DIAView

Alarm

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Outline

- Alarm overview
- Use of alarm window
- Alarm management tool
- Alarm configuration settings
- Right-click function of alarm group

Purpose

In this chapter, you will learn...

… The basic operation and management of the alarm

… The function of the alarm group

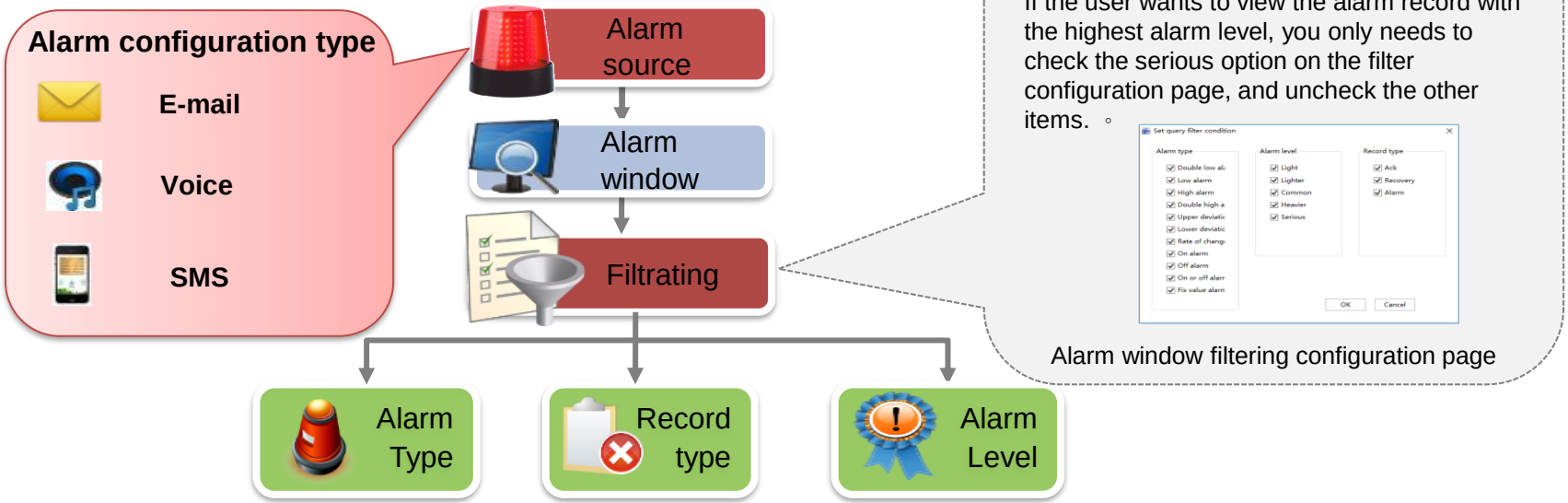
Outline

- Alarm overview
- Use of alarm window
- Alarm management tool
- Alarm configuration settings
- Right-click function of alarm group

Alarm overview

➢ **DIAView Alarm function**

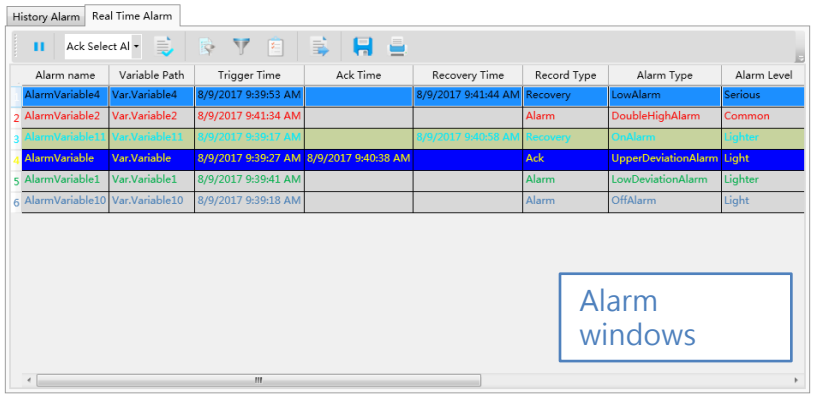
- The alarm is a reminder when the system-related variable data exceeds the warning value, in order to achieve the early warning of danger in the production process and the prevention of equipment failure.
- The alarm plays an irreplaceable role in the safety of the system in the industrial automation control system.

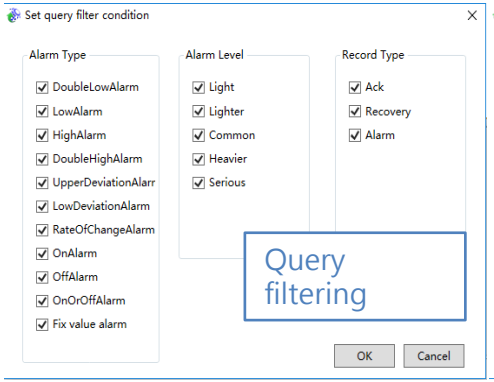


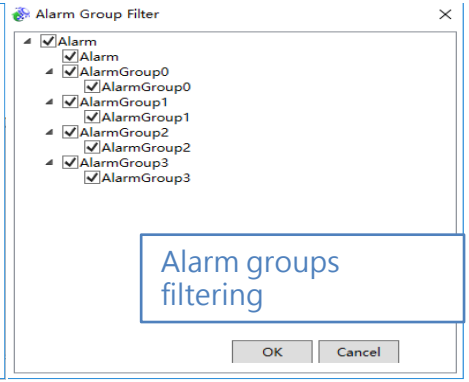
Alarm overview

➢ Reliable Alarm Management Tool :

- The alarm window records **alarm name, variable path, triggering time, response time, recovery time, record type, type of alarm and alarm level alarm data**, and can undertake filtering, filtering, grouping of the data query, display Settings, save, print and export data to report or Excel, etc.







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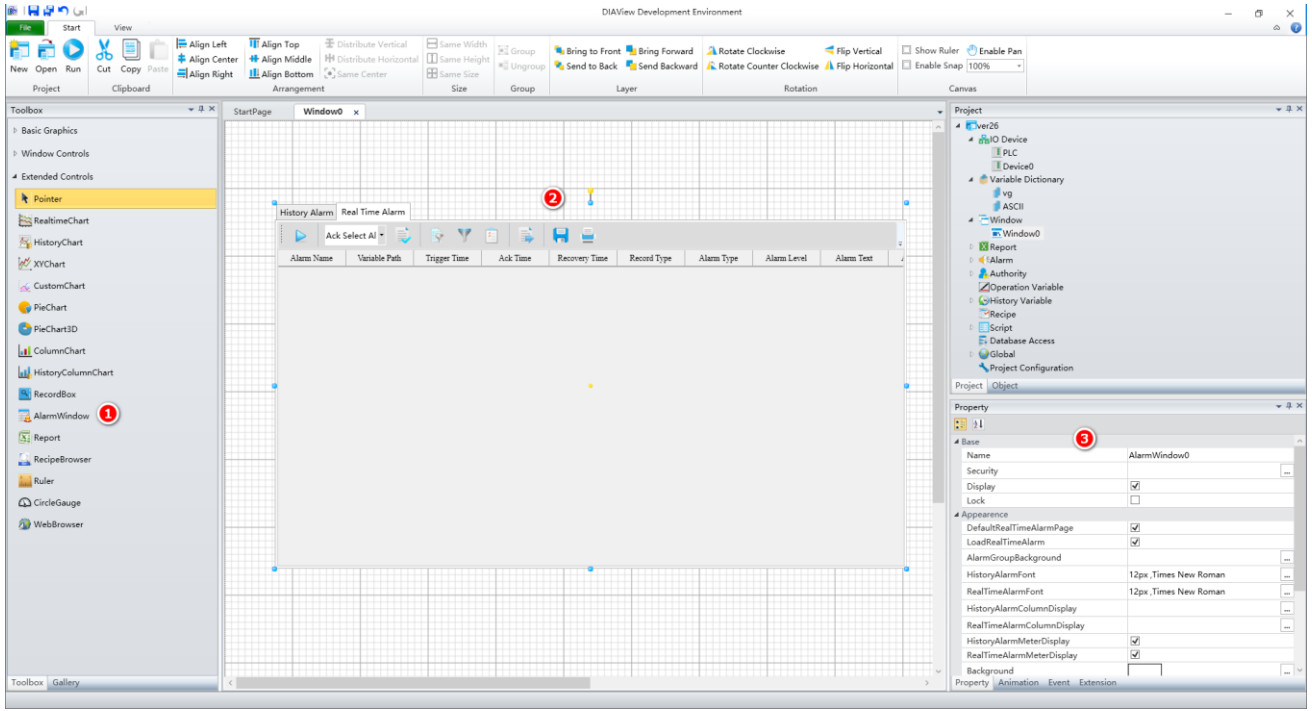
Use of alarm window

- **Create a alarm window**
  - ① Click the tool to set the alarm window
  - ② Drag to the desired position on the canvas
  - ③ Configure alarm window properties



Use of alarm window

➢Alarm Properties

① **Name:** Basic properties, same as other control graphics

② **Appearance:** The appearance of the alarm window includes setting the default display real-time alarm page, loading real-time alarm data, alarm group background color settings, real-time and historical alarm data font format, filtering and filtering real-time and historical alarm groups, whether to display real-time and historical alarm columns and alarms Window background color

③ **Toolbar:** The toolbar contains whether to display the toolbar and the toolbar size display

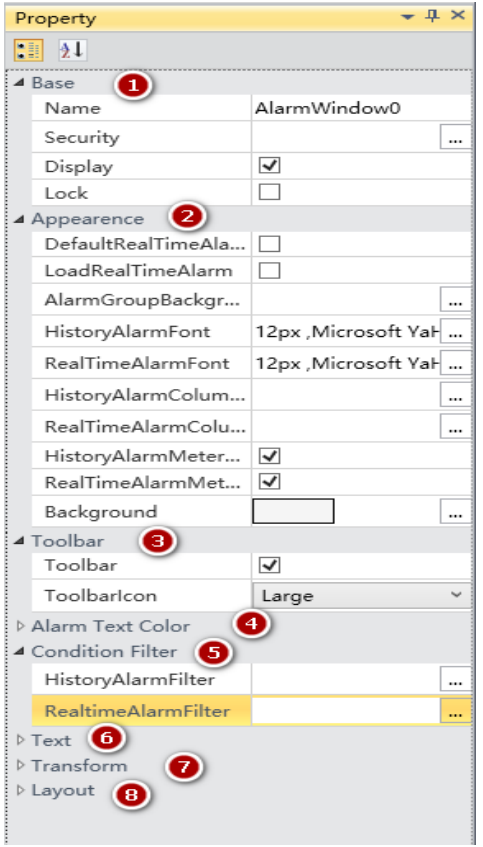
④ **Alarm color setting:** the required color can be set according to different types of alarms

⑤ **Condition Filter:** real-time and historical alarm data according to type

⑥ **Text:** Alarm window prompts text information

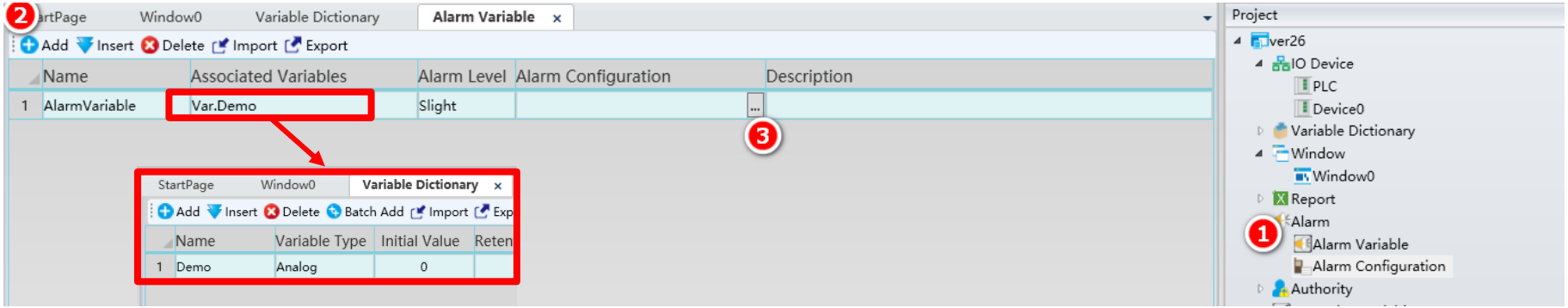
⑦ **Transform:** Contains the center point of the alarm window control

⑧ **Layout:** The size and position of the alarm window in the canvas can be adjusted by numerical value



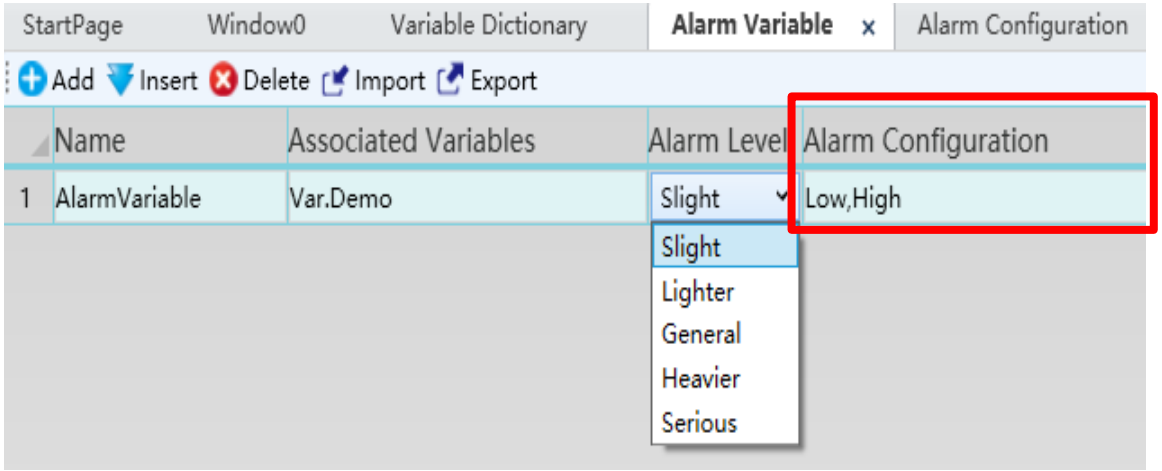
Use of alarm window

- **Create the alarm variable**
  - ① Select "**Alarm Variable**" Button
  - ② Creating alarm variables: click the "**Add**" button in the window to add alarm variables; the system will give a preset name
  - ③ **Associate variable:** Click the button in the variable storage cell and select the system variable to associate (only analog value and digital value type variables can be used to set alarms)



Use of alarm window

- **Alarm level:**
  - Click the button and a menu will appear for you to select a level.
- **Alarm configuration:**
  - Click the button in the alarm configuration storage cell and the alarm configuration window will appear; the system will perform related configurations according to the variable type



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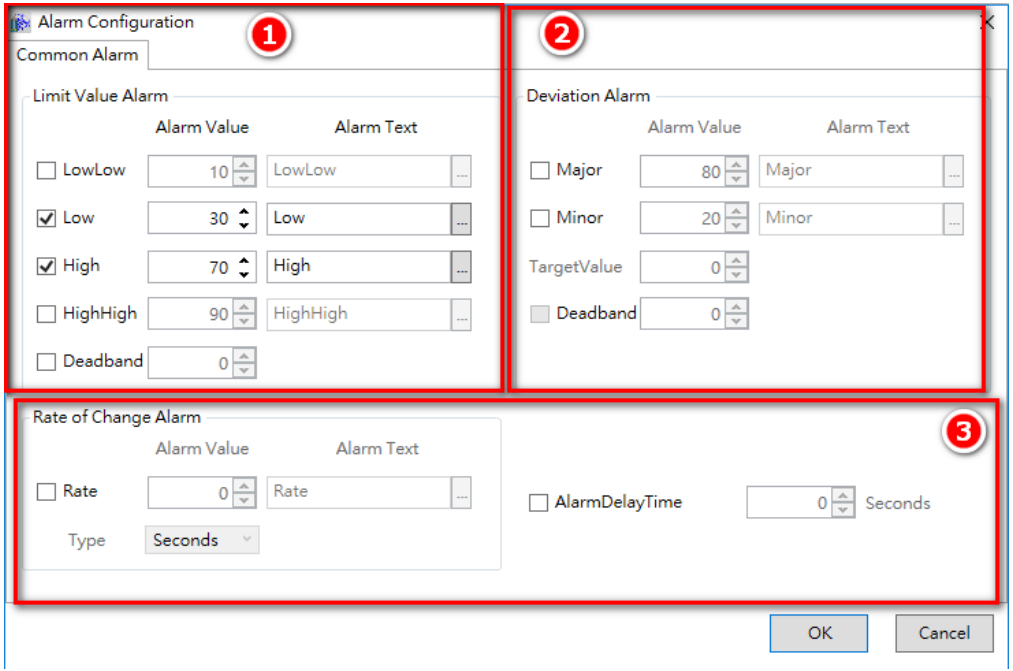
Use of alarm window

➢Alarm Configuration:

① **Common Alarm:**
The alarm generated when the value of the analog value exceeds the value of the alarm threshold set.

② **Deviation alarms:**
This is the alarm that occurs when the ratio of the analog value to the deviation target value fluctuation exceeds the changing range set.

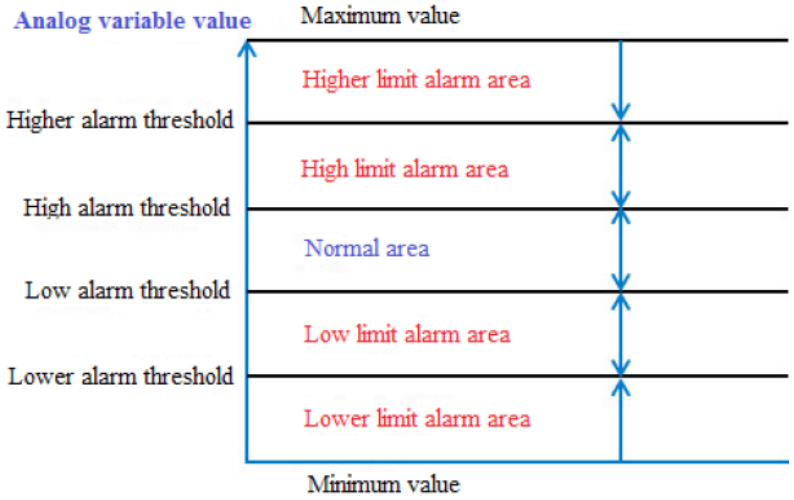
③ **Rate of change alarm:**
This is the alarm that occurs when the change rate of the analog value exceeds the value set for a period, which means that the alarm that will occur when the variable value changes too quickly.



For the calculation method of the rate of change, refer to the user manual 11.3

Use of alarm window

- **Overage alarm:**
  - There are 4 alarm thresholds for over-limit alarms: **extremely low, low, high, extremely high**.
  - The alarm threshold value should be set between the maximum value and minimum value of the variable.
  - Its alarm threshold and principles are as shown in the figure below:



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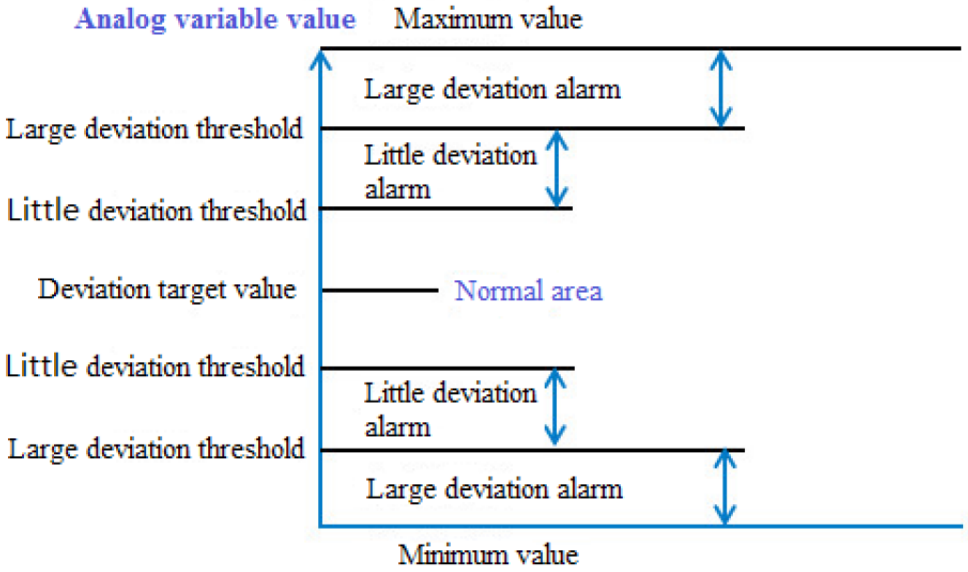
Use of alarm window

- **Deviation alarms:**
  - Deviation alarms are divided into two types: **Large deviation and Little deviation**.
  - When the fluctuating value exceeds the Large/Little deviation range, Large deviation alarms and Little deviation alarms will occur respectively. Also, only one deviation alarm will occur for each variable.



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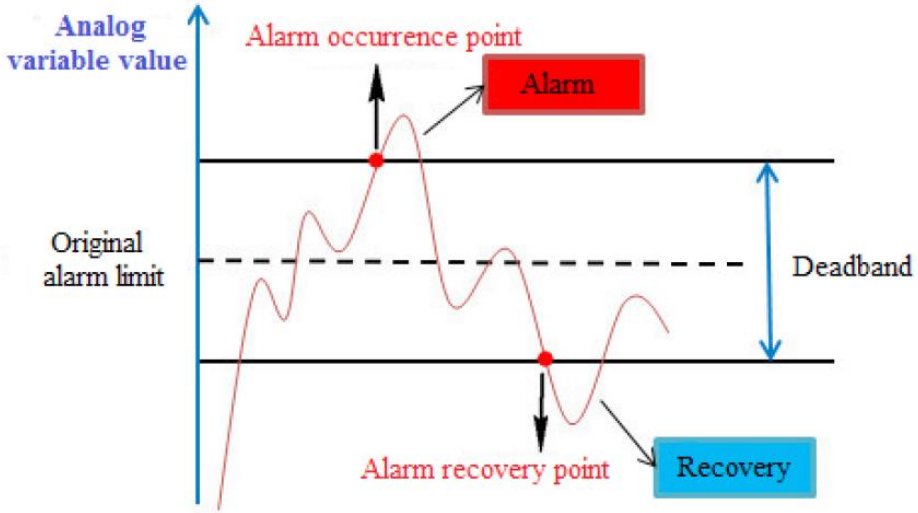
Use of alarm window

- **Dead band:**
  - The effect of the dead band is to prevent unrealistic alarms from being generated when the variable value changes frequently between the original maximum and minimum alarm threshold by adding a threshold value for the maximum and minimum limit of the alarm, changing the original alarm threshold from a single line to an alarm threshold band.
  - The principles of the alarm dead band are as shown in the figure below:



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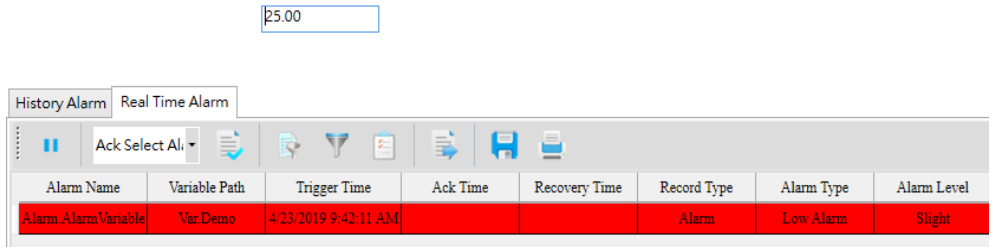
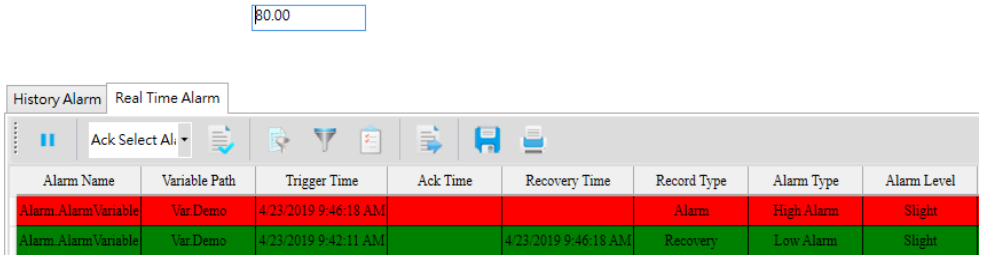
Use of alarm window

- **Example of alarm configuration :**
  - ① We set the value controlled by alarm configuration between 30 and 70.
  - ② So when the value is 25, it shows the low alarm, and when the value go up to 80, it recovers from the low alarm status. But it's over 70, so go into the high alarm status.
  - ③ Finally, when the value go back to 50, it clears all the alarm.

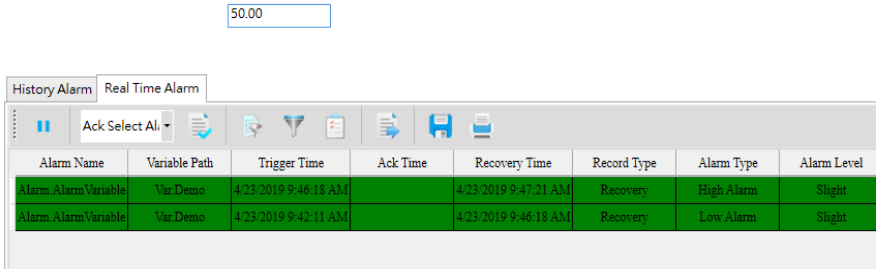
①



②



③



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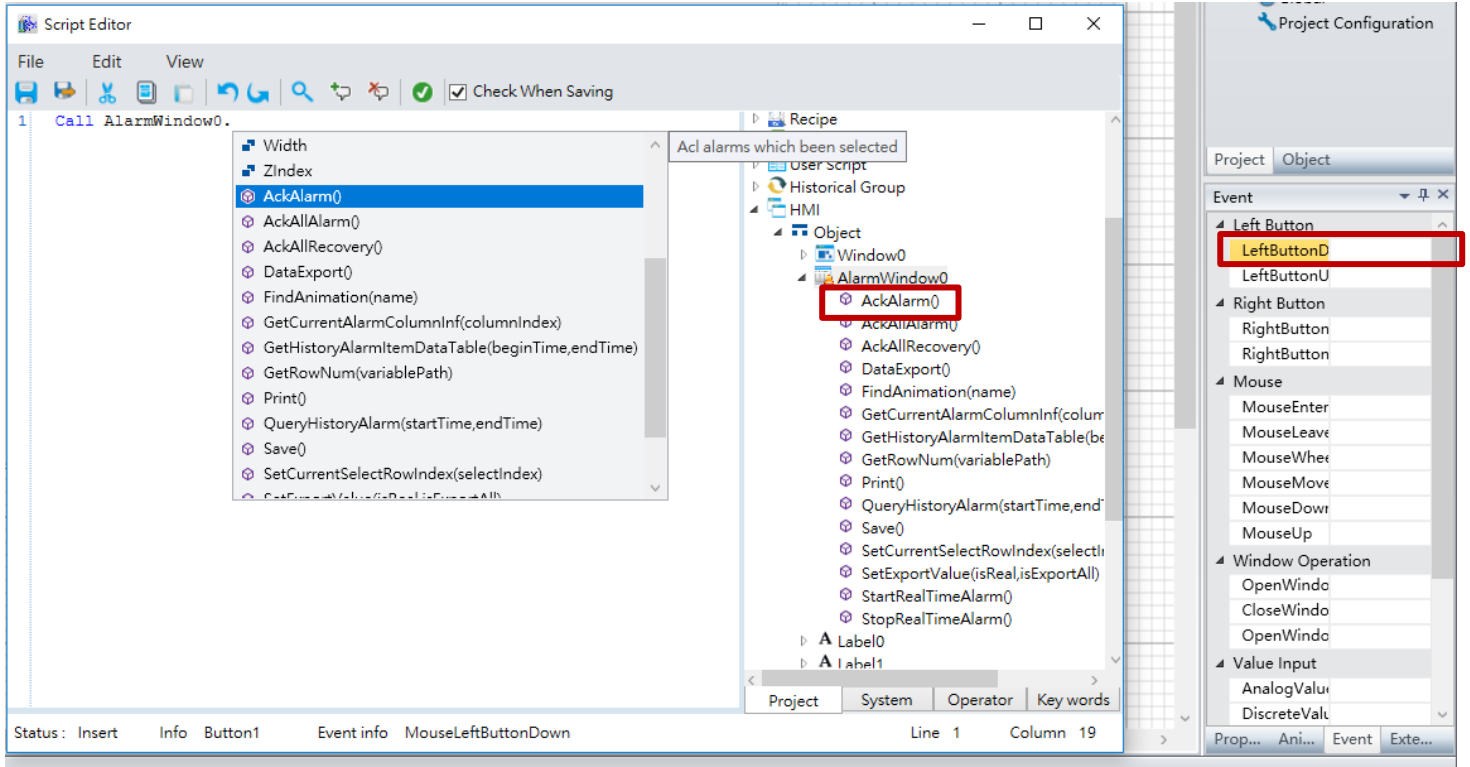
Use of alarm window

- **Script example of Ack an alarm button :**

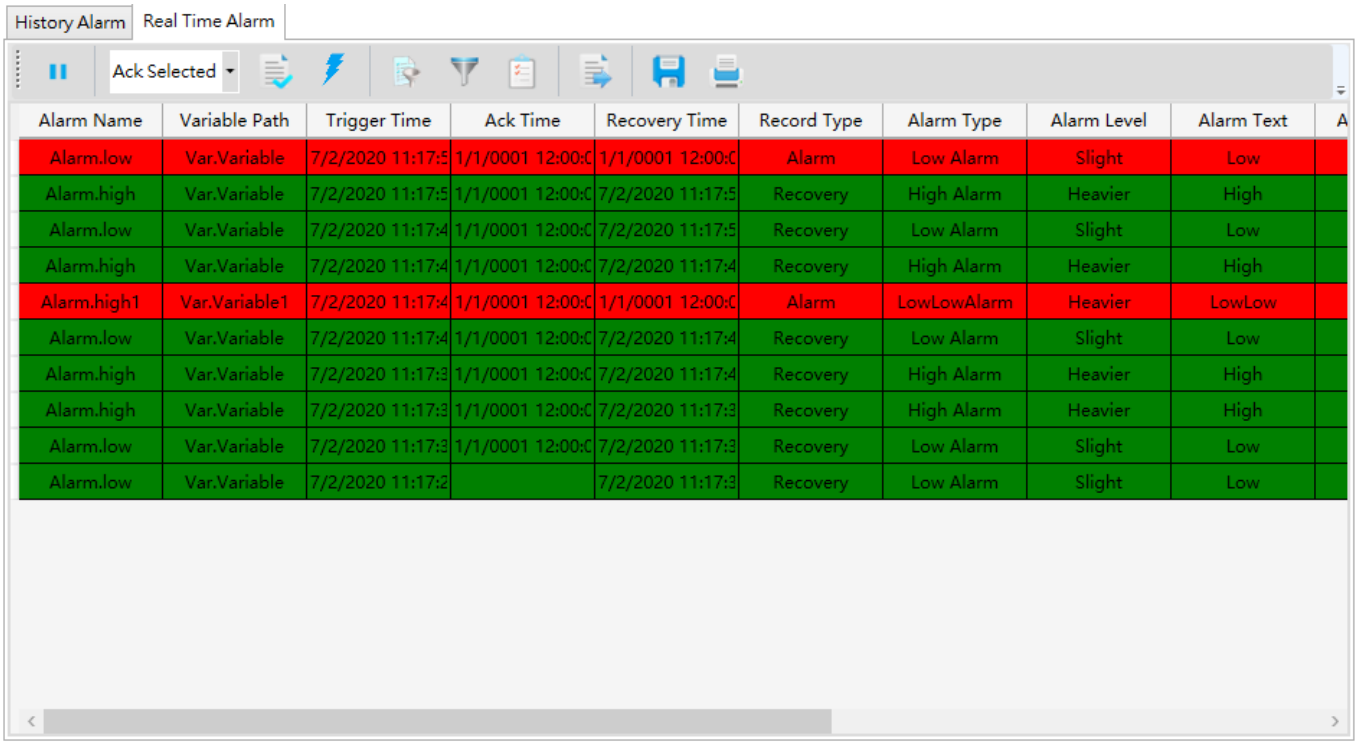
① Configure the response alarm script by pressing the left button



Use of alarm window

- **Script example of Ack an alarm button :**

② Trigger an alarm during operation



Alarm Name	Variable Path	Trigger Time	Ack Time	Recovery Time	Record Type	Alarm Type	Alarm Level	Alarm Text	A
Alarm.low	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	1/1/0001 12:00:0	Alarm	Low Alarm	Slight	Low	
Alarm.high	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	High Alarm	Heavier	High	
Alarm.low	Var.Variable	7/2/2020 11:17:4	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	Low Alarm	Slight	Low	
Alarm.high	Var.Variable	7/2/2020 11:17:4	1/1/0001 12:00:0	7/2/2020 11:17:4	Recovery	High Alarm	Heavier	High	
Alarm.high1	Var.Variable1	7/2/2020 11:17:4	1/1/0001 12:00:0	1/1/0001 12:00:0	Alarm	LowLowAlarm	Heavier	LowLow	
Alarm.low	Var.Variable	7/2/2020 11:17:4	1/1/0001 12:00:0	7/2/2020 11:17:4	Recovery	Low Alarm	Slight	Low	
Alarm.high	Var.Variable	7/2/2020 11:17:3	1/1/0001 12:00:0	7/2/2020 11:17:4	Recovery	High Alarm	Heavier	High	
Alarm.high	Var.Variable	7/2/2020 11:17:3	1/1/0001 12:00:0	7/2/2020 11:17:3	Recovery	High Alarm	Heavier	High	
Alarm.low	Var.Variable	7/2/2020 11:17:3	1/1/0001 12:00:0	7/2/2020 11:17:3	Recovery	Low Alarm	Slight	Low	
Alarm.low	Var.Variable	7/2/2020 11:17:2		7/2/2020 11:17:3	Recovery	Low Alarm	Slight	Low	

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Use of alarm window

- **Script example of Ack an alarm button :**
  - ③ Project in run time
    - ❶Select the alarm item
    - ❷Click the configured response button

Use of alarm window

- **Script example of Ack an alarm button :**
  - ④ The color of the responded alarm ACK

History Alarm | Real Time Alarm

Ack Selected

Alarm Name	Variable Path	Trigger Time	Ack Time	Recovery Time	Record Type	Alarm Type	Alarm Level	Alarm Text
Alarm.low	Var.Variable	7/2/2020 11:18:0	1/1/0001 12:00:0	7/2/2020 11:18:0	Recovery	Low Alarm	Slight	Low
Alarm.high	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	High Alarm	Heavier	High
Alarm.low	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	Low Alarm	Slight	Low
Alarm.high	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	High Alarm	Heavier	High
Alarm.low	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	Low Alarm	Slight	Low
Alarm.low	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	Low Alarm	Slight	Low
Alarm.high	Var.Variable	7/2/2020 11:17:5	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	High Alarm	Heavier	High
Alarm.low	Var.Variable	7/2/2020 11:17:4	1/1/0001 12:00:0	7/2/2020 11:17:5	Recovery	Low Alarm	Slight	Low
Alarm.high	Var.Variable	7/2/2020 11:17:4	1/1/0001 12:00:0	7/2/2020 11:17:4	Recovery	High Alarm	Heavier	High
Alarm.high1	Var.Variable1	7/2/2020 11:17:4	7/2/2020 11:26:0	1/1/0001 12:00:0	Ack	LowLowAlarm	Heavier	LowLow
Alarm.low	Var.Variable	7/2/2020 11:17:4	1/1/0001 12:00:0	7/2/2020 11:17:4	Recovery	Low Alarm	Slight	Low
Alarm.high	Var.Variable	7/2/2020 11:17:3	1/1/0001 12:00:0	7/2/2020 11:17:4	Recovery	High Alarm	Heavier	High
Alarm.high	Var.Variable	7/2/2020 11:17:3	1/1/0001 12:00:0	7/2/2020 11:17:3	Recovery	High Alarm	Heavier	High
Alarm.low	Var.Variable	7/2/2020 11:17:3	1/1/0001 12:00:0	7/2/2020 11:17:3	Recovery	Low Alarm	Slight	Low
Alarm.low	Var.Variable	7/2/2020 11:17:2		7/2/2020 11:17:3	Recovery	Low Alarm	Slight	Low

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- Alarm management tool
- Alarm configuration settings
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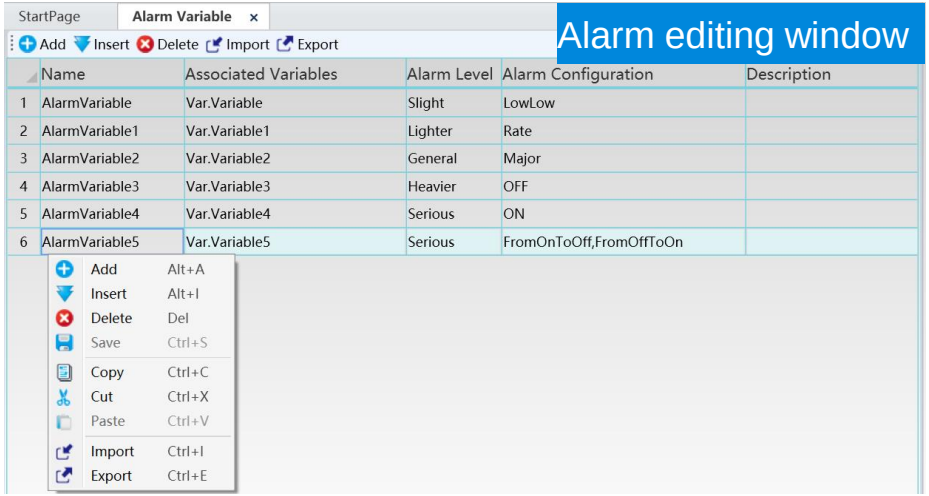
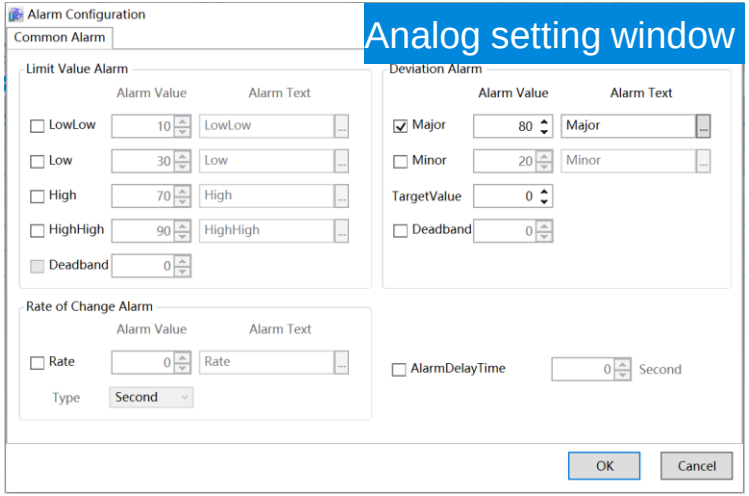
Alarm management tool

➢ Alarm management tool operation:

- Edit actions such as adding, inserting, deleting, importing and exporting alarms
- Filter variables by variable group, variable type, variable name
- Alarm setting according to variable type





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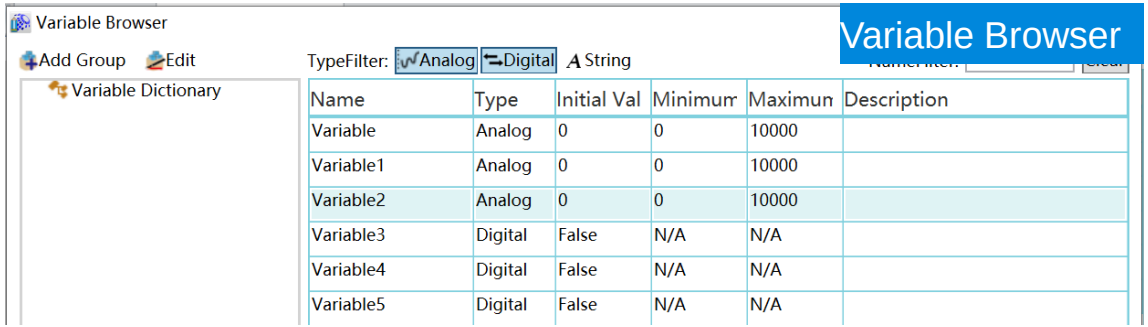
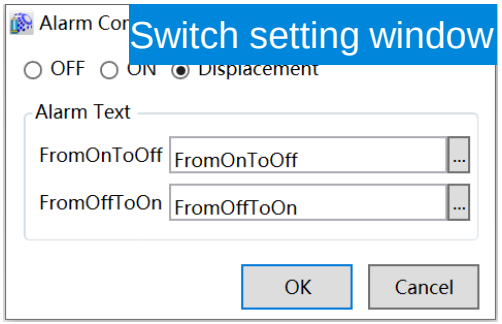


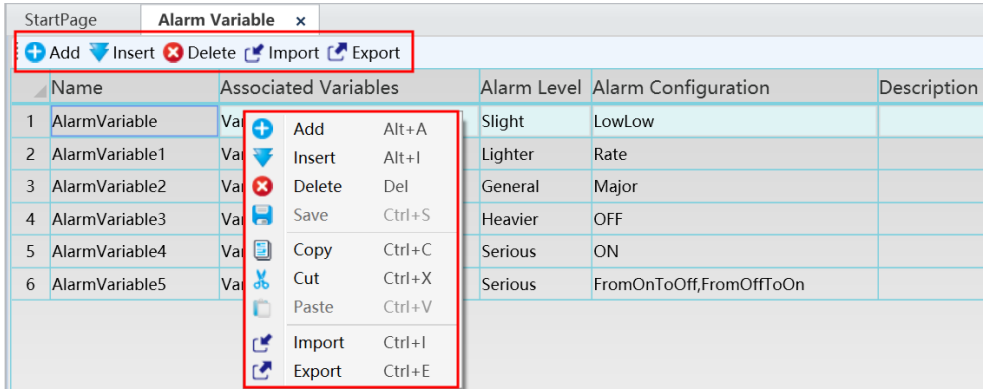


Alarm management tool

➢ Basic operation and attributes of alarm variables

- Basic operation of variables

Add	Add an alarm variable, the newly added variable is displayed in the variable list in the variable editing area
Insert	Insert a variable, the newly inserted variable is displayed above the inserted variable
Delete	Delete a variable
Import	Import external variable configuration files to improve the efficiency of variable configuration
Export	Variable configuration information can be exported as an excel file, supporting xls and xlsx formats
Copy	Copy variables
Cut	Shear variable
Paste	Paste variables



※Refer to the section "11.3 Alarm Variables"in user manual.

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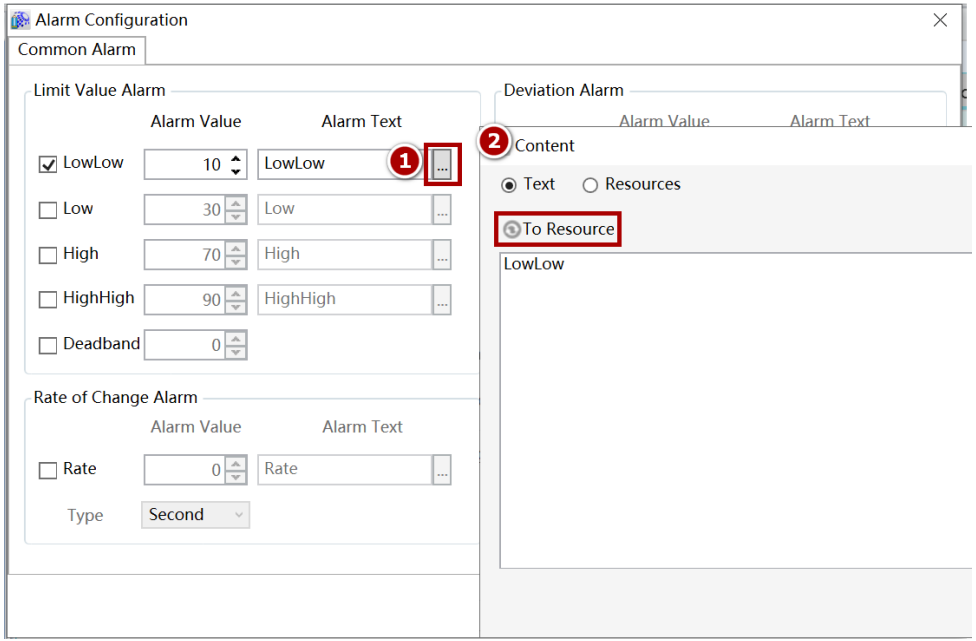
Alarm management tool

- **Multilingual function of alarm setting**

  ① Click the expansion button to the right of the selected alarm settings. (The switch alarm setting can refer to this process)

  ② In the "Content" window, click the "To Resourse" button to select and set multilingual content in the window, and convert the alarm text into multilingual resources.

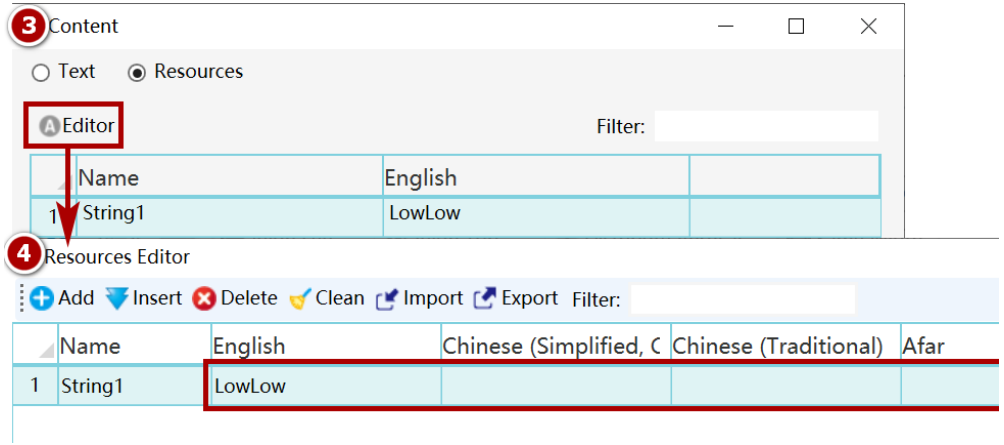


Alarm management tool

- **Multilingual function of alarm setting**

③ Click "Editor" to enter the "Resourse Editor" window

④ In the "Resourse Editor" window, you can edit the added multilingual content directly in the multilingual resource bar. After editing, select the set multilingual resources in the "Content" window and click "OK" to complete the multilingual setting



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Alarm configuration settings

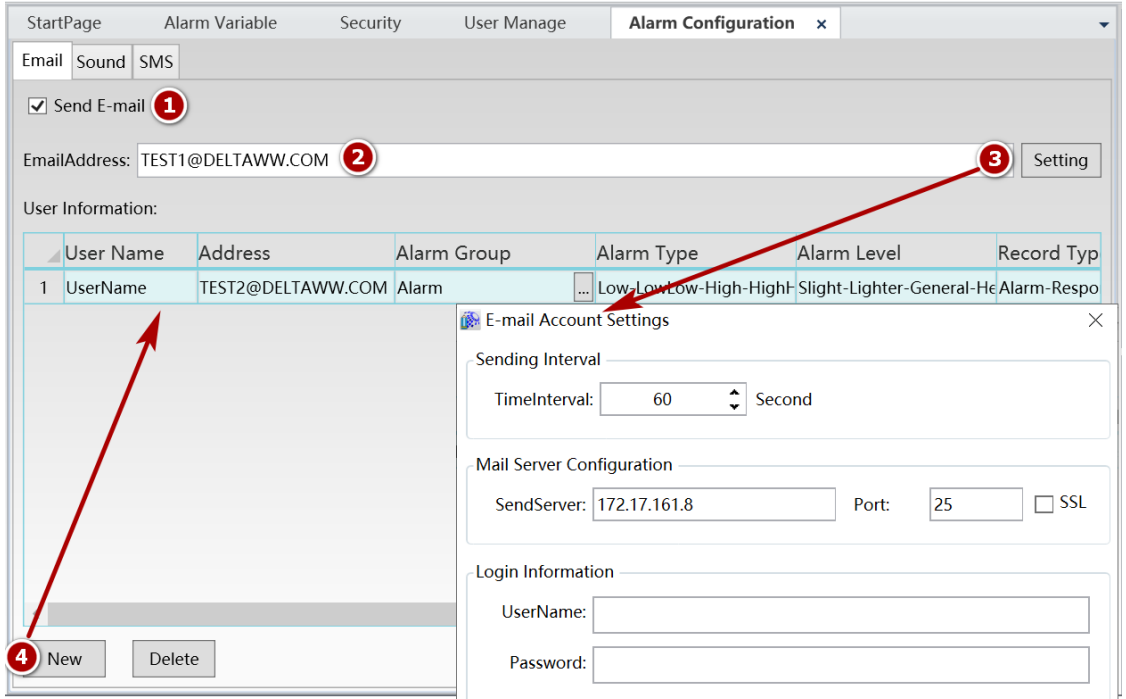
- Type of Alarm configuration: **1. Email** 2.Sound 3. SMS

① Check the "Send E-mail" button to start the function of sending emails.

② Fill in the email address of the recipient user.

③ Set the relevant information for sending emails.

④ Click the "New" button to add user information to receive alarm information.



※Refer to the section "11.5 Alarm configuration settings"in user manual.

Alarm configuration settings

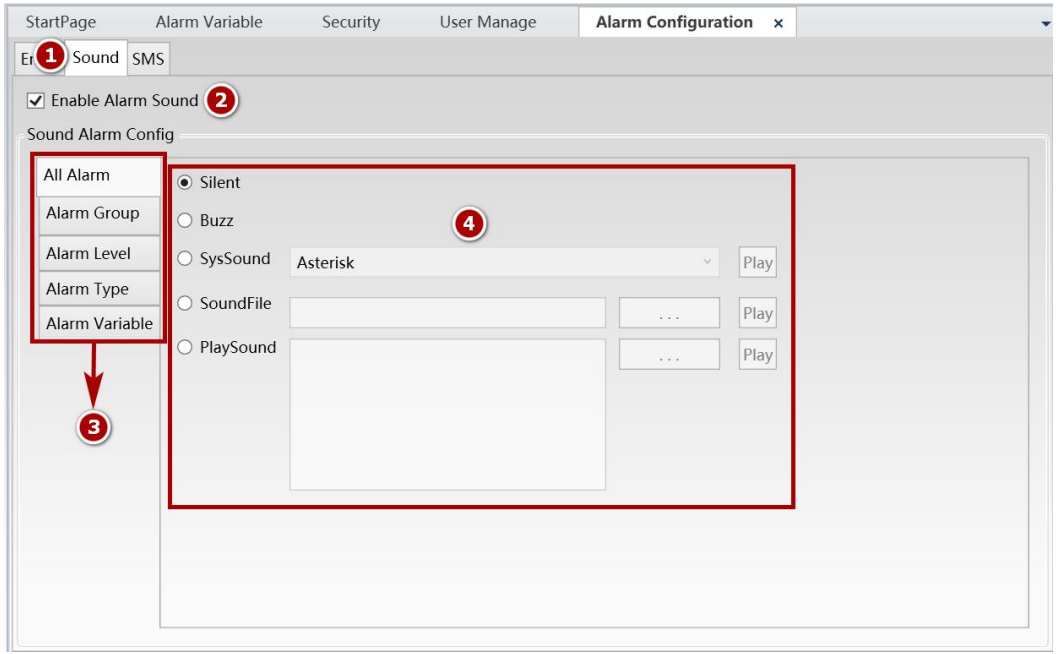
- Type of Alarm configuration: 1. Email **2.Sound** 3. SMS

① Select the “Sound” tab to enter the sound configuration interface.

② Check the “Enable Alarm Sound” button to activate the sound alarm function.

③ Select the alarm content you need.

④ Set the various contents of the sound alarm configuration.



※Refer to the section "11.5 Alarm configuration settings"in user manual.

Alarm configuration settings

- Type of Alarm configuration: 1. Email 2.Sound **3. SMS**

① Select the "SMS" tab to enter the mobile phone SMS configuration interface.

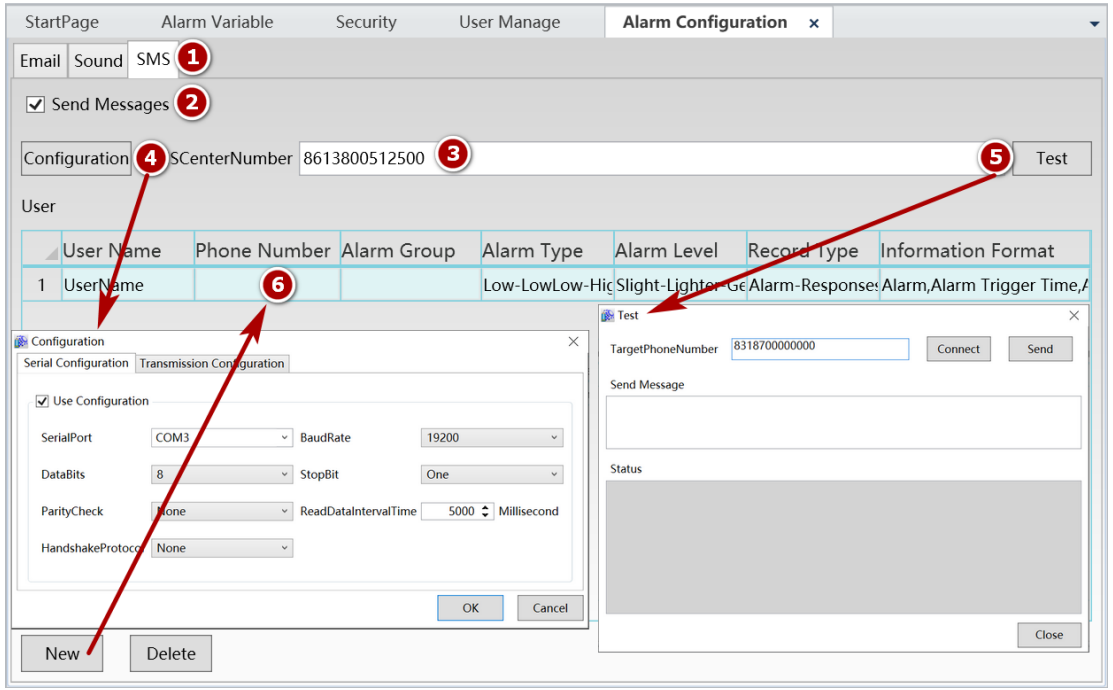
② Check the “Send Messages” button to start sending SMS.

③ Fill in the SMS center number.

④ Click on the "Configuration" button to set the information about sending SMS.

⑤ Click the "Test" button to test the current connection status.

⑥ Click the "New" button to add user information to receive alarm information.



※Refer to the section "11.5 Alarm configuration settings"in user manual.

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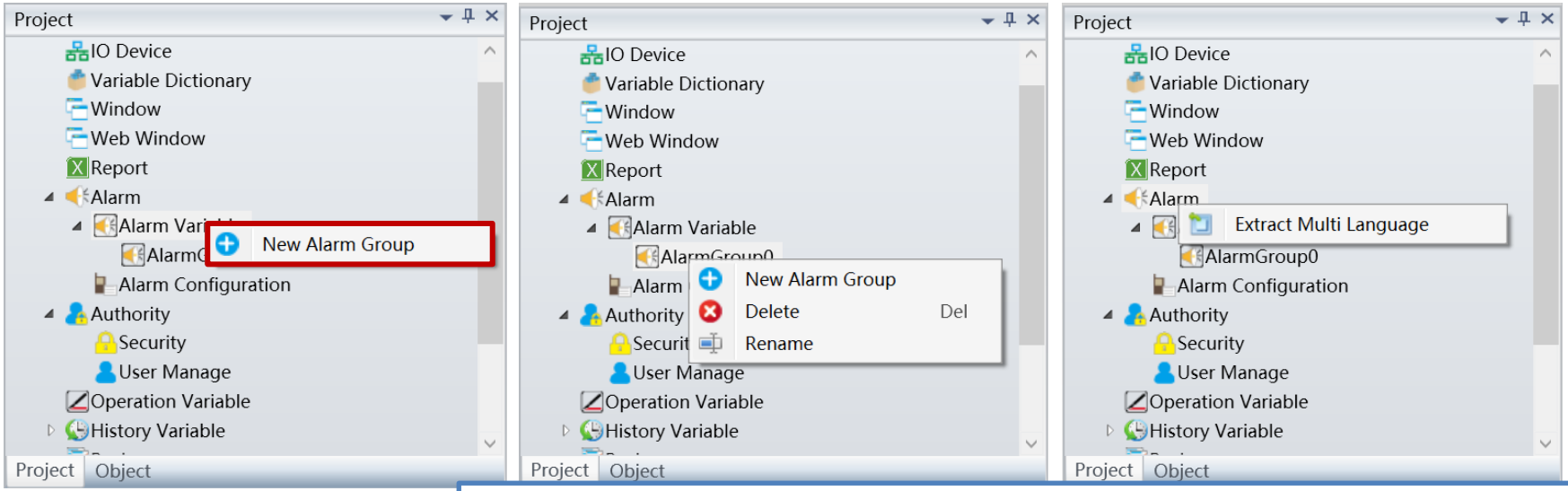
Right-click function of alarm group

➢ Right-click function of alarm group

- The alarm group can realize the classified management of the alarms and classify the related alarms in the same alarm group, which is convenient for the system to manage and operate the alarm groups in a unified manner.
- The alarm variables in the DIAView configuration software generally belong to an alarm group. The alarm group is first established, and then the alarm variables are created in the alarm group.



※Refer to the section "11.2 Alarm group"in user manual.

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