HMI Software User Manual

1 Installation

This section explains how to install the HMI software.

1.1 Requirements for installation environment

All the following OS are compatible with the software.

Windows 7 (32bit / 64bit)

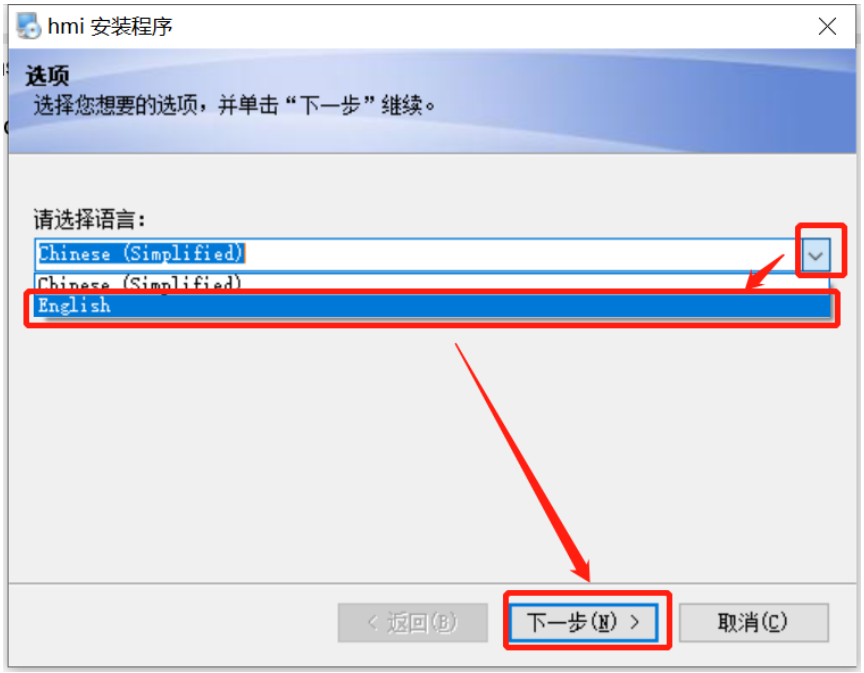
Windows 8 (32bit / 64bit)

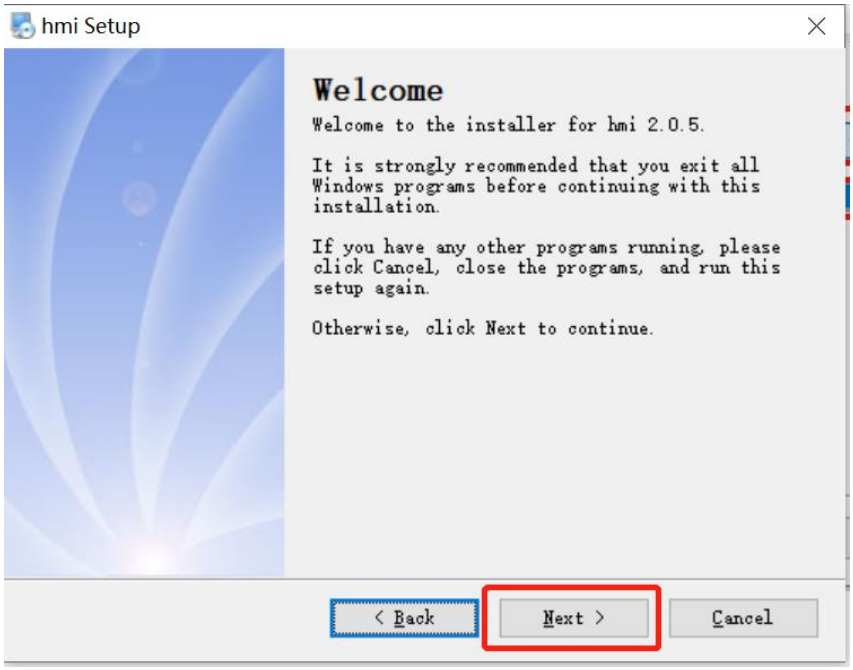
Windows 8.1 (32bit / 64bit)

Windows 10 (32bit / 64bit)

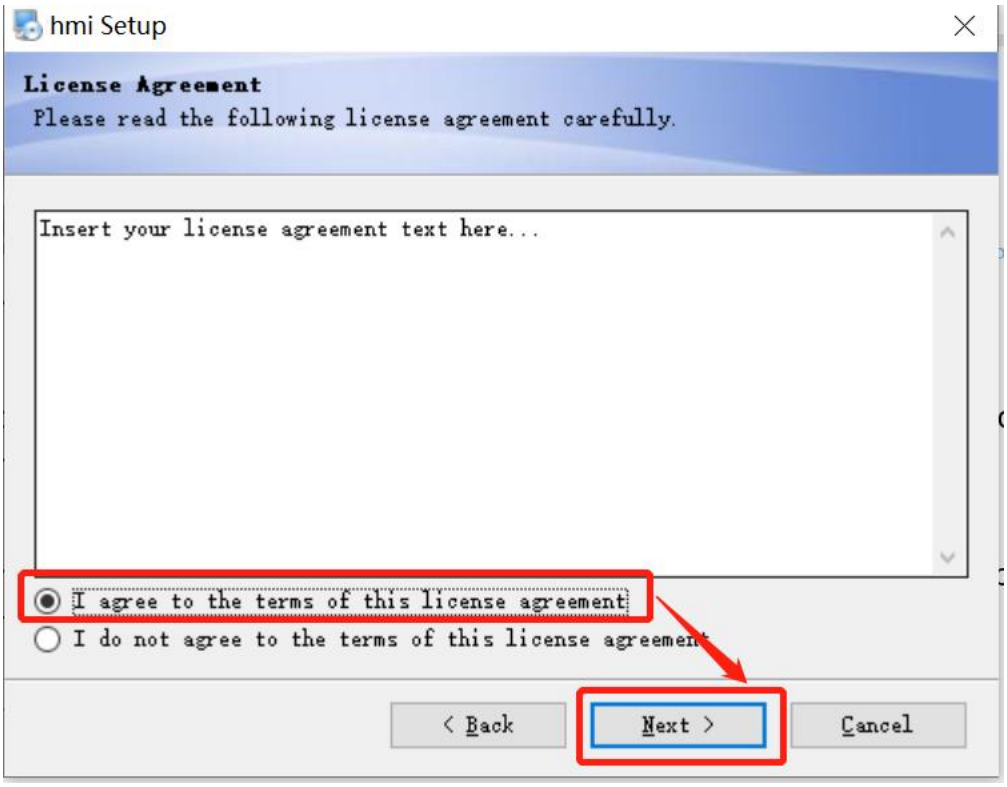
1.2 Installation steps

1) Double click hmi.exe. Select a language and then click [**Next**].

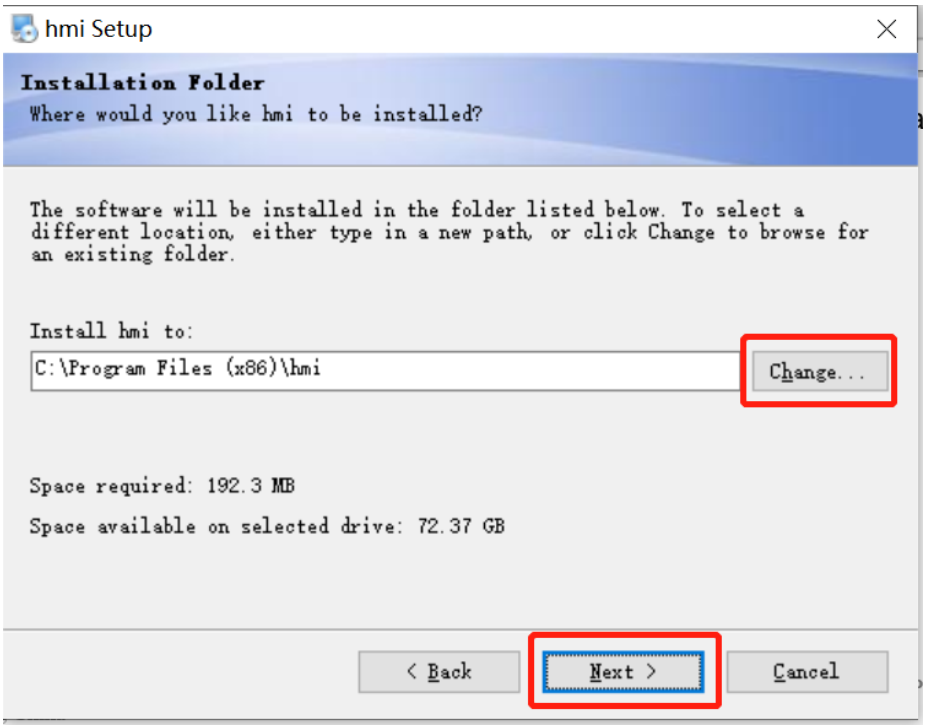




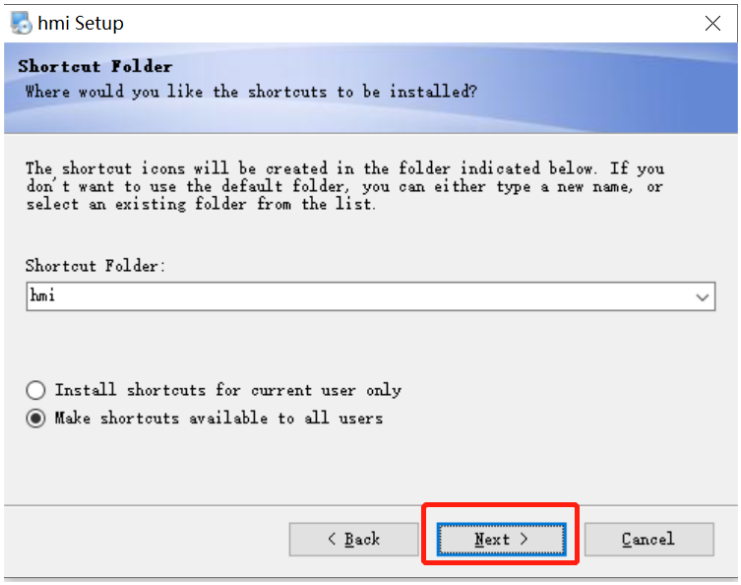
2) Select [**I agree to the terms of this license agreement**], and click [**Next**].



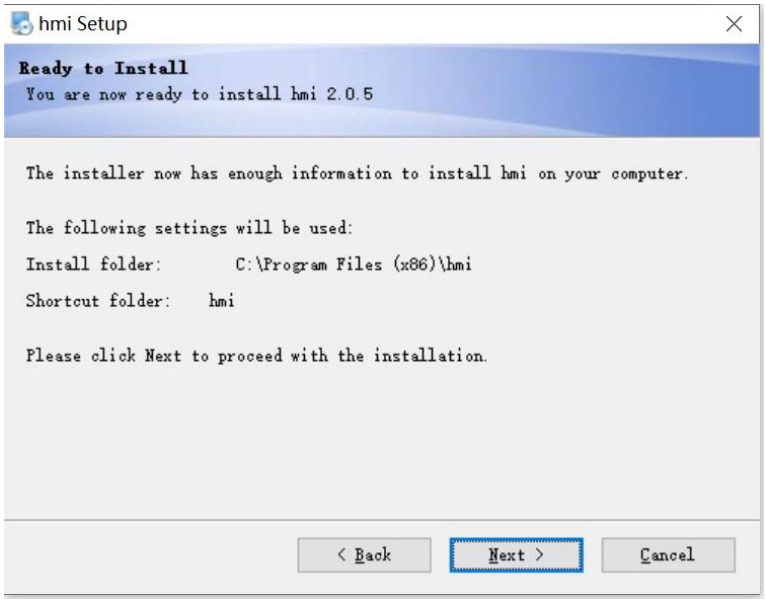
3) Specify the software installation path. You can use the default path, or you can click [**Change…**] to specify another path, and then click [**Next**].



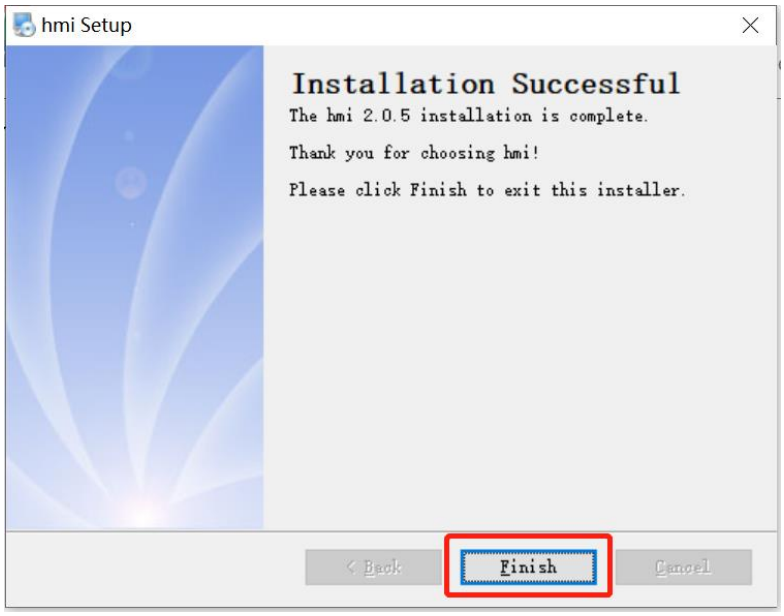
4) Check [**Install shortcut for current user only**] or [**Make shortcuts available to all users**] and click [**Next**].



5) Click [**Next**] to start the installation.

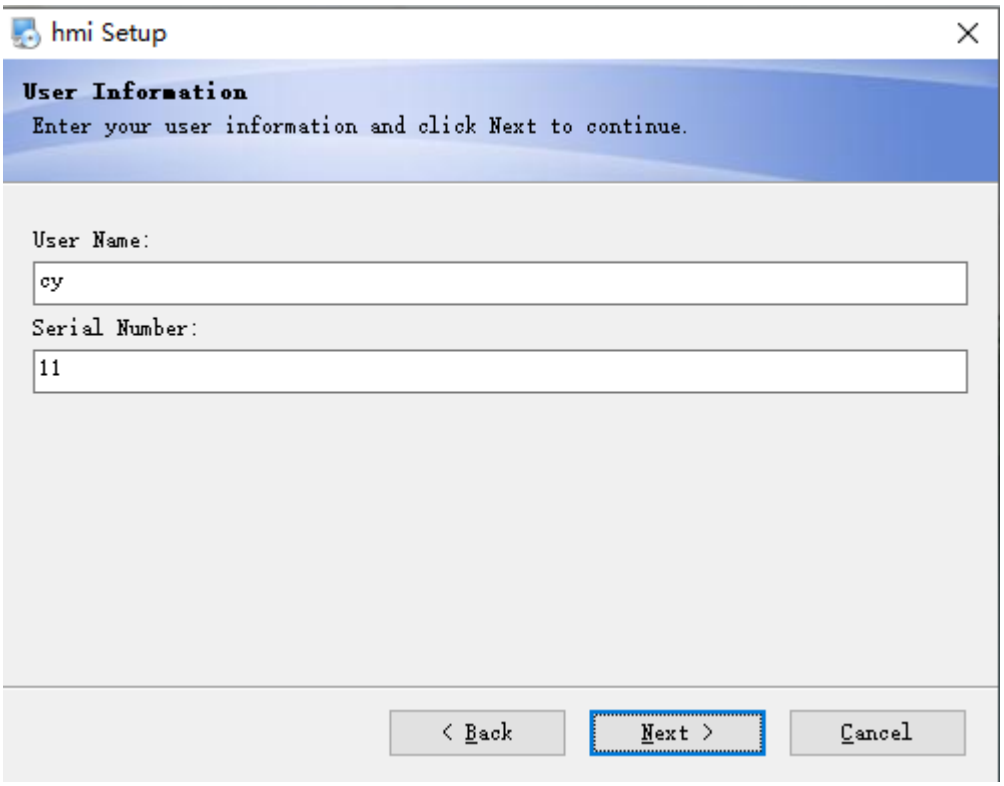


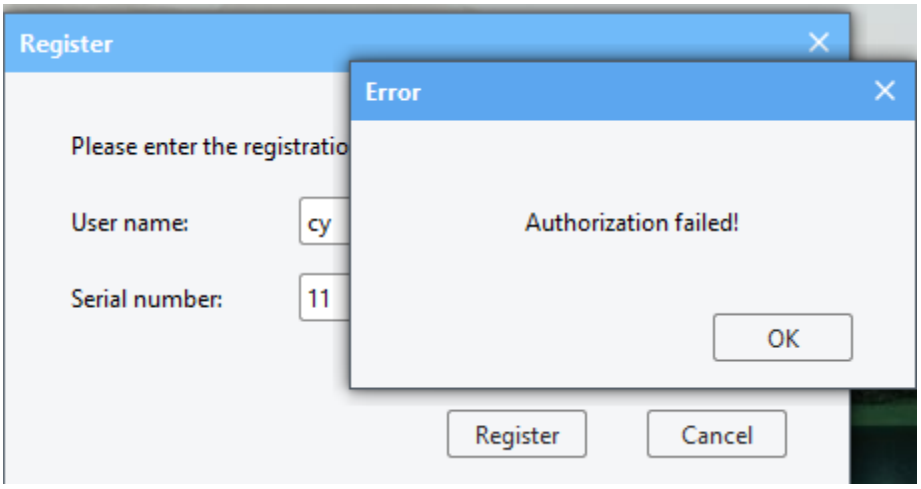
6) When the installation is complete, click [Finish].



Note:

Install hmi 2.0.43.231017.exe , please contact sales to get the ‘serial number’, the default number is incorrect, but ‘user name’ can be customized.


hmi Setup
User Information
Enter your user information and click Next to continue.
User Name:
cy
Serial Number:
11
< Back
Next >
Cancel


Register
Please enter the registratio
User name:
cy
Serial number:
11
Register
Cancel
Error
Authorization failed!
OK

2 Create simple projects

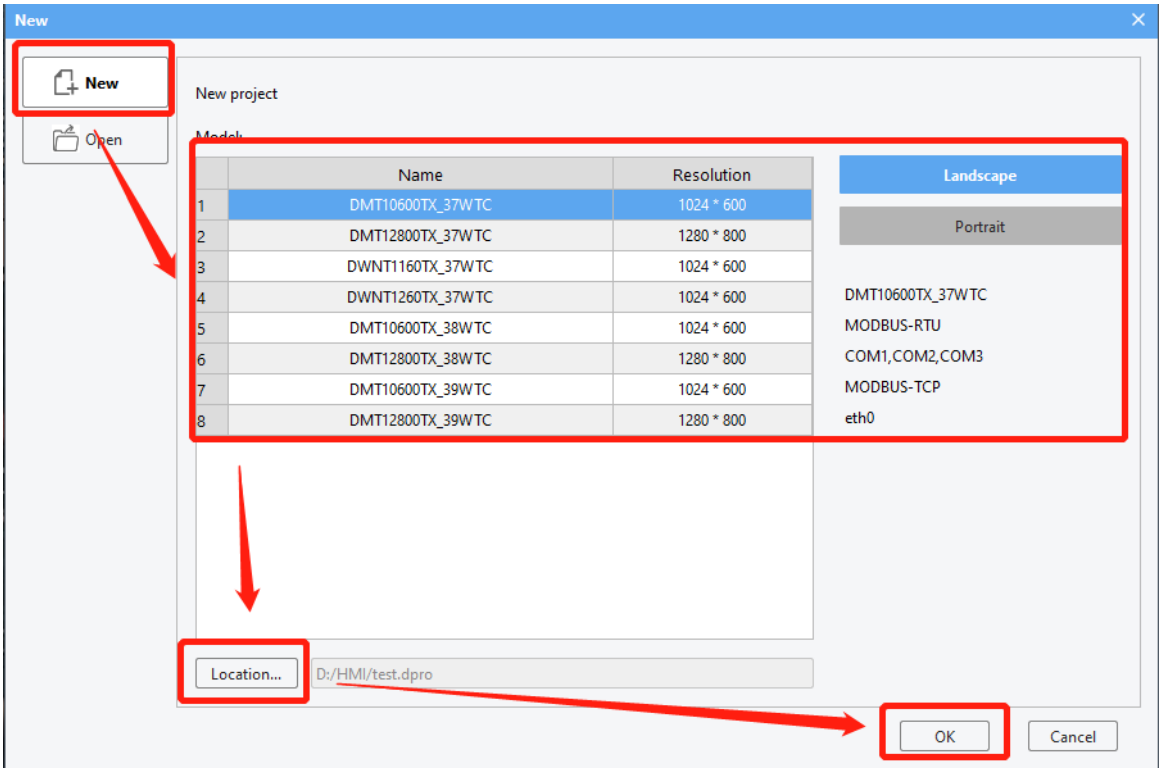
2.1 Create a new project

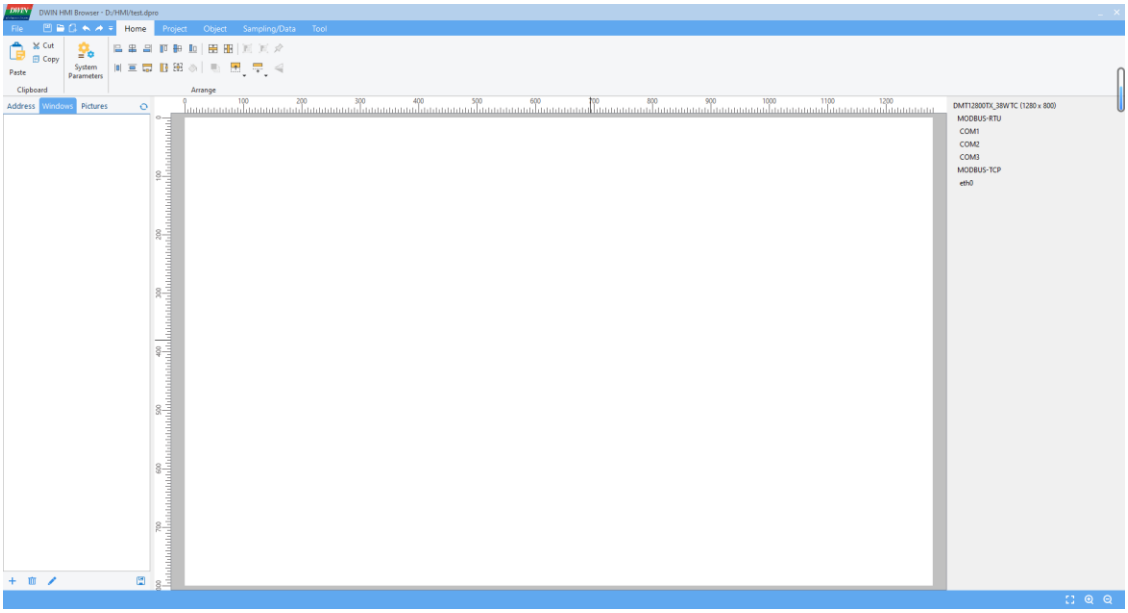
1) Open the HMI software and select [**New**]

2) Choose suitable model. Click [**Landscape**] or [**Portrait**] to change the direction.

3) Click [**Location**] to specify the path to save the new project.

4) Click [**OK**] to enter the main interface.

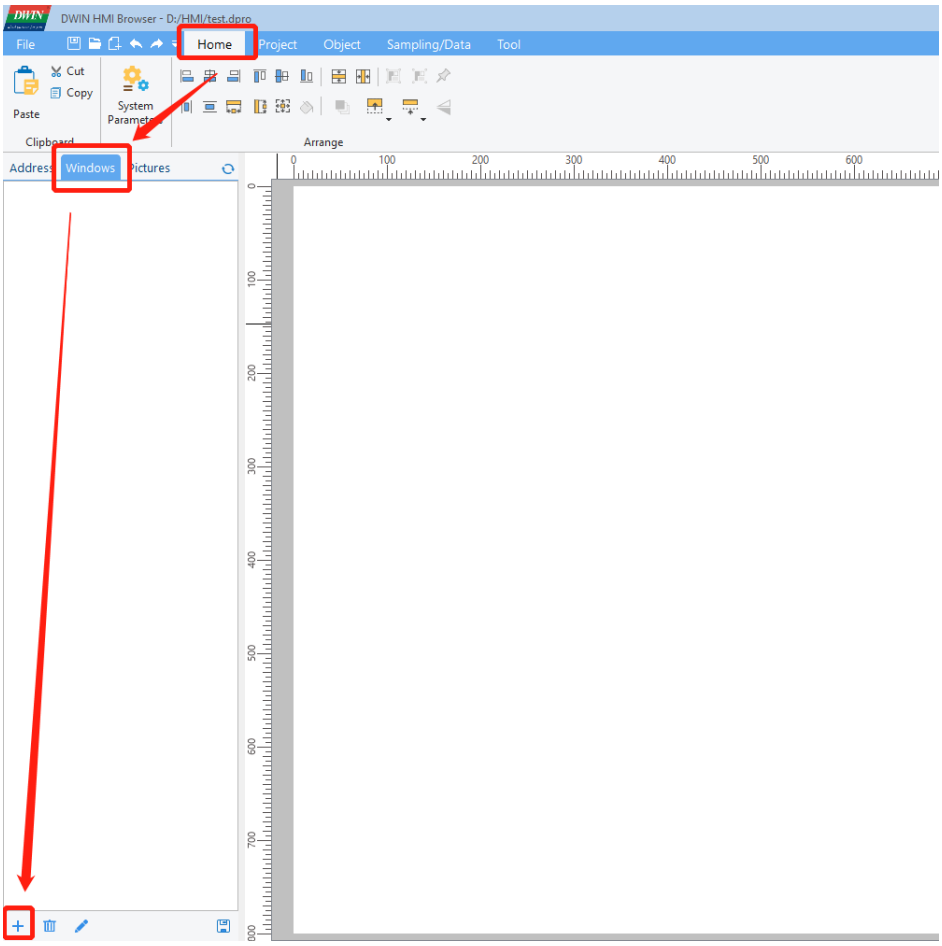




2.2 Create a new page

You can create multiple windows in a project and switch between them.

Select windows and click [+]



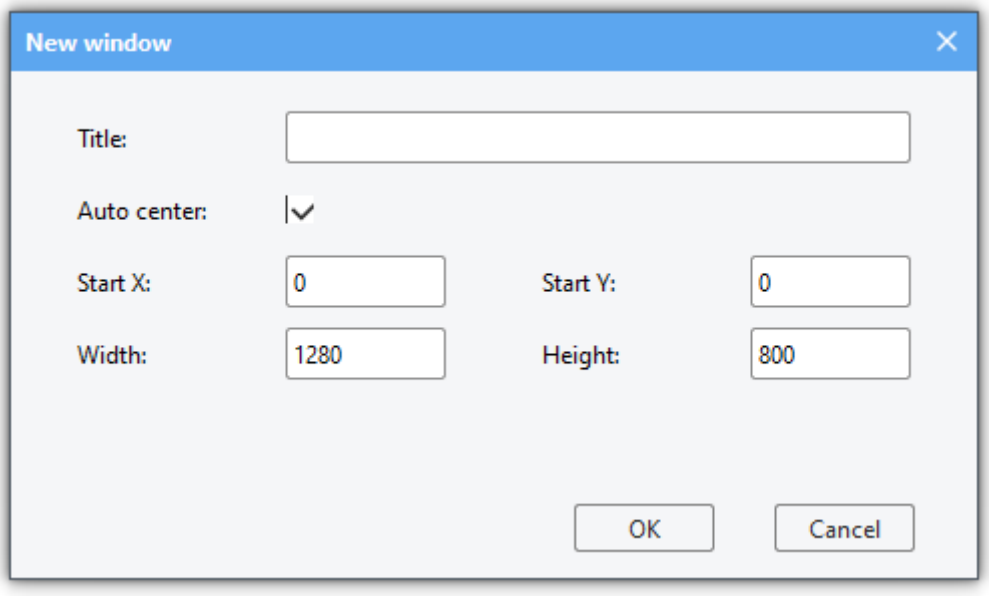
Name the window and set the start coordinate, width and height of the window. If not specified, it defaults to

the maximum size of the window. Select [Auto center] or not based on your need. Then click [**OK**].

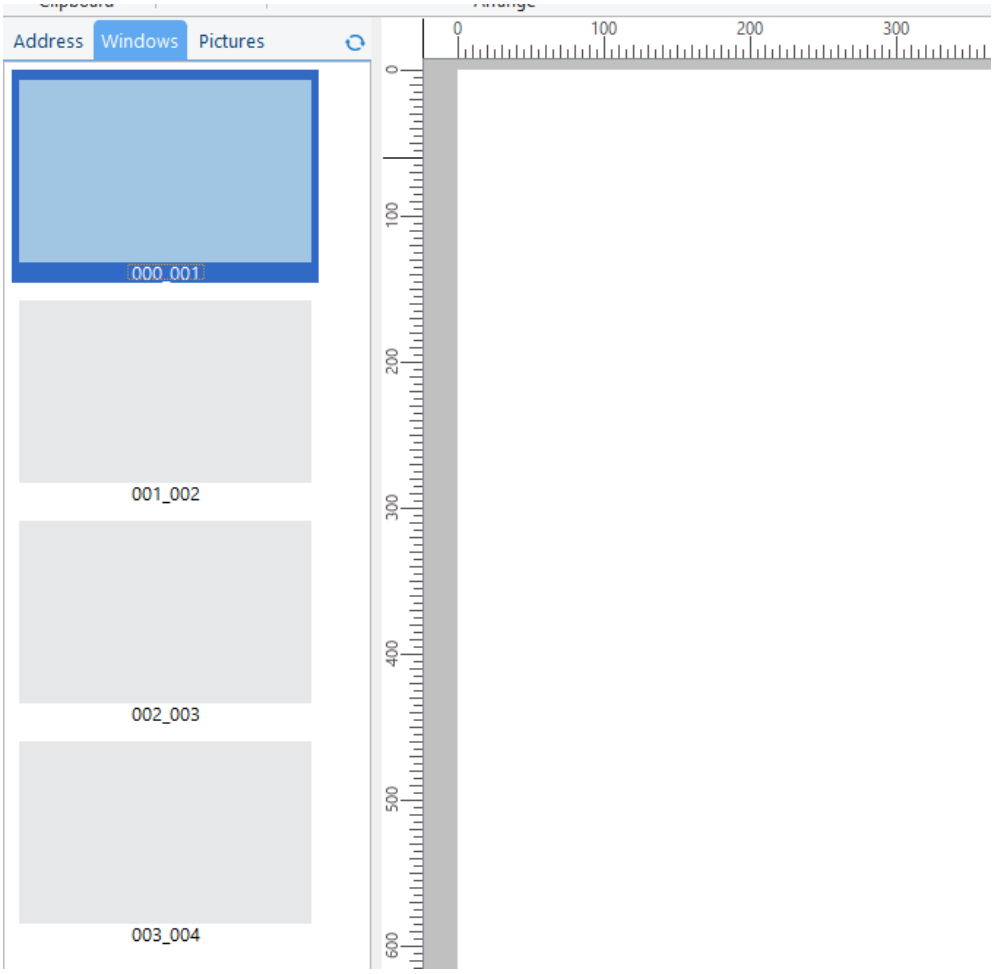
Note:

1) The first window whose id starts with '000' will not be displayed in the current version. Please edit windows from window 001.

2) In the current version, it is recommended to set a background picture for every window using a picture that fits the window size. For example, the size of the current window is set to 600×800. So you need to set a background picture using a 600×800 picture. For details, refer to 6.6.

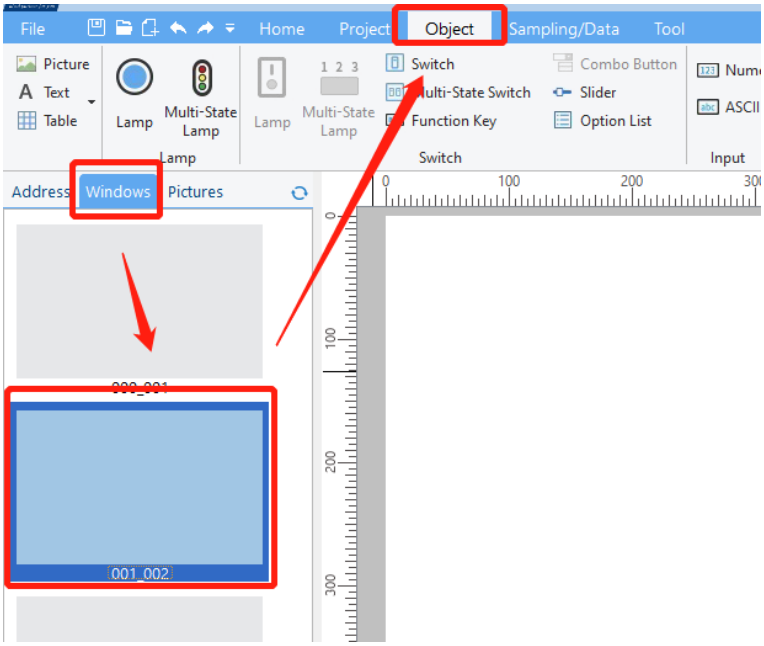


As shown in the following figure, you can create multiple windows by following steps above.



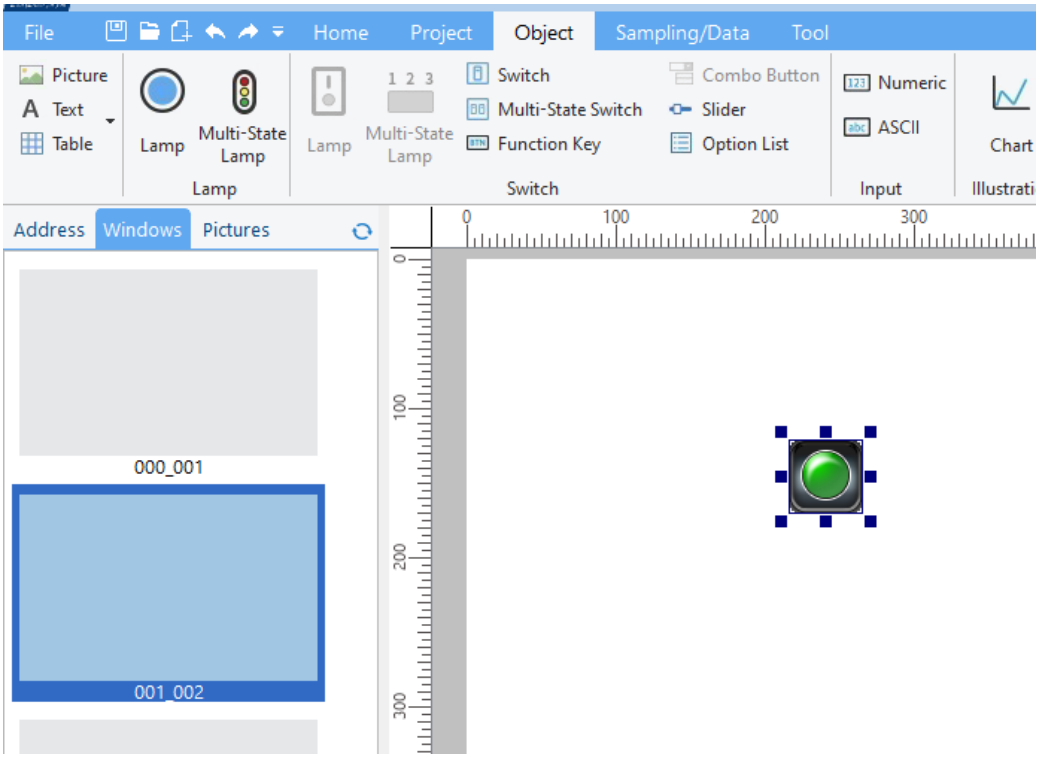
2.3 Object addition

Double-click to select the window for placing the object → switch menu bar to [**Object**] menu.

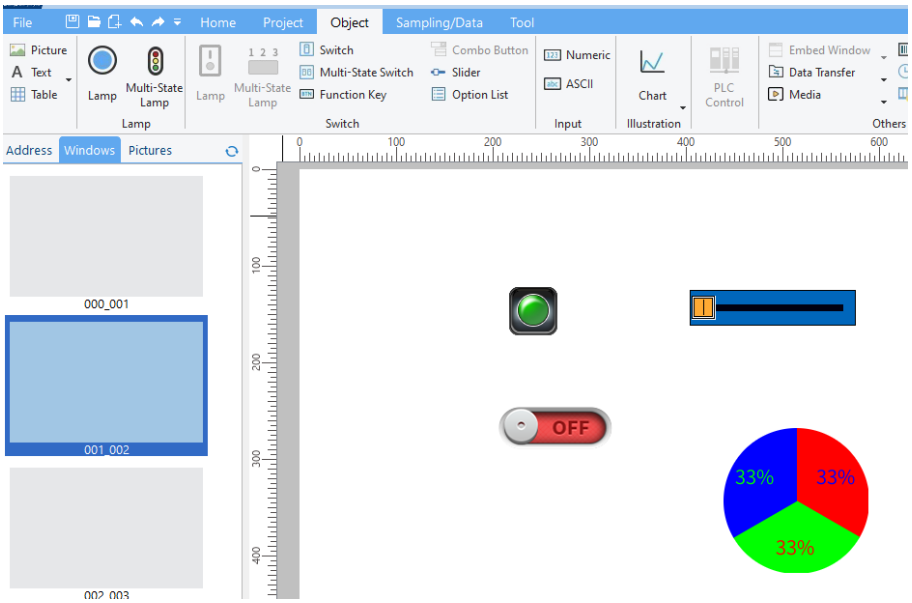


The process of adding an object is as shown in the figure below.

Click an object → drag and drop it to a location in the middle window → double-click on the object to place it.



Place multiple objects.

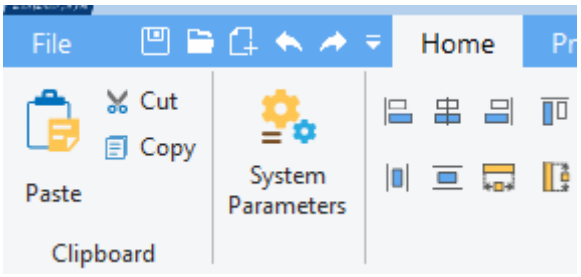


2.4 Object editing

2.4.1 Paste/Copy/Cut/Delete

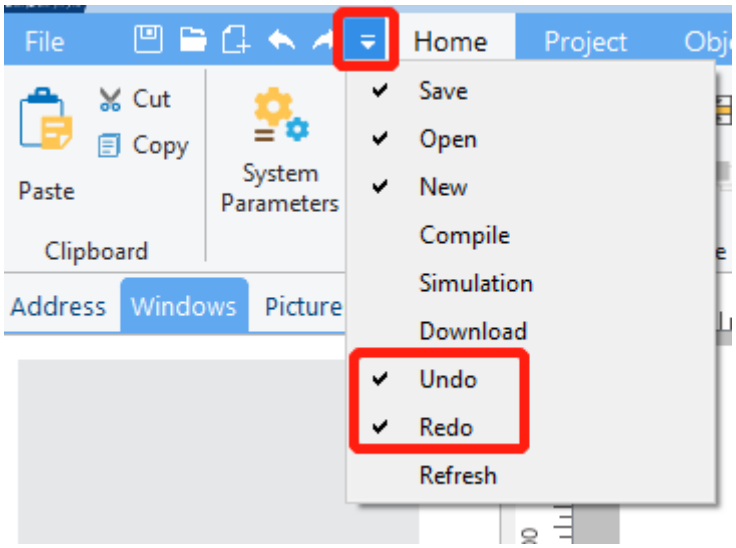
Click to select an object. Click [Copy] or [Cut] to copy the object to clipboard. Click [Paste] to paste the object

to the window. Press [Delete] to delete the object.

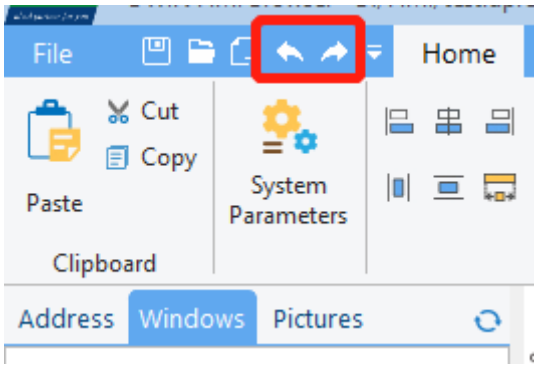


2.4.2 Undo/Redo

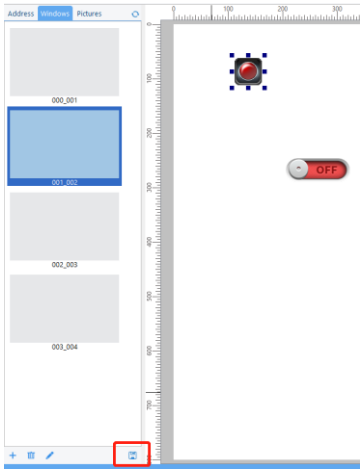
Click the toolbar. Select [**Undo**] and [**Redo**].



Click [**Undo**] or press [**Ctrl +Z**] to reserve your last action. Click [**Redo**] or press [**Ctrl +Y**] to reserve a previous Undo. Only Undo and Redo of the currently opened page are supported.

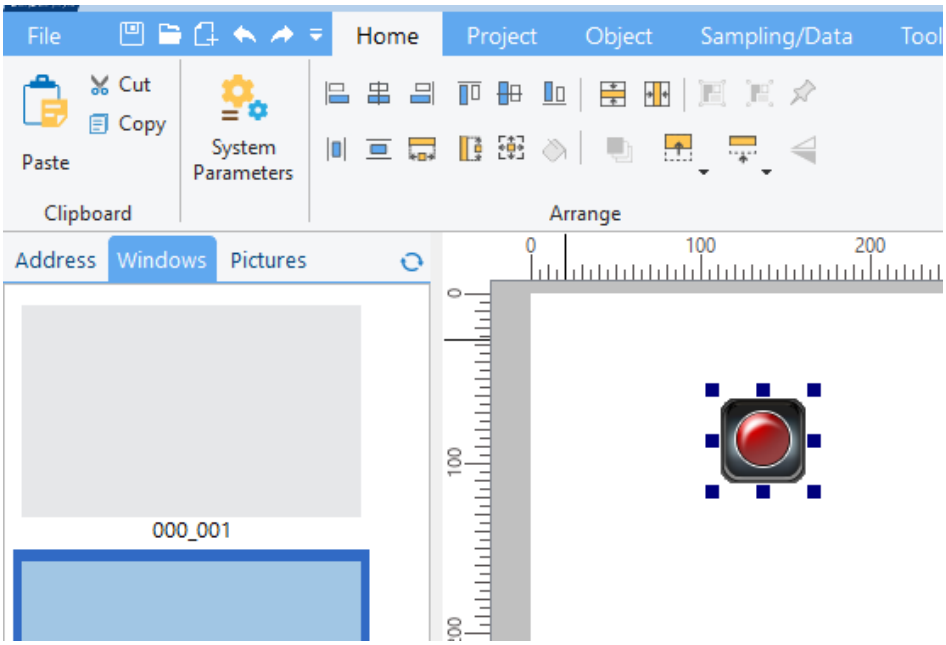


Note: Please click the [save] button at the bottom of [Windows] after Copy/Cut, Paste, Redo and Undo.



2.4.3 Arrange

Select an object. Hold down the [**Ctrl**] key to select multiple objects. Switch menu bar to [**Home**] menu. Click arrangement buttons to arrange objects.



There are five types of arrangements.

1) Align with the datum object (the datum object: the last selected object, that is, the object with small red squares at the four corners).

	Align left with the baseline of the left border of the datum object
	Align vertical center with the vertical center of the datum object
	Align right with the baseline of the right border of the datum object

	Align top with the baseline of the top of the datum object
	Align horizontal center with the baseline of the horizontal center of the datum object
	Align bottom with the baseline of the bottom of the datum object

2) Make same width/height with the datum object (the datum object: selected object with small red squares at the four corners).

	Same width with the datum object
	Same height with the datum object
	Same size (width and height) with the datum object

3) Align with the window

	Vertical center in the window
	Horizontal center in the window

4) Adjust position

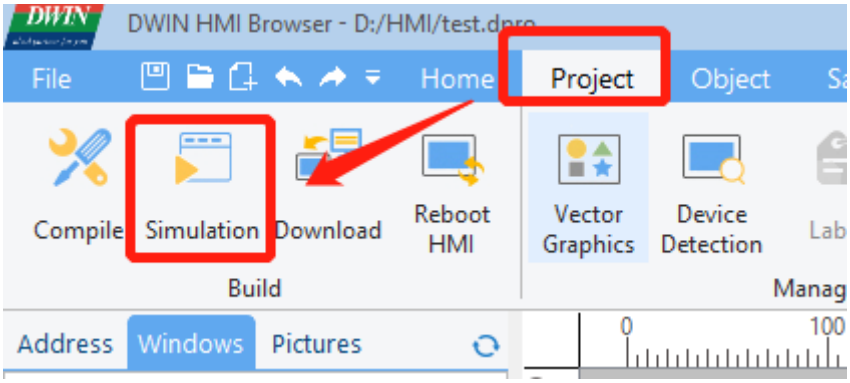
	Adjust the position of the selected object. Move 1 pixel at a time. Click the button or use the arrow keys to adjust the position of the selected object.
	Adjust the width and height of the select object. 1 pixel at a time. Click the button or press [Ctrl + arrow keys] (left arrow to decrease and right arrow to increase) to adjust the size.

5) Equally spaced

	Distribute selected objects horizontally
	Distribute selected objects vertically

2.5 Simulation

You can simulation the project operation on PC. Click [Project]->[Simulation]. The simulation function only supports preset JavaScript commands such as switching interface, opening window, etc. For details, refer to 6.4.



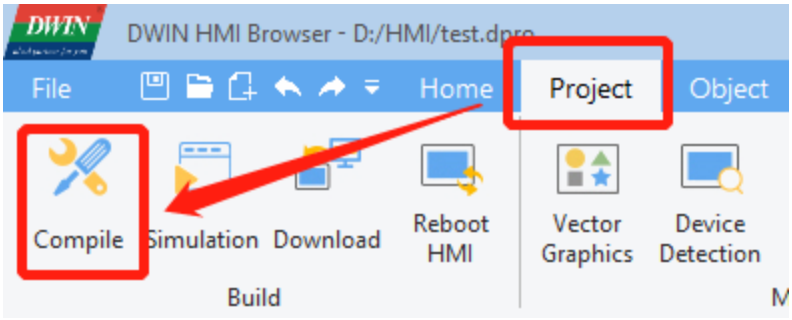
2.6 Window cache

For a window with many objects, you can right-click on the window and select [**Enable Window Cache**] in the pop-up menu. When switching to the window on the target board, the loading speed can be improved.

2.7 Download project files

1) Download project files via USB flash drive.

Click [Project] -> [Compile]



After the compilation is completed, copy the project file to the USB disk and change the name to update.dpro. Then insert the USB flash drive into the device and power on again, and wait for the device to automatically download the update. (Not available in the current version)

2) Download project files via Ethernet cable

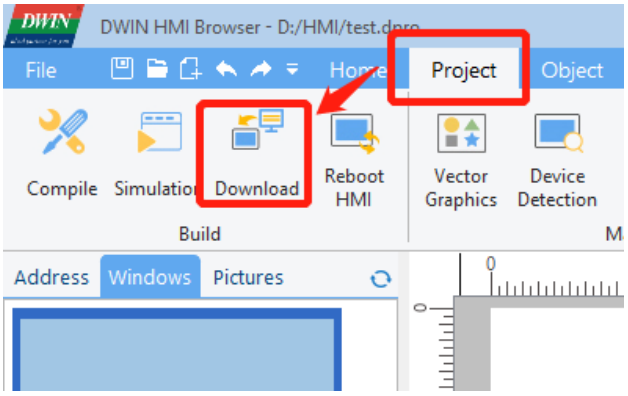
Connect the target board to the PC with an Ethernet cable. Click [Project] ->[Download]. Set the IP address and port of the target board in the pop-up window.

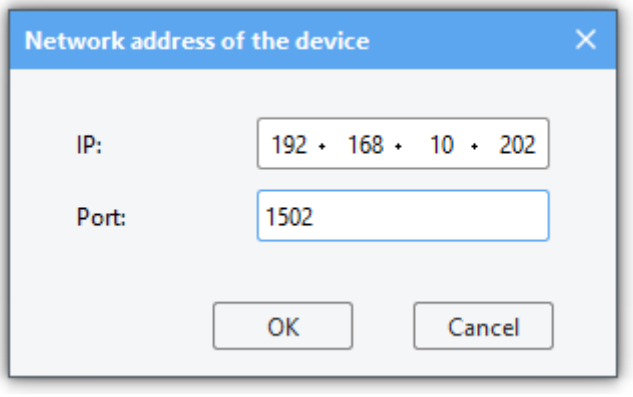
The default IP address is 192.168.10.202 or 192.168.10.201 and the default com is 1502.

Click [**OK**] and the downloading starts.

Note: Please keep the Ethernet cable connected to your computer and power on the device during

downloading.





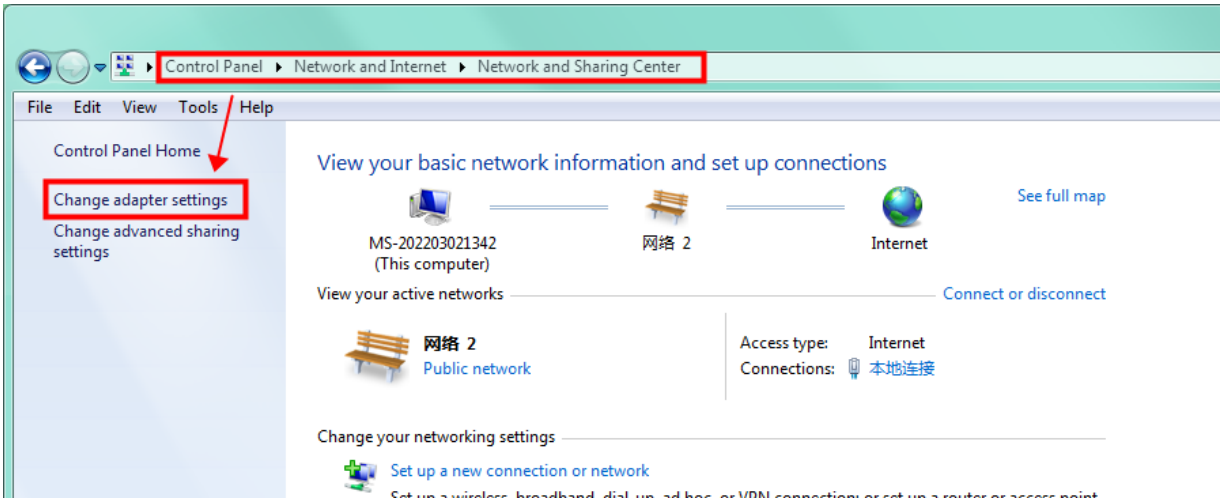
When the HMI software reminds that the downloading is completed, wait for the device to restart automatically. The device will run the downloaded project after the restart.

You can also shut down the device manually after the downloading is completed and power on again. The device will automatically run the downloaded project after startup.

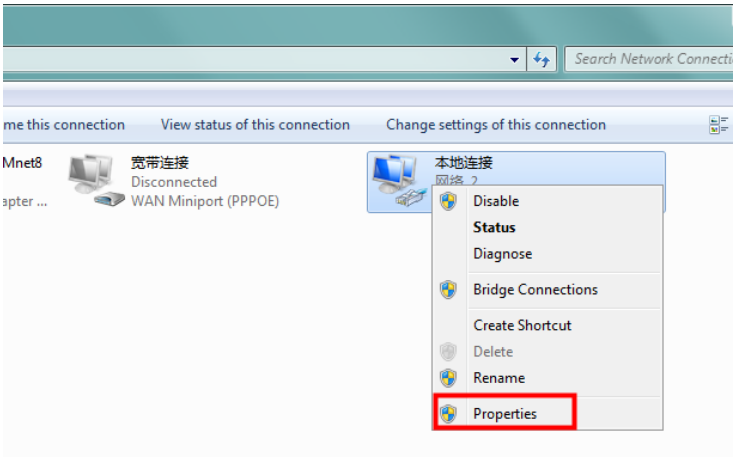
Note: To achieve communication, the IP addresses of the device and the computer should be in the same network segment during downloading.

You can configure the IP address of the computer as follows.

(1) Open **control panel** and click on "**Network and Internet**" and then click on "**Network and Sharing Center**". Click on "**Change adapter settings**".

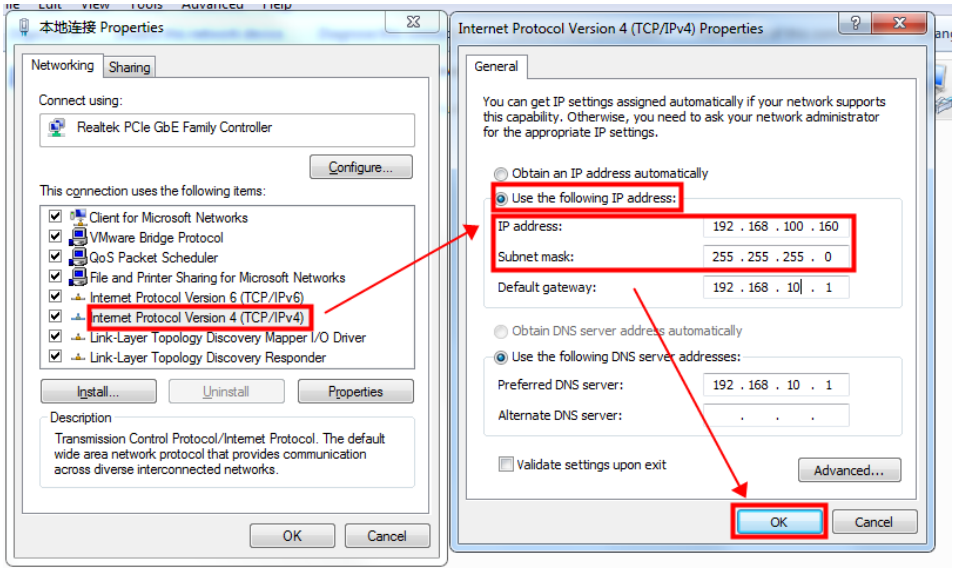


(2) Right-click on the adapter and select "**Properties**".



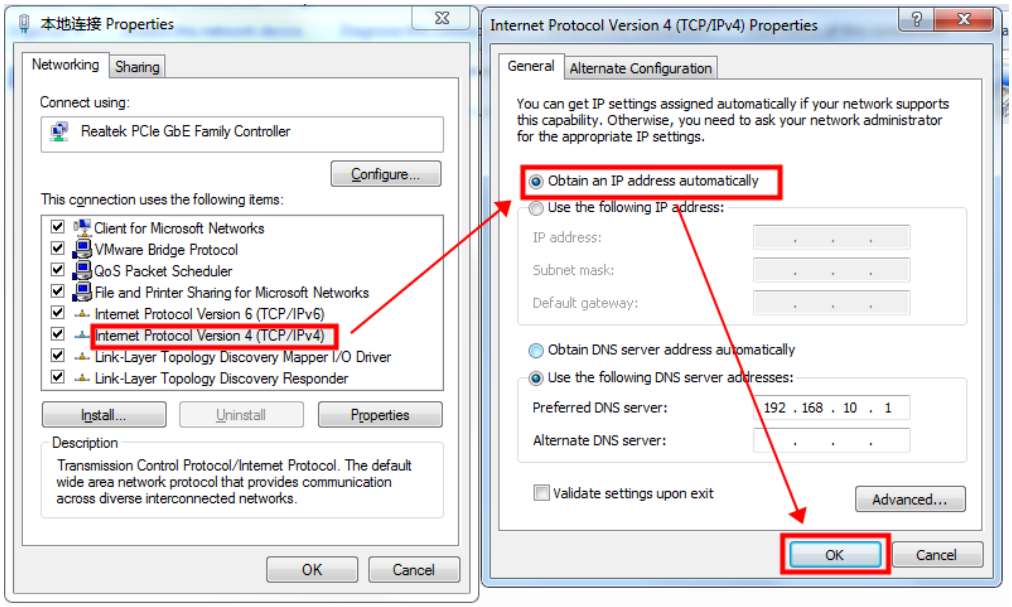
(3) Double-click on "**Internet Protocol Version 4(TCP/IPv4)"**.

(4) Select "**Use the following IP address"** and specify the IP address. The first three numbers should be 192.168.10 to make sure that the computer is in the same network segment with the device. The last number can be filled in 0~255. Do not set it to the same as the IP address of the device. Click the OK button on "Internet Protocol Version 4 (TCP/IPv4) Properties" window, and also click the OK button on "Ethernet Properties" window.



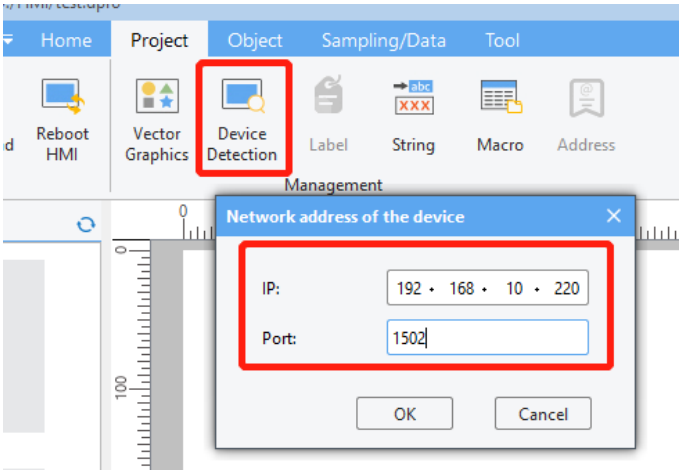
Note: Your computer cannot connect to internet through a cable after changing the IP address to STATIC.

You can set your computer back to DHCP to connect to internet. Repeat steps (1)-(3) again. When you get to the "Internet Protocol Version 4 (TCP/IPv4) Properties" window, click "**Obtain an IP address automatically**".

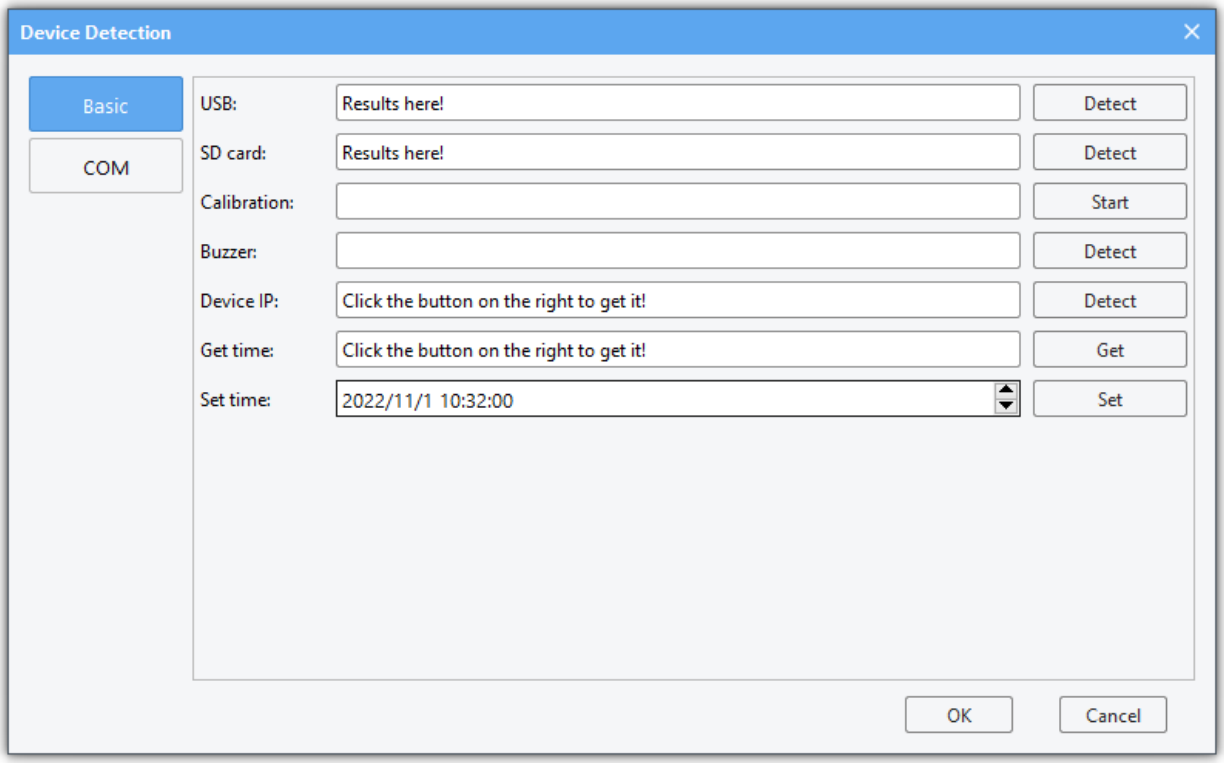


2.8 Check the Communication between the Target Board and the PC

(1) Click [**Project**] -> [**Device Detection**]. Specify the IP address and com in the pop-up window (192.168.10.220 here). Then click [**OK**].

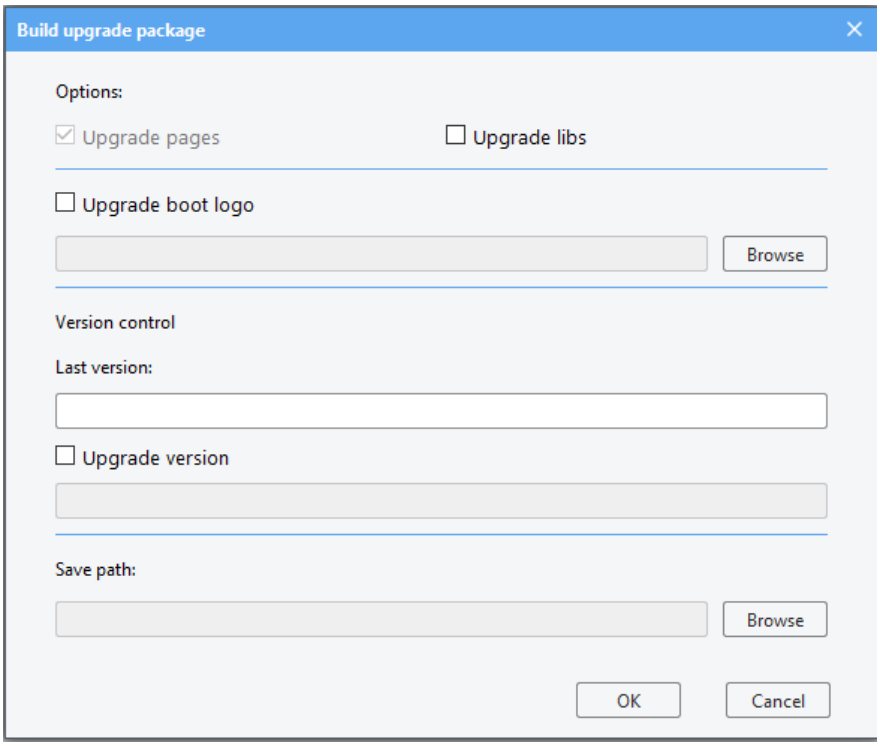


(2) Click [**Detect**] button of the buzzer. If you hear the beeping sound from the target board, it means that the HMI software and the target board have established a good connection and can communicate normally, otherwise the connection has not been established.



2.9 Generate Firmware Upgrade Package (Only available for 38, 39, and 42 series products)

Preparation: After editing the project, click on the menu bar [**Project**] -> Click on the toolbar [**Generate Upgrade Package**] button, a dialog box like the following will appear.



Default selection will update the project, and users can choose whether to update the device-side library files based on their needs.

Users can choose to use the version control feature or not. The current version number of the device can be found in the /etc/emcversion file on the device. The factory version number generally remains unchanged (A01-1-0 for the 39 series, DWIN_V1-0-0 for the 38 series). For subsequent versions, users can manage them according to their needs (whether to enable the version number update function).

Users can choose whether to enable the update of the boot logo as needed. If enabled, click Browse to select the image. The logo image must match the resolution of the device in use (for example, the required logo image size for DMT10600TXXX_xxWTC is 1024*600) and must be in BMP format.

Then select the storage path for the upgrade package (put the upgrade package in the /update directory under the U disk, and do not put other files in this directory).

After the upgrade package is downloaded, insert the U disk into the device before powering on. After powering on, wait for the device to automatically update the project. The device will automatically restart. When the update is complete, there will be a beep prompt (currently available for 38, 39, 42 series products, and some U disks may not be recognized by the device).

3 Module Functions

3.1 System parameter setting

This section describes how to configure the system parameter settings.

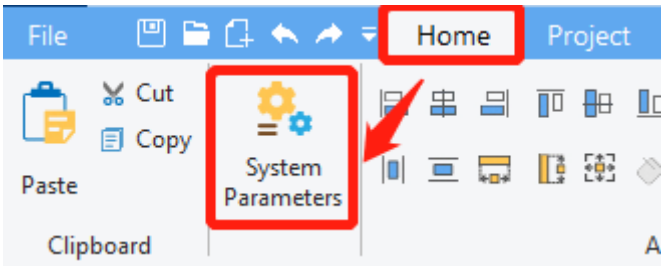
3.1.1 Overview

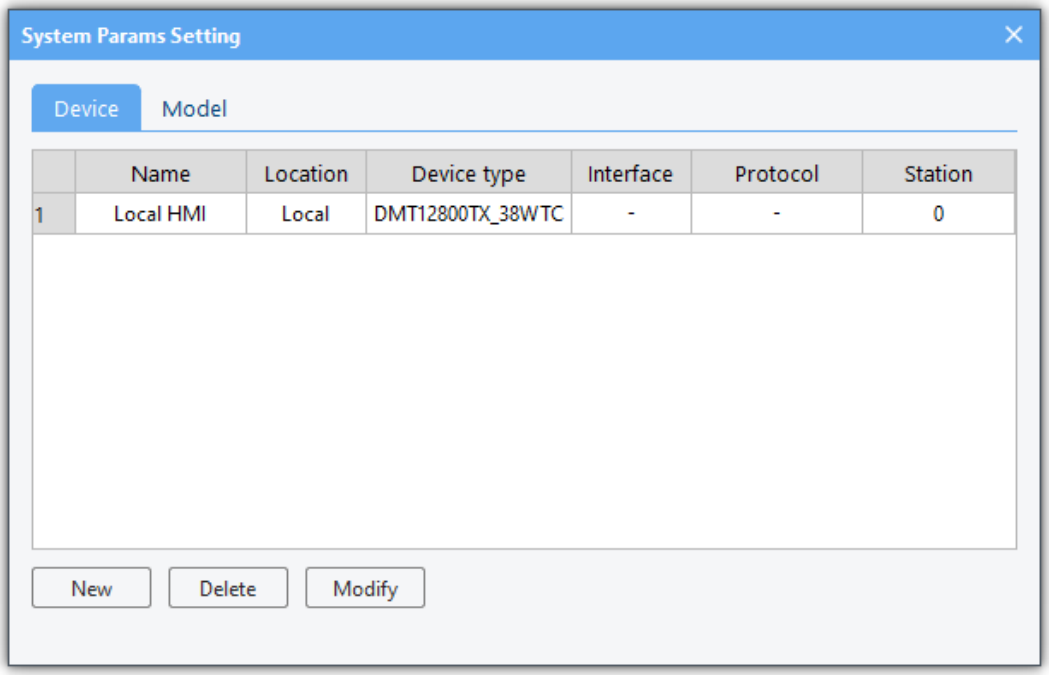
System parameter settings allow adding, setting, and deleting devices in the HMI device list. The PLC to communicate with the device need to be added here.

3.1.2 Settings

Click [**Home**] in the menu bar →click [**System Parameters**] to bring up the [system parameter settings] dialog box.

There is a device named Local HMI by default. Click [Model] to modify the local device's parameters such as HMI model and orientation. Restart the project after modifying to ensure normal display.



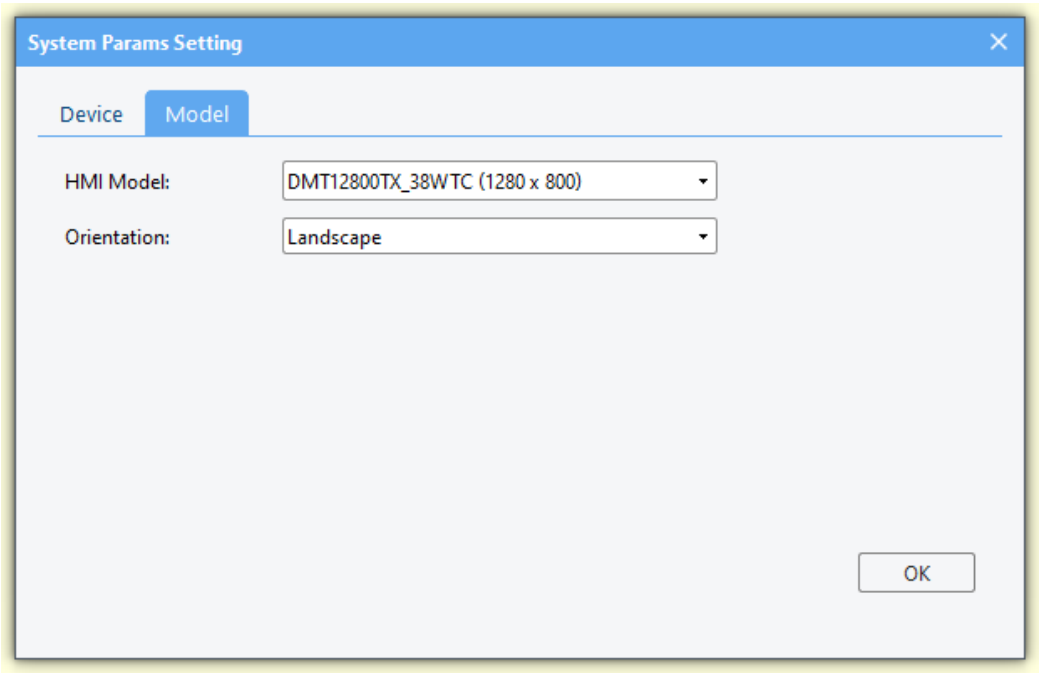


(1) In the [**device**] page, select a device and click [delete] to delete the selected device. The first device in the list is a local device that cannot be deleted.

(2) In the [**device**] page, click [**New**] to bring up the [**Device attributes**] dialog box, the usage of which is explained in 3.7.

(3) In the [**Model**] page, you can check and modify the information about this device.

Note: After changing the resolution or orientation, please close and reopen the project immediately.



3.2 Data sampling

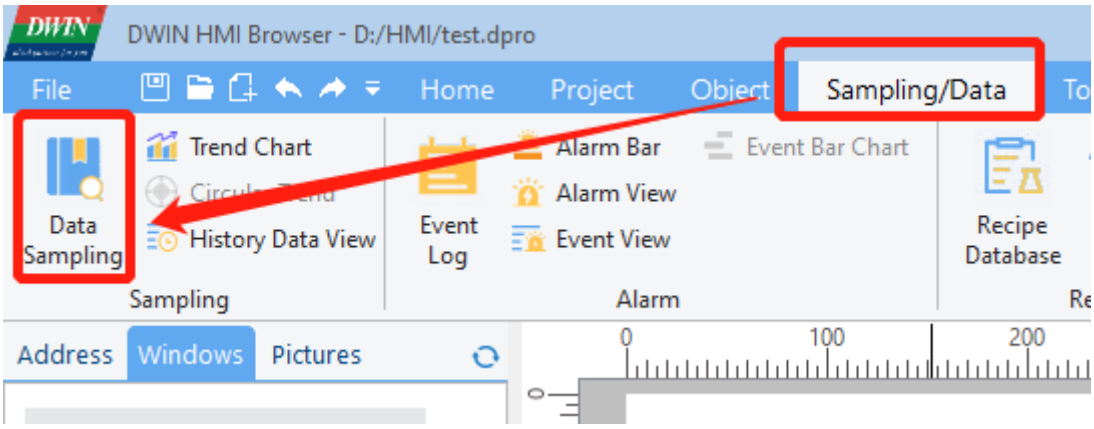
This section describes the configuration of data sampling.

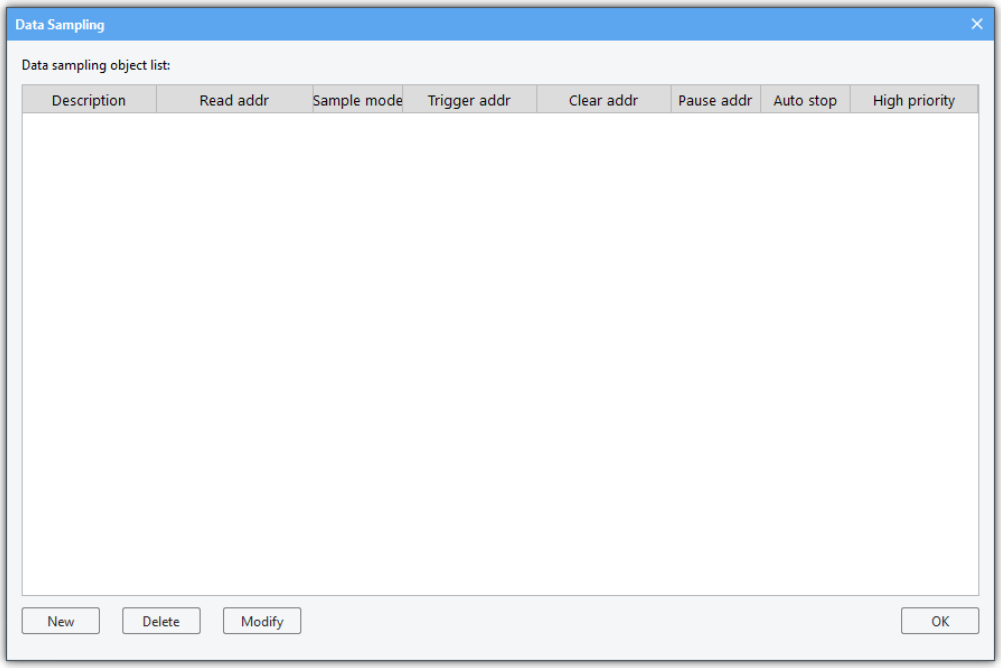
3.2.1 Overview

The [**data sampling**] module is used to define how the data is sampled, e.g., sampling time and sampling address. The acquired sampling data can be stored at a specified address, e.g., a SD card or a USB flash drive. [**data sampling**] can be used with the [History data view] to view data sampling records.

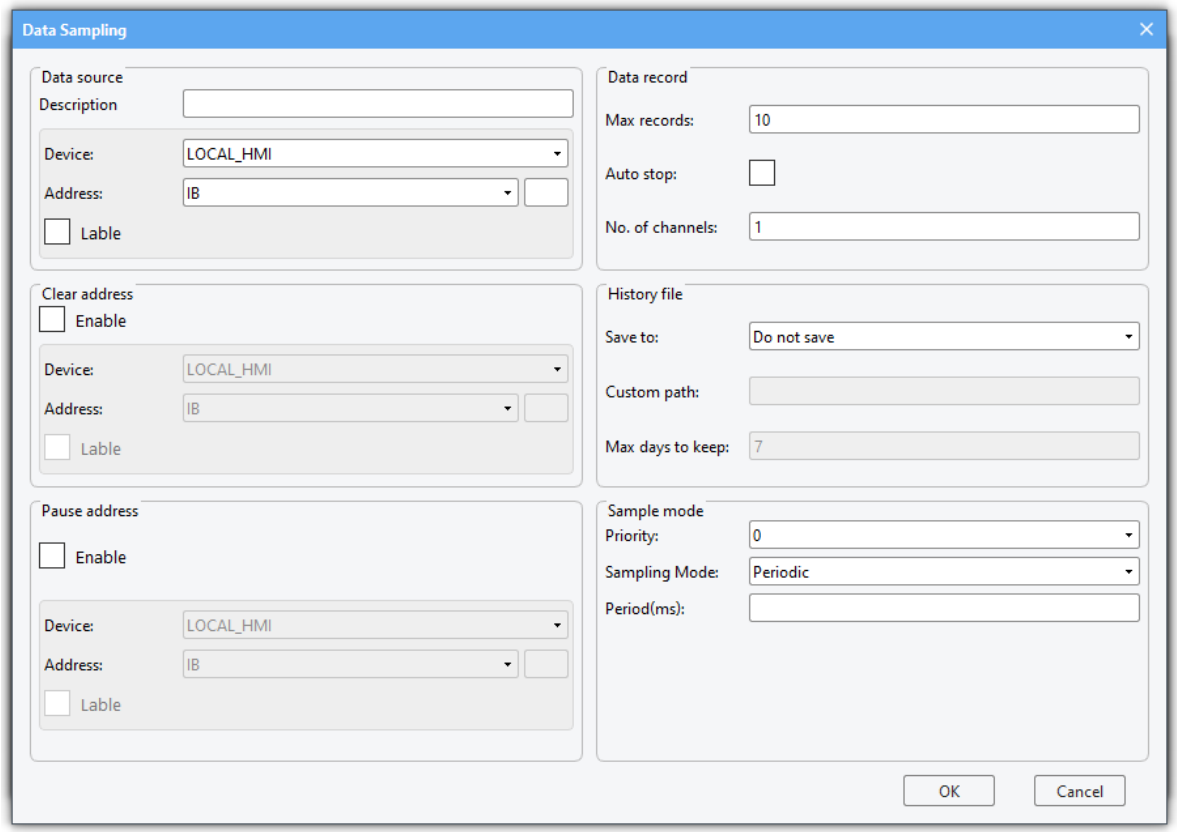
3.2.2 Settings

(1) Click [**Sampling/Data**] in the menu bar→ click [**Data Sampling**] in the toolbar to bring up the [**Data Sampling**] window. You can add data or delete and set selected data by the buttons in the lower-left of the window. When deleting and setting, you need to select the data in the list before you can operate.

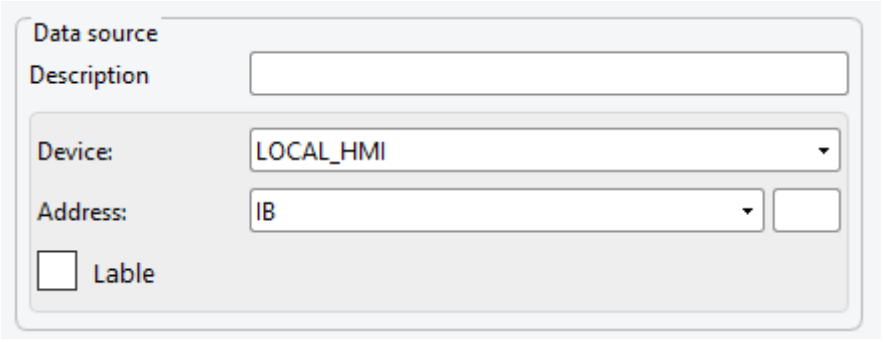




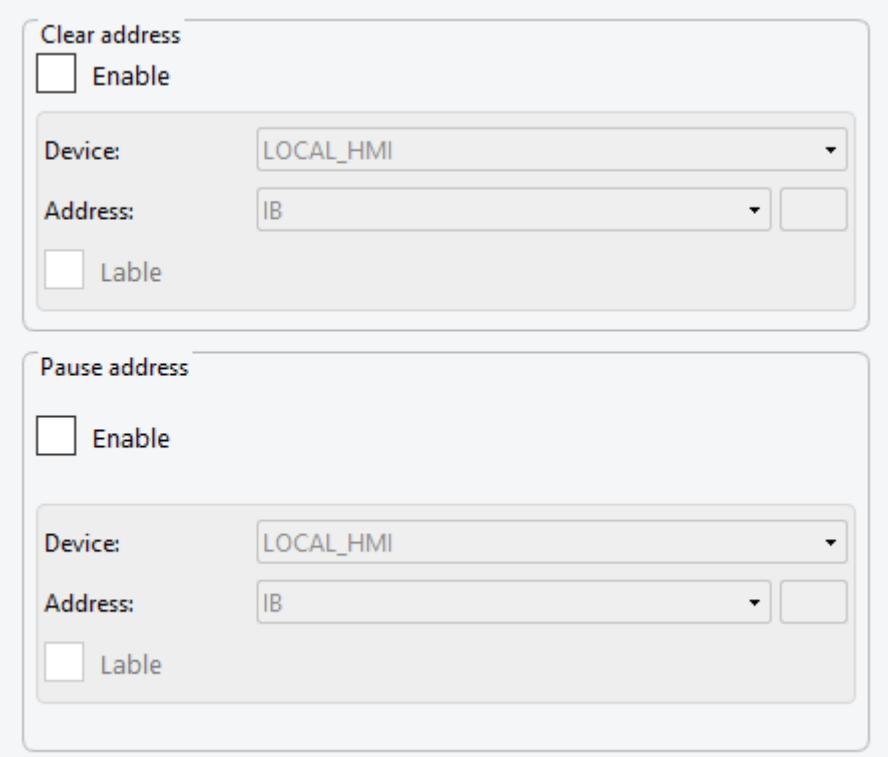
(2) Click [**New**] or [**Modify**] to bring up the following dialog box, through which new data sampling information can be added. You can also select existing data sampling information and click [**Modify**] to modify it.



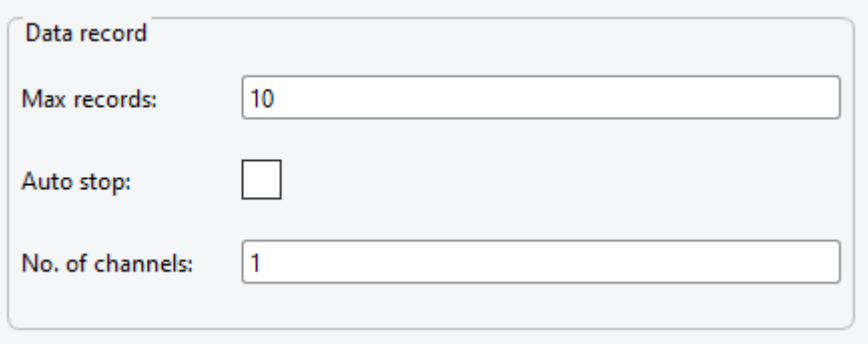
(3) The address of the data source for data sampling can be set and a text description of the data sampling can be made to differentiate between different data samples through [**Data source**].



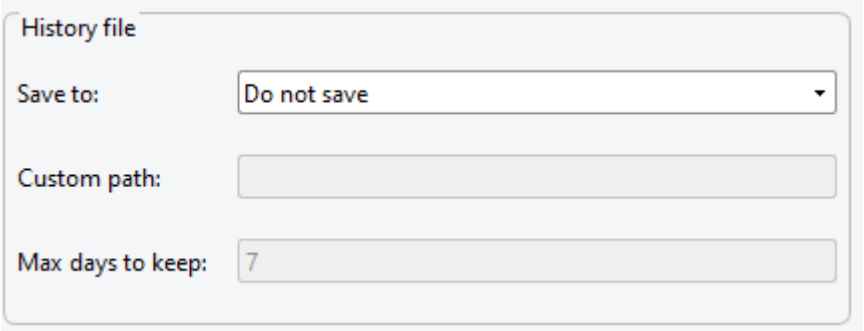
(4) When [**Clear address**] and [**Pause address**] in the [**Data Sampling**] window are enabled, the address can be configured, and the corresponding functions are enabled. (Not available in the current version)



(5) You can set the maximum sampling number on the immediate mode (That is, if it is not saved to the history record, the maximum number of samples saved in real time), whether to stop automatically (Not available in the current version), and the number of channels (When [**Data source**] is set to IS or QS, the number of channels should be greater than the length of the string that may appear.) in [**Data Record**].

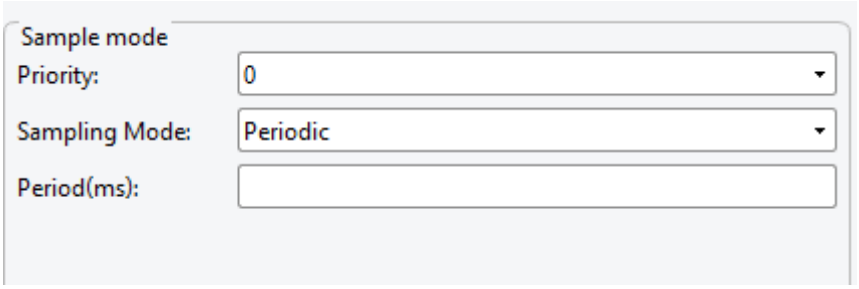


(6) In [**History file**], you can select [**Save to SD card**], [**Save to USB**], [**Custom path**] or [**Do not save**]. If you select [**Save to SD card**] or [**Save to USB**], it is necessary to edit [**max days to keep**]. The default save path of a USB flash drive is hmi folder in its root directory. If you select [**Save to SD card**], please check whether a SD card is inserted into the device. Do not add / at the end of the custom path.



(7) In [**Sample model**], you can edit the priority as either [**Periodic**] or [**Trigger**]. If [**Periodic**] is selected, the sampling period needs to be set. Otherwise, the trigger address and trigger mode need to be set.

Note: the unit of sampling period is MS. If you want to set to sample every 10s, the sampling period can be set to 10000.



3.3 Recipe database

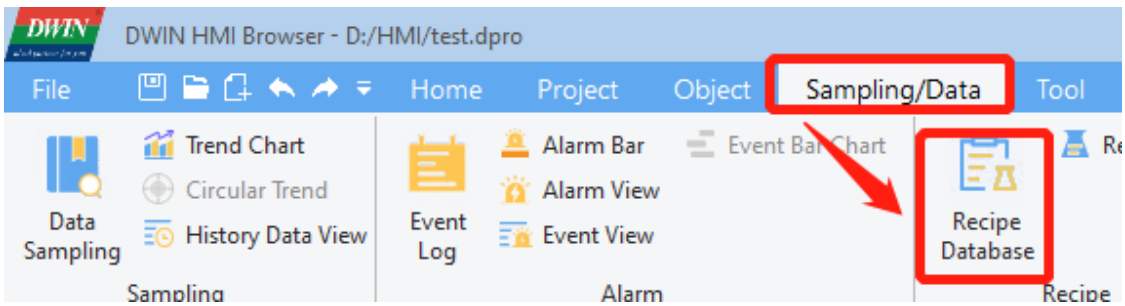
This section describes how to use the recipe database.

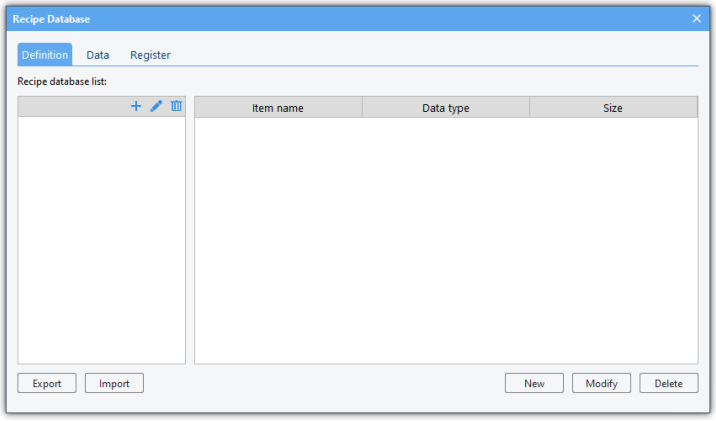
3.3.1 Overview

A recipe database is a database defined by the user in the PC configuration software, where certain recorded data can be preset on the PC, or added, deleted and modified on the HMI device. These database files can be downloaded to the device to change and customize the working parameters of the production line.

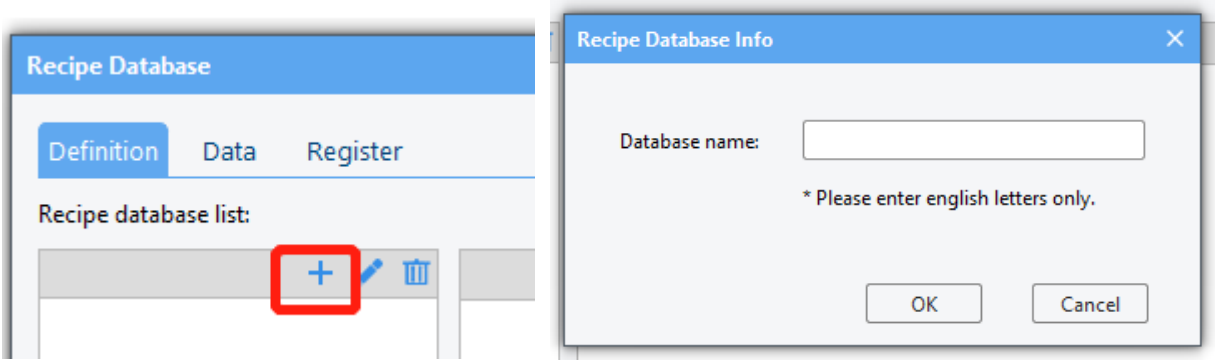
3.3.2 Create a new recipe database

(1) Click [**Sampling/Data**] in the menu bar →click [**Recipe Database**] in the toolbar to bring up the following window.

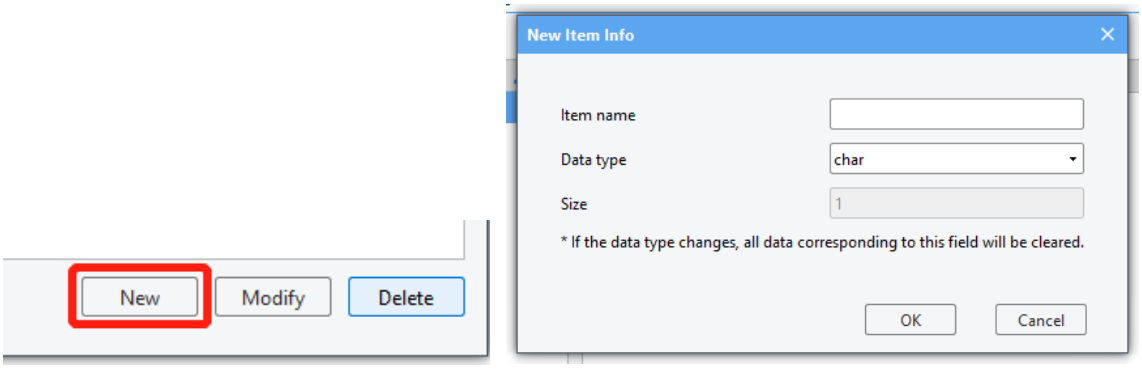




(2) Create a recipe database: click the button as shown, set [Database Name] in the pop-up window, and click [OK]. Then a recipe database is created.



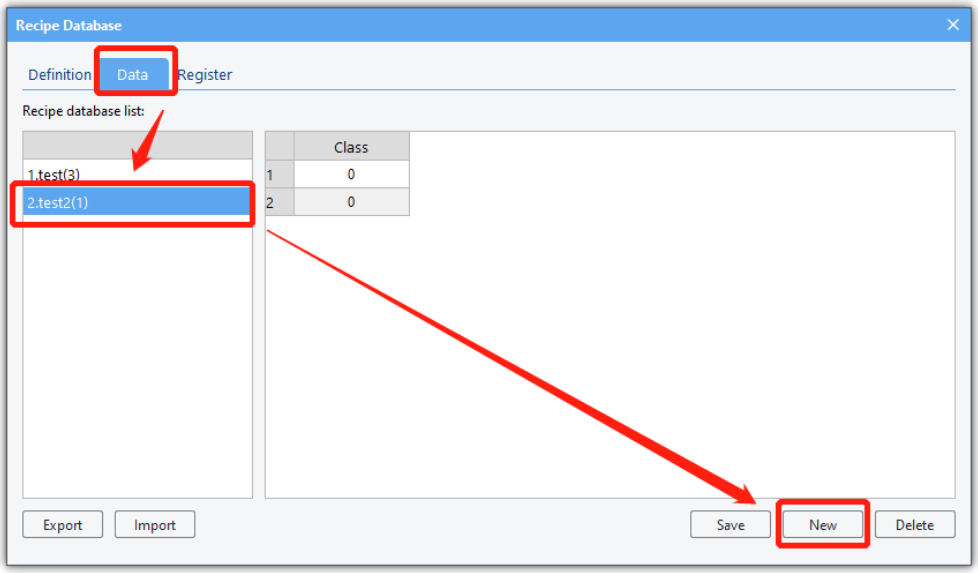
(3) Add [Item] to the database: click [New] and set [Item name], [Data type] and [Size] in the pop-up window.



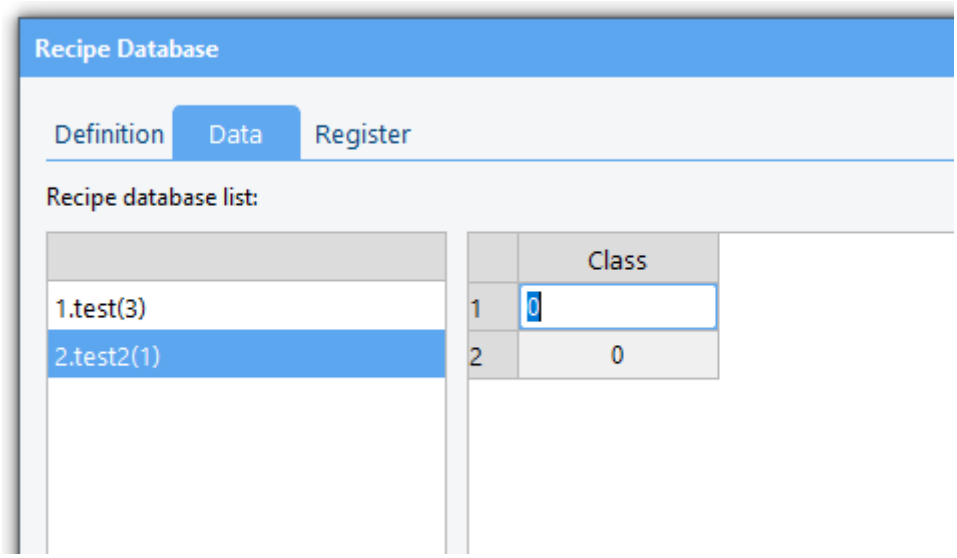
And then click [OK], the new item is added.

More items can be added in the same way.

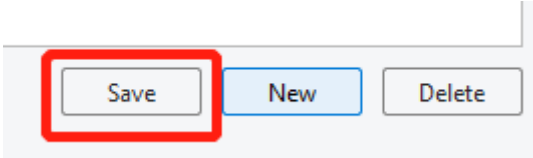
(4) Add data: click [Data] to switch to the following interface and click [New] to add data to the database.



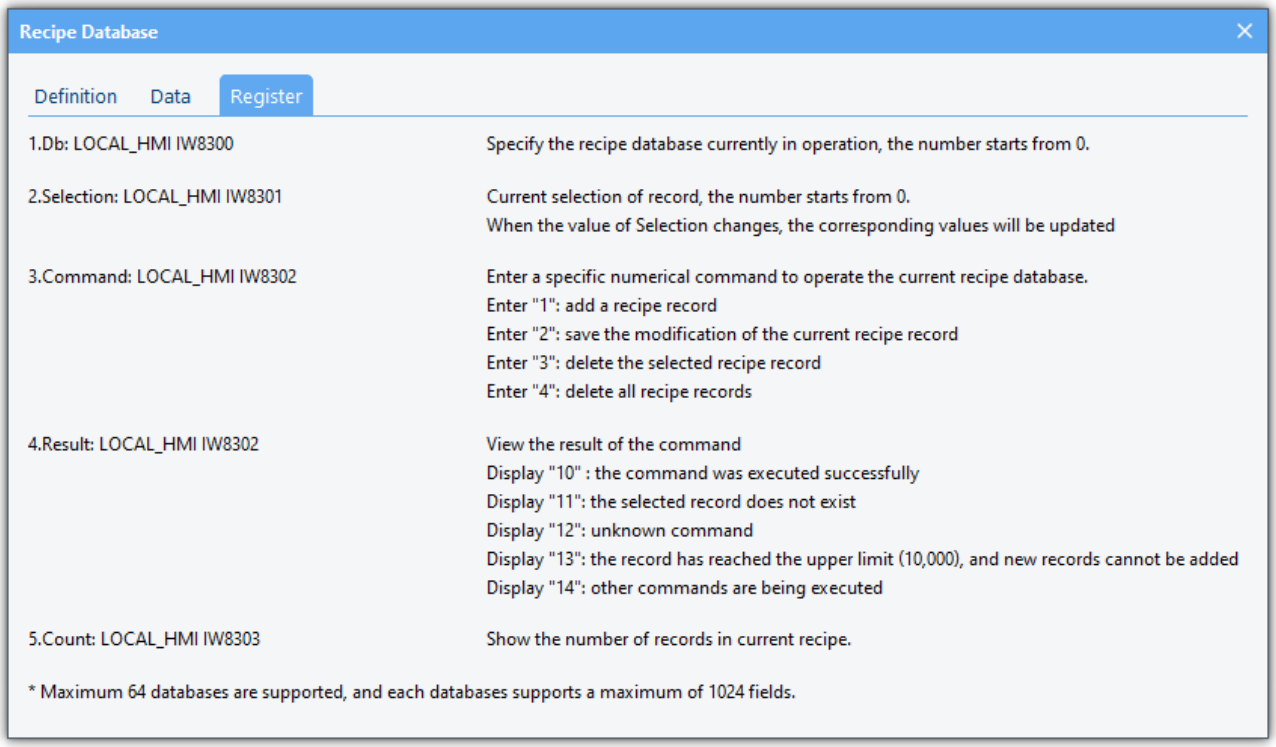
(5) Modify a table: double-click the data, and then you can change it at will.



(6) Click [**Save**] to save the database. When the project is downloaded to the device, the database file will also be downloaded.



(7) Register: You can operate the recipe database in the device through corresponding system register.



(8) Import recipe database into the device

You can follow the steps below to import the recipe database into the device via a USB flash drive.

a) Edit the recipe database and save it in the HMI software for PC. Export the recipe database to the hmi directory of a USB flash drive.

b) Insert the USB flash drive into the device.

c) Execute the corresponding script function through the interface button set by yourself. You can refer to the following script function.

```
function importRdb()
    {
        var ret = Hmiregs.ImportRdbData(0);//Import the first recipe
    }
```

The function description is as follows.

ImportRdbData(recipe database id)

Function description: Import the selected recipe in the hmi directory of the root directory of the USB flash drive into the touch screen.

Parameter description: id of the recipe to be imported. Start from 0 (Number before the name of the recipe-1)

Return:

0: Import successfully

-1: The file to be imported do not exist. / No USB flash drive is inserted.

-2: The import failed. The imported recipe may not be the recipe file of the current project, or the recipe field has been changed, which does not match the original recipe.

-3: The recipe does not exist in the device and cannot be imported and replaced.

Precautions:

The imported recipe needs to be placed in the hmi directory of the root directory of the USB flash drive; the imported recipe needs to be the recipe of the same project, and the items of the recipe have not changed. If the project name is different or the recipe items has been re-modified, import will be affected

(9) Export recipes from the touch screen.

You can follow the steps below to export the recipe database into a USB flash drive from the device.

a) Insert the USB flash drive into the device.

b) Execute the corresponding script function through the interface button set by yourself. You can refer to the following script function.

```
function exportRdb()
    {
        var ret = Hmiregs.ExportRdbData(0);//Export the first recipe
    }
```

The function description is as follows.

ExportRdbData(recipe database id)

Function description: Export the selected recipe to the hmi directory of the root directory of the USB flash drive.

Parameter description: id of the recipe to be exported. Start from 0 (Number before the name of the recipe-1)

Return:

0: Export successfully

-1: No USB flash drive is inserted.

-2: The recipe does not exist.

Precautions:

The exported recipe is placed in the hmi directory of the root directory of the USB flash drive by default;

3.4 Operation log settings

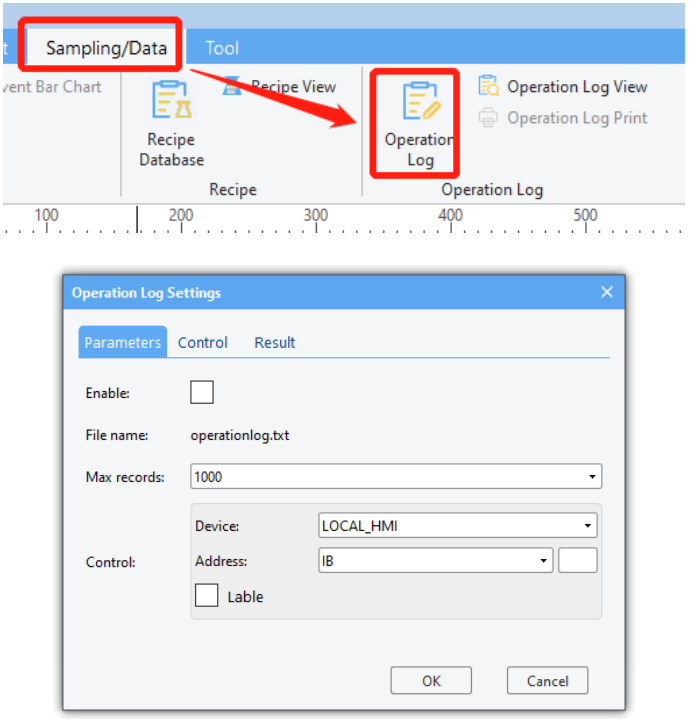
This section explains how to use the operation log setting.

3.4.1 Overview

Operation logs can be used to record user's operations. Relevant parameters can be set in [operation log settings].

3.4.2 Settings

(1) Click [data/history]→ click [operation log settings] to bring up the window as below.



(2) The following content can be set in the pop-up window.

- Maximum number of logs
- Whether to save to external storage synchronously
- Control address: [log users' operation] can be activated by this address.

3.5 Address bar

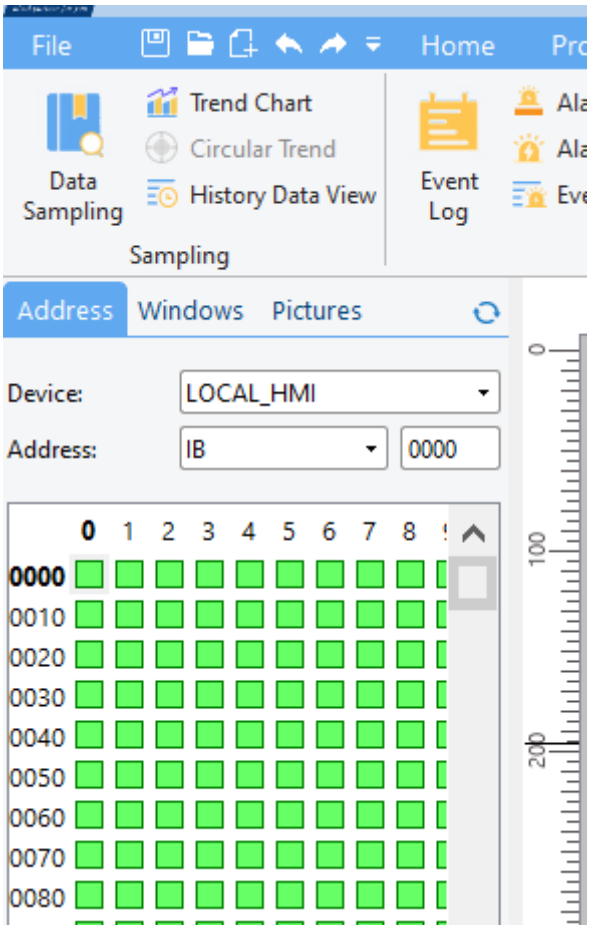
This section discusses the functions of the address bar.

3.5.1 Overview

The address bar can indicate and retrieve the use of register addresses to allocate address appropriately. (Not available in the current version)

3.5.2 Interface description

As below, the address bar is on the left of the software and can be displayed after the [Address bar] item is selected. The address bar is divided into two parts. The upper part is the address retrieval part, and the lower part is the display part.



In the upper part, the address index is switched by selecting devices and addresses, and the lower part presents the address space in the form of squares. Each [green square] represents the corresponding address that is not used and each [red square] indicates the corresponding used address.

3.6 Window Management

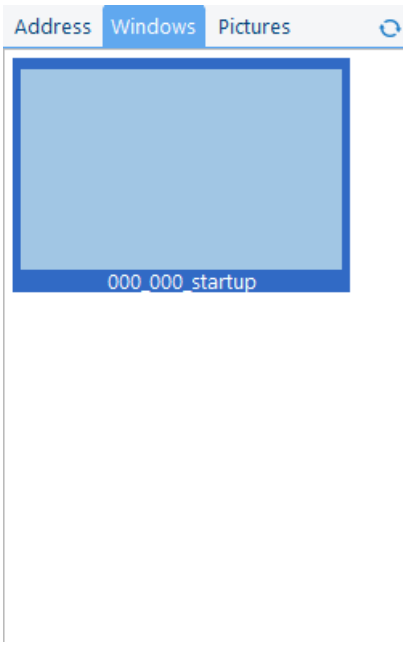
This section outlines the functionalities of window management.

3.6.1 Overview

Window management is used to view, edit, and manage interfaces.

3.6.2 Interface Description

As shown in the figure below, the window management interface is located on the left side of the software and is displayed after selecting window management. The address bar is divided into two parts: the upper part is the window display section, where double-clicking on a window selects it for further editing in the main interface or for management in the editing operation function area below.



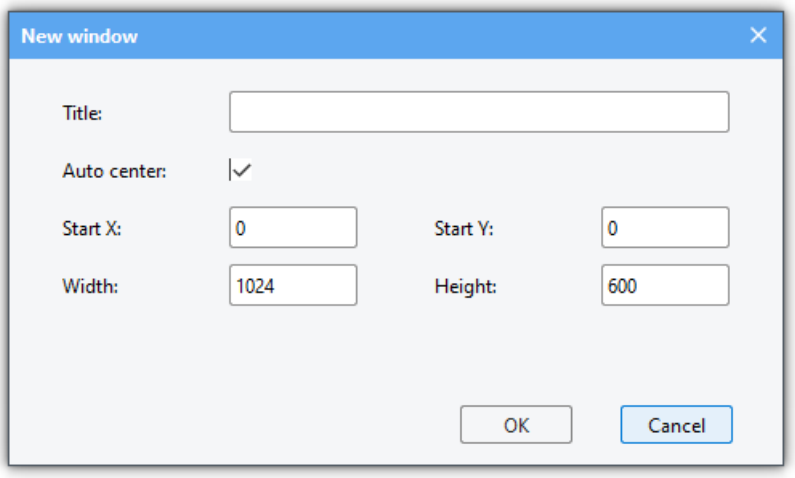
Add + : clicking this button will open a pop-up window where can set the following properties:

- Page Title

- X, Y Starting Coordinates

- Auto-Center Option

- Page Width and Height (defaults to maximum size if not specified)

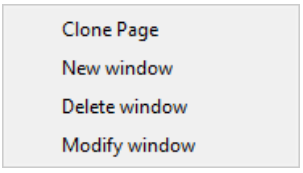


Delete: clicking this button will prompt a pop-up window asking if user want to delete the currently selected interface.

Edit : clicking this button allows user to set the "Page Title," X and Y starting coordinates, auto-center option, and page width and height (defaults to maximum size if not specified).

Save : clicking this button allows user to save modifications and refresh the display promptly.

Right-clicking after selecting a window with a double-click enables the use of the context menu.



Cloning Page: this function copies the current page to create a new one. The functions for adding, deleting, and modifying pages are the same as mentioned above.

3.7 Event login

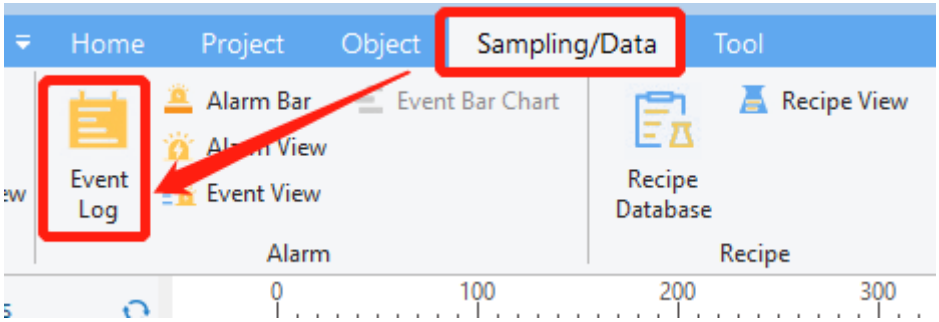
This section introduces the functions of event login.

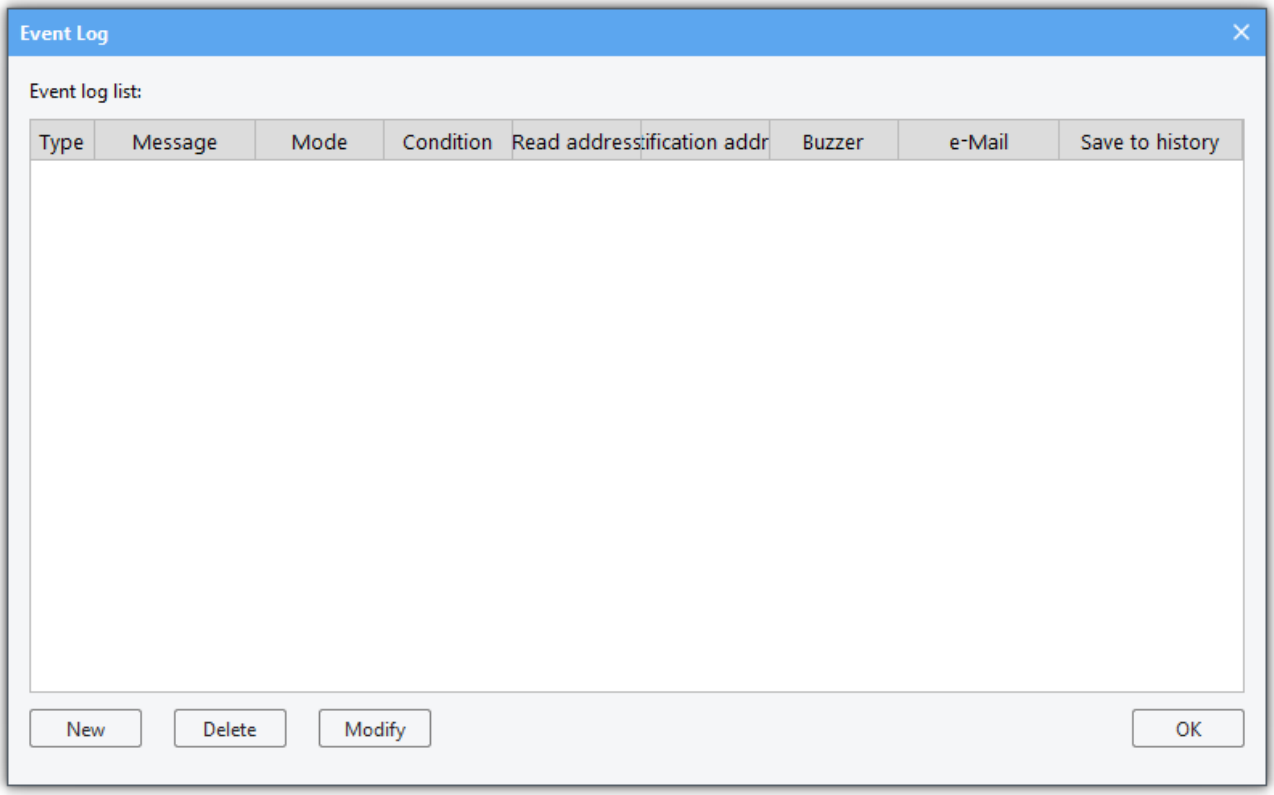
3.7.1 Overview

[Event login] allows you to view the information of currently alarm events and to add, delete, and modify them.

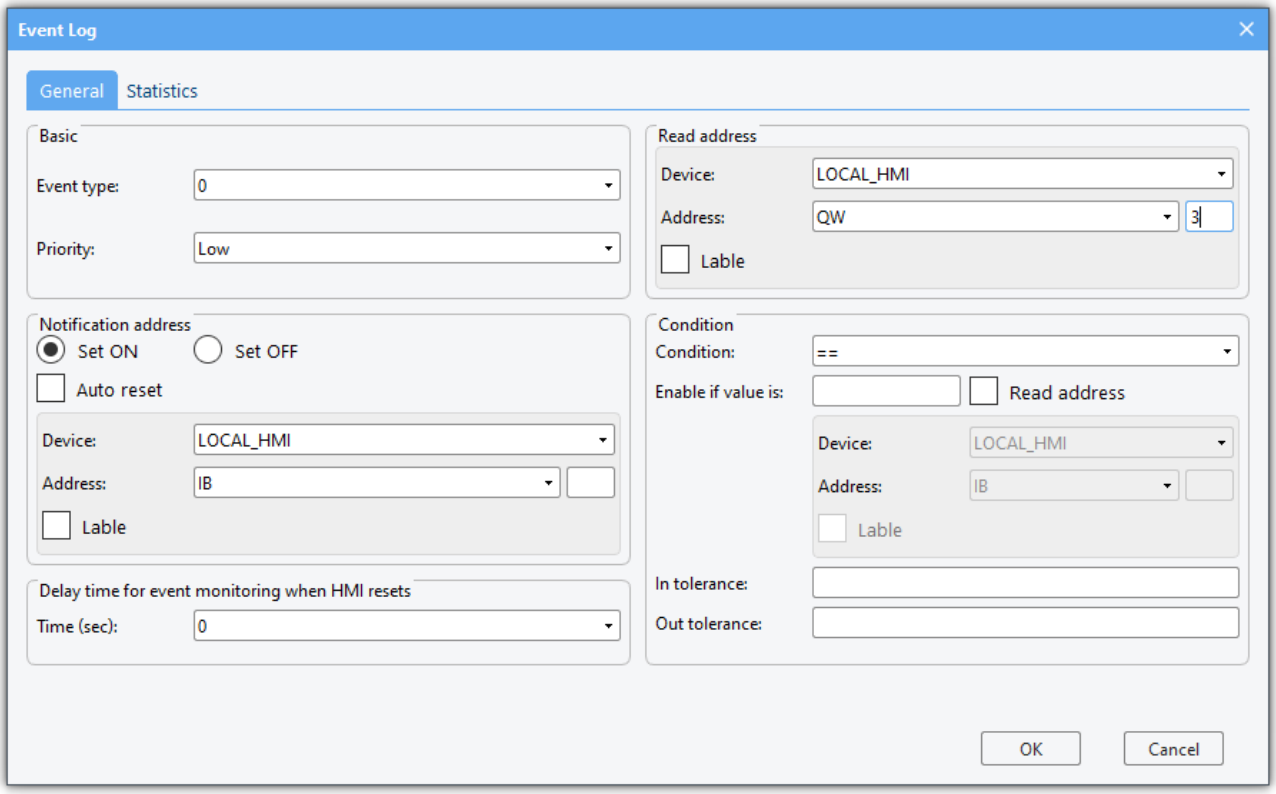
3.7.2 Settings

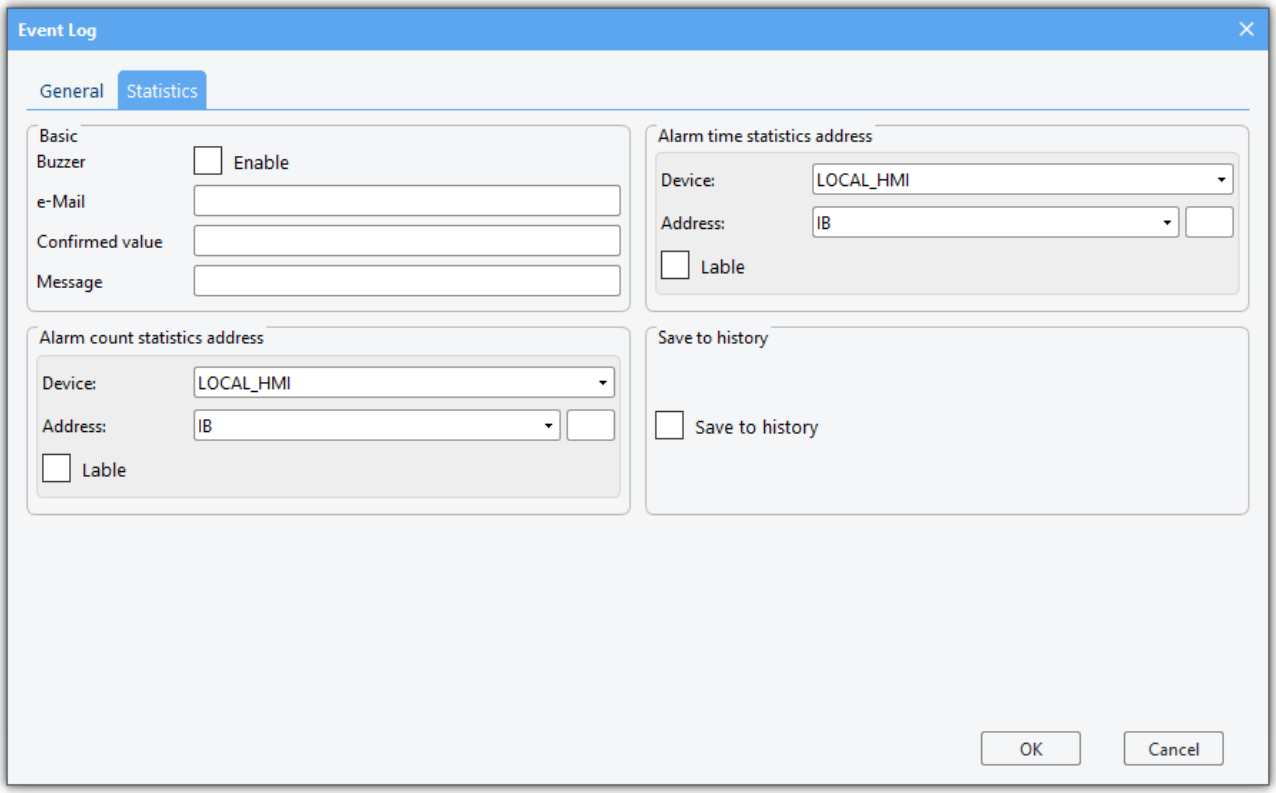
Click [Sampling/Data] → click [Event log] to pop up as follows.





Select an event. Click [Delete] to delete it. Click [Modify] to modify it. Click [New] to set a new event. The interface to set the alarm event is as follows.





The alarm events can be defined and modified in the above interface.

Event type	Alarm events can be categorized and managed from 0 to 255.
Priority	The priority level of the event.

Read address	The system will read the value of the register corresponding to this address to determine whether the conditions for triggering the event are met.
Notification address	The system will send to the notification address an ON or OFF signal according to the check box when the event occurs. When [Auto reset] is checked, the notification address will return to its original state after the alarm is disarmed.
Condition	When the [Read address] corresponds to a bit register, the [trigger condition] can be set as OFF, ON, ON->OFF, or OFF->ON; The system will monitor the ON/OFF status of the specified bit register to determine whether the trigger condition is satisfied. When the register corresponding to [read address] is not a bit register, the [trigger condition] can be set as ==, >, <, or <>. The system will monitor whether the value of the specified register is equal to, greater than, or less than a specific value. When [reference address] is checked, the trigger condition will refer to the value in the register corresponding to the reference address.
In tolerance	The error allowed when [**Condition**] is detected. It is valid when the trigger condition is == or < >. For example, if x is the value in the register corresponding to [**Read address**], the trigger condition is x== 20 and the [in tolerance] is 0.1, the alarm will be triggered only when 19.9 <= x <= 20.1 is satisfied. When the trigger condition is x<>20 and the trigger error is 0.1, the alarm will be triggered when x<19.9 or x>20.1 is met.
Out tolerance	The tolerance allowed when a disarm event is detected, similar to the in tolerance (in tolerance and out tolerance are set independently and do not affect each other).

Delay time for event monitoring when HMI resets	The time for the delay before the value of the specified register is read to determine whether the trigger condition is met after an event is triggered, and the event will not be triggered continuously to cause an alarm.
Buzzer	To enable or disable the buzzer after an event is triggered.
E-mail	The specified addresses to which emails are sent when alarms are triggered or disarmed.
Confirmed value	When an event in the [alarm display] and [event display] objects is acknowledged, this value is written to the [acknowledgment address] specified by the objects. (not available since there is no acknowledgment address in the current version)
Message	The prompt message is displayed in [alarm bar], [alarm view] and [event view] when an event is triggered.
Alarm time statistics register	The time (in seconds) between the event being triggered and being disarmed is written into the register referred to by this address.
Alarm count statistics address	The number of events that have occurred since power on is written into the register indicated by this address.
Save to history	When this tab is checked, the triggered event will be saved as historical data.

3.8 Device attribute settings

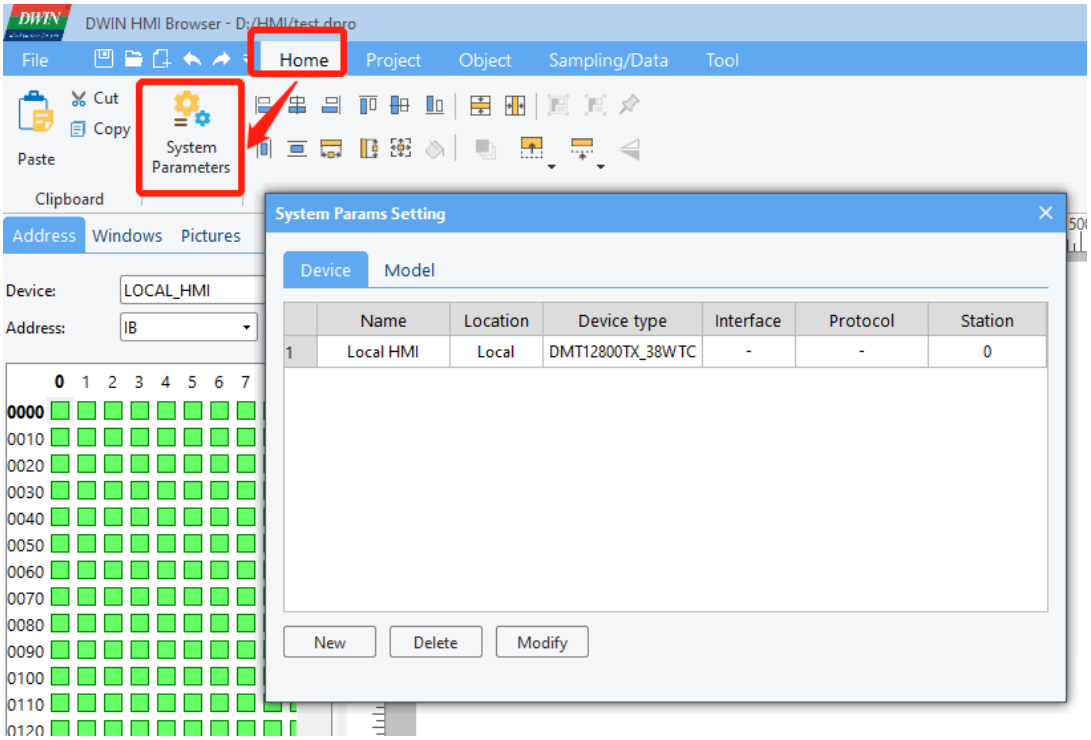
This section describes how to set the device related attributes.

3.8.1 Overview

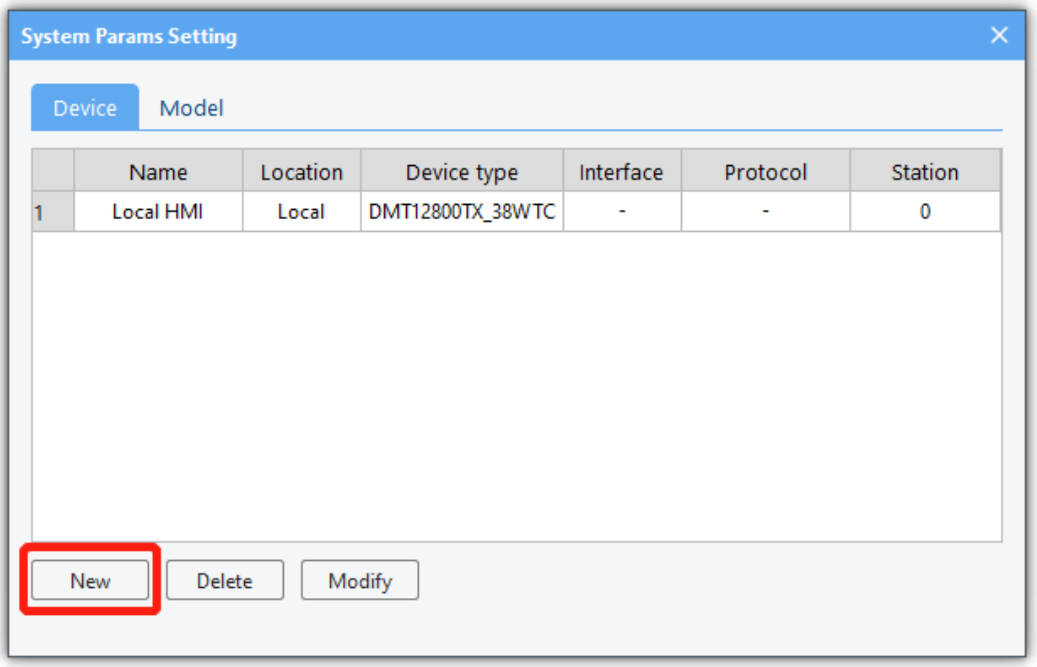
In [Device] interface, information of the device to be connected can be set, such as the HMI station number, the name of the device connected to HMI, the interface type, port and station number, etc.

3.8.2 Settings

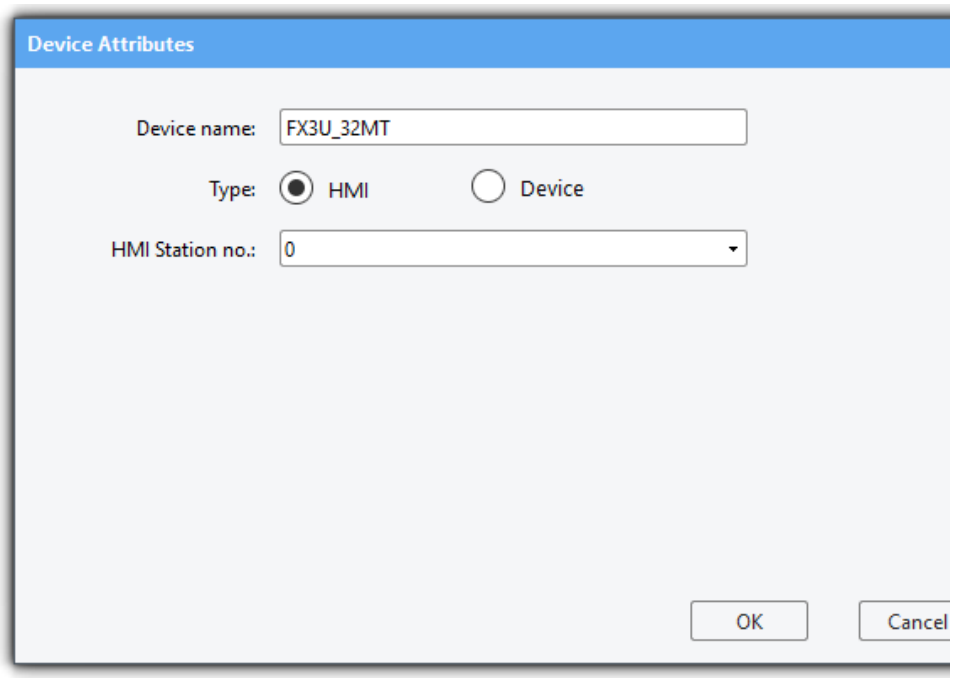
Click [Home] in the menu bar→ click [System Parameters] in the toolbar to bring up the [System Parameters Setting] dialog box.



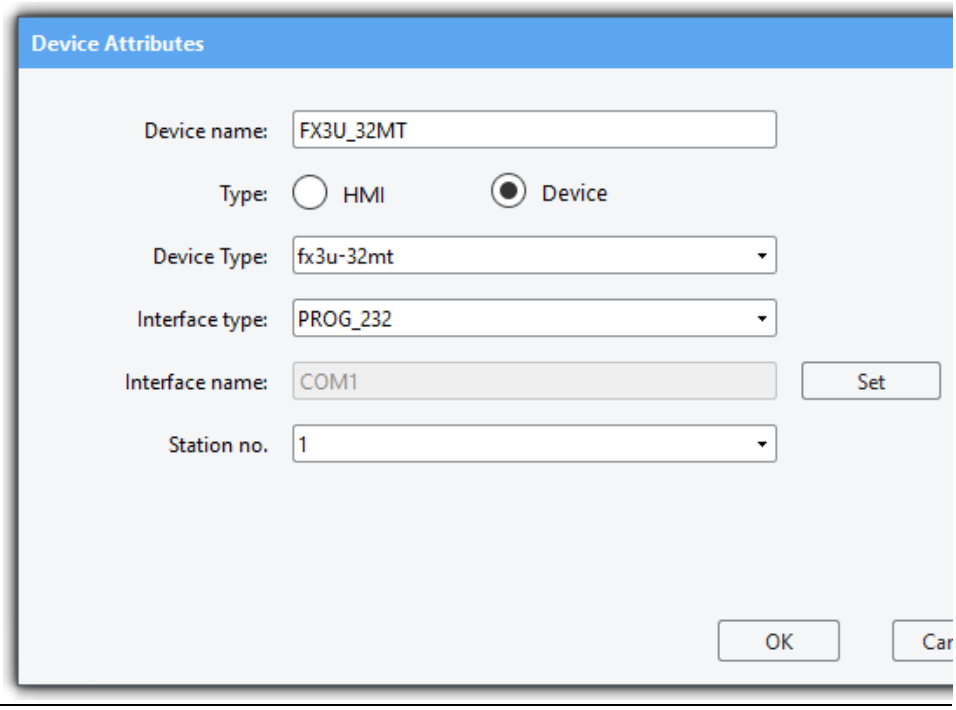
- There is an item in the [Device] dialog by default, which is the local HMI device. Click [Model] if you want to modify attributes of the local HMI device. After changing the resolution or orientation, please close and reopen the project immediately.
- Click [New] in this dialog box to bring up a dialog box, where you can add other devices that you want to connect and set the corresponding device information.



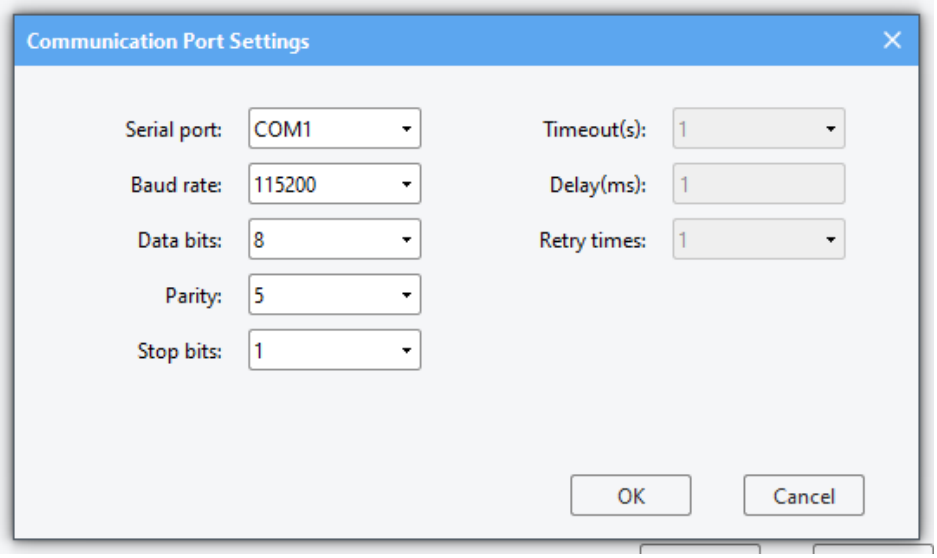
New device information can be set by referring to the following table.

Device Name	The device name is displayed.
Type	● HMI HMI Station No.: You can set the station number of HMI, and generally the default station number is used.  ● Device

You can set the information of the added device.



Device type	Select the type of connected device from [SIEMENS S300], [SIEMENS S2000] and [fx3u-32mt], etc.
Interface type	Set the interface type to [PROG_232], [MODBUS-TCP] or [MODBUS-RTU]. When [fx3u-32mt] is selected as the device type, [PROG_232] and [MODBUS-TCP] can be selected as the interface type. When [SIEMENS S300] or [SIEMENS S2000] is selected as the device type, [MODBUS-RTU] and [MODBUS-TCP] can be selected as the interface type.
Interface name	Set the communication port or IP address. When [MODBUS-RTU] or [PROG_232] is selected as the interface type, click [Set] to open the [communication Port Settings] dialog window and set the communication parameters as follows.



Timeout

The communication interruption exceeds this value (in seconds).

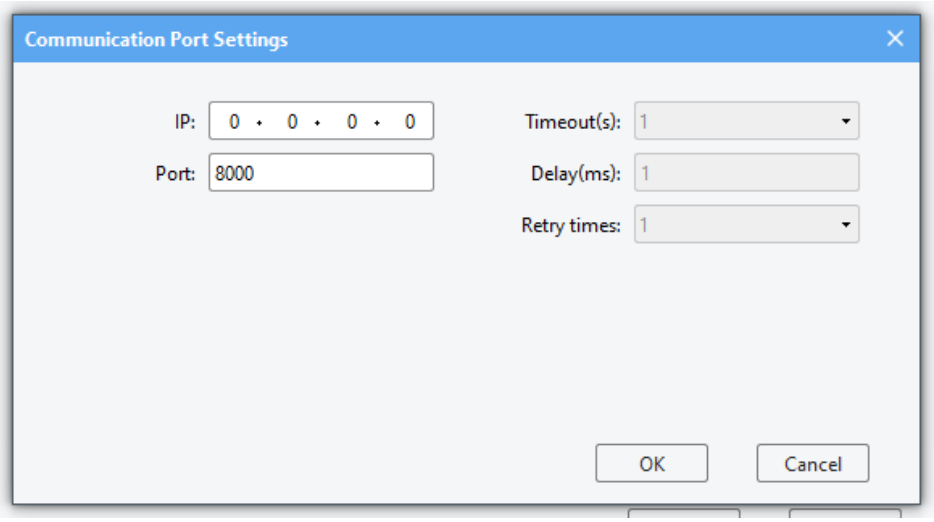
Delay

The HMI will delay this value (in milliseconds) before sending the next command to the device. This parameter will reduce the communication efficiency between HMI and device. If there is no special need, you can set it to “0”.

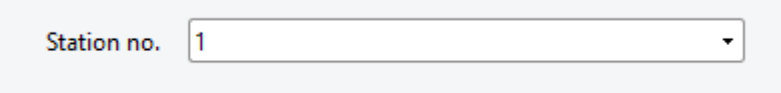
Retry times

The number of commands sent by HMI to the device

When [MODBUS-TCP] is selected as the interface type, click [set] to open the [IP address setting] dialog window and set the IP address and port number as follows.



Station No.	Sets the default station number. When the specified device address does not include station number information, this value will be used as the station number.



3.9 Gallery

This section explains how to use the gallery.

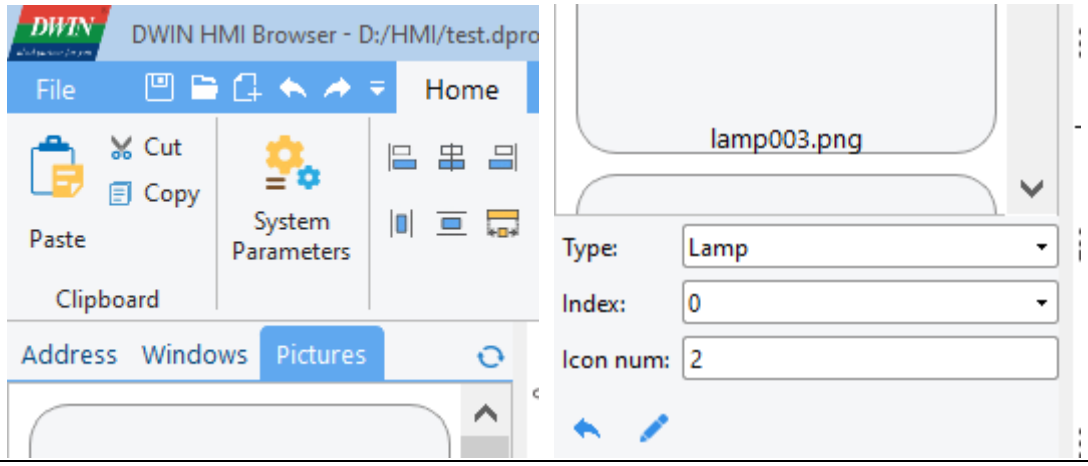
3.9.1 Overview

[Gallery] is used to display and modify the default images.

3.9.2 Interface description

Check the [gallery] bar in the left window to display the gallery.

The gallery bar is divided into two parts. The upper part displays images, and the lower part is for image modification.



Type	To display the images corresponding to the object according to its type.
Index	A object corresponds to a set of images, which are arranged by numbers.
Icon num	An image contains several small icons, When the image is modified, set the number of icons.
[Modify] button 	You can modify the image corresponding to its number in [image group]. (1)Select the image you want to modify→click [modify]→specify the image in the pop-up dialog box.

(2)If there is no image corresponding to a position and thus cannot be selected, you can specify the position number by using the [picture group] drop-down box, and then click the [modify] button to modify it.

[Default] button

To restore the modified image to the default image that comes with the system.

3.10 User Accounts

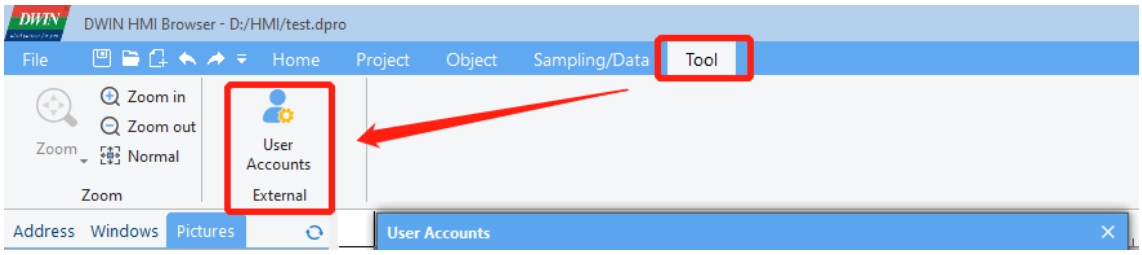
This section describes how to set the user accounts.

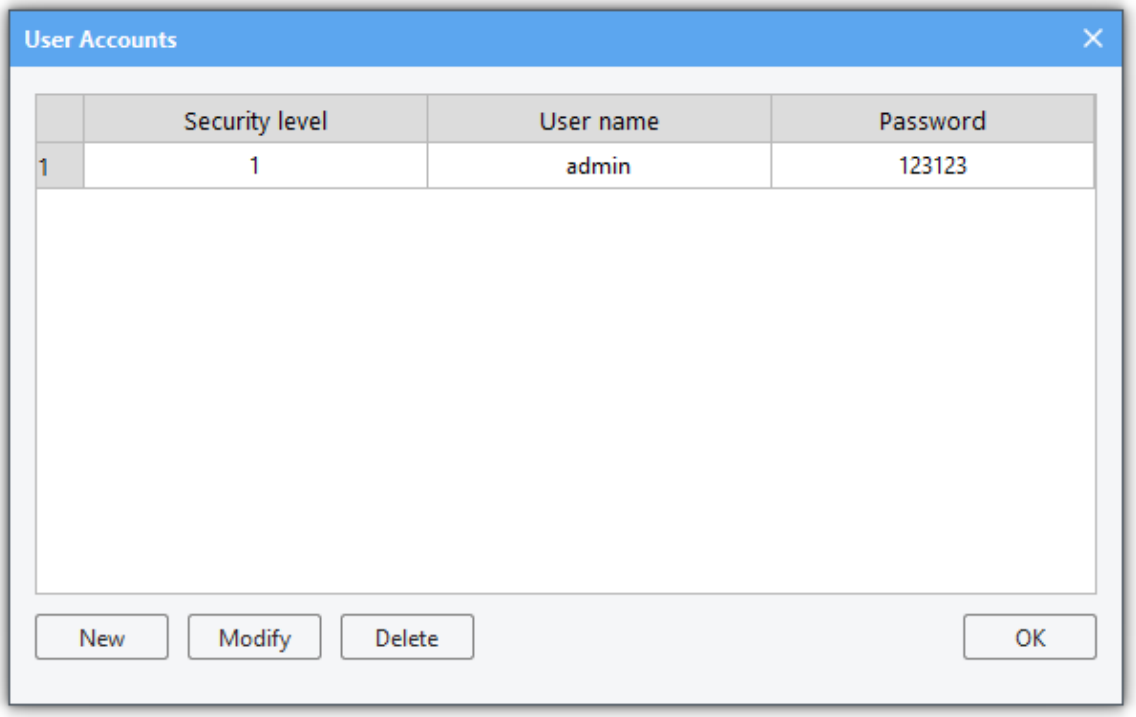
3.10.1 Overview

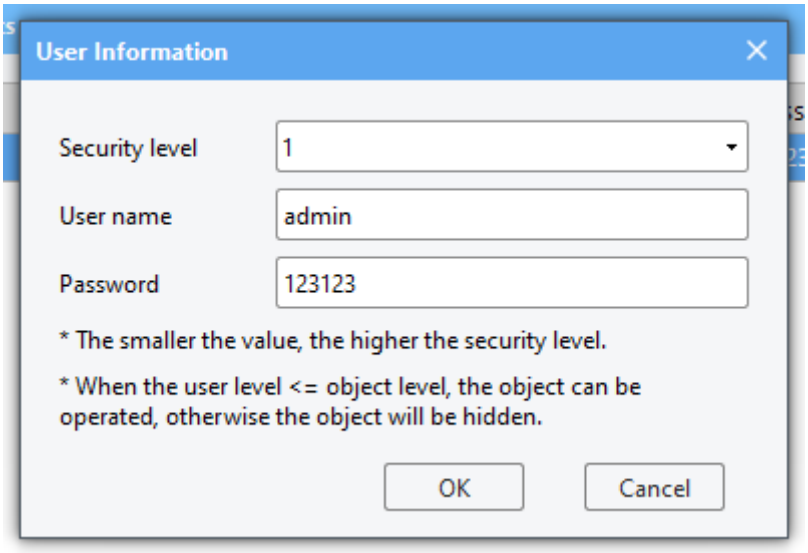
[User Accounts] can be used to set multiple users and corresponding passwords.

3.10.2 Setup

(1) Click [Tool] in the menu bar → [User Accounts]. You can add, modify and delete user accounts.



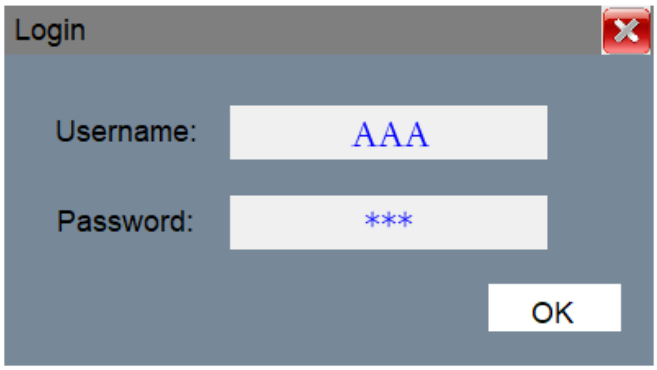




Security level	Range: 1 to 6. The smaller the value, the higher the security level. Only if the user level is less than or equal to the object level, the object can be operated, otherwise the object will be hidden. After the user logs in successfully, the security level of the current user will be written into the LOCAL_HMI IW8200 register, and the current user security level can be obtained from this register.

(2) The device side uses the username and password to log in.

It is necessary to enter the username and password to enter some interfaces on the device side, such as the parameter setting interface. You can set it as follows.

Create a login page	Create a login page in the HMI software. The user can set the username and password in this page.  Username: The character object register needs to be set to: local address LOCAL_HMI IS8202

Password: The character object register needs to be set to: local address LOCAL_HMI IS8214

Login:

When logging in, the value of the LOCAL_HMI IW8220 register needs to be set to 2, indicating that the login operation is in process. The internal program will automatically detect the register value and process accordingly.

Return value of the internal program execution:

When logging in, the internal program will automatically obtain the username and password from LOCAL_HMI IS8202 and IS8214 separately, and then compare it with the username and password set in [User Accounts]. After the comparison, the comparison result will be written to the upper eight bits of the register address LOCAL_HMI IW8220. Different values indicate the following meanings:

0: executing;

1: The verification is successful;

2: No permission;

3: No such user;

4: The password is incorrect;

5: Unknown error.

Custom JavaScript

You can refer to the following function to custom JavaScript.

```
function login()
{
//Set the value of IW8220 to 2, indicating that the login operation is in process. The internal program will detect it automatically.
Hmiregs.SetReg(0,2,8220,2);
Hmiregs.SetReg(0,2,9812,143);      //close the login page begore entering a new page
Hmiregs.MSleep(100);               //Delay 100 MS to wait for the internal program execution
var v = Hmiregs.GetReg(0,2,8220); //Obtain the result of the internal program execution
v = v >> 8;                        //Obtain the upper eight bits
```

```
if(v == 1){              // The execution result is 1, indicating that the verification is successful
Hmiregs.OpenPage(16,0);      //Open a page, such as the parameter settings page
}
// When the execution result is other, a pop-up window can prompt an error, such as the user name does not exist and the password is incorrect.
}
```

To log out the username and password, please refer to the following methods:

```
function logout()
{
//Clear the username and password register
Hmiregs.SetReg(0,10,8202,"");
//Hmiregs.SetReg(0,10,8202,"defaultuse"); // You can also set the default user to defaultuse after logout.
Hmiregs.SetReg(0,10,8214,"");
}
```

3.11 Timer

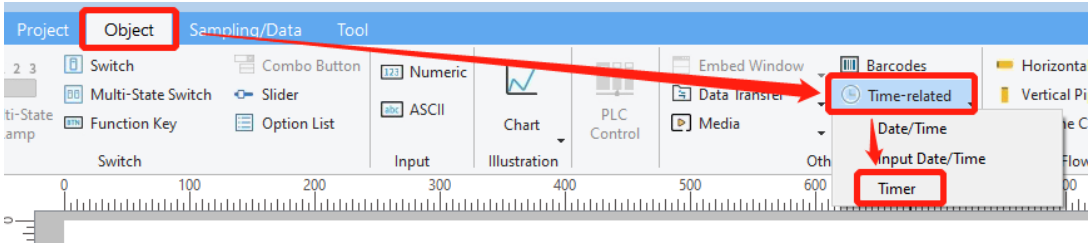
This section describes how to set the timer.

3.11.1 Overview

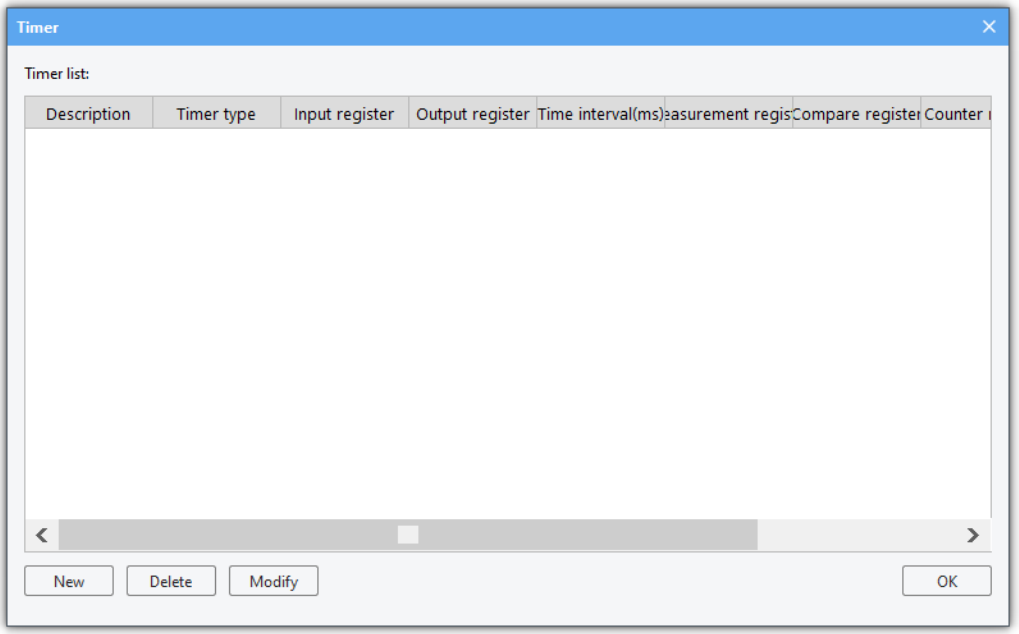
[**Timer**] can be used to set timers.

3.11.2 Setup

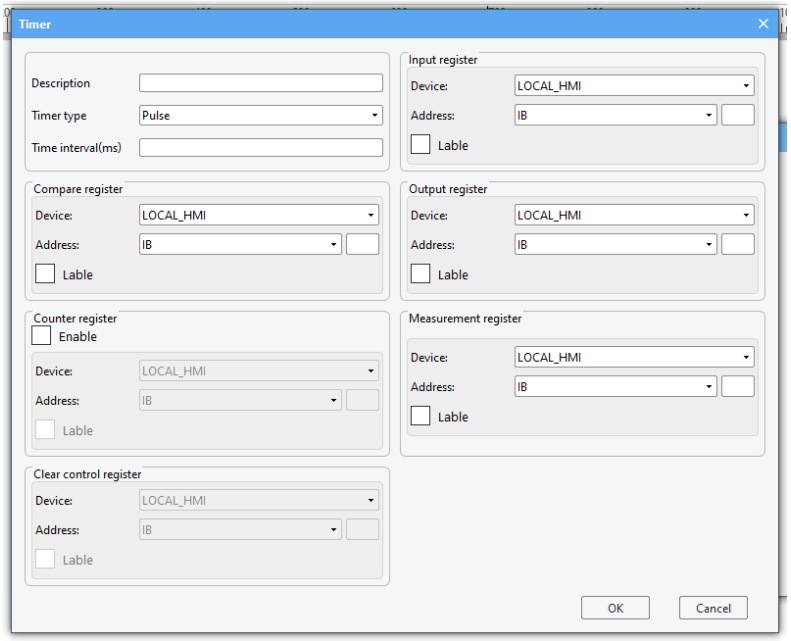
Click [**Object**] in the menu bar → [**Time-related**] → [**Timer**].



The following window will pop up. You can set some basic attributes of the timer in this window.



Click [**New**] to add a new timer and the following window will pop up.



The description of these attributes is as follows.

Attributes	Description
Timer type	(1) Pulse: When the input register turns on, timing begins and the output register turns on. After the timing starts, it cannot be stopped until the timing ends, after which the output register turns off. (2) On delay: When the input register turns on, timing begins and the output register turns off. During the timing process, if the input register turns off, the elapsed time will

	be cleared and the timing will stop. After the timing is over, the output register will turn on. Whenever the input register turns on, the output register will turn off. (3) Off delay: When the input register turns off, timing begins and the output register turns on. During the timing process, if the input register turns on, the elapsed time will be cleared and the timing will stop. After the timing is over, input register will turn on. Whenever the input register turns on, the output register turns on. (4) Accumulated on delay: When the input register turns on, timing begins. During the timing process, if the input register turns off, the timing will stop but the elapsed time will not be cleared and next timing will start from the kept value. After the timing is over, input register will turn on. Whenever the input register turns off, the output register turns off. The elapsed time will be cleared when the clear control register turns on. (5) Accumulated off delay: When the input register turns off, timing begins. During the timing process, if the input register turns on, the timing will stop but the elapsed time will not be cleared and next timing will start from the kept value. After the timing is over, input register will turn off. Whenever the input register turns on, the output register turns on. The elapsed time will be cleared when the clear control register turns on. (6) Timing: When the input register turns on, timing begins and the kept elapsed time will be cleared. When the count reaches the preset time, the elapsed time will be cleared and the timing begins again. The timing will stop only when the input register turns off.
Time interval (MS)	The time interval of each count, in MS.
Input register	Trigger timer
Output register	Set the register when the timing stops.
Measurement register	Set the register to 1 when the timing begins.
Counter register	Save times of timing.
Clear control register	Valid only in accumulated mode. Clear the times of timing when this register turns on.

3.12 Action trigger

This section describes how to use [Action trigger].

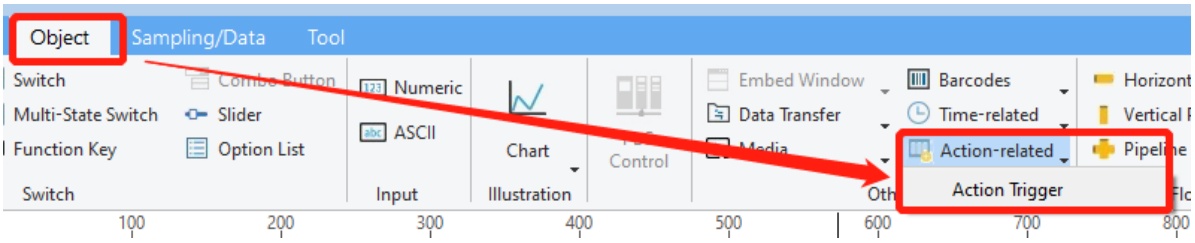
3.12.1 Overview

[**Action trigger**] can be used to set trigger function. For example, execute corresponding function when the

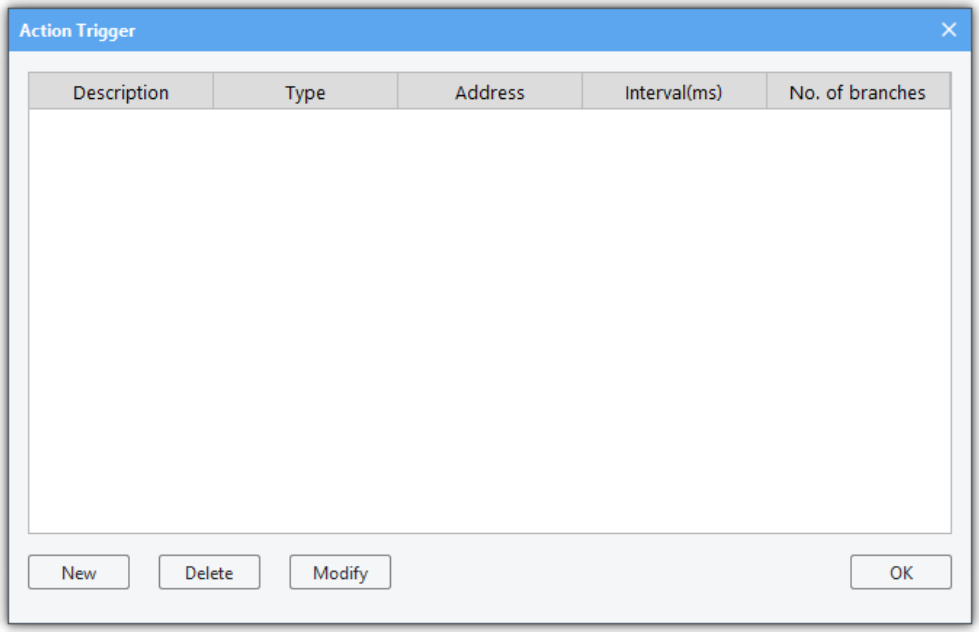
state of some register changes or at set intervals.

3.12.2 Setup

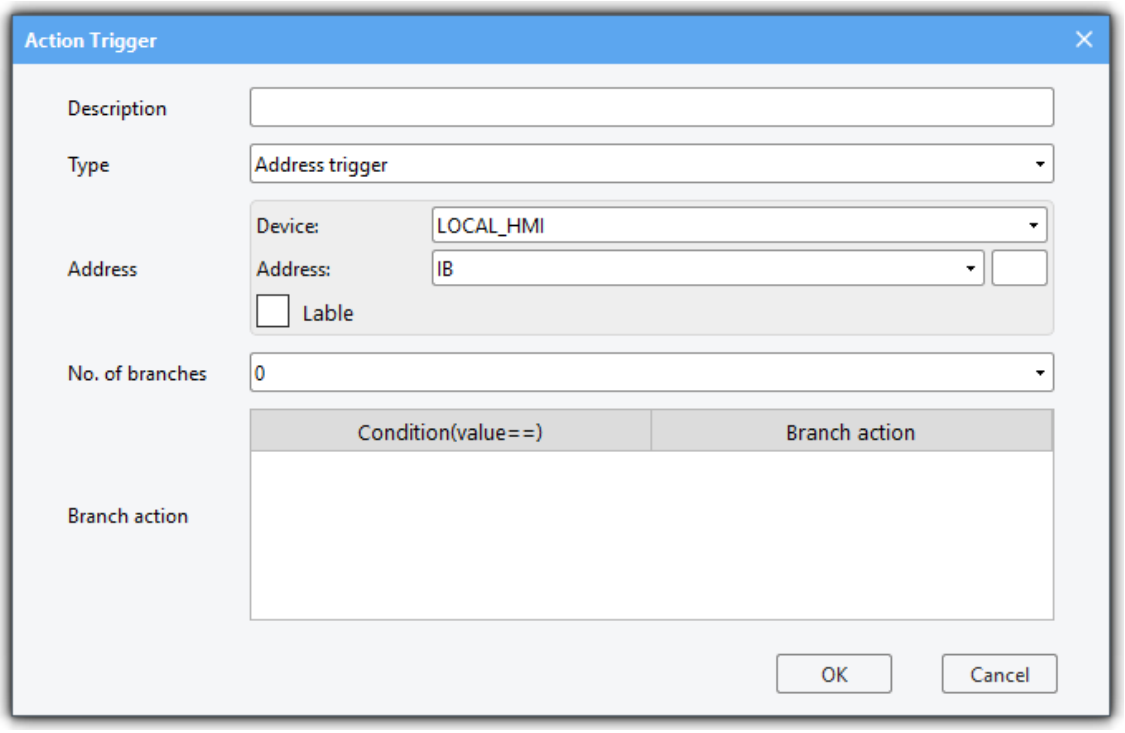
Click [**Object**] in the menu → [**Action-related**] → [**Action trigger**].

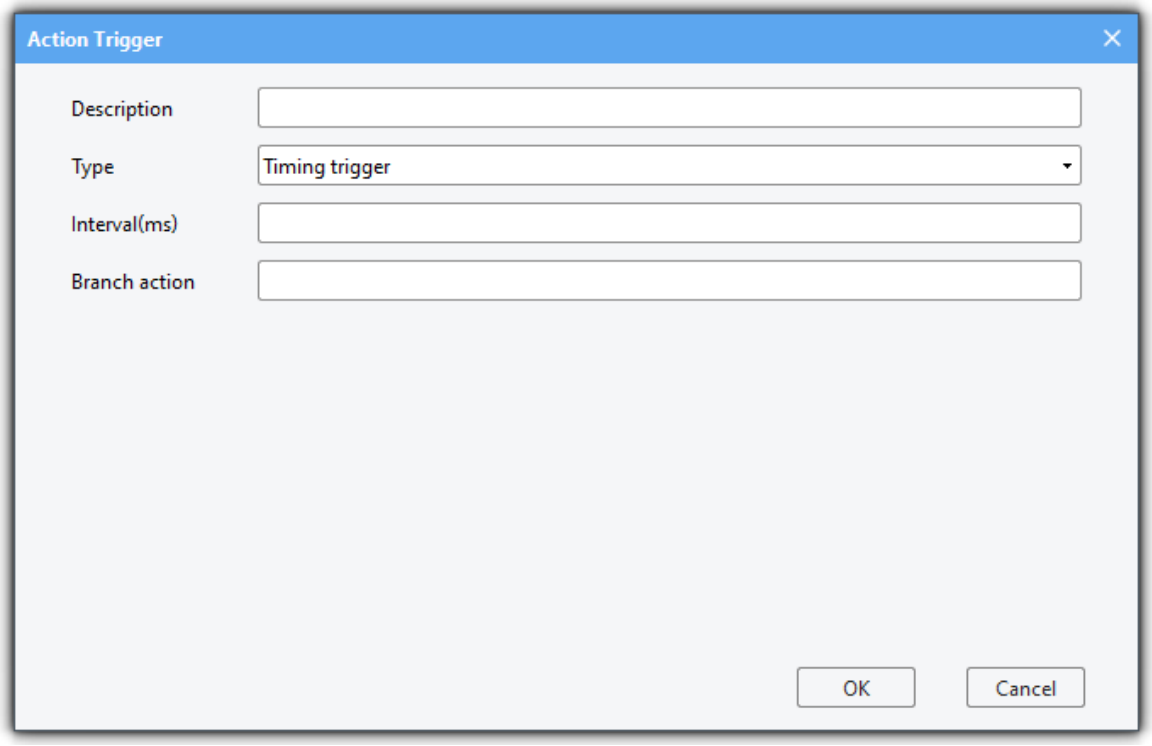


The following window will pop up. This window is used to display some basic attributes of defined action trigger.



Click [**New**] to add an action trigger. The following window will pop up.





The description of these attributes is as follows.

Attributes	Description
Type	Address trigger: when the trigger address meets the trigger condition, a branch action will be executed Timing trigger: execute a branch action every time interval

Address	When the type is address trigger, the branch action will be executed when the specified register satisfies the trigger condition.
No. of branches	When the type is address trigger, he total number of branch actions corresponding to the trigger address.
Branch action	The action to execute when the branch trigger condition is met. For example, the branch action is filled with a JavaScript function, and the script will be executed when the trigger condition is met.
Condition	When setting the trigger condition, the value should be set to an integer. The trigger type is address trigger, the trigger condition is satisfied when the value in the trigger address changes and is equal to the trigger condition
Interval	The timing interval when the type is timing trigger. The unit is milliseconds.

3.13 Touch gesture

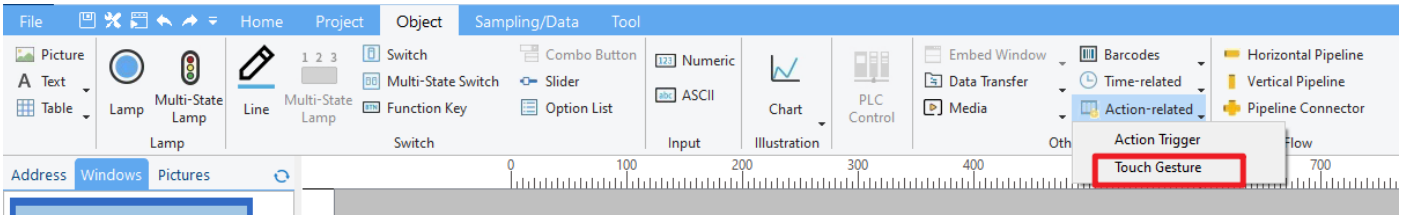
This section describes how to use [Touch gesture].

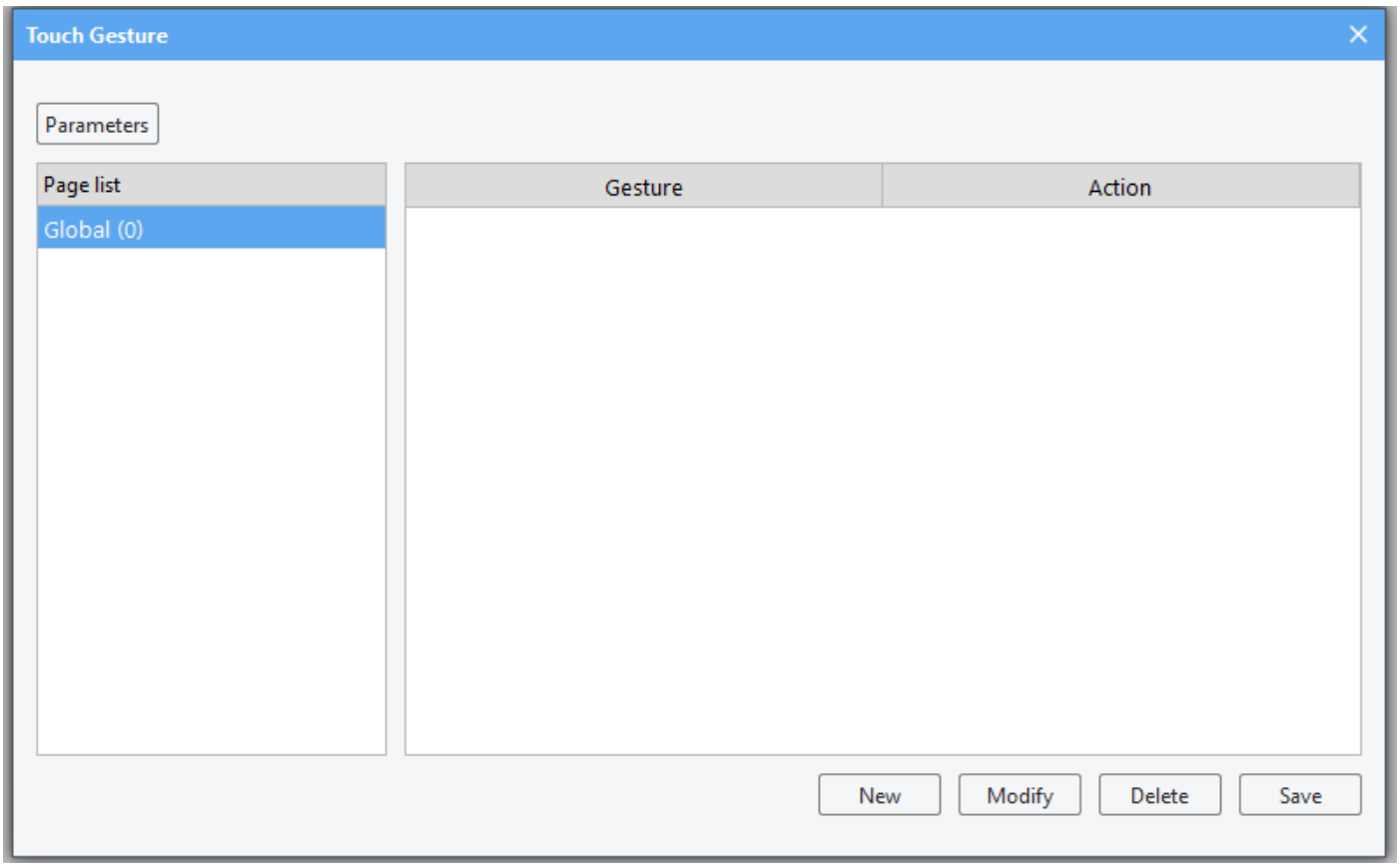
3.13.1 Overview

[Touch gesture] allow setting trigger functions using gestures, such as executing corresponding functions when swiping in a certain direction.

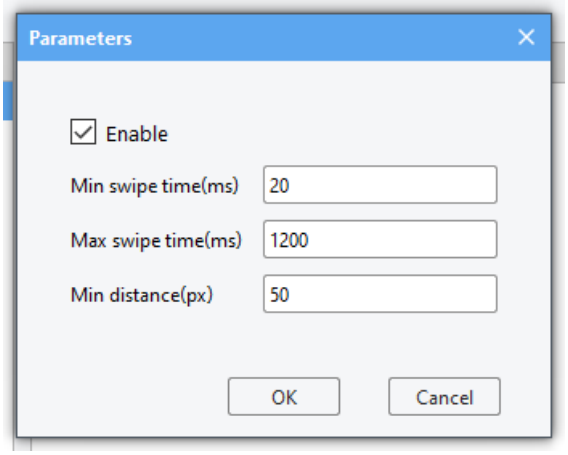
3.13.2 Configuration

Click on the menu bar [Object] → Click on the toolbar [Action-related] → [Touch Gesture]. A window will pop up as follows:



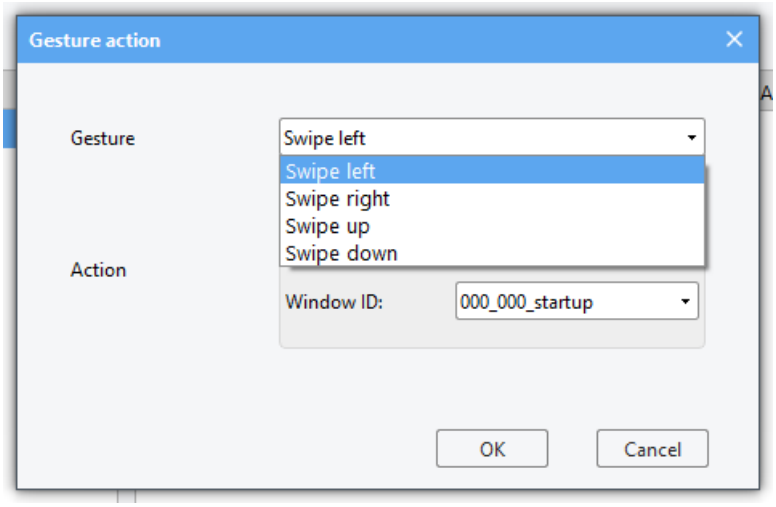


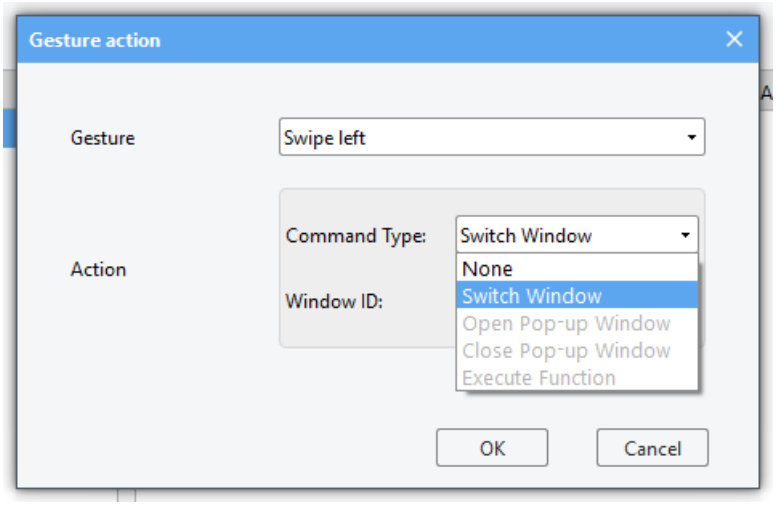
First to [Parameters]



Configure whether to enable the function, the maximum and minimum sliding time, and the minimum detectable sliding distance.

Then, user can set gestures and corresponding triggered functions within the corresponding interface or globally. Currently, gestures only support sliding in four directions and can only trigger page switching.





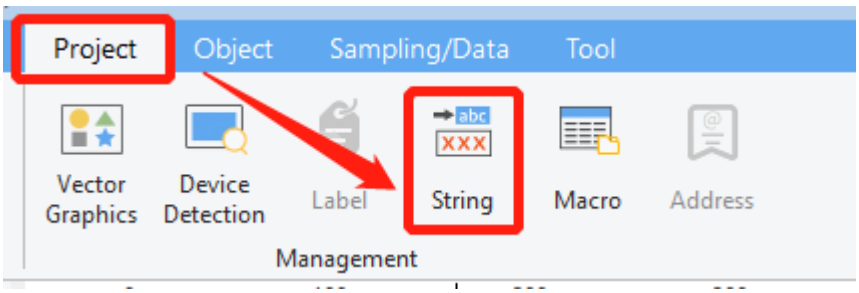
3.14 Multi-language Settings

3.14.1 Overview

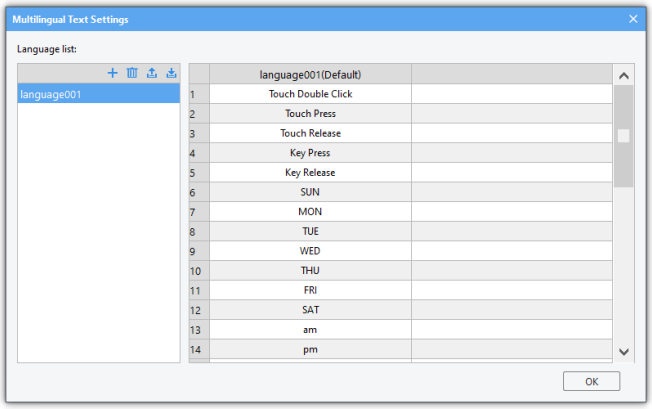
Realize the multi-language switching function on the device side.

3.14.2 Setup

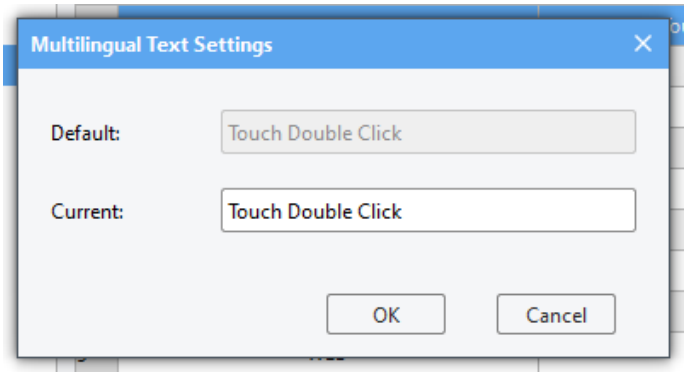
Click [**Project**] in the menu → [**String**]



The following window will pop up.



The description of these settings is as follows.

Attributes	Description
	Add a language.
	Delete the selected language. Language001 is the default language and cannot be deleted.
	Export the selected language as .xml file. You can use related software such as Notepad++, Notepad, vscode, UltraEdit to open it. Please retain the original format when translating fields. Do not delete the entire field like ~~<sb0051 value="主 页"/>~~.
	Import the translated language file to the project.
Double-click to modify	Select a line and double click. You can modify the current field in the pop-up window. 
Switch languages on the device side	Switching languages register: local HMI register LOCAL_HMI QW9002 The value of this register will be detected automatically by the system. The system will restart automatically and switch languages when the value changes.

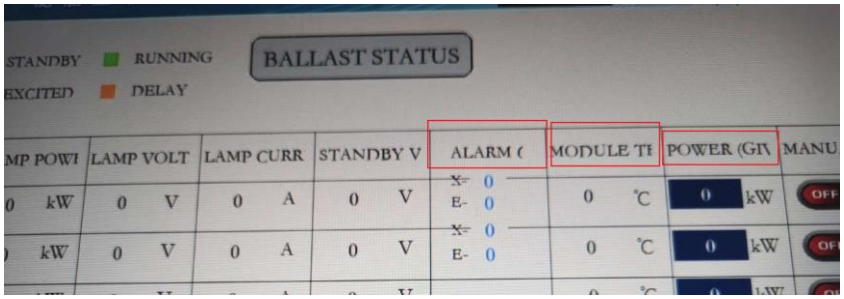
When the value of LOCAL_HMI QW9002 register is 1, the corresponding language is language001;

When the value of LOCAL_HMI QW9002 register is 2, the corresponding language is language002;

...

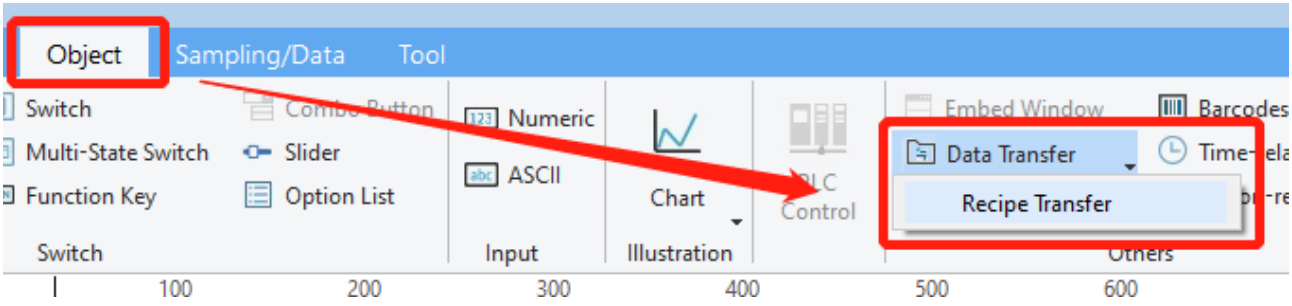
When the value of LOCAL_HMI QW9002 register is N, the corresponding language is language00N;

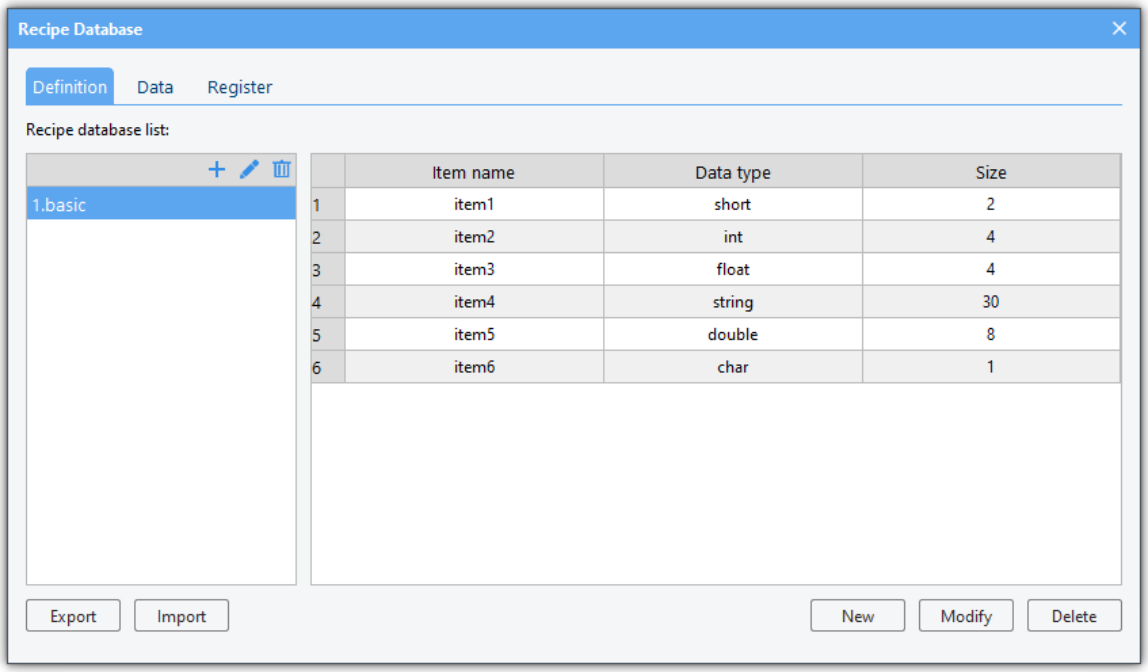
Note: When placing controls with text after enabling multi-language function, please reserve enough space for other languages. Otherwise, the text will not be displayed completely, such as the figure below.



3.15 Recipe transfer

Recipe transfer is used to transfer the preset value in the recipe database to specified register. You can relate the field and target address in [**Object**]→[**Data Transfer**]→[**Recipe Transfer**].





The relevant script functions used in recipe transmission are as follows.

1. RecipeSetValueToBind(Recipe Database id, record id)

Function Description: Set the data of the selected record in the recipe database to the target register.

Parameters Description: Recipe Database id: start from 0 (number before the recipe name-1).

Record id: the id of the record in the recipe database. Start from 0 (Number before the name of the recipe-1). The id of the selected record should be smaller than the maximum record.

Value of return:

0: succeeded

-1: failed

Example:

```
function setData()
{
    //set the first record of recipe database2(basic recipe database in the above picture) to the target register
    Hmiregs.RecipeSetValueToBind(1,0);
}
```

Note: You can preset multiple records in a recipe database. When set the recipe data to the target address, the record id start from 0.

2.RecipeUpdateFromBind(Recipe Database id, record id)

Function Description: Save or synchronize the data of the target register to the selected record in the recipe database.

Parameters Description: Recipe Database id: start from 0 (number before the recipe name-1).

Record id: the id of the record in the recipe database. Start from 0 (Number before the name of the recipe-1). The id of the selected record should be smaller than the maximum record.

Value of return:

0: succeeded

-1: failed

Example:

```
function updateData()
{
    // Save or synchronize the data of the target register to recipe database2(basic recipe database in the above picture).
    Hmiregs.RecipeUpdateFromBind(1,0);
}
```

Note: You can preset multiple records in a recipe database. When saving or synchronizing data to the specified record (id starts from 0), the id of the specified record should be smaller than the maximum record.

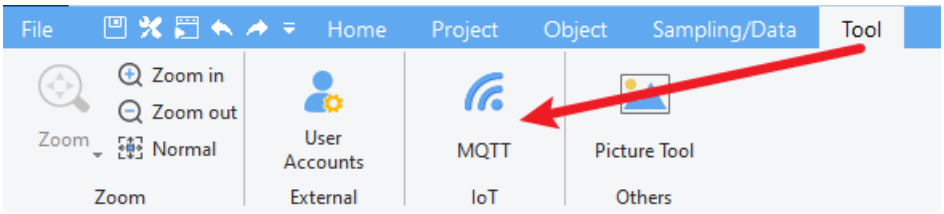
3.16 MQTT

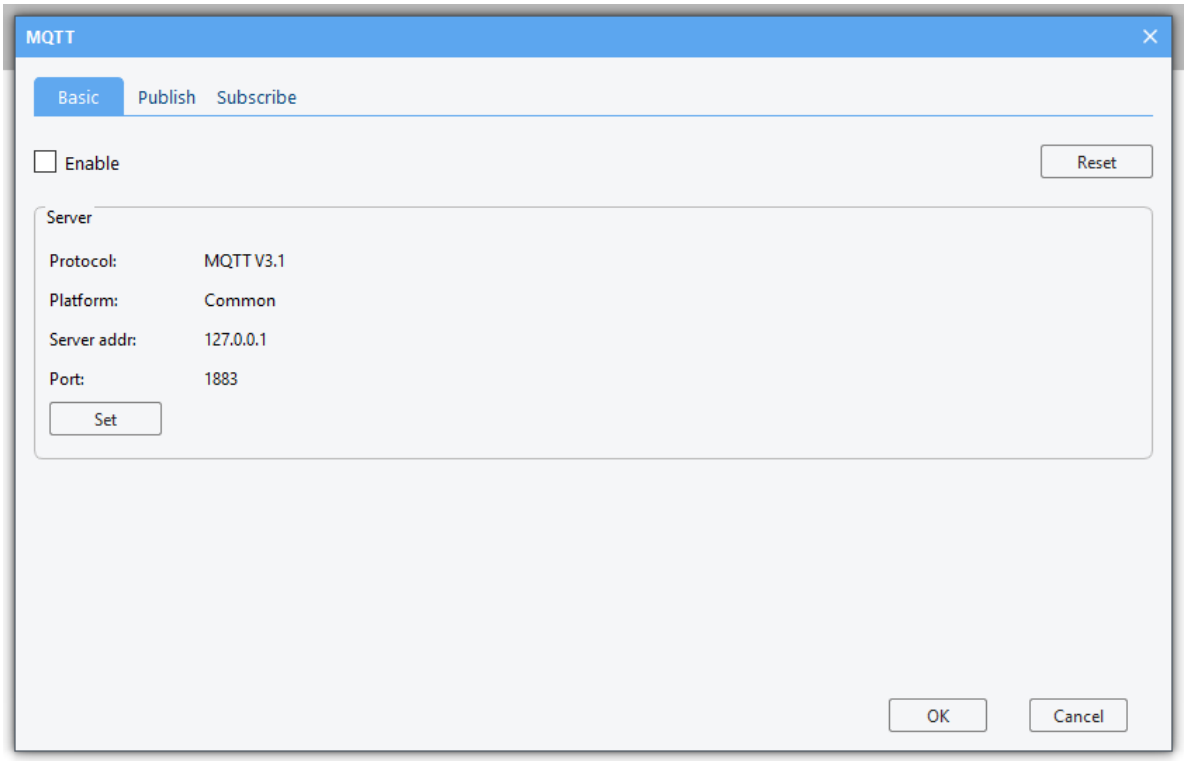
3.16.1 Overview

The [MQTT] functionality enables communication with IoT platforms, facilitating remote control and monitoring.

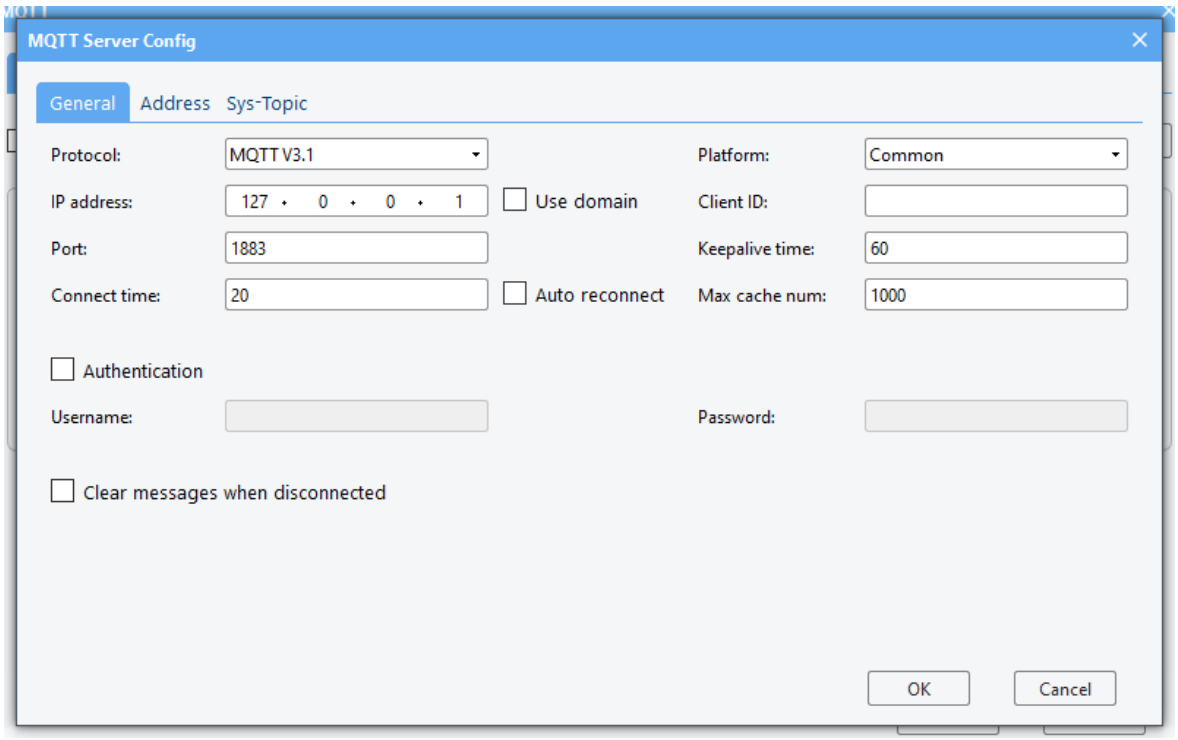
3.16.2 Configuration

(1) Click on the [Tools] menu → Click on the [MQTT] toolbar to open the [MQTT] settings interface for respective configurations. Enable the MQTT functionality by checking the box.





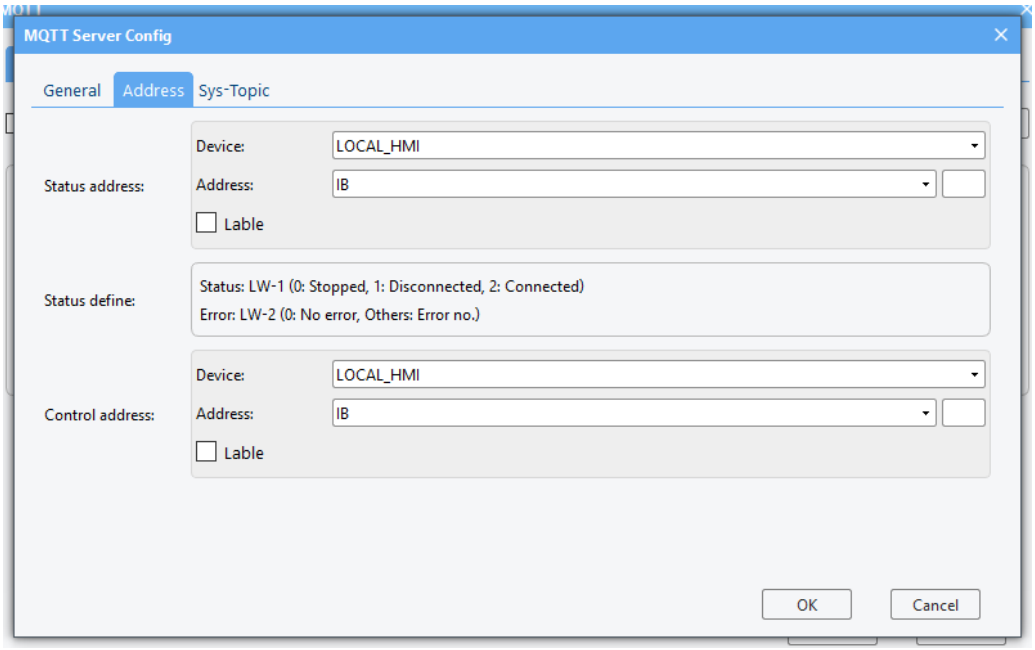
(2) Click on the [Set] button to open the following interface.



Communication Protocol	Available versions: MQTT V3.1, MQTT V3.1.1, MQTT V5.0
IP Address	Set the IP address of the MQTT server for receiving messages.
Use Domain Name	Supports specifying the server using a domain name.
Port Number	Set the port of the MQTT server for receiving messages.
Connection Timeout	Maximum time interval (in seconds) allowed for a single connection attempt. If exceeded, the connection times out.
Auto Reconnect	Automatically reconnects after disconnection.
Platform Type	Currently supports generic platforms such as Alibaba IoT Platform, Tencent IoT Platform, etc.
Client ID/Login Name	Identifier used for logging into the MQTT server.
Heartbeat Interval	Keep-alive time for the device to maintain a long-term connection with the IoT platform. If no messages are received for more than 1.5 times the heartbeat interval, the server will automatically disconnect. Heartbeat interval can be set between 30 to 1200 seconds.
Maximum Cache Entries	Maximum number of messages that can be cached in the message queue.

User Authentication	Enable user authentication if checked.
Username	Username used for connecting to the MQTT server.
Password	Password used for connecting to the MQTT server.
Clear Messages on Disconnection	Set whether to receive offline messages. Default is to receive them; when enabled, offline messages are not received.

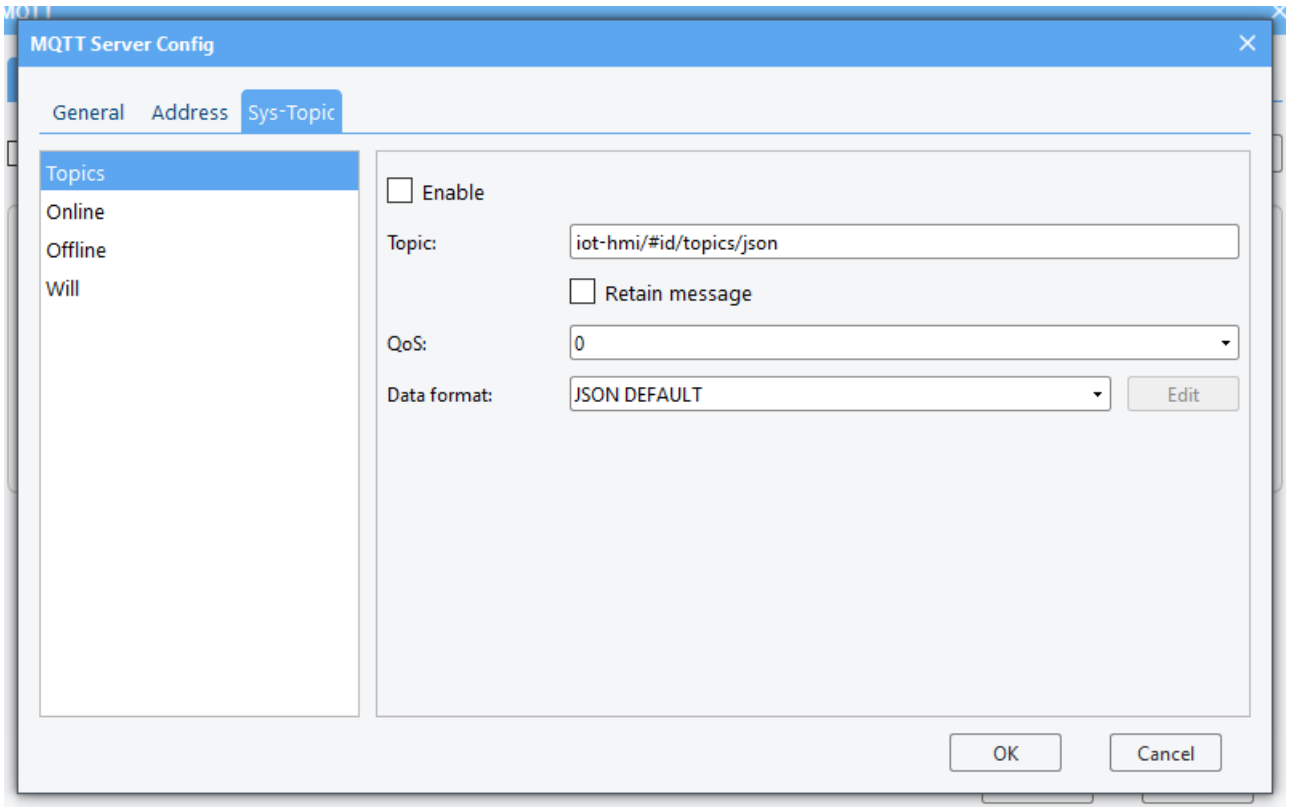
(3) Clicking on the [Address] label opens the following interface:



Status Address	Used to monitor the connection status between the device and the server.
Status Definitions	0: Stopped 1: Disconnected or Connecting 2: Connected
Control Address	0: Ready 1: Connecting to Server 2: Disconnecting For values greater than or equal to 10: 10: Unsubscribe from the first subscribed topic 11: Unsubscribe from the second subscribed topic 12: Unsubscribe from the third subscribed topic

……

(4) Click the [sys-Topic] label to pop up the following interface.



Topics	After the HMI connects to the server, it will send all published topic information from the HMI to the server. Online HMI will send out information after connecting to the server.
Offline	The last message sent by the HMI before actively disconnecting from the server.
Will	In case of an abnormal disconnection between the HMI and the server, the subscribing end of the Last Will will receive this information. The HMI synchronizes the Last Will information to the server when establishing the initial connection.
Retain Message	When selected, the MQTT server retains the latest data.
QoS	MQTT provides three levels of reliability, known as Quality of Service (QoS). The QoS determines whether the message is guaranteed to be delivered. 0: Message is sent only once, delivery is not guaranteed. 1: Message delivery is ensured at least once.

	2: Message delivery is ensured exactly once.

Content Format	Currently, only JSON format is supported. DEFAULT: Default JSON format. The default format for each topic is as follows:
	Topics:
	{
	"d": {
	"topics": [{
	"topic": "publish topic 1"
	}, {
	"topic": "publish topic 2"
	}]
	},
	"ts": "current time"
	}
	Online:
	{
	"d": {
	"connected": true
	},
	"ts": " current time "
	}

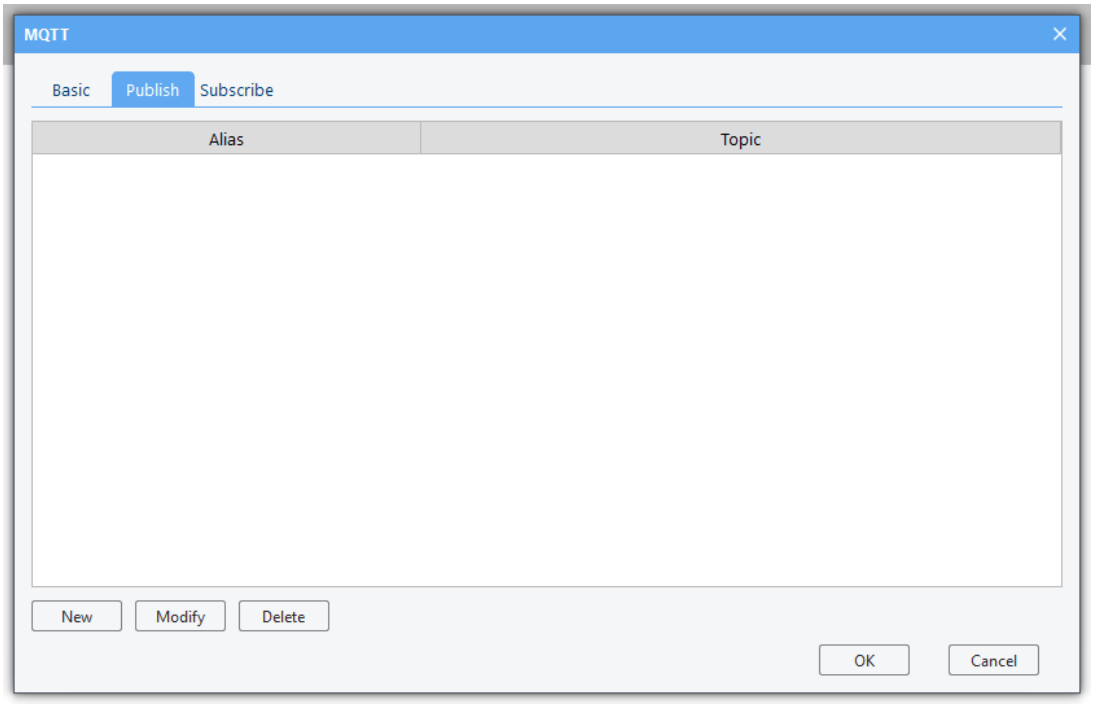
Offline:

```
{
    "d": {
        "connected": false
    },
    "ts": " current time "
}
```

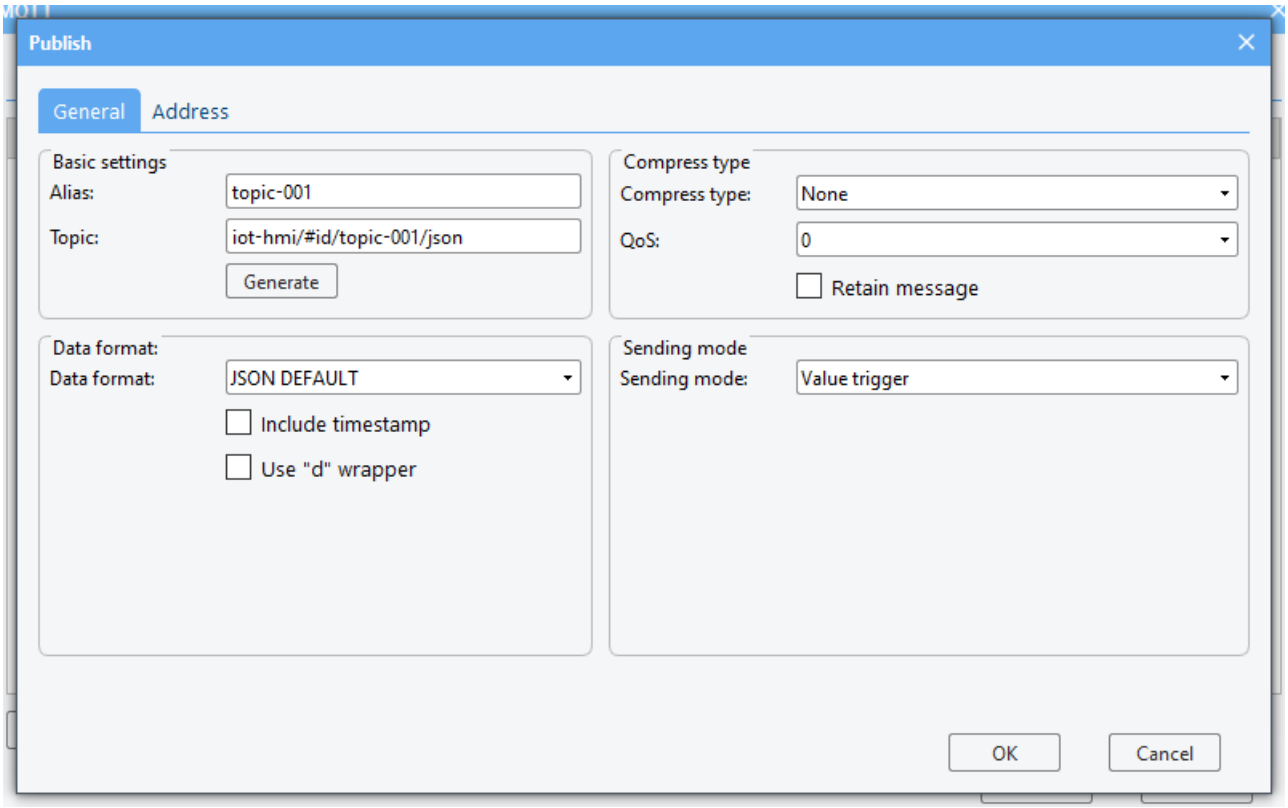
Will:

```
{
    "d": {
        "connected": false
    }
}
```

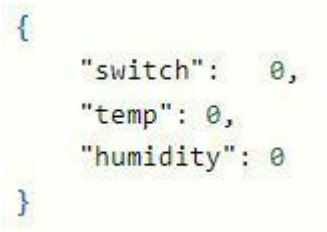
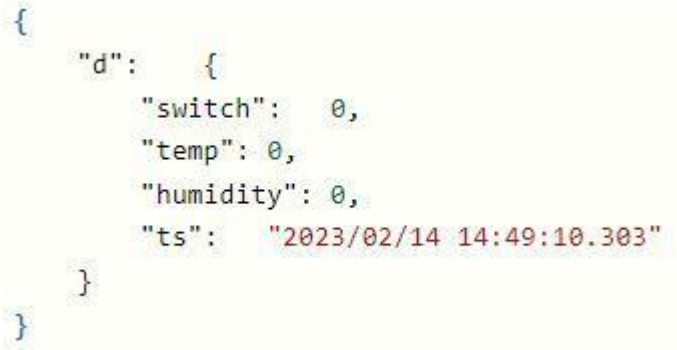
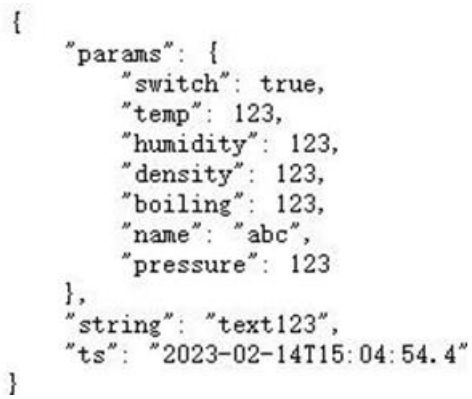
(5) Publish



Click [New] to the general properties and address settings interface:



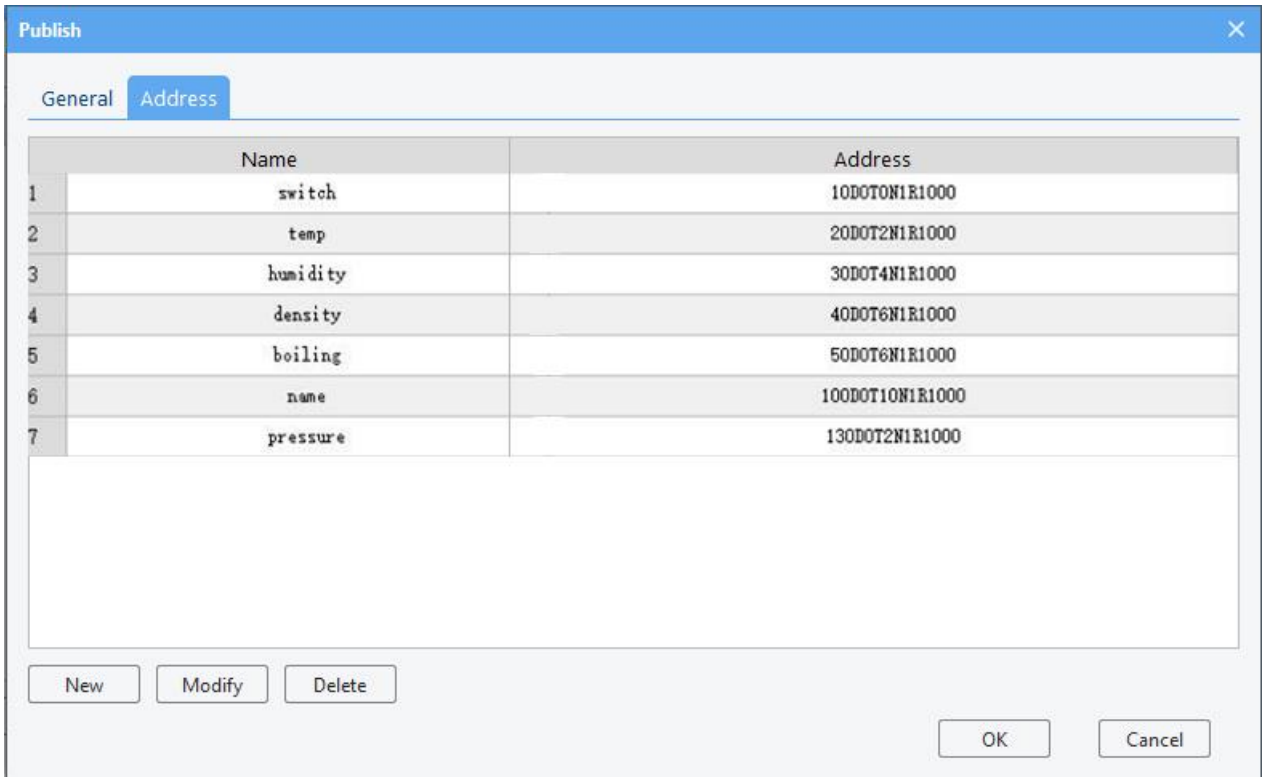
Alias	Set MQTT topic aliases.
Topic	The topics received by the MQTT server when sending information.

Compress type	Currently not supported.
QoS	MQTT provides three levels of reliability, known as quality of service (QoS). The quality of service for message delivery determines whether messages are guaranteed to be delivered. 0: Message is sent only once, with no guarantee of delivery. 1: Message must be delivered at least once. 2: Message must be delivered exactly once.
Data format	Raw: Data composed of BYTE data. JSON DEFAULT: Default JSON format. Message format as follows:  Enabled with timestamp, wrapped with "d" as follows:  JSON CUSTOM: flexible customization of nested JSON structures. For example: 

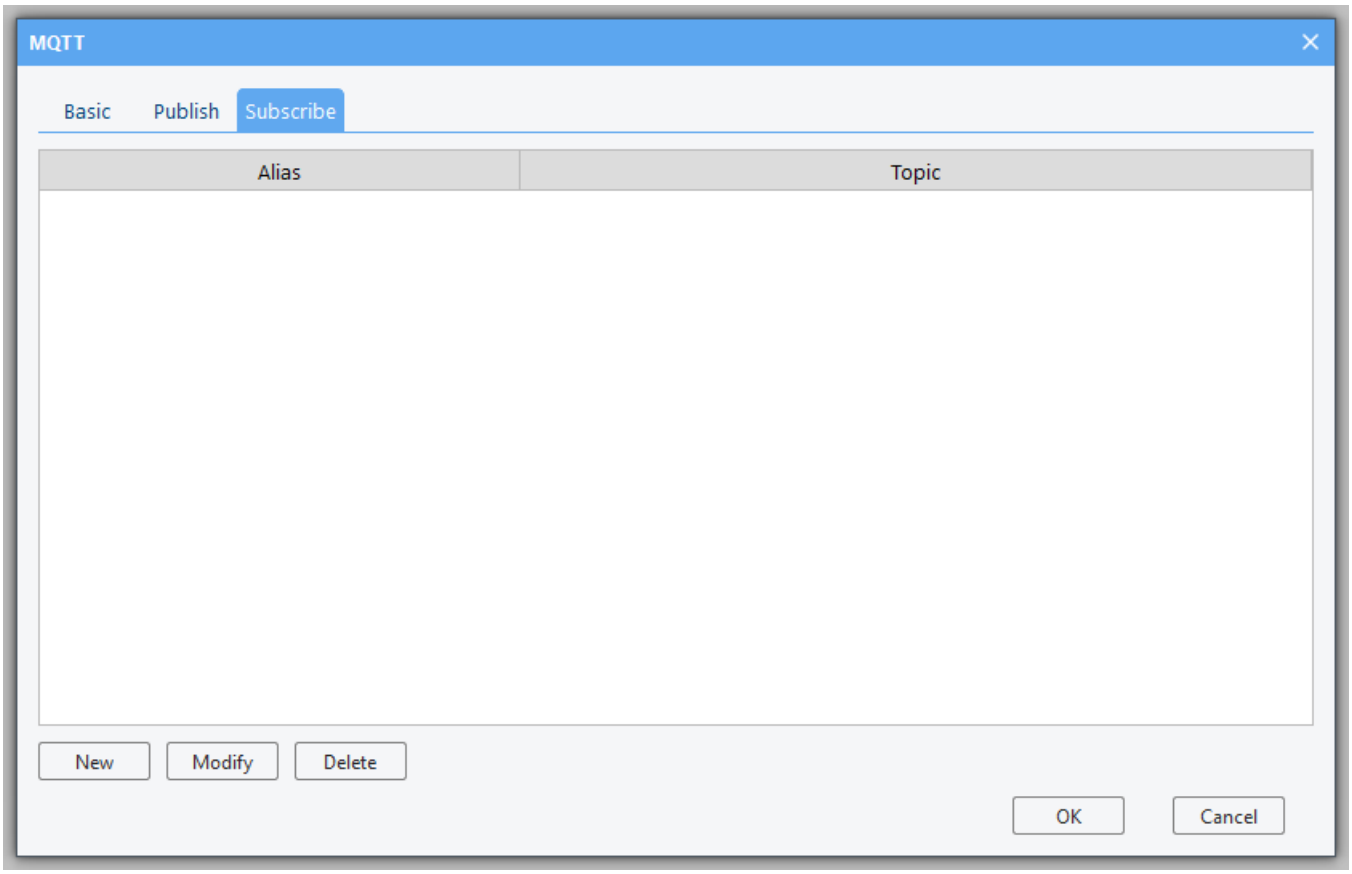
Sending mode	**Send on Value Change:** Publish MQTT information to the server when any register value changes. **Address Trigger:** Publish MQTT messages to the server when specified register states change, such as ON->OFF, ON<-OFF, or ON<->OFF. **Periodic Send:** Send periodically at specified time intervals. The minimum interval can be set to 200ms.

Clicking on the [address] tab will take you to the following interface, where you can set some addresses.

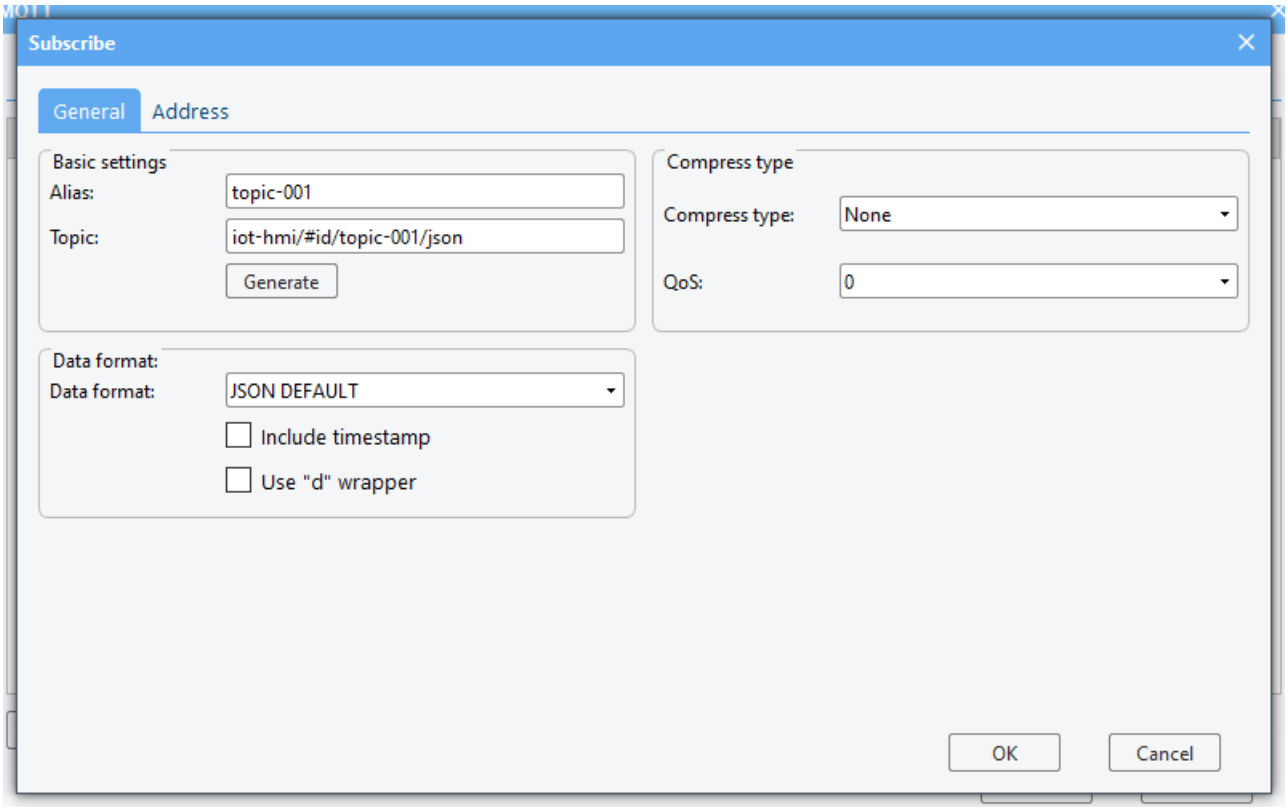
When sending messages to the server, all register values will be sent to the server:



(6) Subscribe



Clicking on the [New] button will take user to the general properties and address setting interface, which is set up in the same way as topic publishing.



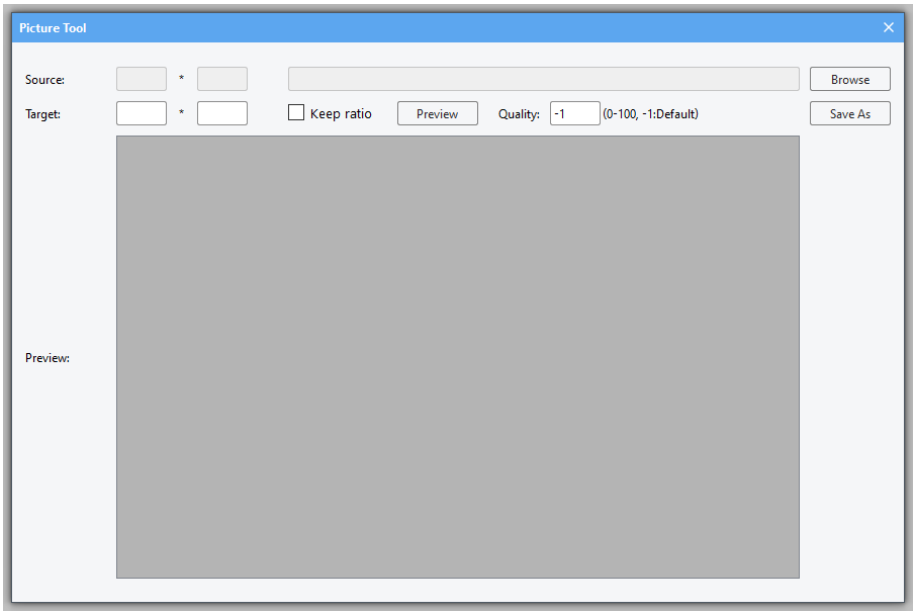
3.17 Picture tool

3.17.1 Overview

The [Picture Tool] is used to modify image resolution, making it convenient to create required images within the software.

3.17.2 Configuration

(1) Click on the [Tool] menu → [Picture Tool] to open the "picture Tool" settings interface for the corresponding configurations.



Click on [Browse] to select the original image to be modified, enter the desired resolution, choose whether to maintain aspect ratio, and click on Preview to view the modified image. The quality refers to the compression level when compressing the image; the higher the level, the larger the file size of the image.

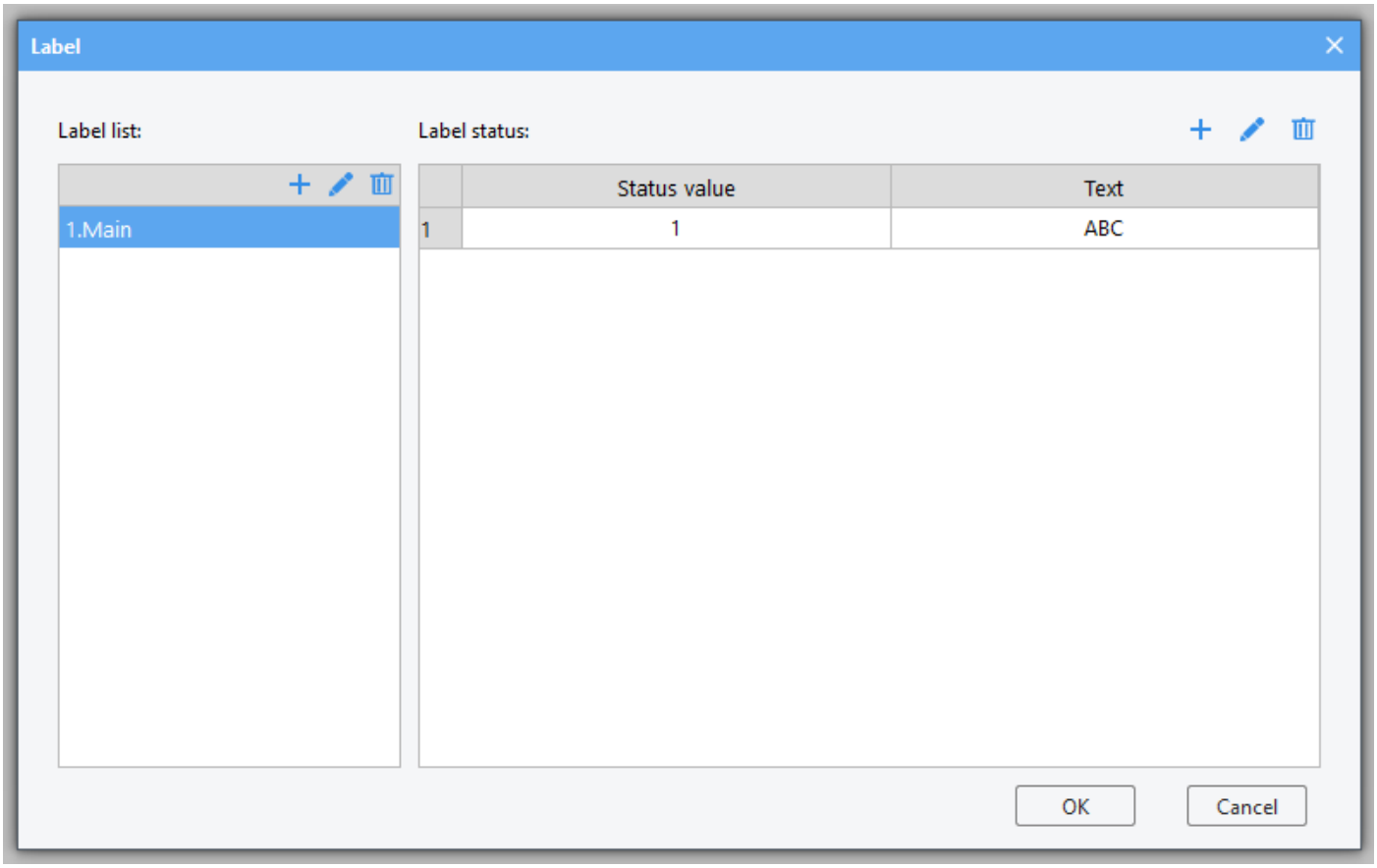
3.18 Lable

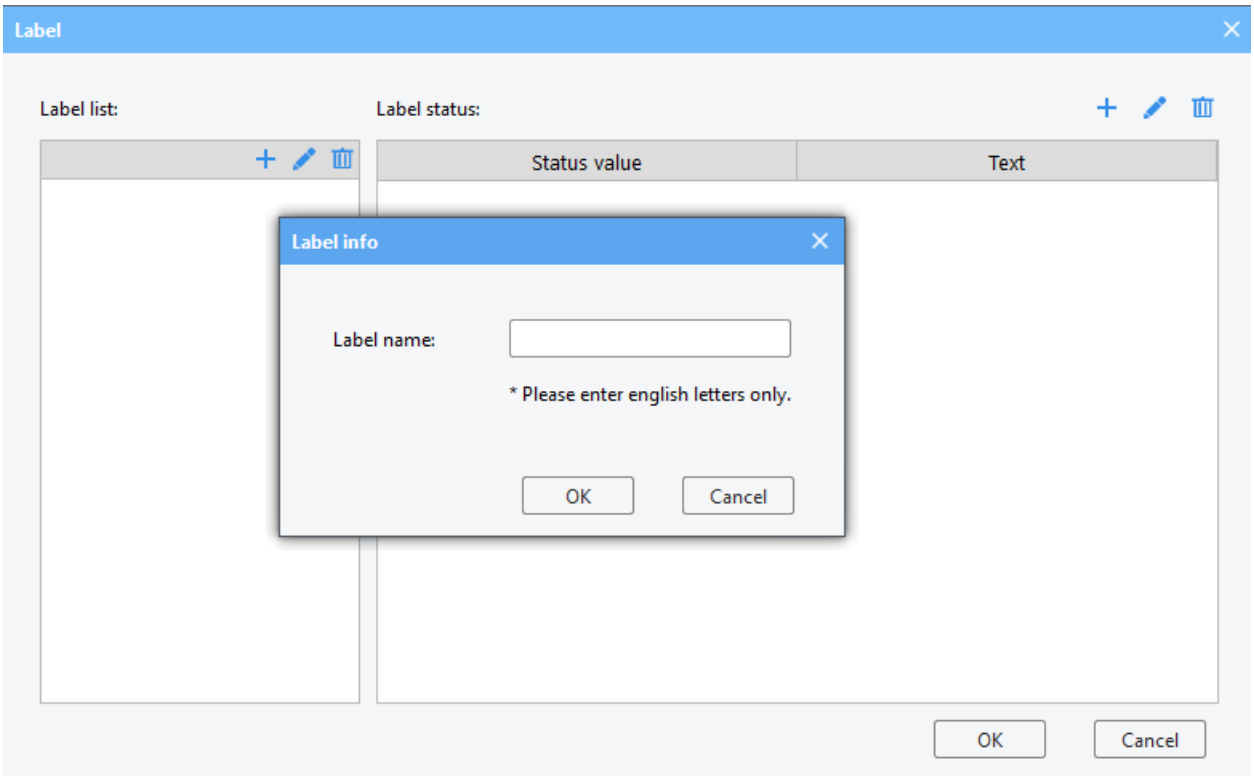
3.18.1 Overview

[Label] provide a convenient way to display text that changes with the values of registers, facilitating the customization of table and other object displays.

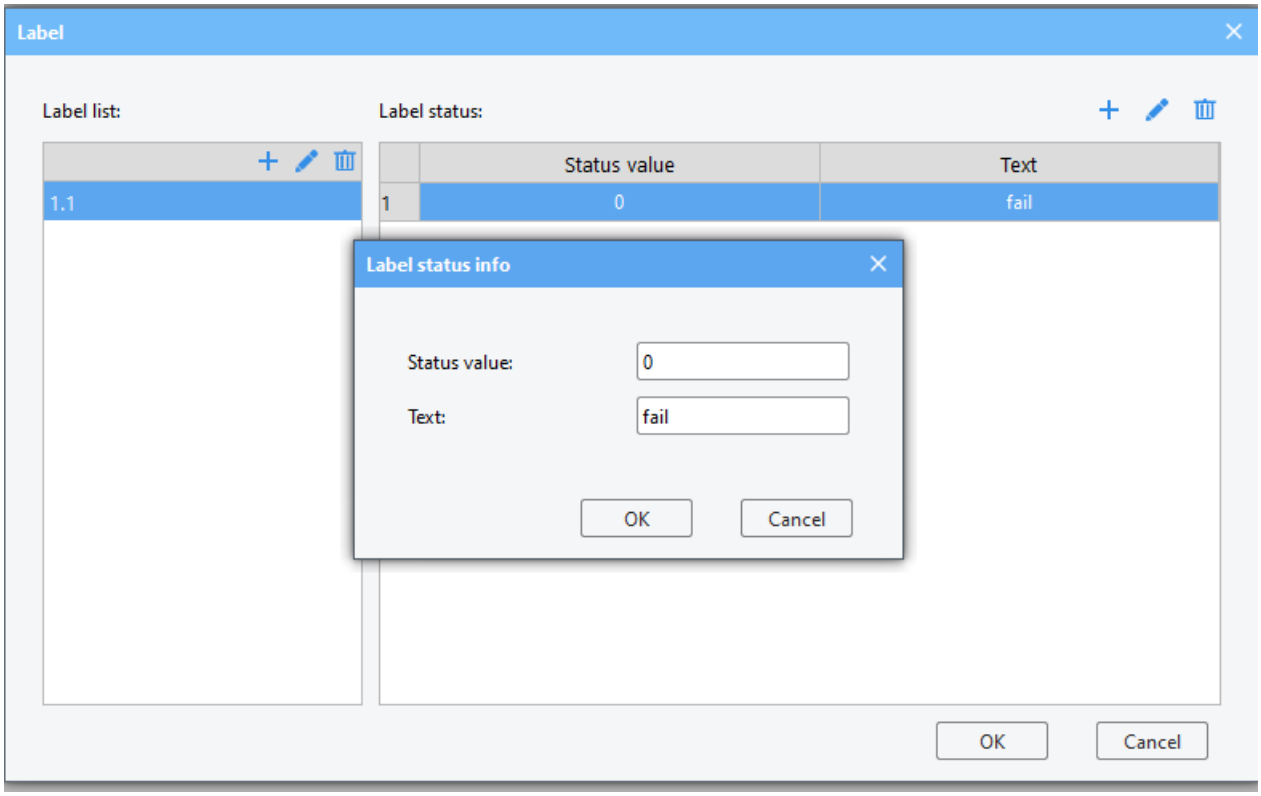
3.18.2 Configuration

(1) Click on the menu bar [Project] → [Label] to open the [Label] settings interface for corresponding configurations.





Only English characters, numbers, and underscores can be input. After adding, left-click to select the tag and edit its status.



Double-click with the left mouse button to select the row you want to modify, then edit the information in the pop-up box.

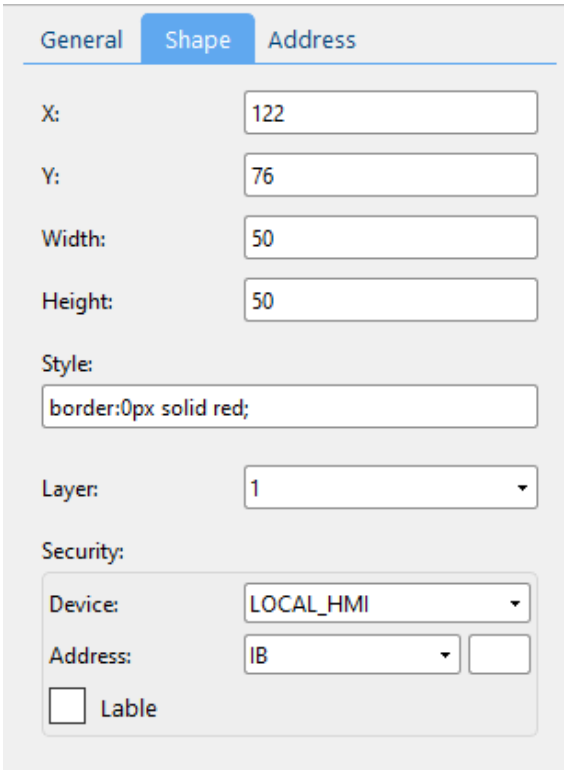
4 Common Attributes

4.1 Overview

You need to set the attributes for objects before using it. Some attributes are common to all objects, and this section introduces the settings of common attributes.

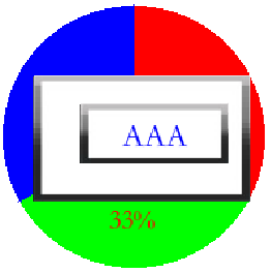
4.2 Attributes

The common attributes are shown as follows.



X and Y	Set x and y coordinates of the object.
Width and height	Set width and height of the object.
Style	Common style attributes, which are the same as HTML rules, are as follows. 1. font-size: set the font size, such as “font-size:21;” 2. font-style: set the font style, common settings are as follows. normal (default) inherit italic

	3. color: set the font color Color settings can usually be defined as follows. (1) Hexadecimal - e.g., “#ff0000” (2) color name - e.g., “black”, “red”, “blue”, “yellow” and “green” 4. background: set the background color 5. border: set the style of the border, including width, color and style of the border line. Format of these attributes are as follows. Width: solid, dashed or dotted Style: x px (no border if not set or set to 0). Color: #ffffff or black E.g., set to “border:1px solid black”, only one blank space between every attribute, 6. padding: set the inner margin, such as “padding:5;” **Note: when setting the object style, you do not need to set all the above attributes. Just modify the default properties that come with the object.** (Set the attributes with “;” separating the different attributes).
Security	The security level of the object. When it is set to LOCAL HMI:IB0000 or LOCAL HMI:user0000 00000000, there is no security setting and all users can operate this object. When it is set to “LOCAL HMI:user+ a number”, such as “LOCAL HMI:user1”,” LOCAL HMI:user2”, the smaller the number, the higher the security level. Only if the number of the user’s security level is smaller or equal to the number of the object’s security level, the object can be operated. Otherwise, it will be hidden. When it is set to other register, whether the object will be displayed is determined by the number of the register. When it is 0, the object will be hidden. When it is not 0, the object will be displayed. (can be used to check whether the object is displayed.)
Layer	When multiple objects are overlapped, set the object display layers to 0, 1, 2, 3... The larger the number, the prior the layer order.


AAA
33%

5 Object

5.1 Lamp

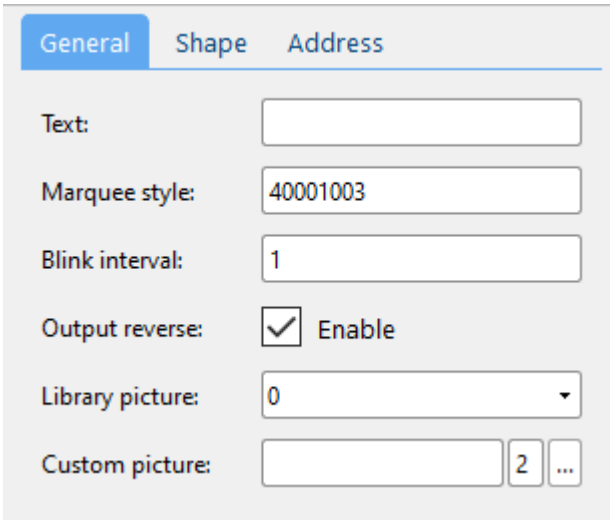
5.1.1 Overview

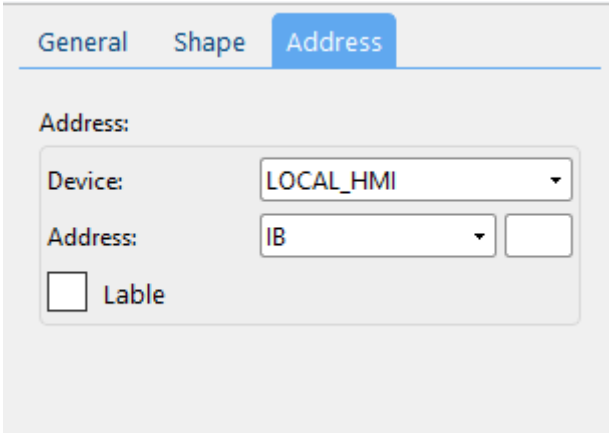
The [Lamp] object is used to display the status of the bit register.

5.1.2 Attributes

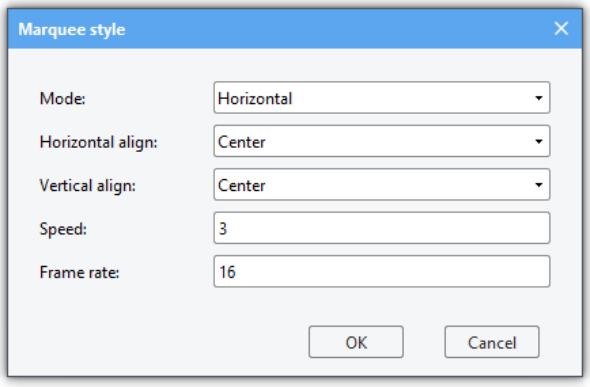
Click [Object] in the menu bar → click [Lamp] to bring up the [Lamp] object. Drag the object to the specified [window] and double-click on the object to place it.

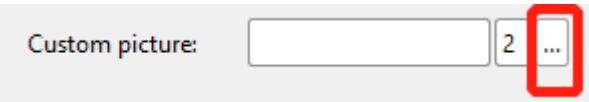
After selecting the object in the [window], you can set relevant attributes in the right window.





(1) General attributes

Text	Text displayed by the object.
Marquee style	Used to assist text display. 

	Default value is 40001003(hexadecimal). That is, horizontally center-aligned, vertically center-aligned, speed set to 3, and 16 frames per second. Speed = the width of the object/ the value of the lower 8 bits (The value of the lower 8 bits should be smaller than the width of the object). The bigger the lower 8 bits, the fewer steps it takes to play through a loop of marquee and the faster it runs. Frame rate: how many frames per second. The bigger the value, the faster it runs. The maximum can be set to 20 (hexadecimal), at this time running 32 steps per second (frame).
Blink interval	Adjust the blinking speed of the lamp, the larger the value the slower the blinking.
Output reverse	In case of no inversion, if the value in the register of the object is 1, the lamp blinks. The lamp will not blink if the value is 0. In case of inversion, if the value in the register of the object is 0, then the lamp blinks. The lamp will not blink if the value is 1.
Custom picture	Custom the picture of the lamp. You need to input the number of small icons in customized pictures. Then click the button to select pictures.  For example, the number of small icons is 2 in the right picture. 

(2) Address setting

Address	Register address referred to by the lamp.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.2 Multi-State Lamp

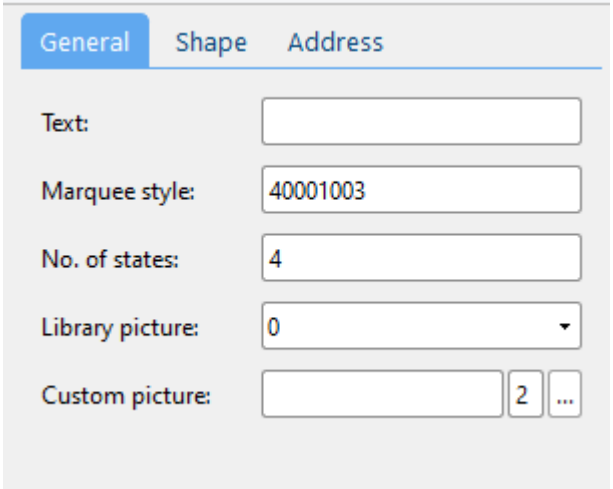
5.2.1 Overview

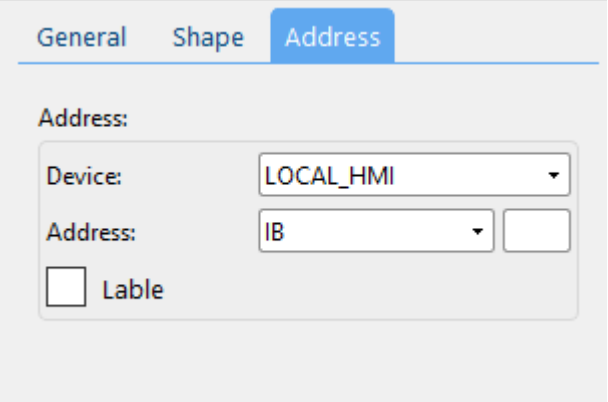
The [multi-state Indicator] object is used to display the state of the specified register, and more than three states can be shown.

5.2.2 Attributes

Click [object]→click [multi-state indicator] to bring up a [multi-state indicator] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.





(1) General attributes

Text	Text displayed by the object.
Marquee style	Refer to [Marquee style] in [Lamp].
No. of states	The total number of states of the multi-state lamp.
Custom picture	Custom the picture of the multi-state lamp. You need to input the number of small icons in customized pictures. Then click the button to select pictures.  For example, the number of small icons is 2 in the right picture. 

(2) Address setting

Address	Register address referred to by the multi-status lamp.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.3 Function key

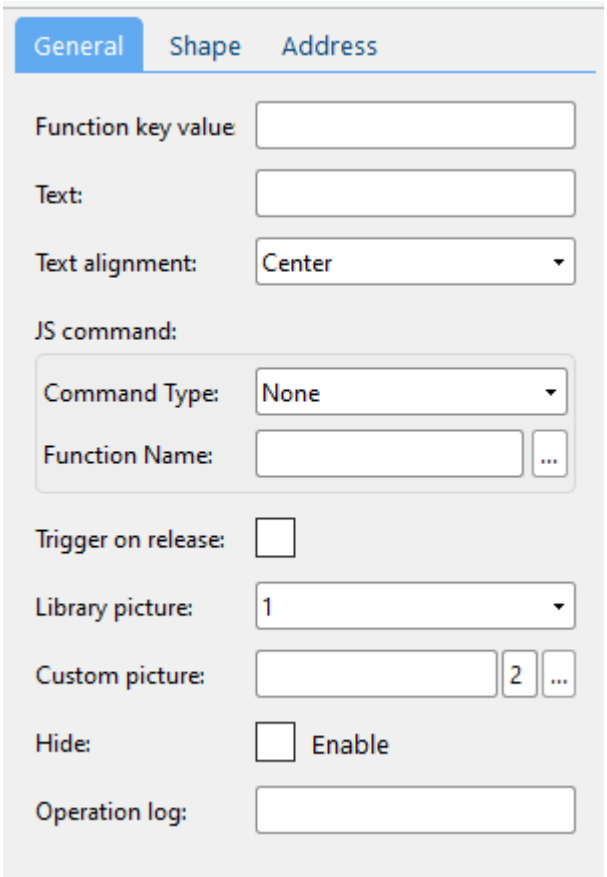
5.3.1 Overview

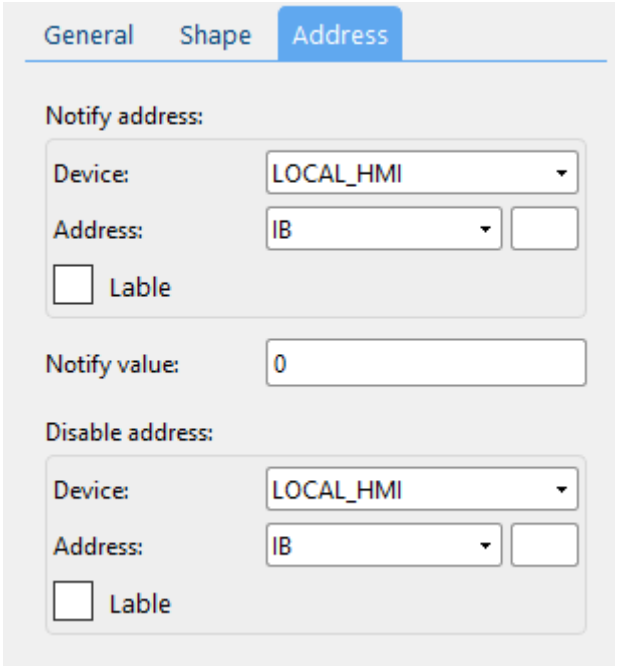
The [function key] object provides functions such as window switching, JavaScript command execution and so forth.

5.3.2 Attributes

Click [Object] in the menu bar→ click [function key] to bring up a [function key] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.





(1) General attributes

Function key value	If the address of the object is set to be the same as the notification address, the command corresponding to the function key will be sent to the object to realize some function when the function key is pressed. (mainly used to refresh display in the current version) For example, if the [Function key value] is set to 286, the display of the corresponding object will be refreshed.
Text	Text displayed by the object.
Text alignment	Left aligned/ Center-aligned/ Right aligned
JS command	JS command is detailed in 6.4.
Trigger on release	If not checked, JS instruction is triggered by pressing the function key. If checked, JS instruction is triggered on release.
Library picture	Use the specified image in the system gallery as the displayed icon.
Custom picture	When this attribute is set, the user-defined image is used preferentially as the displayed icon.
Operation log	Descriptive statements logged to operation logs using function key value.

(2) Address setting

Notify address	The register is notified when the function key is pressed.
Notify value	The value set to notify the register.
Disable address	Specify the register used to disable the function key. When the value of the register is greater than 0, the function key will not be disabled. Otherwise, the function key will be disabled.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.4 Switch

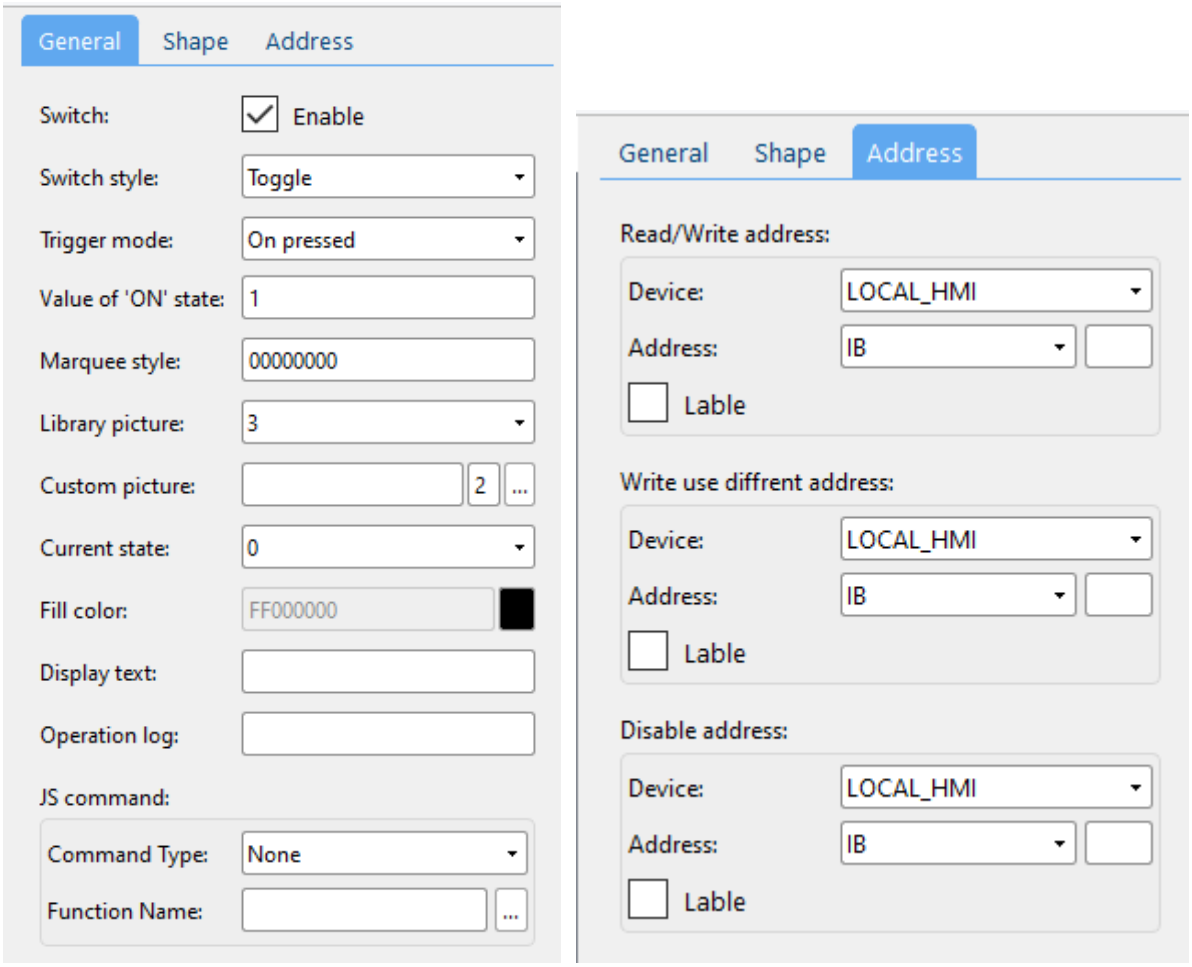
5.4.1 Overview

[Switch] displays the status of the bit registers and defines a touch area on the window that can be pressed to set the status of the indicated bit register as ON or OFF.

5.4.2 Attributes

Click [Object]→click [Switch] to bring up a [Switch] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Switch	If not enabled, the switch does not change when being pressed. It is only used to display.

Switch Style	a. Toggle When this switch is pressed, the status of the specified register will be reversed. E.g., when the status is ON, it will be displayed as OFF. When the status is OFF, it will be displayed as ON. b. Momentary When this switch is pressed, the state of the specified register will be ON first, and when you release the switch, the state will be OFF. c. Set ON The state of the specified register will be set to ON when this switch is pressed. if the register state is ON, press won't change its state. d. Set OFF The state of the specified register will be set to OFF when this switch is pressed. If the register state is OFF, press won't change its state.
Trigger method	To change the trigger method of changing the display state of the switch. On pressed: change the switch display state when pressed. On released: change the state of the switch display when released. (The momentary switch does not have this attribute. The momentary switch is triggered either by pressing or releasing)
Value of 'ON' state	The output value of the register when the switch is set to ON.
Marquee style	Refer to [Marquee style] in [Lamp].
Library picture	Unspecified: Do not use the picture from the library as the icon (set the number of the small icon first). 1-8: Icons are the system default image
Custom picture	The user selects a custom picture to be used as the icon. (input the number of the small icon first) 

Current state	You can select a state and set the displayed color and text of this state.
Fill color	Set the displayed color when the state of the switch is 0 or 1. (Display takes effect when no image is used.)
Display text	Set the displayed text when the state of the switch is 0 or 1.
Operation log	Descriptive statements logged to operation logs when operating the object.
JS command	JS command is detailed in 6.4.

(2) Address settings

Read/write address	The address referred to by the switch.
Write use different address	If this address is set, that is, when the address is not 0, the object read address and written address is different. The switch state is determined by the value in the register corresponding to [**read address**]. When the switch state is changed, the value corresponding to the new state is written to [**read address**] and the register corresponding to [**write address**]. Generally, [**read address**] and [**write address**] are the same address.
Disable address	Specify the register used to disable the function key. When the value of the register is greater than 0, the function key will not be disabled. Otherwise, the function key will be disabled.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.5 Multi-State Switch

5.5.1 Overview

The [multi-state switch] can display different states according to data in the register and can define a touch area on the window that can be pressed to change the data in the indicated register.

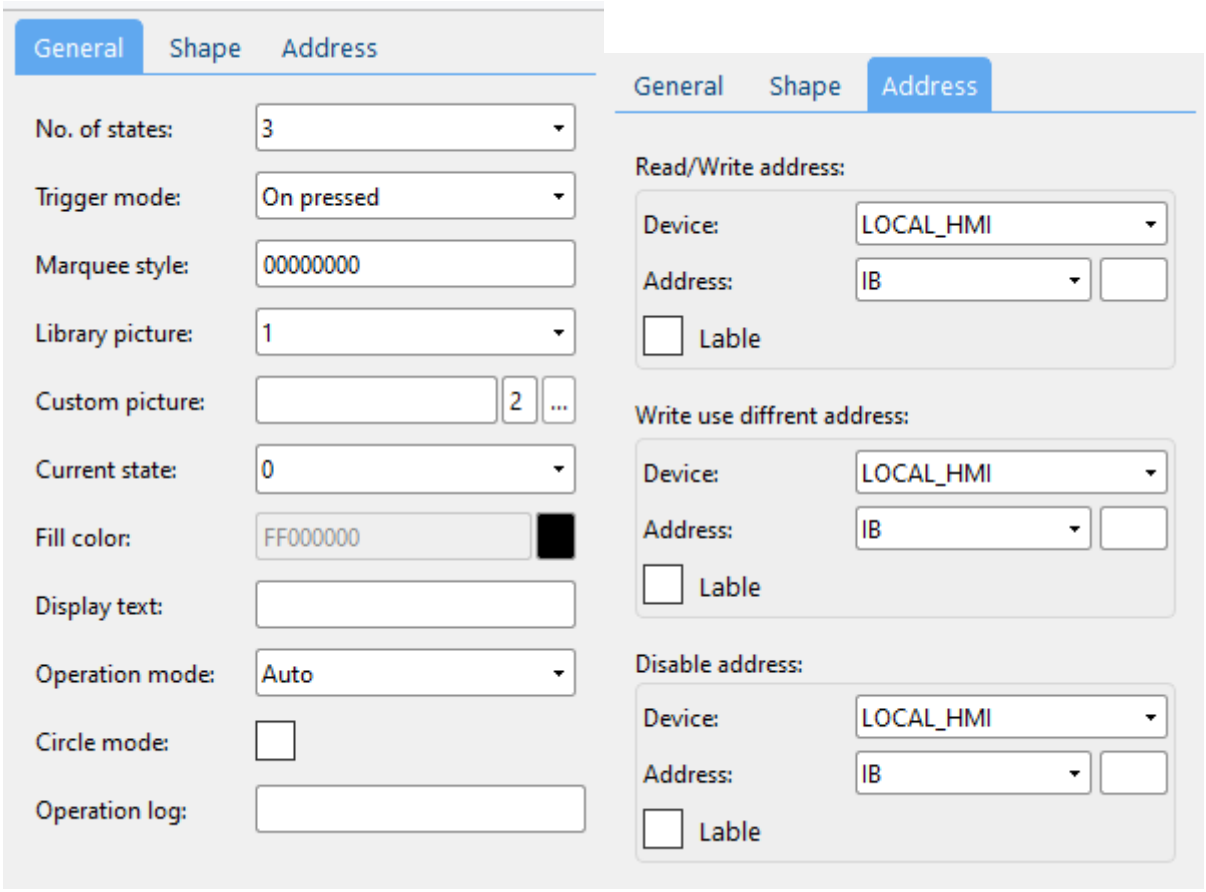
When the multi-state switch is clicked, the value in the specified register is taken out and added by 1. At the same time, the switch turns to the next state and reset until the set maximum state is reached.

5.5.2 Attributes

Click [object]→click [multi-state switch] to bring up a [multi-state switch] object. Drag the object to the

specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

No. of states	Number of multi-state switch states. Range: 3-10. If the value is set to 3, a maximum of 3 states can be switched. If the value is set to 4, a maximum of 4 states can be switched. …
Trigger mode	Change the trigger mode of the switch.
Marquee style	Refer to [Marquee style] in [Lamp].
Library picture	Unspecified: Do not use the picture from the library as the icon (set the number of the small icon first). 1-8: Icons are the system default image

Custom picture	Custom the picture of the multi-state lamp. You need to input the number of small icons in customized pictures. Then click the button to select pictures.
Current state	You can select a state and set the displayed color and text of this state.
Fill color	Set the displayed color when the state of the switch is 0 or 1. (Display takes effect when no image is used.)
Display text	Set the displayed text when the state of the switch is 0 or 1.
Operation mode	Auto: The state displayed by the multi-state switch depends on the data in the specified register and cannot be changed manually. Plus: increment function. At each press of the object, the data in the specified register is incremented by 1, but the result of the value increase will not exceed the set [Number of States]. If [Circle mode] is enabled, it will be reverted back to the lowest state 0 after reaching the maximum state. Minus: decrement function. At each press of the object will result in the data in the specified register is decreased by 1 until it reaches 0. If [Circle mode] is enabled, it will revert back to the highest state after reaching the minimum state.
Circle mode	Refer to the description in the operation mode.
Operation log	Descriptive statements logged to operation logs when operating the object.
JS command	JS command is detailed in 6.4.

(2) Address setting

Read/write address	The address referred to by the switch.
Write use different address	If this address is set, that is, when the address is not 0, the object read address and written address is different. The switch state is determined by the value in the register corresponding to [**read address**]. When the switch state is changed, the value corresponding to the new state is written to [**read address**] and the register corresponding to [**write address**]. Generally, [**read address**] and [**write address**] are the same address.

Disable address	Specify the register used to disable the function key. When the value of the register is greater than 0, the function key will not be disabled. Otherwise, the function key will be disabled.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.6 Slider

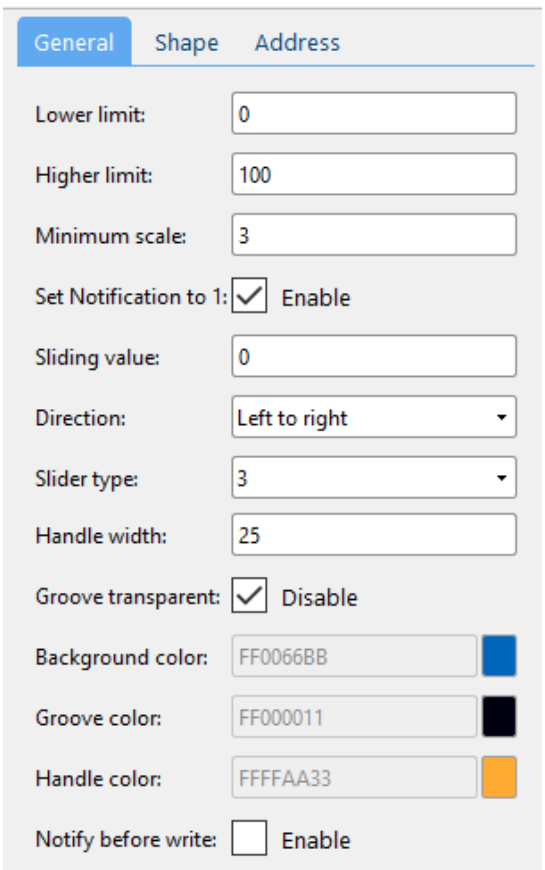
5.6.1 Overview

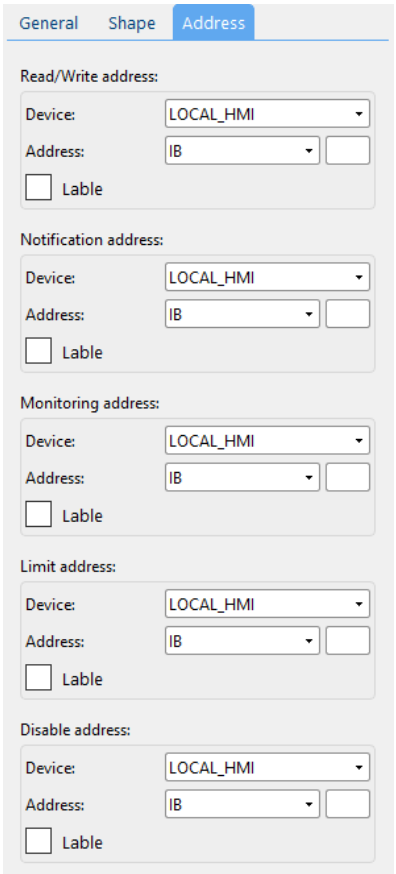
The [slider] can bind a register to the slide state and alter the value in the corresponding register by the slider position.

5.6.2 Attributes

Click [object]→click [slider] to bring up a [slider] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.





(1) General and other attributes

Lower limit	The slide switch scale minimum.
Higher limit	The slide switch scale maximum.
Minimum scale	Minimum unit of slider movement.
Set notification to 1	If this attribute is enabled, the notification address is set to 1. Otherwise, the notification address is set to 0.
Sliding value	The sliding mode will be enabled after the sliding value is set, and the sliding value is the size of each slide.
Direction	There are four sliding directions. 1. left to right 2. right to left 3. top to bottom 4. bottom to top
Slider type	This value ranging from 0 to 3 represents four different sliders.
Handle width	Set the width of the slider.
Groove transparent	The default is non-transparent, and the slide track will be transparent after the tab is unchecked.
Background color	Designate background color of the slide switch.
Groove color	Designate color of groove.
Handle color	Designate color of the handle.
Notification in advance	After the tab is checked, the value of the slider position will inform the notification address before it is written to the [written address] of the corresponding register.

(2) Address setting

Read/write address	The address register controlled by the slider.

Notification address	Notification is enabled when this address is not 0. This address will be notified when the value of the slider position is written to the register corresponding to [**read/write address**]. Whether to notify before or after writing is determined by [**notification in advance**].
Monitoring address	The current value in the register corresponding to [**written address**] is displayed in real time.
Limit address	When this address is enabled, the slider's lower limit is determined by the value in the register of this address and the upper limit is determined by the value in the address register adjacent to this address.
Disable address	Specify the register used to disable the slider. When the value of the register is greater than 0, the function key will not be disabled. Otherwise, the function key will be disabled.

(3) Shape other attributes settings are detailed in Chapter 4.

5.7 Option list

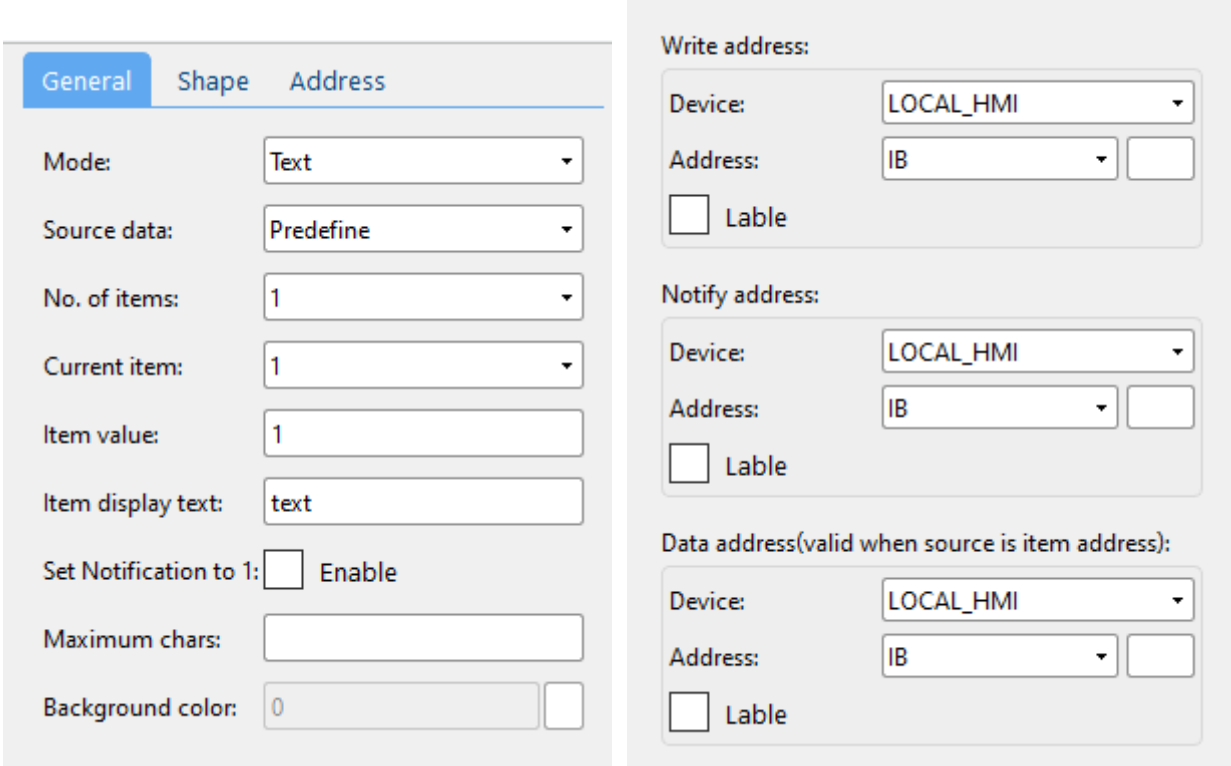
5.7.1 Overview

Drop down the list, and then the value of the selected project can be written to the specified address.

5.7.2 Attributes

Click [object]→click [option list] to bring up a [option list] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Mode	Text, Drop-down list or list.
Source Data	0: Predefine 1: Item address
No. of items	The total number of items in the list. It is valid only if **data source** is the predefined value.
Current item	When the data source is **predefined data**, you can select an item for setting.
Item value	When data source is the **predefined data**, you can set the predefined data as the value written into [**Write address**].
Item display text	When **data source** is the predefined data, you can set the information which is displayed in the option list.
Set Notification to 1	If this attribute is checked, the **notification address** is set to 1. Otherwise, it is set to 0.
Maximum chars	Valid when **data source** is set to 1. Output the maximum length of the string of the item address.
Background color	Background color of the selected option list. (Valid when [**Mode**] is set to [**Text**].)

(2) Address setting

Write address	When the mode is text, the number of the item will be displayed according to the value of the register of the [write address].
Notify address	Valid when the data source is predefined data. This address will be informed when data changes in the register corresponding to the [write address].
Data address	Valid when the data source is predefined data. This address is used to store the beginning address of the project data.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.8 Numeric

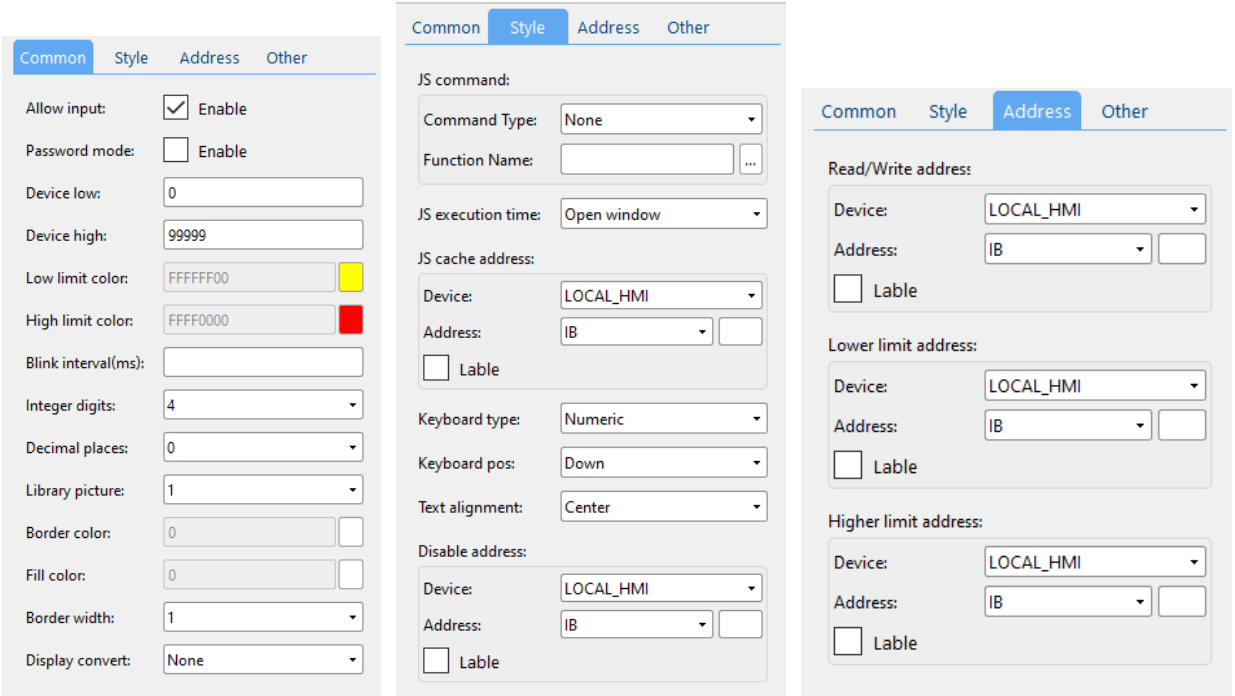
5.8.1 Overview

The [numeric] object is used to set or display the value in the specified register.

5.8.2 Attributes

Click [object]→click [numeric] to bring up the [numeric] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Allow Input	When the input function is enabled, you can manually enter the value to set the specified register. When not enabled, you cannot enter characters manually, and the input box is only used to display the value in the specified register.
Password mode	When password mode is enabled, the entered characters are displayed with "*".
Device low **Device high**	The numeric can be written to the specified register only if it is within the lower and upper limits of the device. The color of the entered numeric will be red to prompt the user that the numeric exceeds the range.
Low limit color **High limit color**	If the register value is less than [Device low], the background color of the object will be set as the low limit color. If the register value is greater than [Device high], the background color of the object will be set as the high limit color. Note: When there is a trigger warning register, this register controls whether to display the low and high limit colors. At this time, the upper and lower limits will not trigger the warning color. For details, see the description of this attribute.
Blink interval	When the limit color is displayed, if there is a flashing interval, the displayed value will have a flashing effect. The smaller the value of the blinking interval, the faster the flashing, and the minimum value can be set to 50ms. If this attribute is empty, there will be no blinking effect.
Integer digits **Decimal place**	To limit the number of digits displayed before and after the decimal point.
Library picture	Draw using the specified image. If library picture is set to [unspecified], the object icon will not be drawn using the picture, but by specified border color and fill color.
Border color	Valid when library picture is set to [unspecified]. At this time, draw the object border using border color.

Fill color	Valid when library picture is set to [unspecified]. At this time, fill the object will the fill color.
Border width	Set the border width when using border color to draw the border.
Display convert	When displaying the value in the register, you can set the register value to be divided by 10/100/1000 to display, or multiplied by 10/100/1000 to display.

(2) Style

JavaScript	Specify the name of the user-defined JS function.Refer to 6.4

JS execution time	Specify the JS script execution time.
	a. When opening the window
	The JS command will be executed automatically when opening a new window(interface).
	b. Before written.
	The JS function will be executed before the user inputs value to the register.
	Function: write conversion. This function is described in the **JS cache address**.
	c. When the value changes.
	When the value in the register changes, the JS command will be executed automatically, and the numeric object will display **the return value** of the JS function. In case of no return value, the object will not display anything.
	Function: formatting the value in the display register, such as: 38kW, 39°55′21″, 12km, etc.
	JS command can be written as follows to format the display register value.
	function printValue()
	{
	var v1,v2;
	//Read values in the register.
	v1 = Hmiregs.GetReg(0,2,1);
	//Formatting(customizable)

```
    v2 = v1 + 'kW';
    return v2;
    //The numeric object will display the returned sting.
}
```

GetReg function parameters detailed information is as follows.

Hmiregs.GetReg(0,2,1);

If the cache address is xAABBCCCC

then 0-AA 2-BB 1-CCCC.

Here [**JS cache address**]: x00020001 is used.

JS cache address

When using this function, you need to set the [**JS execution time**] to [**before writing]**

You can read this address in the JS script to get the value entered by the user. Then you can write the converted value into the register to realize the conversion function.

Example:

```
function jsConvert()
{
var value;
//Read the user input value from the cache address.
value = Hmiregs.GetReg(0,9,0x00000001);
//Convert the input value (.customizable).
value = value * 3.14159;
// Write the converted value back to the cache address.
Hmiregs.SetReg(0,9,0x00000001,value);
//The program automatically obtains the converted value to determine.
//Only those within the upper and lower device limits will be written to the specified registers.
}
```

	GetReg function parameters are detailed as follows. Hmiregs.GetReg(0,9,0x00000001); 0: station No. of the device. 9: type of the register 0x00000001： address of the register SetReg function parameters are similar to GetReg. The last parameter indicates the value written to the register. **Note:** **The register type corresponding to the cache address must be double type so that it can cache data of various types, such as 00090001, 00090005, 00090009, etc. When setting it, you should avoid using the same address elsewhere.**
Keyboard type	QWERTY: English letters, special symbols, numbers, etc. Numeric: Numbers only. (Only numbers can be entered in the numeric object)
Keyboard pos	Specify the keyboard pop-up position. Down: below the object. Up: above the object. Left: on the left side of the object. Right: on the right side of the object.
Text alignment	Left aligned, center-aligned and right aligned.
Disable address	When the value of the register is greater than 0, the object will be disabled and cannot be operated.

(3) Address setting

Read/write address	The address of the register to read or write.

Lower limit address	When this attribute is activated, the background color of this object will be set to the [low limit color] if the [lower limit address] is greater than 0. Note: If [Device low] and [Low limit address] both are set, the [Low limit address] controls whether to trigger the [low limit color], otherwise the [device low] will trigger the [Low limit color].
Higher limit address	When this attribute is activated, the background color of this object will be set to the [High limit color] of the [Higher limit address] is greater the 0. Note: If [Device high] and [Higher limit address] both are set, the [Higher limit address] controls whether to trigger the [High limit color], otherwise the [device high] will trigger the [High limit color].

(4) Shape and other attributes settings are detailed in Chapter 4.

5.9 ASCII

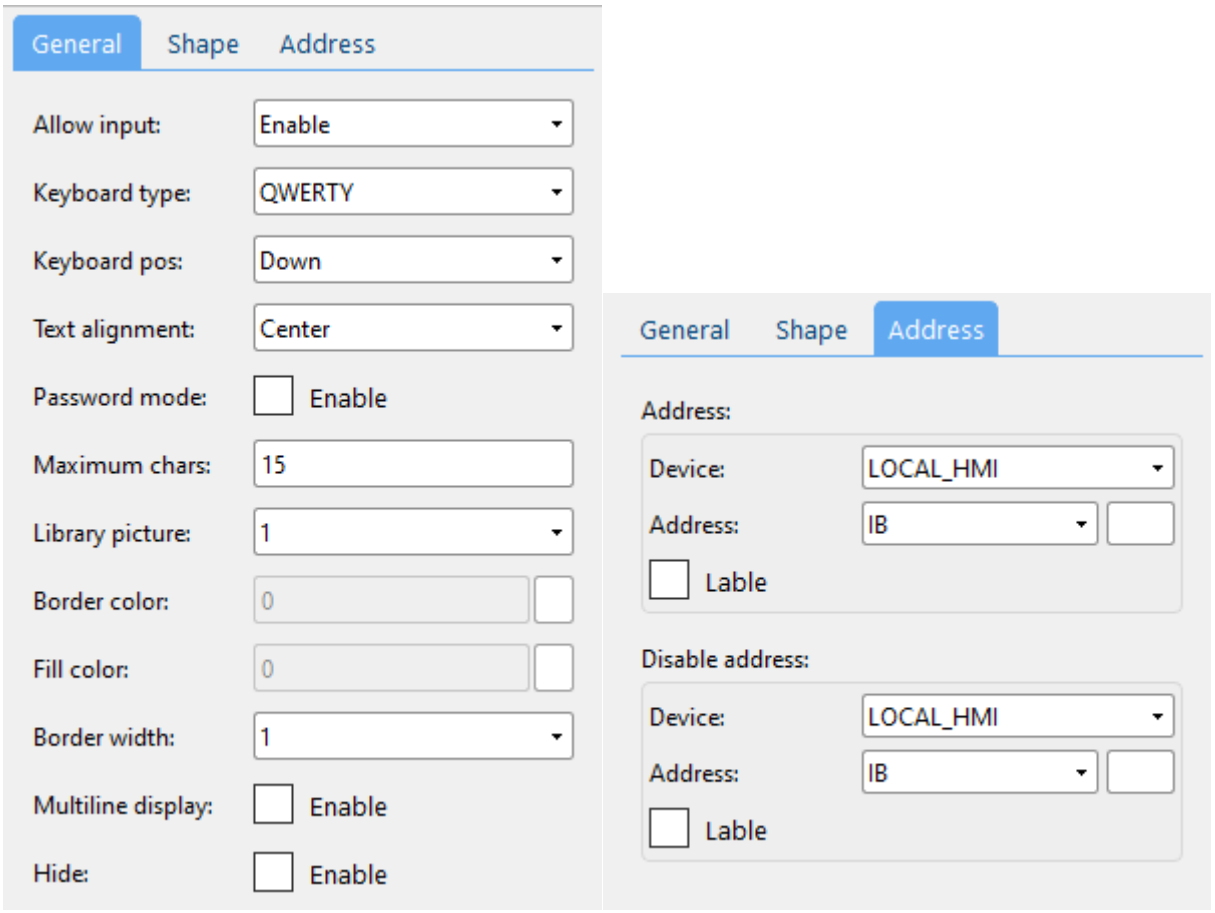
5.9.1 Overview

The [ASCII] object can be used to enter or display characters in the specified register.

5.9.2 Attributes

Click [Object]→click [ASCII] to bring up the [ASCII] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [page], you can set relevant attributes in the right window.



(1) General attributes

Allow input	[**enabled**]: you can manually enter the value to set the specified register. [**Disable**]: You cannot enter characters manually, and the input box is only used to display the value in the specified register. [**USB scan code**]: After a barcode is scanned by the USB code scanner, the scanned code content can be obtained automatically (in the code scanning mode, characters cannot be manually input, and only one object on a window can obtain the scanned code content)
Keyboard type	Character keyboard: English letters, special symbols, numbers, etc. Numeric keyboard: Numbers only.
Keyboard pos	Specify the keyboard pop-up position. Below: below the object. Above: above the object. Left: on the left side of the object. Right: on the right side of the object.
Text alignment	Left aligned, center-aligned and right aligned.

Password mode	When password mode is enabled, the entered characters are displayed with "*".
Maximum chars	Specify the maximum number of characters that can be entered.
Library picture	Draw icons by specified images. If this attribute is set to [Unspecified], the icon is specified by [**border color**] and [**fill color**].
Border color	When [**Library picture**] is set to [**Unspecified**], you can specify the icon border color.
Fill color	When [**Library picture**] is set to [**Unspecified**], you can specify the icon padding color.
Border width	Set the border width when using border color to draw the border.
Multiline display	When enabled, multiple lines can be displayed, and word wrapping is carried out when there is a line feed or when the number of characters exceeds the number of characters in one line. In multi-line display mode, the object is only used to display the characters in the specified register and the input function is not available. (The size of the object should be large enough to display multiple lines.)
Hide	When enabled, the object will be hidden.

(2) Address setting

Address	The register address referred to by the numerical object.
Disable address	Specify the register used to disable the object. When the value of the register is greater than 0, the function key will not be disabled. Otherwise, the function key will be disabled.

(3) Shape and other attributes settings are detailed in Chapter 4.

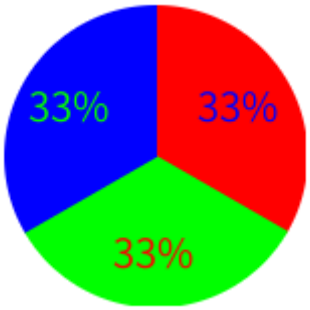
5.10 Pie chart

5.10.1 Overview

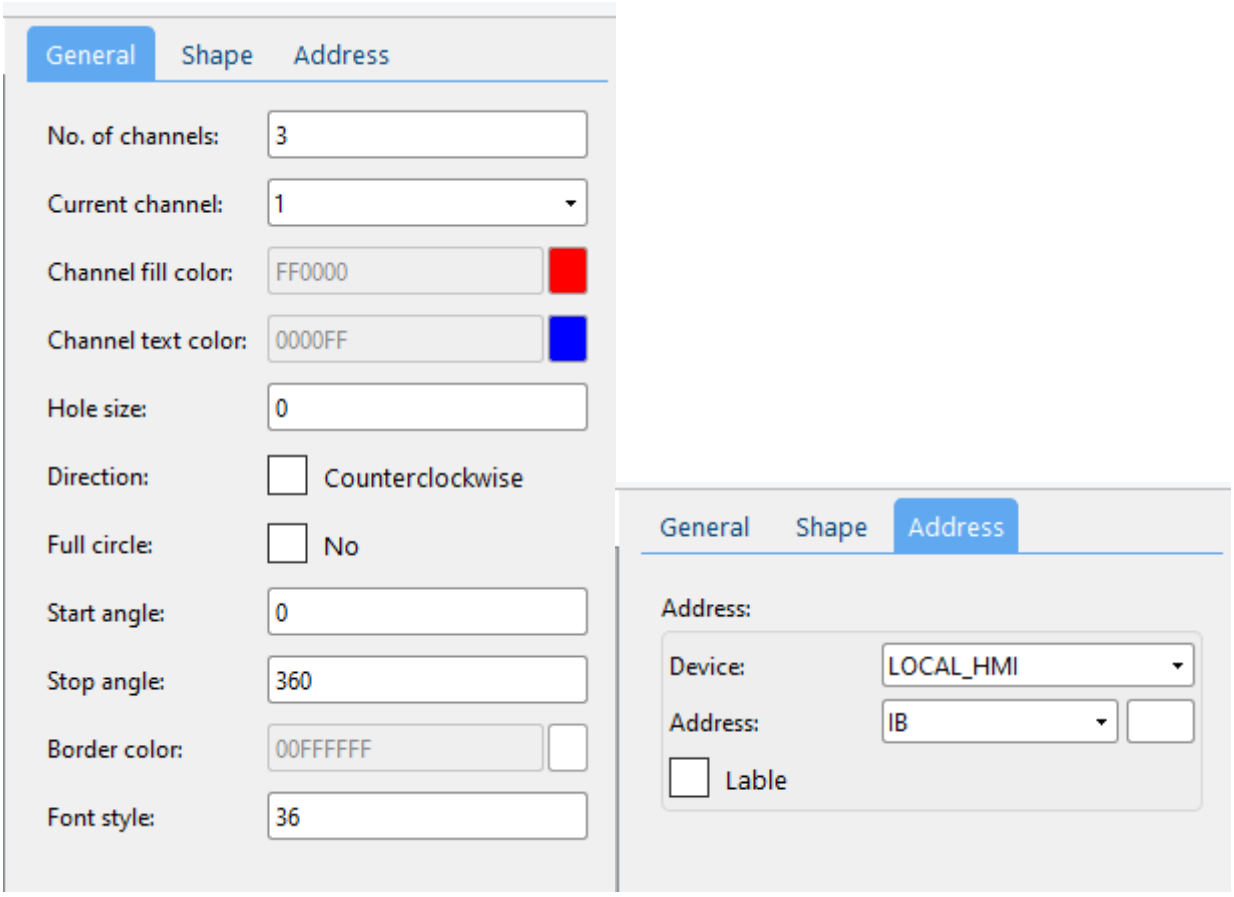
The [pie chart] object reads data from multiple channels in succession, starting from the specified address, and displays the proportion of these data by a pie chart.

5.10.2 Attributes

Click [object]→click [Chart]→click [pie chart] to bring up the [pie chart] object. Drag the object to the specified [window] and double-click on the object to place it.



After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attribute

No. of channels	The number of channels displayed in the pie chart, ranging from 2 to 16.
Current channel	You can select certain channel, set parameters i.e., padding color and font color.
Channel fill color	Set the padding color of **the selected channel**.
Channel text color	Set the font color of **the selected channel**.
Hole size	The size of the center of the pie chart is within 0 ~ 100 pixels.
Direction	Specify the pie chart direction. Not enabled: Clockwise Enabled: Counterclockwise
Full circle	If checked, the pie chart will not be all-round, and the end angle can be set.
Start angle **Stop angle**	The start angle can be set from 0 - 360 °and the end angle can be set from 0 - 360 °(If [full circle] is not checked, only the starting angle works, indicating the position of the 0 scale).
Border color	The border color of the pie chart can be set.
Style and decimals	The data style is specified by two digits. The first digit represents the font style. 1: No data is displayed. 2: The channel data is displayed. 3: The percentage of each channel (the angle number) is displayed. The second digit represents the number of decimal places, which can be set from 1 to 5. Only when the first digit is 2, the input decimals is valid. For instance, "**24**" means the channel data is displayed and 4 decimals are reserved.

(2) Address setting

Address	Start address for continuous data acquisition, based on the number of channels

(3) Shape and other attributes settings are detailed in Chapter 4.

5.11 Dynamic scale

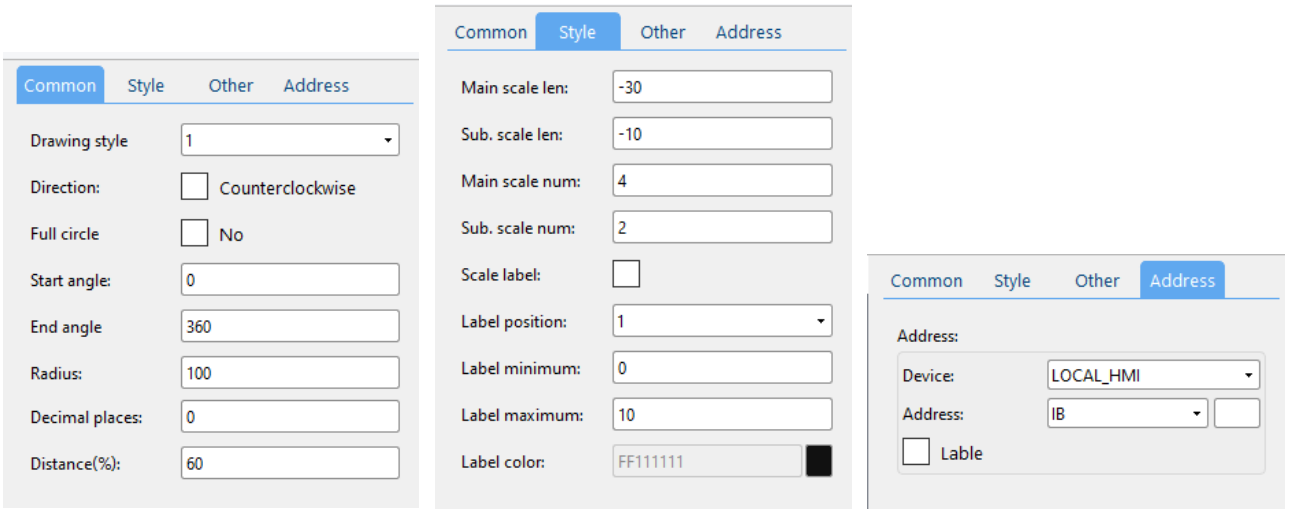
5.11.1 Overview

The [dynamic scale] object can be in different styles, such as circular, horizontal and vertical scales. The scale content is adjustable to provide scales for other objects such as [bar graph].

5.11.2 Attributes

Click [object]→click [chart]→click [dynamic scale] to bring up the [dynamic scale] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.

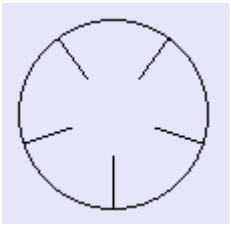
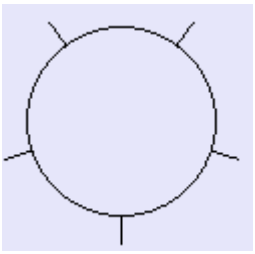


(1) Common attributes

Drawing style	1: horizontal scale 2: vertical scale 3: circular scale

Direction	When the [drawing style] is set as [circular scale], its direction can be specified from following options. Not enabled: clockwise Enabled: counterclockwise
Full circle	Valid when [Drawing style] is circular scale. If checked, the circular scale will not be all-round, and the end angle can be set.
Start angle **End angle**	The start angle can be set from 0 - 360 °and end angle can be set from 0 - 360 °(valid if the “no” label behind [full circle] is checked).
Radius	Specify the radius of the circle. This attribute should be set when [drawing style] is [circular scale].
Decimal places	Specify the decimal places, ranging from 0 to 6. No decimal part if this attribute is set to 0.
Distance	When [drawing style] is [circular scale], this attribute represents the distance percentage of [scale symbol] to the object.

(2) Style

Main scale len. **Sub scale len.**	Percentage length of scale to the object radius, from -100 to 100. -100~0: ratio of the inward scale length to the radius  0~100： ratio of the outward scale length to the radius 

Main scale num. **Sub scale num.**	The number of main/sub scales.
Scale label	Display the scale value or not. Enabled this attribute to display.
Label position	Specify the position of the scale value. Horizontal scale: 0-Displayed on the left. 1-Displayed on the right Vertical scale: 0-Displayed above scales. 1-Displayed below scales.
Label minimum **Label maximum**	When [scale label] is enabled, specify the maximum and minimum of the scale value.

(3) Address setting

Address	Specify [scale label], i.e., the starting address for the successive acquisition of [label minimum] and [label maximum], and if [label maximum] is set to 0, the minimum and maximum values are read from the registers corresponding to [Address] and its adjacent address, respectively.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.12 XY plot

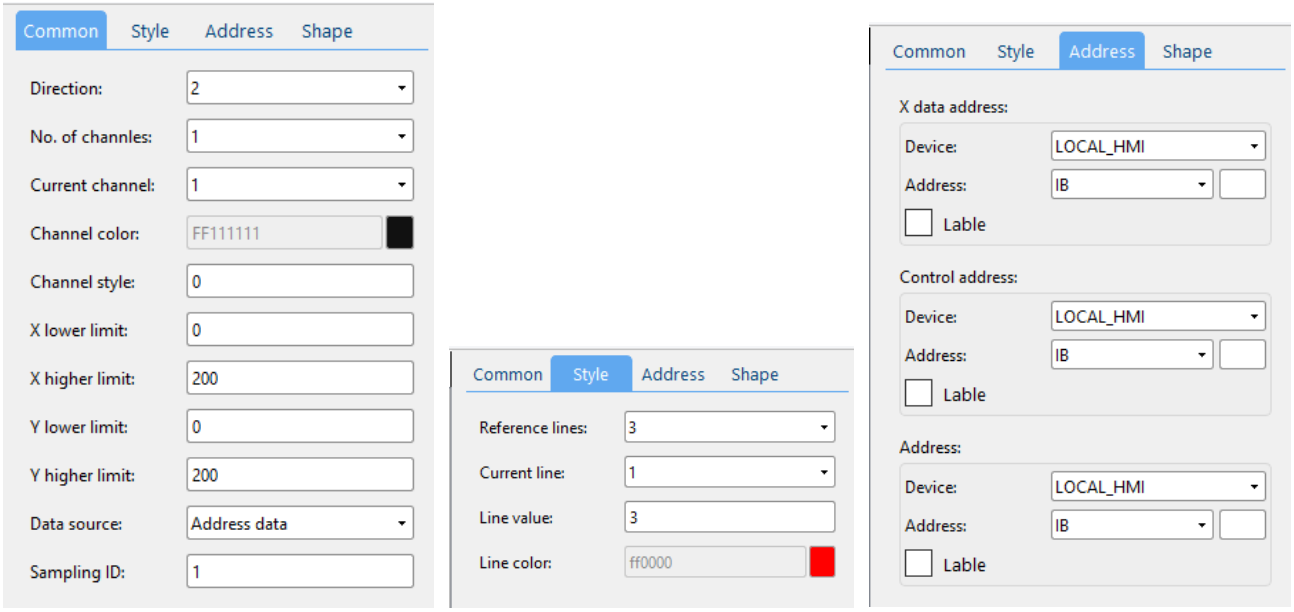
5.12.1 Overview

The [XY plot] object is used to display two-dimensional coordinates X and Y, including values of X and Y read from the specified register. Up to 16 sets of curves can be displayed at the same time. You can observe and analyze changes of data in each register by this graph. (Not available in the current version, please use the trend chart.)

5.12.2 Attributes

Click [object]→click [graph]→click [XY plot] to bring up the [XY plot] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) Common attributes

Direction

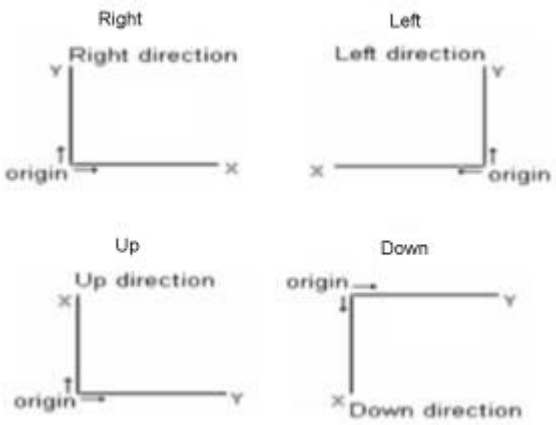
Specify the orientation of the coordinate map.

1：Towards the left.

2：Towards the right.

3：Upwards.

4：Downwards.



No. of channel(s)

The number of channel(s) ranges from 1 to 16.

If set to 2, the data of channel 1 will be obtained from the register corresponding to the [Address] and then the data of channel 2 will be obtained from the address adjacent to the [object address].

The number of the data is specified by the register corresponding to the [control address].

	It is similar when more than 2 channels are set.
Current channel	You can select certain channels to set parameters e.g., padding color and drawing style.
Channel color	Specify the curve color of the selected channel.
Channel style	Specify the curve style of the selected channel. **-1**: Padding in case of 1 channel and the orientation is towards the right **0**: Solid line with the width of 1 **1**: Dashed line with the width of 1 **2**: Dotted line with the width of 1 **3**: Dashed dotted line with the width of 1 **4**: Dashed double dotted line with the width of 1 **>4**: Solid line with the width of n, n=value-3
X/Y lower limit **X/Y higher limit**	The acquired XY axis data is drawn only within the s=upper and lower limits.
Data source	[Address data]: The data of the plot will be obtained from the register corresponding to the object. [Sampling data]: The data of the plot will be obtained from the recipe database.
Sampling ID	When the [Data source] is set to [Sampling data], specify the sampling ID of recipe database to obtain the data.

(2) Style

Reference lines	Specify the number of reference lines. Up to 4 reference lines.
Current line	You can select a reference line and make corresponding settings, such as current value and color.
Line value	Specify the value of the selected reference line.
Line color	Specify the color of the selected reference line.

(2) Address setting

X data address	Specify the starting address to continuously acquire X-axis data. If this address is specified, the X-axis data is acquired from this address. If this address is not specified, the X-axis is used to indicate the serial number of data.
Control address	Two consecutive values were obtained from this address. (1) Command 0：Redraw 1：Clear 2：Clear redraw (2) Number of data (single channel) This value defines the number of consecutive data acquired from the register corresponding to [**Address**].
Address	This address is the start address for continuous Y-axis data acquisition.

(4) Outline and other attributes settings are detailed in Chapter 4.

5.13 Bar graph

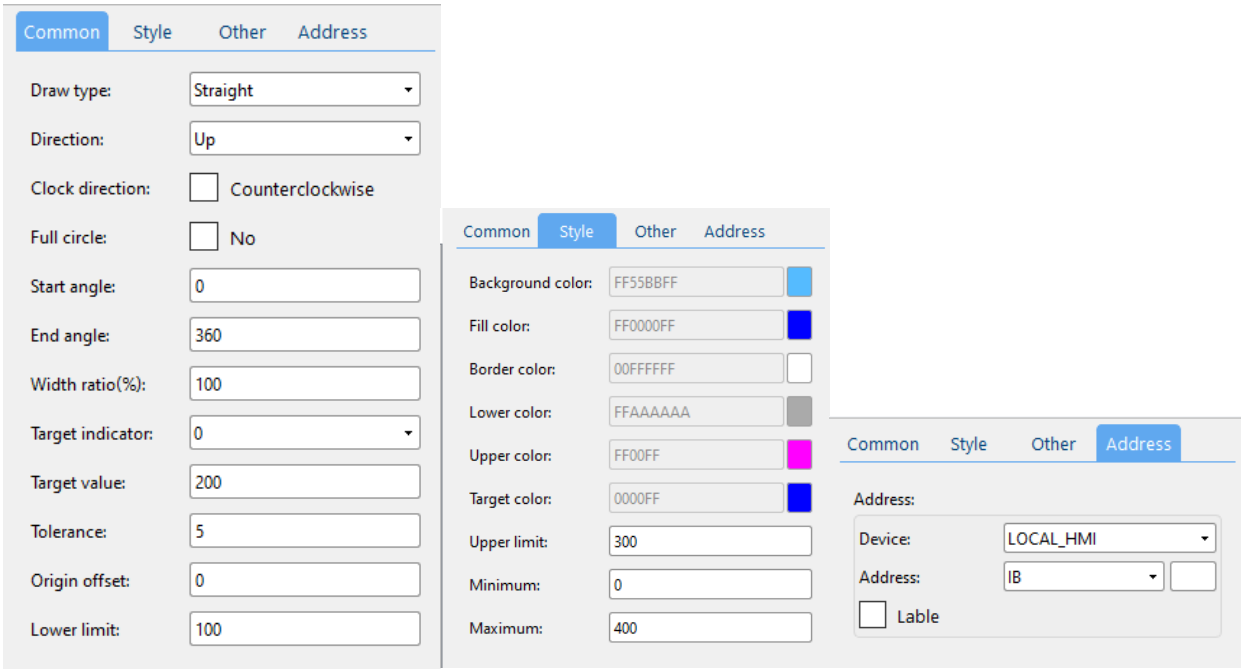
5.13.1 Overview

The [bar graph] object displays the data of the specified register in percentage.

5.13.2 Attributes

Click [object]→click [chart]→click [bar graph] to bring up the [bar graph] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Draw type	Straight: histogram round: circular diagram
Direction	Set this attribute when the [drawing type] is [straight]. [up], [down], [left], [right]
Clock direction	Valid only when [drawing type] is [round].
Full circle	If checked, the bar graph will not be all-round. The start and end angle can be set.
Start angle **End angle**	The start angle can be set from 0 - 360 °and end angle can be set from 0 - 360 °. This end angle is valid only if the “no” label behind [full circle] attribute is checked. (Note: The line between the center of the circle and the top of the circle is 0 °.)
Width ratio (%)	The ratio of the width of the histogram to the width of the object or the ratio of the radius of the circular diagram to the radius of the object.
Target indicator	Whether the target value is used. 0: not used 1: used
Target value	Valid when [Target indicator] is 1.

Tolerance	Specify the tolerance of the target value. If the target value is 100 and the error is 5, then the target range is from 95 to 105. If the data is within the target range, the data is displayed by the specified [**target color**]. (Valid when target attribute is 1).
Origin offset	Valid when the [drawing type] is a histogram, and 0 is the default origin.

(2) Style

Background color **Fill color** **Border color** **Lower color** **Upper color** **Target color**	Specify relevant colors for this object.
Upper limit	If the data is greater than the upper limit, the object will be in upper color.
Lower limit	If the data is smaller than the upper limit, the object will be in lower color.
Minimum **Maximum**	The data should be between the maximum and the minimum.

(3) Address setting

Address	Address to obtain data.

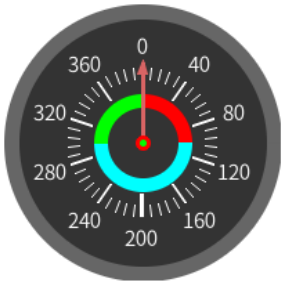
(4) Outline and other attributes settings are detailed in Chapter 4.

5.14 Meter Display

5.14.1 Overview

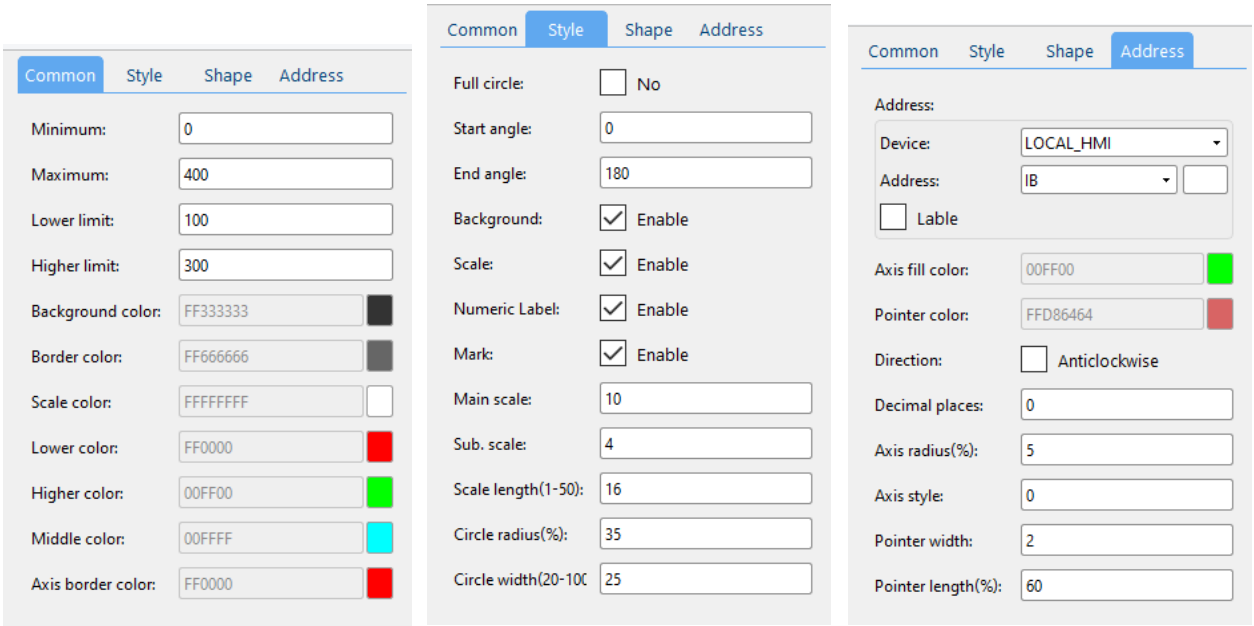
The [meter display] object can acquire the value in the specified register and display the data in the form of a meter.

5.14.2 Attributes



Click [object]→click [chart]→click [meter display] to bring up the [meter display] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.

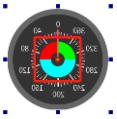


(1) General attributes

Maximum and minimum	The maximum and minimum of data. Data should be between the maximum and minimum values.
Lower limit	If the data is less than the [lower limit], [lower color] is rendered.
Higher limit	If the data exceeds the [higher limit], [higher color] is rendered. If the data is within the [lower limit] and [higher limit], [padding color] is rendered.
Background color **Border color**	Specify the color of the object.

Scale color
Scale frame color
Lower color
Higher color
Label color
Axis border color

(2) Style

Full circle	If checked, the meter will not be all-round, and the end angle can be set.
Start angle **End angle**	The start angle: 0 - 360 ° The end angle: 0 - 360 °(this attribute is valid only If all-round clock attribute is checked) (Note: The line between the center of the circle and the top of the circle represents 0 °)
Background	If enabled, the [background color] takes effect; if not, the background is transparent.
Scale	Enable or disable scales.
Numeric label	Enable or disable the numeric label.
Mark	Enable or disable marks.
Main scale **Sub scale**	Specify the number of main/sub scales.
Scale length (1-50)	The percentage of the main scale length to the size of the object: 0-50%.
Circle radius (%)	The distance percentage of the numerical value tab to the radius of the object: 0-50%.
Circle width (20-100)	The circle width is from 20 to 100%. 

(3) Address setting

Objects address	Address to obtain data.
Axis fill color	Color used to fill the inner circle.
Pointer color	Color of the pointer.
Direction	Counterclockwise/clockwise within the ranges of minimum and maximum values.
Decimal places	The decimal number of the numerical value tab.
Axis radius (%)	Axis radius as a percentage of object radius.
Axis style	Style of the axis shape. 0: circle 1: square
Pointer width	Width of the pointer.
Pointer length (%)	A percentage from 0 to 100%, and actual length of the pointer = percentage × maximum radius.

(4) Shape and other attributes settings are detailed in Chapter 4.

5.15 QR code

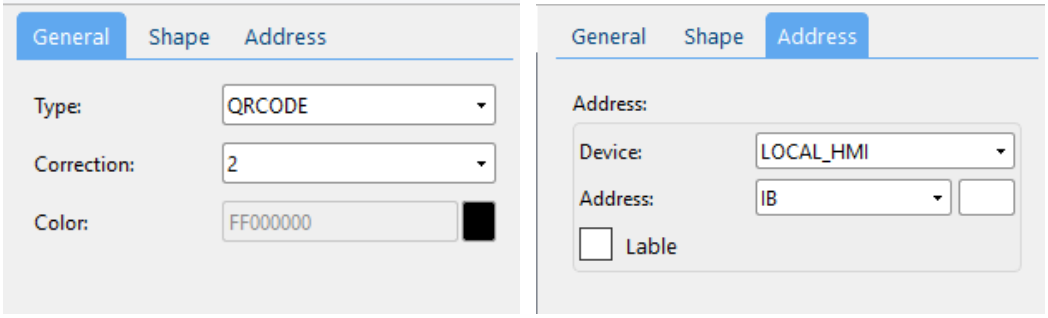
5.15.1 Overview

Display strings by a QR code.

5.15.2 Attributes

Click [object]→click [barcodes] →click [QR Code] to bring up the [QR Code] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attribute：

Type	The standard by which the code is drawn. AZTEC Code QR Code
Criteria	This attribute is effective when the **type** is a [QR code]. QR codes have the “correction ability”. Even if the code becomes dirty or broken, the data can be automatically recovered. This “correction ability” has four levels, and its strength increases with the higher level, but the size of the code also becomes larger as the amount of data increases. You should take the actual situation and the code size into consideration to select the appropriate level. In the factory and other environments susceptible to dirt, you can choose level Q or H. In a less dirty environment with more data is, level L is recommended. In general, most users choose level M (15%). Criteria 1, 2, 3, 4 for QR codes corresponding to LEVEL_L, LEVEL_M, LEVEL_Q, LEVEL_H, respectively. L (Low): 7% of the word code can be corrected. M (Medium): 15% of the word code can be corrected. Q (Quartile): 25% of the word code can be corrected. H (High): 30% of the word code can be corrected.
Size	Size of the QR code.
Color	Color of the QR code.

(2) Address setting

Address	Read the characters in the address and convert these characters to a QR code.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.16 Alarm bar

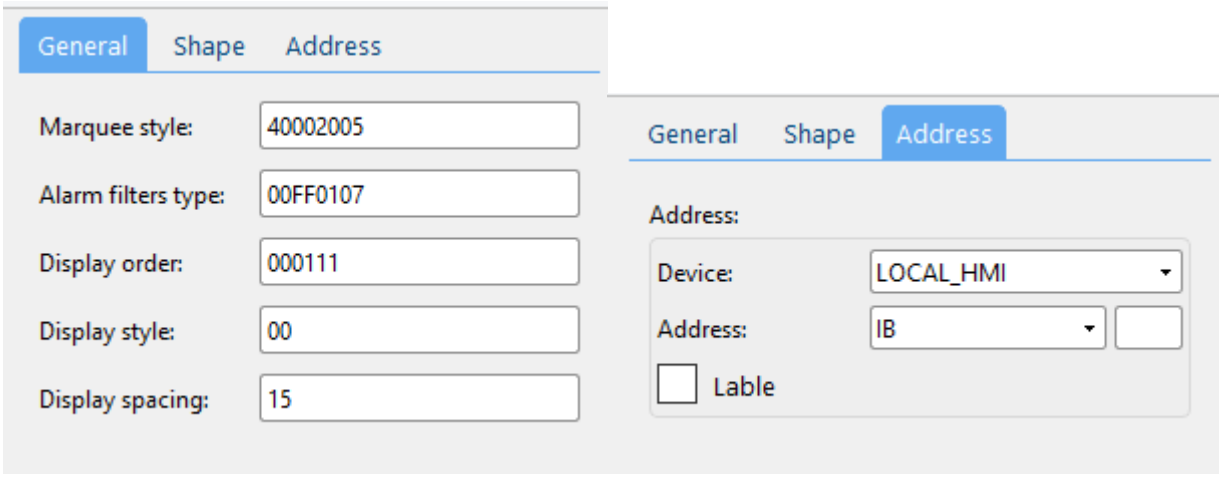
5.16.1 Overview

A single-line marquee is used to display the events defined in [Event log] and having occurred.

5.16.2 Attributes

Click [Sampling/Data] → click [Alarm Bar] to bring up the [Alarm Bar] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes：

Marquee style	Refer to [Marquee style] in [Lamp].

Alarm filter type	Filtering alarm events 00FF0107 00: Initial alarm type. Value range: 00~FF FF: Termination alarm type. Value range: 00~FF 01: Sorting type. 0-chronological order and 1-reverse chronological order. 07: The specified alarm data source. 0: All alarms in the real-time buffer. 1: In the real-time buffer, the acknowledged alarms. 2: In the real-time buffer, the unacknowledged alarms. 3: In the real-time buffer, the alarms that do not require acknowledgment. 4: In the real-time buffer, the alarms that have been disarmed. 5: In the real-time buffer, the alarms that are not disarmed 6: In history, the acknowledged alarms. 7: In history, the unacknowledged alarms. 8: In history, the alarms that do not require acknowledgment. 9: In history, the alarms that have been disarmed 10: In history, the alarms that are not disarmed. 11: All alarms in history.
Display order	000111: Specify the display sequence, and whether the content is displayed. The last three bits of 111 indicate that date, time and events are all displayed 001 indicates that only the alarm event is displayed 010 means only the alarm time is displayed 100 means only the alarm date is displayed The first three bits represent the display style 000 is default date-time-events 001 is time-date-events 010 is date-events-time 011 is time-events-date

	100 is events-date-time 101 is events-time-date
Display style	00: Display style of date and events The first bit represents the date: 0-YY/MM/DD and 1-YY.MM.DD HH The second bit represents the time: 0-HH:MM:SS and 1-HH:MM
Display spacing	Spacing between different content

(2) Address setting

Address	Address of the register corresponding to the object

(3) Shape and other attributes settings are detailed in Chapter 4.

5.17 Time/Date

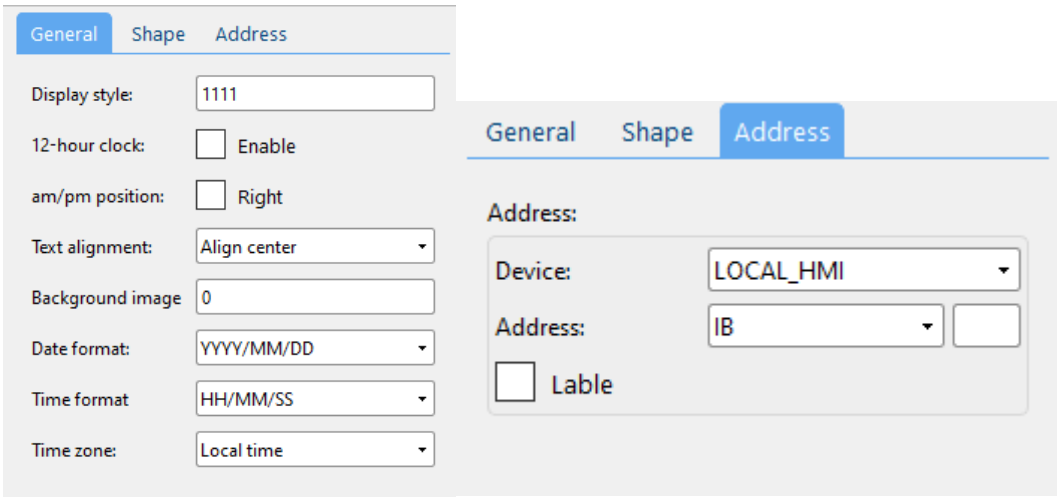
5.17.1 Overview

Real-time display of time and date.

5.17.2 Attributes

Click [Object]→click [time-related] →click [Date/Time] to bring up the [Date/Time] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes：

Display style	Display style: 1111 Lower 3 bits represents whether date, week and time are displayed. 1 means displayed, and 0 means not displayed E.g., 111 means date - week – time and 101 means the date – time Highest bit: 1xxxx; 1 means transparent background color, and 0 means opaque background color.
12-hour clock	The default is 24-hour clock. If checked, time will be displayed in 12-hour clock.
am/pm position	Valid when [12-hour clock] is checked. The default is on the left, when checked, am/pm is on the right.
Text alignment	Align center; Align left; Align right.
Background image	Background color can be replaced with a background image. Valid when the index is greater than 0.
Data format	0: YYYY/MM/DD 1: MM/DD/YYYY 2: DD/MM/YYYY
Time format	0: HH/MM/SS 1: HH/MM
Time zone	Local Time; UTC time.

(2) Address setting

Address	Address of the register corresponding to the object.

(3) Shape and other attributes settings are detailed in Chapter 4.

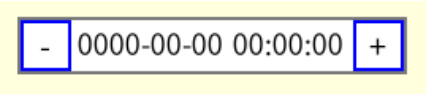
5.18 Input Date/Time

5.18.1 Overview

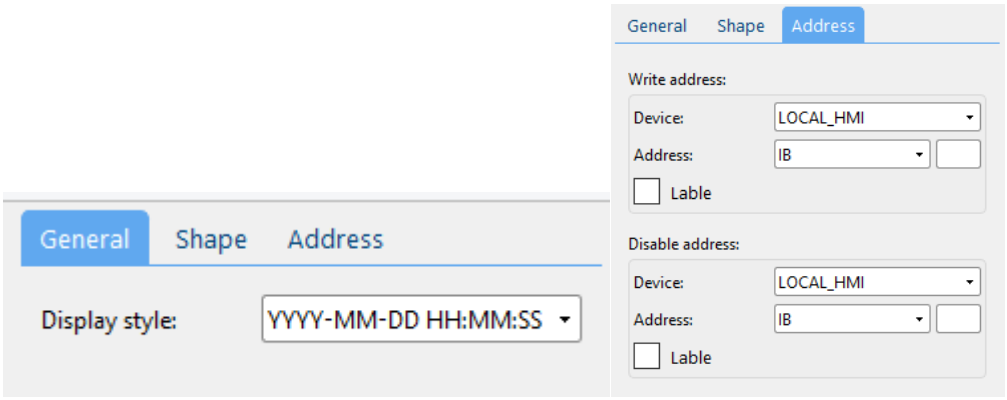
Write specified date and time to the corresponding register.

5.18.2 Attributes

Click [Object]→click [time-related] →click [Input Date/Time] to bring up the [Input Date/Time] object. Drag the object to the specified [window] and double-click on the object to place it.



After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes：

Display style	You can choose from the following three modes. YYYY-MM-DD HH:MM:SS YYYY-MM-DD HH:MM:SS

(2) Address setting

Write address	The date and time entered by the user will be converted into a timestamp and written to this address. The data type of the register corresponding to this address should be at least

	unsigned int type, so as to prevent the value of the timestamp from being out of range when the value of the time stamp is too large to write into the register. Select QD as the type of the local HMI register. When the register type is inappropriate, the date and time are displayed as 0000:00:00 00:00:00, and cannot be modified.
Disable address	Specify the register used to disable the function key. When the value of the register is 0, the function key will not be disabled. Otherwise, the function key will be disabled.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.19 Table

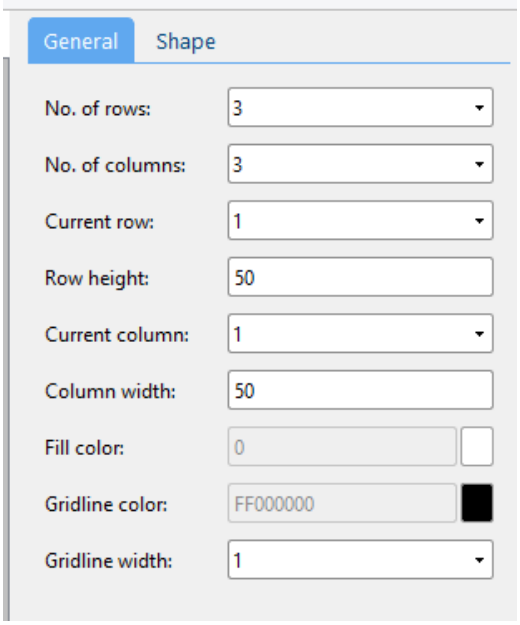
5.19.1 Overview

Add a table to the window and set the border, grid and padding style.

5.19.2 Attributes

Click [object]→click [table] to bring up the [table] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes：

No. of rows **No. of columns**	Set the number of rows and columns.

Current row **Row height**	Set the height of the specified row.
Current column **Column width**	Set the width of the specified column.
Fill color	Set the color used to fill the table.
Gridline color	Set the color of the gridlines.
Gridline width	Set the width of the gridlines.

5.20 Custom table

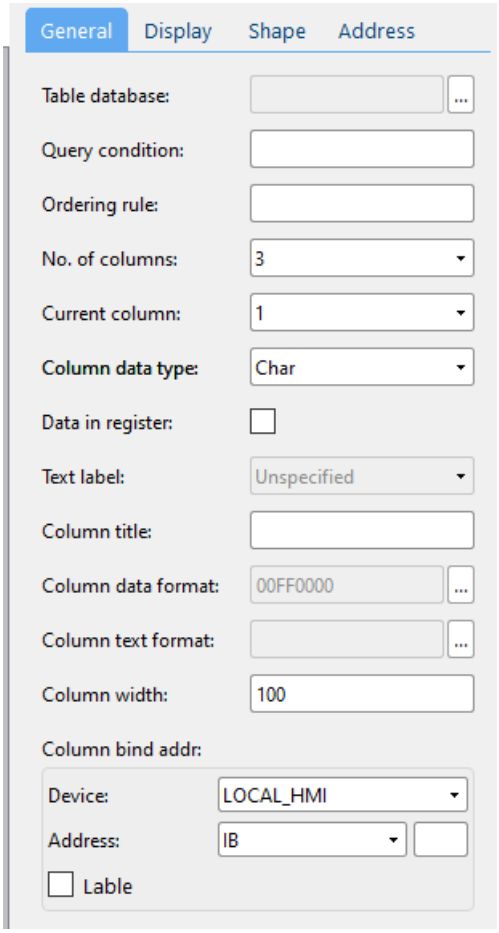
5.20.1 Overview

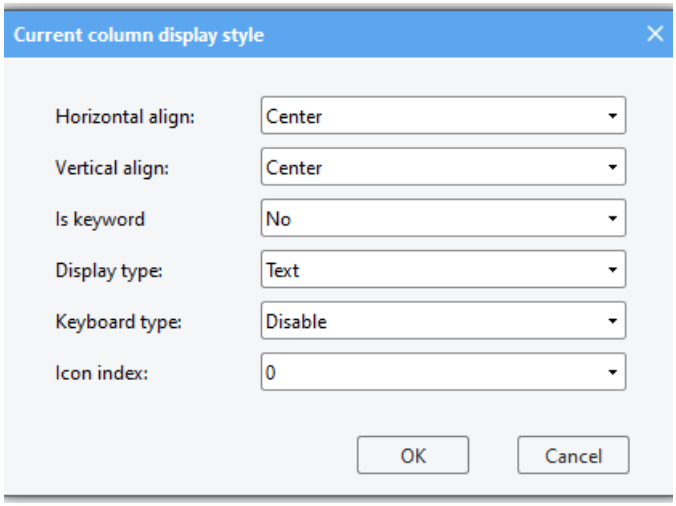
Adding custom tables to the window allows for the inclusion of custom tables, with the ability to manage table data sources and formats through attribute settings or database forms.

5.20.2 Attribute Settings

Pressing the [Object] button on the menu bar, followed by the [Table] button on the toolbar, and then selecting the [Custom Table] button will open a [Custom Table] object. Drag and drop the object to the specified [page] to add a new [Custom Table].

After selecting the object in the [page], you can set the relevant properties in the window on the right side.


General
Display
Shape
Address
Table database:
Query condition:
Ordering rule:
No. of columns:
3
Current column:
1
Column data type:
Char
Data in register:
Text label:
Unspecified
Column title:
Column data format:
00FF0000
Column text format:
Column width:
100
Column bind addr:
Device:
LOCAL_HMI
Address:
IB
Lable


Current column display style
Horizontal align:
Center
Vertical align:
Center
Is keyword
No
Display type:
Text
Keyboard type:
Disable
Icon index:
0
OK
Cancel

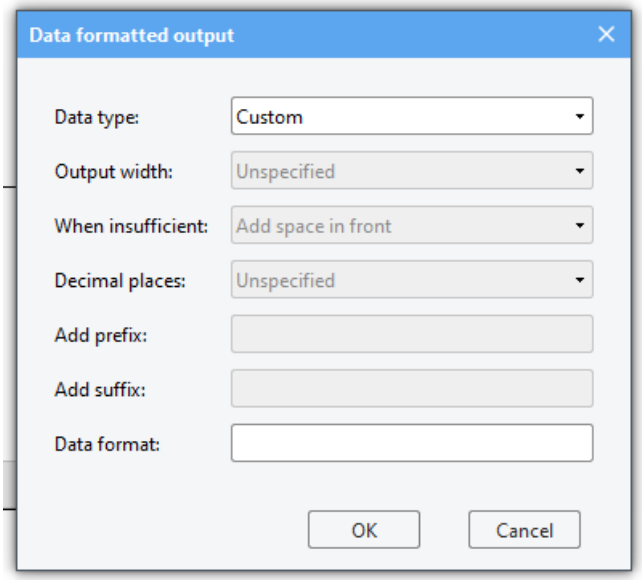


Table database	Set up the table-related database
Query condition	Currently not available
Ordering rule	Currently not available
No. of columns	Set the total number of columns to be displayed
Current column	Select the column currently being edited
Column data type	Set the data type of the current column. Select "Auto-Increment" for the Integer type, where each additional data entry increases the value by one. Select "Label" type to enable text label functionality.
Data in register	When selected, the data is determined by the value in the register. When not selected, it defaults to the preset value.
Text label	Available when the data type is Label. Choose the desired label based on the settings in the Text Label module.
Column title	Set the display title for the current column
Column data format	Set the display style for the current column (refer to the table above)
Column text format	Set the text format for the current column (refer to the table above)
Column width	Set the width of the current column in the table

Column bind addr	Set the associated address for the current column. When clicking on a row in the table, the data from each column of that row will be written to the corresponding associated address.

Table database setting

Rows	Pre-set the number of rows in the custom table
Field name	Automatically generated and cannot be modified
Data type	Set in "General Properties", displayed here for reference only and cannot be modified
Address range	If using local registers, this can be left unset
Preset value	If the data type is selected as xxx type, then the cell value reading address needs to be pre-set.
Read address	If the data type is selected as Register: xxx type, then the register address needs to be set.

Column display setting

Horizontal / vertical align	Arrangement of content within the table horizontally/vertically.
Is keyword	Currently not available.
Display type	Text or image type can be selected, such as indicators/lights, buttons, switches, etc.
Keyboard type	When the display type is selected as text.
Icon index	When the display type is selected as image type, you can select the desired image based on the index. The index here corresponds to the index in the image library.

Data formatted setting

Data type	Set the format for displaying data, with options like custom, text, signed integer, etc.

Output width	Set the output width; available when the data format is not text.
When insufficient	Determine how to handle the data when the output width is insufficient; available when there is a limit on the output width.
Decimal places	Set the number of decimal places; available when the data format is floating-point.
Add prefix/suffix	Set fixed prefixes and suffixes for data display; available when the data format is not custom.
Data format	Automatically generate the display format based on previous selections. Alternatively, user can directly input the format here, and after saving, it will be applied accordingly to the previous selections.

Address setting

Address	When the control address of the function key matches this address, the functionality of the component can be controlled through the setting of the function key value. The specific definitions are as follows: 1: Add; 2: Delete; 3: Save; 4: Previous Page; 5: Next Page; 6: Left column; 7: Right column.

5.21 Static/Dynamic Text

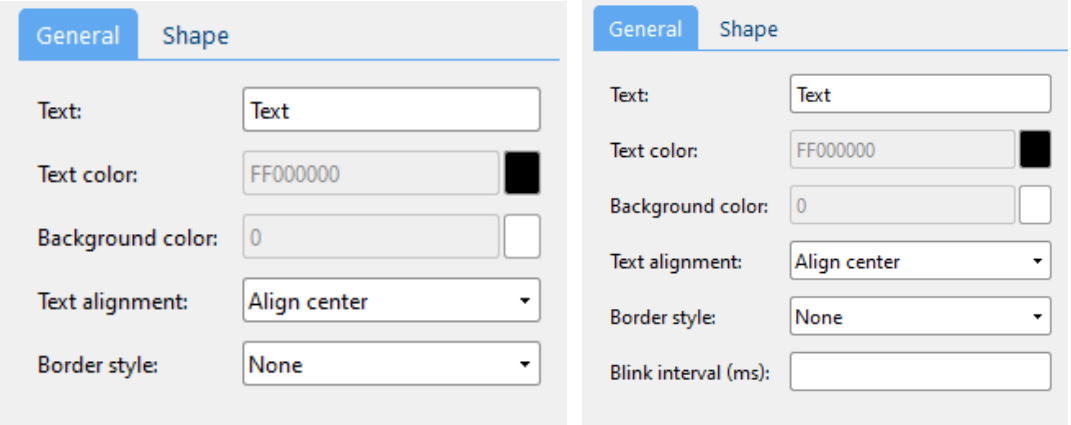
5.21.1 Overview

Add text to the window, and set the font, color, size and various related attributes.

5.21.2 Attributes

Click [object]→click [text] →click [Static text]/[Dynamic text] to bring up the [Static text]/[Dynamic text] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes:

Text	Specify the content displayed by the object.
Text color	Specify the color of text content.
Background color	Specify the text background color
Text alignment	Specify the text alignment
Border style	Specify the border style. (Only dynamic text has this attribute)
Blinking interval (MS)	Specify the blinking interval. The unit is MS. (Only dynamic text has this attribute)

(2) Shape and other attributes settings are detailed in Chapter 4.

5.22 Picture

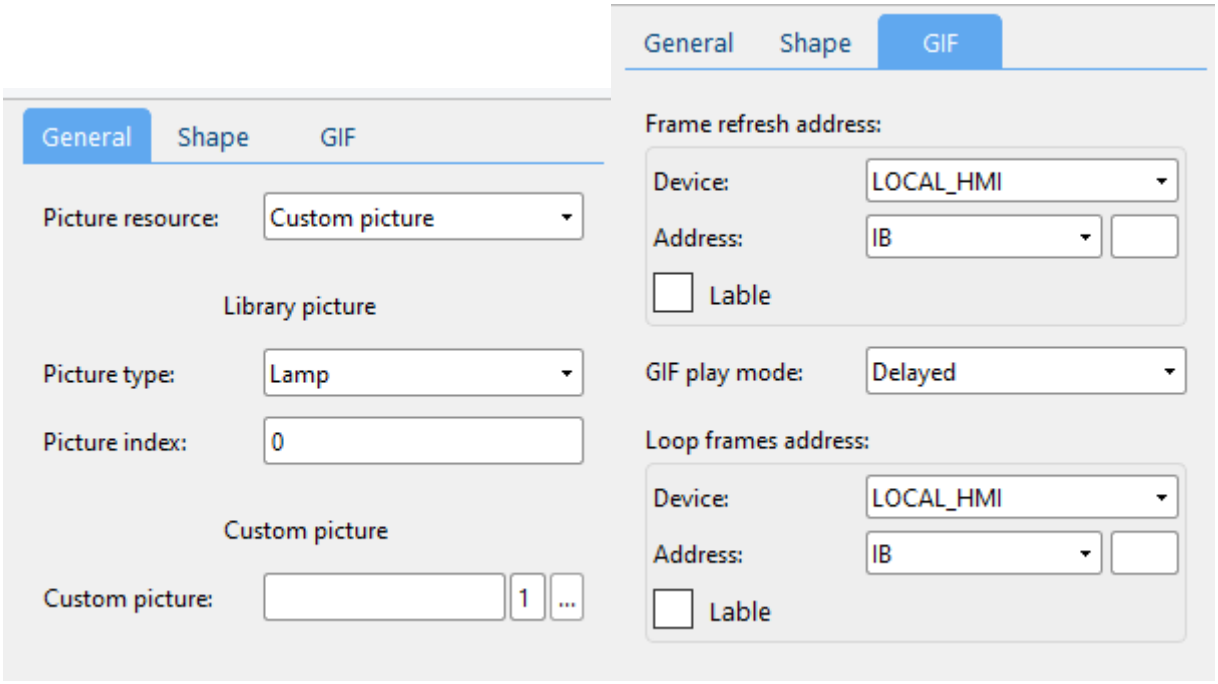
5.22.1 Overview

Add picture from the system or custom picture to the window.

5.22.2 Attributes

Click [object]→click [picture] →click [Static text]/ [Dynamic text] to bring up the [Static text]/ [Dynamic text] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes:

Picture source	Specify the picture source: [custom picture], [library picture]
Picture type	Specify the type of the library picture.
Picture index	Specify the index of the chosen picture.
Custom picture	You need to input the number of small icons in customized pictures. Then click the button to select pictures.  For example, the number of small icons is 2 in the right picture. 

(2) GIF

Frame refresh address	If the [Picture source] is [custom picture] and the selected picture is in gif format, a certain frame in the gif picture can be displayed by setting the value of the frame refresh address register. If this register is set to 0, the 0th frame of the gif image will be displayed. If it is set to 1, the 1st frame of the gif image will be displayed...
GIF play mode	Delayed: When spanning from the current frame to the specified frame, the process of the span will be played.

	Instant: When spanning from the current frame to the specified frame, the process of the span will not be played. Delayed loops: When spanning from the current frame to the specified frame, the process of the span will be played. Some frames after the specified frame starts to play in a loop. Instant loops: When spanning from the current frame to the specified frame, the process of the span will not be played. Some frames after the specified frame start to play in a loop. [Loop frames address] should be set to specify the number of the frames To be played in a loop. If the register of the loop frames address is set to 5, the 5 frames after the specified frames will be played in a loop.
Loop frames address	The number of the frames to be played in a loop will be obtained from this address when loop playback is required.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.23 History data view

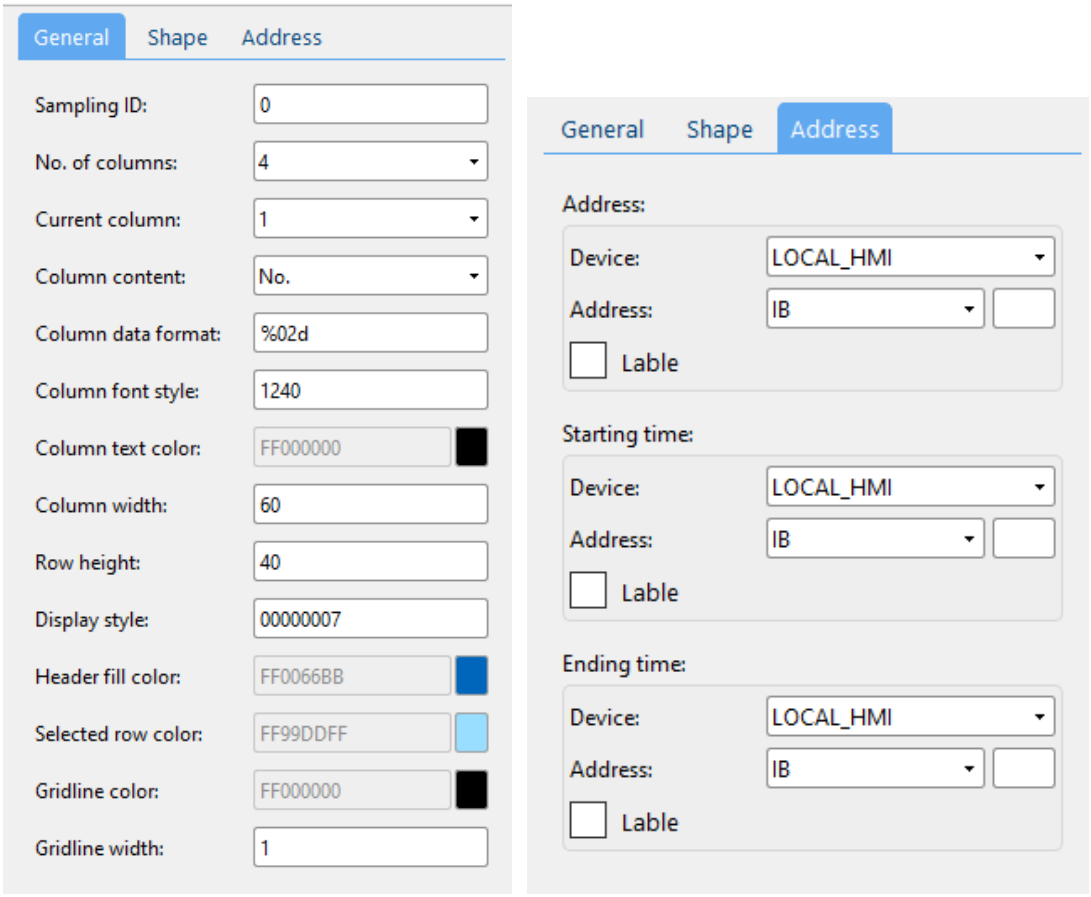
5.23.1 Overview

[History data view] displays data in the database of alarm events

5.23.2 Attributes

Click [Sampling/Data] →click [History data view] to bring up the [History data view] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes：

Sampling ID	Specify to display the information in [data sampling]. You can check all the data sampling in the module, and the ID number is the serial number of a certain data sampling.
No. of columns	Set the total number of columns in the table
Current column	You can select a column to set the corresponding attributes, such as font color, table width, etc.
Column content	Set title of the selected column
Column data format	The display style of the selected column. E.g., %02d means that the data is displayed in two integers. Note: The set [Column data format] should correspond to the data type of the register, so as to avoid the mismatch between the displayed value and the actual value in the register. Float: %f, %10.2f. Double: %lf

Column Font style	Font style BIT0~2: 000, 001: bold; 010: italic; 100 underline. Horizontal alignment BIT3~4: 01-left-aligned; 00-center-aligned; 10-left-aligned Vertical alignment BIT5~6: 01-top-aligned; 00-center-aligned; 10-bottom-aligned Font size BIT 8~15: E.g., 1240(hexadecimal) means that font size is 18, font style is bold, and alignment is horizontally centered and vertically bottom.
Column text color	Set the text color of the selected column
Column width	Set the width of the selected column
Row height	Set the height of each row
Display style	0x00000001 // horizontal lines 0x00000002 // vertical lines 0x00000004 // the title bar 0x00000008 // the scrolling register control function 0x00000010 // the database management function 0x00000020 // data in descending order 0x00000040 // data in ascending order 0x00000080 // data automatic update 0x00000100 // the confirmation control function 0xF0000000 // how to display time F position 0:HH:MM:SS;1:HH:MM;2:DD:HH:MM;3:HH; 0x0F000000 // how to display date F position: 0:MM/DD/YY,1:DD/MM/YY, 2:DD.MM.YY, 3:YY/MM/DD
Header fill color	Specify the padding color of title column.
Selected row color	Specify the padding color of the selected row.

Gridline color	Specify the gridline color
Gridline width	Specify the gridline width

(2) Address

Address	After setting, you can use the [function key] to control refresh and other operations.
Starting time **Ending time**	Filter the displayed data according to the data time and the set starting/ending time.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.24 Recipe view

5.24.1 Overview

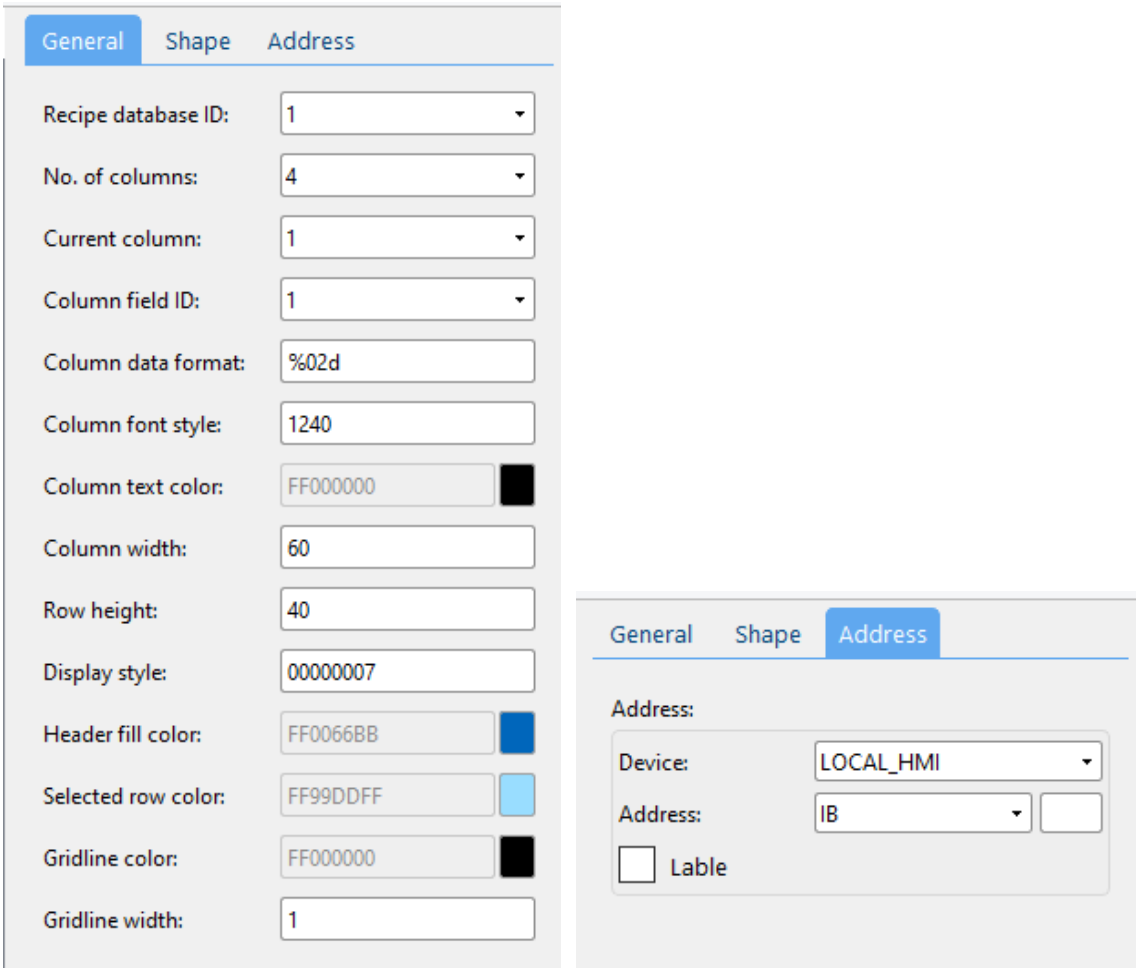
The [recipe view] can display relevant information in the recipe database.

5.24.2 Attributes

Click [Sampling/Data] →click [recipe view] to bring up a [recipe view] object.

After selecting the object in the [page], you can set relevant attributes in the right window. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Recipe database ID	Specify which database file in the recipe database is displayed. You can check which database files are available in the [recipe database] module, and the ID number is the database serial number.
No. of column	Set the total number of columns
Current column	You can select a column to set the corresponding attributes, such as font color, table width, etc.
Column field ID	Set the displayed field of the current column.
Column data format	The display style of the selected column. E.g., %02d means that the data is displayed in two integers. Note: The set [Column data format] should correspond to the data type of the register, so as to avoid the mismatch between the displayed value and the actual value in the register.

	Float: %f, %10.2f. Double: %lf
Column font style	Font style BIT0~2: 000, 001: bold; 010: italic; 100 underline Horizontal alignment BIT3~4: 01-left-aligned; 00-center-aligned; 10-left-aligned Vertical alignment BIT5~6: 01-top-aligned; 00-center-aligned; 10-bottom-aligned Font size BIT 8~15: E.g., 0x1240 means that font size is 18, font style is bold, and alignment is horizontally centered and vertically bottom.
Column text color	Set the text color of the selected column.
Column width	Set the width of the selected column
Row height	Set the height of each row
Display style	0x00000001 // horizontal lines 0x00000002 // vertical lines 0x00000004 // the title bar 0x00000008 // the scrolling register control function 0x00000010 // the database management function 0x00000020 // data in descending order 0x00000040 // data in ascending order 0x00000080 // data automatic update 0x00000100 // the confirmation control function 0xF0000000 // how to display time F position 0:HH:MM:SS;1:HH:MM;2:DD:HH:MM;3:HH; 0x0F000000 // how to display date F position: 0:MM/DD/YY,1:DD/MM/YY,2: DD.MM.YY,3: YY/MM/DD

Header fill color	Specify the padding color of the header.
Selected row color	Specify the padding color of the selected row
Gridline color	Specify the gridline color.
Gridline width	Specify the gridline width.

(2) Address

Address	There is no need to set the address in current version.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.25 Operation log view

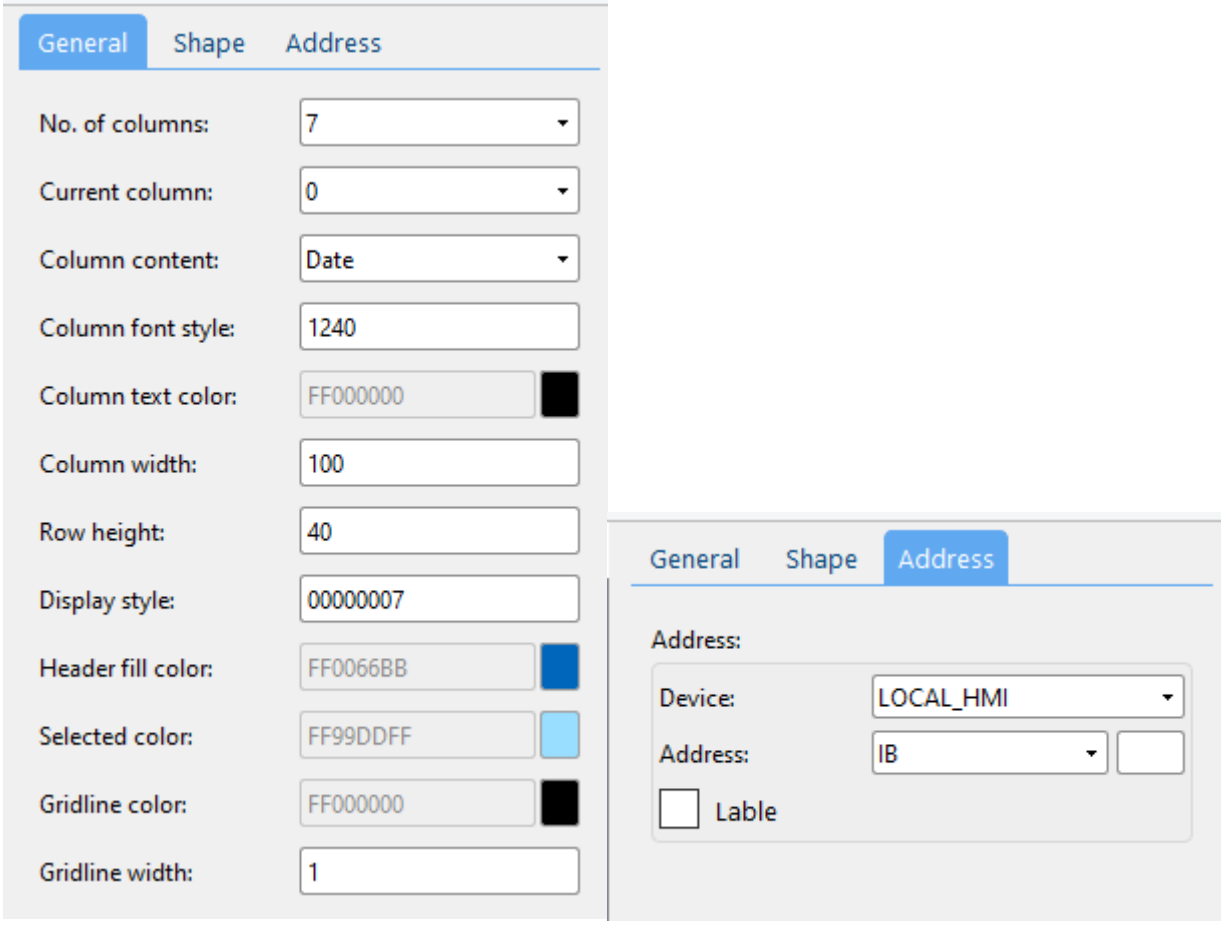
5.25.1 Overview

[Operation log view] can be used to view user operation logs.

5.25.2 Attributes

Click [Sampling/Data]→click [operation log view] to bring up an [operation log view] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Operation log address	Specify the source of the operation log
Number of columns	Set the total number of columns
The selected column	You can select a column to set the corresponding attributes, such as font color, table width, etc.
Content	Set content of the selected column
Text style	Font style BIT0~2: 000, 001: bold; 010: italic; 100 underline Horizontal alignment BIT3~4: 01-left-aligned; 00-center-aligned; 10-left-aligned Vertical alignment BIT5~6: 01-top-aligned; 00-center-aligned; 10-bottom-aligned Font size BIT 8~15: E.g. 0x1240 means that font size is 18, font style is bold, and alignment is horizontally centered and vertically bottom.

Text color	Set the text color of the selected column
Table width	Set the width of the selected column
Row height	Set the height of each row
List display style	0x00000001 // horizontal lines 0x00000002 // vertical lines 0x00000004 // the title bar 0x00000008 // the scrolling register control function 0x00000010 // the database management function 0x00000020 // data in descending order 0x00000040 // data in ascending order 0x00000080 // data automatic update 0x00000100 // the confirmation control function 0xF0000000 // how to display time F position 0:HH:MM:SS;1:HH:MM;2:DD:HH:MM;3:HH; 0x0F000000 // how to display date F position: 0: MM/DD/YY, 1: DD/MM/YY, 2: DD.MM.YY, 3: YY/MM/DD
Padding color	Specify the padding color of title column
Row color	Specify the padding color of the selected row
Gridline color	Specify the gridline color
Gridline width	Specify the gridline width

(2) Address

Address	There is no need to set the address in current version.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.26 Alarm view/Event view

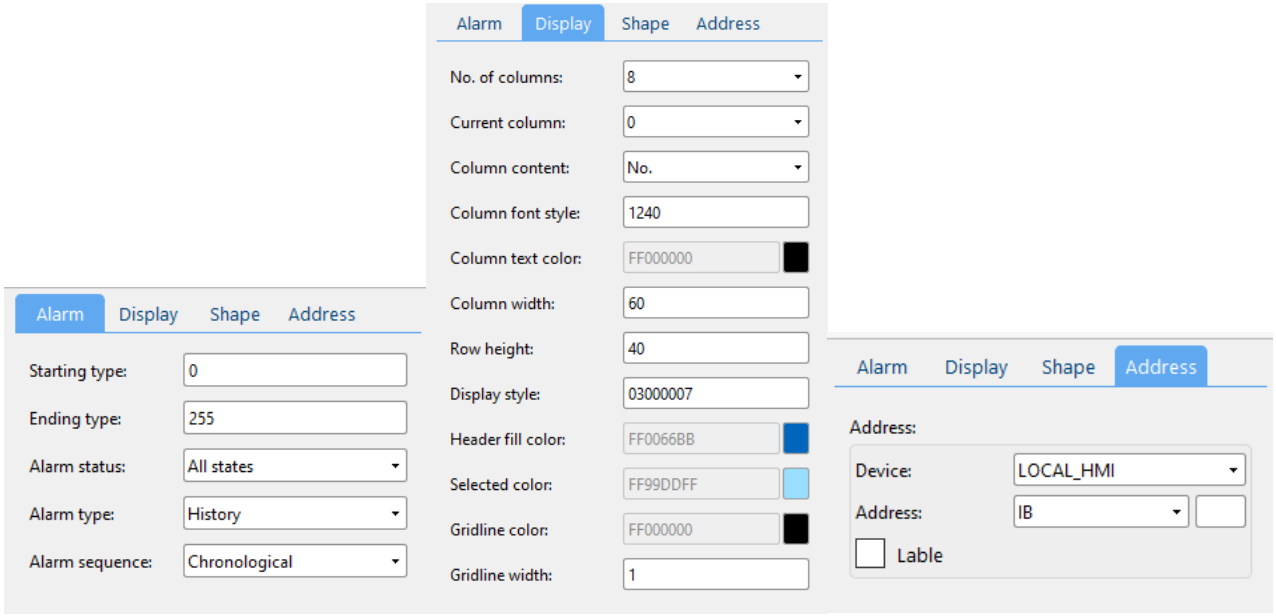
5.26.1 Overview

[Alarm view]/[Event view] can be used to view alarm information.

5.26.2 Attributes

Click [Sampling/Data] → click [Alarm view]/[event view] to bring up an [Alarm view]/[Event view] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) Alarm

Starting type	Filter the displayed alarm event starting type.
Ending type	Filter the displayed alarm event ending type. The object will display the alarm events from the starting type to the ending type.
Alarm status	You can select from the following options: [all states], [confirmed], [unconfirmed], [no confirmation required], [cleared], [not cleared]. The object will only display the contents of the selected option.
Alarm type	You can select from [real-time], [history] and [all]. All alarms will be displayed if you choose [all] and [alarm status] will become invalid.
Alarm sequence	You can select from [chronological] and [time reversal].

(2) Display

No. of columns	Set the total number of columns in the table.
Current column	You can select a column to set the corresponding attributes, such as font color, table width, etc.
Column content	Set content of the selected column.
Column font style	Font style BIT0~2: 000, 001: bold; 010: italic; 100 underline Horizontal alignment BIT3~4: 01-left-aligned; 00-center-aligned; 10-left-aligned Vertical alignment BIT5~6: 01-top-aligned; 00-center-aligned; 10-bottom-aligned Font size BIT 8~15: E.g., 0x1240 means that font size is 18, font style is bold, and alignment is horizontally centered and vertically bottom.
Column text color	Set the text color of the selected column.
Column Width	Set the width of the selected column.
Row height	Set the height of each row.
Display style	0x00000001 // horizontal lines 0x00000002 // vertical lines 0x00000004 // the title bar 0x00000008 // the scrolling register control function 0x00000010 // the database management function 0x00000020 // data in descending order 0x00000040 // data in ascending order 0x00000080 // data automatic update 0x00000100 // the confirmation control function 0xF0000000 // how to display time F position 0: HH:MM:SS;1:HH:MM;2:DD:HH:MM;3:HH;

	0x0F000000 // how to display date F position: 0:MM/DD/YY,1:DD/MM/YY,2: DD.MM.YY,3: YY/MM/DD
Header fill color	Specify the padding color of the title column.
Selected row color	Specify the padding color of the selected row.
Gridline color	Specify the gridline color.
Gridline width	Specify the gridline width.

(3) Address

Address	There is no need to set the address in current version.

(4) Shape and other attributes settings are detailed in Chapter 4.

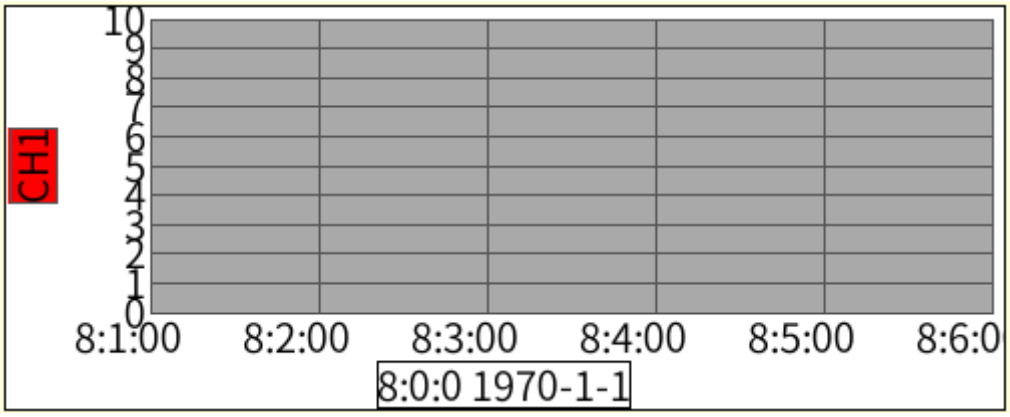
5.27 Trend chart

5.27.1 Overview

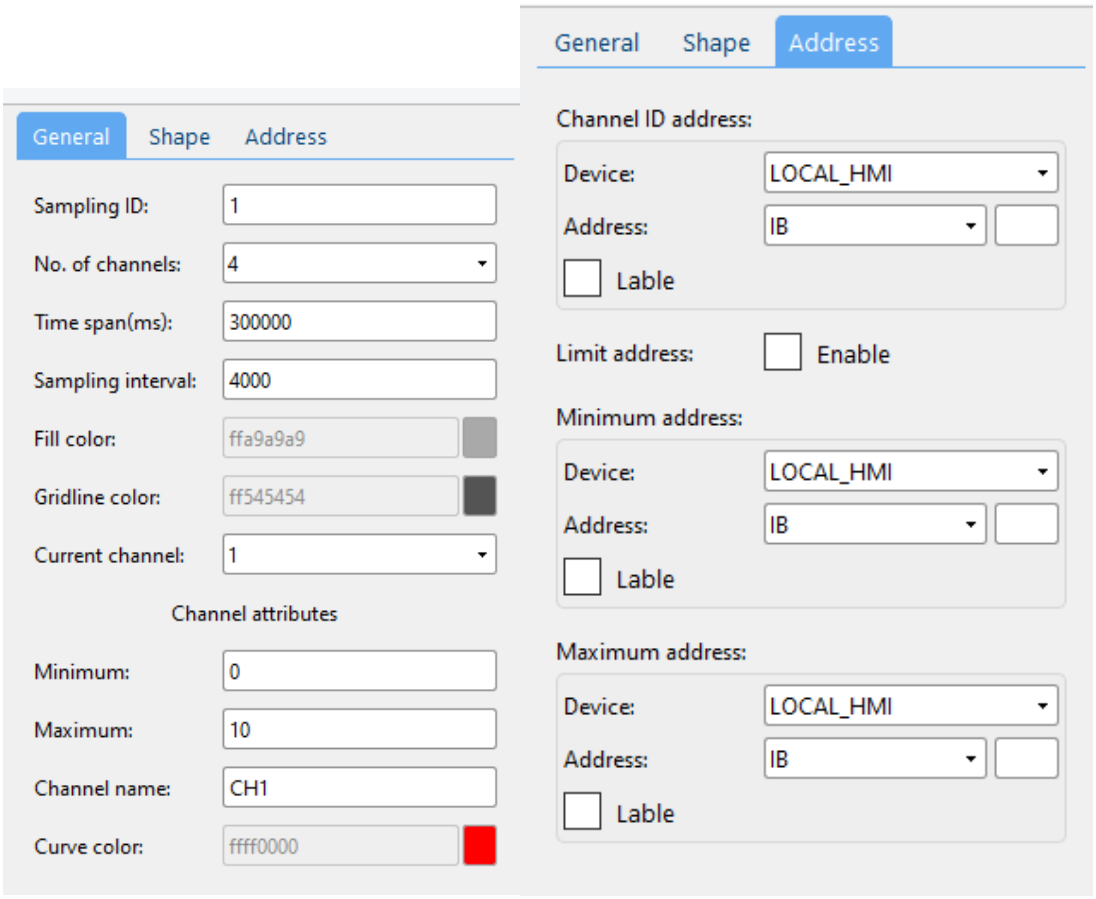
[Trend chart] can be used to display the trend of the data corresponding to the sampling id in the data sampling database over a period of time.

5.27.2 Attributes

Click [Sampling/Data] → click [Trend chart] to bring up an [Trend chart] object. Drag the object to the specified [window] and double-click on the object to place it.



After selecting the object in the [window], you can set relevant attributes in the right window.



(1) General attributes

Sampling ID	Specify the source of the operation log
No. of columns	Set the total number of columns
Time span(ms)	You can select a column to set the corresponding attributes, such as font color, table width, etc.
Sampling interval	Set content of the selected column
Fill color	Font style BIT0~2: 000, 001: bold; 010: italic; 100 underline
Gridline color	Set the text color of the selected column
Current channel	Set the width of the selected column
Minimum	Set the height of each row
Maximum	0x00000001 // horizontal lines

Channel name	Specify the padding color of title column
Curve color	Specify the padding color of the selected row

(2) Address

Address	There is no need to set the address in current version.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.28 Horizontal Pipeline/Vertical Pipeline

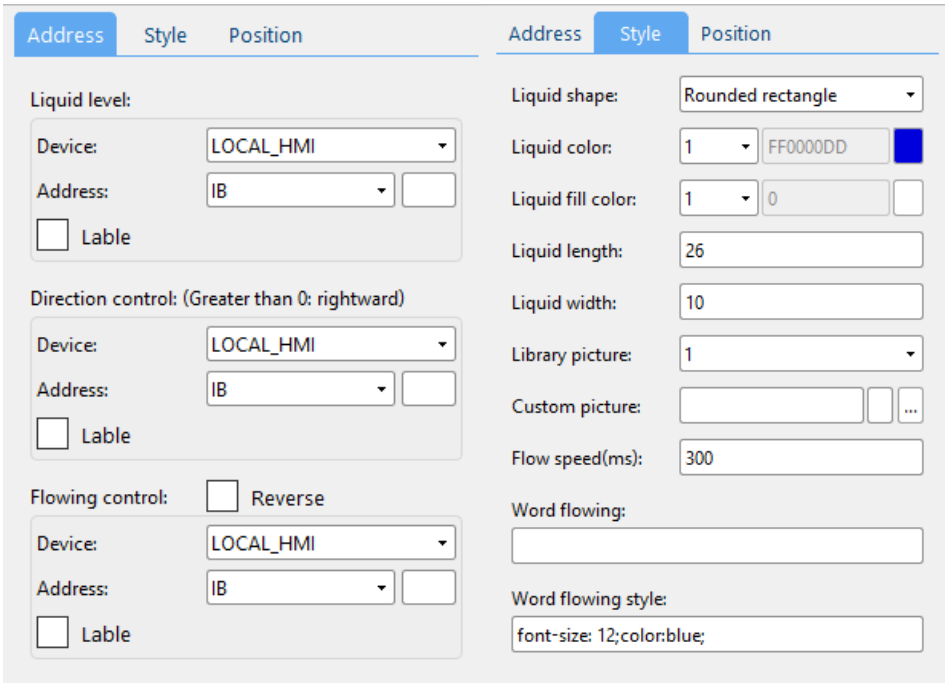
5.28.1 Overview

[Horizontal Pipeline]/ [Vertical Pipeline] can be used with [Pipeline Connector] to build process flow diagrams.

5.28.2 Attributes

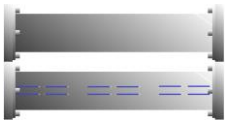
Click [Object] → click [Horizontal Pipeline]/ [Vertical Pipeline] to bring up an [Horizontal Pipeline]/ [Vertical Pipeline] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



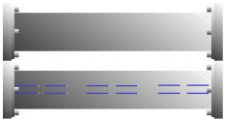
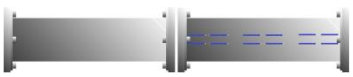
(1) Address

Liquid level	When the value of the register is 1:

	a. if there are 2 custom pictures, the second picture will be displayed in the pipeline.  b. if there is only one custom picture, the content set in [word flowing] attribute will be displayed in the pipeline. 
Direction control	Set the state of the register value relative to 0 to specify the flowing direction. When the value of the register is greater than 0, the direction is right (up for vertical pipeline.) When the value of the register is equal to 0, the direction is left (down for vertical pipeline.)
Flowing control	Set the value of the register to specify whether to flow.
Reverse	Checked: Flow if the value of the register of [Flowing control] is 0. Not flow if the value is 1. Unchecked: Flow if the value of the register of [Flowing control] is 1. Not flow if the value is 0.

(2) Style

Liquid shape	Choose from [Rounded rectangle] and [Arrow].
Liquid color	Valid when [word flowing] is not used to simulate liquid flow. Specify the color of the flowing liquid. You can set the color of the liquid in different working states: If you need to set the liquid color to color 1, you can set the value of the [flowing control] register to 1; If you need to set the liquid color to color 2, you can set the value of the [flowing control] register to 2; ... Up to ten colors can be set in this version.

Liquid fill color	Valid when [word flowing] is not used to simulate liquid flow. Specify the color of the flowing liquid. You can set the color of the liquid in different working states: If you need to set the liquid fill color to color 1, you can set the value of the [flowing control] register to 1; If you need to set the liquid fill color to color 2, you can set the value of the [flowing control] register to 2; ... Up to ten colors can be set in this version.
Liquid length	Set the length of the liquid.
Liquid width	Set the width of the liquid.
Library picture	unspecified: do not use an image as the icon. numbers: use the default image specified by the system to draw the icon.
Custom picture	Customize the picture used to display in the pipeline: You need to input the number of small icons in customized pictures. Then click the button to select pictures.  For example, the number of small icons is 2 in the following picture.  Note: a. If the number of small icons is set to 2, the icons should be placed vertically, but not placed horizontally as the following picture.  b. The icons will be rotated 90 °clockwise automatically. Horizontal piping diagrams can be used in vertical pipeline like horizontal pipeline.
Flow speed(ms)	The unit is millisecond. The smaller the value, the faster the flow.

Word flowing	Set the word used to simulate liquid flowing. When this attribute is set to empty, the liquid flow is simulated by specifying the [liquid shape].
Word flowing style	Set the font size and color when using word to simulate liquid flowing.

(3) Shape and other attributes settings are detailed in Chapter 4.

5.29 Pipeline Connector

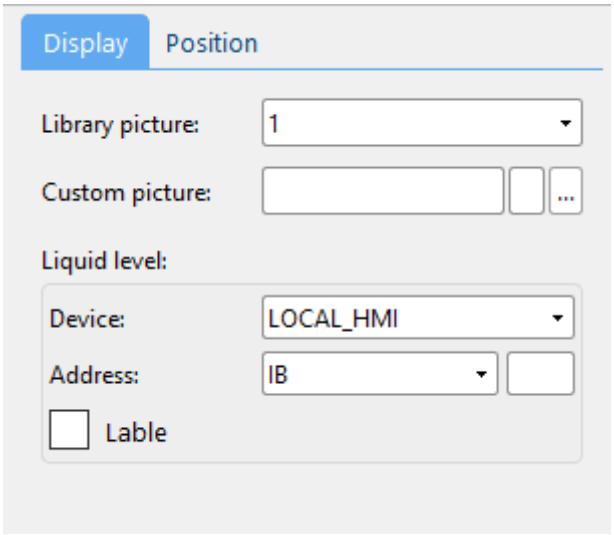
5.29.1 Overview

[Pipeline Connector] can be used with [Horizontal Pipeline]/ [Vertical Pipeline] to build process flow diagrams.

5.29.2 Attributes

Click [Object] → click [Pipeline Connector] to bring up an [Pipeline Connector] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can set relevant attributes in the right window.



(1) Display

Custom picture	Customize the picture used to display in the pipeline: You need to input the number of small icons in customized pictures. Then click the button to select pictures.
Liquid level	There is no need to set this attribute in current version.

(2) Shape and other attributes settings are detailed in Chapter 4.

5.30 Vector Graphics

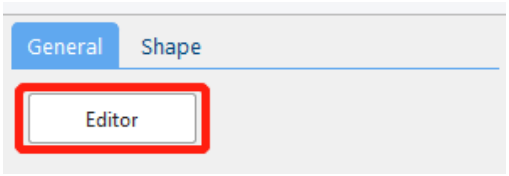
5.30.1 Overview

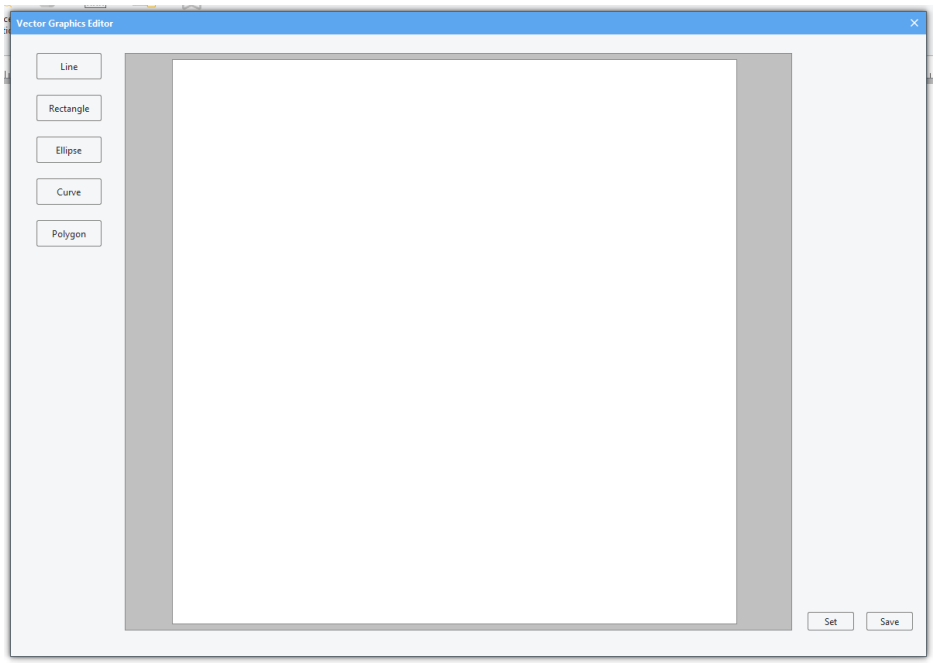
[Vector Graphics] can be used to edit vector graphics. You can place the edited vector graphics like an object. Basic graphics such as lines, rectangles, ellipses, curves, polygons are integrated in the editing function.

5.30.2 Instructions for use

Click [Project] → click [Vector Graphics] to bring up an [Vector Graphics] object. Drag the object to the specified [window] and double-click on the object to place it.

After selecting the object in the [window], you can click [editor] in the right window to enter the editing interface.





The instructions for each basic graphic are as follows:

(1) line

Click the [Line] button to enter the line drawing mode. Press and hold the left mouse button to start drawing a line. Move the mouse to draw. Release the left button to finish drawing the line.

(2) rectangle

Click the [Rectangle] button to enter the rectangle drawing mode. Press and hold the left mouse button to start drawing a rectangle. The position where the left mouse button is clicked is the upper left corner of the rectangle. Release the left mouse button to end drawing. The position where the left mouse button is released is the lower right corner of the square.

(3) ellipse

Click the [ellipse] button to enter the ellipse drawing mode, click the left mouse button to start drawing a circle and drag the mouse to change the size and shape of the circle, release the left mouse button to finish drawing.

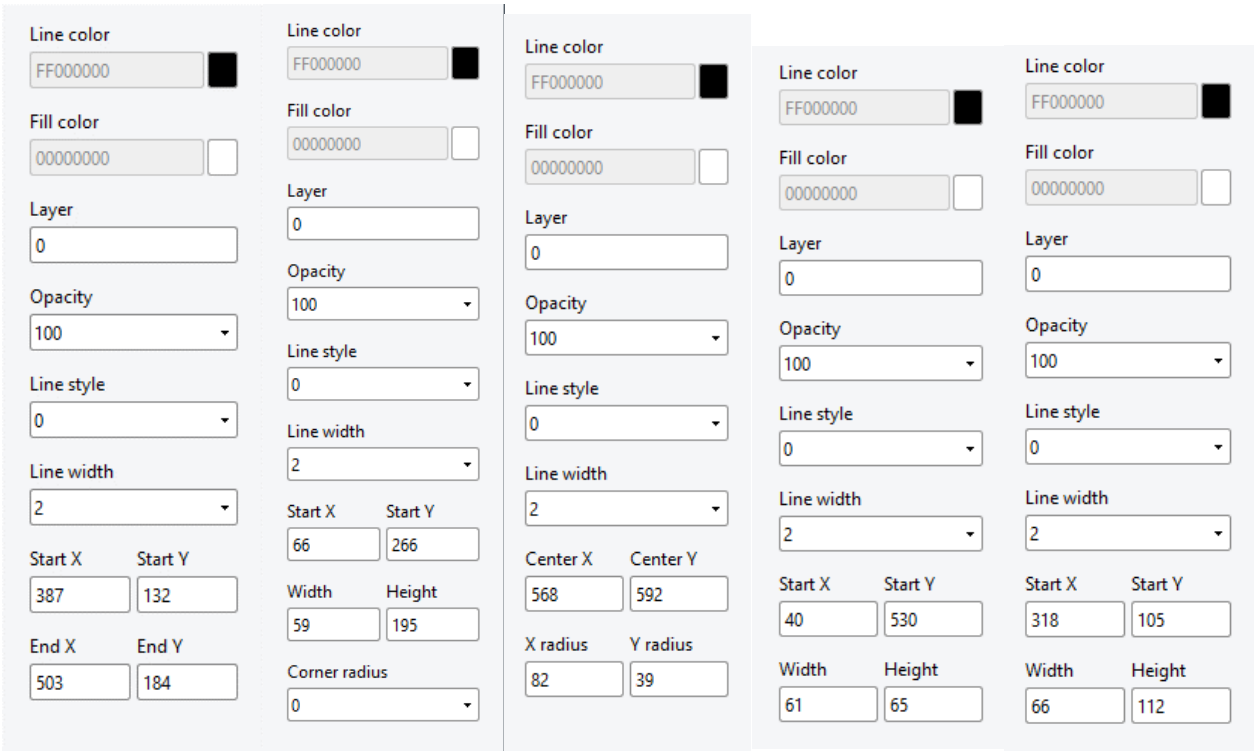
(4) curve

Click the [curve] button to enter the curve drawing mode. The left-click position is the starting point of the current small curve, and the left-click position is the end point of the current small curve. Press and hold the left button and drag to change the curvature and length of the curve. , direction, etc. Release the left button to complete the current curve drawing, repeat the above process to draw the next curve, and click the right button to end the curve drawing.

(5) polygon

Click the [Polygon] button to enter the polygon drawing mode. Left-click is the starting point of one side, and the next click is the end point of one side. Repeat the above process. Right-click to end drawing and the starting point and the end point will be automatically connected.

3 Attributes introduction



Line color	Sets the line color for drawing graphs.
Fill color	Sets the fill color of the drawn graphics area. The filled area does not exist for a line. It is a closed area for a closed graphic. For an open curve, it is the area enclosed by the auxiliary line and the curve when drawing.
Layer	Set the layer where the graph is located. The larger the number, the higher the graph will be displayed.
Opacity	Set the opacity of the graphics. The maximum value is 100 (completely opaque) and the minimum value is 0 (completely transparent).
Line style	Invalid.
Line width	Set the line width used when drawing.
Start X Start Y **End X End Y**	Set the X value and Y value of the start point and end point of the graph (i.e., the upper left corner and lower right corner of the selected box around the graph).
Width **Height**	Set the width and height of a rectangle.
Corner radius	Set the corner radius of a rectangle. The rectangle is a rounded rectangle when the [corner radius] is greater than 0.
X radius **Y radius**	Set the X and Y radius of an ellipse.

5.31 Media Player (unavailbale for 38 series)

5.31.1 Overview

[Media Player] can be used to play local video files in mp4 and avi formats. (Not available in the current version)

5.31.2 Attributes settings

Source address	Store the address of the video to be played. (e.g., :/mnt/exUDISK/test3.mp4)

Play control address	The register to control the status of play. 0: play; 1: pause; 2: fast forward; 3: backward; 4: previous episode; 5: next episode; 6: repeat; 7: stop.
Progress control address	Control the play progress. The unit is second.
Default play url	Set the default url to be played. It [Source address] is empty, the video corresponding to the url will be played.
Auto play	Autoplay or not.

6 Others

6.1 Input method

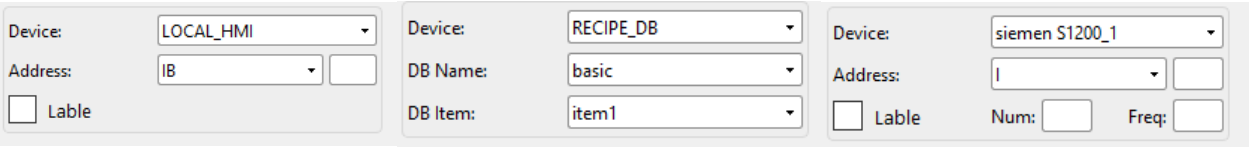
The preset input method is the default input method in the system.

6.2 Download project

For detailed description, please refer to Chapter 2.

6.3 Register address setting

In the software, it is frequently needed to set the register address. The register address setting instructions are as follows.



Device	Address: The left edit box	Address: The right edit box
LOCAL_HMI (Local register)	Specify the register type.	Range:
	IB: Bit status output register;	IB：0 - 10255
	QB: Bit status input-output register;	QB：0 - 10255
	IW: 16-bit word output register;	IW：0 - 10255
	QW: 16-ibit word input-output register;	QW：0 - 10255
	ID:32-bit double-word output register;	ID：0 - 5127
	QD: 32-bit double-word input-output register;	QD：0 - 5127
	IF：32BIT-float output register；	IF：0 - 5127
	QF：32BIT-float input and output register；	QF：0 - 5127
	IDD：64BIT-double output register；	IDD：0 - 2563
	QDD：64BIT-double input and output register.	QDD：0 – 2563
	IS: string input register	IS: 0-10255
	QS: string output register	QS: 0-10255

	user: set the security level of the object
RECIPE_DB **(Local recipe register)**	Specify the recipe database. You can define the recipe database in the [recipe database] module.
	Specify a field in the recipe database. There can be multiple fields in a recipe database, and each field corresponds to a set of data. You can define the field and preset the data corresponding to the field in the [recipe database] module.
Modbus_comm (commonly used register)	Specified registers: Coil (DO): 0x, may be read or written by HMI. Discrete inputs (DI): 1x, may only be read by HMI. Analog inputs (AI): 3x, may only be read by HMI. Analog outputs (AO): 4x, may be read or written by HMI. AIW: Input registers (WORD) AOW: Output registers (WORD) AID: Input registers (DWORD) AOD: Output registers (DWORD) AI4F: Input registers (FLOAT) AO4F: Output registers (FLOAT) AI8F: Input registers (DOUBLE) AO8F: Output registers (DOUBLE) AIS: Input registers (STRING) AOS: Output registers (STRING)

Note: When the device is selected as an external device, [Num] is the number of registers. [Freq] is the time

interval for register refresh, and the unit is millisecond.

6.4 JavaScript function

JavaScript provides additional functionality required outside of the application. When the HMI is running, the JavaScript can be automatically executed, and it is responsible for the communication between the user and the project. This chapter mainly introduces the syntax of JS scripts, how to use and edit and other functions.

6.4.1 Edit

There are two ways to edit the JavaScript in the current version.

a) Click [Project] in the menu bar → click [Macro] to bring up the [Macro] interface. You can edit JavaScript in the pop-up window.

b) Edit JavaScript files in JavaScript editor such as Notepad++, Windows Notepad, UltraEdit, VS Code.

Import the JavaScript files in the [Macro] interface.

[Macro] function introduction:

New	Click the [new] button in the [Macro] interface to create a new JavaScript file.
Save	Click the [Save] button in the [Macro] interface to save the JavaScript file.
Delete	Click the [Delete] button in the [Macro] interface to delete the selected JavaScript file.
Import **Export**	Click the [Import]/[Export] button in the [Macro] interface to import or export the selected JavaScript file.
Current JS file	Select to switch the current script through the combo box.
JS setup	Click the [JS setup] button→ Double-click the JS file that you want to modify → select a JS file for the selected window through the combo box.
Tab	equal to 4 spaces.
End	jump to the end of the current line.
Backspace	Delete the character before the cursor or selected characters.

Delete	Delete the character after the cursor or the selected characters.
F3/F4	Search the selected characters in the content below/above.
Copy/Paste	Press [Ctrl]+[C] to copy or [Ctrl]+[V] to paste after selecting some characters. You can also right click and select to copy or paste after selecting some characters.
Compile	Compile and run JS functions (To run JS functions, you need to call the function separately, such as: fn(n1,n2,n3);). Support compiler and running error reporting by highlighting the error line. (Note: When a script is set as a window script, the function that is called separately will run immediately when going to this window. If you don't want to run immediately, please note the call after debugging.)
Undo/Redo	Undo: [Ctrl]+[Z]; Redo: [Ctrl]+[Y]

6.4.2 Syntax

Here we only introduce some basic syntax commonly used when editing scripts. If you want to learn more about JavaScript, you can search for related tutorials on the Internet.

Basic syntax	Semicolon: used to separate statements. Usually, we add a semicolon at the end of each executable statement.
	Example:
	a = 5;
	b = 6;
	c = a + b;
	Comments: Single line comments start with //. Multi-line comments start with /* and end with */.
	Example:
	/*
	The code below will change
	the heading with id = "myH"
	and the paragraph with id = "myP"
	in my web page:

	*/ Var x = 5; // Declare x, give it the value of 5
Declare a variable	Declare variables with the var keyword. Example: var name,age; You can assign a value to a variable using the = operator when you declare it or after the declaration and before accessing it. Example: name = "David"; var age = 30;

Function syntax	A JavaScript function is defined with the function keyword, followed by a name, followed by parentheses ().
	Function without parameters:
	function functionname()
	{
	// the code to be executed
	}
	Function with parameters: The parentheses may include parameter names separated by commas:
	(parameter1, parameter2, ...)
	function myFunction(var1,var2)
	{
	// the code to be executed
	}
	Function arguments are the values received by the function when it is invoked. Parameters and arguments must appear in a consistent order.
	Example: myFunction(argument1,argument2)
	function myFunction(a,b)

	{
	x=a+b
	}
	To invoke the function above:
	myFunction(2,3);
	Functions often compute a return value. The return value is "returned" back to the "caller":
	function myFunction()
	{
	var x=5;
	return x;//return the return value
	}
	To invoke the function above:
	var myVar=myFunction();

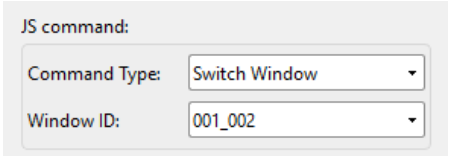
Conditional statements	Similar to C conditional statements if if…else switch for while

3 common functions

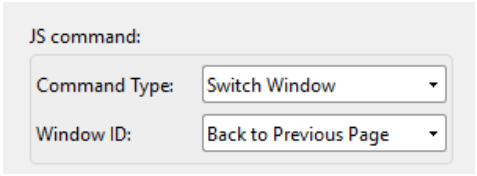
In HMI software, JS functions are often used in objects such as function keys, switches, and numeric. There are usually two ways to use JS functions:

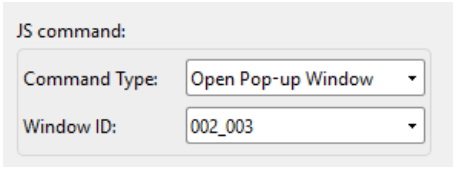
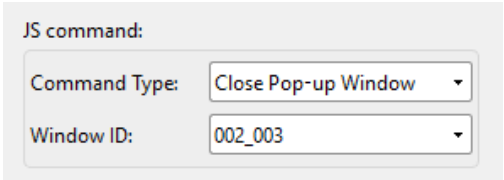
a) pre-defined JavaScript commands

Switch window	Switch windows: name of the window (ID_Title) For example, when the function key is pressed, jump to the window with ID number 1 can be set as follows:



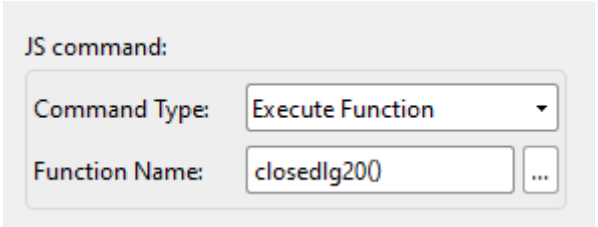
Go back to the previous page:



Open pop-up window	Open a pop-up window: name of the window (ID_Title) For example, when the function key is pressed, open the window with ID number 2 can be set as follows: 
Close pop-up window	Close a pop-up window: name of the window (ID_Title) 

b) custom JavaScript commands

Add user-defined functions in common.js	Refer to the following function
	function closedlg20(){
	Hmiregs.SetReg(0,2,9820,143);
	}

Use a user-defined function in an object	

When the command type is set to [execute function], the JavaScript window will pop up automatically. Double-click the function name to select it. Or you can click […] to enter the JavaScript window.

4 Hmiregs object

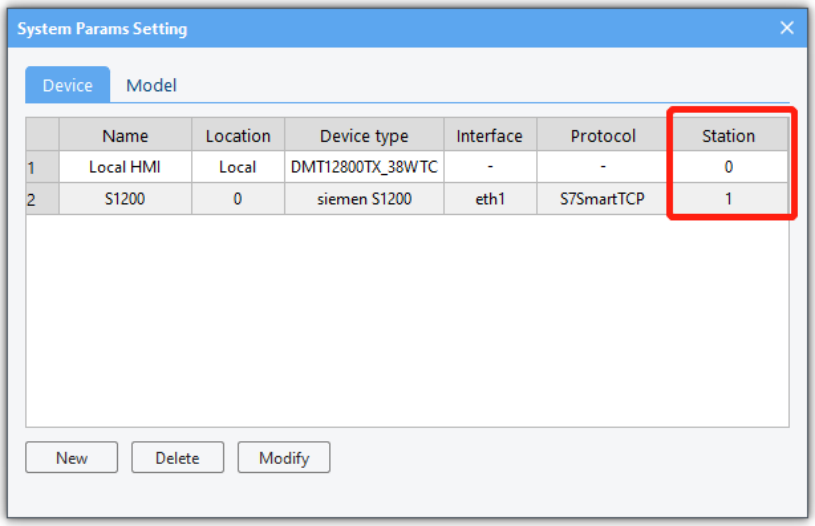
A JS object Hmiregs is encapsulated inside the HMI configuration software, and some common operations can be realized through this object.

Set the value of a register

Hmiregs.SetReg(int devid,int regtype,unsigned long reg,var value);

Parameters' introduction:

devid: Station No. of the device. The station number can be set in [System Parameters]. The station number of the local device is 0.



regtype: the type of the register

Local HMI devices:

IB-0	QB-1	IW-2	QW-3	ID-4	QD-5	IF-6
QF-7	IDD-8	QDD-9	IS-10	QS-11		

Siemen S200:

I-0	Q-1	M-2	S-3	SM-4	V-5	L-6
IB-7	QB-8	MB-9	SB-10	SMB-11	VB-12	LB-13
IW-14	QW-15	MW-16	SW-17	SMW-18	VW-19	LW-20

AIW-21	AQW-22	T-23	C-24	ID-25	QD-26	MD-27
SD-28	SMD-29	VD-30	LD-31	VF-32	LF-33	MS-34
SMS-35	VS-36					

reg: the address of the register

value: the value to set

For example,

(1) Set the local HMI device QW100 register value to 6.

Hmiregs.SetReg(0,3,100,6);

(2) Set the value in VW804 register of Siemens S200 to 2.

Hmiregs.SetReg(1,19,804,2); //It is assumed that the station number of the equipment is 1.

(3) Set the value in M5.7 register of Siemens S200 to 1.

Hmiregs.SetReg(1,2,47,1); //It is assumed that the station number of the equipment is 1.

47(argument3): address= integral part*8+decimal places value when reading/writing registers in JavaScript

(4) Set strings into the IS8202 register of the local device

Hmiregs.SetReg(0,10,8202,"username");

Hmiregs.SetReg(0,10,8202,""); //clear the IS8202 register.

Read registers

Hmiregs.GetReg(int devid,int regtype,unsigned long reg);

For the meaning of the parameters, see the description in the [**Set the value of a register**] above.

For example,

(1) read the value in QW100 register of the local device

var v = Hmiregs.GetReg(0,3,100);

(2) read the value in VW804 register of Siemens S200

var v = Hmiregs.GetReg(1,19,804); //It is assumed that the station number of the equipment is 1.

	(3) read the value in M5.7 register of Siemens S200
	var v = Hmiregs.GetReg(1,2,47); //It is assumed that the station number of the equipment is 1.
	(4) read the string in VS2001 register of Siemens S200
	var str = Hmiregs.GetReg(1,36,2001,20); //argument4: start from the VS2001 address, read 20 bytes continuously.

Open a window/pop-up window	Function: Hmiregs.OpenPage(var pageID,var type);
	Parameters' introduction:
	pageID: ID of the window to be opened.
	type: type of the window to be opened. Windows-0; Pop-up window-1.
	For example,
	Hmiregs.OpenPage(5,0); //open the window with ID number 5
	Hmiregs.OpenPage(6,1); //open the window with ID number 6
	You can also open a window or a pop-up window using the pre-defined command.
	Details referring to [pre-defined JavaScript commands].

Close a pop-up window	Close the pop-up window with ID number 20:
	function closedlg20()
	{
	Hmiregs.SetReg(0,2,9820,143);
	}
	You can set the JS command of some function key to closedlg20() so that the pop-up window will be closed when you click the function key.
	Parameters' introduction:
	'0', '2', '143' is fixed. Only the 3rd parameter changes.
	3rd parameter: 9800+the ID of the pop-up window to be closed
	For example,
	Hmiregs.SetReg(0,2,9821,143); //close the window with ID number 21
	Hmiregs.SetReg(0,2,9809,143); //close the window with ID number 9

	You can also close a pop-up window using the pre-defined command. Details referring to [pre-defined JavaScript commands].

Delay function	Hmiregs.MSleep(100); //stop the program for 100 MS. Delay time is specified in milliseconds.
	When using this function, the window will be blocked and the click will not be responded. It is not recommended to set an excessive time.
	setTimeout("functiontobecalled()",delaytime); //Delay time is specified in milliseconds.
	Function: delay a function call
	For example, you can delay setting the value of a register for 1 second.
	function percent()
	{
	var v = Hmiregs.GetReg(0,2,780);
	Hmiregs.SetReg(0,2,780,v+1);
	if(v < 100)
	setTimeout("percent()",1000); //call the function itself
	}

Delete a sampling record	DeleteSample(sid,eid,val)
	The following are the parameters-
	sid: -1 means to delete all records. If sid is greater than or equal to 0, delete the entries equal to val in the sampling records of sid, and the deletion range is sid to eid.
	For example, delete the entry whose data is 1 in sample id0 (that is, the first data sample), and the deletion range includes the content of sample id 1-15.
	function exp()
	{
	Hmiregs.DeleteSample(0,15,1);
	}

Data analysis	Hmiregs.analysisData(method,sid,channel) The following are the parameters-

sid: sampling id to be analyzed.

channel: 0 for multi-channel sampling. You can specify the channel to be analyzed when choosing single channel.

For example, analyze the data in first channel of the first sampling id.

```
function exp()
{
var min,max,avg,val;
min = Hmiregs.analysisData(0,0,0);
max = Hmiregs.analysisData(1,0,0);
avg = Hmiregs.analysisData(2,0,0);
 val = Hmiregs.analysisData(3,0,0);
}
```

5 Functions related to PDF

Some PDF-related functions are encapsulated inside the HMI configuration software.

pdf.HPDF_Open	Example: pdf.HPDF_Open(2000,1000) Create a pdf with a width of 2000 and a height of 1000 and open the created pdf. The font "Helvetica" is used by default (the font cannot display Chinese by default), the default font size is 12, the default line width is 1.0, and the RGB of the line is (0, 0 ,0).
pdf.HPDF_Save	Example: pdf.HPDF_Save("/media/usb/test.pdf") Save the pdf to "/media/usb/test.pdf" as test.pdf.
pdf.HPDF_Close	Example: pdf.HPDF_Close() Close the pdf.
pdf.HPDF_AddOnePage	Example: pdf.HPDF_AddOnePage(800,1000) Add a page with a width of 800 and a height of 800 to the pdf and switch to that page. The line width and color are the same as the previous page.
pdf.HPDF_SwitchToPage	pdf.HPDF_SwitchToPage(pid)

	Switch to the page with pid. pid: the id of the page to be switched. The id of the first page created is 0 by default.
pdf.HPDF_LoadTTFfont	pdf.HPDF_LoadTTFfont(path) Load a font. The default font cannot display Chinese characters. There is a font named ttf that can display Chinese characters. You can load the font by setting the path to path=”/usr/share/SDL_UI/fonts/STSONG.TTF”.
pdf.HPDF_SetFontSize	pdf.HPDF_SetFontSize(size): set the font size.
pdf.HPDF_DataTableTimeFilter	pdf.HPDF_DataTableTimeFilter(flag) Save the start time of the database filtering to filter data before the start time. flag: 0-alarm; 1-event; 2-recipe; 3-sampling; 4-record If you save the history database, you don't need to use this function.
pdf.HPDF_AlarmTable	pdf.HPDF_AlarmTable(starttype,endtype,sorttype,source,vnum,str_vwidth) Save the content in the alarm database to the pdf. The following are the parameters- starttype: the start alarm type to be filtered. endtype: the end alarm type to be filtered. sorttype: 0- chronologically, most recent first; 1- in reverse chronological order, most recent last. source: the specified data source 0: All alarms in the real-time buffer. 1: In the real-time buffer, the acknowledged alarms. 2: In the real-time buffer, the unacknowledged alarms. 3: In the real-time buffer, the alarms that do not require acknowledgment. 4: In the real-time buffer, the alarms that have been disarmed. 5: In the real-time buffer, the alarms that are not disarmed

6: In history, the acknowledged alarms.

7: In history, the unacknowledged alarms.

8: In history, the alarms that do not require acknowledgment.

9: In history, the alarms that have been disarmed

10: In history, the alarms that are not disarmed.

11: All alarms in history.

12: all alarms in the real-time buffer and history.

vnum: the number of the columns in the table

str_vwidth: the width of the column, separated by commas.

Example:

```
function save_histalarm()
{
    var year,month,day,h,m,s;
    pdf.HPDF_Open(920,1000);
    pdf.HPDF_LoadTTFfont("/usr/share/SDL_UI/fonts/STSONG.TTF");
    pdf.HPDF_AlarmTable(0,255,0,11,6,"100,100,100,100,180,320");//6为列数 11为历史记录中的所有

    g_Date.setTime(Date.now());
    if(g_using_UTC){
        year = g_Date.getUTCFullYear();
        mon = g_Date.getUTCMonth() + 1;
        dd = g_Date.getUTCDate();
        h = g_Date.getUTCHours();
        m = g_Date.getUTCMinutes();
        s = g_Date.getUTCSeconds();
    }
    else{
        year = g_Date.getFullYear();
        mon = g_Date.getMonth() + 1;
        dd = g_Date.getDate();
        h = g_Date.getHours();
        m = g_Date.getMinutes();
        s = g_Date.getSeconds();
    }
    var ret = pdf.HPDF_Save("/media/usb/" + "Alarm_his" + "_" + year + "-" + mon + "-" + dd + "_
    pdf.HPDF_Close();
}
```

pdf.HPDF_SampleTable

pdf.HPDF_SampleTable(startsid,vnum,sidnum,sample_format,real,stime,etime,method,val)

Save the content in the recipe database to the pdf.

The following are the parameters-

started: the start id, greater than or equal to 1;

vnum: number of the column in the table;

sidnum: number of the sid;

sample_format: the data format of each sid, separated by commas (Just specify that the data format of the sampling channel involved is different from the format specified in each column in the [history data view]);

real: 1 when pdf.HPDF_DataTableTimeFilter(flag) is used; otherwise 0.

stime: starting time to export data.

etime: ending time to export data

method: method to export data. 0-chronologically; 1-by data.

val: export records where startid = val.

example:

```
var g_Date = new Date();
var g_using_UTC = 0;
var sample_format = "%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%10.2f,%d,%10.2f,%d,%d,%10.4f,%10.4f,%d,%d,%d,%d,%d,%d,%d,%d";
function save_histsample()
{
    var year,mon,dd,h,m,s;
    pdf.HPDF_Open(2510,1000);
    pdf.HPDF_LoadTTFfont("/usr/share/SDL_UI/fonts/STSONG.TTF");
    pdf.HPDF_SampleTable(1,28,25,sample_format,0);

    g_Date.setTime(Date.now());
    if(g_using_UTC){
        year = g_Date.getUTCFullYear();
        mon = g_Date.getUTCMonth() + 1;
        dd = g_Date.getUTCDate();
        h = g_Date.getUTCHours();
        m = g_Date.getUTCMinutes();
        s = g_Date.getUTCSeconds();
    }
    else{
        year = g_Date.getFullYear();
        mon = g_Date.getMonth() + 1;
        dd = g_Date.getDate();
        h = g_Date.getHours();
        m = g_Date.getMinutes();
        s = g_Date.getSeconds();
    }
    var ret = pdf.HPDF_Save("/media/usb/" + "DATA_his" + "_" + year + "-" + mon + "-" + dd + "_" + h + "." + m + "." + s + ".pdf");
    pdf.HPDF_Close();
    if(ret == 1)
        Hmiregs.OpenPage(43,1);//导出成功
    else if(ret == 0)
        Hmiregs.OpenPage(44,1);
    else if(ret == -1)
        Hmiregs.OpenPage(45,1);
    Hmiregs.SetReg(0,3,62,0);
}
```

6 Functions related to CSV

Hmicsv.Create	Hmicsv.Create(filename): Scan devices and find the USB disk. Create a file named filename.
Hmicsv.Setup	Hmicsv.Setup(cloum, "selectcloum1, 2, 3, ...", row, ranked_cloum, rankey); The following are the parameters- cloum: number of columns to be exported. (The number of columns excluding No., date, and time when exporting sampling records; Total number of columns when exporting from database.)

	"selectcloum1, 2, 3, ...": select fields to be exported corresponding to each column. (The first three columns of sampling are fixed as number, date, and time, so selectcloum1 is displayed in the fourth column. The sampling number and field number start from 1.) row: Maximum number of rows to export ranked_cloum: sort based on that column. (The column should be selected. That is, the column is selectcloum1, 2 or 3…) (This item cannot be 0) rankey：type of sorting. 0-don't sort; 1-int, smallest to largest; -1-int, largest to smallest; 2-float, smallest to largest; 3-double, smallest to largest; 4-string smallest to largest;
Hmicsv.SampleExport	SampleExport(format, stime, etime, method, val); format: Specify the format of each sid, separated by commas. stime,etime: starting time and end time to export records. method: 0-chronologically; n-by column n. val: export records where selectclonum n = val.
Hmicsv.AlarmExport	AlarmExport(stype, etype, source, stime, etime); stype, etype：starting and ending alarm type to be filtered. source: specified data source. 0: All alarms in the real-time buffer. 1: In the real-time buffer, the acknowledged alarms. 2: In the real-time buffer, the unacknowledged alarms. 3: In the real-time buffer, the alarms that do not require acknowledgment. 4: In the real-time buffer, the alarms that have been disarmed. 5: In the real-time buffer, the alarms that are not disarmed 6: In history, the acknowledged alarms. 7: In history, the unacknowledged alarms. 8: In history, the alarms that do not require acknowledgment. 9: In history, the alarms that have been disarmed. 10: In history, the alarms that are not disarmed.

	11: All alarms in history. 12: All alarms in the real-time buffer and history. stime, etime: starting and ending time to export records (invalid in the current version)
Hmicsv.RecipeExport	RecipeExport(recipe_format,dbid); recipe_format: specify the format of every field, separated by commas. dbid: id of the exported database, starting from 0.
Hmicsv.Close()	Close corresponding source.

6.5 Reserved registers

In the local HMI device, some register addresses are reserved for special purposes, and these registers should be avoided when setting registers.

1 User account login

IS8202	To save the entered user name when logging in. See chapter 3.9 for details.
IS8214	To save the entered password when logging in. See chapter 3.9 for details.
IW8220	This register needs to be set when the user log in. See chapter 3.9 for details.

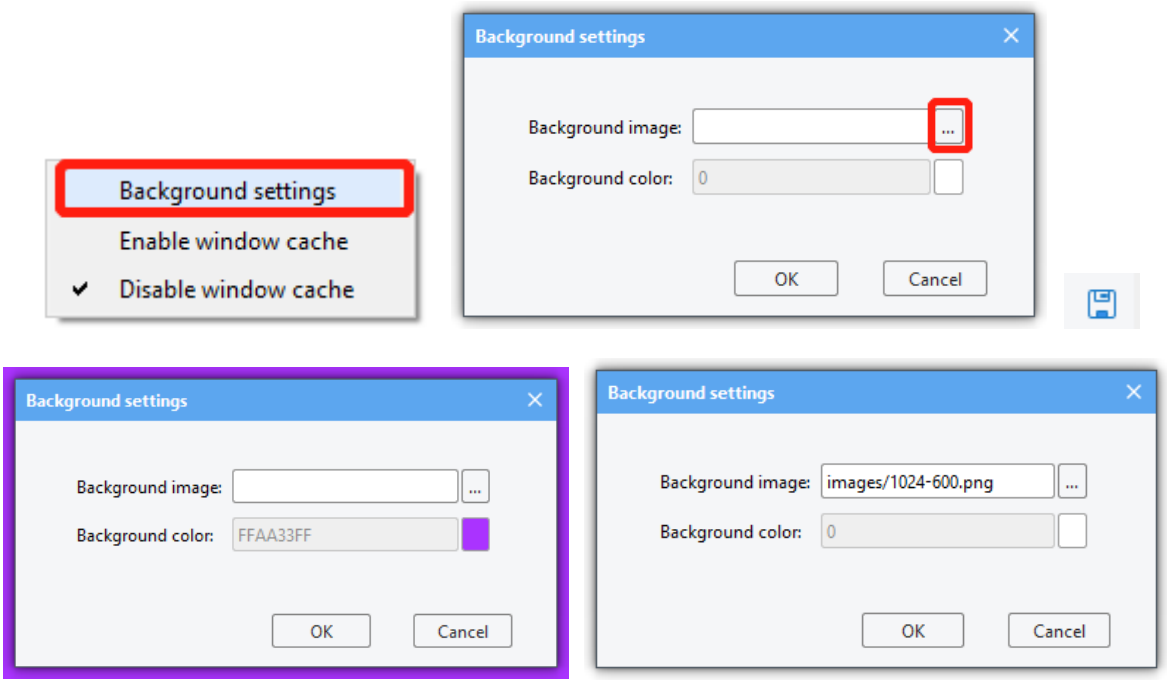
2. Others

QW8224	Save the communication with PLC： 0: PLC not connected. 1: Abnormal communication with PLC. 2: PLC running.
QB8224	Detect whether a USB disk is inserted： 0: No USB disk is inserted. 1: The USB disk is inserted.
QB8225	Detect whether a SD card is inserted： 0: No SD card is inserted. 1: The SD card is inserted.

IW8300	The currently operated recipe database.
IW8301	The selected record in the current recipe database.
IW8302	Enter a specific value to perform an operation and return the result of executing the command.
IW8303	Display the total number of records in the current recipe database.

6.6 Background settings

The background picture can be set separately for each window: double-click the selected window in the [window] list -> right-click in the window area -> [Background Settings] -> select the background image -> select the picture file -> click the [Save] icon in the left [window] interface. For files with the same name, you need to switch to another window and then switch back to refresh and display the new background image after setting. (**In the current version, you should set a background image or background color for each window. The background color cannot be transparent. It is recommended to use an image that fits the window size. Don't use a PNG image whose background is transparent. You can set as follows.**



7 Revision records

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