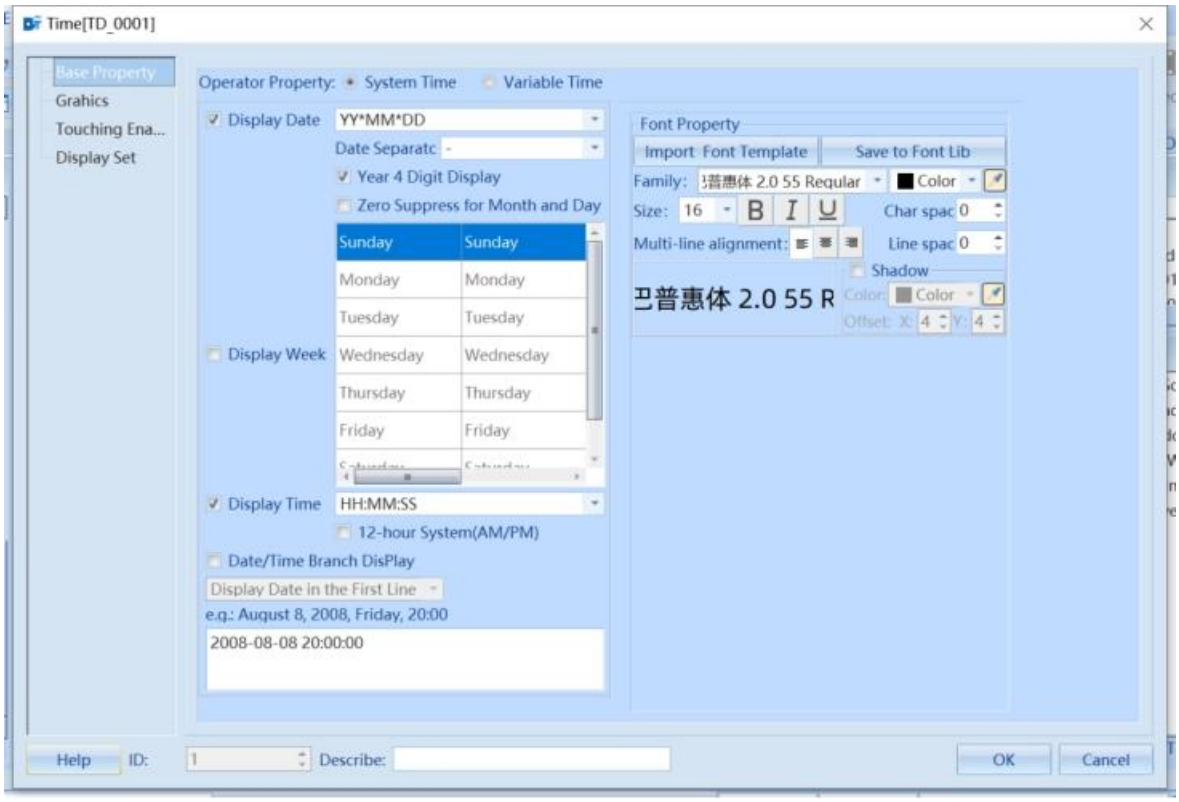
8.9 Other

8.9.1Time

The time component is used to display the date, week, and time of the touch screen/controller.

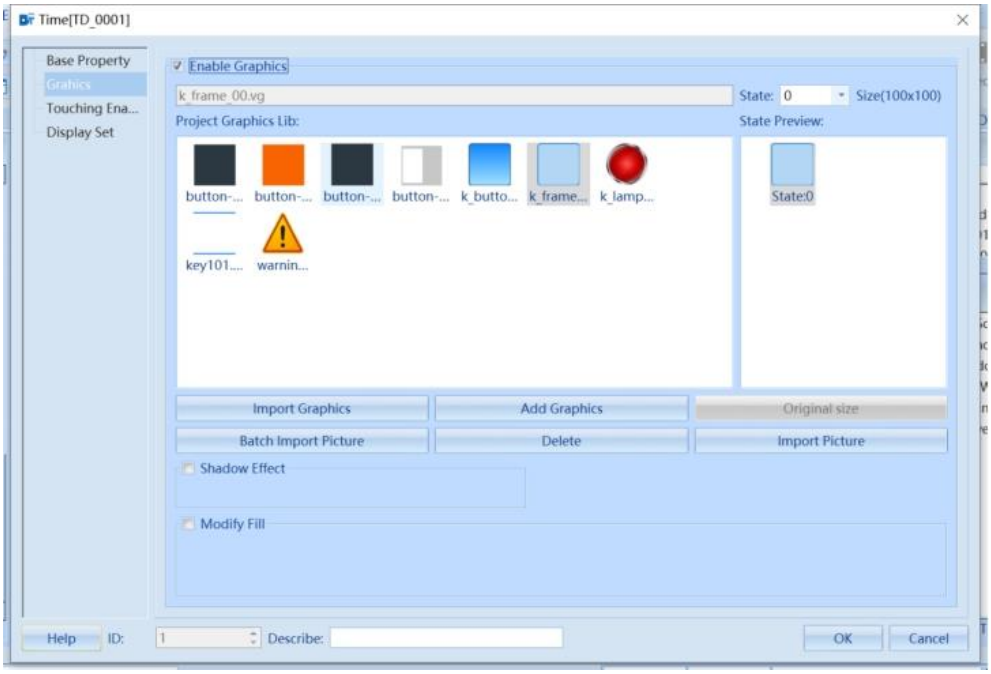
1. Check at least one of the three options: display date, display week, and display time.
2. You can only check the week when selecting 【system time】.

1. In the Basic Property dialog box of the Time component, corresponding properties can be set.



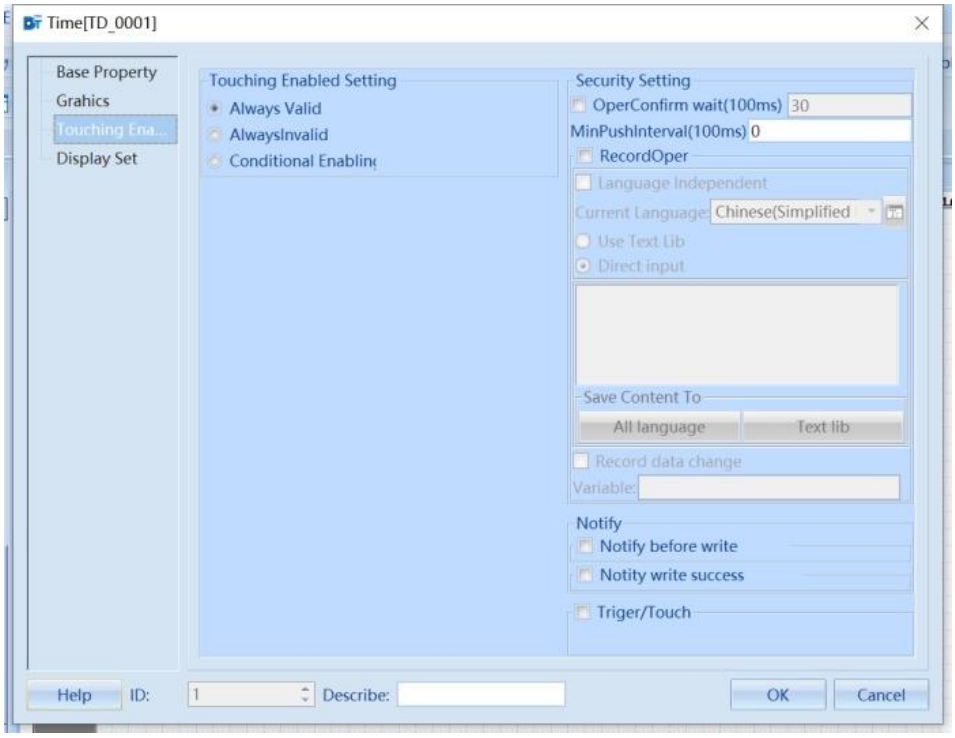
Time - Basic Property Description	
Operator Property	It includes two options: 【system time】 and 【variable time】. Selecting system time displays the system time, and selecting variable time selects the variable for time
Display Date	Set whether to display dates
Show Week	1. 【Date Format】: Five formats are available. Where DD represents the day, MM represents the month, and YY represents the year
Display time	Set whether to display time 1. 【Time Format】: Three formats are available. Where HH represents hour, MM represents minute, and SS represents second 2. 【12-hour system (AM/PM)】: The selected time is displayed in 12 hour format. If the time is 8pm and the time format is "HH: MM: SS", then "08:00:00 PM" will be displayed; If this box is not selected, it will display as' 20:00:00 '
Date/Time Branch Display	Set whether the date and time are displayed separately, including 【Display Date in the First Line】 and 【Display Time in the First Line】
Text Edit	Used to edit the text content of the week, valid when 【Display Week】 is checked
Font Property	Used to set the relevant properties of the font of the time component. For specific attribute descriptions of font templates, please refer to Chapter 19.2 Font Library.

2. In the "Graphics" dialog box of the "Time" component, corresponding attributes can be set.



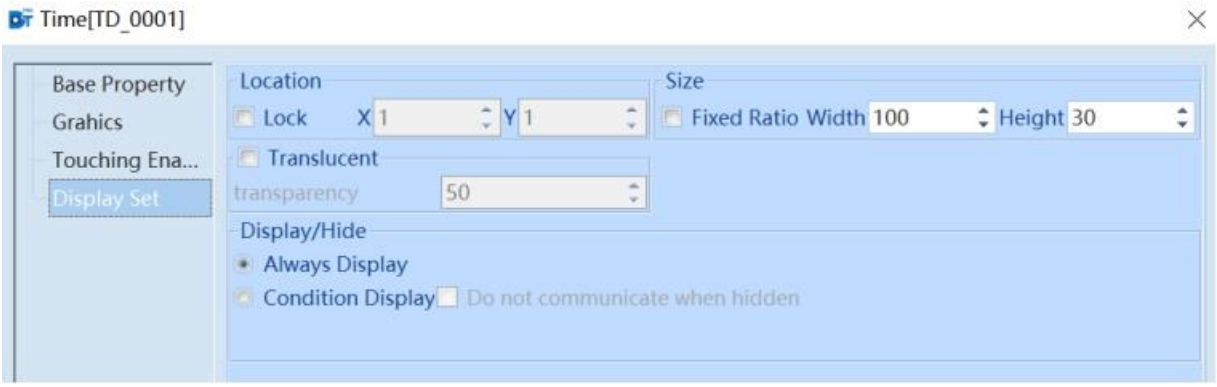
Time - Graphics Description	
Enable Graphics	Set whether the time component uses graphics. If there are no required graphics, click 【Import Graphics】 to import external images. Please refer to Chapter 19.2 Font Library for specific attribute descriptions of the images.
Shadow Effect	Effective after checking. Set component shadows and offset values
Modify Fill	You can choose three fill types: color, pattern, and gradient to set the background color

3. In the "Touching Enable Setting" dialog box of the "Time" component, corresponding properties can be set.



Time – Touching Enable Setting	
Touching Enable Setting	1. 【Always valid】: If checked, it means that the data can be effectively written to the specified register by touching the active area of the current component 2. 【Always Invalid】: If checked, it means that even if the current component touches the valid area, the data cannot be effectively written to the specified register 3. 【 Show Invalid Flag 】: If checked, it indicates that the current component is in a touch invalid state, and the component displays an invalid flag. This function is only available when 【Always Invalid】 or 【Conditional Enabling】 is checked. The color of the invalid touch mark can be set in the 【Global Set】. For specific attribute descriptions of global settings, please refer to Chapter 3.2 Global Set. 4. 【 Display grayscale font 】: If checked, it indicates that the grayscale font will be displayed when the current component is in a touch disabled state. This function is only available when 'Always Invalid' or 'Conditional Enabling' is checked. 5. [Condition Enable]: Check to indicate that the current component can only be touched and data written to the specified register when the state of the positioning variable or word variable meets the set conditions 6. [Automatic Display of Login Window]: If checked, it means that when the current user's permissions do not meet the set permissions, a user login window provided by the system will automatically pop up for the user to enter their password for login. Please refer to Chapter 6 for specific attribute descriptions of the user login window
Security Setting	1. 【Minimum Push Time (100ms)】: It is necessary to continuously press the current component for no less than the set time before the data can be effectively written to the specified register. The minimum unit is 100ms. A value of 0 indicates that the minimum pressing time is not set 2. 【Operator confirmation wait (100ms)】: If checked, the HMI will automatically pop up an operation confirmation window when touching the current component. Click "OK" to write the data to the specified register. Click "Cancel" or if the user has not clicked "OK" after the set waiting time, the operation will be automatically cancelled 3. 【 Minimum Push interval (100ms) 】: The minimum pressing time interval between two operations of the same component, with a minimum unit of 100ms. When it is 0, it indicates that the minimum pressing interval for the operation is not set
Record Operation	To use 【Record Operation】, you need to first enable the operation log. For specific descriptions of the operation log, please refer to Chapter17 – Operation log 1. 【Language Independent】: If 【Language Independent】 is checked, the selection box after "Display Language" will be invalid, and the component defaults to using the first language. 2. 【Current Language】: The currently displayed language 3. 【Use Text Lib】: If checked, the operation record of the current component will use the text content of the text library 4. 【Direct Input】: If checked, the text content of the input box will be used for the operation record of the current component 5. 【Record Data Change】: If checked, the operation log can monitor the changes in data or the status of variables.
Notify	1. 【Notify before write】: If checked, the operation must be notified of completion before the actual action can be triggered 2. 【Notify write success】: If checked, the notification will only be triggered if all actual actions are successfully executed
Trigger/Touch	1. 【Keyboard】: By setting the keyboard buttons, it takes effect when the touch setting button is pressed 2. 【 Register 】: Set bit variables and trigger types to achieve touch operation

4. In the 【Display Set】 dialog box of the Time component, corresponding attributes can be set.

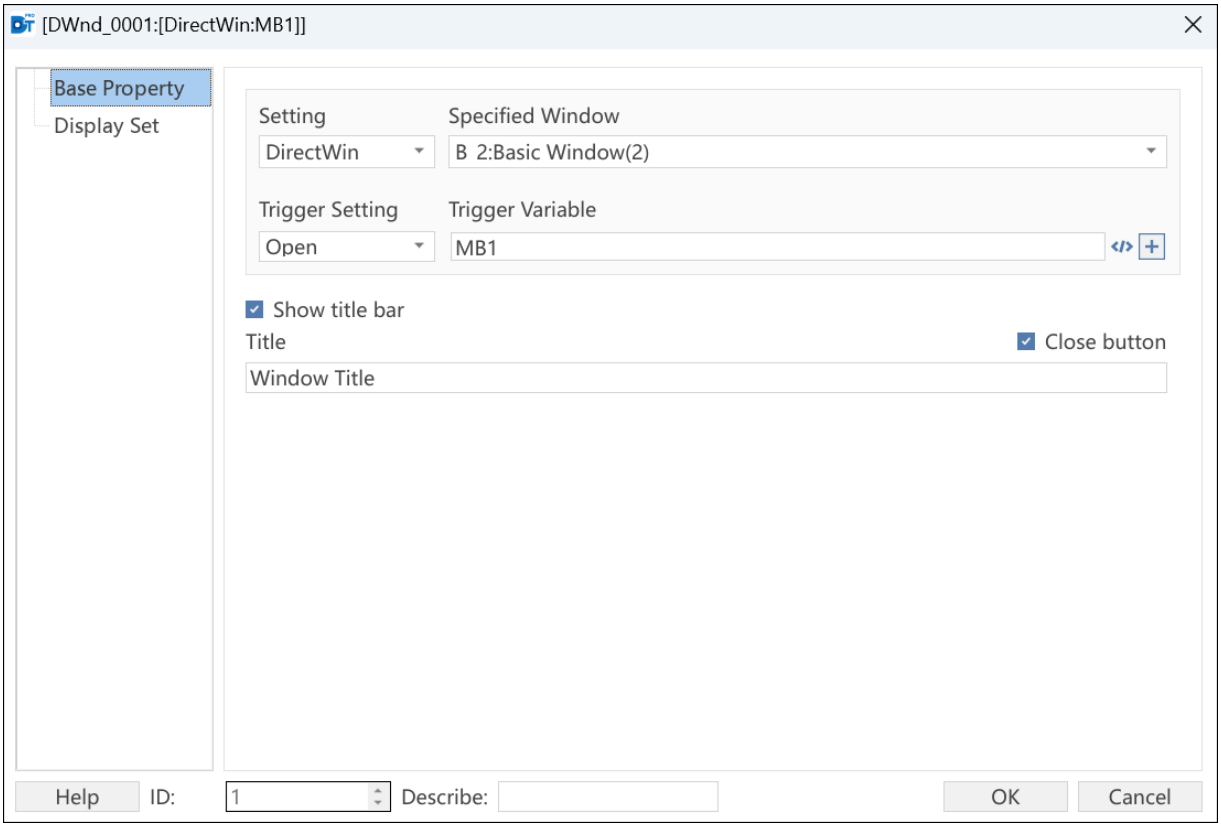


Time - Display Set Description	
Lock	Set whether the position of the component is locked
Fixed ratio of width and height	Set the size of the component and calculate the corresponding width or height proportionally. The ratio is the ratio of width to height before selecting 【Fixed Ratio】.
Translucent	Effective after checking. The component will display the transparency level based on the translucency value
Display/Hide	Always display: Check to indicate that the current component remains displayed Condition display: Includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Authority control: Support multiple permissions control, check that the operator needs to meet the multiple permissions of the component to display the current component. ② Express control: Check to indicate that the current component can only be displayed when the state of the specified bit or word variable meets the set conditions ③ Do not communicate when hidden: When the variables used by components are External variable, check this option, and components will not communicate when they are hidden ④ False state work: Takes effect when in an error state

8.9.2 Window

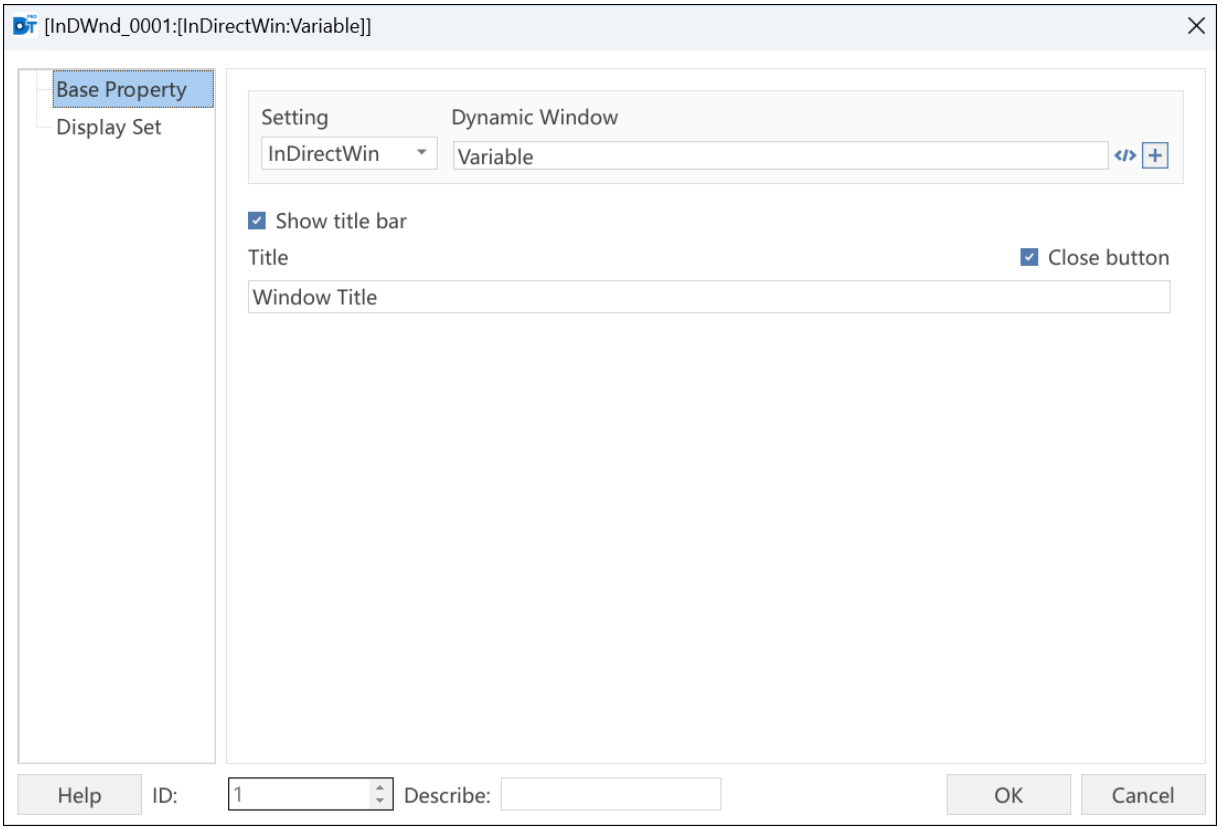
The Window element allows you to choose between direct or indirect windows, and can display other windows within a specific area of the current window;

8.9.2.1 Directwin



Direct Window - Basic Property Description	
Setting	Choice of direct or indirect window
Specified Window	Specify the target window to be displayed in the direct window area, and the drop-down box can be filtered to select the basic window in the project
Trigger Setting	Split into on and off, default is on
Trigger Variable	Variables can be added or selected; supports bit variables, bool variables, fetch bits (8, 16, 32, 64)
Show title bar	1. Display the title bar and close button of the window component, and the title bar can be set by yourself. 2. Drag the title bar to move the component position. 3. Close the window with the close button without affecting the state of the variable.

8.9.2.2 InDirectwin



Indirect Window - Basic Property Description	
Setting	Choice of direct or indirect window
Dynamic Window	Selected variables can set the corresponding pop-up window, can add or select variables; support word variables (8-64 bits)
Show title bar	1. Display the title bar and close button of the window component, and the title bar can be set by yourself. 2. Drag the title bar to move the component position 3. Close the window with the close button without affecting the state of the variable.

8.9.2.3 Display Set

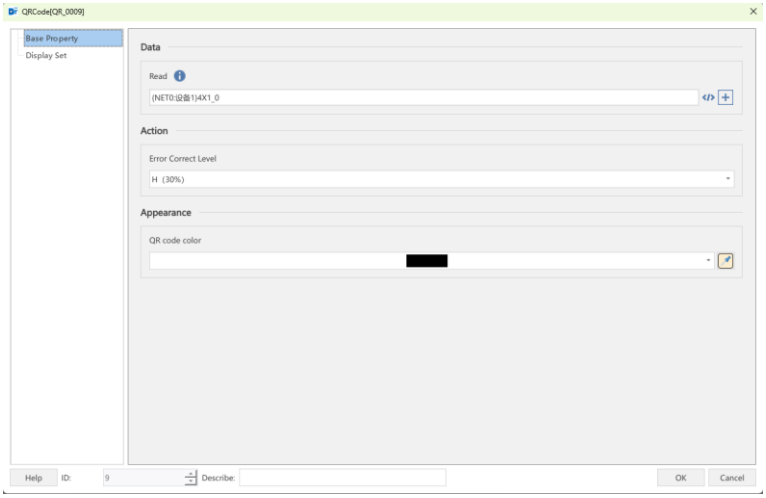
Display Setting Description	
Lock	Sets whether the position of the component is locked or not
Fixed Ratio	Set the size of the component to calculate the corresponding width or height proportionally. Proportion is the ratio of width and height before [Fixed Ratio] is ticked.

8.9.3 QR code

The QR code component displays characters in the form of a QR code, and users can view the corresponding characters by scanning the QR code.

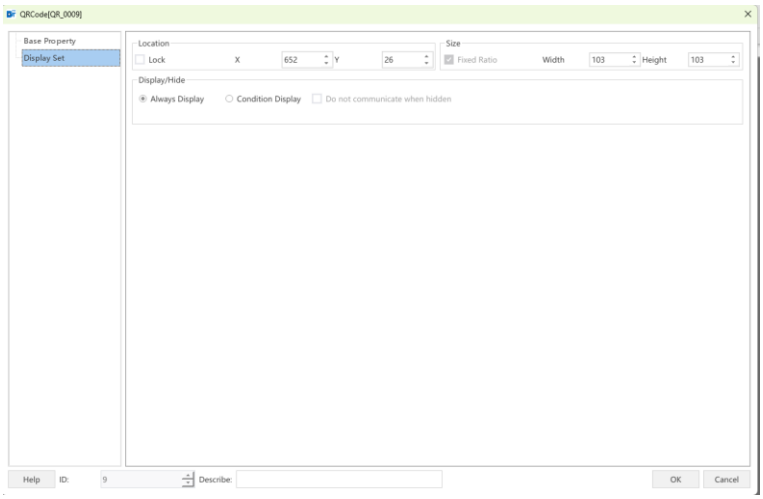
The QR code component displays the generated characters in the form of a QR code, and users can scan the QR code to view the corresponding characters

8.9.3.1 Base Property



QR code-Base Property Description	
Data	Used to select variables associated with QR codes, with a maximum length support of 512 bytes
Action	By default, it is the highest and divided into L (low: 7%) M (medium: 15%) Q (high: 25%) H (high: 30%). The error correction level gradually increases from L to H, and the fault tolerance level gradually increases
Appearance	Set the color for displaying QR codes

8.9.3.2 Display Set



QR code-Display Set Description	
Location	Set whether the position of the component is locked
Size	There is no fixed aspect ratio, any value of width/height is modified, and the other value is modified synchronously; Dragging components on the screen proportionally zooms in and out
Display/Hide	Check to indicate that the current component remains displayed continuously
	Condition display: includes permission control, expression control, no communication when components are hidden, and false status takes effect ① Permission Control: Checking indicates that the operator needs to have the set permissions in order to display the current component ② Expression control: Check to indicate that the current component can only be displayed when the state of the positioning variable or word variable meets the set conditions ③ No communication when component is hidden: When the variable used by the component is an external variable, check this option to prevent communication when the component is hidden ④ False state takes effect: takes effect when in an error state

9 IOT

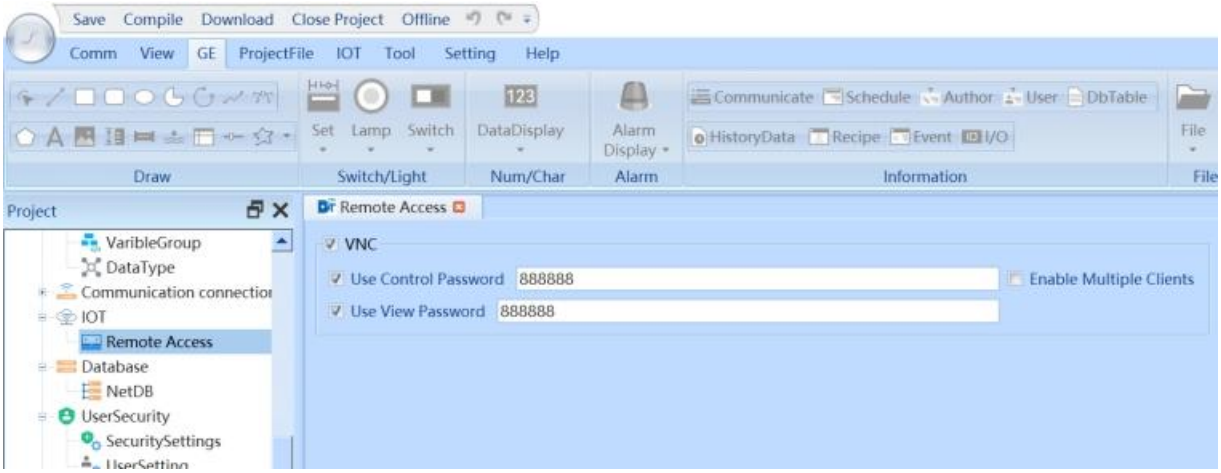
9.1 VNC

VNC is an abbreviation for Virtual Network Computer, which is a screen sharing and remote operation software that uses the RFB protocol. This software can transmit keyboard and mouse movements and real-time screen images through the network.

The VNC system consists of a client, a server, and a protocol. The server's purpose is to share the screen of the machine it is running on. The server passively allows the client to control it, while the VNC client (or Viewer) observes and controls the server, interacting with it.

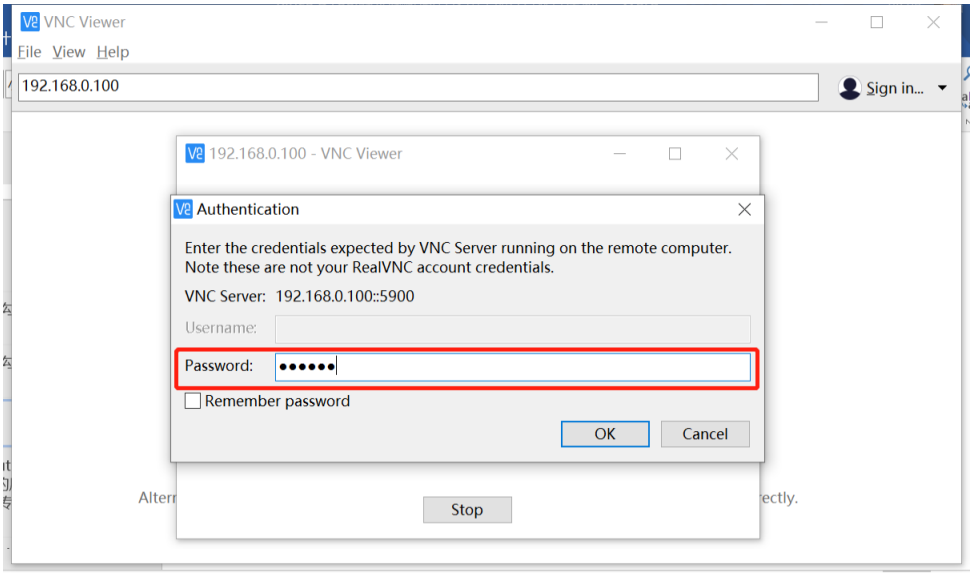
VNC is independent of the operating system, so it can be used across platforms. Kinco enables the VNC function by using the touch screen as a server, which can be remotely accessed by remote devices (such as PCs, mobile phones, etc.) to obtain images or data.

Note: F1 series screens do not currently support this feature.



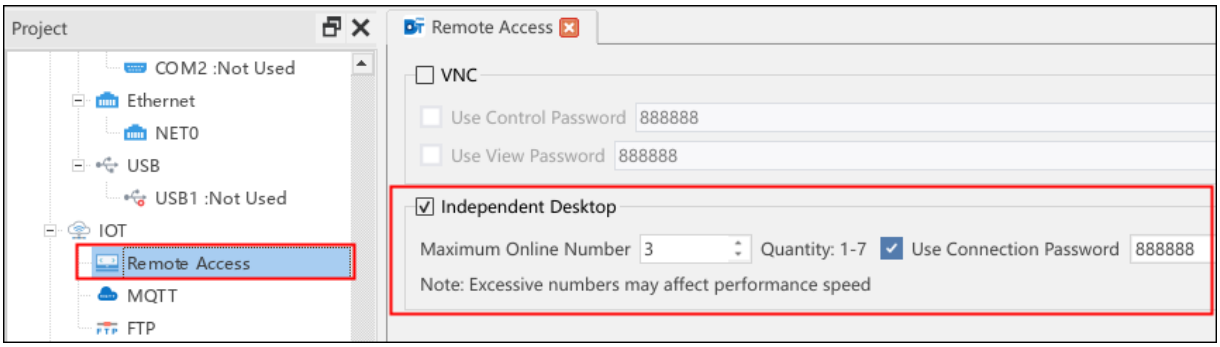
VNC Setting Instructions	
Check VNC to enable VNC function (support client and web function): 1. Client port number is 5900 by default 2. Browser port number is 5800 by default (just enter: screen IP:5800 at the browser web address)	
Use Control Password	Can operate and view HMI
Use View Password	Can monitor HMI but cannot operate it
Enable Multiple Clients	Using multiple client connections simultaneously. Attention: Too many clients can affect the operation of HMI

As shown in the following figure, you can use VNC client to bind the IP address of the screen during operation. Enter the password to achieve screen monitoring and operation.



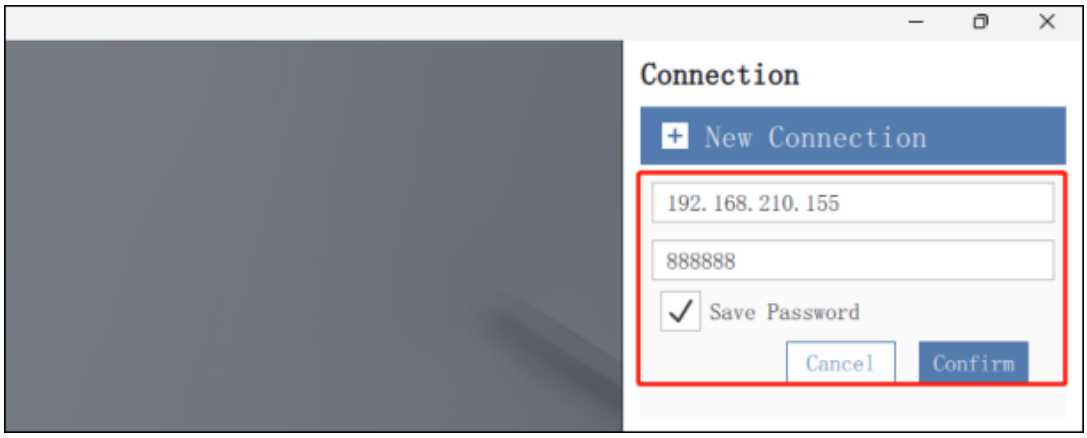
9.2 Independent Desktop

The independent desktop is different from VNC. It supports mobile phone and tablet client APP to connect with the screen. It can operate the interface independently and independently from the screen operation. It is asynchronous. It can be understood that the mobile phone or tablet is regarded as an independent touch screen device.After setting the number of connections and connection password, download DTPView.apk and install it

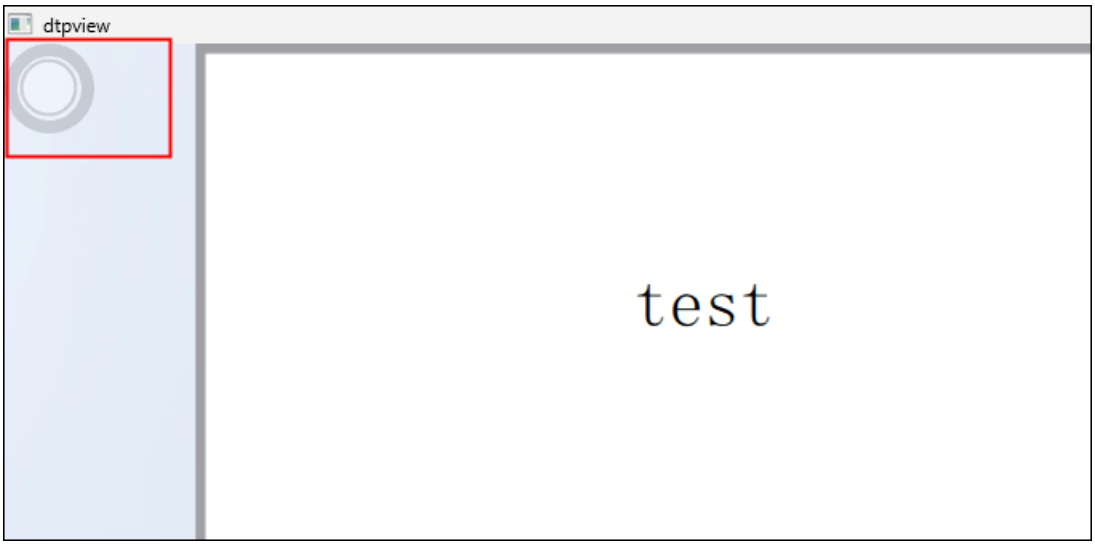


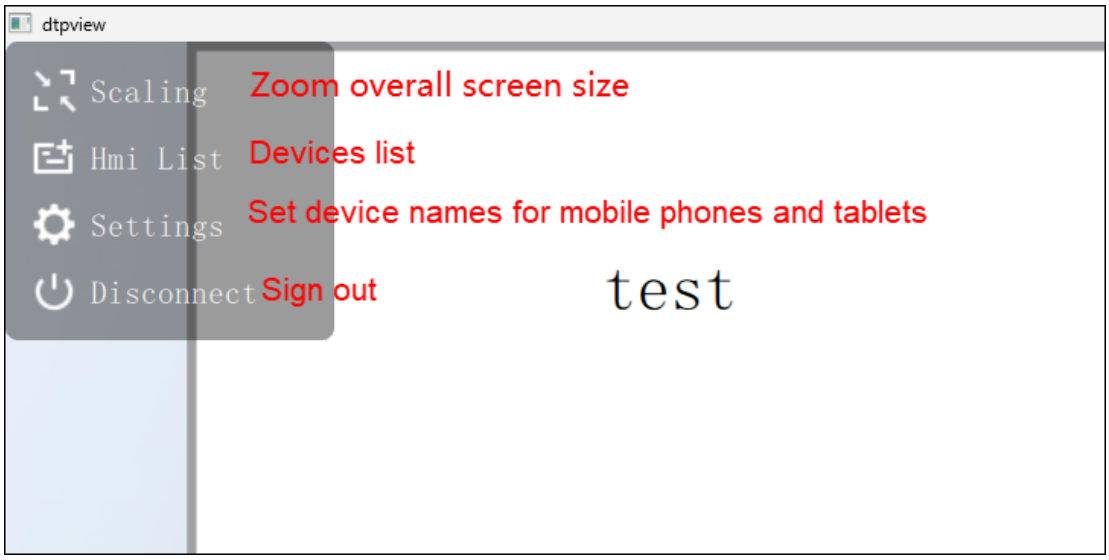
When installing an APP, please make sure to enable the background running permission of the APP and turn off the power saving mode. If it is a Redmi tablet, it is best to turn off the power saving strategy.

Enter the IP address and online password on the screen



Click on the floating ball in the upper left corner to perform the following operations

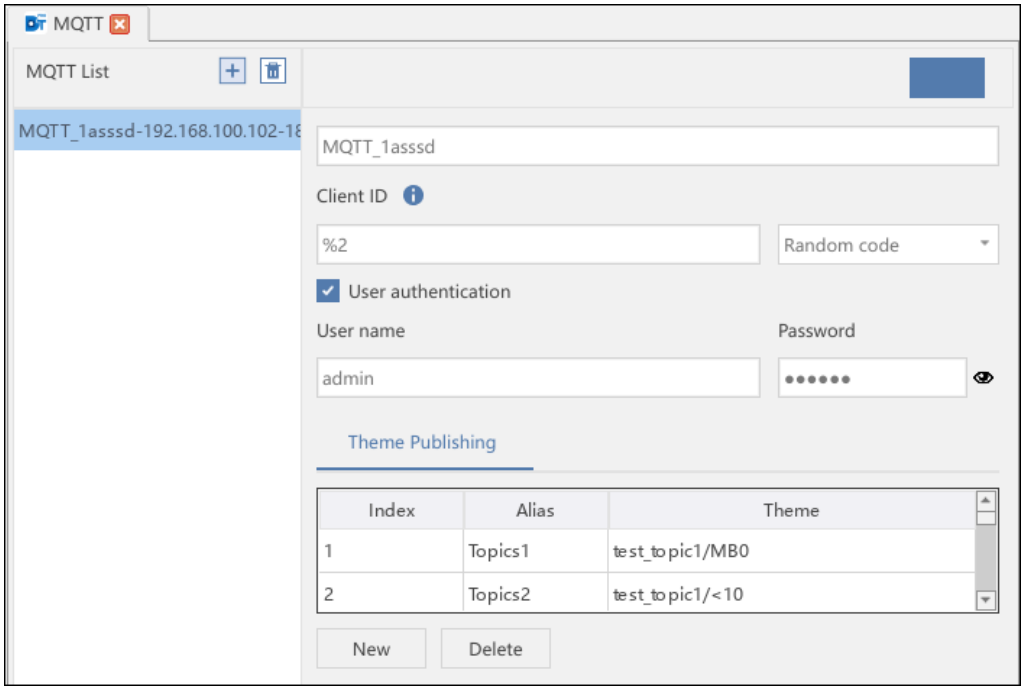


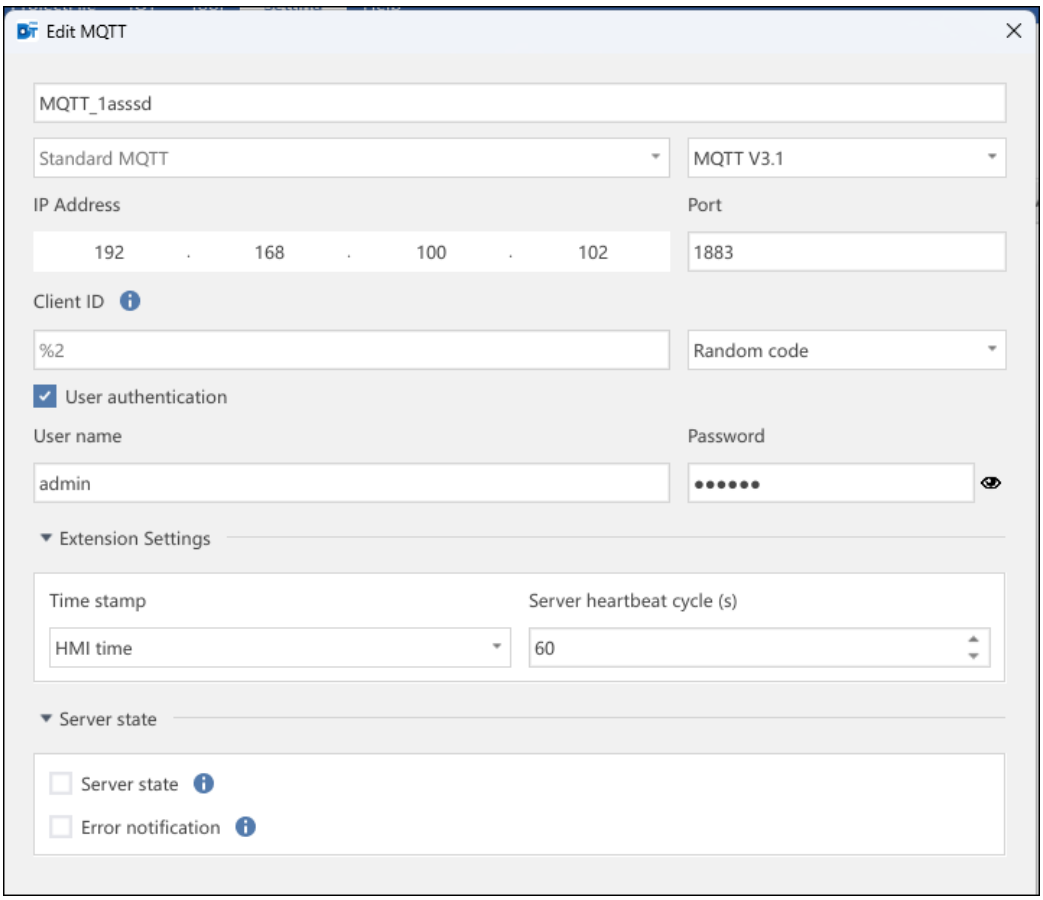


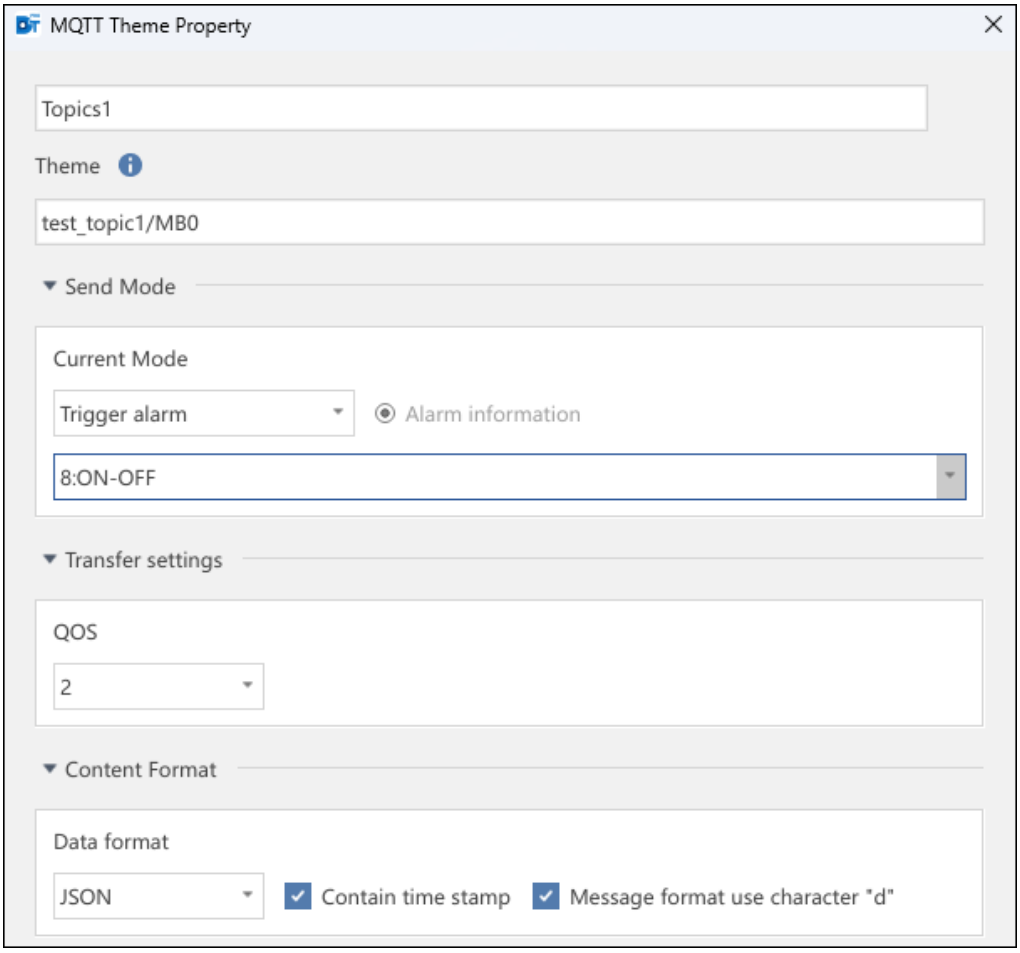
Attention: After zooming in and out, the screen cannot be touched. You need to click on the hover ball again to restore touch

9.3 MQTT

MQTT (Message Queuing Telemetry Transport) is a lightweight message protocol based on the publish/subscribe paradigm. It is suitable for remote devices with low hardware performance and environments with poor network conditions. Therefore, MQTT protocol has a wide range of applications in IoT (Internet of Things), small device applications, mobile applications, and other fields. Advantages: Low code volume, low overhead, low bandwidth usage, instant messaging protocol




Edit MQTT
MQTT_1asssd
Standard MQTT
MQTT V3.1
IP Address
Port
192 . 168 . 100 . 102
1883
Client ID
%2
Random code
User authentication
User name
Password
admin
Extension Settings
Time stamp
Server heartbeat cycle (s)
HMI time
60
Server state
Server state
Error notification



MQTT 设置说明	
description	Description of the server, modifiable
Standard MQTT	Select the corresponding MQTT protocol version
IP Address	IP address of the server
Port	default1883
User authentication	Consistent with the username and password settings of the server
Extension Settings	Timestamp: optional HMI local time, UTC time Server heartbeat : Conduct connection state access to the server according to the set cycle
Server Status	= 0, stop connecting to the MQTT server , = 1 , the MQTT server was disconnected, = 2 , the MQTT server is online
Error notification	0: NoError, 1: InvalidProtocolVersion , 2: IdRejected , 3: ServerUnavailable, 4: BadUsernameOrPassword , 5: ProtocolViolation , 6: UnknownError, 7: Mqtt5SpecificError
Theme Publishing	The topic description can be modified arbitrarily, defaulting to topic1,2,3
	Send mode: Send a message to the server when the selected alarm is triggered
	Transfer settings: Set the QoS level to at most once (QoS 0), at least once (QoS 1), and only once (QoS 2)
	Data format: default Jason format, can be checked to include timestamp, messages use d symbol, and messages are sent with timestamp and d symbol

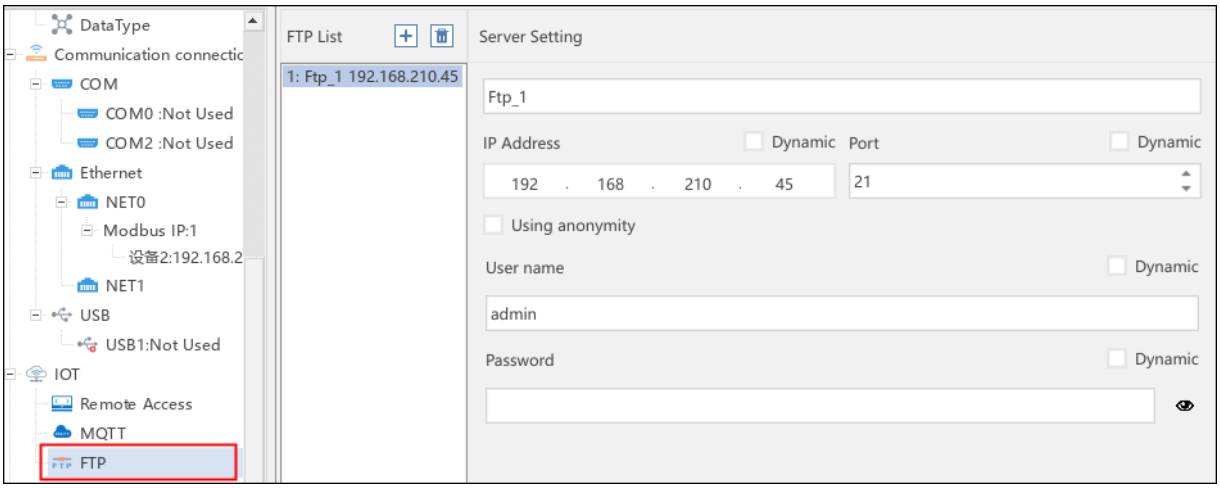
9.4 FTP

FTP (File Transfer Protocol) is one of the protocols in the TCP/IP protocol group. The FTP protocol consists of two components, one is the FTP server, and the other is the FTP client. The FTP server is used to store files, and users can use the FTP client to access resources located on the FTP server through the FTP protocol. The following describes the settings for accessing other servers using the touch screen as an FTP client

FTP Server Setting Instructions	
The description can be edited arbitrarily, the port number defaults to 21	
IP Address	Consistent with the IP of the server, check to modify the IP by using the value of a dynamically settable string variable
Using anonymity	For servers with anonymous access, you can check this option for anonymous access
User Name	Consistent with the username set by the server, check to modify the username by using the value of a dynamically settable string variable
Password	Consistent with the password set by the server, check the option to modify the password using the value of a dynamically settable string variable

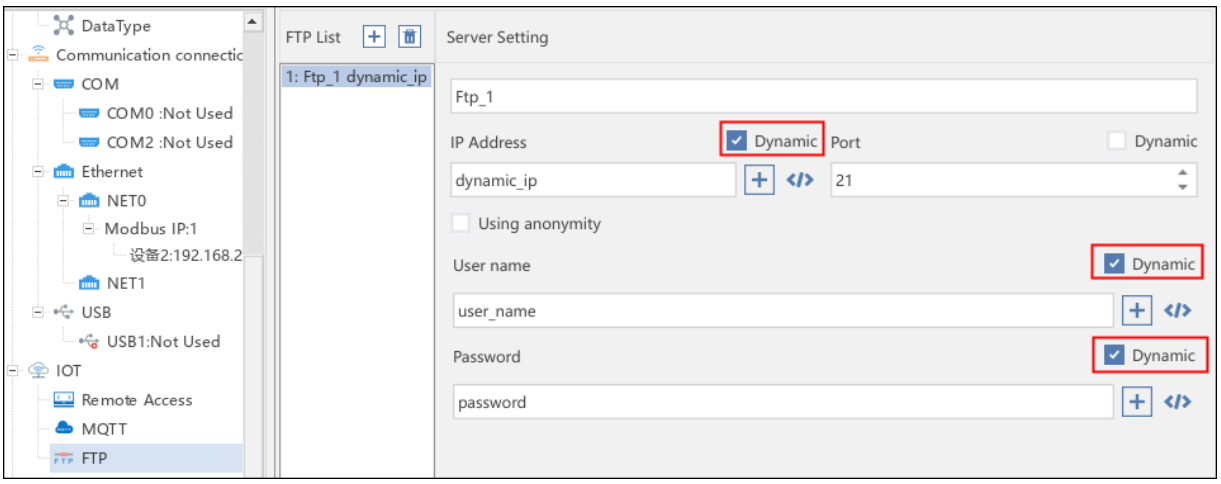
Example of scenario application:

As shown in the figure, edit the IP, port number, username, and password to match the server settings

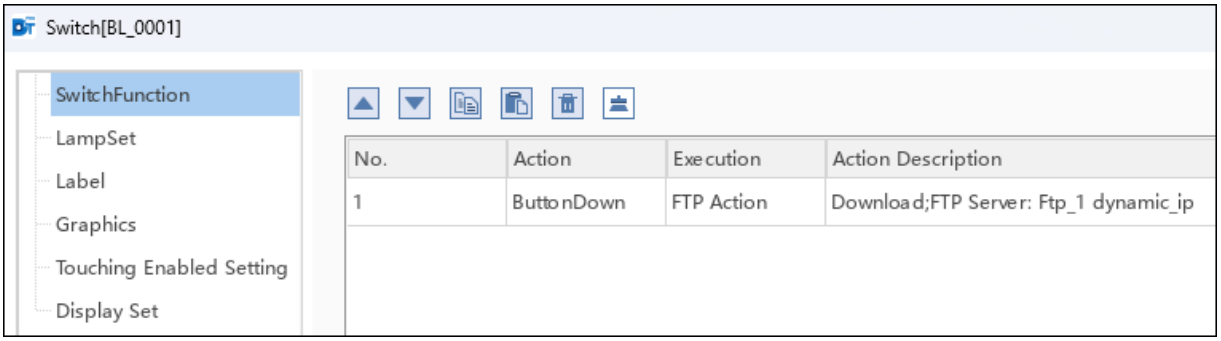


If you want to access multiple servers, you can create a new one in the FTP list

You can also switch servers for access through dynamic IP/username/password, all of which have string variables



When switching server access, after modifying these three variables, trigger the FTP transfer action to access the new server



Please refer to "8.3.13 FTP Action Set" for detailed instructions on FTP action upload/download settings

10 Database

The database is mainly used to control data reports and set the function of saving and then exporting them

10.1 Net Database

Description for Database Table				
Database table list	Database Table List	Name		Set the name of the data report to a maximum of 128 characters
		Description		Description of table attributes, up to 128 characters
	Field list			Adding, deleting, moving up and down fields
		Name		Set the field name of the database table to a maximum of 128 characters
		Description		Description of field attributes, up to 128 characters
		Property	Null	Do not set field properties
			Allow Blank	Allow empty data, display empty data as blank
			Major Key	Used to identify each record, the data in the primary key field cannot be empty
			Major Key: Auto Increment	It is possible to increment the data of a certain field as the record is inserted (without inserting data for this field). The prerequisite for automatic increment is that this field must be a major key, and there can only be one automatic increment in a table. Only 8 bits, 16 bits, 32 bits, and 64 bits have this feature
		Char Length		When the field type is string, the length of the string field can be set
		Type	SQLite 、 MySQL	Supports all data types.
			PostgreSQL	64-bit unsigned numbers are not supported.
			SQL Server	Unsupported 32-bit unsigned numbers, 64 bit signed/unsigned numbers, time, long time, time of day and date
	Capacity set	Record filled operator		Automatically delete the oldest record
				No longer saving records
		Capacity unit		Number of records
		Entries capacity		The default capacity is 1000 units, with a maximum of 65535 units
Property		Local Database		Database on the local machine. Currently only SQLite, PostgreSQL are supported Note: PostgreSQL is not support G2 series HMI
		Remote Database		Set database types: MySQL, SQL Server, PostgreSQL
				Set the IP address, port (MySQL default port 3306, SQL Server default port 1433, PostgreSQL default port 5432), username and password, and then update the database
Database use environment		Select a database table to view the usage environment of the database table		

1.  These three actions represent replication, addition, and deletion, respectively. Copy can be copied from both local and remote databases.

2.  Must be checked to delete database tables/fields
3. Collaborate with "Database Action Settings" in Chapter 8.3.1.11 – Database Action Set and Chapter 8.7.3 - Database Table.

11 User Security

User security function refers to the ability to define specific authorization and access permissions for specific users. Anyone who wants to use HMI functions needs to log in with a specified username and user password.

User permissions involve two types of objects: user groups and users.

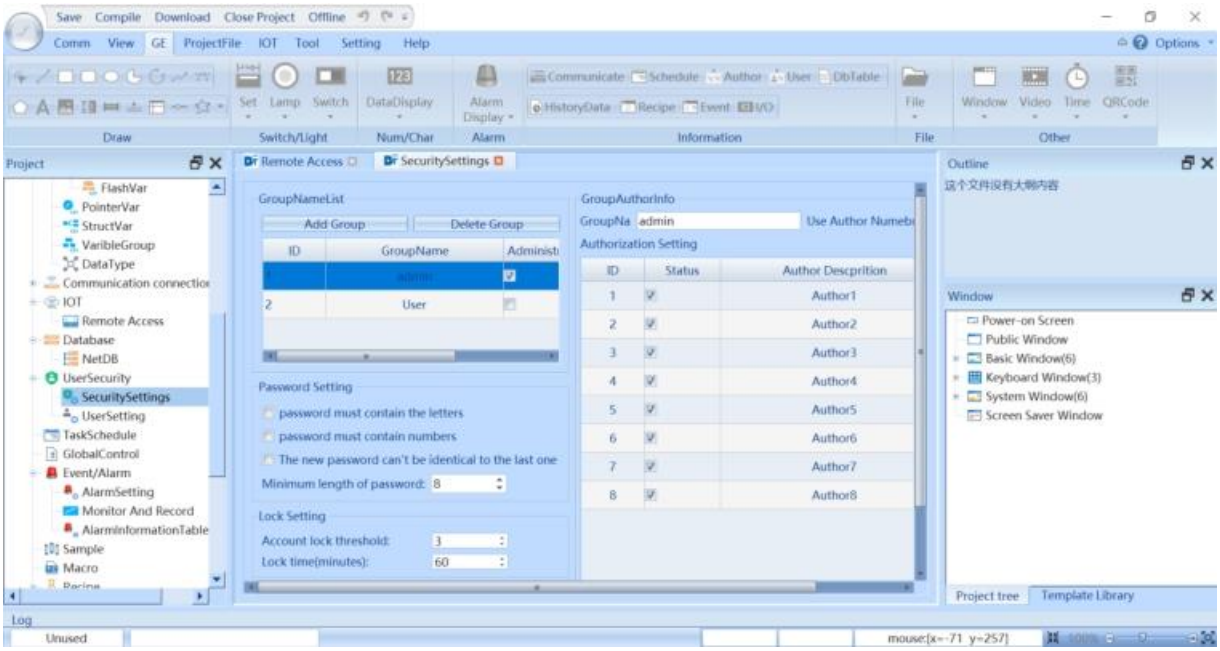
User group: Set a certain type of user group to have specific permissions, and a user group can contain multiple users.

User: Belongs to a specific user group. A user can only be assigned to one user group.

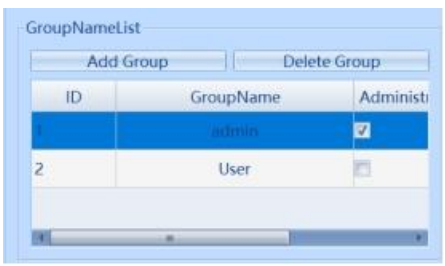
In practical applications, access permissions are not directly assigned to users, but rather to specific user groups. A specific user is assigned to a specific user group to obtain permissions, which separates the management of a specific user from the configuration of permissions and facilitates management. Information about user groups and users is stored in the HMI's internal database.

11.1 Security Settings

The security settings are preconfigured in the Project Menu Window. Clicking the "Security Settings" option in "User Security" in the "Project" window will automatically open the User Group Management Settings page in the design area. This page is used to configure and manage user groups and users. The configuration page mainly contains the "User" tab setting page and "Group" tab setting page. By clicking the button of the "Security Settings" tab, you can open the "Properties" parameter configuration dialog box.

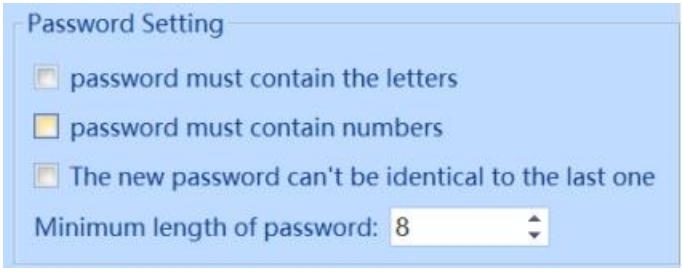


11.1.1 Group Name List



Group Name List Description		
Open the "Group" tab in the User Rights Management Editor and click the "Add" button to create a new permission group and configure it. By default, two types of user groups, "admin" and "User", have been pre-defined in the system.		
Add Group	Add permission groups, up to 32 permission groups can be added	
Delete Group	Delete permission groups	
Permission settings	ID	Permission Group Number
	Group Name	Customizable user group name
	Administrator	Set a unique administrator permission group. Effective after checking

11.1.2 Password Setting

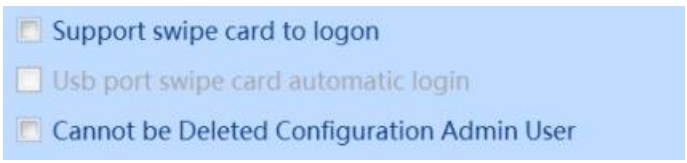


Password Setting Description	
Password must contain the letters	The user password set must contain letters
Password must contain numbers	The user password set must contain numbers
The new password can't be identical the last time	The new password for modifying password settings cannot be the same as the old password
Minimum length of password	Set the minimum character length of the password. The default length is 8, and up to 15 digits can be set

11.1.3 Lock Setting

Lock Setting Description	
Account Lock Threshold	The number of times you are allowed to enter the wrong password for the same account. After the set number of times, the account will be locked and cannot be used.
Locking time (minutes)	Set the time when the account will be locked. The account will be unlocked when the set time is reached. The time is in minutes.
The default account lock threshold is 3 and the default lockout time is 60, which means that after 3 incorrect passwords are entered, the account will be locked out for 60 minutes.	

11.1.4 Swiping Setting



Swiping Setting description	
Support swipe card to login	After checking, you can set the user's card number and support entering the card number to log in. It is not checked by default
USB port swipe automatic login	After checking, you can use an RFID reader to swipe your card and log in directly. It is not checked by default
Cannot be Deleted Configuration Admin User	Check to restrict the deletion of initial administrator users through user management. It is not checked by default
Note: Only after checking 'Support swipe card to login' can the USB port card swiping automatic login be checked. To use the card swiping function, you need to set the card number in the user settings, where one card number corresponds to one user. Using an RFID card reader for card swiping login is valid at any screen and time.	

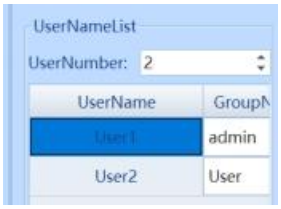
11.1.5 Group Authority Setting

Group author setting description		
Group Name	Edit the name of the permission group	
Use Author Number	Set the number of permissions for the current permission group. Maximum quantity is 32	
Authorization Setting	ID	Permission number
	Status	Set the permissions that the permission group has. Effective after checking. It is not checked by default
	Author Description	Customizable permission descriptions, such as "operator" and "engineer".

11.2 User Setting

Open the "Users" tab in the User Rights Management Editor. You can modify the number of users, create new users, and configure them. By default, "User1" and "User2" users have been predefined in the system.

11.2.1 User Name List

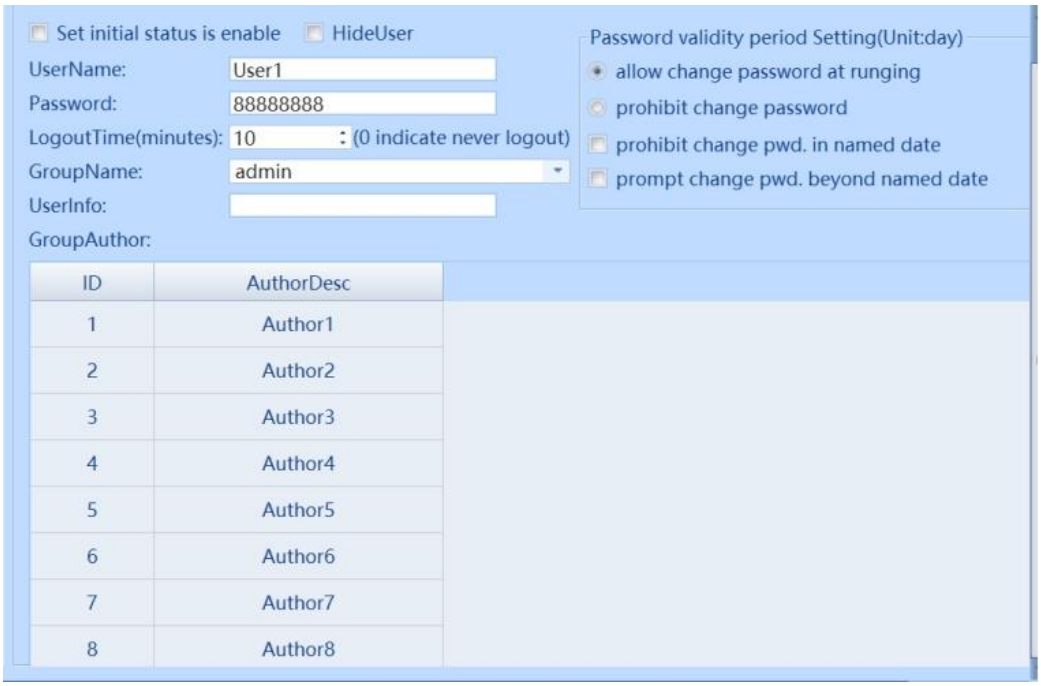


User Number: Set the total number of users, with a maximum of 1024

Parameter	Description
UserNumber	User serial number
Enable	If checked, the user becomes effective. It is not checked by default
User name	Customizable User Name
Group Name	Set the permission group to which the user belongs and get the corresponding permission
Hide User	Check to hide the user in the user list. It is not checked by default
User Info	Set user information, such as engineers and operators. The system variable '$User Description' can be used to display the current user information
Import Users	Import a user data table with a default file name of "User List. xlsx" and a type of xlsx; The pop-up window is named "Import User" (the file name can also be imported without the input suffix. xlsx)
Export Users	Export the current project user data table, and the exported file name defaults to "UserList", which can also be named by oneself. The file type is xlsx. The exported file exists in the software installation directory

These two actions represent import users and export users, respectively.

11.2.2 User Authority Information



Setting items	Description
User Name	Customizable User Name
Password	Configure the user password for the corresponding username in string format
Group name	Set the permission group to which the user belongs and obtain the corresponding permissions for the permission group
Logout time (minutes)	Set the automatic logout time to start counting from the last operation after logging in to the user. 0 indicates that the identity has not been unregistered
CardID	After enabling card swiping login, the user card number can be bound. The system variable '$Employee Card Number' can be used to display the current user information

Group Author	Display the permission content of the permission group set by the user
Allow change password at running	The user password can be modified by configuring the function on the HMI, which is checked by default
Prohibit change password	Prohibit modifying user passwords by configuring functions on HMI
Prohibit change pwd in named date	Set the number of days to not allow modification. The default is unchecked, and the default value is 1. The setting range is 1-3650 and the unit is "days".
Prompt change pwd beyond named date	The user is automatically prompted to change the password after the specified number of days. The default is unchecked, and the default value is 1. The setting range is 1-3650, and the unit is "days".

11.3 User Variable

If users do not use the system's own user window, they can create their own user-related operations through user variables.

11.3.1 Current User Variable

Variable Name	Data Type	Data Length（bit/byte）	Read/Write	Description
$User_Name	String	31	Read only	Used to display the current username. It is blank when not logged in
$User_Password	String	15	Read/Write	Enter user password when logging in
$User_Group	String	31	Read only	Used to display the user group to which the current user belongs. It is blank when not logged in
$User_Description	String	31	Read only	Used to display the description information of the current logged in user
$Employee_card_ID	String	31	Read only	Used to display the user card number of the current logged in user
$User_edit_status	Bit	1	Read/Write	User editing status enable
$Logout_Time	16-bit unsigned	2	Read only	Used to display the current user's logout time, which is 0 when not logged in
$Employee_Card_Login	Bit	1	Read only	Used to display whether the user supports card swiping login. 1 indicates support, 0 indicates no support

11.3.2 Set Relevant User Variable

Variable Name	Data Type	Data Length（bit/byte）	Read/Write	Description
$Set_User_Password	String	15	Read/Write	Used to enter a password when adding a new user or modifying a password
$Set_Employee_Card_ID	String	31	Read/Write	Used to input card numbers when adding new users or modifying card numbers
$Set_User_Description	String	31	Read/Write	Used to enter a description when adding a new user or modifying a user description
$Set_Password_Retention	16-bit unsigned	2	Read/Write	Used to set the maximum number of days a password can be used. After exceeding the set number of days, the user will be prompted to modify the password without forcing it to be modified. When the variable is 0, there will be no prompt
$Set_Modify_Password_Status	Bit	1	Read/Write	Set whether password modification is allowed. 1 indicates allowed, 0 indicates not allowed
$Set_Confirm_Password	String	15	Read/Write	Used to enter a confirmation password when adding a new user or modifying a password

$Set_User_Account_Status	Bit	1	Read/Write	Used to set user account status when creating new users or modifying user parameters. 1 indicates disable, 0 indicates enable. The current user account status cannot be modified
$Set_Logout_Time	16-bit unsigned	2	Read/Write	Used to set the logout time when adding new users or modifying user parameters
$Set_User_Group_ID	String	31	Read/Write	Used to set user groups when adding new users or modifying user parameters
$Set_User_Name	16-bit unsigned	2	Read/Write	Used to set the username when adding new users or modifying user parameters
$ Set_Password_Retention_Date	16-bit unsigned	2	Read/Write	Used to set password retention days when adding new users or modifying user parameters

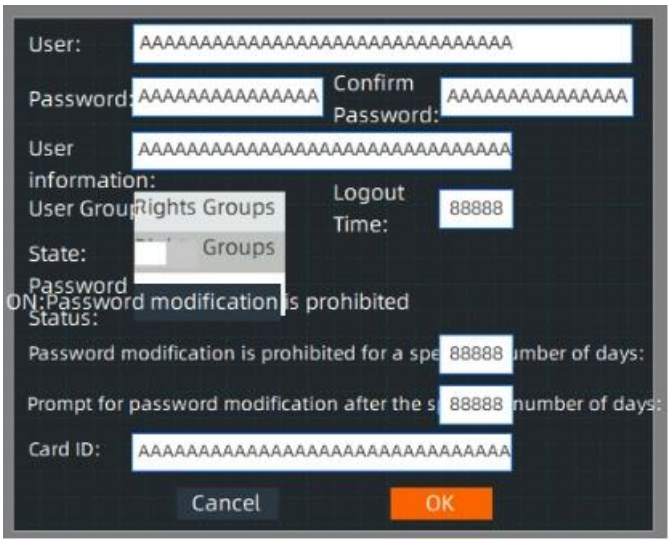
11.4 User Window

11.4.1 User Authority Browse

This screen is used to display user information. Administrator users can add, delete, modify, and restore default user properties for project configurations.

11.4.2 User Property Configuration

Property configuration window for 'Add User'/'Modify User'



11.4.3 User Password Modification

Users can perform password modification operations through this screen

11.4.4 User Authority Login

You can log in by entering a username and password. When checking “swipe card login” in the security settings, you can also log in directly by entering the card number.

11.5 User Operation

11.5.1 Introduction to Operation

Except for login/logout, all other operations require the operation permissions of the administrator account. All operations are executed based on the bound system variables and their contents.

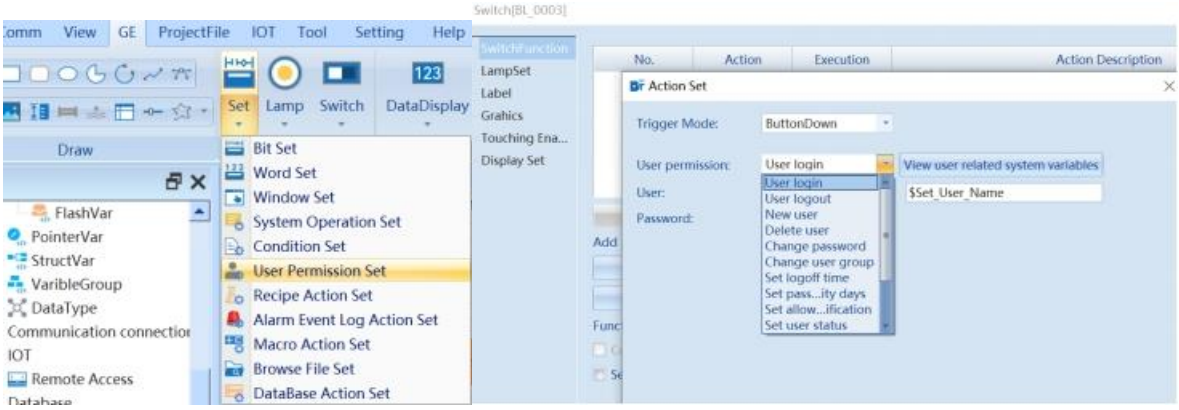
Operation Name	Operation Name
User login	Perform user login operations
User logout	Perform the operation of logging off the current user
New User	Execute the action of adding a new user
Delete User	Delete specified user
New Password	Modify the specified user password
User Group	Modify the user group of the specified user
Logout time	Set the specified user logout time
Set password validity days	Set the number of valid days for the specified user password
Set whether password modification is allowed	Set whether specified users are allowed to modify passwords
Set User Status	Set whether the specified user is enabled
Set all user parameters	Set specified user parameters
Restore project default user	Restore default user attributes for project configuration

Modify User Card ID	Modify the specified user card number
Modify User Description Information	Modify the specified user description information

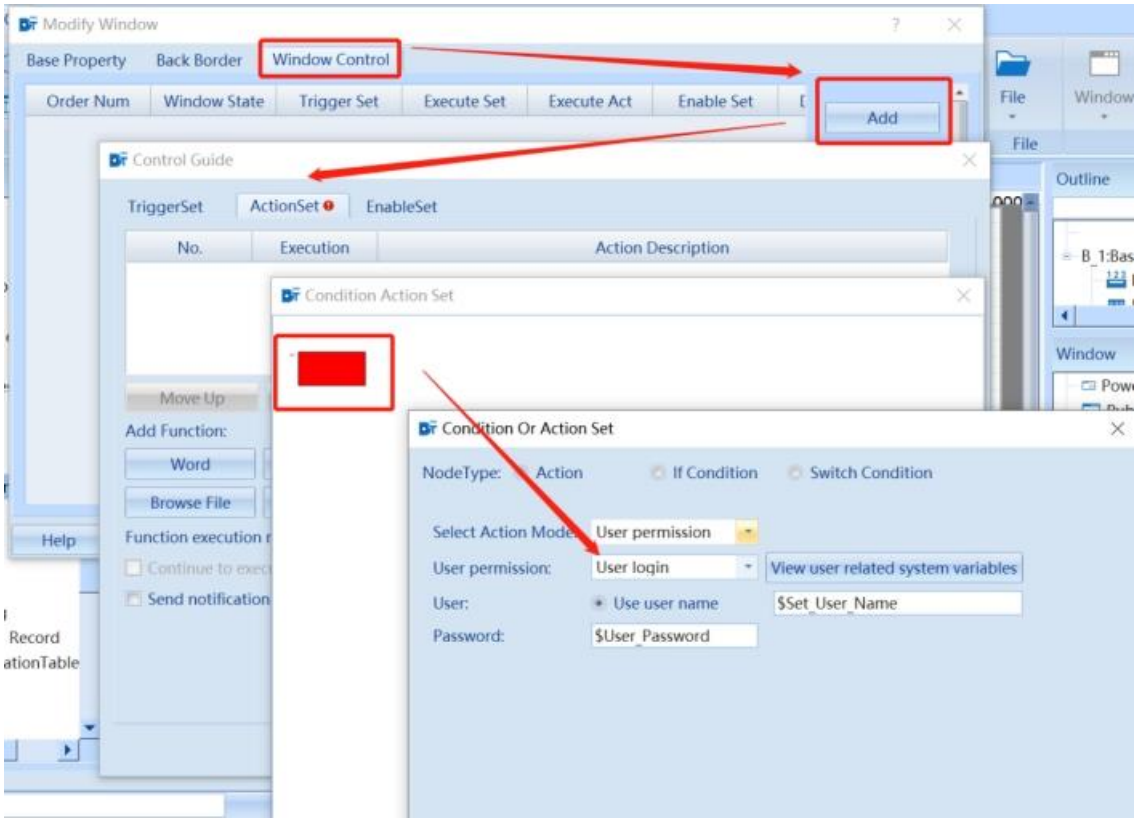
11.5.2 Introduction to Function

The following functions all support performing user actions

1.Set Function



2.Window Control



12 Task Schedule

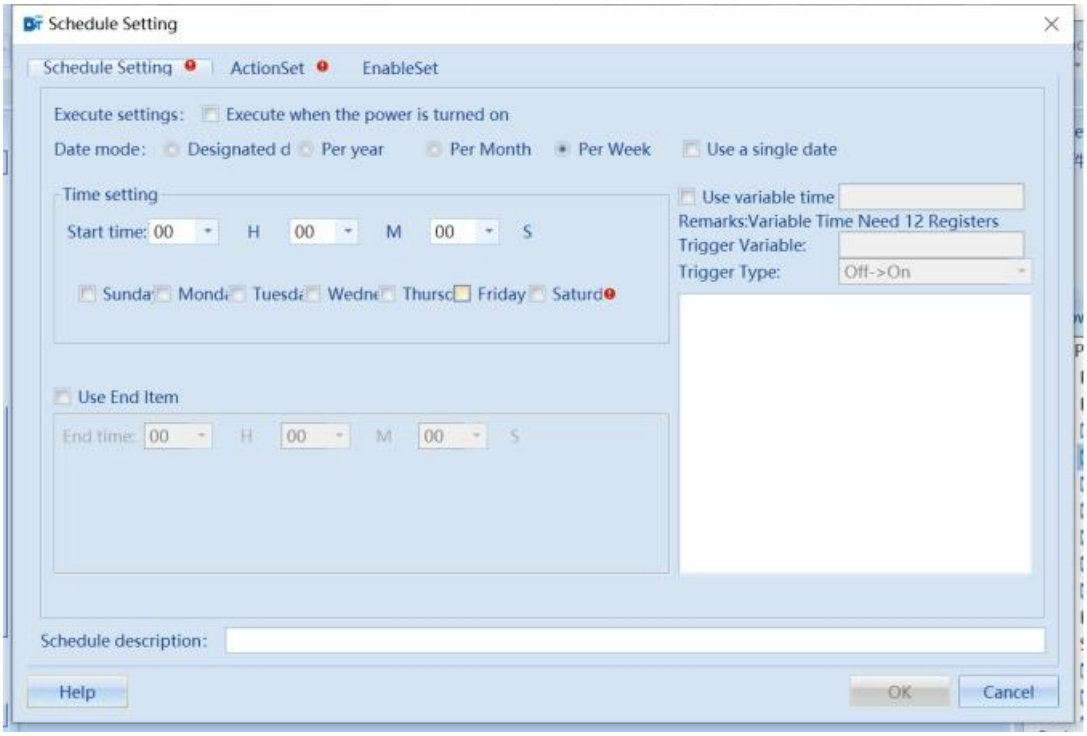
The task schedule list is used to register HMI to perform pre scheduled operations at a specified time, change the state of bit registers or the value of word registers. It is suitable for planning routine programs within a specified time frame.

- 【Task Schedule】interface

Instructions for setting the scheduling operation	
Add	Add scheduling operation items
Delete	Delete the currently selected scheduling operation item
Clear	Delete all scheduling operations for the current project
Edit	Modify the currently selected scheduling operation item
Copy	Copy the currently selected schedule operation item
Paste	Paste the copied schedule operation item
Enable	Enable the currently selected scheduling operation item
Enable All	Enable all scheduling operations for the current work
Disabled	Disable the currently selected scheduling operation item
Disabled All	Disable all scheduling operations for the current work

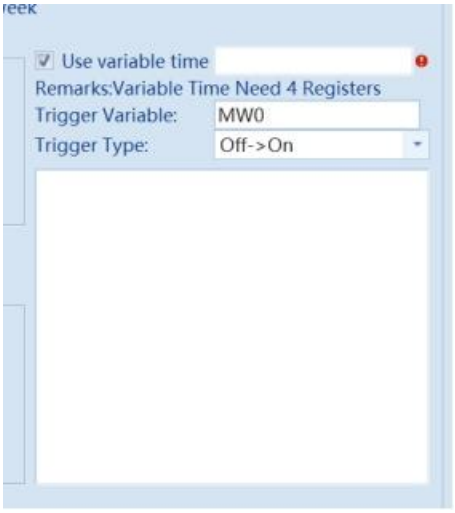
12.1 Schedule Set

Click on 'Add' and a pop-up will appear as shown in the following figure:



Schedule Setting Instructions		
Execute settings	Not checked by default. Execute when power is turned on	
	Checked	1. If the HMI starts after the scheduled time, execute the start action first. 2. If the HMI starts before the scheduled time and the end action is checked, the end action will be automatically executed first.
	Unchecked	If the power is turned on later than the scheduling start time and the end action is checked, the start action will not be automatically executed, but the end action will be automatically executed. If the end action is not set, the scheduling interval cannot be correctly determined, so the action will not be executed. 2. If the HMI starts before the scheduled time and the end action is checked, the start action will be automatically executed first.
Date mode	The trigger method for scheduling execution is specified date/year/month/week (using a single date)	
Time setting	Set the scheduling time. If the end action is enabled, the end time must be greater than the start time	
Use Variable	Check the option to use variables, set variables directly, and assign values to the variables to set the triggering time (data is an array, which can be automatically assigned)	

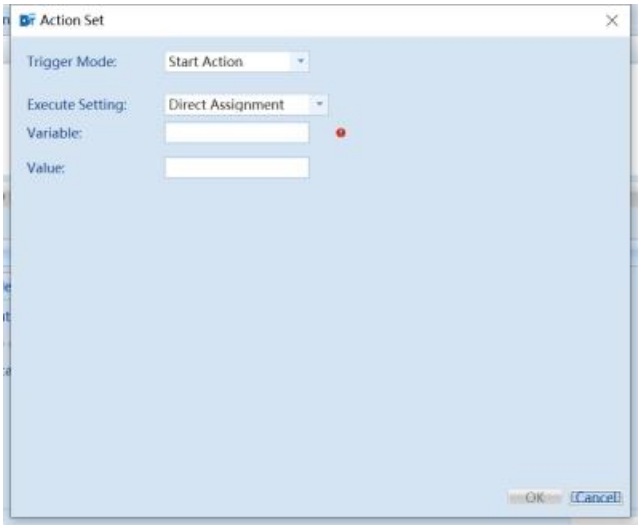
Use variable time: Users do not need to modify and download the project through configuration. They can directly set the start/end action execution time online, and trigger the modification to take effect.



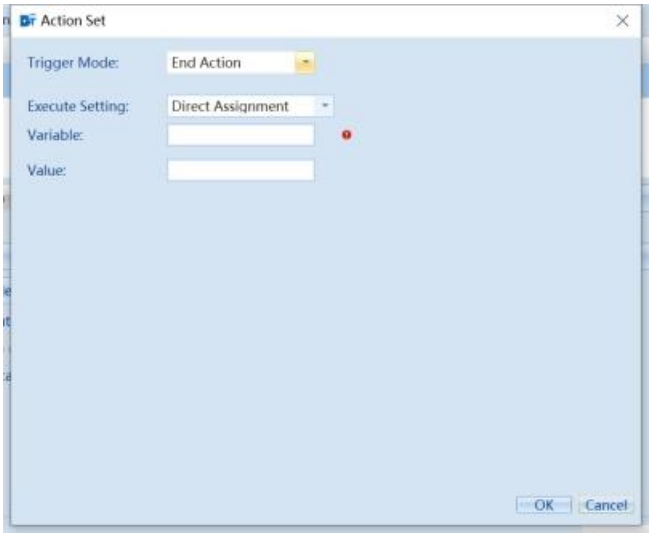
12.2 Action Set

Start Action: The action performed when the condition is met.

Action settings can be set to execute multiple actions. Execution can choose between sequential execution and full execution. Sequential execution refers to strict execution in the order in which actions are added, while full execution results in an uncertain order of execution.

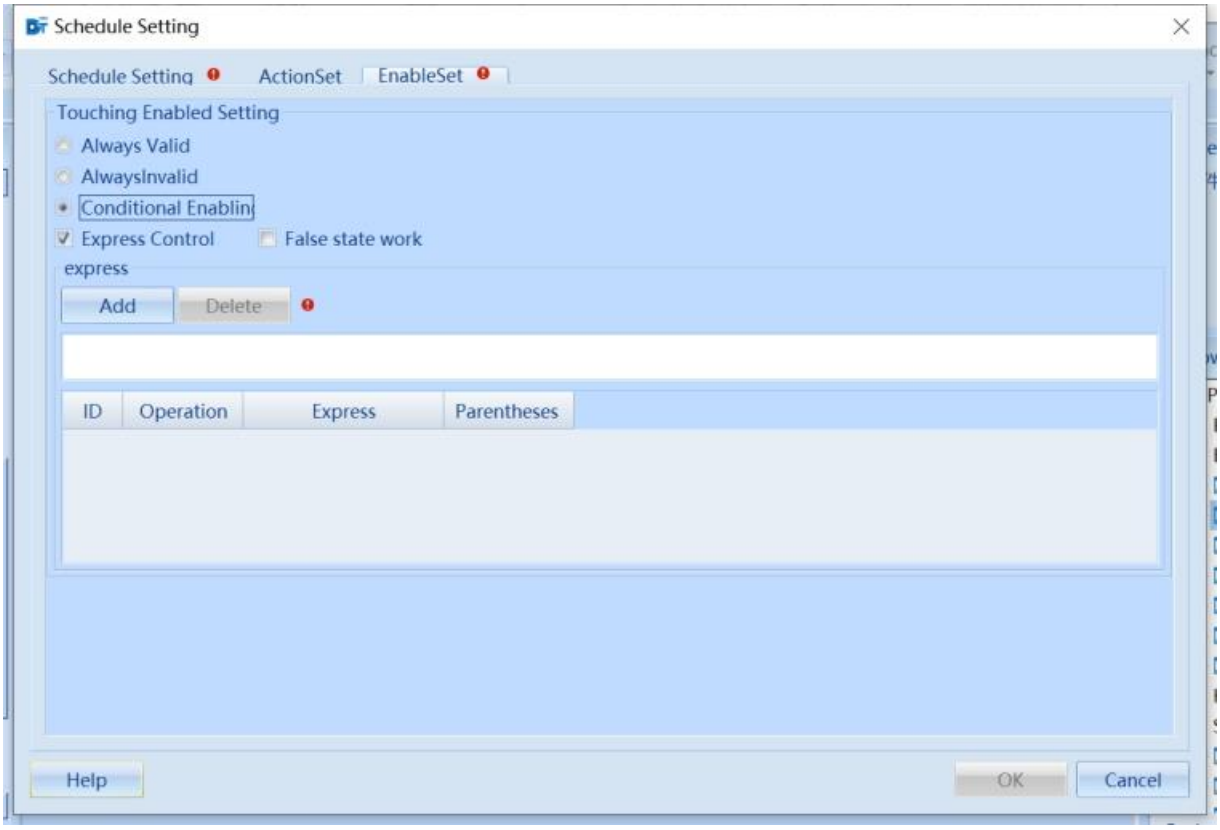


End Action: Enable 'End Action' to take effect.



12.3 Enable Set

Enable Set Description	
Always Valid	Action always in effect
Always Invalid	Action Inhibit
Conditional Enabling	Effective when conditions are met

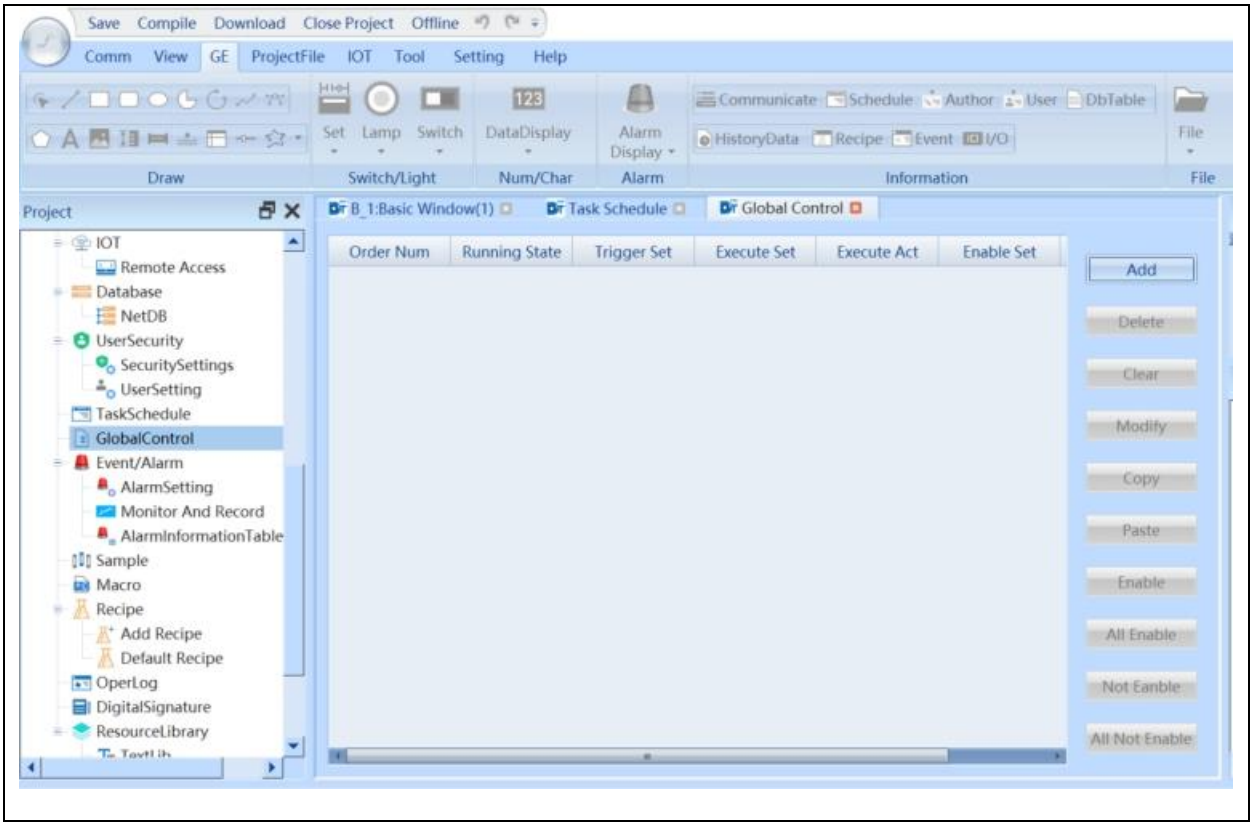


13 Global Control

Global control is used to execute global judgment actions of HMI, which can be executed periodically and predetermined actions can be executed according to certain conditions.

13.1 Operation Panel(GlobalControl)

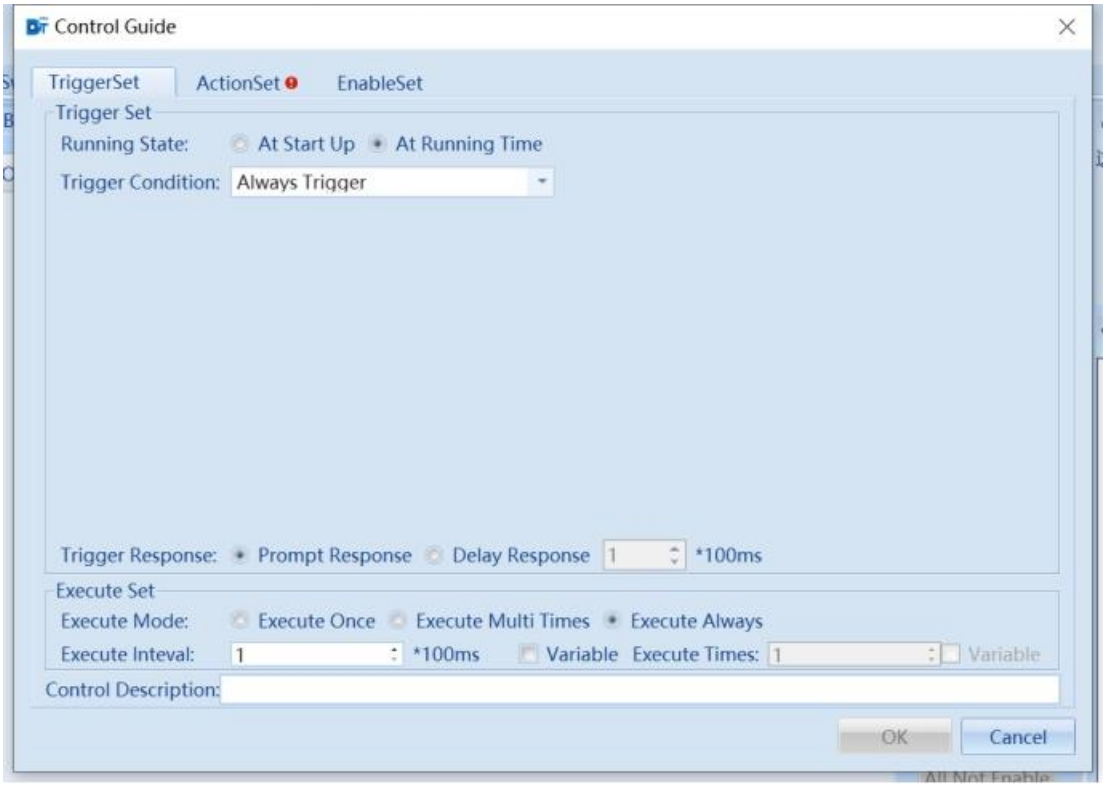
As shown in the following figure, you can “add”, “delete”, “modify”, “copy”, “paste”, and “enable”.

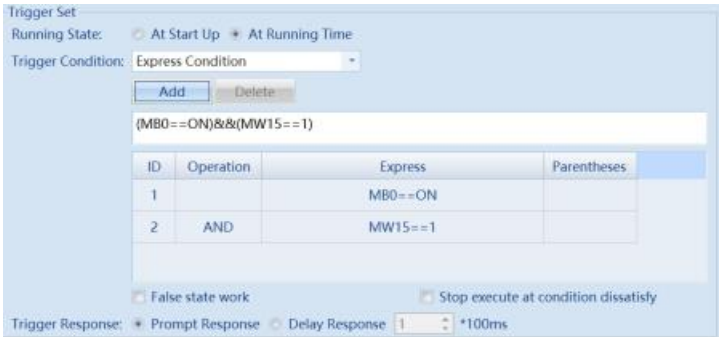


Description of the operation panel (for global control)	
Add	Add global control operation items
delete	Delete the currently selected global control action item
Clear	Delete all global control operation items for the current project
Modify	Modify the currently selected global control action item
Copy	Copy the currently selected global control action item
Paste	Paste the copied global control action item
Enable	Enable the currently selected global control operation item
All Enable	Enable all global control operation items for the current work
Not Enable	Set “not enable” for the currently selected global control operation item
All Not Enable	Set “not enable” for all global control operation items in the current work

Right click on the selected item to select Mobility Control Data

13.2 Trigger Set

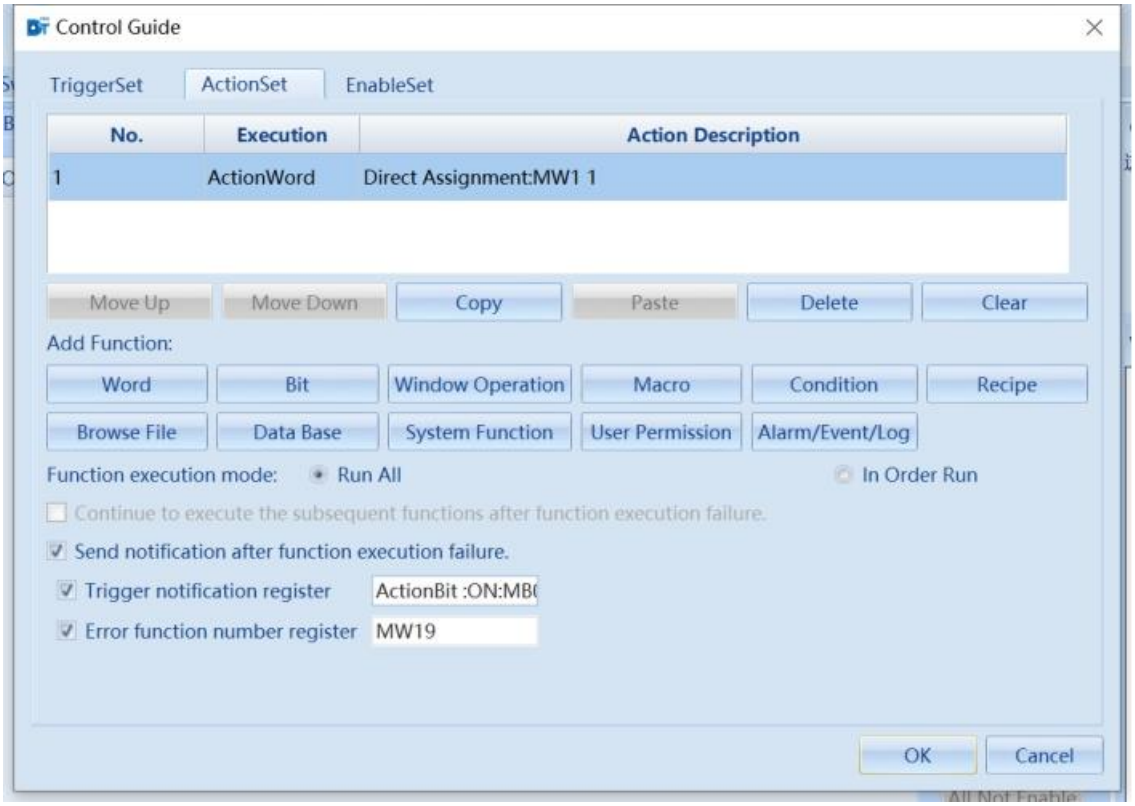


<table>
<tr><th colspan="4">Trigger Set Description</th></tr>
<tr><td rowspan="8">Running State</td><td colspan="3">At Start Up: Only execute once during HMI startup</td></tr>
<tr><td rowspan="7">At Running Time: Execute when the triggering condition is met during HMI operation</td><td colspan="2">Always Trigger: Periodic execution during HMI runtime</td></tr>
<tr><td colspan="2">Bit State Change: ON->OFF, OFF->ON, ON<->OFF, ON->OFF(automatic reset), OFF->ON(automatic reset)</td></tr>
<tr><td colspan="2">Word Value Change: Trigger execution when the word value changes, and the range of changes can be set. The default value is 1</td></tr>
<tr><td colspan="2">String Change: Trigger execution when the string content changes</td></tr>
<tr><td rowspan="3">Express Condition</td><td>Bitwise Logic: ON、OFF、Logic NOT</td></tr>
<tr><td>Word Logic: Equal to, less than, greater than, less than or equal to, greater than or equal to, not equal to (variable or constant)</td></tr>
<tr><td>Note:
1. Double click on the operation column to modify AND OR for multiple conditions, and double click on the parentheses column to modify ()
2. The false status can be set to take effect, and the execution can be stopped if the conditions are not met (in conjunction with the execution method)
  </td></tr>
</table>

		Data Source Change	Perform data transmission of a single word or multiple words, with bidirectional transmission capability
		Window Switch	Execute when the current window changes
Trigger Response	Prompt Response: Execute immediately when conditions are met		
	Delay Response: Execute according to the set time delay, and the Unit of time is 100ms		
Execute Mode	Execute Once: If the condition is met, execute once		
	Execute Muti Times: When the conditions are met, execute the preset number of times, in conjunction with the execution cycle and execution times		
	Execute Always: If the condition is met, execute continuously: in conjunction with the execution cycle		
Control Description	Explanation of the current global control operation		

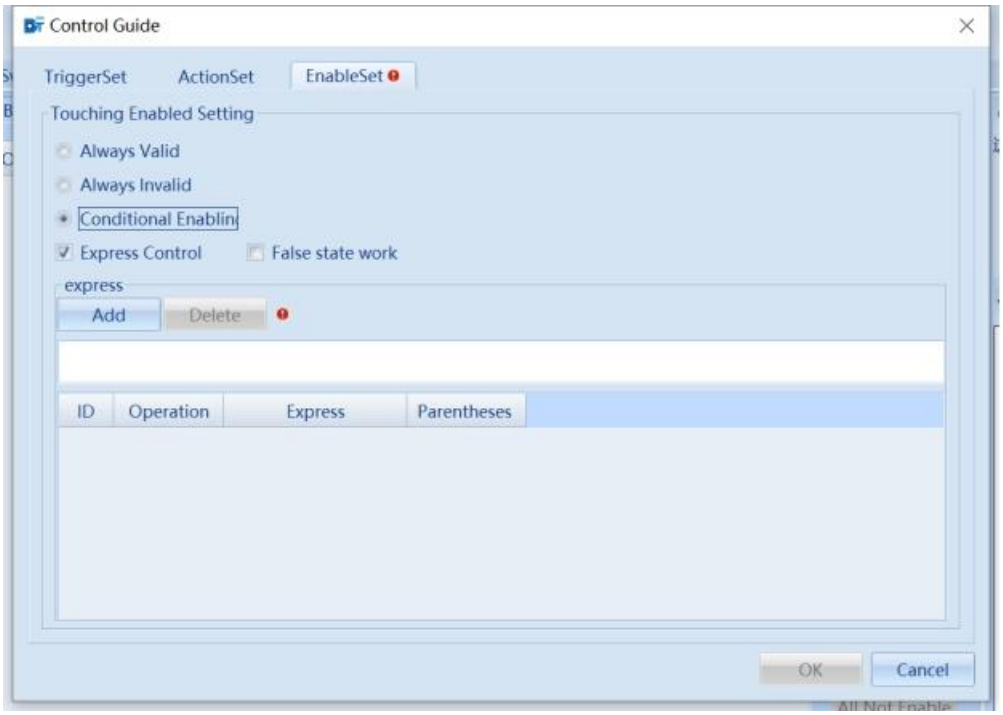
13.3 Action Set

Multiple actions or single actions can be executed in sequence, consistent with button execution actions



13.4 Enable Set

Enable Set Description	
Always Valid	Action always active
Always Invalid	Action disabled
Conditional Enabling – Express Control	Effective when conditions are met


Control Guide
TriggerSet
ActionSet
EnableSet
Touching Enabled Setting
Always Valid
Always Invalid
Conditional Enablin
Express Control
False state work
express
Add
Delete
ID
Operation
Express
Parentheses
OK
Cancel

14 Alarm/Event

Event/Alarm contains alarm settings, data monitoring and statistics, and alarm information tables for registering event/alarm information to be recorded, as well as alarm levels, variables to be recorded when an alarm occurs, and settings for action response.

14.1 Alarm Set

Alarm settings are mainly used to set the export of alarm records and other attributes of alarms.

Alarm Set	
Auto Generate Alarm ID	Check to indicate that the alarm ID will be automatically generated when an alarm occurs
Alarm ID digits	Set the number of digits displayed for the alarm ID, with a minimum of 1 digit and a maximum of 5 digits
ID Display Leading Zero	If checked, it means that the alarm ID on the alarm component will be displayed in the form of a leading 0. For example, if the alarm ID is 1 and the number of digits displayed for the alarm ID is 2. If checked, it will display 02

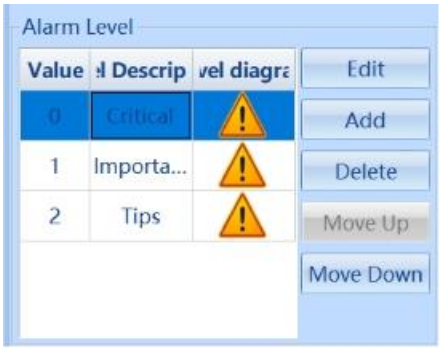
1. In the "Alarm Group" dialog box, corresponding properties can be set.

Alarm can be grouped to indicate the priority of the alarm. The "Default Alarm Group (0)" alarm group is preset in the alarm group, which is the root node and has only one root node; The alarm group can support up to 5 levels of nodes, and the same level can support up to 99 nodes; The serial number in the name is the alarm group ID.

Alarm Set - Alarm Group Description	
Edit	Edit the currently selected alarm group
Add	Add the next level node of the currently selected alarm group
Delete	Delete the currently selected alarm group

2. In the "Alarm Level" dialog box, corresponding properties can be set.

Alarms can be graded to indicate the importance of the alarm. By default, the system has three alarm levels, Critical, Important, and Tips.



Alarm Set-Alarm Level description	
Alarm Level	① Value: ID of the alarm level, cannot be modified ② Level Description: The name of the alarm level ③ Level diagram: Diagram of the alarm level
Edit	1. Edit the level description and level diagram of the currently selected alarm level 2. The font color and background color of the alarm line can be set for the alarm level: the background color is effective for real-time alarm tables and historical alarm tables; The font color is valid for alarm bars, real-time alarm tables, historical alarm tables, etc., and only for triggering states 3.Alarm description: Text library can be used
Add	③ Level diagram: Diagram of the alarm level
Delete	Edit the level description and level diagram of the currently selected alarm level
Move Up	Add alarm level
Move Down	Delete the currently selected alarm level

3. In the "Alarm Type" dialog box, corresponding properties can be set.

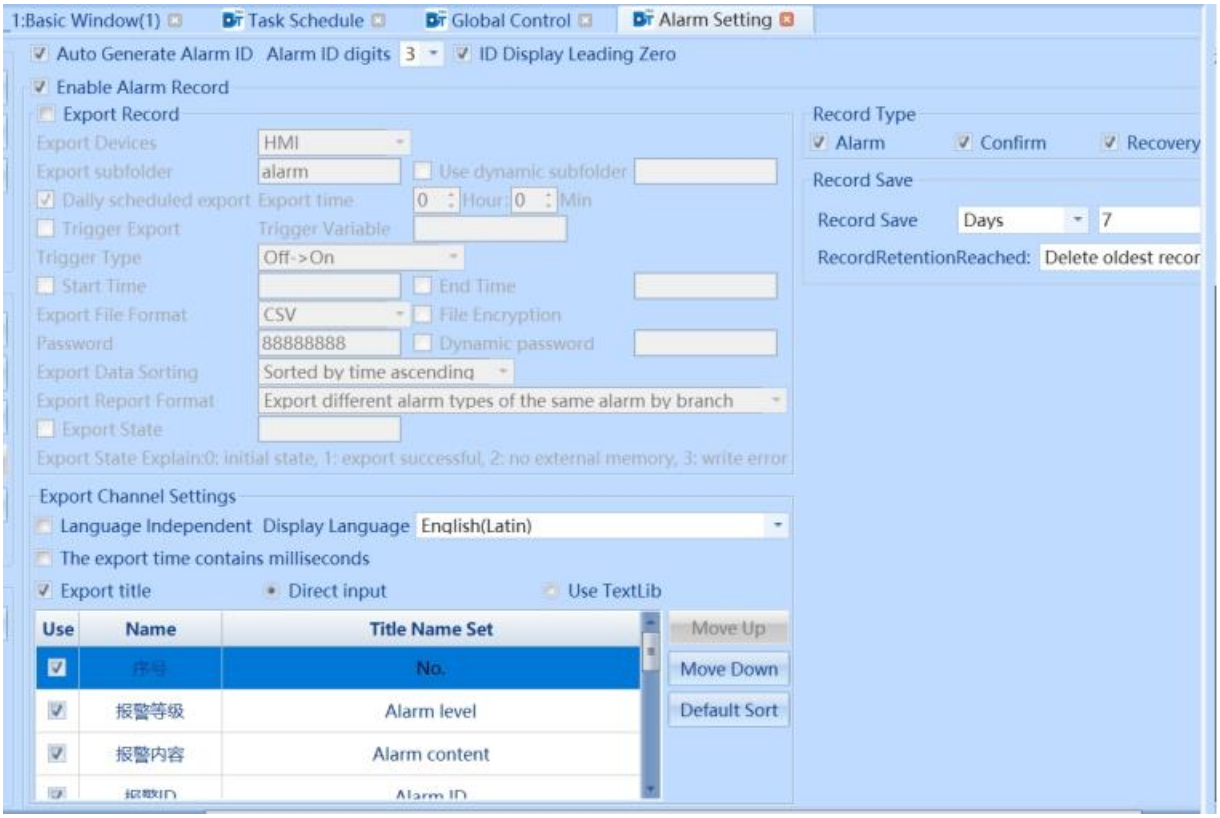
Alarms can be divided into different types to indicate the category of the alarm. The system has Alarm, Confirm, and Recovery alarm types by default.

Alarm Set- Alarm Level Description	
Alarm Type	① Value: The ID of the alarm type, which cannot be modified ② Type: The type of alarm, which cannot be modified ③ Description: The description of the alarm type, which can be modified. The content displayed in the "Alarm Status" column on the alarm component
Edit	Edit the alarm description of the currently selected alarm type

4. In the "Enable Alarm Record" dialog box, corresponding properties can be set.

Alarm records are used to save the alarm information generated during the project's operation, so that it can be viewed and analyzed in the future.

The difference between “Export Record” in alarm settings and “Export Set” in alarm components:
1. The “Export Record” in alarm settings is to export background alarm information.
2. The “Export Set” in the alarm component is to export the alarm information displayed by the current component.

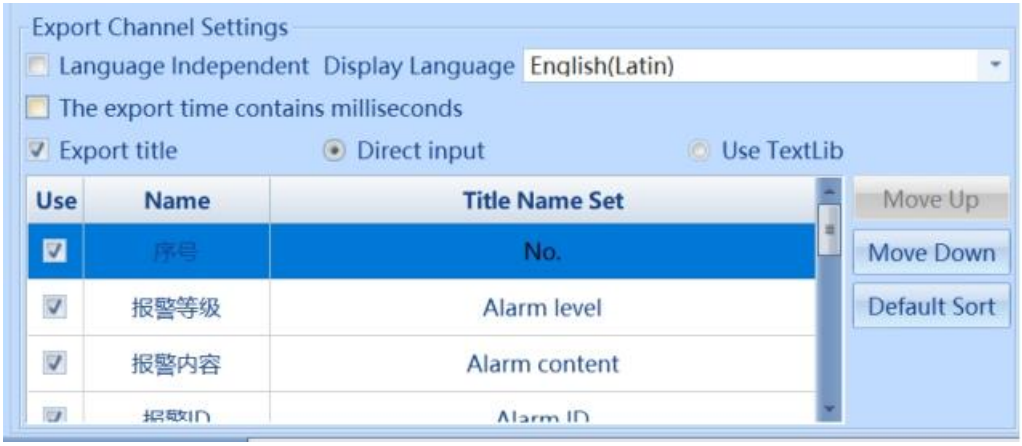


Alarm Set - Record Export Instructions	
Export Devices	Export and save alarm information to external storage devices
Use dynamic devices	Dynamically setting export devices using string variables
Export Subfolder	Set the name of the sub folder for exporting alarm information. If this item is blank, the alarm information will be saved in the "data" folder of the project root directory by default
Use dynamic subfolder	Dynamically setting the name of a subfolder using string variables
Daily scheduled export	Set the export time and regularly export alarm information every day
Trigger Export	Export alarm information triggered by the status of bit variables
Trigger Type	Set the triggering method for triggering export bit variables
Start Time	Set the start time for export. Please use time component settings when configuring. For time components, please refer to Chapter 8.9.1: Time
End Time	Set the end time for export. Please use time component settings when configuring. For time components, please refer to Chapter 8.9.1: Time
Export File Format	Set the file format for exporting alarm information, including CSV and PDF
File Encryption	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encrypt】 is not checked, the exported file format is set in the 【Export File Format】 option, and the file can be opened directly
Dynamic password	Use string variables to dynamically set the password for file encryption, which is valid when 【File Encryption】is checked

Export Data Sorting	Set the sorting method for exported data, including two options: "Sort by time ascending" and " Sort by time descending"
Export Report Format	Set the record format for exporting alarm information, including "Export different alarm types of the same alarm by branch" and " Export different alarm types of the same alarm in one row". When selecting ' Export different alarm types of the same alarm by branch ', the data table in' Export Channel Settings' will have an 'Alarm Status' title bar. For example, when an alarm message has three states: triggered, acknowledged, and restored, if you select " Export different alarm types of the same alarm by branch", the exported data table will display three states: triggered, acknowledged, and restored in different branches. Otherwise, it will not be displayed.
Export State	Reflect the exported state through the value of the word variable. 0 indicates the initial state; 1 indicates successful export; 2 indicates no external memory; 3 indicates a write error

5. In the "Export Channel Settings" dialog box, you can set the corresponding attributes.

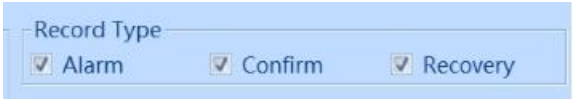
“Export Channel Settings” are used to set the properties of the exported alarm information table.



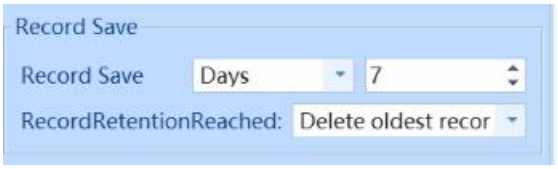
Alarm Set - Export Channel Settings Description	
Language Independent	If checked, the selection box after 【Display Language】 is invalid, and the component defaults to using the first language
Display Language	Set the language of the title bar, which is valid when 【Language Independent】 is not checked
The export time contains milliseconds	If checked, the time in the exported alarm information table includes milliseconds
Export title	If checked, the exported alarm information table includes a title bar, which is checked by default
Direct input	The【Title Name Set】 column in the【Export Channel Setting】 data table uses direct input to modify the title block name
Use Text Lib	The【Title Name Set】 column item in the 【Export Channel Setting】 data table can use the text library
Move Up	Move up the currently selected alarm level
Move Down	Move down the currently selected alarm level
Default Sort	Restore to the original sorting of the data table

6. In the “Record Type” dialog box, corresponding properties can be set.

“Record Type” is used to set the alarm type of alarm information in the exported alarm information table. It includes three record types: alarm, confirm, and recovery. By default, three types are checked. If a certain item is not checked, there will be no alarm type for this item in the exported alarm information table.



7. In the "Record Save" dialog box, corresponding properties can be set.



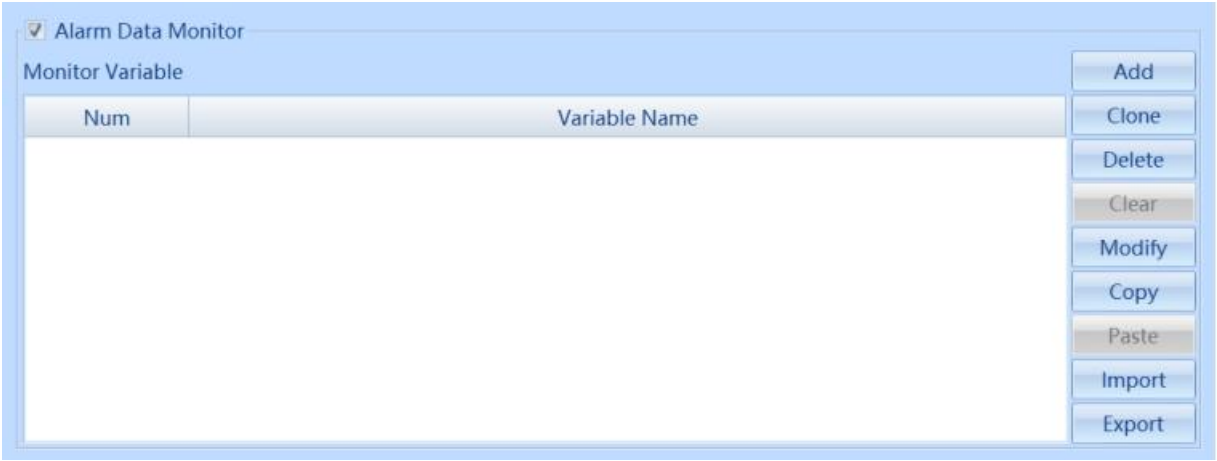
Alarm Set - Record Save Instructions	
Record Save	Set the attributes to be retained in the exported alarm information table. The unit can be selected as "Days" or "Number". When selecting 'Days', the minimum value is 1 day and the maximum value is 365 days; When selecting 'Number', the minimum value is 1 item and the maximum value is 100000 items
Record Retention Reached	When the alarm information table reaches the "record retention" number, new data is recorded according to the set "record retention reached" method, including "delete the oldest record" and "not save new records"

14.2 Monitor and Record

Data monitoring and recording are used to configure variable data that needs to be displayed in alarm information. There are two situations: the first is to display real-time data of certain variable values when the alarm is triggered in the alarm text, and the second is to monitor the historical changes of alarm related variables. Monitoring changes in data is the second situation.

1. Only when monitoring variables are added to "Monitor and Record " can monitoring variables be associated with the alarm entries in the "Alarm Information Table".
2. Insert up to 8 monitoring variables into an alarm message.

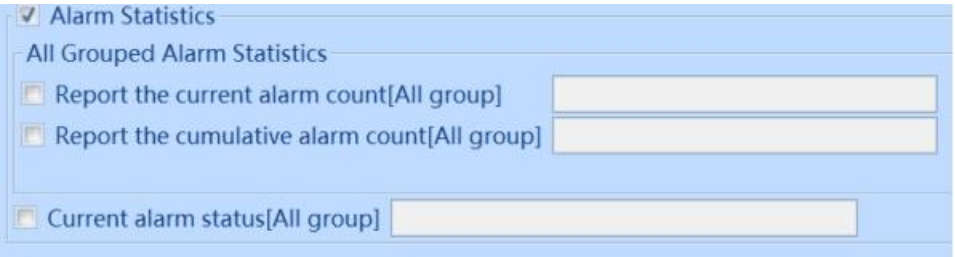
1. In the " Alarm Data Monitor " dialog box, corresponding properties can be set.



Alarm Data Monitor - Export Channel Setting Description	
Add	Add monitoring variables
Clone	Clone the current monitoring variable. Clicking the 【Clone】button will pop up the "Set Monitoring Variable" window, where the attributes of the variable are consistent with the currently selected variable attributes

Delete	Delete the currently selected variable
Clear	Clear all variables
Modify	Edit the properties of the currently selected variable
Copy	Copy the currently selected variable
Paste	Paste the currently selected variable
Import	Import Monitoring Variable Table
Export	Export the current monitoring variable table

2. In the "Alarm Statistics" dialog box, corresponding properties can be set.

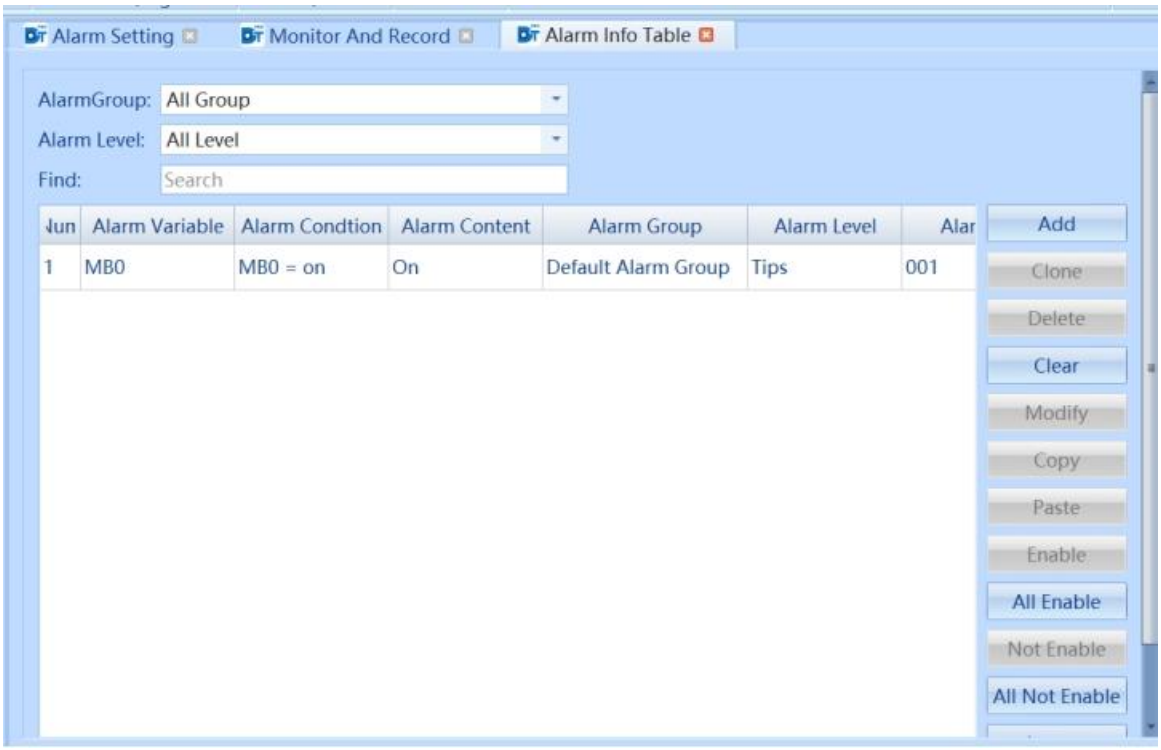


Monitor and Record - Alarm Statistics Description	
Report the current alarm count [All group]	Display the current alarm count through word variables
Report the cumulative alarm count [All group]	Display the cumulative number of alarms that have occurred through word variables
Current alarm status [All group]	Determine whether there is currently an alarm triggered by the status of the bit variable. As long as an alarm is triggered, the current alarm status variable will be set to 1

14.3 Alarm Information Table

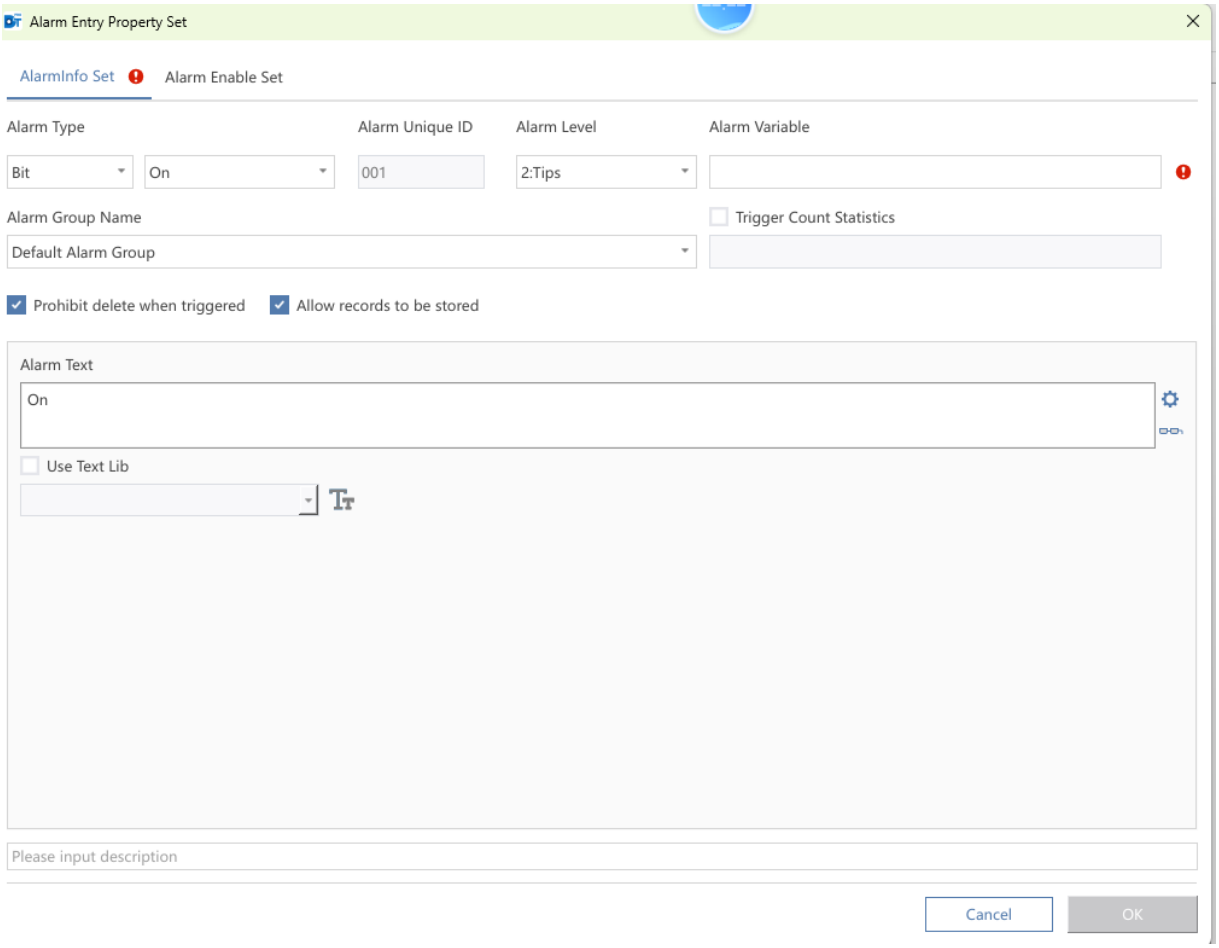
A library component used to register alarm information. It is possible to register alarm information triggered by bit variables, word variables, and expression conditions.

1. In the "Alarm Info Table" dialog box, corresponding properties can be set.



Alarm Information Table Description	
Alarm Group	Filter alarm information by alarm group
Alarm Level	Filter alarm information by alarm level
Find	Search for alarm information
Add	Add alarm information
Clone	Clone the current alarm information. Clicking the 【Clone】 button will pop up the "Alarm Entry Attribute Settings" window. The attributes of the alarm information are consistent with the currently selected alarm information attributes
Delete	Delete the currently selected alarm information
Clear	Clear all alarm messages
Modify	Edit the properties of the currently selected alarm information
Copy	Copy the currently selected alarm information
Paste	Paste the currently selected alarm information
Enable	Set the currently selected alarm information to be valid
All Enable	Set all alarm information to be valid
Not Enable	Invalid setting of the currently selected alarm information
All Not Enable	Set all alarm information invalid
Import	Import Alarm Information Table
Export	Export the current alarm information table

2. Click the "Add" button to set the properties of alarm information in the "Alarm Entry Property Set" dialog box. The following is a description of bit variable alarm types.



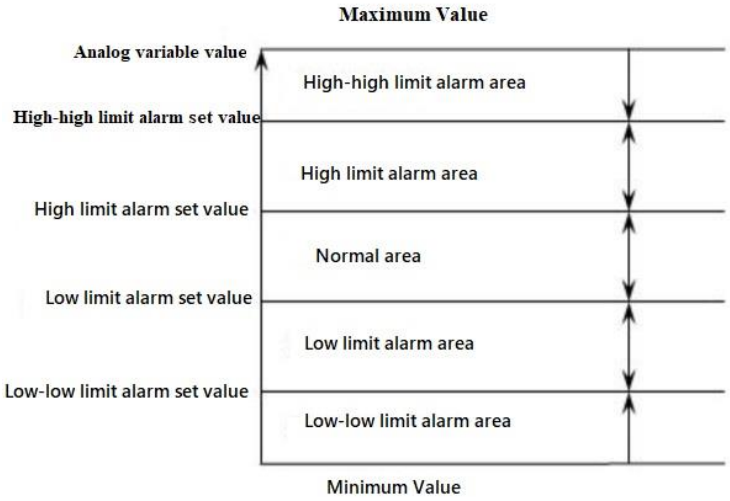
Alarm Information Table - Bit Variable Alarm Entry Properties Description

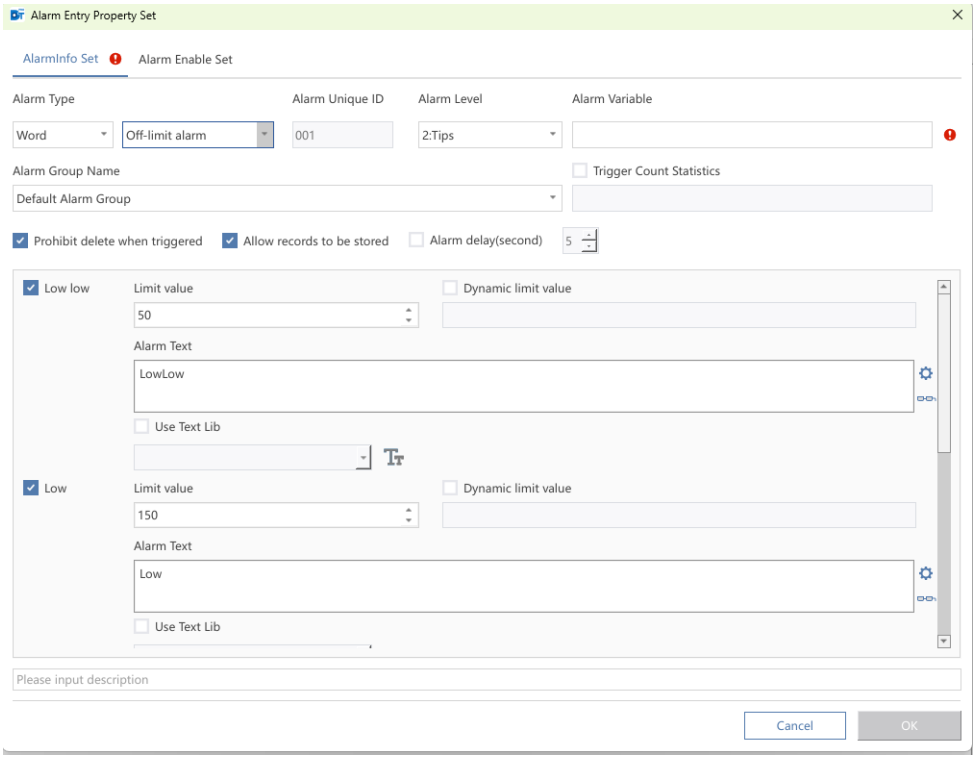
Alarm Type	Set alarm information for alarm information, including bits, words, and expressions
Alarm Unique ID	The ID of the alarm message. Modification is not allowed, system automatically assigns
Alarm Group Name	Set the group name for alarm information
Alarm Level	Set the level of alarm information
Alarm Variable	Set trigger variables for alarm information
Accumulated number of triggers	Record the cumulative total number of triggers
Prohibit delete when triggered	Check to indicate that deletion on the alarm component is not allowed when this alarm message is triggered
Allow records to be stored	Check to indicate that this alarm information is allowed to be stored
Switch value alarm	The triggering conditions for bit variable alarm information, including ON, OFF, and Change. There are two types of Changes: ON ->OFF and OFF ->ON
Alarm Text	The text content displayed after the alarm message is triggered. Click the 【Set】 button to add monitoring variables. The added monitoring variables will be displayed in the alarm text. When the alarm is triggered, the current status or data of the monitoring variables will also be displayed
Action	Set the actions to be executed during alarm triggering, confirmation, and recovery
Use Text Lib	Alarm text using text library
Text state switch variable	Switch the state of text through word variables. Valid when checking 【Use Text Lib】

3. Click the 【Add】 button to set the properties of alarm information in the 【Alarm Entry Property Set】 dialog box. The following is a description of the alarm types for word variables.

- **Word Variable Off-limit alarm**

When a variable value changes, if it crosses a certain limit value, an "Off-limit alarm" will immediately occur. At a certain moment, there may only be one type of out of limit alarm for a variable, so only one type of out of limit alarm is generated. For example, if the value of a variable exceeds the high-high limit, a high-high limit alarm will be generated instead of a high limit alarm. In addition, if the limit is exceeded twice, it is necessary to check whether the two limits are of the same type. If so, no new alarm will be generated, but it does not mean that the alarm has been restored. If not, the original alarm will be restored first and then a new alarm will be generated. The schematic diagram is shown in the following figure:





Alarm Information Table - Word Variable Off - Limit Alarm	
Alarm Type	Set alarm information for alarm information, including bits, words, and expressions
Alarm Unique ID	The ID of the alarm message. Modification is not allowed, system automatically assigns
Alarm Group Name	Set the group name for alarm information
Alarm Level	Set the level of alarm information
Alarm Variable	Set trigger variables for alarm information
Over limit or deviation alarm delay	Set the overrun or deviation alarm delay time, which is in seconds. The default is 5 seconds, and the range is 1-60 seconds. The alarm delay is only valid when triggered, but invalid after the alarm is recovered. If a new alarm is triggered within the delay time, the timing will restart
Prohibit delete when triggered	Check to indicate that deletion on the alarm component is not allowed when this alarm message is triggered
Allow records to be stored	Check to indicate that this alarm information is allowed to be stored
OFF - limit alarm	When defining the limit value, it should be: low-low limit value<low limit value<high limit value<high-high limit value. If it is not correct, it will prompt an error; If there is an error in the dynamic limit value, the alarm will not be triggered. The over limit alarm includes four types: low-low, low, high, and high-high ① Low-low: An alarm is generated when the value of the alarm variable is lower than the low limit value, and the low limit alarm is restored when it is greater than the low limit value ② Low: When the value of the alarm variable is lower than or equal to the low limit value, an alarm is generated, and when it is greater than the low limit value, the low limit alarm is restored ③ High: When the value of the alarm variable is greater than the high limit value, an alarm is generated, and when it is less than the high limit value, the high limit alarm is restored ④ High-high: When the value of the alarm variable is greater than or equal to the high-high limit value, an alarm is generated, and when it is less than the high-high limit value, the high-high limit alarm is restored
Dynamic limit value	Using variables to dynamically modify boundary values
Action	Set the actions to be executed during alarm triggering, confirmation, and recovery

Alarm Text	The text content displayed after the alarm message is triggered. Click the 【Set】 button to add monitoring variables. The added monitoring variables will be displayed in the alarm text. When the alarm is triggered, the current status or data of the monitoring variables will also be displayed
Use Text Lib	Alarm text using text library
Text state switch variable	Switch the state of text through word variables. Valid when checking 【Use Text Lib】

➢ Word Variable Deviation Alarm

Deviation alarm is an alarm generated when the fluctuation of the analog value relative to the target value exceeds the specified range of change. During the process of variable changes, if a certain limit value is crossed, an alarm will be immediately generated. However, there will not be two types of deviation alarms generated at the same time.

The schematic diagram is shown below.

The deviation alarm limits are calculated as follows:

①Small deviation alarm limit value = deviation target value + - defined small deviation value;

②Large deviation alarm limit value = deviation target value + - defined large deviation value;

The deviation alarm has the following four cases:

① Small deviation alarm is generated when it is greater than or equal to the small deviation alarm limit

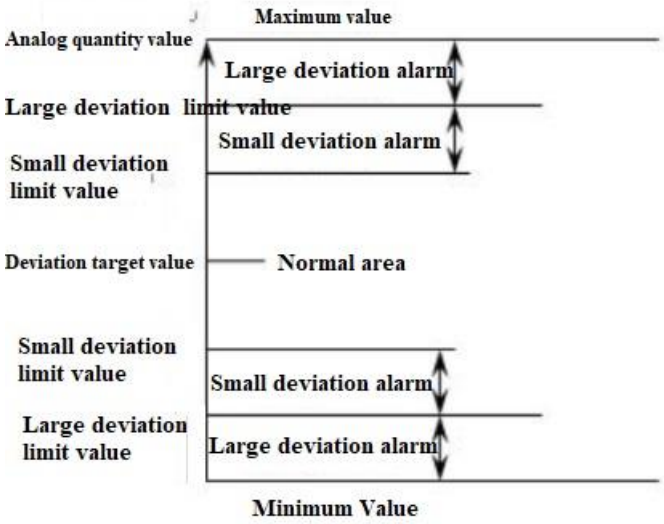
②The large deviation alarm is generated when it is greater than or equal to the large deviation alarm limit

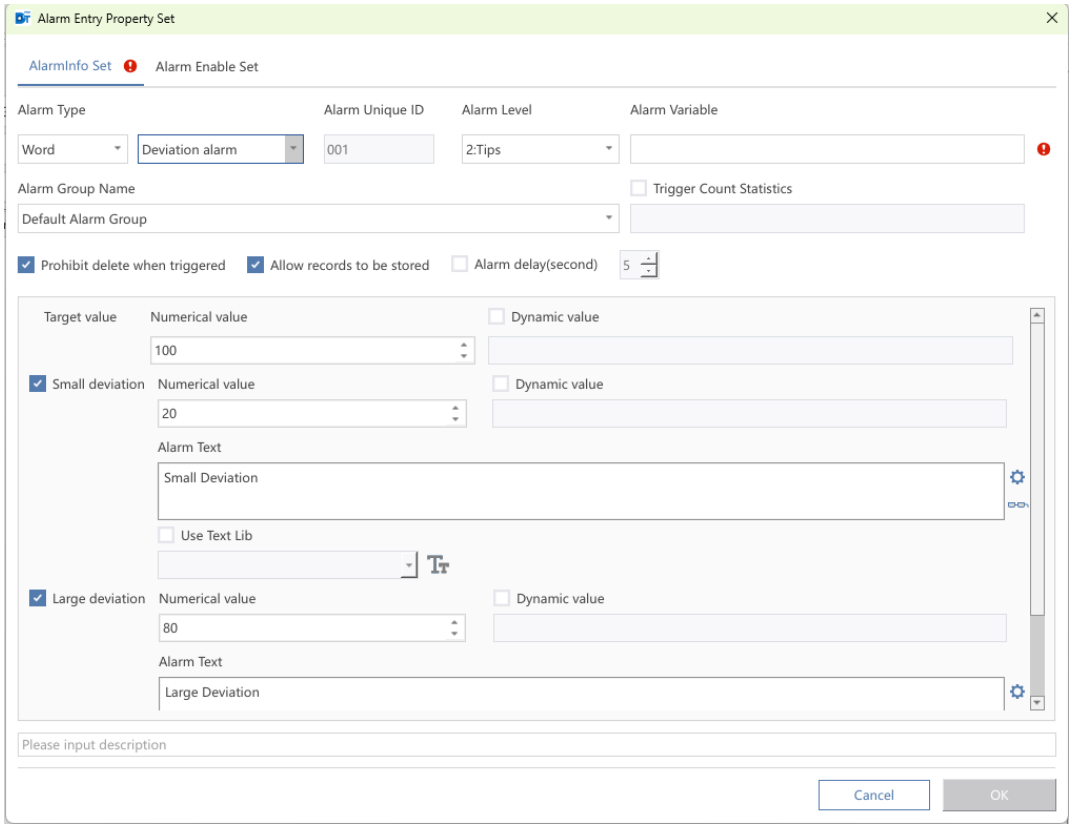
③ Small deviation alarm is generated when it is less than or equal to the small deviation alarm limit

④Generate a large deviation alarm if it is less than or equal to the large deviation alarm limit

For example, if the target deviation value is 100, the small deviation value is 20, and the large deviation value is 80, then the small deviation alarm limit = deviation target value + - defined small deviation value = 80,120, and the large deviation alarm limit = deviation target value + - defined large deviation value = 20,180.

Assuming that the minimum value of the variable is 0 and the maximum value is 255, the small deviation alarm is generated when the value of the variable is in the range of [120,180); the large deviation alarm is generated when the value of the variable is in the range of [180,255]; the small deviation alarm is generated when the value of the variable is in the range of [80,20); the large deviation alarm is generated when the value of the variable is in the range of [20,0]; and the large deviation alarm is not generated when the value of the variable is in the range of (80. When the value of the variable is within the range of (80, 120), no alarm is generated, i.e., the normal area.

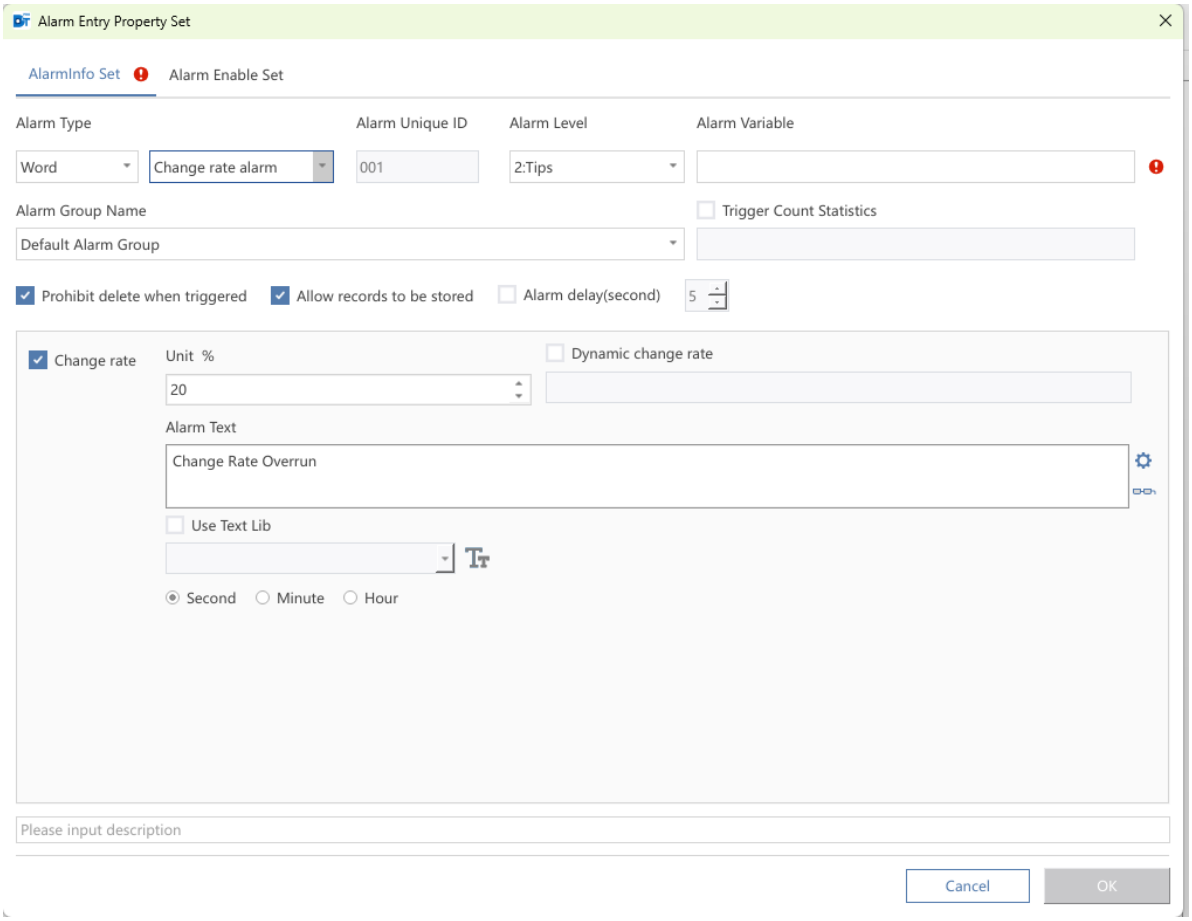




Alarm Information Table - Word Variable Deviation Alarm	
Alarm type	Set alarm information for alarm information, including bits, words, and expressions
Alarm Unique ID	The ID of the alarm message. Modification is not allowed, system automatically assigns
Alarm Group Name	Set the group name for alarm information
Alarm Level	Set the level of alarm information
Alarm Variable	Set trigger variables for alarm information
Over limit or deviation alarm delay	Set the overrun or deviation alarm delay time, which is in seconds. The default is 5 seconds, and the range is 1-60 seconds. The alarm delay is only valid when triggered, but invalid after the alarm is recovered. If a new alarm is triggered within the delay time, the timing will restart
Prohibit delete when triggered	Check to indicate that deletion on the alarm component is not allowed when this alarm message is triggered
Allow records to be stored	Check to indicate that this alarm information is allowed to be stored
Deviation alarm	The value of small deviation must be smaller than the value of large deviation, and the preset value is used when the dynamic deviation value is incorrect. Deviation alarms include two types: small deviation and large deviation
Deviation setting usage percentage	Check to indicate the percentage of deviation value used
Dynamic value	Using variables to dynamically modify deviation and target values
Action	Set the actions to be executed during alarm triggering, confirmation, and recovery
Alarm Text	The text content displayed after the alarm message is triggered. Click the 【Set】 button to add monitoring variables. The added monitoring variables will be displayed in the alarm text. When the alarm is triggered, the current status or data of the monitoring variables will also be displayed
Use Text Lib	Alarm text using text library
Text state switch variable	Switch the state of text through word variables. Valid when checking 【Use Text Lib】

➢ Word Variable Change Rate Alarm

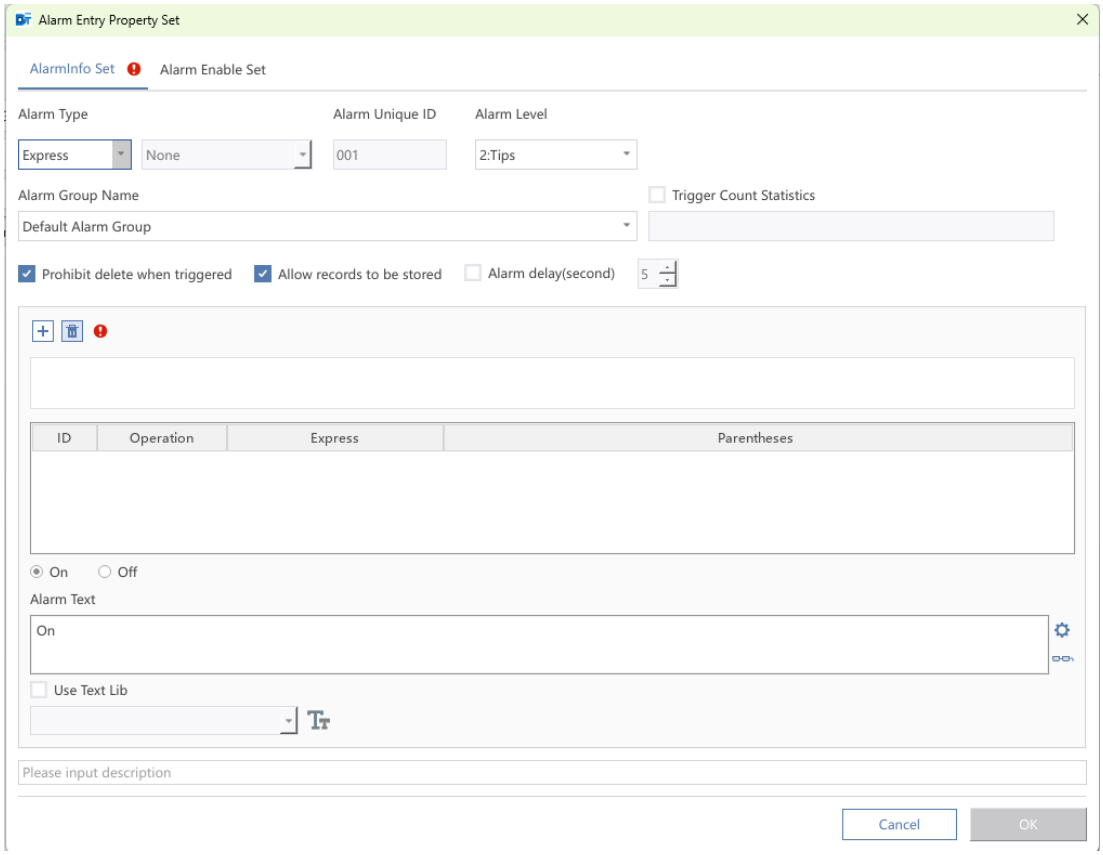
Change Rate alarm refers to an alarm generated when the value of an analog quantity changes faster than a specified value over a period of time, that is, when the variable changes too quickly. During system operation, whenever a variable undergoes a change, the system automatically calculates the speed of the variable change to determine whether an alarm is generated.



Alarm Information Table - Word Variable Change Rate alarm	
Alarm Type	Set alarm information for alarm information, including bits, words, and expressions
Alarm Unique ID	The ID of the alarm message. Modification is not allowed, system automatically assigns
Alarm Group Name	Set the group name for alarm information
Alarm Level	Set the level of alarm information
Alarm Variable	Set trigger variables for alarm information
Over limit or deviation alarm delay	Set the overrun or deviation alarm delay time, which is in seconds. The default is 5 seconds, and the range is 1-60 seconds. The alarm delay is only valid when triggered, but invalid after the alarm is recovered. If a new alarm is triggered within the delay time, the timing will restart
Prohibit delete when triggered	Check to indicate that deletion on the alarm component is not allowed when this alarm message is triggered
Allow records to be stored	Check to indicate that this alarm information is allowed to be stored
Change Rate	Set the limit value for the rate of change alarm. There are three types of rate of change alarms (in units of time): seconds, minutes, and hours
Dynamic change rate	Using variables to dynamically modify the rate of change
Action	Set the actions to be executed during alarm triggering, confirmation, and recovery
Alarm Text	The text content displayed after the alarm message is triggered. Click the 【Set】 button to add

	monitoring variables. The added monitoring variables will be displayed in the alarm text. When the alarm is triggered, the current status or data of the monitoring variables will also be displayed
Use Text Lib	Alarm text using text library
Text state switch variable	Switch the state of text through word variables. Valid when checking 【Use Text Lib】

4. Click the 【Add】 button to set the properties of alarm information in the 【Alarm Entry Property Set】 dialog box. The following is an explanation of the expression alarm type.

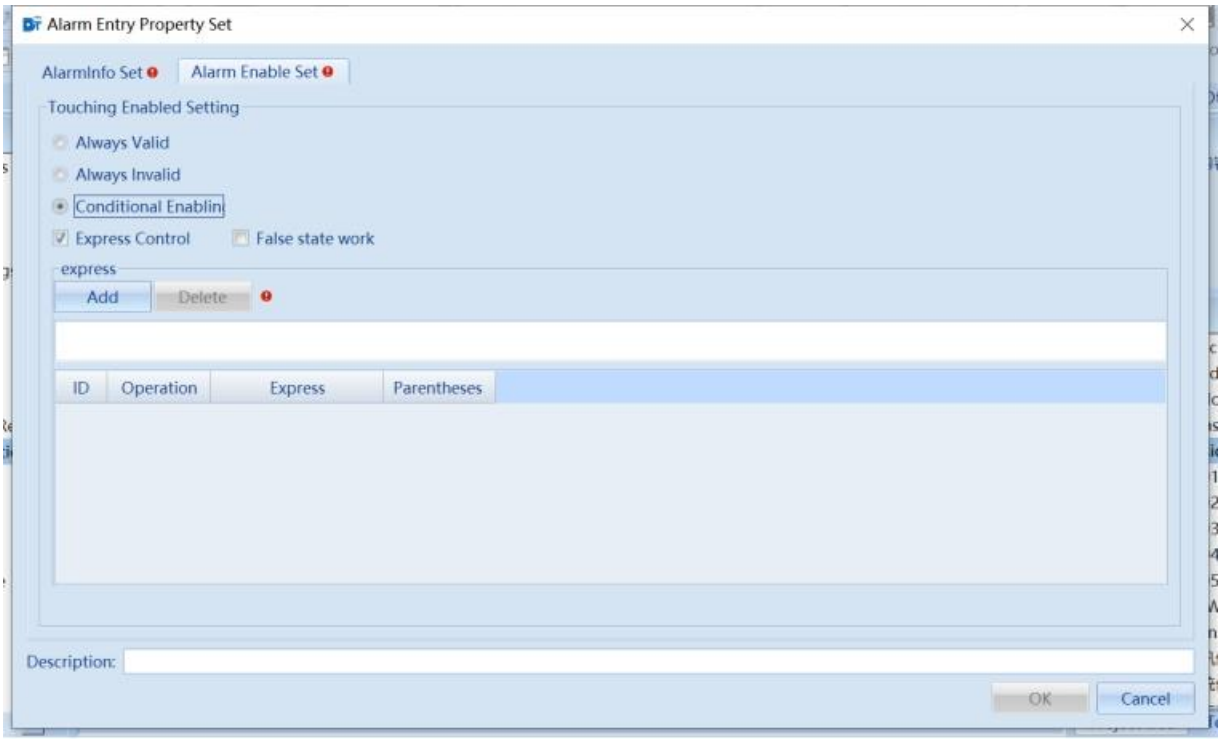


Alarm Information Table - Expression Alarm	
Alarm Type	Set alarm information for alarm information, including bits, words, and expressions
Alarm Unique ID	The ID of the alarm message. Modification is not allowed, system automatically assigns
Alarm Group Name	Set the group name for alarm information
Alarm Level	Set the level of alarm information
Alarm Variable	Set trigger variables for alarm information
Over limit or deviation alarm delay	Set the overrun or deviation alarm delay time, which is in seconds. The default is 5 seconds, and the range is 1-60 seconds. The alarm delay is only valid when triggered, but invalid after the alarm is recovered. If a new alarm is triggered within the delay time, the timing will restart
Prohibit delete when triggered	Check to indicate that deletion on the alarm component is not allowed when this alarm message is triggered
Allow records to be stored	Check to indicate that this alarm information is allowed to be stored
Add	Click the 【Add】 button to add expressions for bit or word variables
Alarm status	The alarm status includes two types: ON and OFF. ON indicates that the expression is valid, OFF indicates that the expression is not valid
Alarm Text	The text content displayed after the alarm message is triggered. Click the 【Set】 button to add monitoring variables. The added monitoring variables will be displayed in the alarm text. When

	the alarm is triggered, the current status or data of the monitoring variables will also be displayed
Action	Set the actions to be executed during alarm triggering, confirmation, and recovery
Use Text Lib	Alarm text using text library
Text state switch variable	Switch the state of text through word variables. Valid when checking 【Use Text Lib】

5. Click the 【Add】 button to set the properties of alarm information in the 【Alarm Entry Property Set】 dialog box. The following is an explanation of alarm enable settings.

Used to configure whether the current alarm information is valid (default is always valid). When the alarm enable is set, if the alarm variable only meets the triggering conditions but does not meet the enabling conditions, then this alarm is also invalid.

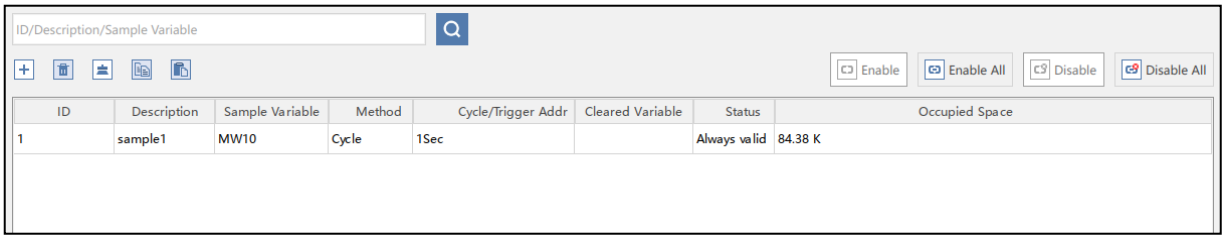


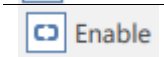
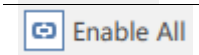
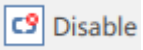
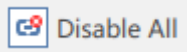
Alarm Information Table - Alarm Entry Property Set - Alarm Enable Set Description	
Always Valid	Check to indicate that the current alarm information is always valid
Always invalid	If checked, it indicates that the current alarm information has been invalid and the current alarm is disabled
Display invalid flag	If checked, the alarm message will display an invalid flag. Valid when checking 【Always Invalid】 and 【Conditional Enabling】
Show grayscale font	If checked, the font color of the alarm information will be displayed in grayscale. Valid when checking 【Always Invalid】 and 【Conditional Enabling】
Conditional Enabling	Check to indicate that the current alarm information is only valid when the specified bit or word variable meets the set conditions
False status work	Switch the state of text through word variables. Valid when checking 【Use Text Lib】

15 Sample

Data sampling mainly involves setting the sampling method, sampling variables, period, and other related attributes for historical data and trend graphs.

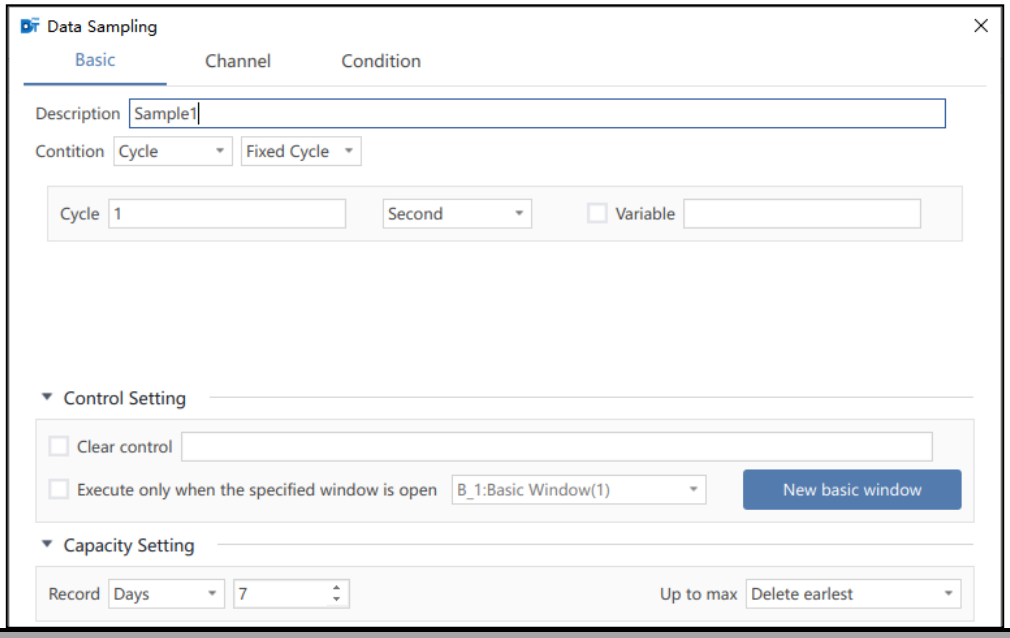
● [Data Sampling List] interface



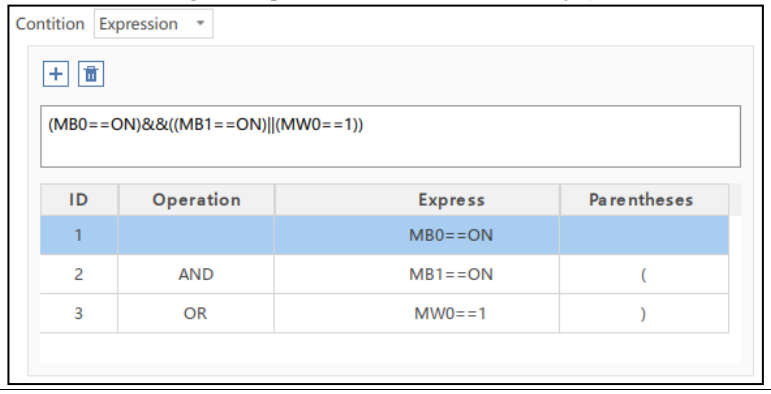
Data Sampling List Setting Instructions	
	Add data sampling item
	Delete the currently selected sampling item
	Delete all data sampling items in the current project
	Copy the currently selected data sampling item
	Paste the copied data sampling item
	Enable the currently selected data sampling item
	Enable all data sampling items in this list
	Prohibit enabling the currently selected data sampling item
	Disable all data sampling items in this list

15.1 Basic

Click on  icon and the interface shown in the following figure will pop up



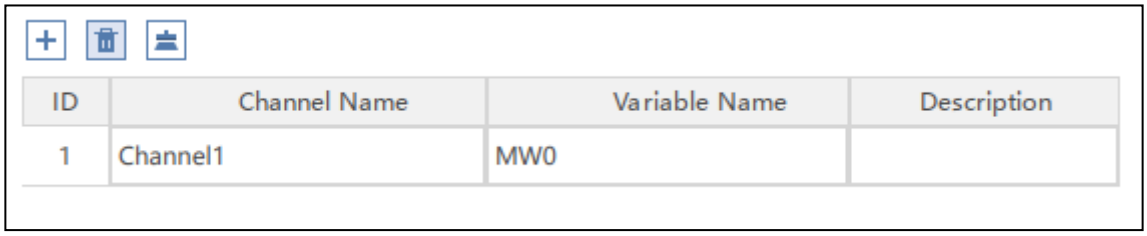
General Property Settings Description			
Description	the information of data sampling items, making it convenient for historical data and trend chart components to call data sources		
Contition	Cycle	Fixed Cycle	Set a constant period, in seconds or 100 milliseconds, and sample every other sampling period
		Fixed Time	Sampling is performed every other sampling cycle within a specified time period, in seconds or 100 milliseconds
	Bit	Perform a data sampling according to the specified triggering method (on<=>off, on ->off, off ->on, on ->off (automatic reset), off ->on (automatic reset))	
	Word	Collect when changes occur	Perform a data sampling once the specified word variable changes
		Comply with variable range acquisition	Perform a data sampling when the value of the specified word variable changes between two consecutive times within the specified range of changes
	Expression	Bit:ON、OFF、Logical Not	
		Word:Equal, less, greater, less or equal, greater or equal, not equal(variable or constant)	
		Note: Double clicking on the operation column for multiple conditions can modify AND\OR, and double clicking on the parentheses column can modify ()	
Control Setting	Clear control	Bit variable control, when the state is ON, clears all sampling records in memory	
	Execute only when the specified window is open： After checking, data sampling will only be executed in the specified window		
Capacity	Record	Choose to save sampling records by days or items	



Setting	Up to max	Choose to delete the earliest record or stop sampling when the number of records saved is up to max
Occupied space	1. Cycle/timing: occupying storage space for 24 hours; (Number of samples * Sampling variable data, data type 8 bits occupy one byte) 2. Timing (variable time), constant time selection of variables, displayed according to 1000 * data types 3. Trigger/expression: 1000 entries occupy storage space;	

15.2 Channel

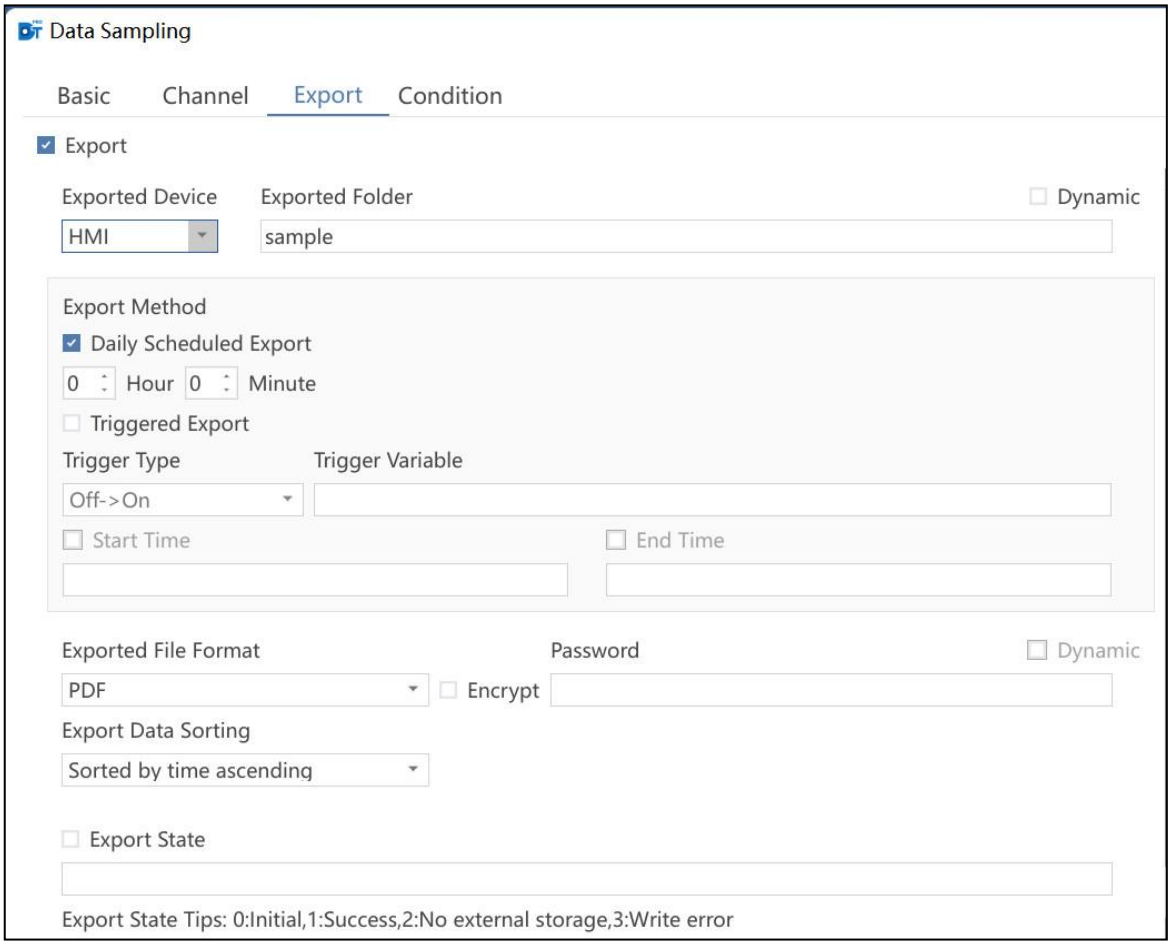
● [Channel setting] interface



Channel Setting List Description	
+	Add a new data sampling channel, supporting up to 256 channels
🗑	Delete the currently selected sampling channel
🗑	Delete all sampling channels

15.3 Export

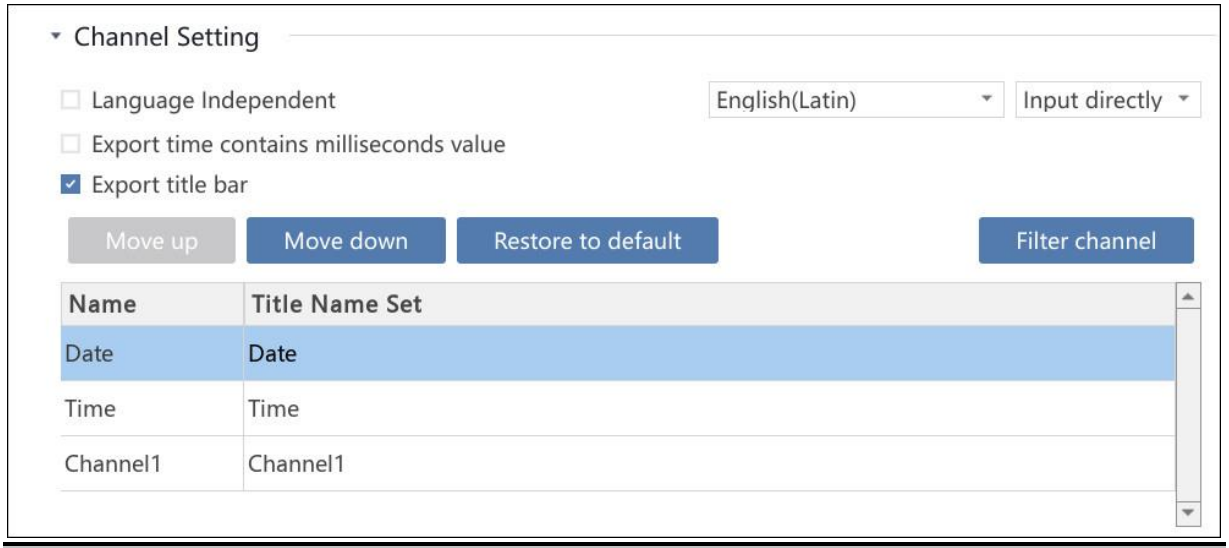
15.3.1 Export property settings



Data Sampling-Record Export Instructions	
Exported Device	Export and save data sampling information to an external storage device

Exported Folder	Set the subfolder name of the exported data sampling information, if the export is successful, the subfolder name will be generated in the folder corresponding to the exported device under the path of project directory ".../disk". If the export is successful, the subfolder name will be generated in the folder corresponding to the exported device under the path of project directory ".../disk", and Sample is the default subfolder name.
Using Dynamic Subfolders	Dynamically setting subfolder names using string variables
Daily Scheduled Export	Set the export time to export data sampling record information on a daily basis.
Triggered Export	Export of data sampling log information by state triggering of bit variables, note: choose at least one of the two export methods.
Trigger Type	Setting the trigger type for triggering exported bit variables
trigger variable	Triggering an export with a bit variable
Start time	To set the start time of export, use the time element setting for configuration , time element Please refer to subsection 8.9.1 Time
End time	Set the end time of the export, and use the time element to set it during configuratio , time element Please refer to subsection 8.9.1 Time
Export File Format	Set the file format for exporting data sampling information, including CSV and PDF.
file encryption	Check the exported file format is compressed, decompression of files need to enter a password to successfully decompress, if you do not check the [file encryption], the exported file format is set in the [export file format] option file format, directly open the file can be
dynamic password	Use string variables to dynamically set the password for file encryption, valid when [File Encryption] is checked.
Export data sorting	Set the sorting method of exported data, including "ascending order by time" and "descending order by time".
Export State	The export status is reflected by the value of the word variable. 0 Initial status; 1 Successful export; 2 No external memory; 3 Write error

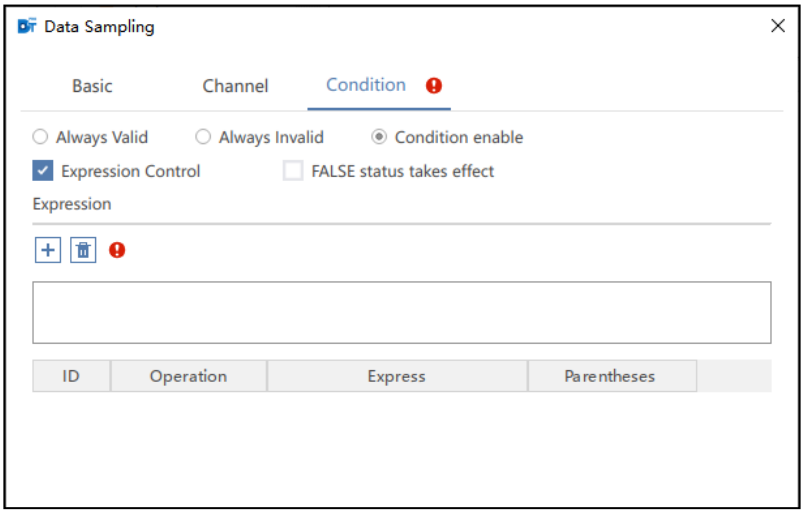
15.3.2 Export Channel Settings



Description of data sampling and export channel settings	
Language Independent	Checking this box disables the language selection box and the component defaults to the first language.
Export time contains milliseconds value	Check to include milliseconds in the exported data sampling information table.
Export title bar	Checked if the exported data sampling information form contains a title bar, checked by default.
Input directly	The "Title bar name settings" column in the "Export channel settings" data form uses direct input for modifying the title bar name.
Use TextLib	Use of text libraries for the "Title bar name settings" column in the "Export channel settings" data table
Filter channel	Default select all, can manually filter/cancel the corresponding channel display
Move up	When a data table row is selected, click [Move Up] to move up the selected row. The [Move Up] button is effective except when the first row of the data table is selected.

Move down	When a data table row is selected, click [Move Down] to move down the selected row. The [Move Down] button is effective except when the last row of the data table is selected.
Restore to default	Revert to the original sorting of the data table

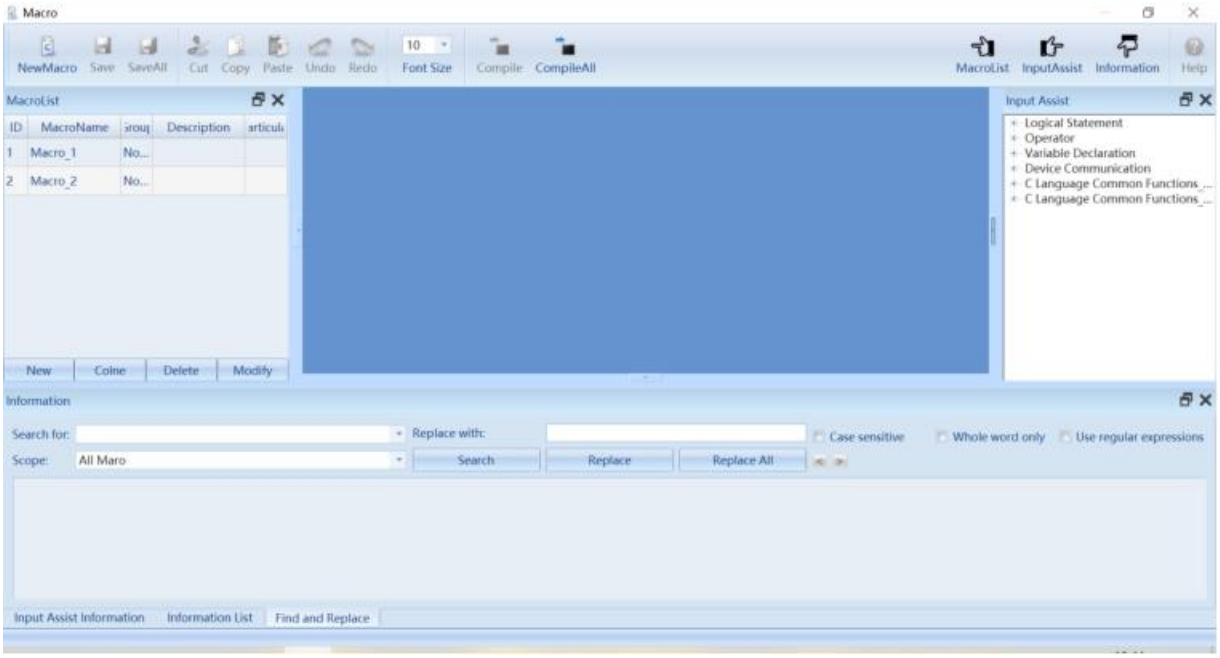
15.4 Condition



Description of enabling conditions	
Always Valid	Action always in effect
Always Invalid	Action remains invalid
Condition enable	Effective when conditions are met

16 Macro Instruction

Macro instructions use C language source code editing to meet special applications such as user logic and arithmetic operations. The use of macro instructions in conjunction with related components can achieve functions such as computation or logic that cannot be achieved by components, making the programming ability of HMI more powerful.



Description od Macro Instruction	
New	Create a new macro instruction
Clone	Copy a macro instruction
Delete	Delete a macro instruction
Modify	Modify the name and grouping of macro instructions

16.1 Macro Instruction Syntax

- Definition of constants

Constants are fixed values that do not change during program execution. These fixed values are also called literal quantities. Constants can be any basic data type, such as integer constants, floating-point constants, character constants, or string literals. Constants are like regular variables, but their values cannot be modified after being defined.

- Integer constant

Integer constants can be Decimal, Octal, or hexadecimal constants. The prefix specifies the radix: 0x or 0X represents hexadecimal, and 0 represents Octal. If there is no prefix, it defaults to a Decimal constant.

. Decimal integer: 345, -234, 0, 23456

. Hexadecimal number: 0x3b, 0xffff; Must start with 0x

. Octal number: 037, 077; Must start with 0

Boolean: true, false;

- Floating point constant

A floating-point constant consists of an integer part, a Decimal separator, a decimal part, and an exponent part. You can use decimal or exponential forms to represent floating-point constants.

. Floating-point arithmetic number: 3.14159.

- Character constant

Character constants are enclosed in single quotes. For example, 'x' can be stored in a simple variable of type char.
String literals or constants are enclosed in double quotes. A string contains characters similar to character constants: ordinary characters, Escape sequence, and common characters.

Character type: 'a'. Characters must use single quotation marks

. String: 'hello, dear'. String must use double quotes' '

- Variable

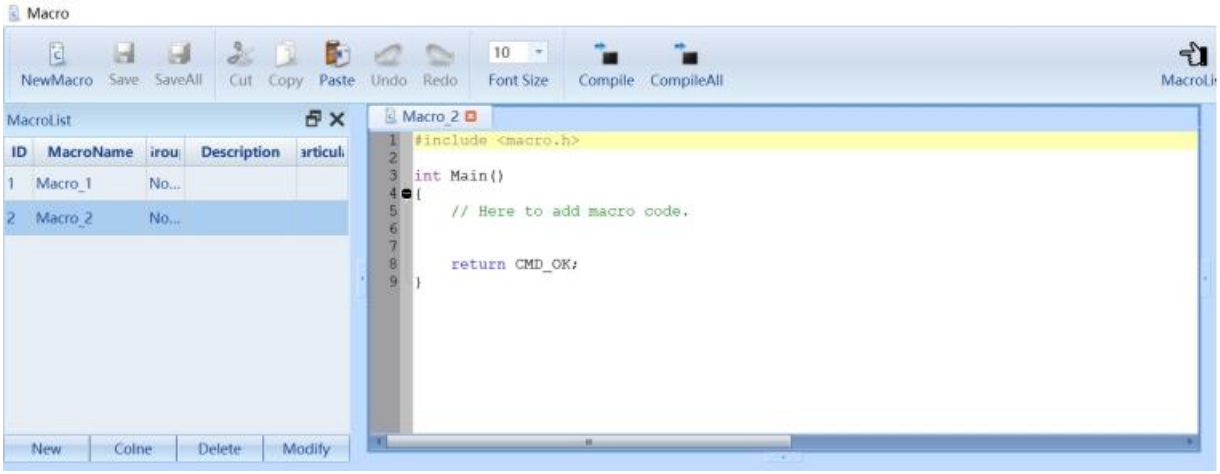
A variable is actually the name of a storage area that a program can manipulate. Each variable in C has a specific type. The type determines the size and layout of variable storage. Values within this range can be stored in memory, and operators can be applied to variables, which change with the execution result of macro instruction statements.
The name of a variable can consist of letters, numbers, and underscore characters, and must start with a letter or underscore. Uppercase letters are different from Minuscule. The cache name reserved by the system cannot be used as a variable name because C is case sensitive.
There are generally several basic types of variables:

Type	Description	Scope
bool (Boolean type)	1 bit (One bit)	0, 1
char (Character type)	8 bits (One byte)	±127
short (Short Integer)	16 bits (One character)	±32767
int (Double Integer)	32 bits (Double characters)	±2147418112
float (Floating Point)	32 bits (Double characters)	Use 1 bit for symbols, 8 bits for exponents, and 23 bits for decimals -3.4E38 to 3.4E38
Unsigned Char (Character type)	8 bits (One byte)	0 ~ 255
Unsigned Short (Short Integer)	16 bits (One character)	0 ~ 65535
Unsigned Int (Double Integer)	32 bits (Double characters)	0 ~ 4,294,967,295

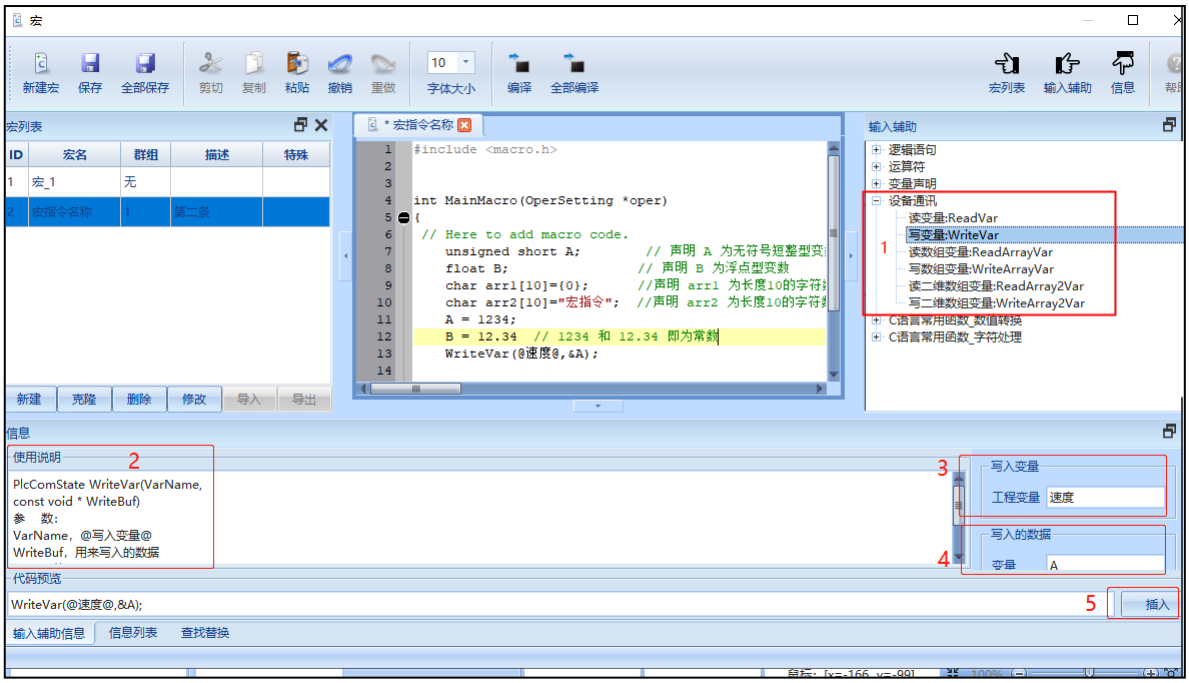
Usage Examples

1. Create new macro command: In this process you can name, group, and encrypt.

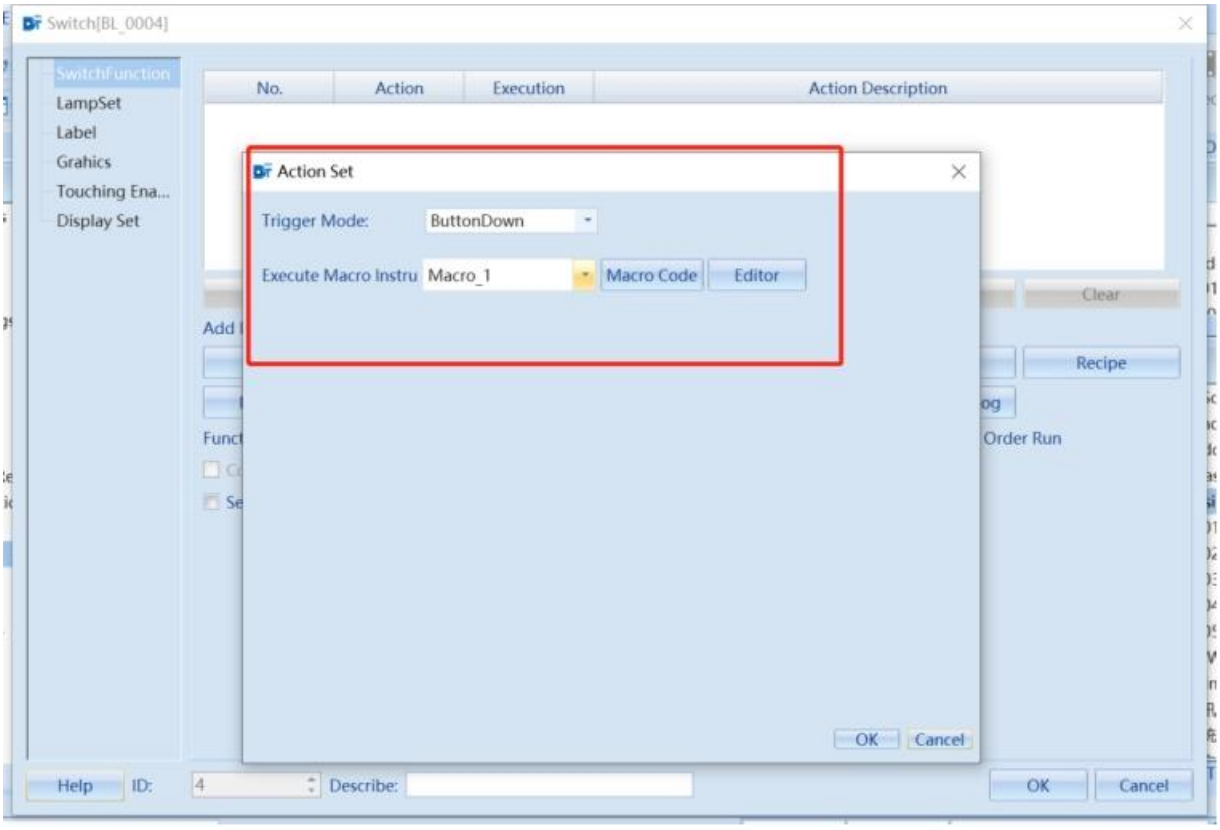
2. Edit macro command



3. Command insertion:



4. Compile after completion



5. Off-line simulation or download for execution

16.2 Device Communication Function

Function Name	Description	Function Name	Description	Function Name	Description
ReadVar	Read	ReadArrayVar	Read one-	ReadArray2Var	Read 2D array

Function Name	Description	Function Name	Description	Function Name	Description
	variables		dimensional array variables		variables
WriteVar	Write variables	WriteArrayVar	Write one-dimensional array variables	WriteArray2Var	Write 2D array variables

Detailed description of function name:

ReadVar

```
#include <macro.h>
/*
PlcComState ReadVar(VarName,void *ReadBuf)  Read Variables
Parameters:
VarName, @ Read Variables @
ReadBuf, Data used for reading
Return value: Communication error code*/
int Main()
{
//Here to add macro code.
   short A;  // Declare A as a short integer variable
   float B;  // Declare B as a floating-point variable
   char arr[10]={0};// Declare arr as a character array of length 10
   ReadVar(@ReadHexadecimalIntegers@,&A);     //"ReadHexadecimalIntegers" is the name of the tag variable to be created
   ReadVar(@ReadSinglePrecisionFloatingPointNumbers@,&B);
   ReadVar(@ReadStringVariables @,&arr[0]);
   return CMD_OK;
}
```

WriteVar

```
#include <macro.h>
/*
PlcComState WriteVar(VarName,const void *WriteBuf)  Write Variable
Parameters:
VarName, @ Write Variable @
ReadBuf, Data used for writing
Return value: Communication error code */
int Main()
{
//Here to add macro code.
   short A;// Declare A as a short integer variable
   float B;// Declare B as a floating-point variable
   char arr[10]={0};// Declare arr as a character array of length 10
   A=10;
   B=3.14;
   WriteVar(@WriteHexadecimalIntegers@,&A);// "WriteHexadecimalIntegers" is the name of the tag variable to be created
   WriteVar(@WriteSinglePrecisionFloatingPointNumbers @,&B);
   WriteVar(@WriteStringVariables@,&arr[0]);
   return CMD_OK;
}
```

ReadArrayVar

```
#include <macro.h>
/*
PlcComState ReadArrayVar(VarName,uint32 index,void *ReadBuf)  Reading one-dimensional array variables
Parameters:
VarName, @Reading array variables@
index, Array variable subscript
ReadBuf, Data used for reading
Return value: Communication error code */
int Main()
{
```

	//Here to add macro code.
	short arr[20]={0}; //Declare "arr" as a short array of length 20
	short i=0;//Declare i as a short integer variable, initialize i to 0
	for(;i<20;i++)
	{
	ReadArrayVar(@FunctionReading20@,i,&arr[i]);
	// Read a 16- bit integer array variable with a length of 20 defined as " FunctionReading20" and place it in the arr array}
	return CMD_OK;
	}

WriteArrayVar	#include <macro.h>
	/*
	PlcComState ReadVar(VarName,uint32 index,void *WriteBuf) Write one-dimensional array variables
	Parameters:
	VarName, @ Read variables @
	index, Index of array variables
	WriteBuf, Data used for writing
	Return value: Communication error code */
	int Main()
	{
	//Here to add macro code.
	short arr[20]={0}; // Declare arr as a short array of length 20
	short i = 0,k; // Declare i and k as short integer variables, where i is initialized to 0
	for (;i<20;i++)
	{
	k=10*i+1;
	WriteArrayVar(@FunctionWriting20@,i,&k);
	// Write the k value of the loop calculation into a 16-bit integer array variable with a length of 20 defined as " FunctionWriting20"
	}
	return CMD_OK;
	}

ReadArray2Var	#include <macro.h>
	/*
	PlcComState ReadArray2Var(VarName,uint32 index1,uint32 index2,void *ReadBuf) Read real-time data of two-dimensional array variables
	Parameters:
	VarName, @Reading 2D array variables@
	index1, Row subscripts of array variables
	index2, Column subscripts of array variables
	ReadBuf, Data used for reading
	Return value: Communication error code
	*/
	int Main()
	{
	//Here to add macro code.
	short arr[4][5]={0}; //Declare arr as a short array of length 20
	short i=0,j=0;//Declare i, j as short integer variables, and initialize i to 0
	for(;i<4;i++)
	{
	for(;j<5;j++)
	{
	ReadArray2Var(@2DArrayReading20@,i,j,&arr[i][j]);
	// Read a 16-bit integer 2D array variable with a length of 4 * 5 and a definition name of "2DArrayReading20", and place it in the arr array
	}
	}
	return CMD_OK;
	}

WriteArray2Var	#include <macro.h> /* PlcComState WriteArray2Var(VarName,uint32 index1,uint32 index2,void *WriteBuf) Write real-time data for two-dimensional array variables Parameters:

```
VarName，@Read variables@
ReadBuf，Data used for reading
Return value: Communication error code
*/
int Main()
{
 //Here to add macro code.
   short arr[4][5]={0}; //Declare arr as a short array of length 20
   short i = 0,j=0,k; //Declare i and k as short integer variables, where i is initialized to 0    for
(;i<4;i++)
    {
      for(;j<5;j++)
        {
          k=10*j+i+1;
        }
     WriteArray2Var(@2DArrayWriting20@,i,j,&k);
       //Write the k value of the loop calculation into a 1- bit integer array variable with a length of 20
defined as "2DArrayWriting20"
       }
return CMD_OK;
}
```

16.3 Macro Instruction Execution

1. Button execution

2. Window execution

3. Global control

4. Numerical input triggering

5. PLC control

6. Alarm triggering

16.4 Macro Instruction Examples

Example 1:

Extract and write the scanning string "PL01~Work0001~PG01~a123456" to the corresponding address

```
#include <macro.h>
#include <stdio.h>
int Myfun(char *str1,char *str2)// Define a function to replace~with a " space
{
 while(*str1!='\0')
                {
                *str2=*str1;
   if(*str2=='~')
                *str2=' ';
```

```
            str1++;
            str2++;
            }
            *str2='\0';
 return 0;
}

int Main()
{
            //Here to add macrocode.
            char str1[200]="PL01~Work0001~PG01~a123456";//Define temporary data instead of scanned data
            char str2[200]={0};
            Myfun(str1,str2);
            char arr1[10]={0};//Define temporary variable receiving workshop code
            char arr2[10]={0};//Define temporary variable receiving work order number
            char arr3[10]={0};//Define temporary variable receiving operation group
            char arr4[10]={0};//Define temporary variable to receive product number
            sscanf(str2,"%s %s %s %s",arr1,arr2,arr3,arr4);//Take out the corresponding array and place it in a temporary
variable
            WriteVar(@workshop@,&arr1[0]);//Write the address data for storing workshop codes into defined variables
            WriteVar(@WorkOrder@,&arr2[0]);//Write the address data storing the work order code into the defined
variable
            WriteVar(@ProductionProcesses @,&arr3[0]);//Write the address data of the stored process code into the
defined variable
            WriteVar(@ProductID@,&arr4[0]);//Write the address data for storing product numbers into the defined variable
            return CMD_OK;
}
```

17 Recipe

Recipe data refers to the data stored inside the HMI and in an area that can be saved after power outage.

17.1 Introduction to Recipe

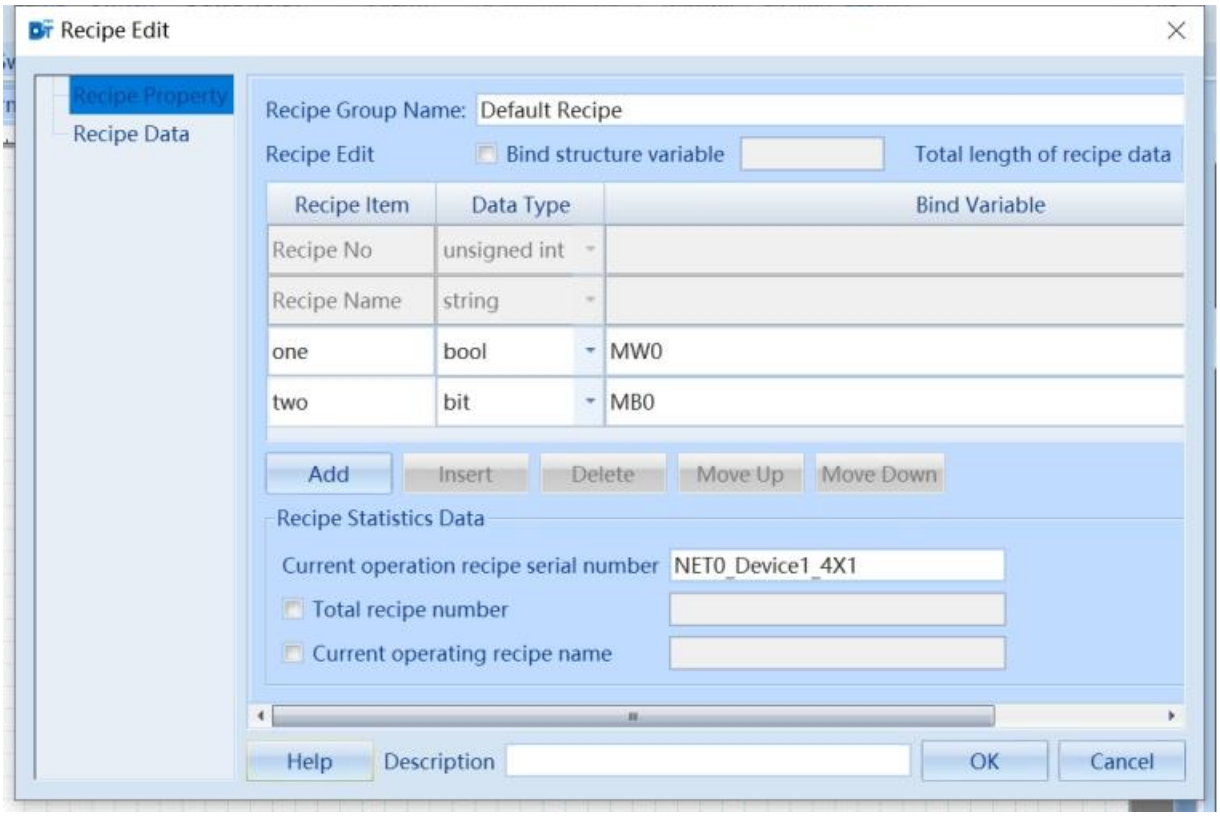
Recipes are collections of the same type of data with a fixed data structure. A recipe can contain multiple recipe data, which may differ in terms of data but are completely consistent in structure. At the same time, the recipe is stored in the "csv" file format in the project, with the storage path located in the "recipe" folder of the project root directory.

17.2 Recipe Setting

“Recipe Edit” is mainly used to set recipe attributes, and these data can be displayed using recipe components. Please refer to Chapter 8.7.5 : Recipe.

A project can be configured with up to 100 recipe groups, and each recipe can be configured with up to 1080 recipe items. There is no limit to recipe data.

1. In "Project" - "Recipe" window, double-click 【Add Recipe】 to add a recipe group. The "Recipe No" and "Recipe Name" columns in the recipe data table are created by default by the system and cannot be edited or bound to variables. The following is a description of the recipe group attributes.

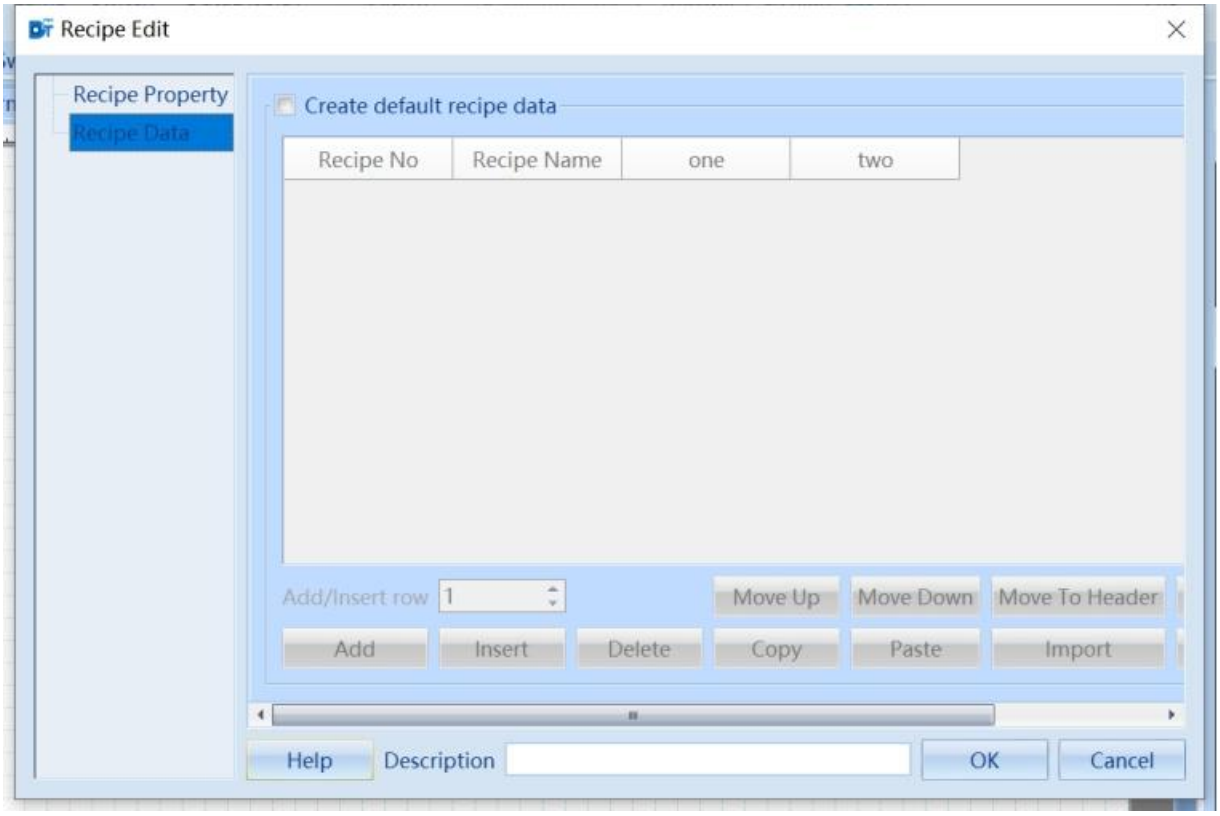


Recipe - Recipe Group Property Description	
Recipe Group Name	Set the current recipe group name
Bind structure variable	If checked, all column items in the formula data table, except for 【Recipe No】 and 【Recipe name】, will be associated with structural variables. The number of associated recipe items is determined by the number of structural variables
Total length of recipe data	Display the total length of recipe data for the current recipe group
Add	Add a new recipe item, click once to add a new line. It is valid when 【Bind Structure Variable】 is

	not checked
Insert	Insert a recipe item. The position of the inserted recipe item is on the previous line of the currently selected recipe item. It is valid when 【Bind Structure Variable】 is not checked
Delete	Add the currently selected recipe item, which is valid when 【Bind Structure Variable】 is not checked
Move Up	Move the currently selected recipe item up
Move Down	Move down the currently selected recipe item
Current operation recipe serial number	Display the current operation recipe number using word variables
Total recipe number	Use word variables to display the total number of pre recipes
Current operating recipe name	Display the current operation recipe name using string variables

Note: The data type of the variable bound to the recipe item needs to be the same as the data type of the recipe item

2. In the Project-Recipe window, double click 【Add Recipe】 to add a recipe group. The following are descriptions of recipe data.



Recipe - Recipe group property description	
Create default recipe data	Check to create a recipe data table based on the recipe table in the 【Recipe Property】 section
Add/Insert row	Set to increase the number of inserted rows
Move Up	Move the currently selected row up
Move Down	Move the currently selected row down
Move To Header	Move the currently selected recipe data to the header
Move To Footer	Move the currently selected recipe data to the end of the table
Add	Add formula data, click once to add a new line
Insert	Insert Recipe Data
Delete	Delete the currently selected recipe data

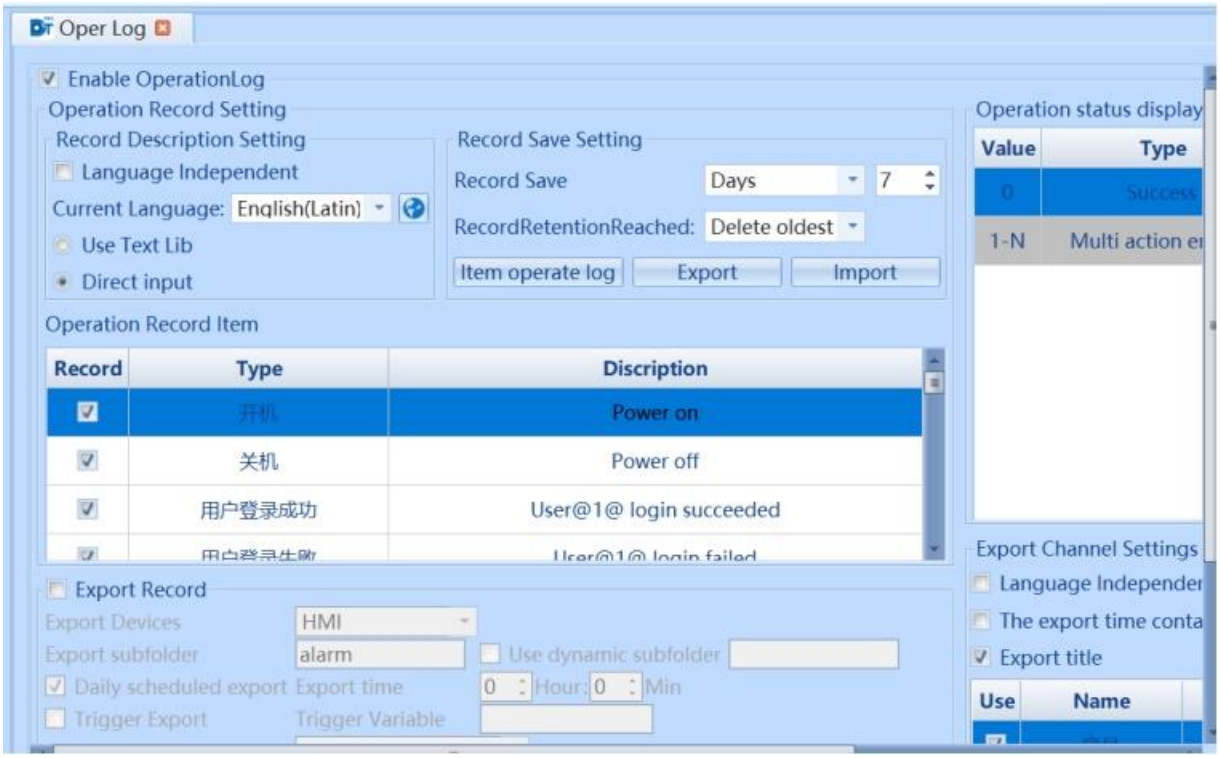
Copy	Copy the currently selected recipe data
Paste	Paste the currently selected recipe data
Import	Import the formula data table, and the format of the imported table must be consistent with the current formula data table format. Please note that the import will not overwrite the previously existing data
Export	Export the current recipe data table. The default file name for exporting is 【RecipeData】, which can also be named by oneself. The file format is 【'. xlsx'】, and the exported file is stored in the software installation directory.

18 Operation Log

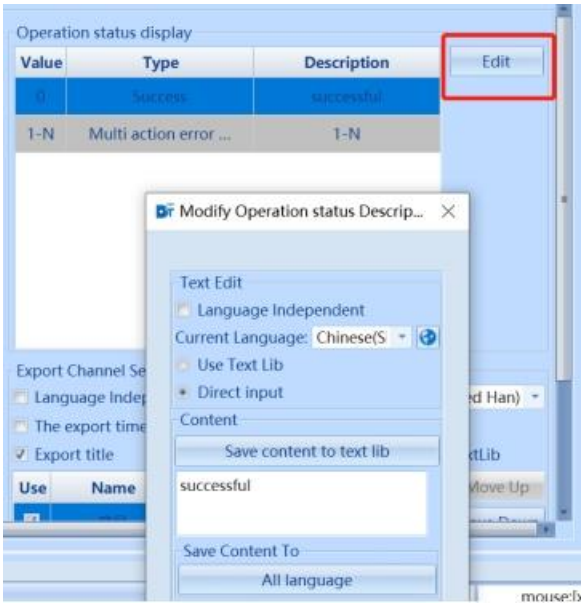
The operation log can record the operations performed by the user on the HMI, and the user can save these operation records in CSV or PDF file format to external storage. To use the operation log, you need to first check 【Enable OperationLog】.

18.1 Enable Operation Log

1. In the " Oper Log" dialog box, corresponding properties can be set.



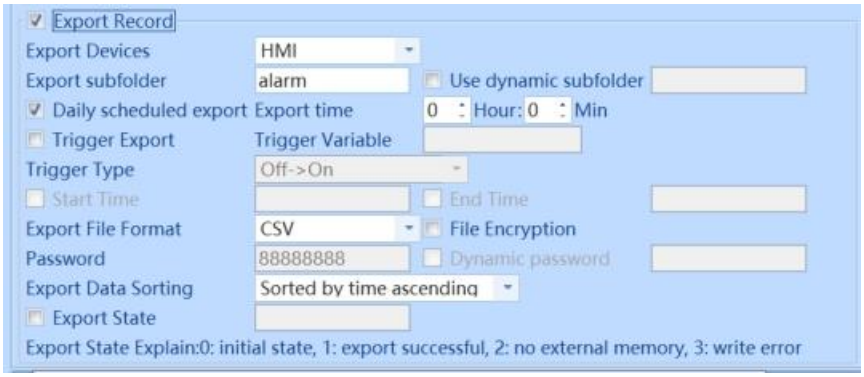
2. In the "Operation status display" dialog box, you can set the content of the "Description" column item displayed on the HMI for the operation log component.



Operation Log - Operation Record Setting Instructions	
Language independent	Set the attributes of the record description. If checked, the selection box after 【Current Language】 is invalid. The component defaults to using the first language
Use Text Lib	Set the attributes of the record description, check 【Use Text Lib】 to select the text library name in the corresponding area of the 【Description】 column in the operation record table
Direct input	Set the attributes of the record description, check 【Direct Input】 to directly edit the description in the corresponding area of the 【Description】 column in the operation record table
Record Save	Set the attributes to be retained in the exported operation log table, and the unit can be selected as "Days" or "Number of Items". When selecting 'Days', the minimum is 1 day and the maximum is 365 days; When selecting 'Number of items', minimum 1 item and maximum 100000 items
Record Retention Reached	When the operation log reaches the "record retention" number, new data is recorded according to the set "record retention reached" method, including "delete the oldest record" and "no longer keep new records"
Item operate log	Clicking on 【Item Operate Log】 will pop up a corresponding window, where you can configure the operation logs of components on all windows in the project, and choose whether to monitor variables and use a text library
Operation Record Item	System operation record table, where @ 1 @ represents 1 change data, with a maximum of 8

18.2 Export Record

1. In the "Export Record " dialog box, corresponding properties can be set.



2. In the "Export Channel Settings" dialog box, corresponding properties can be set.

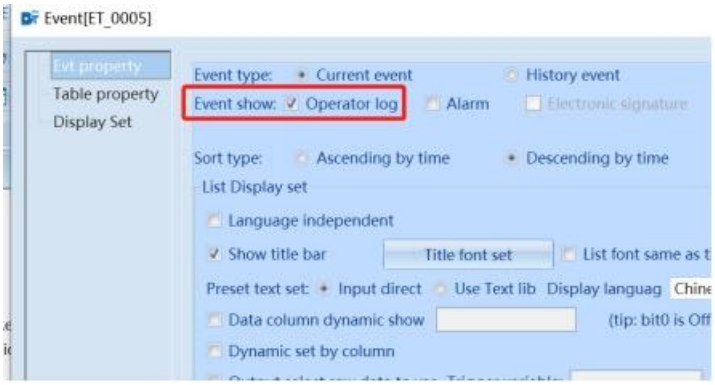
Oper Log – Export Record Instructions	
Export Devices	Export and save operation log records to external storage devices
Use dynamic devices	Dynamically setting export devices using string variables
Export subfolder	Set the name of the sub folder for exporting operation log records. If the export is successful, the set sub folder name will be generated in the "tar" folder of the project root directory. The operation log records will be recorded in the sub folder. If this item is blank, the operation log records will be saved in the "tar" folder of the project root directory by default
Use dynamic	Using string variables to dynamically set sub folder names

subfolder	
Daily scheduled export	Set export time and regularly export operation log records every day
Trigger Export	Triggering export operation log records through the status of bit variables
Trigger Type	Set the triggering method for triggering export bit variables
Start Time	Set the start time for export
End Time	Set the end time for export
Export File Format	Set the file format for export operation log records, including CSV and PDF
File encryption	If checked, the exported file format is a compressed package, and a password is required to successfully extract the file. If 【File Encryption】 is not checked, the exported file format is set in the 【Export File Format】option, and you can open the file directly
Dynamic password	Use string variables to dynamically set the password for file encryption, which is valid when 【File Encryption】 is checked
Export Data Sorting	Set the sorting method for exported data, including two options: "Sort by time ascending order" and "Sort by time descending order"
Export State	Reflect the exported state through the value of the word variable. 0 indicates the initial state, 1 indicates successful export, 2 indicates no external memory and 3 indicates a write error

Oper Log - Export Channel Setting Description	
Language independent	If checked, the selection box after 【Display Language】 is invalid, and the component defaults to using the first language
Display Language	Set the language of the title bar, which is valid when 【Language Independent】 is not checked
The export time contains milliseconds	If checked, the time in the exported operation log record includes milliseconds
Export Title	If checked, the exported operation log record includes a title bar, which is checked by default
Direct input	The "Title Name Set" column in the "Export Channel Setting" table can use direct input to modify the title block name
Use Text Lib	The "Title Name Set" column item in the "Export Channel Setting" data table can use a text library
Move Up	Move the currently selected row up
Move Down	Move the currently selected row down
Default Sort	Restore to the original sorting of the data table

18.3 Operation Log Display

After enabling operation logs, event components can be used to visually display the content of the operation logs



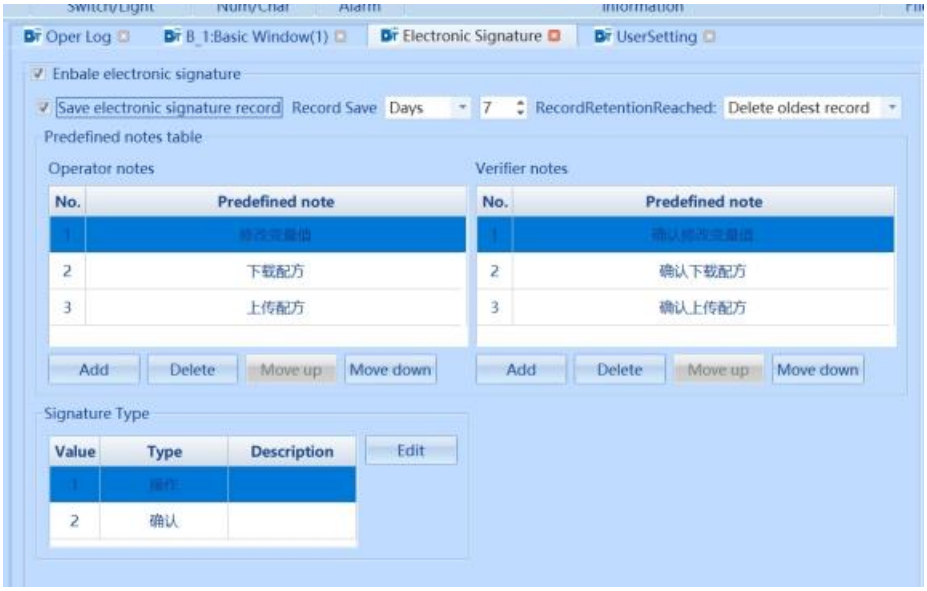
Offline simulation effect:

No.	Type	Date	Time	Device	Window	Element	Status	Description	User	Permission

19 Electronic Signature

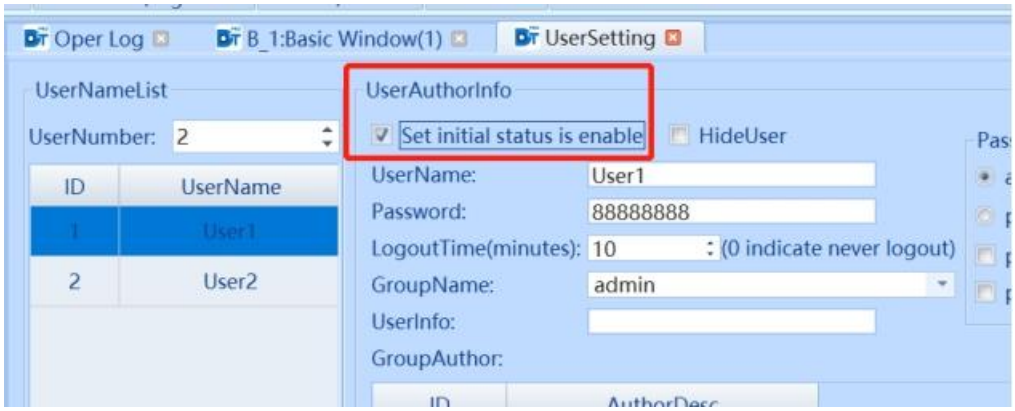
Electronic(Digital) signature can only be operated with signature authorization when manipulating variable controls. In response to changes in data values, signature authorization can set up to two levels of confirmation (operator and verifier), and electronic signature information is included in the operation log. After checking Enable electronic signature, you can see the relevant settings for electronic signature under its basic properties when using numerical components.

1. Enable electronic signature function:



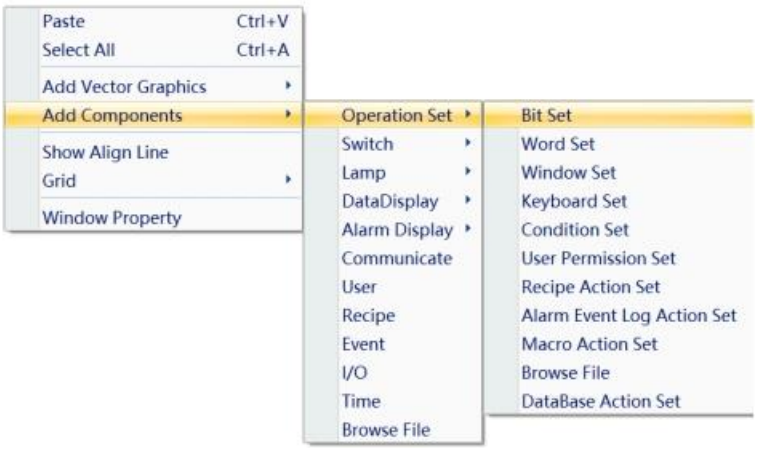
Electronic signature setting instructions			
Enable electronic signature	This function can only be used after checking it. It is not checked by default Note:This function is not support G2 series HMI		
Save electronic signature record	Record Save	Days	Electronic signature records are saved by days, with a default of 7 days and a maximum of 365 days allowed
		Number	Electronic signature records are saved by number of entries, with a default of 10000 entries and a maximum of 100000 entries
	Record Retention Reached	Delete oldest record	After reaching the set number of days or pieces to save, delete the earliest saved record and continue saving new records
		Not save new records	Do not continue saving after reaching the set number of days or entries
Operator notes	Add, delete, and move as needed (system operation window 40005)		
Verifier notes	Add, delete, and move as needed (system operation window 40006)		
Signature Type	Operation/verification comments can be edited and modified		

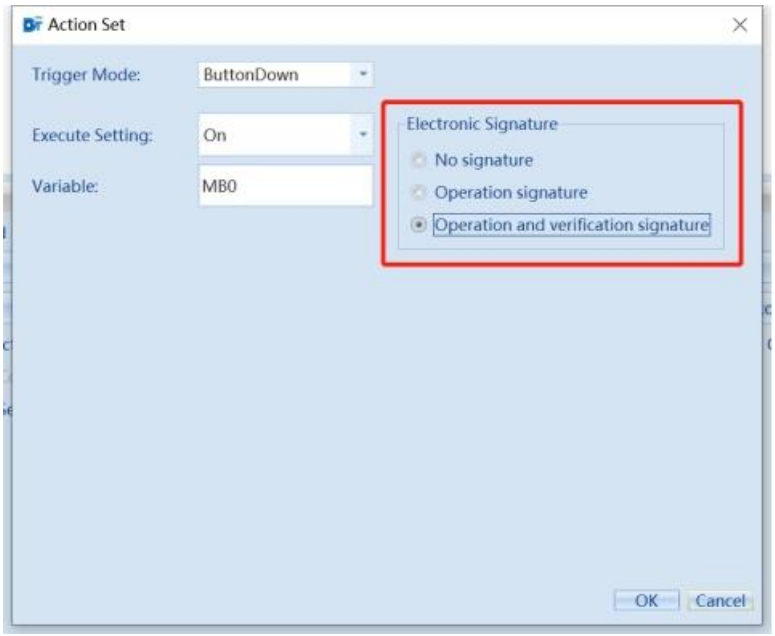
2. UserAuthorInfo



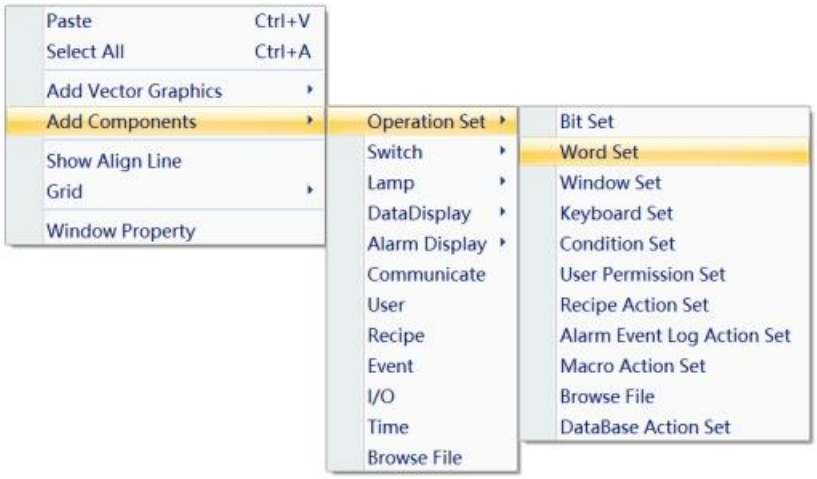
3. Use bit/word components to set electronic signatures: Electronic signatures support “switch component” - bit set/multi state setting and numerical components.

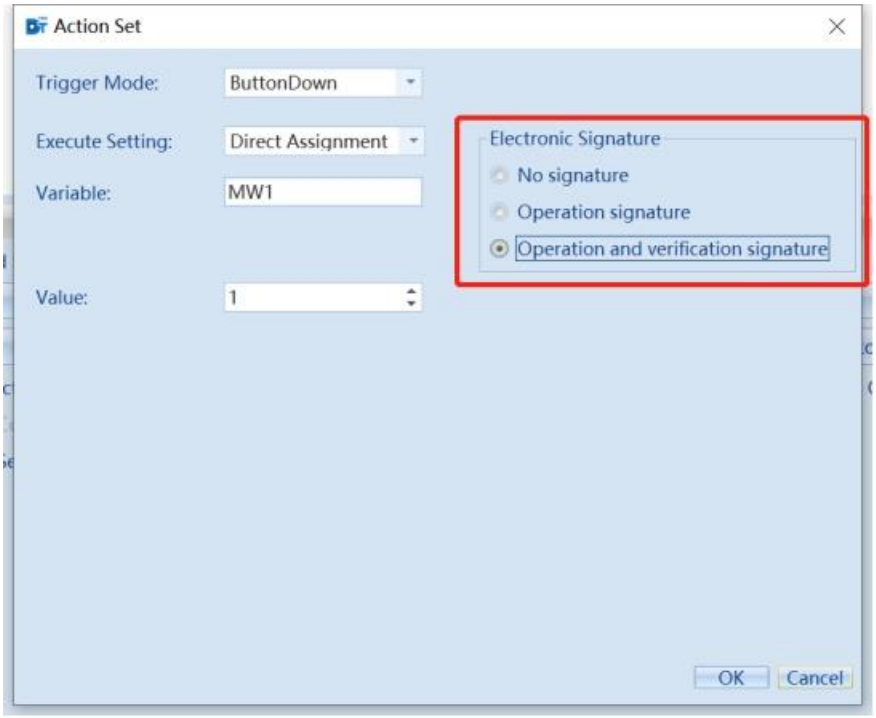
Bit set:





Multi state set:





Numerical input:

20 Resource Library

To save frequently used images, fonts, languages, text, etc. for quick and repeated use.

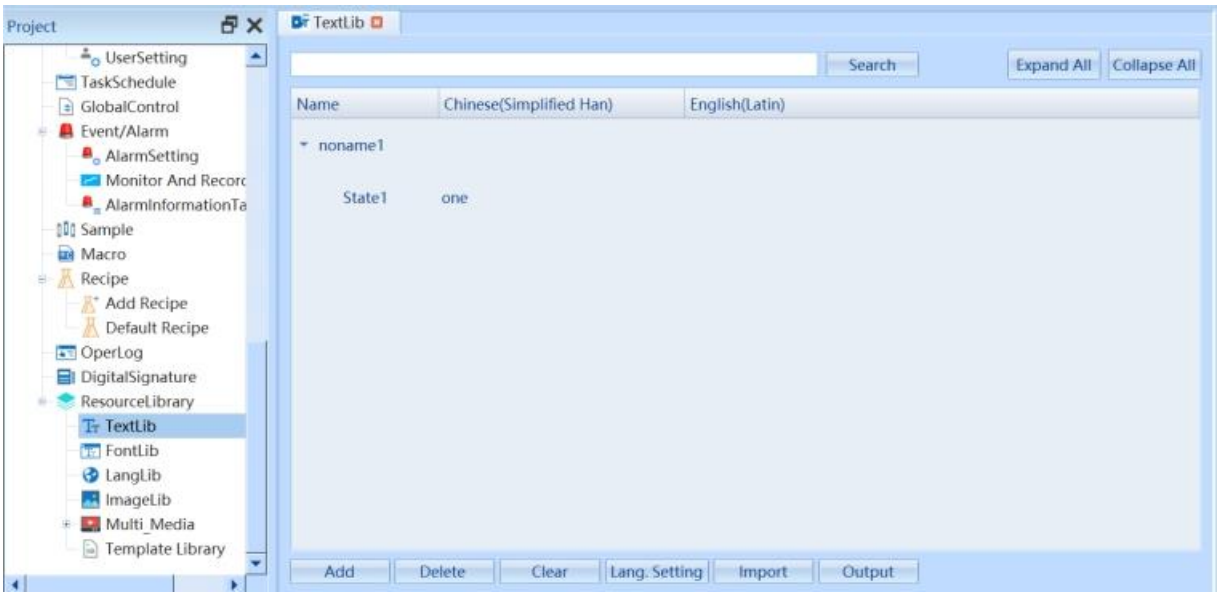
20.1 Text Library

As shown in the following figure, it is the text library (menu bar – Project - ResourceLibrary - TextLib), which can achieve quick editing.

When you need to edit a large amount of text content in a text library, you can use the 【Export】 function to export the text library to a designated location on a PC, and then use Excel to complete the editing work. This not only facilitates editing operations, but also saves a lot of time. After editing, use the 【Import】function to import the table into the text library for easy use.

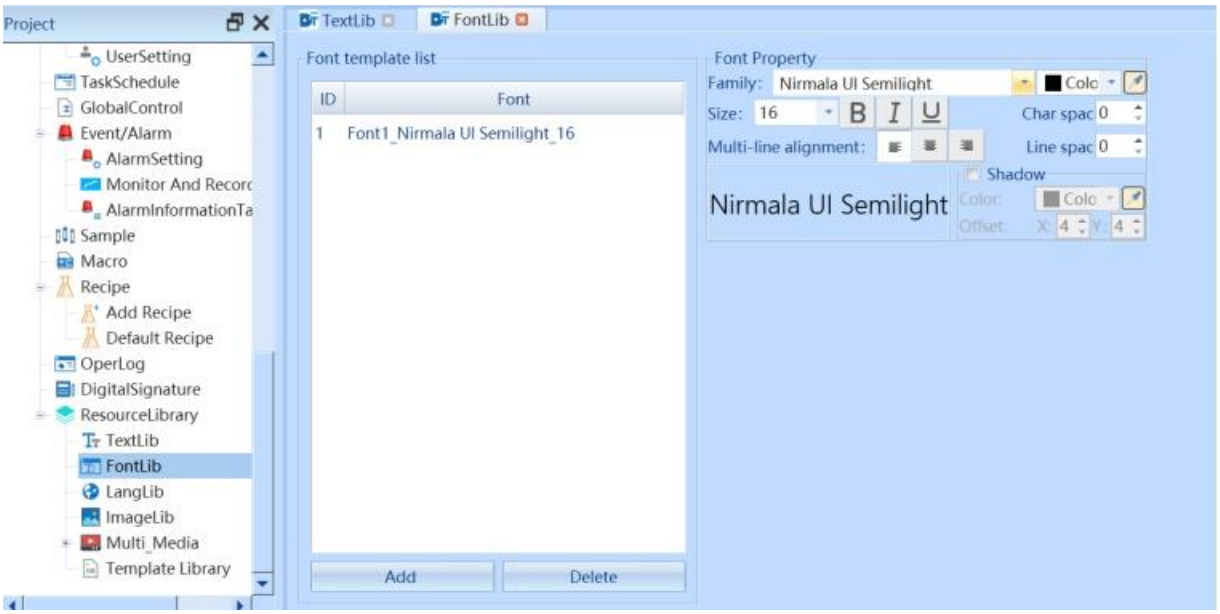
When there is no need for a large batch of text libraries, you can directly add, delete, or empty them

The text library is displayed in different languages, and text content in different languages can be set. Where the text library is used in the component, the text library can also be set, and the settings will be synchronized to the text library.



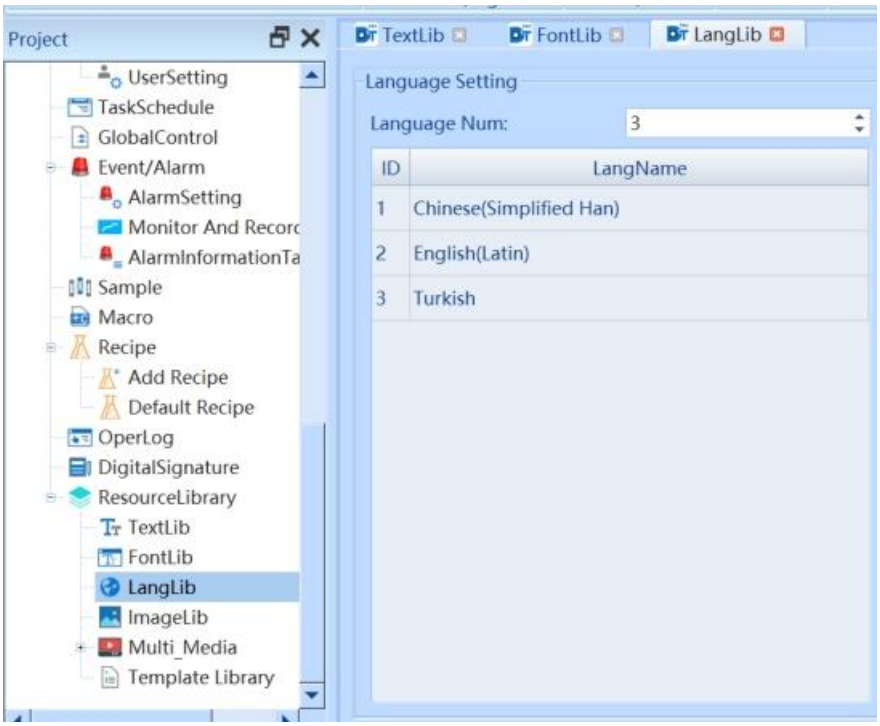
20.2 Font Library

As shown in the following figure, the font library is used to add font templates and quickly set fonts. At the font property of the component, you can click "Import Font Template" to use the font library, or you can click "Save to Font Library" to save the font template set in the component to the font library for reuse.



20.3 Language Library

The language library shown in the following figure is used to set the language. The language library supports a maximum of 32 languages. Changing the number of languages will also modify the number of languages used in other places. It can also be used in conjunction with a font library, where font templates can be imported and font attributes can be saved to the font library.



20.4 Image Library

As shown in the following figure, the image library can be pre imported, or newly created and saved, and can be reused.

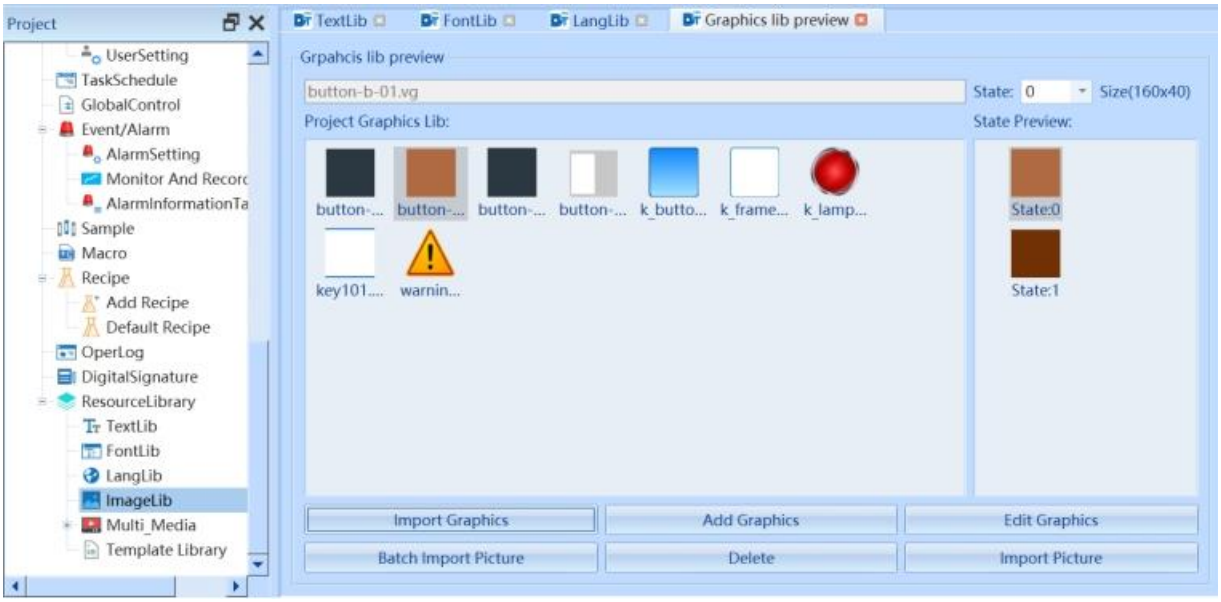
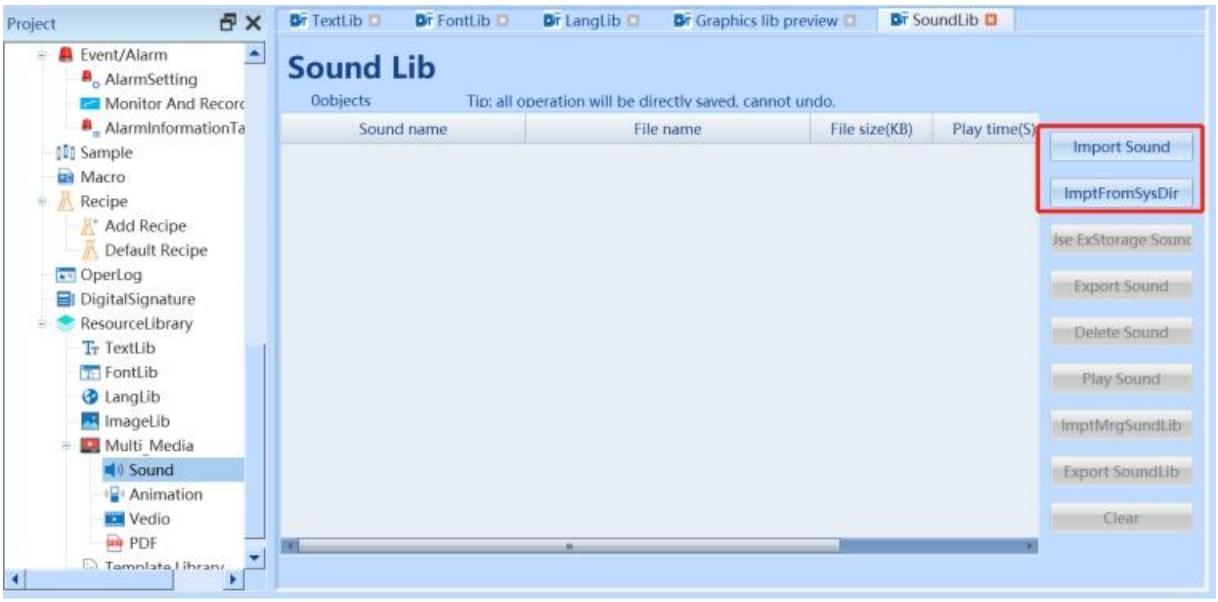


Image Library Description	
Import Graphics	Import System Library for Use
Add Graphics	Establish external graphic usage
Edit Graphics	Edit the currently selected image
Batch Import Picture	Batch import of external image libraries for use
Delete	Delete the selected graphic, this operation is not recoverable
Import Picture	You can import one or more external images. If multiple images are selected, the imported image is a multi-state graph

20.5 Multimedia

20.5.1 Sound

You can import sound, display specific information about the sound, or export sound from the sound library for deletion, playback, and other operations.



20.5.2 Animation

20.5.3 Video

20.5.4 PDF

20.6 Template Library

20.6.1 Introduction to Template Library

It can meet the setting needs of personalized components/controls for users who have used them multiple times, saving the time for configuration. After setting parameters for individual/multiple components according to requirements, they can be added to the template library and can be called at any time. When changing the computer/software installation directory, you can export the original template library and then import it.

Special convenience features such as:

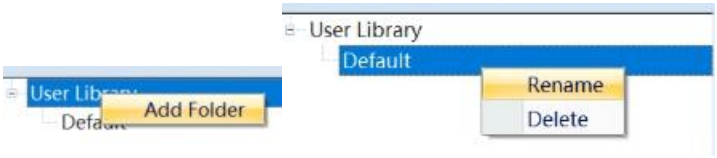
1. After a switch component - macro action (macro contains Modbus device External variable) is added to the template library, the new project calls this element, which can automatically configure the PLC device and create this macro, and the macro code is also retained.

2. After adding a switch component - recipe action to the template library, the new project calls this component to automatically add a recipe.

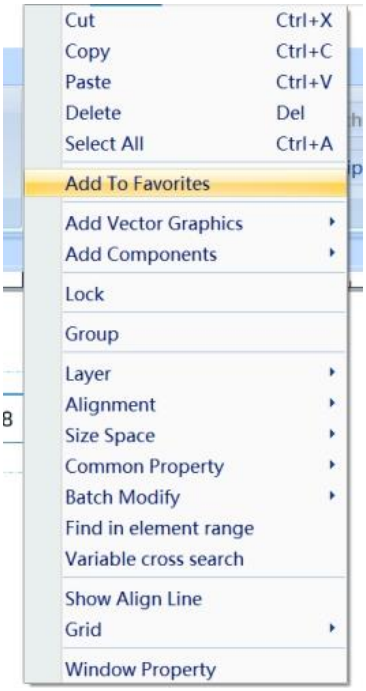
In summary, the template library can be directly and conveniently used by users.

20.6.2 Template Library Setting

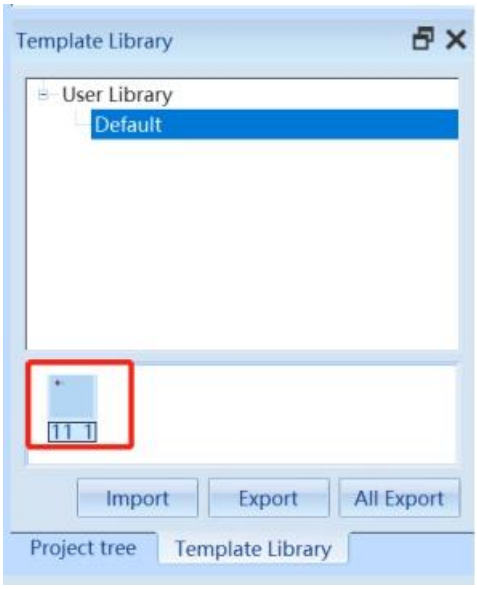
1. Right click on the User Library – Add Folder and Rename it

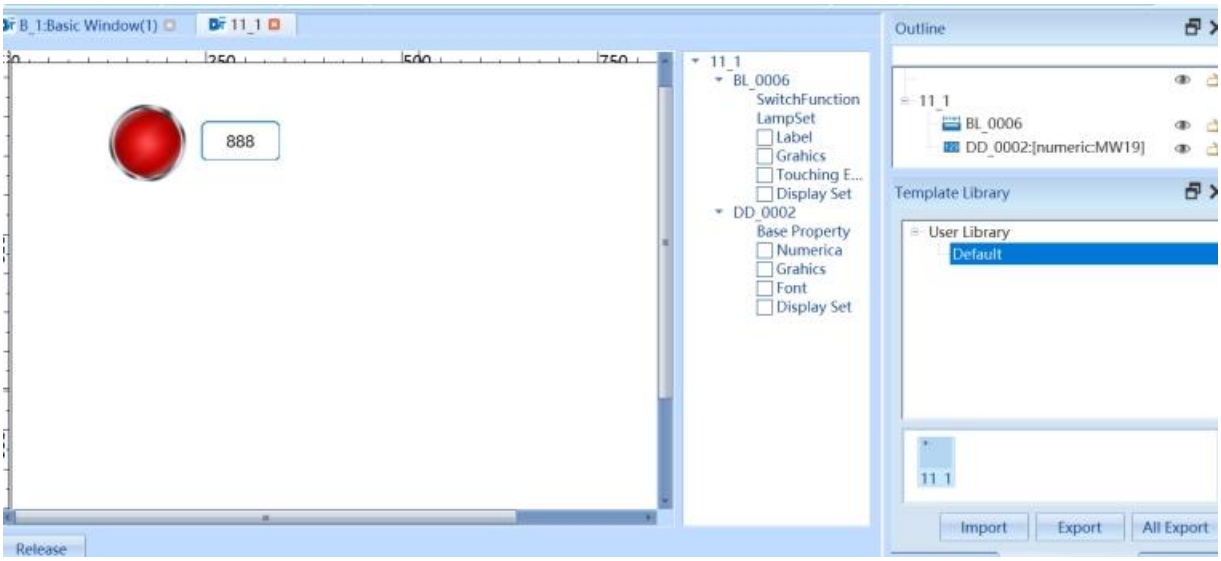


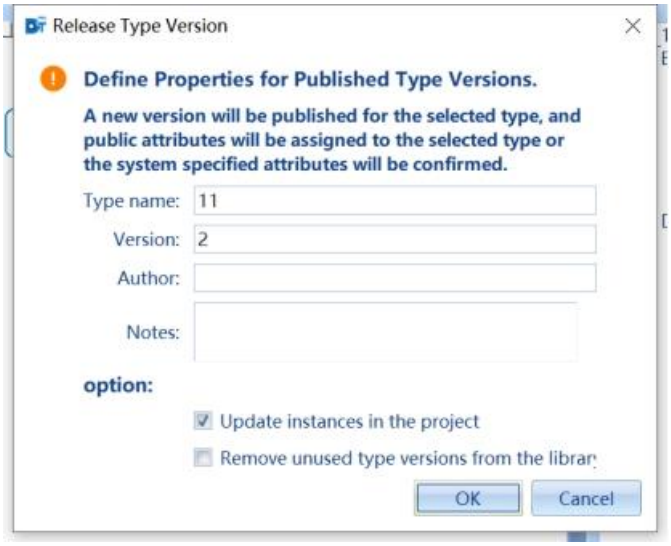
2. Select the desired single/multiple components and right-click on 'Add to Favorites'

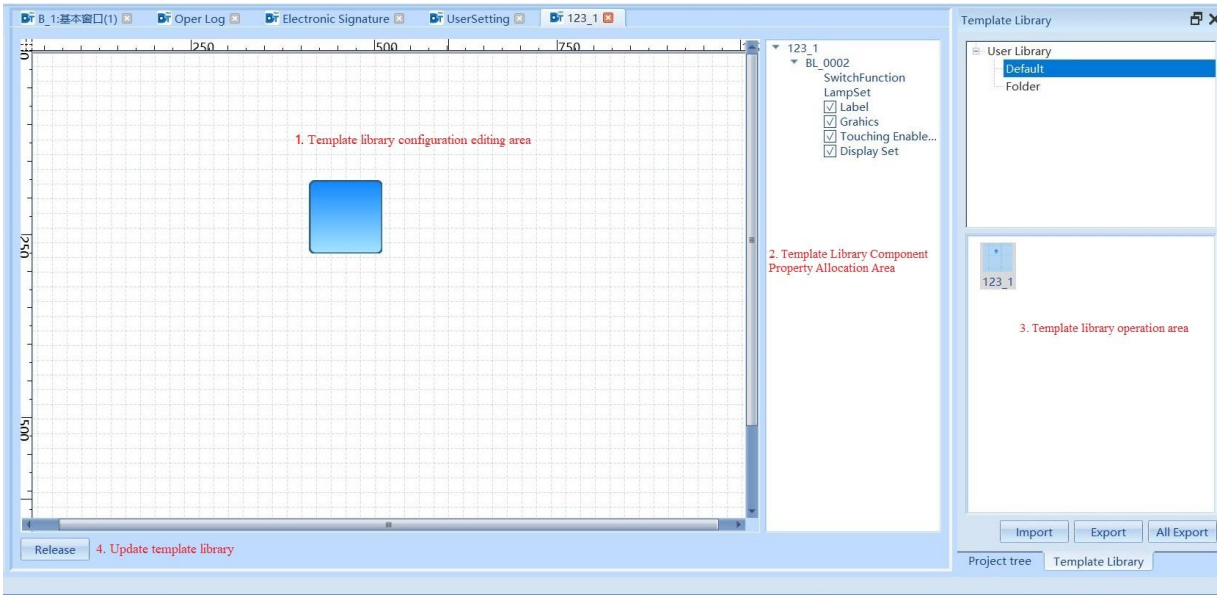


3. After adding to favorite, the version number "_1" will be automatically added after the library name, and you will enter the template library editing interface.







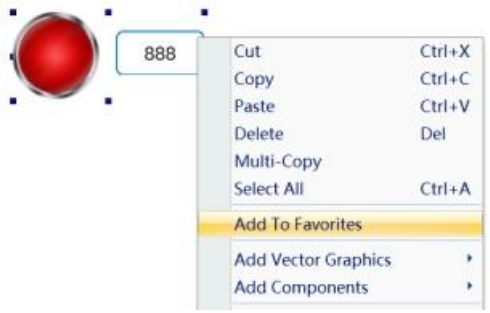


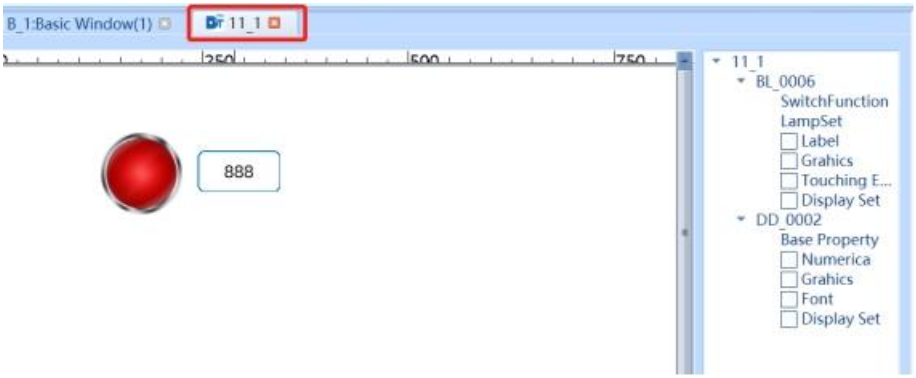
Template Library Editing Interface Setting Description	
1. Template library configuration editing area	Like the basic window, components can be added or removed, and parameters can be set for components
2. Template Library Component Property Allocation Area	Assign attributes to each component in the template library configuration screen one by one, without checking them by default. Checked attributes can only be visible when the basic window calls this template library after the template library version is saved and updated, and when the component attribute configuration is double clicked. It can be understood that the checked attributes are provided for users to flexibly modify, while the unchecked attributes are updated in bulk with the template library. Please refer to the template library instance demonstration for details. Note: For checked attributes, as long as the user has modified these attributes when calling the library in the basic window, after updating the template library, these attributes will not be updated with the template library update, only unchecked attributes will be updated. If the selected attribute has not been modified by the user in the basic window, it will also be updated with the template library update.
3. Template library operation area	You can modify the name of the template library, enter the editing interface, delete, import, and export operations

4. Update template library	● Click "Release" at the bottom left to pop up the update template library interface for update operations ● Version: When updating, the version number will be automatically+1, and it can also be modified to any other version ● Author and comments: You can add information about the author and comments ● Options ● Update instances in the project: After checking, the components calling this template library in the basic window will batch update the settings of unchecked attributes in the synchronized template library ● Remove unused type versions from the library: If checked, the template library styles that have not been called in the library will be deleted

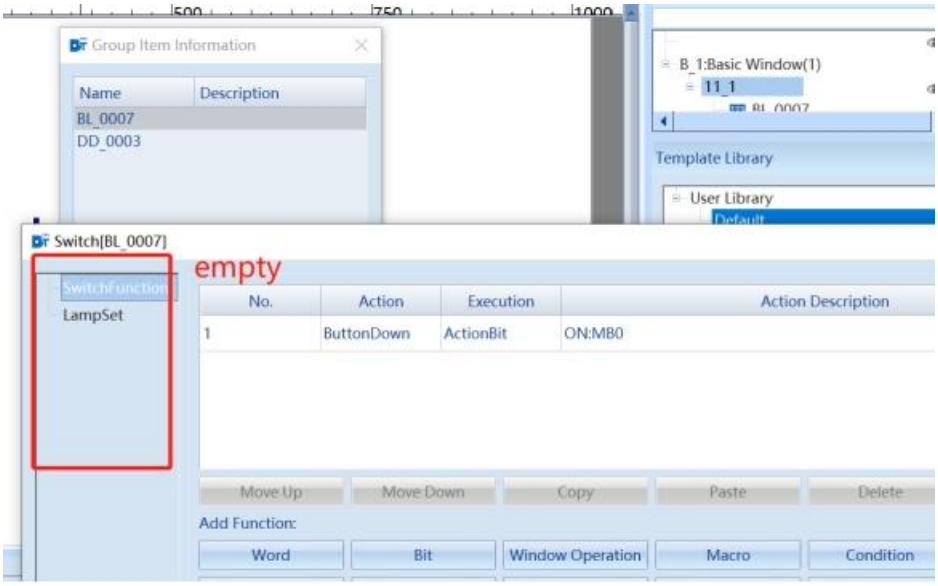
20.6.3 Template library instance demonstration

1. Select the component and right-click to add it as a favorite.

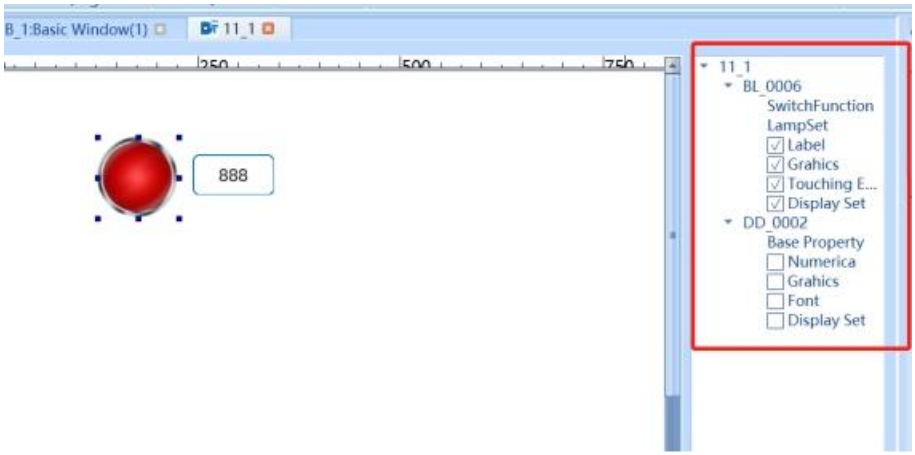




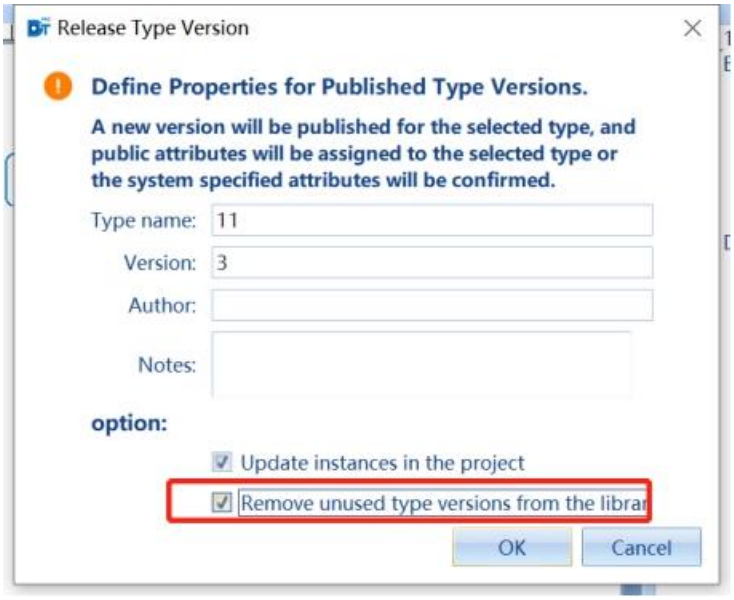
2. At this point, if the template library component property is not checked, then double clicking on the component property in the basic window will result in no property options being visible.



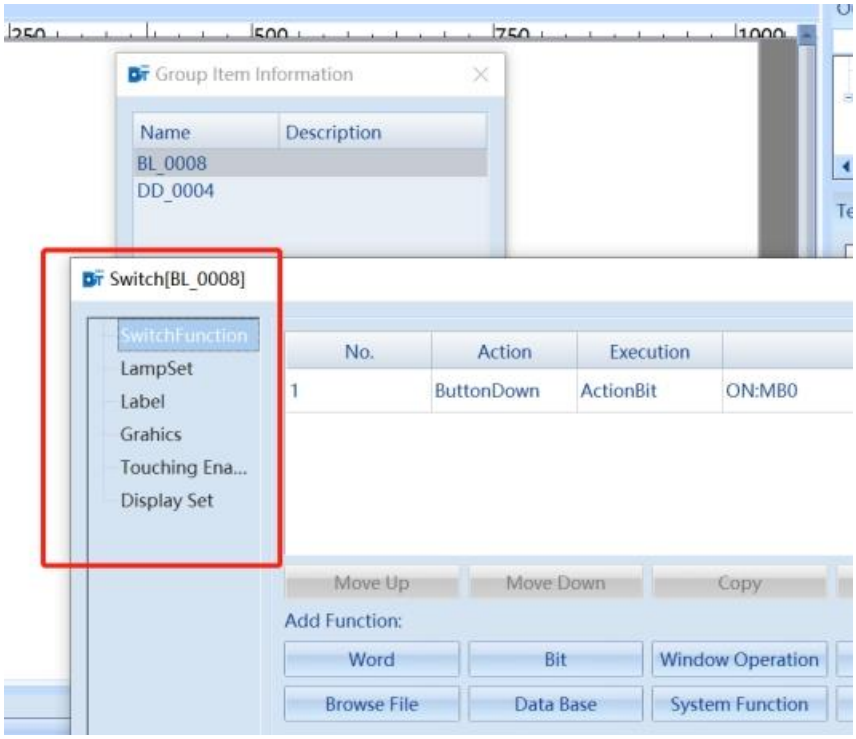
3. Assign the 'Label' property to the switch component 'SB_0004' in the template library.



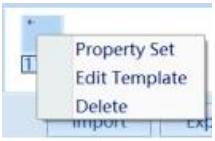
4. Click the "Release" button at the bottom left to update the instance. If "Remove unused type versions from the library" is checked, the template library "Style a1" will be deleted.

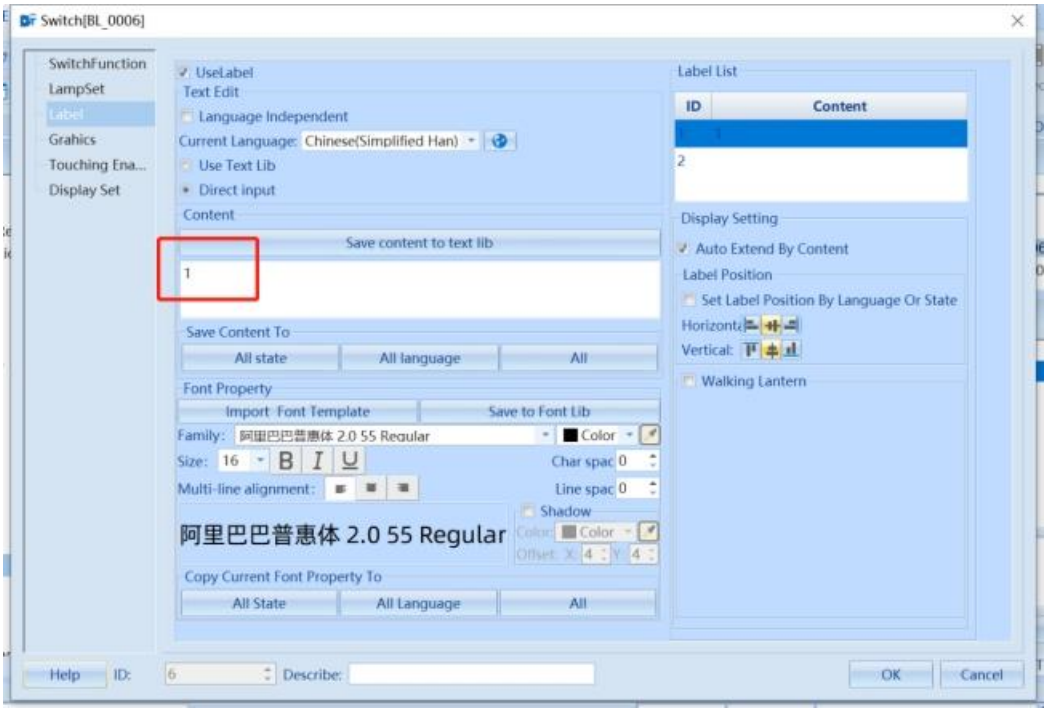


5. After the update, the template library editing interface will automatically close and return to the configuration basic window. At this time, by viewing the switch component properties, you can see that the "label" attribute appears.

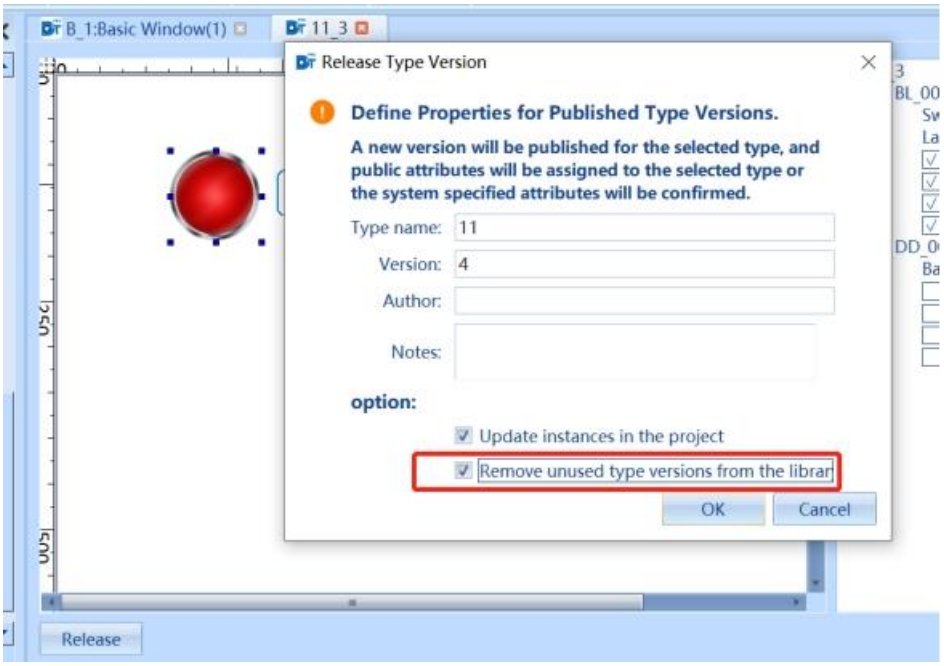


6. At this point, the "Label" attribute of the component will not be modified. Right click on the template library and click "Modify" to enter the template library editing interface. Edit the "Label" attribute of the component with the content of "1".

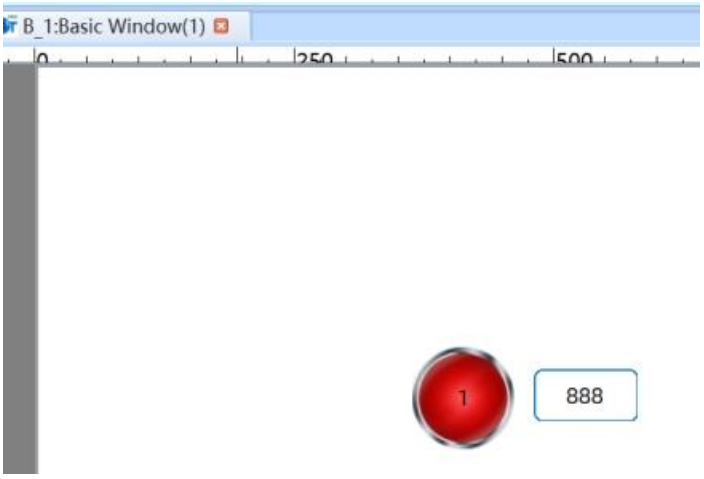




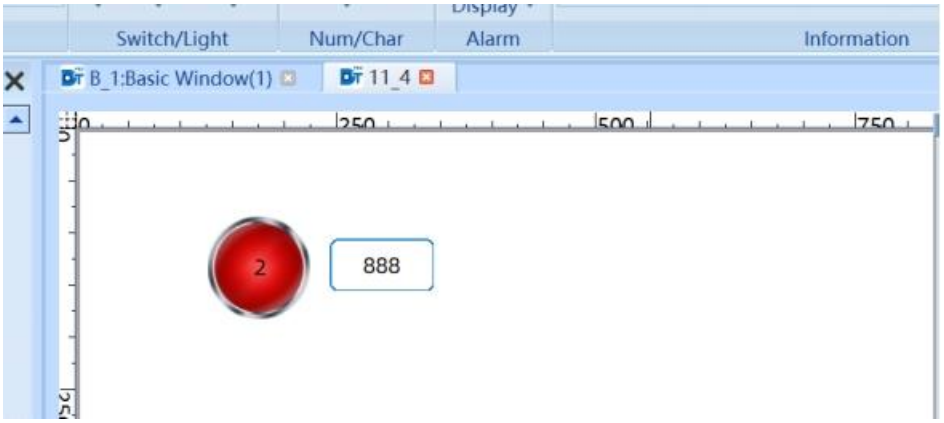
7. Click on the "Release" button at the bottom left to update the instance.



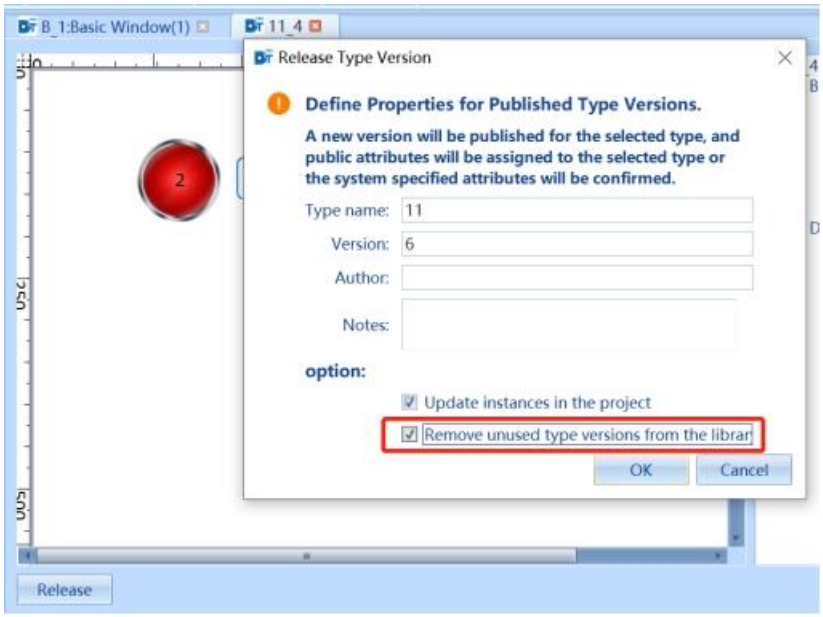
8. At this point, returning to the basic window, you can see that the attributes of the component label have also been updated.



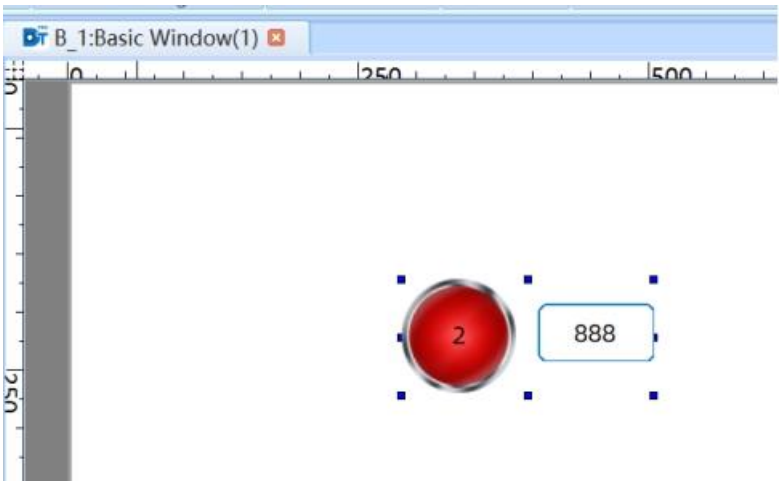
9. Now, modify the "Label" attribute content to "2".



10. Enter the template library editing interface again and click the "Release" button to update the instance.



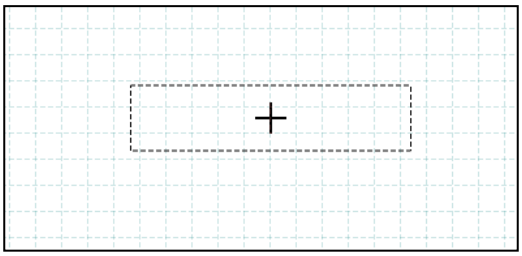
11. Returning to the basic window interface, you can see that the "label" attribute content of the component has not been modified with the template library update.



12. Reference the Template Library

Select the template library to be called

Hold down the left mouse button, move to the basic window, release the mouse button, and the template library components will be placed in the basic window.



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