

OMC System Software

High-performanceHMI

SISPatch

User Manual

IM51S18-E

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Symbol Definition	
	WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user.

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SISPatch

Section 1 Overview

SISPatch is a patch package that connects SIS data to High-performanceHMI and achieves centralized monitoring. Connect SIS TAG to High-performanceHMI system via domain variable, to monitor the real-time data, diagnosis data and trend data, etc.

Section 2 Connect SIS Driver

Run installation program of SISPatch to install SISPatch Driver. After that, TCS-900 Driver can be added when configuring High-performanceHMI domain variable.

SIS Driver supports to import several SIS projects via domain variable configuration, and import SIS project configuration to import SIS project configuration to High-performanceHMI domain variable configuration in batch.

2.1 Configure SIS Driver

Open domain variable configuration software, select **Edit/Operational Domain Driver Settings (R)** in menu bar to pop up the interface below.

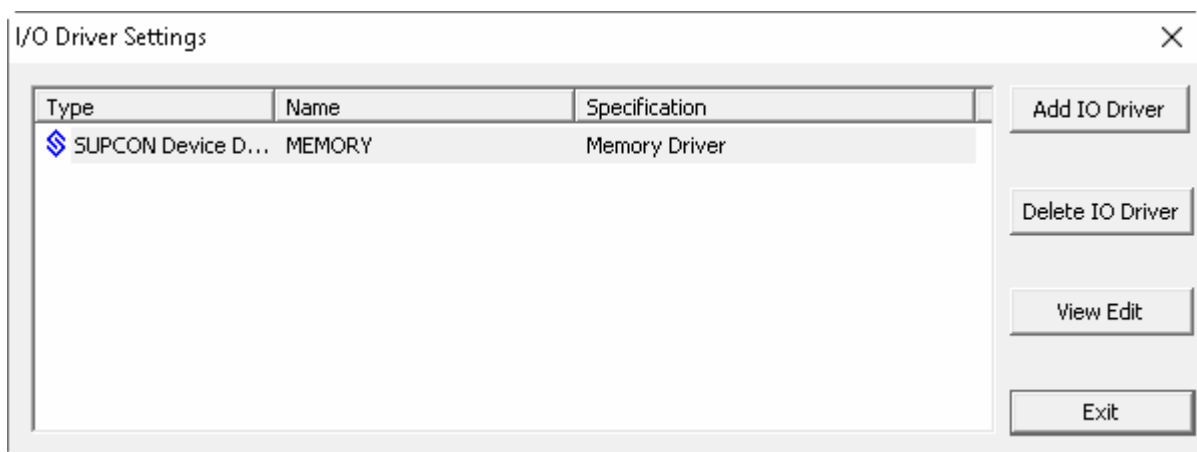


Figure 2-1 I/O Driver Settings

Click "Add IO Driver" in the IO driver settings interface, to pop up the I/O driver settings wizard.

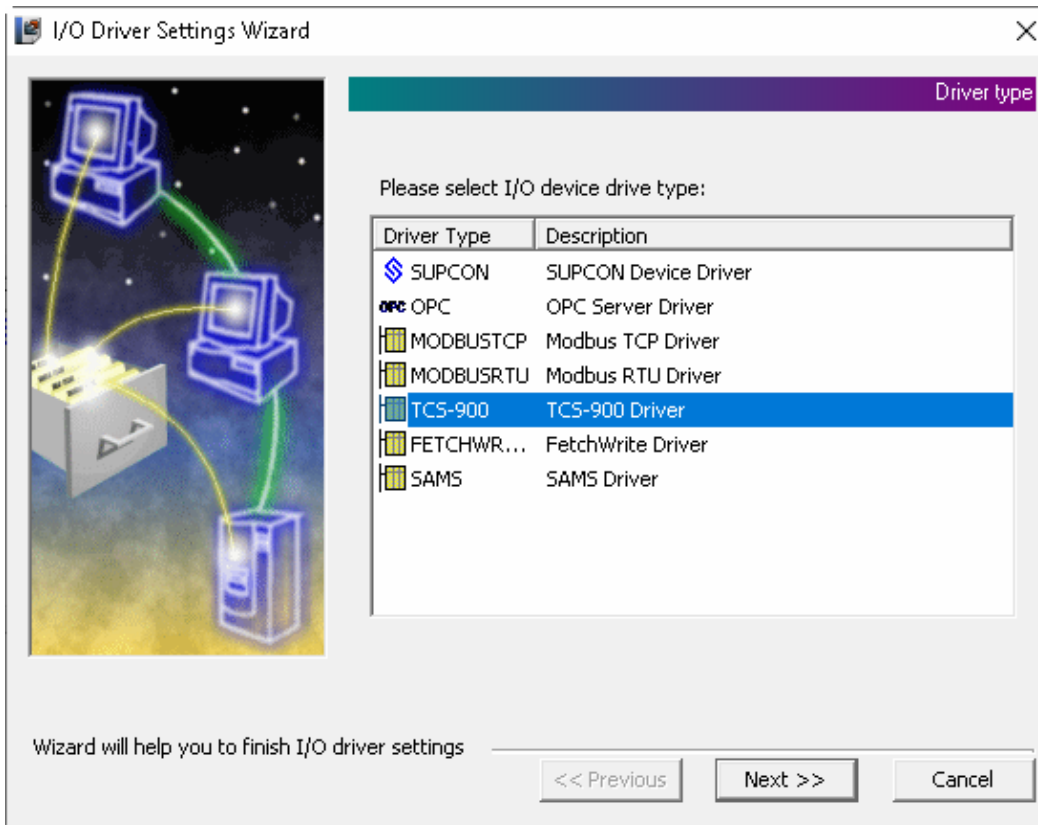


Figure 2-2 I/O Driver Settings Wizard

Select "TCS-900 Driver" and click "Next".

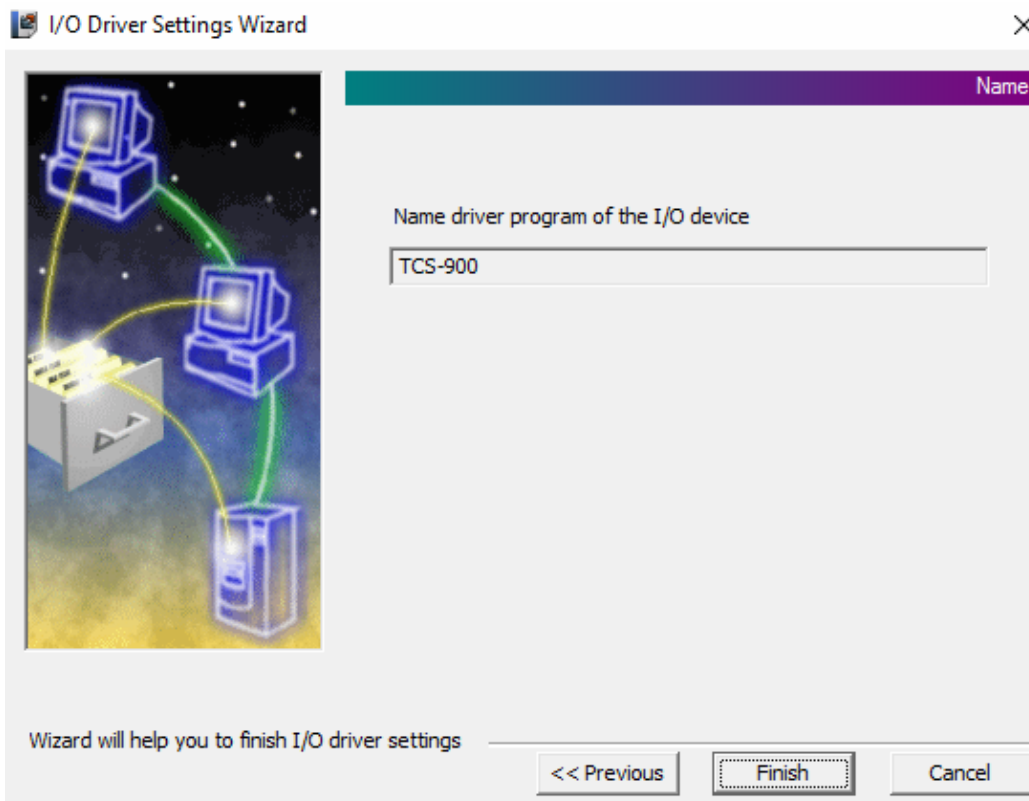


Figure 2-3 Input driver program name

Click "Finish" to complete the driver program configuration and open the TCS driver configuration interface.

2.2 Configure SIS TAG

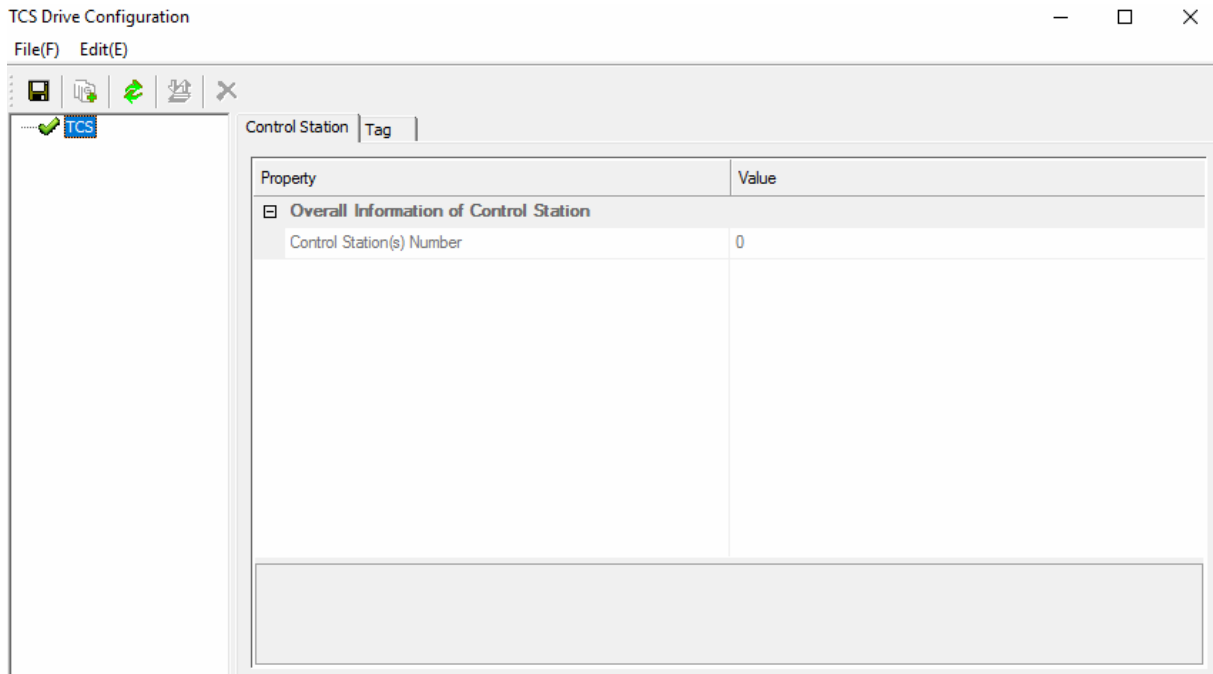



Figure 2-4 TCS Driver Configuration

Click **Edit/ Load(M)** or click  in toolbar to load SIS configuration, which should be completed in SafeContrix first.

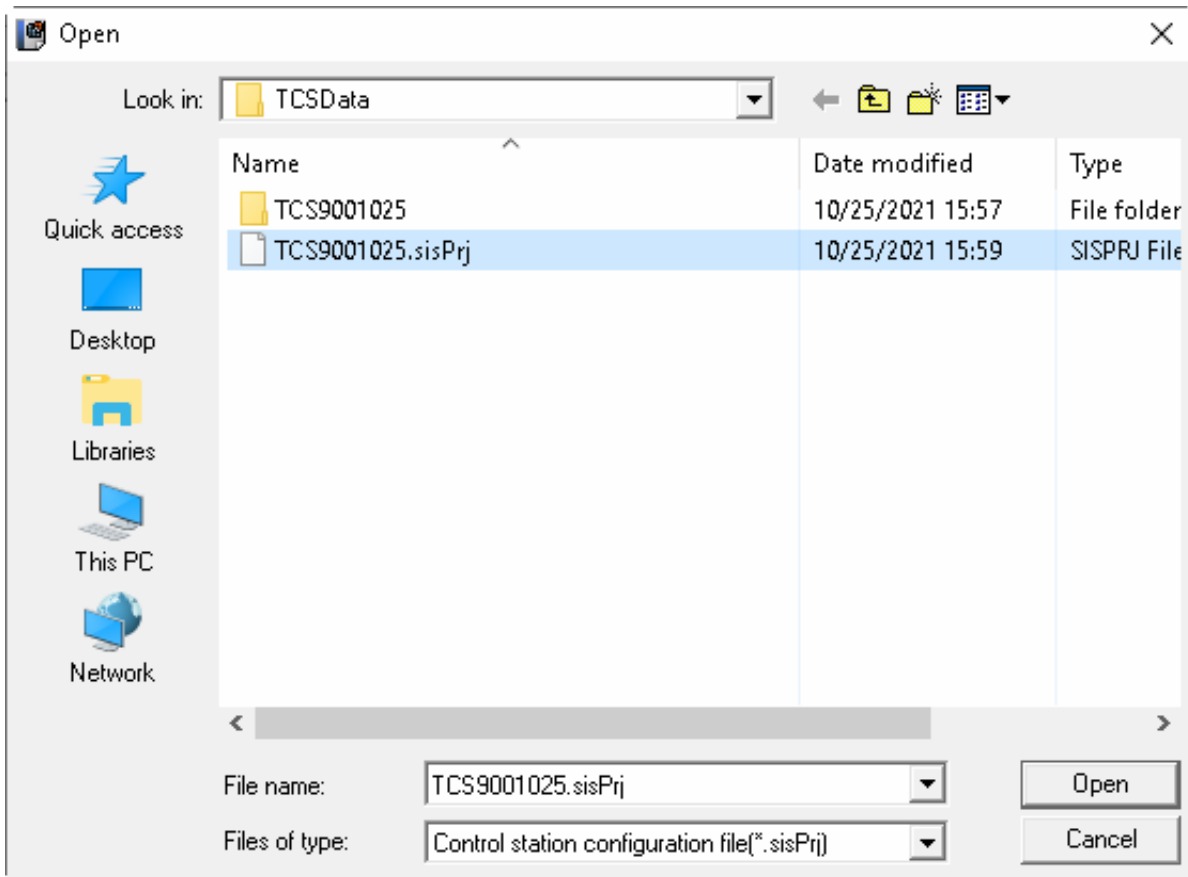


Figure 2-5 Load SIS configuration

Double-click to open the selected configuration, and the configuration information will be shown in “TCS Driver Configuration” interface. SIS driver management supports to load several project configuration files.

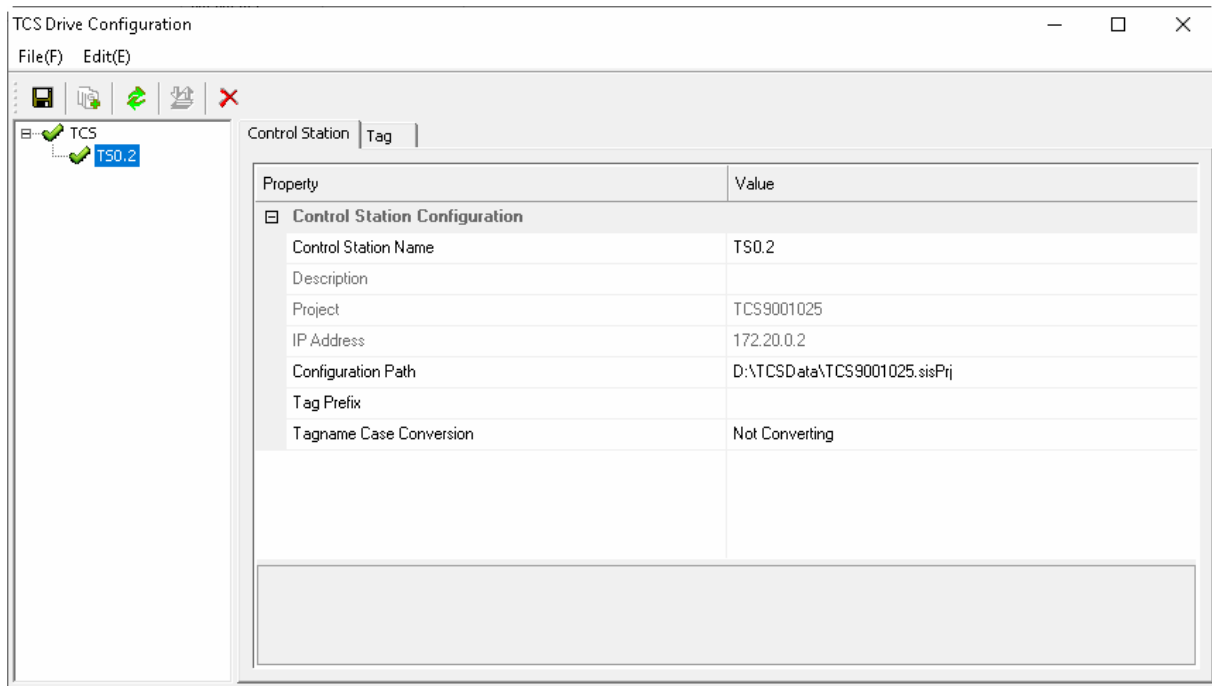


Figure 2-6 TCS Driver configuration interface

The imported control station will be marked by last 2 fields of TS+IP address, for example TS15.2.

Control station name and tag prefix can be modified in the figure above. Control station name can only contain number, letter or "-", "_", and ".", maximum 128 characters. Names cannot be repeated.

If add several configurations simultaneously, the name of configuration tag added later is repeated with that of added before, a tag prefix will be added, the prompt is shown below.

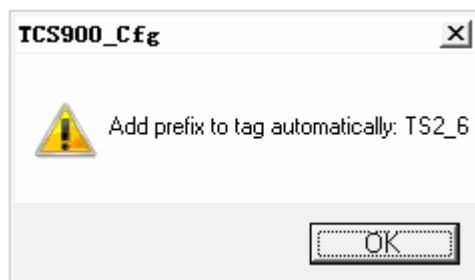


Figure 2-7 Add prefix to tag automatically

Switch to "Tag" to show the tag filter interface, as shown below.

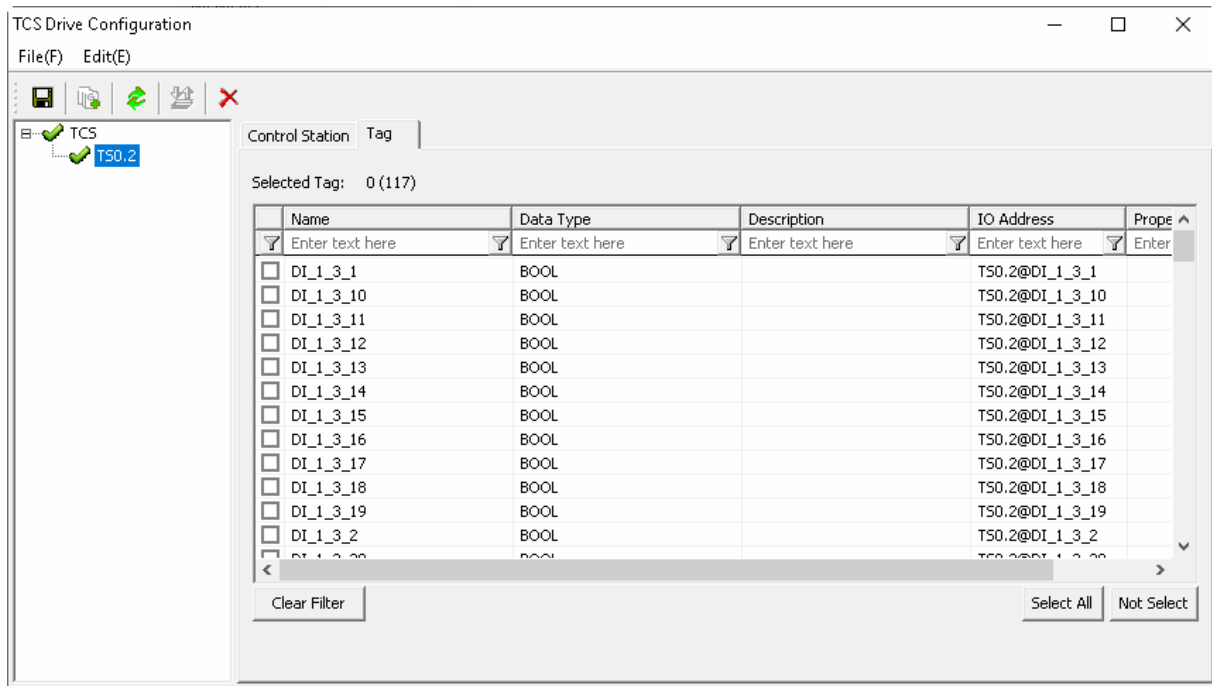



Figure 2-8 TCS driver tag configuration

- Tag filter conditions include "Name", "Data Type", "Description", "IO Address" and "Properties".
- Select the check box of each row to switch status, press keys "Shift", "Ctrl" and click to select several items, to switch status simultaneously, switch status of all selected tags with the current check box.
- Click "Select All" in the right lower corner of interface to select all tag in current page. Click "Select None" to clear all selected tags.
- Click column title to sort the tags by alphabetical order. Click once to sort by ascending order, and twice by descending order.
- Input key word in search boxes of filter conditions and press "Enter" key to filter the tags in list.
- Click different control stations in left pane, update properties interface and tag list interface, clear filter conditions of tag list in "Tag" tab.

Click  above status column to pop up status filter dialog below.

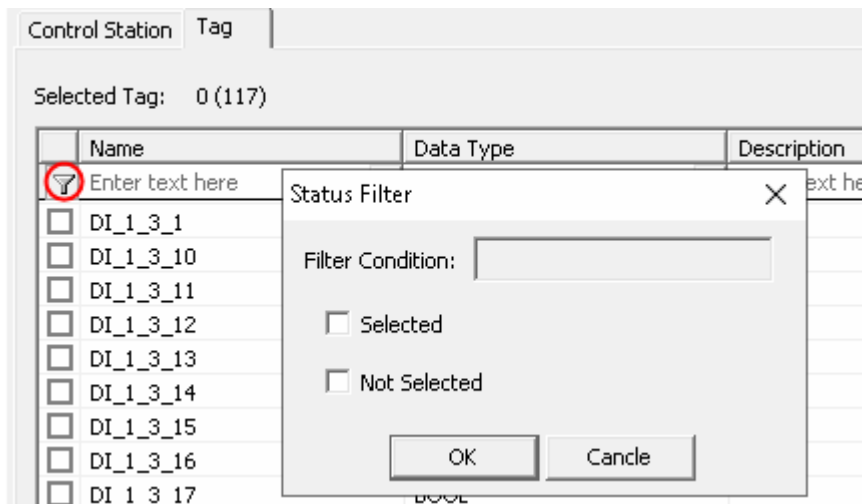



Figure 2-9 Status Filter

There are 3 filter conditions: "Selected", "Unselected" and "Selected OR Unselected" (select "Selected" and "Unselected" together).

Click  of data type condition to pop up the data type condition to pop up the filter dialog of data type. As shown below.

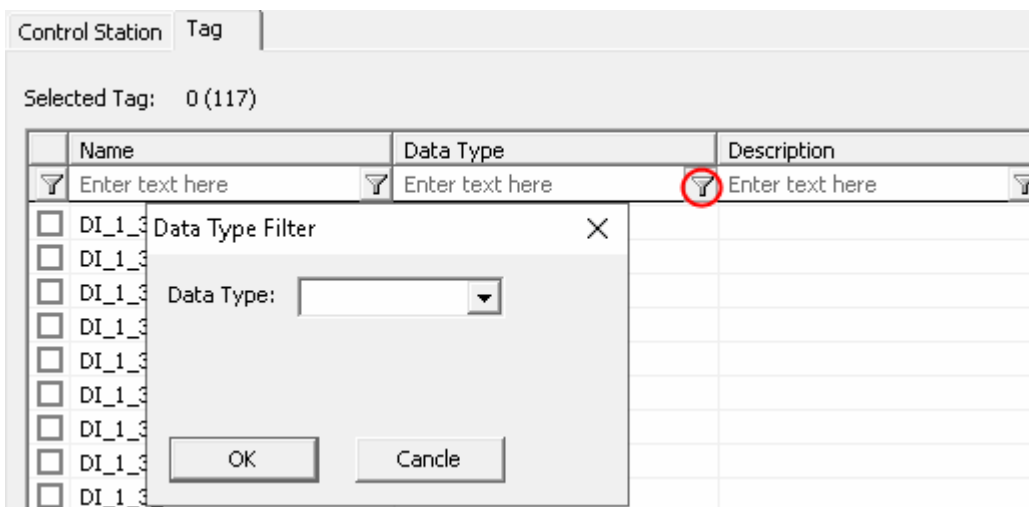



Figure 2-10 Data Type Filter

Select various data types from the drop-down menu to filter rows, such as "BOOL", "REAL", "INT" and so on.

Click **File/ Save** or  to save configuration. Close driver configuration interface. All selected tags have been added to domain variable configuration. As shown below.

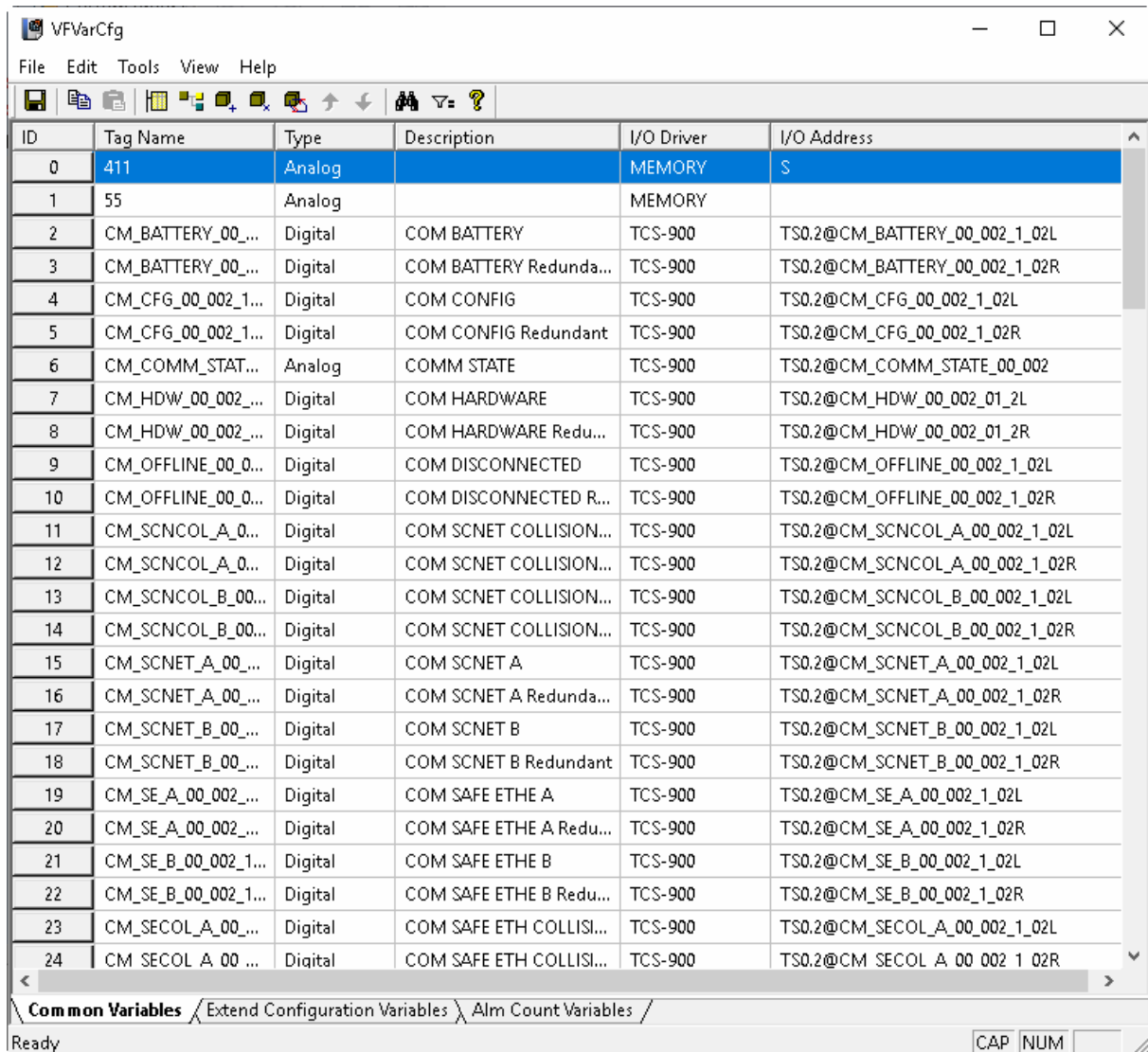


Figure 2-11 Add SIS TAG to domain variable configuration

2.3 Set Alarm Limit

In Figure 2-11, SIS TAG has been added to domain variable configuration. User can set alarm limit for the tags. The setting method is same with ordinary domain variable tags. When real-time value reaches to alarm limit, process alarm will be generated in monitoring.

2.3.1 Configure Analog Alarm

Configured analog alarm interface is shown below.

Analog Settings

Basic Alarm

☒ Alarm Enable

Alarm Limit		Limit	Description	Alarm Priority
<input checked="" type="checkbox"/>	LL	0	LL	Low
<input checked="" type="checkbox"/>	L	0	L	Low
<input checked="" type="checkbox"/>	H	100	H	Low
<input checked="" type="checkbox"/>	HH	100	HH	Low
<input type="checkbox"/>	HYS	0		

☐ Change Rate 0 % Low

Remark Region

Remark1:

Remark2:

OK Cancel

Figure 2-12 Alarm configuration

- Alarm Enable: select "Enable Alarm" to enable the alarm settings. Alarm information can be set and modified after enable the alarm settings.
- Alarm Limit: include LL alarm, L alarm, H alarm, HH alarm, HYS value and change rate alarm. The front 4 settings cannot exceed the limited range of basic settings. Change rate alarm is shown as range percentage in 0~100.
- Alarm Level: set the alarm level for tag, to distinguish the different alarm levels of tags. While creating project, alarm level can be configured. In default, the value is low. And alarm User can adjust by or input the number directly.

2.3.2 Configure Digital Alarm

Digital alarm configuration interface is shown below.

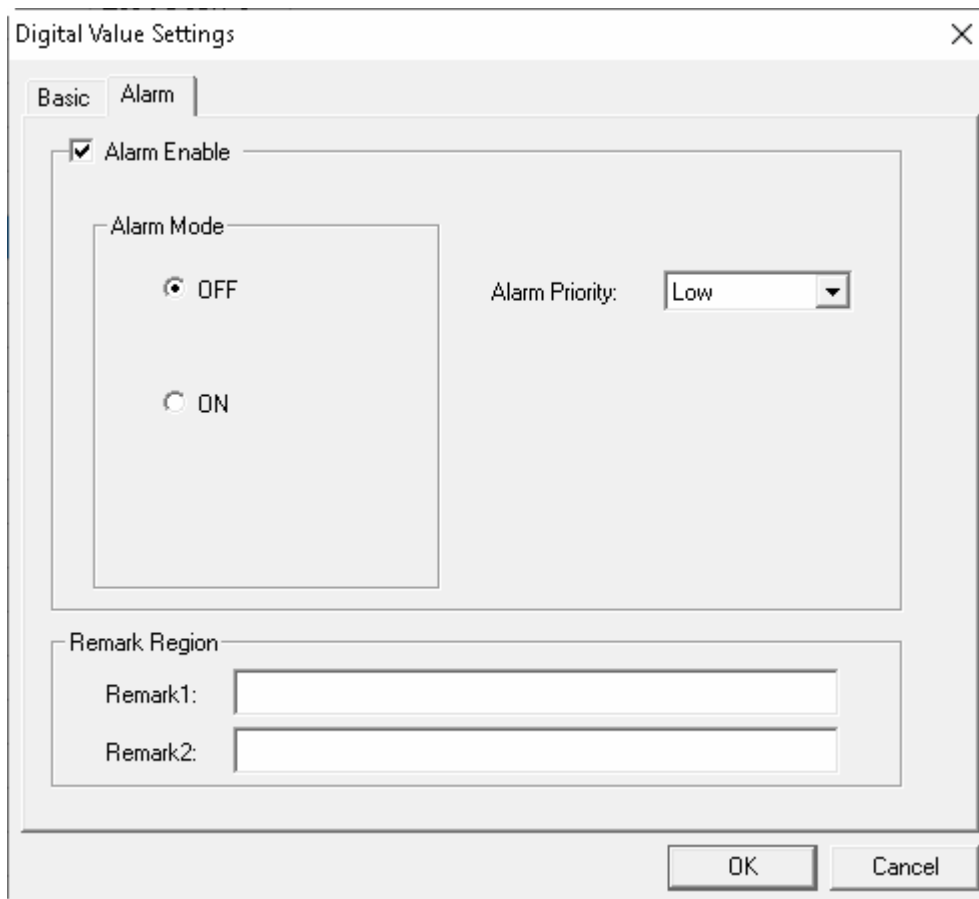



Figure 2-13 Alarm configuration

- Alarm Enable: select "Enable Alarm" to enable the alarm settings. Alarm information can be set and modified after enable the alarm settings.
- Alarm Mode: digital alarm modes including OFF alarm and ON alarm.
- Alarm Level: set the alarm level for tag, to distinguish the alarm levels of tags. Settings for alarm level is same with extend configuration variable of analog.

Section 3 Real-time Diagnosis Control

After installing SISPatch package, user can select some real-time diagnosis controls of SIS system from configuration toolbar of graphics. User can view the SIS fault diagnosis information via the real-time diagnosis control.

Open the graphics drawing software, click  (Diagnosis Control of TCS Control Station) in the left pane, press the left button of mouse, drag and drop to form a rectangle frame. As shown below.

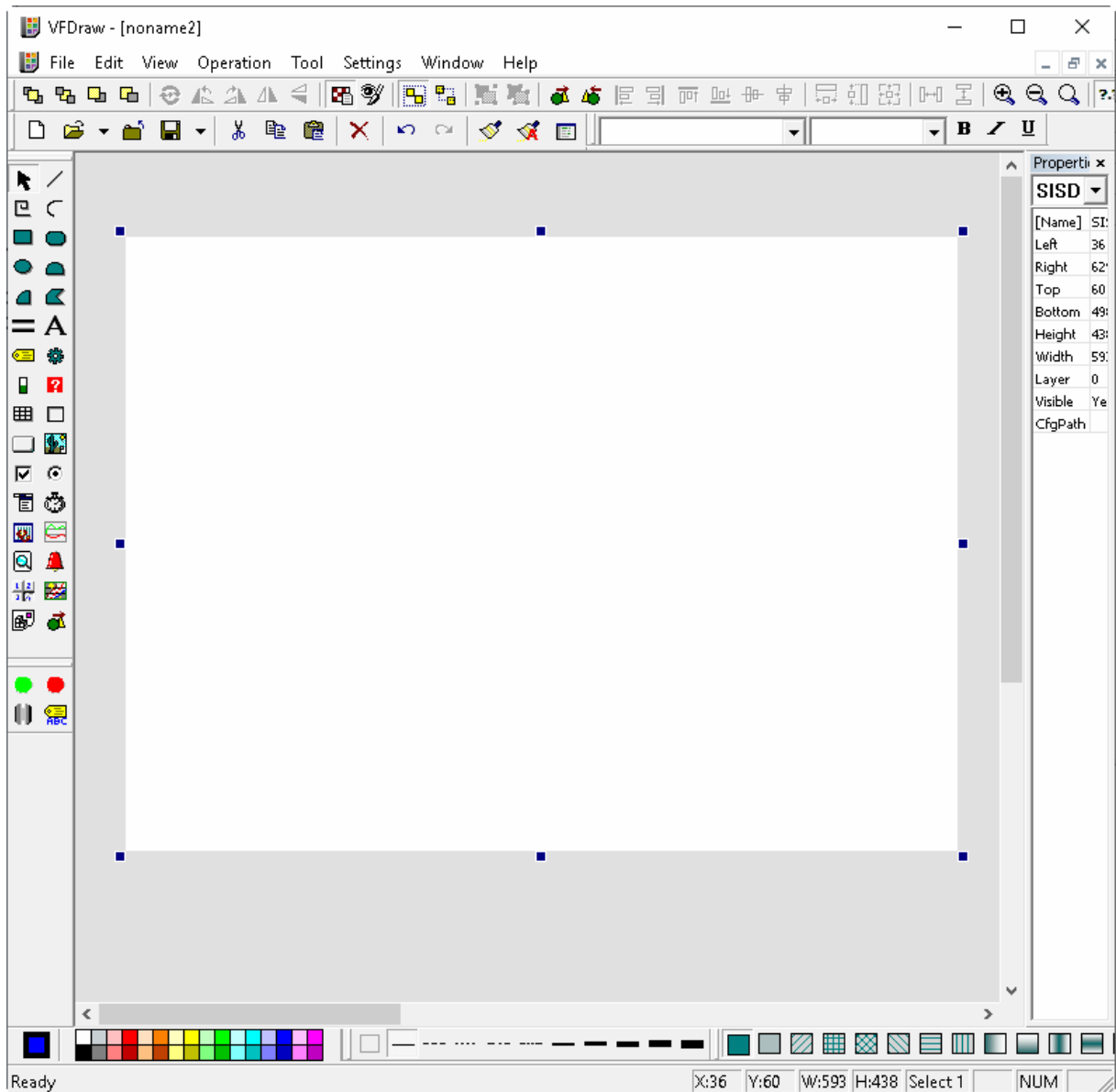


Figure 3-1 Insert diagnosis control

Double-click the control or right-click it and select "Control Properties", to pop up the interface below.

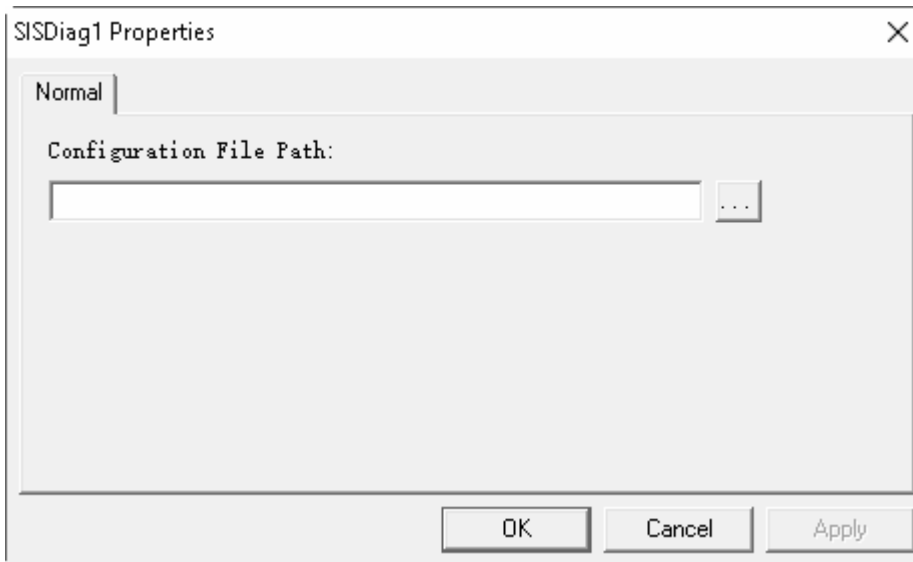



Figure 3-2 Diagnosis control properties

Click  to load configuration file.

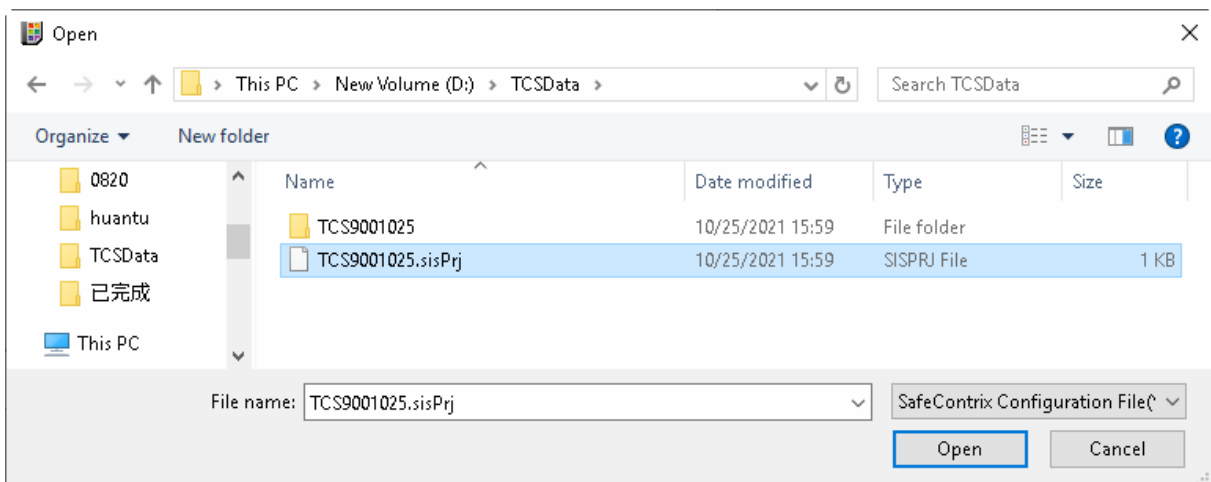


Figure 3-3 Load configuration file

Click "OK" after loading configuration file, to show the configuration graph.

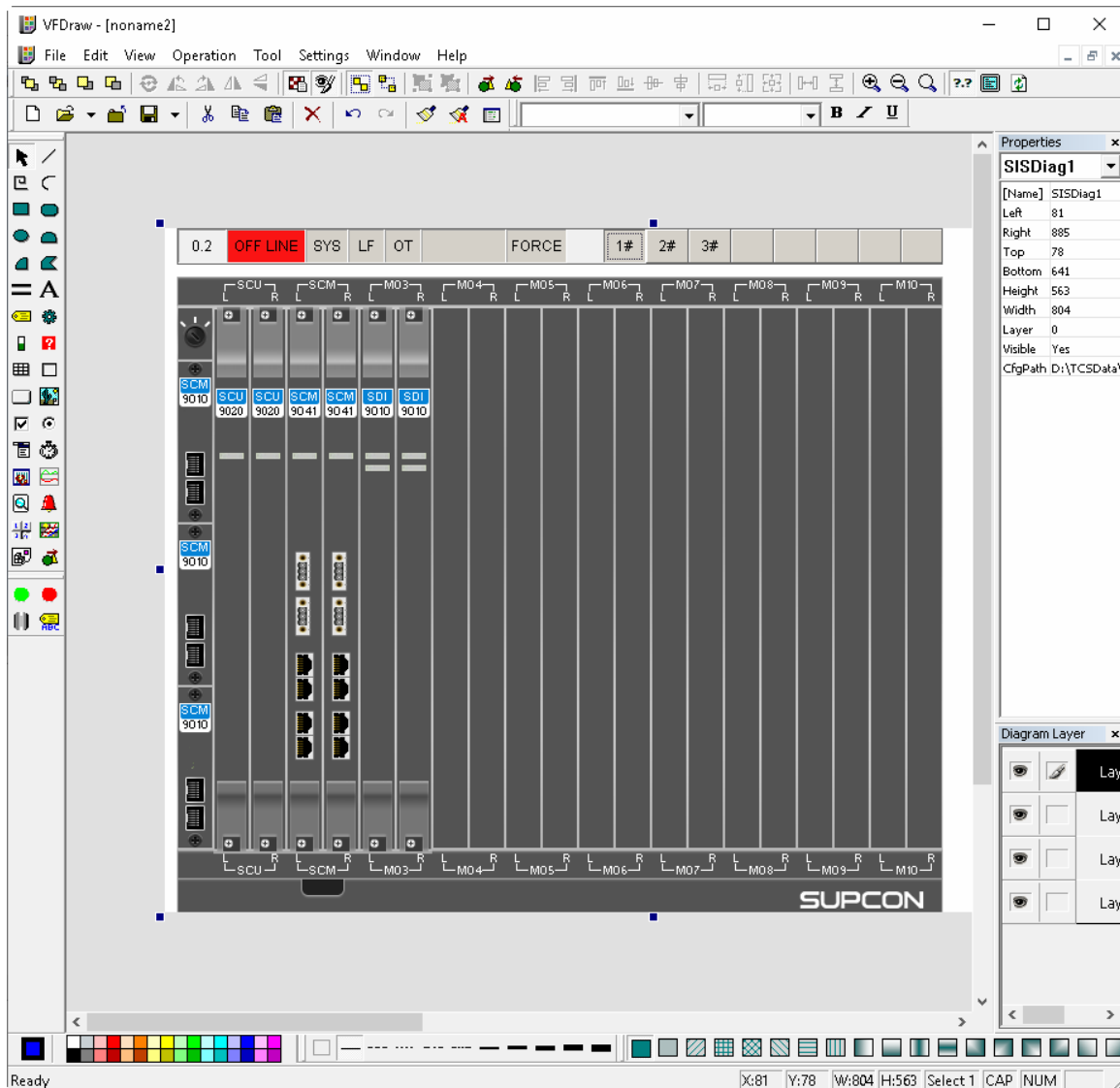



Figure 3-4 Control station configuration graph



The top light on module becoming red (such as ) means that the module has fault.

Double-click the slot to pop up the diagnosis information interface, which including real-time diagnosis tab and detail diagnosis tab. Each diagnosis item has corresponding actual value. Diagnosis item with fault is red.

For detail diagnosis and indicator of TCS-900 system, refer to *SafeManager User Manual*.

Section 4 SISPatch Real-time Monitoring

This section introduces how to monitor SIS TAG, which can be achieved in High-performanceHMI real-time monitoring software.

4.1 Start Real-time Monitoring Software

Steps to start the real-time monitoring software:

Select **Start > OMC > VFLaunch** to pop up the operation domain configuration selection interface.

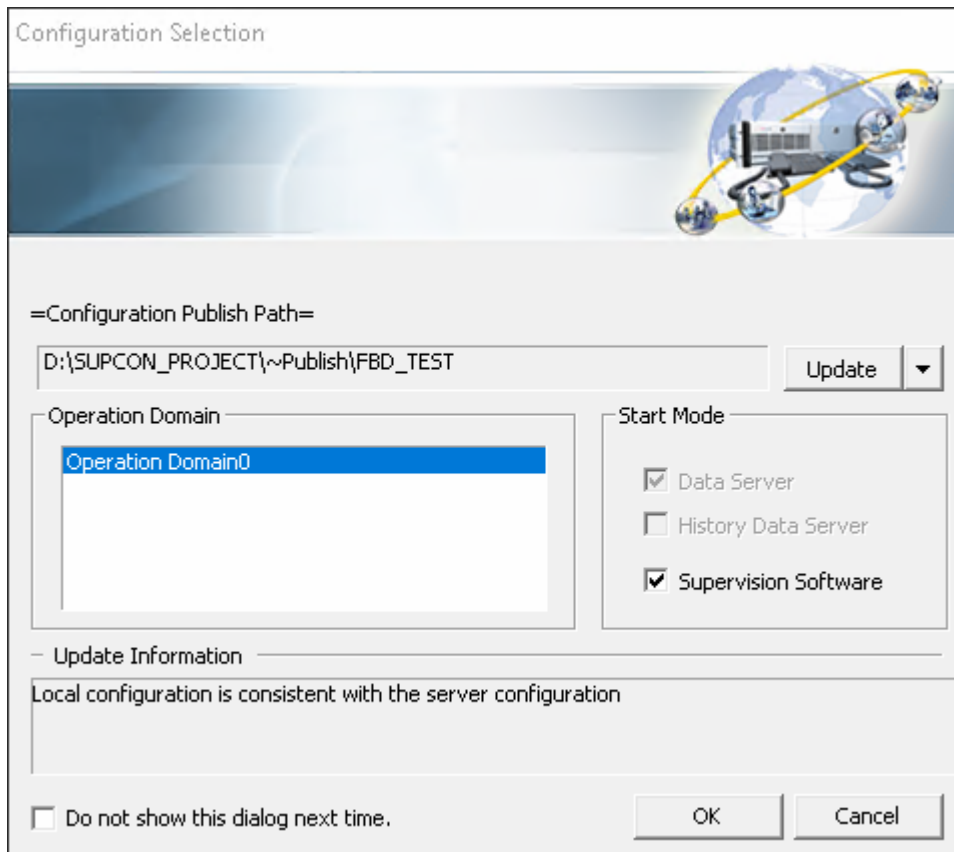


Figure 4-1 Select Configuration

Select the operation domain to be login and the startup mode of monitoring.

Click "OK" to pop up the monitoring welcome interface.

Select the command "User Login" in the dropdown list box of the monitoring header, and select "Login" from the drop-down menu, to pop up "Login" dialog shown below.

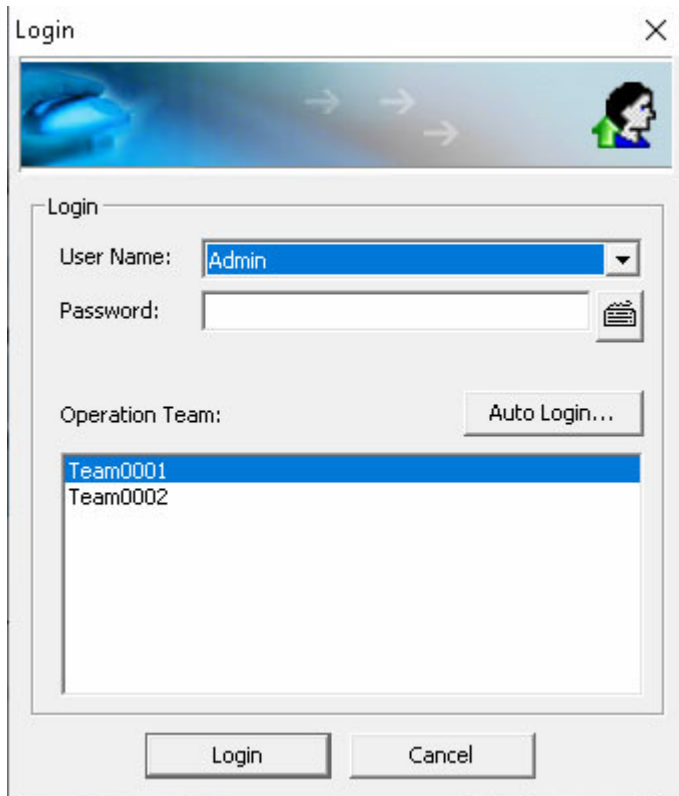


Figure 4-2 Login

Select user name and input password, click "OK" to pop up the main interface of monitoring, and start the monitoring successfully.

4.2 SIS Function Block Panel

On function block panel of SIS TAG user can:

- Monitor and modify the status and parameters of SIS TAG.
- Execute parameter settings and control operation.
- Achieve monitoring interface jump.

4.2.1 Panel

Panels of SIS TAG are shown below.

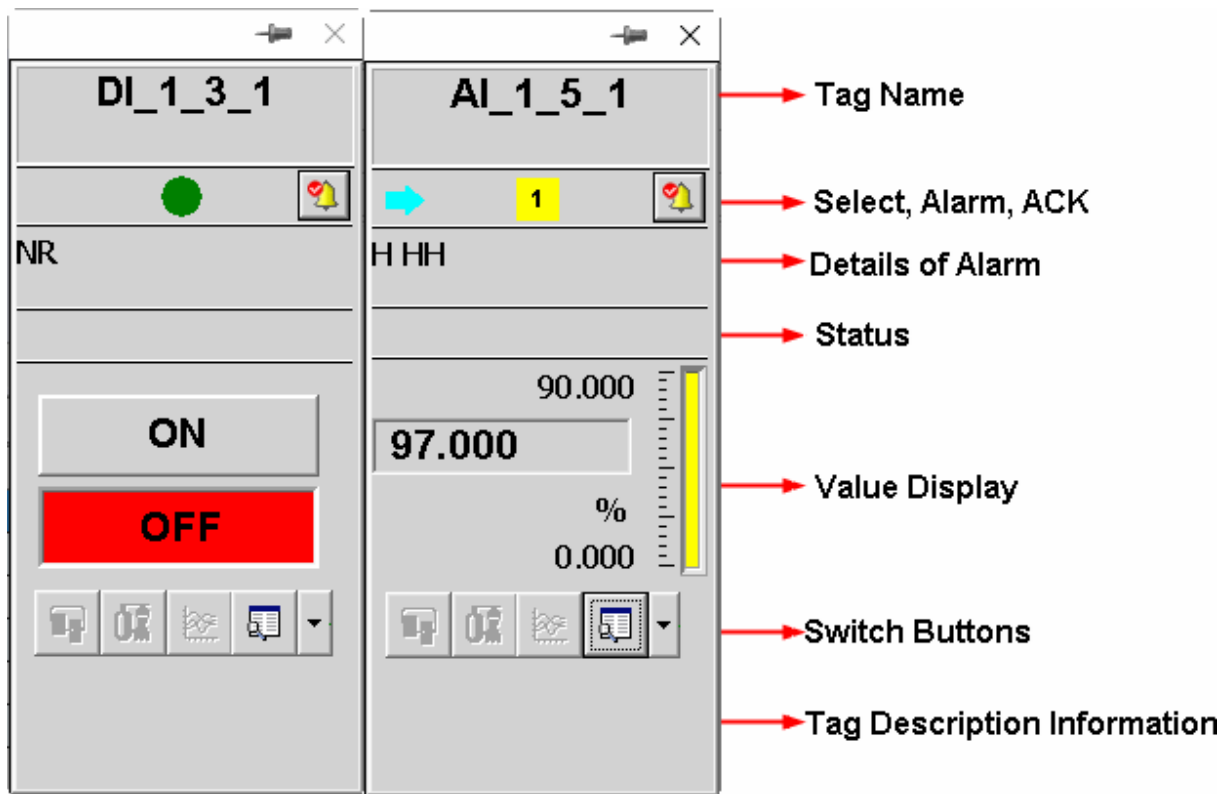








Figure 4-3 SIS TAG panels

The left one above is SIS analog tag panel, and the right on is SIS digital tag panel.

- Panel pin
On the right upper corner, the button  can be applied in pop-up panel. Click it to become  , so the panel will be always on top.
- Close panel
On the right upper corner of panel, the button  is on the pop-up panel, while not on the tuning group window.
- Tag instance name
Show the tag name or instance name of function block, to distinguish different function blocks.
- Select, alarm, acknowledge
 -  Select: select panel as current operation panel.
 -  Alarm: tag alarm status of panel.
 -  Alarm acknowledge: acknowledge the tag.
- Alarm, status display region
Show the current alarm information of tag or function block (such as HH and LL, etc.) and status (manual, automatic, cascade and OOS, etc.)
- Analog data display region

Show the analog value and unit in tag or function block, such as the PV, MV, SV of PID function block.

- Value display region

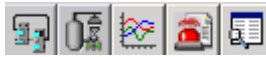
Show the current value of analog or digital.

Analog data: show the real-time value of key parameter data dynamically by the bar graph. Show the limit values on both ends of scale rod, which also marks with HH, H, L and LL.

Digital data: show the digital value by button, which marks by "ON" and "OFF". The button colors of DI and DO buttons can be shown as set in tag configuration.

Besides, value can be assigned for tag in this region. Input new analog tag value or click ON/OFF button of digital.

Jump Button region


There are 5 jump buttons at the bottom of panel,  are trend, graphics, trend, alarm viewer and turning window jump buttons from left to right. Click alarm viewer button to pop up the alarm viewer window of tag.

- Tag description

Show the description of tag or function block, maximum support 31 characters.

4.2.2 Start Panel

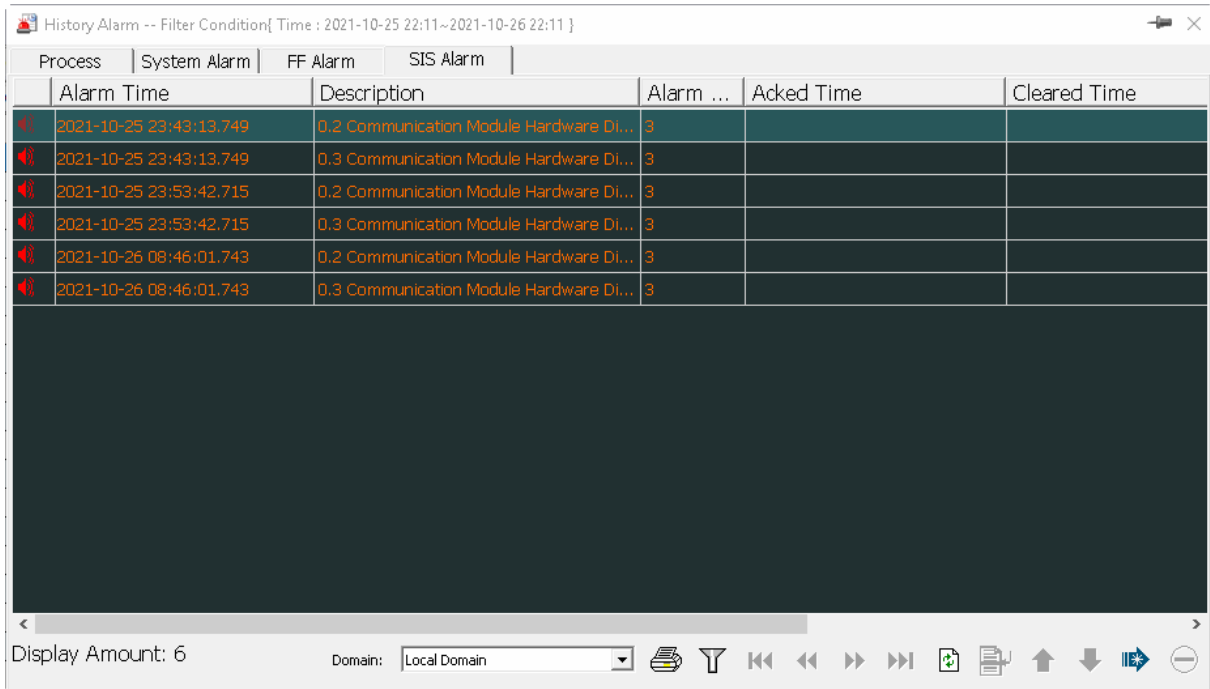
Method to start SIS TAG panel is same with starting general tag. Several methods are shown below:

- Click  in the toolbar of monitoring main interface, to pop up the select tag window. Select the SIS TAG and click "OK" to pop up the panel.
- Double-click the tag in monitoring main interface to start the tag panel.
- Double-click the SIS TAG in graphics to pop up the panel.
- Double-click the SIS TAG in trend window to pop up the panel.

4.3 Query SIS alarm

4.3.1 SIS History Alarm

Select the command of "History Alarm" in the dropdown list box of the monitoring header to query SIS alarm. SIS alarm page is shown below.




History Alarm -- Filter Condition[Time : 2021-10-25 22:11~2021-10-26 22:11]

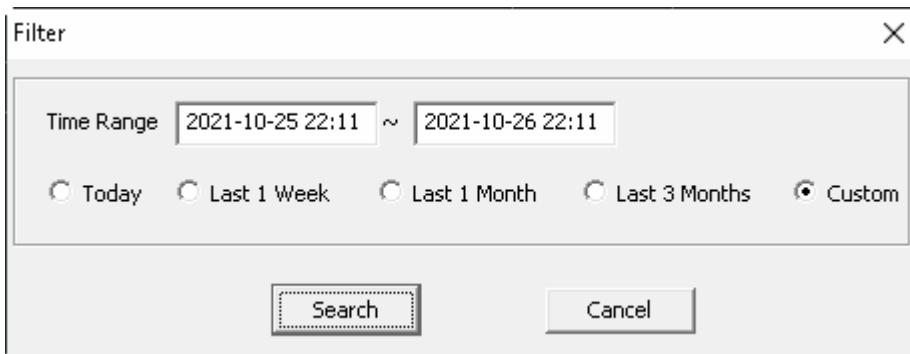
Process	System Alarm	FF Alarm	SIS Alarm			
Alarm Time	Description	Alarm ...	Acked Time	Cleared Time		
2021-10-25 23:43:13.749	0.2 Communication Module Hardware DI...	3				
2021-10-25 23:43:13.749	0.3 Communication Module Hardware DI...	3				
2021-10-25 23:53:42.715	0.2 Communication Module Hardware DI...	3				
2021-10-25 23:53:42.715	0.3 Communication Module Hardware DI...	3				
2021-10-26 08:46:01.743	0.2 Communication Module Hardware DI...	3				
2021-10-26 08:46:01.743	0.3 Communication Module Hardware DI...	3				

Display Amount: 6 Domain: Local Domain

Figure 4-4 SIS alarm interface

Alarm list includes "Alarm Time", "Description", "Alarm Level", "Acknowledge Time", "Disappear Time", "Acknowledge by" and "Acknowledge Operation Node".

Click  to pop up the alarm filter interface below, in which can filter SIS alarm by time range.



Filter

Time Range: 2021-10-25 22:11 ~ 2021-10-26 22:11

☐ Today
 ☐ Last 1 Week
 ☐ Last 1 Month
 ☐ Last 3 Months
 ☒ Custom

Search Cancel

Figure 4-5 Filter

4.3.2 SIS System Alarm

Select the command of "System Alarm" in the dropdown list box of the monitoring header, pop up the system alarm list shown below, in which show the system alarms.







System Alarm			
Time	Description	Alarm...	
Time	Description	Alarm Type	
2021-10-26 11:21	11.211 Referenced Domæ	SYSALM	
2021-10-26 11:18	2.182 Referenced Domæ	SYSALM	
2021-10-26 11:13	9Batch Server Unau	SYSALM	
2021-10-26 0:12	3 Controller Lost	SYSALM	
2021-10-26 0:12	2 Controller Lost	SYSALM	
2021-10-26 0:5	5 Controller Lost	SYSALM	
Alarm Amount:0/8			     

Figure 4-6 System alarm list






- Show SIS alarm : click it and the window will not change, OMC and SIS mixed alarm interface shows SIS alarms and mixed alarms separately. The SIS alarms are shown above and mixed system alarms are shown down. Click SIS button again to restore to original size of mixed alarm window, in which only show mixed system alarms.
- Acknowledge single alarm : click it to acknowledge single alarm.
- Acknowledge current list : click it to acknowledge alarms in batch. If the cursor is in SIS alarm interface, acknowledge the 1000 system alarms with highest priorities in SIS alarm window. When the cursor is in mixed system alarm interface, acknowledge the 1000 system alarms with highest priorities in mixed system alarm window.
- Alarm display settings : click it to pop up alarm display dialog of operation domain. The alarm of reference domain can be shown as required. If trans-domain alarm is configured, click the icon to pop up the window shown below. Select the operation domain to show its alarms in alarm list.



Figure 4-7 Operation domain alarm display

- If trans-domain alarm isn't set in operation domain configuration, click the button is useless.
- Open system status : for local ECS system alarm, click it to jump to corresponding fault diagnose interface. For remote system alarm or SIS alarm, click the button is useless.

4.3.3 SIS Process Alarm

Select the command of 'Process Alarm' in the dropdown list box of the monitoring header, pop up the process alarms list below, in which shows all visible (process) alarms of current operation team. Alarms are sorted by levels in default. Please refer to *System Builder Software User Manual* for details of sorting alarms.

	Time	Tag	Description	Alarm...	Value	Group	De
1	2021-10-26 20:49:53.002	55		LL	0.000	Group: 254 Re	
1	2021-10-26 21:09:22.349	AI_1_5_1		HH	97.000	Group: 254 Re	

Alarm Amount:2

1 2 3 4 5

Figure 4-8 Process alarms list

Process alarm of SIS TAG is same with common domain variable. Please refer to *Real-time Monitoring Software User Manual* for details.

4.3.4 Query Offline Alarm

Open the history alarm offline browser by selecting **OMC > Intelligent Application Management** from start menu. In Intelligent Application Center, click > **Tool > History Alarm Viewer**. Select **Type/ System SIS** in menu bar to view the history records of SIS TAG alarm.

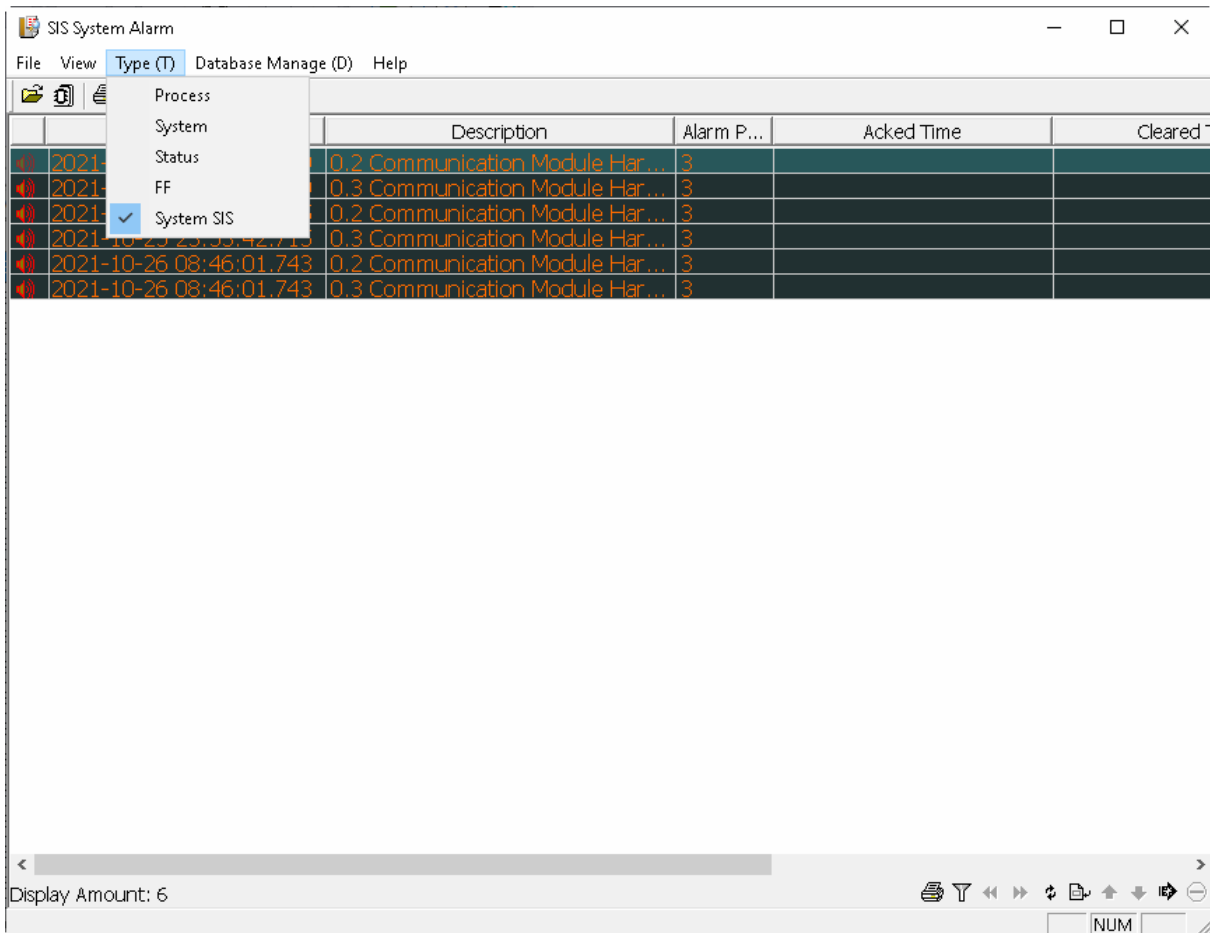


Figure 4-9 SIS alarm offline browser

Export Alarm

Select **File/ Export** to open the alarm export interface, and select **SIS System Alarm** from the drop-down menu of alarm type, as shown below.

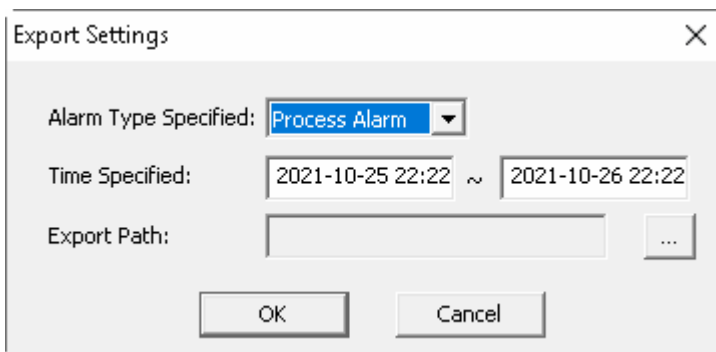


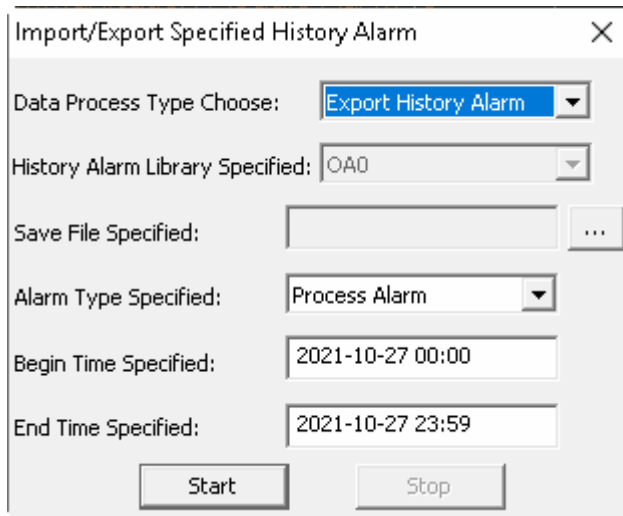
Figure 4-10 SIS alarm export settings

This function can export all alarms conforming to current filter conditions to .CSV files. Export settings include "Time Specified" and "Export Path".

The setting method is same with exporting process alarm in OMC. Please refer to *History Alarm Viewer User Manual* for details.

Specify History Alarm Import/ Export Interface

Select **Database Management/ Import/Export Specified History Alarm** to pop up the dialog below, in which can import specified history alarm records.



The dialog box titled "Import/Export Specified History Alarm" contains the following fields and controls:

- Data Process Type Choose:** A dropdown menu with "Export History Alarm" selected.
- History Alarm Library Specified:** A dropdown menu with "OAO" selected.
- Save File Specified:** A text input field with a browse button (...).
- Alarm Type Specified:** A dropdown menu with "Process Alarm" selected.
- Begin Time Specified:** A date/time input field showing "2021-10-27 00:00".
- End Time Specified:** A date/time input field showing "2021-10-27 23:59".
- Buttons:** "Start" and "Stop" buttons at the bottom.

Figure 4-11 Import/Export Specified History Alarm


Data process method can select "Export History Alarm" or "Import History Alarm", and specify "History Alarm Library" and "Save File". After installing SISPatch, alarm types include "Process Alarm", "System Alarm", "Status Alarm" and "SIS System Alarm". Specify the time period and start to import or export history alarm.

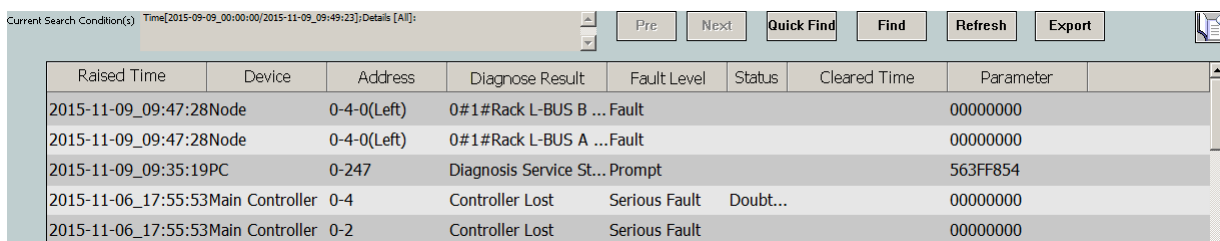
4.4 SIS History Fault Diagnosis



Attention:

IP addresses of SIS and High-performanceHMI controllers cannot be same, or the SIS fault diagnosis will be wrong.

Select the command of "System Diagnose" to display system diagnose system. Click  to open the query window below.



The screenshot shows a "Fault diagnosis query window" with a search bar at the top and a table of results below.

Current Search Condition(s): Time[2015-09-09_00:00:00/2015-11-09_09:23];Details [All];

Buttons: Pre, Next, Quick Find, Find, Refresh, Export

Raised Time	Device	Address	Diagnose Result	Fault Level	Status	Cleared Time	Parameter
2015-11-09_09:47:28	Node	0-4-0(Left)	0#1#Rack L-BUS B ... Fault				00000000
2015-11-09_09:47:28	Node	0-4-0(Left)	0#1#Rack L-BUS A ... Fault				00000000
2015-11-09_09:35:19	PC	0-247	Diagnosis Service St... Prompt				563FF854
2015-11-06_17:55:53	Main Controller	0-4	Controller Lost	Serious Fault	Doubt...		00000000
2015-11-06_17:55:53	Main Controller	0-2	Controller Lost	Serious Fault			00000000

Figure 4-12 Fault diagnosis query window

Click "Find" to pop up the filter condition settings dialog below.

Figure 4-13 Filter condition settings

- **Time Range**
set the start time and end time for filtering.
- **Detail Fault Position**
select "TCS-900" from the drop-down menu of system bar, and the filter results will be SIS TAG. Filter conditions include station, redundancy and IO module, etc. Click "Add" to add a record to filter list.
- **Diagnosis Information**
Check "Diagnosis Information" and select the diagnosis information to view in the below check box.
- **Fault level:** select one or several fault levels as filter condition.

Section 5 Revision

Table 5-1 Retrofit list of the version

Document Version	Applicable Model	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First release

Document Version	Applicable Model	Remarks
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots.