

**OMC System Software**

**High-performanceHMI**

**Tag Builder**

**User Manual**

**IM41S57-E**

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# Tag Builder

## Section 1 Overview

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VFTAGBuilder is a component of High-performanceHMI System Software, which is used to implement tag configuration. VFTAGBuilder must be invoked by VFExplorer.

- Configure tags in single control station.
- No need to close the software when downloading configuration.
- Provide convenient editing functions of tag configuration information, including tag adding, tag deleting and tag modifying and modifying of tag parameters (includes tag name) in batch.
- Support multiple modes of tag search like search by tag name, description and, channel address and Support wildcard query.
- Real-time save the tag configuration automatically.
- Provide a function of initializing value of custom tag.
- Import and export configuration in EXCEL format.
- Compile and download single unit as the minimum unit.
- Scan and upload the channel tag ( No need manual configuration, and generate the corresponding tag to the finished hardware configuration)
- Check the validity of total tags or single tag.
- Check the using information of the tags in custom program.
- Provide setting of the digital tag in SOE record.

The typical configurations of tags from different controllers listed on this manual have different tag properties. Please refer to *IO Tag User Manual* for details.

## Section 2 Introduction to Interface

Select the control station (not locked by other engineer stations) needed to be configured in VFExplorer, and click "Open from Configuration Server" in right-click menu. Double-click "Tag Table" in property bar of the control station (or select "Tag Table" in property bar and click "Edit" in right-click menu) to open VFTAGBuilder, and its interface is shown as Figure 2-1.

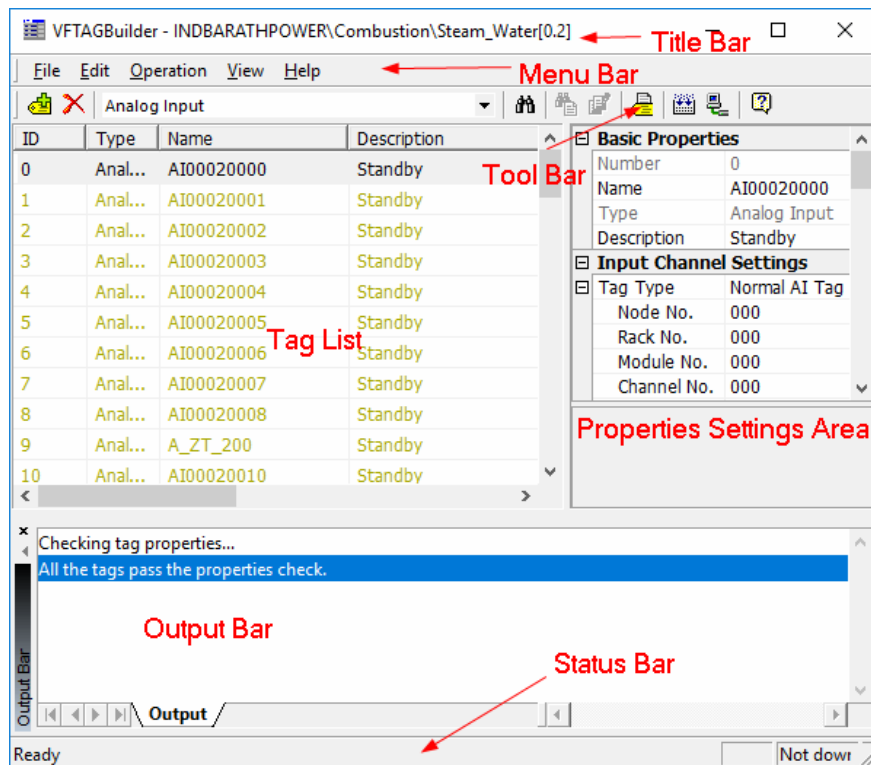


Figure 2-1 Interface of VFTAGBuilder

### 2.1 Introduction to Interface

Interface of VFTAGBuilder mainly includes three parts: tag list area, locating on the left of the interface and used to display the configured tags; tag property setting area, locating on the right and used to set and view all properties of selected tag; and output bar, locating at the bottom and used to display the result of operation, which can be closed if necessary.

- Title Bar-Display the program title.
- Menu Bar-Include File, Edit, Operate, View, and Help. Each menu item contains submenu items.
- Toolbar-List frequently used menu functions in icon, making it convenient to use. Click the menu **View/Toolbar** to decide whether to show the bar or not.
- Tag List-Display the tag list conformed to the designated conditions.
- Properties Settings Area-All properties of the selected tag can be set and viewed.

- Output Bar-Display the result of the operation and so on. Click the menu **View/Output bar** to decide whether to show the window or not.
- Status Bar-Display some information of the current operation and some prompts. Click the menu **View/Status Bar** to decide whether to show the bar or not.

## 2.2 Introduction to Menu Bar & Toolbar

**Table 2-1 Introduction to menu bar and toolbar**

Menu	Submenu	Icon	Function
<u>F</u> ile	Import		Import tags from exterior files
	Export		Export the configured tag
	QRCode Import		Import QRCode file in format of csv.
	QRCode Export		Export an existing QRCode file
	Import from Project Template		Import the tag configuration information from project template .xls file into the VFTAGBuilder.
	Exit		Exit the VFTAGBuilder
<u>E</u> dit	<u>F</u> ind(Ctrl+F)		Find the designated tag
	<u>R</u> ename in Batch(Ctrl+R)		Rename tags in batch
	<u>S</u> elect <u>A</u> ll(Ctrl+A)		Select all tags in the tag list area
	<u>I</u> nvert Selection		Turn the selected tag into unselected, or turn the unselected tag into selected.
<u>O</u> peration	<u>A</u> dd Tag(Ctrl+N)		Add a tag to the tag list
	<u>D</u> elete Tag		Delete the designated tag in the tag list
	<u>M</u> odify in Batch(Ctrl+B)		Modify the parameters of the same type tags in batch
	<u>P</u> arameter Upload		Backup the parameter information of the designated tags in the controller
	<u>A</u> dd to Upload Tag List		Add tag into the upload tag list
	<u>T</u> ag Debugging		Connect to the controller and debug the tag parameter
	<u>S</u> can Tags from Channels		Generate a tag list according to the hardware configuration. Subordinate menus: Scan New Added, Communication Tag Strategy
	<u>D</u> efault Tag Type Settings		Default the tag type. Subordinate menus: Set As Type Template, Automatically Set As Type Template, Restore to Original Settings, Import Default Type, Export Default Type
	<u>T</u> ag Usage(F6)		Check whether the tag is used by program
	<u>V</u> acant Channel Information		Amount statistics of vacant channel
	<u>H</u> ardware Statistics		Amount statistics of tags without corresponding hardware channels
	<u>C</u> heck All(F7)		Check multi-parameters of all tags in the current controller
	<u>C</u> heck Tag Properties(F5)		Check tag properties
	<u>R</u> estore Tag Configuration (Used after Force Unlock)		Clear the global tag list after force unlock
<u>V</u> iew	<u>T</u> oolbar		Show/Hide the Toolbar
	<u>S</u> tatus Bar		Show/Hide the Status Bar
	<u>O</u> utput Bar		Show/Hide the Output Bar
<u>H</u> elp	<u>A</u> bout		About VFTAGBuilder



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**Tip:**

After enabled the QRCode function in Global Default Settings, "QRCode Import" and "QRCode Export" will appear in the submenu of File (F).

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## Section 3 Introduction to Tag Property Area

The tag property area, on the right of the tag list area, displays all properties of the designated tag. Properties can be modified in this area.

Basic Properties	
Number	0
Name	AI00020000
Type	Analog Input
Description	Standby
Input Channel Settings	
Tag Type	Normal AI Tag
Node No.	000
Rack No.	000
Module No.	000
Channel No.	000
Module Type	AI711-S Analog Input Module(8 Channels)
Signal Type	Current(4mA~20mA)
Tag Running Cycle	200ms
Communication Parameter Settings	
Signal Conversion Process	
Conversion Type	Linear Conversion
Linear Sqrt	Not Sqrt
Low Signal	Not Cut
Low Cut Value(%)	0.5000
Filter Time Constant(s)	0.0000
Output Range Settings	
Span Maximum	100.0000
Span Minimum	0.0000
High Overrange Limit(%)	10.0000
Low Overrange Limit(%)	10.0000
Overrange Maximum Alarm	Enable
Overrange Minimum Alarm	Enable
Unit	%

**Figure 3-1 Tag property area**

The tag property area lists all properties of the designated tag, including Number, Name, Type, Description, etc. All the properties can be directly modified in the property box except Type and Number. Property items which can't be modified are displayed in gray and others are in black.

Text or number can be input in the edit box of properties such as Name, Description, etc. Press Enter after input (or move the cursor away from the current edit box). Some properties have pull-down menu. When one of these properties is selected, a pull-down menu pop up, like,



and only the items on the pull-down menu can be selected.



When modifying the tag name, program will check whether the name is exclusive in the controller. If a tag with the same name exists, program will maintain the original name and prompt name repeated in the output bar.

Notes for application:

1. Tag name is case sensitive. For example, TIC901 and tic901 are regarded as different tags. The maximum characters of tag name are 24. If exceeded, system will prompt in the Output bar.
2. Tag name must accord with the naming criterion. Otherwise, system will prompt error.
3. Tag name can only start with number or letter and consist of letters, numbers, '-' and '\_'. When start with special characters, an error prompt "Tag name can only start with number or letter" will pop up in the Output bar. When modifying the tag description, any character can be input within the maximum characters 64. If over limit, an error prompt will be displayed in the Output bar.
4. If the tag is referenced in a program section, it can't be deleted but can be modified.
5. I/O tag: When modifying the tag number, it should be 0~31 for nodes, 0~3 for racks, 0~15 for modules, and 0~31 for channels.



**Tip:**

When setting alarm value of analog tag, value with high alarm priority should be larger than that with low priority (for example, HHH alarm value should be larger than HH alarm value). Otherwise, a prompt of compiling error will pop up.

### 3.1 AI Tag Property Settings

**Table 3-1 AI tag property settings**

Category	Setting Item	Properties
Basic Properties	Number	Determined when the tag is added, and can't be modified.
	Name	Can be modified manually.
	Type	Analog Input(can't be modified)
	Description	Tag instruction, and can be input manually.
Input Channel Setting (When the tag type is Normal AI Tag)	Tag Type	Normal AI Tag/Communication AI Tag (optional)
	Node No.	0~31 (input manually)
	Rack No.	0~3 (input manually)
	Module No.	0~15 (input manually)
	Channel No.	0~31 (input manually)
	Module Type	Accord with the hardware configuration
	Signal Type	Accord with the hardware configuration
Input Channel Setting (When the	Tag Run Cycle	Fast Cycle/ Basic Scan Cycle (optional)
	Tag Type	Normal AI Tag/Communication AI Tag (optional)
	Communication Node No.	Appoint the communication node NO. (0~31) of the tag

Category	Setting Item	Properties
tag type is Communication AI Tag)	Communication Rack No.	Appoint the communication rack NO. (0~3) of the tag
	Slave Station Address	Appoint the slave address (0~255) of the tag
	Data Block No.	Appoint the data block NO. (0~63) of the tag
	The Offset Address of the Tag in the Data Block	Appoint Offset address (0~511) of the slave station in the Data Block
Communication Parameter Settings (when tag type is set as Communication AI Tag)	Data Type	2 Bytes Integer (signed/unsigned)/ 4 Bytes Integer (signed/unsigned)/ 4 Bytes Float
	Signal Properties	Actual Value/Percentage(It is available only when data type is 4 Byte Float)
	Status Code Location	Status Code Ahead/ Status Code Behind/ No status Code
	Data Format	No Conversion/Byte Conversion/Word conversion /Word Internal Conversion
Signal Conversion Process	Conversion Type	Linear Conversion/No Conversion (optional)
	Linear Sqrt	Not Sqrt/Sqrt (optional)
	Small Signal	Not Cut/Cut(optional)
	Small Signal Cutting Value (%)	It can be modified when Small Signal is set as "Cut"
	Filter Time Constant (S)	Input values manually
Output Range Settings	Maximum	Input values manually
	Minimum	Input values manually
	Extended Range Maximum Percentage (%)	Input values manually
	Extended Range Minimum Percentage (%)	Input values manually
	Overrange Maximum Alarm	Enable/Disable
	Overrange Minimum Alarm	Enable/Disable
	Unit	%, Pa, etc. (optional)
Input Original Code Settings (When tag type is set as Communication AI Tag)	Input Original Code Maximum	Input values manually
	Input Original Code Minimum	Input values manually
Alarm Setting	HHH Limit Alarm	Disable/Enable (optional)
	HHH Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	HHH Limit Alarm Value	Input HHH alarm value manually
	HH Limit Alarm	Disable/Enable (optional)
	HH Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	HH Limit Alarm Value	Input HH alarm value manually
	H Limit Alarm	Disable/Enable (optional)
	H Limit Alarm Value	Input H alarm value manually
	H Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	L Limit Alarm	Disable/Enable (optional)
	L Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	L Limit Alarm Value	Input Lower alarm value manually
	LL Limit Alarm	Disable/Enable (optional)
	LL Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	LL Limit Alarm Value	Input LL alarm value manually

Category	Setting Item	Properties
	LLL Limit Alarm	Disable/Enable (optional)
	LLL Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	LLL Limit Alarm Value	Input LLL alarm value manually
	H/L Limit Alarm Hysteresis	Input values manually
	Alarm Rate Alarm	Disable/ Enable (optional)
	Alarm Rate Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Alarm Rate Alarm Value	Manual Input Alarm Value
	Fault Alarm	When the tag is normal tag, system will enable "fault alarm" by default. When the tag is communication tag, you can enable or disable the fault alarm. Select "Enable" to generate alarm after fault happened. Select "Disable" to do not generate alarm after fault happened.
	Fault Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
Tag Fault Handling	Fault Handling	The options include hold, set maximum limit of actual value, set minimum limit of actual value, set fault preset value and set proximity extended range limit.
Supervision Settings	Tag Group	Tag Group 0~31 (optional)
	Tag Level	Tag Level 0~9 (optional)
	Default Decimal Digits	(0~5) optional
	Panel	AI tag can set the panel as custom panel or system original panel.
	QRCode	AI tag can be configured with associated QRCode, refer to the "Configure QRCode" for detail of QRCode configuration.
	Device Information Enable	Set whether to switch to IDM device information page of tag in HMI. Please refer to View Tag that is linked to the IDM Device Information for details.



**Tip:**

When the corresponding module of the tag is a temperature module, its span setting of should be identical to the corresponding span value in the hardware configuration.

## 3.2 AO Tag Property Settings

**Table 3-2 AO tag property settings**

Category	Setting Item	Properties
Basic Properties	Number	Determined when the tag is added and can't be modified.
	Name	Can be modified manually.
	Type	Analog Output(can't be modified)

Category	Setting Item	Properties
	Description	Tag instruction and can be input manually.
Output Channel Settings (When the tag type is Normal AO Tag)	Tag Type	Normal AO Tag/Communication AO Tag (optional)
	Node No.	0~31 (input manually)
	Rack No.	0~3 (input manually)
	Module No.	0~15 (input manually)
	Channel No.	0~31 (input manually)
	Module Type	Accord with the hardware configuration
	Signal Type	Accord with the hardware configuration
	Tag Run Cycle	Fast Cycle/ Basic Scan Cycle (optional)
Output Channel Settings (When tag type is Communication AO Tag)	Tag Type	Normal AO Tag/Communication AO Tag (optional)
	Communication Node No.	Appoint the communication node No. (0~31) of the tag
	Communication Rack No.	Appoint the communication rack No. (0~3) of the tag
	Slave Station Address	Appoint the slave station address (0~255) of the tag
	Data Block No.	Appoint the data block No. (0~63) of the tag
	The Offset Address of the Tag in the Data Block	Appoint the offset address (0~255) of the tag in the data block
Communication Parameter Settings (When tag type is Communication AO Tag)	Data Type	2 Byte Integer (signed/unsigned) / 4 Byte Integer (signed/unsigned) / 4 Byte Float
	Signal Properties	Actual Value/Percentage(It is available only when data type is 4 Byte Float)
	Status Code Location	Status Code Ahead/ Status Code Behind/ No status Code
	Data Format	No Conversion/Byte Conversion/Word conversion /Word Internal Conversion
Signal Conversion Process	Conversion Type	Linear Conversion/ No Conversion
	Direct /Reverse Output Selection	Direct Output/Reverse Output (optional)
Output Range Settings	Maximum	Input values manually
	Minimum	Input values manually
	Extended Range Maximum Percentage (%)	Input values manually
	Extended Range Minimum Percentage (%)	Input values manually
	Overrange Maximum Alarm	Enable/Disable (optional)
	Overrange Minimum Alarm	Enable/Disable (optional)
	Unit	%, Pa, etc(optional)
Output Original Code Settings	Output Original Code Maximum	Input values manually
	Output Original Code Minimum	Input values manually
Alarm Settings	Output H Limit Alarm	Disable/Enable (optional)
	Output H Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Output L Limit Alarm	Disable/Enable (optional)
	Output L Limit Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Fault Alarm	When the tag is normal tag, system will enable "fault alarm" by default. When the tag is communication tag, you can enable or disable the fault alarm. Select "Enable" to generate alarm after fault happened. Select "Disable" to do not generate alarm after fault happened.

Category	Setting Item	Properties
	Fault Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Configuration Error Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
Supervision Settings	Tag Group	Tag Group 0~31 (optional)
	Tag Level	Tag level 0~9 (optional)
	Default Decimal Digits	0~5 (optional)
	Panel	AO tag can set the panel as custom panel or system original panel.
	QRCode	AO tag can be configured with associated QRCode, refer to the "Configure QRCode" for detail of QRCode configuration.
	Associated tags	It is used to configure AI tags' associated tags. If associated tags have panels, users can open the panel by the switching button on the monitoring panel.
	Device Information Enable	Set whether to switch to IDM device information page of tag in HMI. Please refer to View Tag that is linked to the IDM Device Information for details.

### 3.3 DI Tag Property Settings

Table 3-3 DI tag property settings

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified.
	Name	Can be modified manually.
	Type	Digital Input ( can't be modified)
	Description	Tag instruction and can be input manually
Input Channel Settings(when tag type is Normal DI Tag)	Tag Type	Normal DI Tag / Communication DI Tag (optional)
	Node No.	0~31 (input manually)
	Rack No.	0~3 (input manually)
	Module No.	0~15 (input manually)
	Channel No.	0~31 (input manually)
	Module Type	Accord with the hardware configuration
	Tag Run Cycle	Fast Cycle/ Basic Scan Cycle (optional)
Input Channel Settings (when tag type is Communication DI Tag)	Tag Type	Normal DI Tag/Communication DI Tag (optional)
	Communication No.	Appoint the communication node No. (0~31) of the tag
	Communication Rack No.	Appoint the communication rack No.(0~3) of the tag
	Slave Station Address	Appoint the slave station address (0~255) of the tag
	Data Block No.	Appoint the data block No. (0~63) of the tag
	The Offset Address of the Tag in the Data Block	Appoint the offset address of the tag in the data block
Signal Conversion Process	Input Negate	Disable/Enable
Alarm Settings	ON Status Alarm	Disable/Enable (optional)
	ON Status Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	OFF Status Alarm	Disable/Enable (optional)

Category	Setting Item	Properties
	OFF Status Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Positive Transition-sensing Alarm	Disable/Enable (optional)
	Positive Transition-sensing Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Negative Transition-sensing Alarm	Disable/Enable (optional)
	Negative Transition-sensing Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Fault Alarm	When the tag is normal tag, system will enable "fault alarm" by default. When the tag is communication tag, you can enable or disable the fault alarm. Select "Enable" to generate alarm after fault happened. Select "Disable" to do not generate alarm after fault happened.
	Fault Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
Tag Fault Processing	Fault Processing	Hold/Set ON/Set OFF(optional)
Supervision Settings	Tag Group	Tag Grouping 0~31 (optional)
	Tag Level	Tag level 0~9 (optional)
	Alarm Level	level 0(Low)~31(High) (optional)
	ON Description	Input ON status description
	OFF Description	Input OFF status description
	Color Configuration	Configure ON/OFF color on the tag panel. Select "Custom Configuration" to configure the ON/OFF color of tag panel in ON/OFF color selection area of monitor. Select "Global Default Configuration" and the ON/OFF color on panel of monitor will be displayed in the color configuration in system structure configuration software.
	Panel	DI tag can set the panel as custom panel or system original panel.
SOE Settings (When tag type is Normal DI Tag)	SOE Tag	No/Yes (optional)
	SOE Description	When SOE Tag is "Yes", input characters within 64
	SOE Device Group	When SOE Tag is "Yes", input characters within 24



#### Tips:

Editing status of parameters of SOE items associates with the corresponding hardware configuration:

- When the corresponding module of the tag is SOE module, "SOE Tag" is read-only and displayed "Yes". At this time, SOE description and equipment group can be edited.
- When the corresponding module of the tag is not SOE module, "SOE Tag" can be edited.
- During whole check and tag check, system will update SOE Tag according to the hardware configuration.

### 3.4 DO Tag Property Settings

**Table 3-4 DO tag property settings**

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified here.
	Name	Can be modified manually.
	Type	DO (It can't be modified)
	Description	Tag instruction and can be input manually
Output Channel Settings(when tag type is Normal DO Tag)	Tag Type	Normal DO Tag / Communication DO Tag (optional)
	Node No.	0~31 (input manually)
	Rack No.	0~3 (input manually)
	Module No.	0~15 (input manually)
	Channel No.	0~31 (input manually)
	Module Type	Accord with the hardware configuration
	Tag Run Cycle	Fast Cycle/ Basic Scan Cycle (optional)
Output Channel Setting (when tag type is Communication DO Tag)	Tag Type	Normal DO Tag/Communication DO Tag (optional)
	Communication No.	Appoint the communication node No.(0~31) of the tag
	Communication Rack No.	Appoint the communication rack No. (0~3) of the tag
	Slave Station Address	Appoint the slave station address (0~255) of the tag
	Data Block No.	Appoint the data block No. (0~63) of the tag
	The Offset Address of the Tag in the Data Block	Appoint the offset address of the tag in the data block
Signal Conversion Process	Output Negate	Disable/Enable (optional)
Alarm Settings	ON Status Alarm	Disable/Enable (optional)
	ON Status Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	OFF Status Alarm	Disable/Enable (optional)
	OFF Status Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
	Fault Alarm	When the tag is normal tag, system will enable "fault alarm" by default. When the tag is communication tag, you can enable or disable the fault alarm. Select "Enable" to generate alarm after fault happened. Select "Disable" to do not generate alarm after fault happened.
	Fault Alarm Level	Select the alarm level from drop-down menu, options show by the global default settings.
Supervision Settings	Tag Group	Tag Grouping 0~31 (optional)
	Tag Level	Tag level 0~9 (optional)
	ON Description	ON status description
	OFF Description	OFF status description
	Color Configuration	Configure ON/OFF color on the tag panel. Select "Custom Configuration" to configure the ON/OFF color of tag panel in ON/OFF color selection area of monitor. Select "Global Default Configuration" and the ON/OFF color on panel of monitor will be displayed in the color configuration in system structure configuration software.
	Panel	DO tag can set the panel as custom panel or system original panel.

Category	Setting Item	Properties
SOE Settings (When the tag type is Normal DO Tag)	SOE Tag	No/Yes (optional)
	SOE Description	When SOE Tag is "Yes", input characters within 64
	SOE Device Group	When SOE Tag is "Yes", input characters within 24

### 3.5 Custom Analog Property Settings

**Table 3-5 Custom analog property**

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified.
	Name	Input manually
	Type	Custom Analog(can't be modified)
	Description	Tag instruction and can be input manually
Initial Value	Initial Value	Input the initial value manually
Output Value Settings	Maximum	Input manually
	Minimum	Input manually
	Unit	%, Pa , etc.(optional)
Supervision Settings	Tag Group	Tag Grouping 0~31 (optional)
	Tag Level	Tag level 0~9 (optional)
	Default Decimal Digits	0~5(optional)
	Panel	NN tag can set the panel as custom panel or system original panel.

### 3.6 Custom Digital Property Settings

**Table 3-6 Custom digital property settings**

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified.
	Name	Can be modified manually
	Type	Custom Digital (can't be modified)
	Description	Tag instruction and can be input manually
Initial Value	Initial Value	OFF/ON (optional)
Supervision Settings	Tag Group	Tag Grouping 0~31 (optional)
	Tag Level	Tag level 0~9 (optional)
	ON Description	ON status description
	OFF Description	OFF Status description
	Color Configuration	Configure ON/OFF color on the tag panel. Select "Custom Configuration" to configure the ON/OFF color of tag panel in ON/OFF color selection area of monitor. Select "Global Default Configuration" and the ON/OFF color on panel of monitor will be displayed in the color configuration in system structure configuration software.
	Panel	ND tag can set the panel as custom panel or system original panel.
SOE Settings	SOE Tag	No/Yes (optional)



	SOE Description	When SOE Tag is "Yes", input characters within 64
	SOE Device Group	When SOE Tag is "Yes", input characters within 24

### 3.7 Custom Integer Property Settings

*Table 3-7 Custom integer property settings*

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified.
	Name	Van be input manually
	Type	Custom Integer(can't be modified)
	Description	Tag instruction and can be input manually
Integer Type	Integer Type	USINT, UINT, etc (optional)
Initial Value	Initial Value	Input the initial value manually
Output Range Settings	Maximum	Input values manually
	Minimum	Input values manually
	Unit	%, Pa , etc(optional)
Supervision Settings	Tag Group	Tag Grouping 0~31 (optional)
	Tag Level	Tag level 0~9 (optional)
	Panel	NA tag can set the panel as custom panel or system original panel.

### 3.8 Page Exchange Analog Property Settings

*Table 3-8 Page exchange analog property settings*

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified here.
	Name	Can be input manually
	Type	Page Exchange Analog (can't be modified)
	Description	Tag instruction and can be input manually
Initial Value	Initial Value	Input the initial value manually

### 3.9 Page Exchange Digital Property Settings

*Table 3-9 Page exchange digital property settings*

Category	Setting Item	Properties
Basic Properties	number	Determined when a tag is added and can't be modified.
	Name	Can be input manually
	Type	Page Exchange Digital(can't be modified)
	Description	Tag instruction and can be input manually
Initial Value	Initial Value	OFF/ON (optional)

### 3.10 Page Exchange Integer Property Settings

**Table 3-10** Page exchange integer property settings

Category	Setting Item	Properties
Basic Properties	Number	Determined when a tag is added and can't be modified
	Name	Can be input manually
	Type	Page Exchange Integer (can't be modified)
	Description	Tag instruction and can be input manually
Integer Type	Integer Type	USINT, UINT, etc.(optional)
Initial Value	Initial Value	Input the initial value manually



**Tip:**

Page exchange variable, the global variable without the multicast function, can be used for data transmission between different pages of Custom Programs and Custom Function Block.

### 3.11 Function Block Tag Property Settings

**Table 3-11** Function block tag property settings

Category	Setting Item	Properties
Basic Properties	Number	(All properties can't be modified)
	Name	
	Type	
	Description	
Detailed Information	Function Block Address	
	Function Block Type	
	Function Block Library ID	
	Module ID	
	The Name of Program It Belongs to	
Supervision Settings	Tag Group	
	Tag Level	
	QRCode1	It's used to configure the QRCode address for AI, AO, PID or PIDEX.
	QRCode2	It's used to configure the QRCode address for PID or PIDEX.



---

**Tips:**

**PID tag and PIDEX tag supports QRCode, refer to "Configure QRCode" for its configuration.**

---

## Section 4 Operation Instruction of Tag Configuration

Tag configuration should be implemented after the hardware configuration. To modify the tag configuration, first achieve the tag list that is corresponding to I/O module channels by scanning channel tags, and then implement the modification according to the project need.

### 4.1 Add Tag

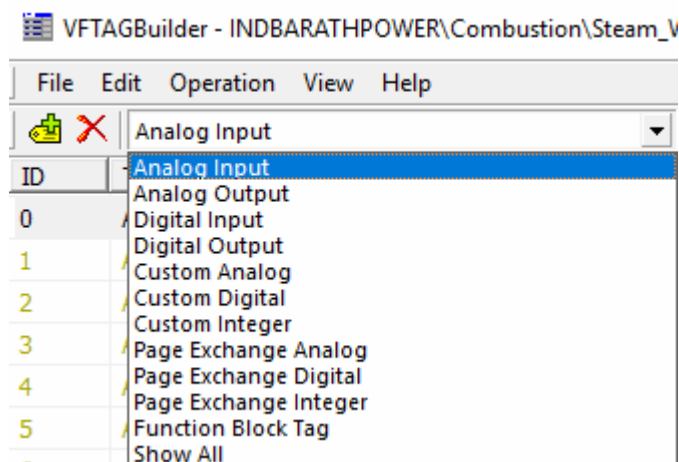
High-performanceHMI System Software supports configuration of ten types of tags:

**Table 4-1 Tag instruction**


Tag Type	Name	Data Type Of Tag Value
AI	Analog Input	REAL
AO	Analog Output	REAL
DI	Digital Input	BOOL
DO	Digital Output	BOOL
NA	Custom Analog	REAL
ND	Custom Digital	BOOL
NN	Custom Integer	USINT, UINT, UDINT, SINT, INT, DIN (optional )
PA	Page Exchange Analog	REAL
PD	Page Exchange Digital	BOOL
PN	Page Exchange Integer	USINT, UINT, UDINT, SINT,INT,INT(optional)

Steps:

1. Select one tag type to be added in the pull-down box on Toolbar, as shown in Figure 4-1.



**Figure 4-1 Tag type selection**

2. Select the menu **Operation/Add Tag** (or click the button  on Toolbar, or select

“Add Tags” in the right-click menu).




**Tips:**

- When the amount of one type of tags has reached limits of the controller, including exceeding the amount limit of this type of tags, exceeding the amount limit of I/O tags, and exceeding the amount limit of tags gross, prompt information will be displayed in the output bar.
- Properties of new tags are initialized as the template parameter values. The initial parameters of tags of the same type are the same.

## 4.2 Delete Tag

Steps:


1. Select the tag to be deleted in the tag list.
2. Select the menu **Operation/Delete Tag** (or click the button  on Toolbar or select Delete selected tags in the right-click menu.

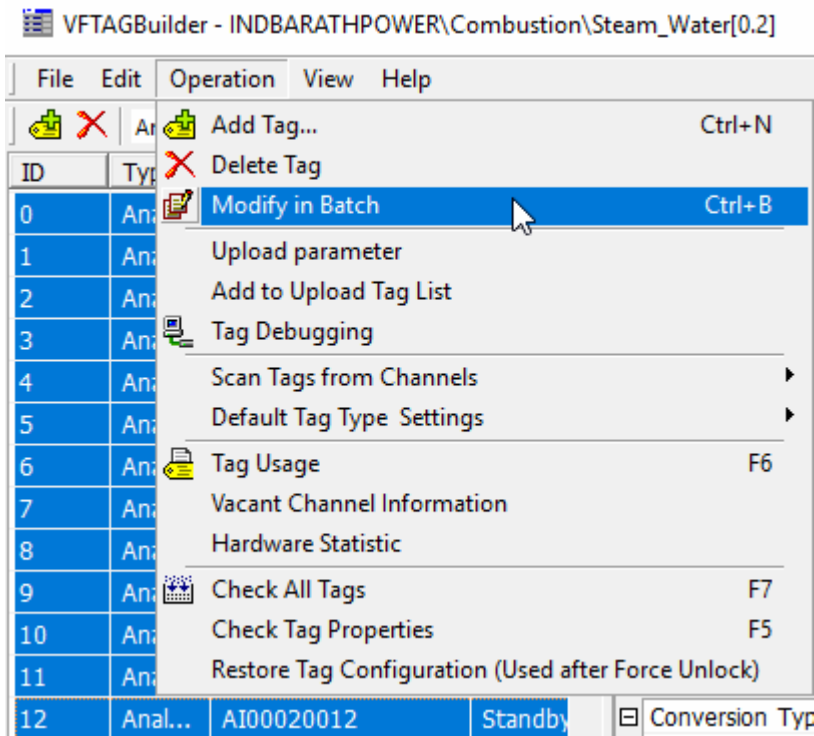


**Tips:**

- Use shift key or ctrl key to delete several tags simultaneously
- Referenced tags can't be deleted and the prompt information will be displayed in the output bar.

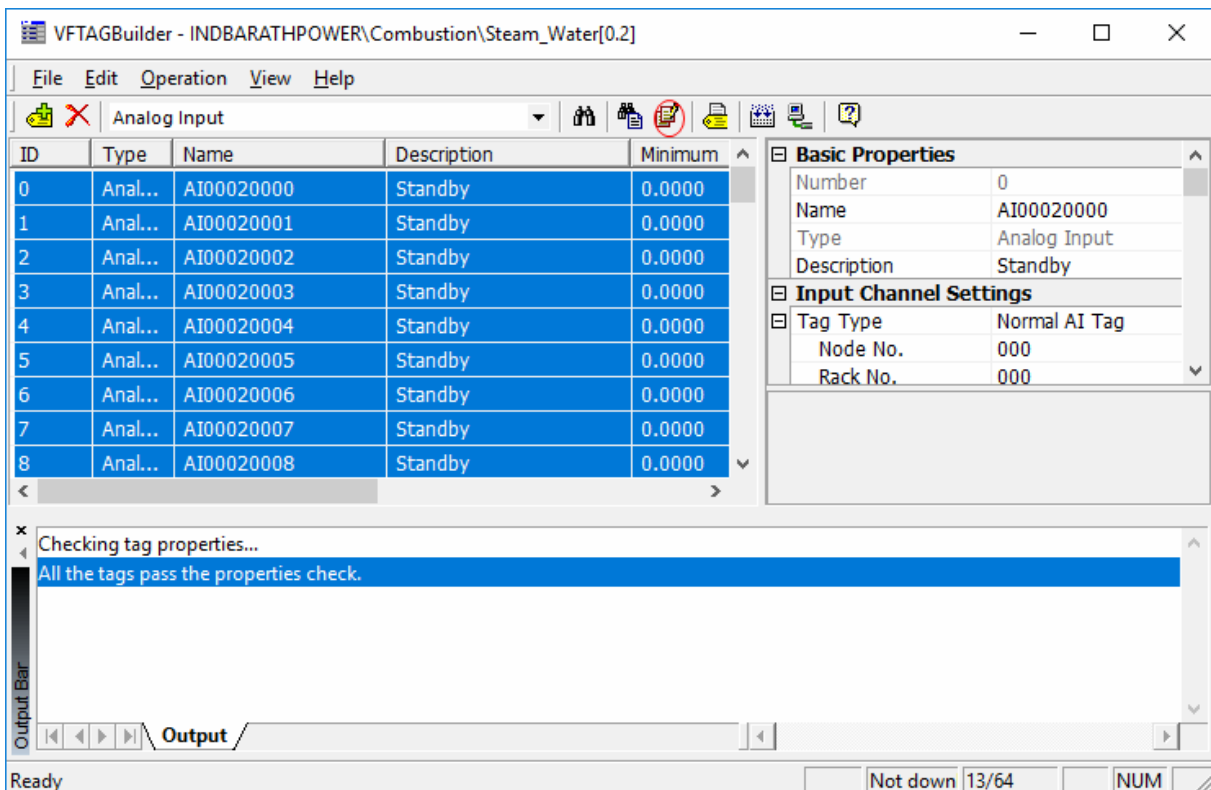
## 4.3 Modify Tags in Batch

Select a batch of tags to be modified and then select the menu **Operation/ Modify in Batch** or click the button  on Toolbar, as shown in Figure 4-2. The icon of Modify in Batch in the menu and the corresponding icon on Toolbar will be hollow after selected.



**Figure 4-2 Modify in Batch**

Status of modifying in batch as shown in Figure 4-3




**Figure 4-3 Status of modifying in batch**

Tag parameters can be modified in the property box in batch. There are some differences from that

of single tag:

- Parameter modification works for all the selected tags.
- Tag name can't be modified directly in this case.
- In the property box, if the parameter values of all the selected tags are the same, the parameter value will be displayed. Otherwise, the parameter value is null.
- The confirm dialog box will pop up before finally modifying the parameters. Click "OK" and then start modifying.

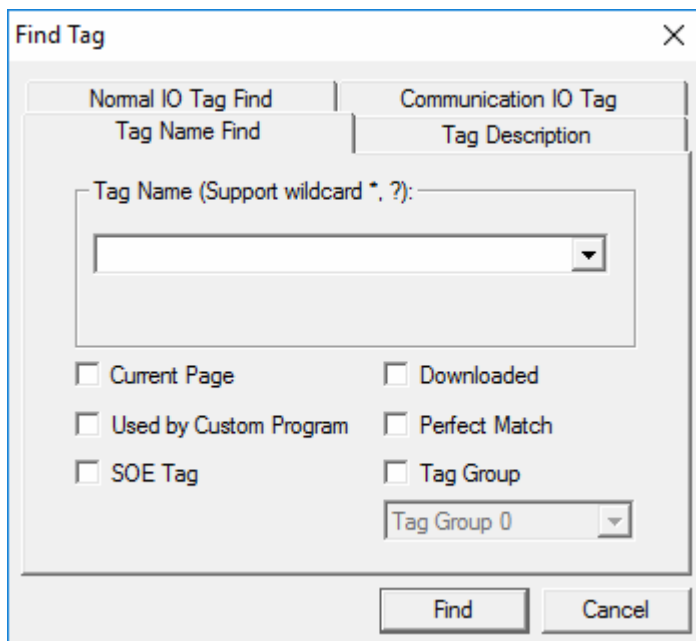
When tags of different types (i.e., AI, AO, DI, DO, etc.) or tags of different tag types (means normal tag and communication tag) are selected simultaneously, command of Modify in Batch is unavailable.

Select the menu **Operation/Modify in Batch** or click the icon  on Toolbar, system exits the status of modifying in batch. The icon of Modify in Batch in the menu and the corresponding icon on Toolbar will recover.

## 4.4 Find Tags

VFTAGBuilder supports the function of find tags.

Select the menu **Edit/Find** or click the button  on Toolbar to open the dialog box of Find tags, as shown in Figure 4-4.



**Figure 4-4 Find tags according to tag names**

Find tags by four methods below:










- Tag name
- Tag description
- Normal I/O tag
- Communication I/O tag

#### 4.4.1 By Tag Name

Click the label "Tag Name" in the dialog box shown in Figure 4-4 and the interface is shown in Figure 4-4.

To find certain tags, input the name. It supports wildcards "\*" which stands for several characters and "?" which stands for one character. For example, all tags starting with "AI" will be found if input "AI\*". While all tags starting with "AI00" Will be found if input "AI00?".

The following conditions can be set in Tag Name:

1. Current Page: Only find tags listed in the current tag list area.
2. Used by Custom Program: Whether tags to be find are used by custom program. Three states:
  - Not select: Whether the tag is used by custom program or not doesn't affect the search result. Interface: .
  - Used by custom program: find tags used by custom program. Interface: .
  - Not used by custom program: find tags not used by custom program. Interface: .
3. SOE Tag: Tags to be used must be SOE tags. Three states:
  - Not select: Whether tags are SOE tags or not doesn't affect the search result. Interface: .
  - SOE Tag: Find SOE tags conformed with Tag Name. Interface: .
  - Non-SOE Tag: Find non-SOE tags conformed with Tag Name Interface: .
4. Perfect Match: find tags completely conformed with Tag Name in the input box.
5. Downloaded: The tag to be found must have been downloaded. Three states:
  - Not select: Whether tags have been downloaded or not doesn't affect the search result. Interface: .
  - Downloaded: find tags downloaded already Interface: .
  - Not downloaded: find tags that haven't been downloaded. Interface: .
6. Tag Group: Whether to find tags in a certain tag group. If it is not selected, tags will be found in all groups. Otherwise, find tags in this group.

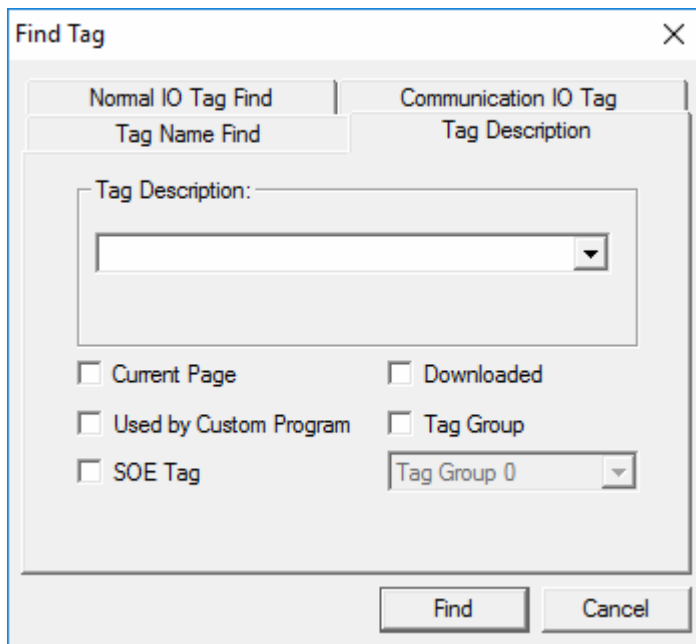


**Tip:**

Double-click the filter item to turn “Used by Custom Program”, “SOE Tag” and “Downloaded” as ☒.

#### 4.4.2 By Tag Description

Click the label "Tag Description" in the dialog box as shown in Figure 4-4. The interface is shown as Figure 4-5.



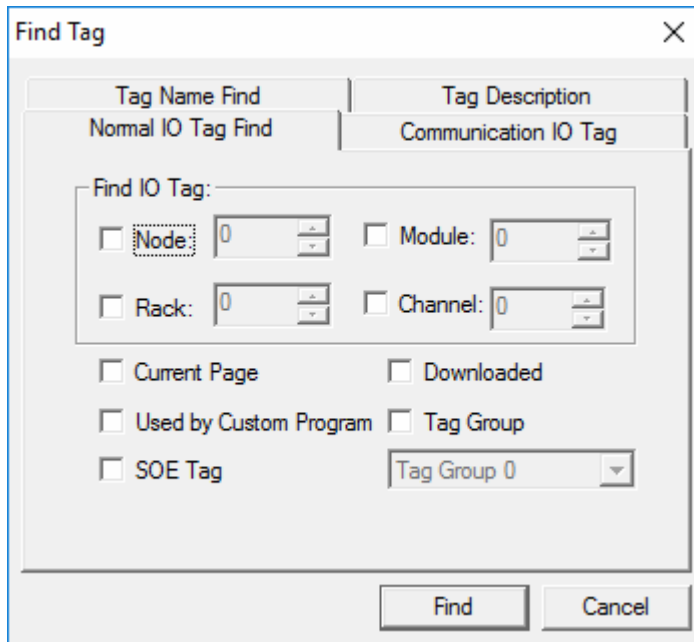
**Figure 4-5 Find tags according to tag description**

The tags will be listed whose description contains the input contents. For example, the description of AI001 is "AI signal, Graphics". When "signal" is input, tags with "signal" in their tag descriptions will be listed.

Similar to the Tag Name search, Tag Description search also can be set Current Page, Used by Custom Program, SOE Tag, Downloaded, and Tag Group.

#### 4.4.3 By Normal IO Tag

Click the label "Normal IO Tag" in the dialog box as shown in Figure 4-4. The interface is shown in Figure 4-6.



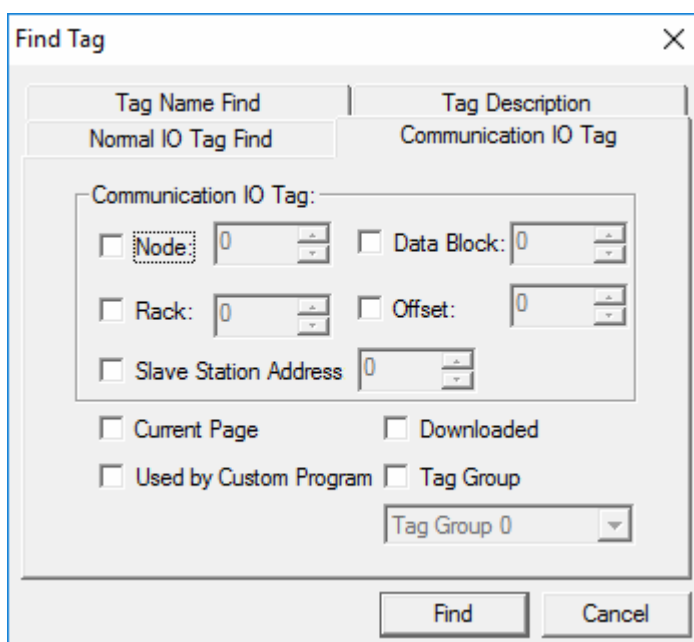
**Figure 4-6 Normal I/O Tag search**

Tags can be searched by the tag address. Select the checkbox before the address parameter name and to start up the parameter. For example, when setting as shown in Figure 4-6, tags which all module channels of No.0 node and No.1 rack corresponds to will be found.

Same to the Tag Name search, General I/O Tag search also can be set Current Page, Used by Custom Program, SOE Tag, Downloaded, and Tag Group.

#### 4.4.4 By Communication I/O Tag

Click the label "Communication IO Tag" in the dialog box as shown in Figure 4-4. The interface is shown in Figure 4-7.




**Figure 4-7 Communication I/O Tag search**

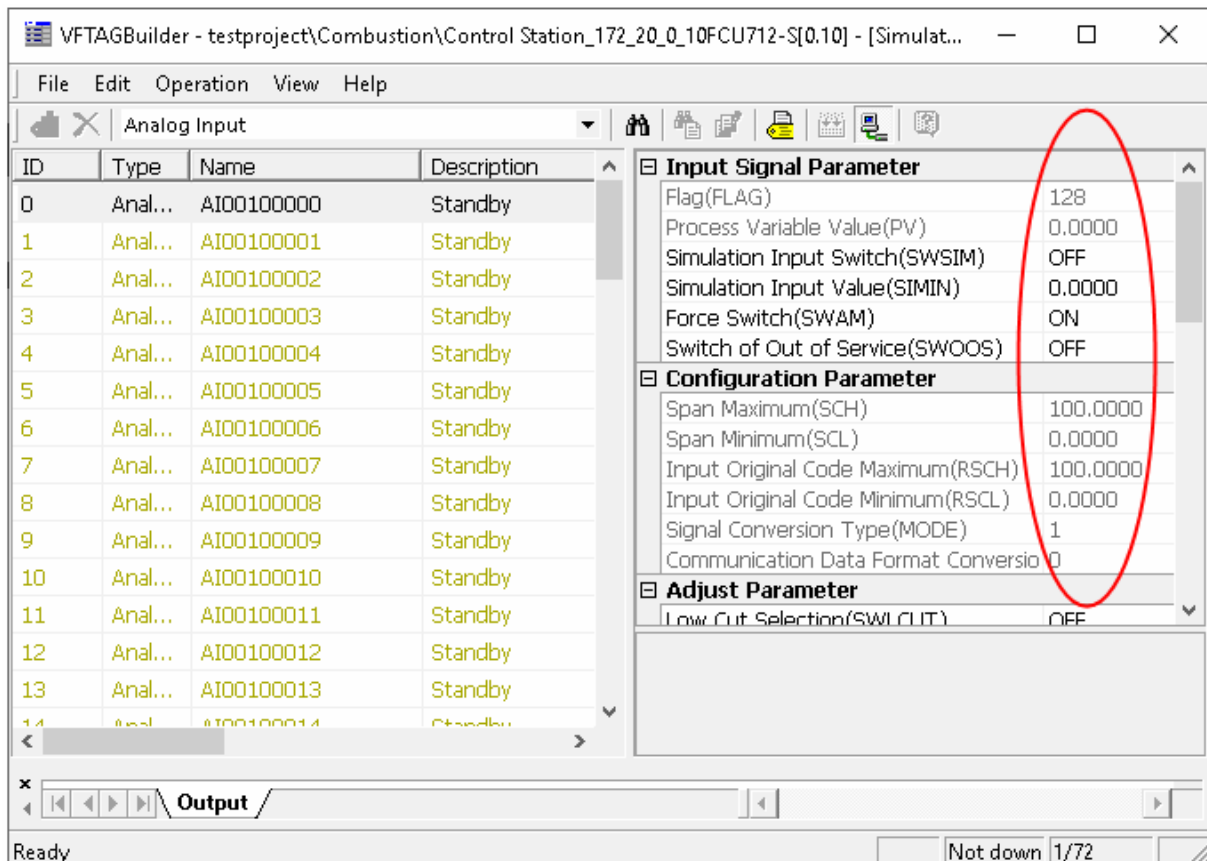
Tags can be searched by address of the communication I/O Tag. Select the checkbox before the address parameter name to start up the parameter. For example, when setting as shown in Figure 4-7, tags that No.0 node, No.0 rack and slave station address is 0 will be found.


Current Page, Used by Custom Program, Downloaded, and Tag Group can be set.

## 4.5 Tag Debugging

VFTAGBuilder supports a simple function of tag debugging. In the status of online debugging, users can view property values of selected tags which are refreshed every 500 milliseconds. The parameter not in gray can be modified. Input values in the selected property box, press Enter and the value will be written to the controller. The values of digitals can be selected ON/OFF by the pull-down box.

After downloading the tag configuration correctly, click the button  on Toolbar or select the menu **Operation/Tag Debugging** and program will enter the debugging status. Select a tag and parameters can be modified in the property window. As shown in Figure 4-8, users can view the real-time value of the corresponding tag in the tag list.

**Figure 4-8 Tag Debugging-A tag selected**

Click the button  again, and program exits the debugging status.

If fail to connect with the controller, system will pop up "Controllers connection overtime, disconnect". Please connect again after removing the faults.

---

**Tips:**

When debugging, the force switch SWAM displays "ON/OFF" by default. You can modify the project file as described in the following steps to change it to "FORCE/UNFORCE"



1. Open project file: the project file is "D:/SUPCON\_PROJECT/Project Name/Project.scp" by default.
  2. Add statement "SWAM\_ShowMode=1" to the node [config]. When SWAM\_ShowMode=1, SWAM displays FORCE/UNFORCE; When SWAM\_ShowMode=0, SWAM displays ON/OFF.
  3. Close VFTAGBuilder and refresh the configuration in the VFExplorer.
- 

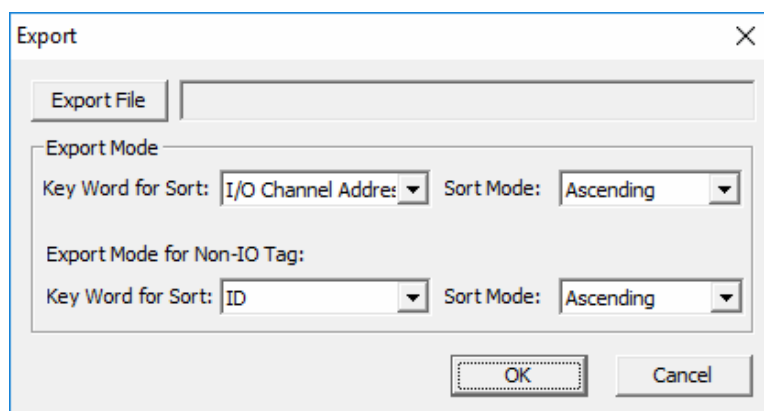
## 4.6 Import/Export/Import from Project Template

VFTAGBuilder supports the import and export functions of the designated format (.xls), and performs batch configuration for tag properties (such as alarm level, etc) by importing/ exporting.

### 4.6.1 Export

It is used to export the current configuration parameters in VFTAGBuilder to Excel files (.xls format). Configuration parameters can be modified by modifying the corresponding .xls file. However, modification in the .xls file must conform to the format regulation of parameters in VFTAGBuilder.

Select the menu **File/Export**, and then pop up the dialog box of Export, as shown in Figure 4-9.



**Figure 4-9 Dialog box "Export"**

Click the button "Export File" then pop up the dialog box "Save As". Select the path to save the

export file and input the filename. Then select one of the export modes: for I/O Tag or for Non-I/O Tag (except AI / AO / DI/ DO). After selecting the export mode and the export file path, click the button "OK" to start the export. At last, system will prompt: Tag exporting has finished!

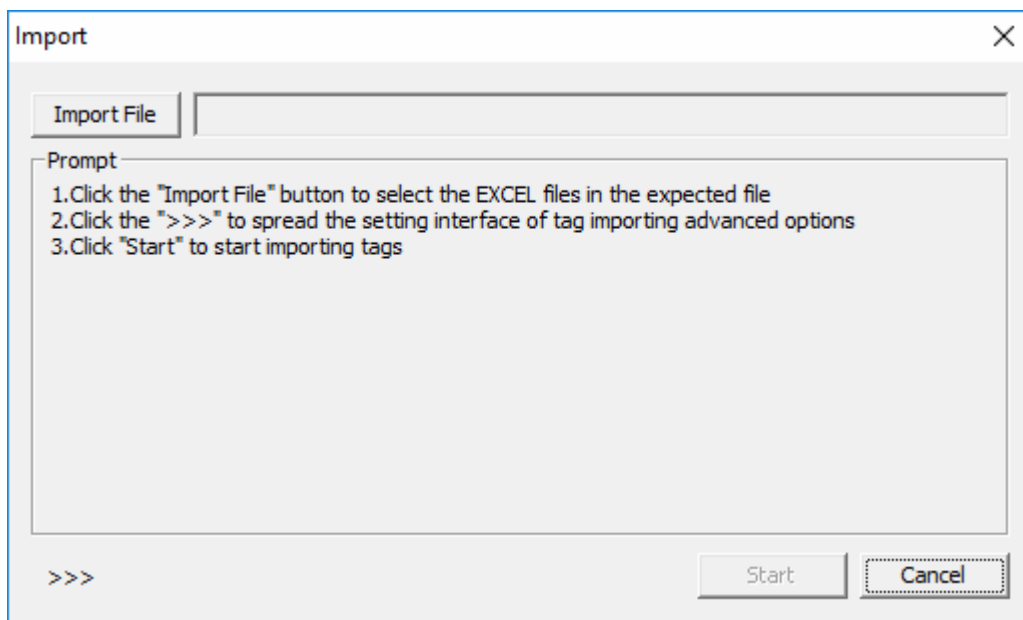
Key Word for Sort in Export Mode for I/O Tag: ID, Name, and I/O Channel Address; Sort Mode: Ascending and Descending.

Key Word for Sort in Export Mode for Non-I/O Tag: ID, Name; Sort Mode: Ascending and Descending.

#### 4.6.2 Import


It is used to import the tag tables (in .xls format) to VFTAGBuilder to update the tag configuration according to the parameter setting in the .xls file.

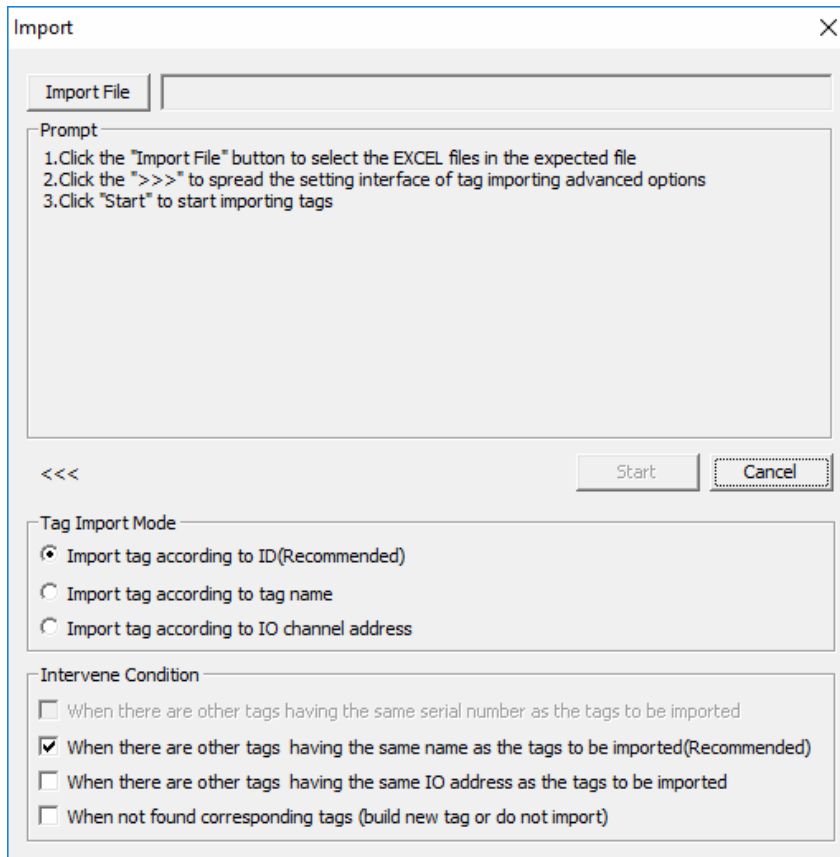
Select the menu **File/Import**, then pop up a dialog box of Import, as shown in Figure 4-10.



**Figure 4-10 Dialog box "Import"**

Click the button "Import File", and then pop up a dialog box "Save As". Select an EXCEL file conformed to proper format (accord with the format regulation of parameters in VFTAGBuilder). Then click the button "Start ". (The button is unavailable (in gray) until a file is selected). If the file imported doesn't accord with the format specification, import fails and there prompts: The file imported is empty. Please select the import file again. In the process of importing, the button "Start" becomes "Stop", which is used to stop importing. Or click the button "Cancel" to cancel the import. After importing, the button "Start" becomes "Import Again" and the button "Cancel" becomes "Finish". If users don't want to import again, click "Finish"

Click the button , then a setting interface of advanced options will extend, as shown in Figure 4-11.



**Figure 4-11 Dialog box "Advanced Options"**

The import operation will overwrite the current tag configuration by that in the EXCEL file, so the matching relationship should be set first between tags in the EXCEL file and those in VFTAGBuilder, i.e., "Tag Import Mode" and "Intervene Condition".

- Tag Import Mode: The rules for matching tags in the EXCEL file with those in VFTAGBuilder correspondingly during the process of importing the update.
- Intervene Condition: the conditions on which the process of import needs to be paused and engineers are allowed to intervene, i.e., certain condition is satisfied or certain error occurs.

When advanced options are not set, tags will be imported according to the default settings: Tag Import Mode is "Import tag according to serial number" and Intervene Condition is "When there are no other tags having the same name as the tags to be imported."



**Tip:**

**If there is no special requirement (especially when tags are used by user function block), tags will be imported according to the default import mode.**

Tag Import Mode and Intervene Condition can be defaulted in the extension part of the dialog box.

There are three options for "Tag Import Mode":

- Import tag according to ID: This is the recommended mode, which creates the matching relationship according to the serial number of tags. For example, No.1 AI tag in the Excel file will update No.1 AI tag in VFTAGBuilder. If the tag doesn't exist, a new tag will be generated.



**Attention:**

**If there are tags used by custom program in the tag configuration, it is required to import tags in this matching mode.**

---

- Import tag according to tag name: It creates matching relationships according to the tag name. For example, a tag named "AI001" in the EXCEL file will update the tag named "AI001" in VFTAGBuilder. If the tag doesn't exist, a new tag will be generated.
- Import tag according to I/O channel address: It creates matching relationships according to the channel address of I/O channel tags. For example, a tag whose I/O channel address is 003-002-006-007 in the EXCEL file will update the tag whose I/O channel address is 003-002-006-007 in VFTAGBuilder. If the tag doesn't exist, a new tag is will be generated



**Attention:**

**The import matching mode is only applicable for importing I/O tag. When non-I/O tags are imported in this matching mode, they will be imported as new tags.**

---

Intervene Condition is set in case of conflicts or multi-options to be chose in the import process, which implements the pause function for engineers to operate manually.

- When there are no other tags having the same serial number as the tags to be imported: Tags with the same serial number exist except the default matching tag.
- When there are no other tags having the same name as the tags to be imported: Tags with the same name exists except the default matching tag.
- When there are no other tags having the same I/O address as the tags to be imported: Tags with the same I/O channel address exist except the default matching tag.
- When not found corresponding tags (build new tag or do not import): No corresponding matching tag can be found in the default matching mode.

Example:

The imported tag table (tags in EXCEL file):

**Table 4-2 Import tags**

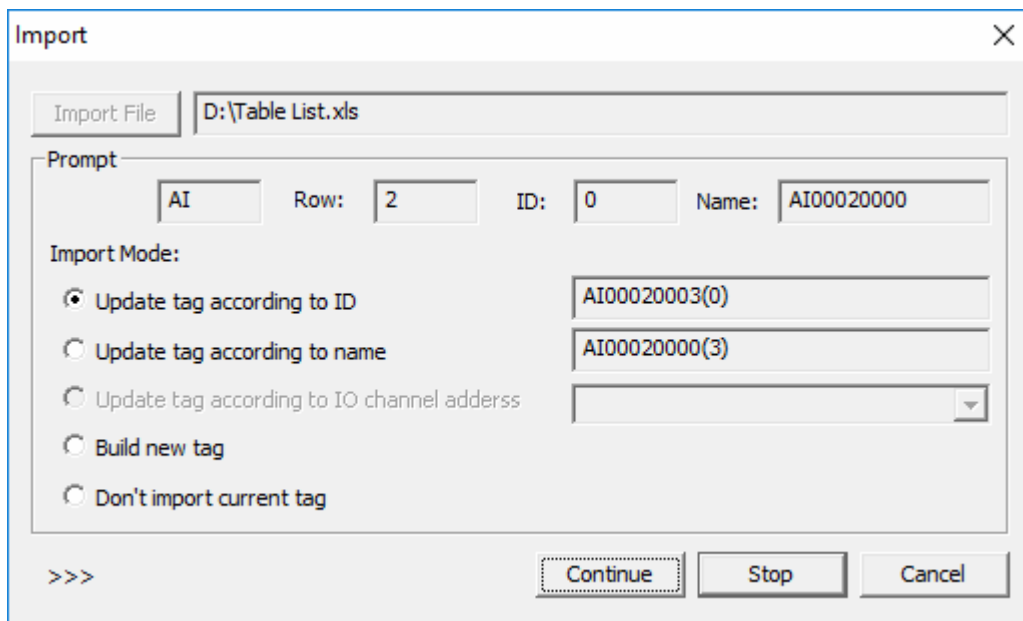
ID	Name	Description	Address
0	AI0	Analog input 0	000-000-000-000
1	AI1	Analog input 1	000-000-000-001
2	AI2	Analog input 2	000-000-000-002

The current tag configuration (tags in the VFTAGBuilder):

**Table 4-3 Current tags**

ID	Name	Description	Address
0	AI1	Analog input 1	000-000-000-002
1	AI2	Analog input 2	000-000-000-000
4	AI0	Analog input 0	000-000-000-001

If Tag Import Mode is "Import tag according to ID" in this case, No.0 AI0 tag in the table will update No.0 AI1 tag in the tag configuration after import. However, a tag with name AI0 and No.4 exists in the current tag configuration. If Intervene Condition is "When there are other tags having the same name as the tags to be imported", the dialog box of import is shown in Figure 4-12 when AI0 tag is imported.



**Figure 4-12 Dialog box "Import intervene"**

In this case, operators can select "Update tag according to ID", i.e., AI0 in the table (ID: 0) updates tag AI1 (ID: 0). Operators also can select "Update tag according to name", i.e., AI0 in the table (ID: 0) updates AI0 (ID: 4). Operators also can select "Build a new tag" or "Don't import current tag".

When selecting various Import Modes (select the same Import Mode in the dialog box of import as



shown in Figure 4-12), the tag table imported is shown in *Table 4-4*.

**Table 4-4 Imported tag table**

ID Import Mode	0	1	2	3	4	5
Tag in original table	AI0	AI1	AI2	-	-	-
Tag in updated able by ID	AI1	AI2	AI0	-	-	-
Tag in updated table by Tag Name	AI0	AI1	AI2	-	-	-
Tag in updated table by Building a new tag	AI0	AI1	AI2	AI1_0	AI2_0	AI0_0



**Attention:**

During importing intervening interface, if "\*" appears in front of the tag name, tag has been updated by other tag in the tag table (Excel).

If the import intervening interface pops up frequently, users should check whether the setting of intervene condition or tag table ((Excel) imported is right.

### 4.6.3 Import from Project Template

Project template is created according to needs of the project configuration. Information of tag configuration can be imported from the existed project template (.xls file) to VFTAGBuilder.


## 4.7 Configure QRCode

Instrument information can be searched by QRCode.

In the VF tag builder software, the QRCode can be configured for the single tag and configured for the multiple tags by importing. After configured the tag's QRCode, user can view the QRCode of tag in the real-time monitoring software and obtain the relevant instrument information. In addition, tag builder software also supports batch export of configured QRCode to facilitate batch configuration of tag QRCode.

### 4.7.1 Configure QRCode for Single Tag

By following steps, you can configure QRCode for the single tag.

- 1) Select "QRCode" in the "Supervisor Settings" column of tag property and click  to pop up editing interface of QRCode information as shown below.



**Figure 4-13 Editing interface of QRCode information**

- 2) In QRCode information configuration interface, user can modify the QRCode information. The QRCode information is a string of less than 250 bytes in length.



**Tip:**

The length of associated QRCode information matches the complexity of QRCode picture. When the QRCode information becomes longer, QRCode will be more complex synchronously.

---

#### 4.7.2 Configure QRCode for Multiple Tags

When configure QRCode for the multiple tags, you should configure QRCode information table firstly and import the table.

##### Configuration Rules of QRCode Information Table

QRCode information of tag is stored in QRCode information table in the form of CSV file. QRCode information table is in the format of "Tag name QRCode1 QRCode2", as shown in figure below.

	A	B	C
1	Tag Name	QRCode1	QRCode2
2	AI00020000	<a href="http://www.baidu.com">http://www.baidu.com</a>	
3	AI00020001	<a href="http://www.baidu.com">http://www.baidu.com</a>	
4	AO00020000	<a href="http://www.baidu.com">http://www.baidu.com</a>	
5	AO00020001	<a href="http://www.baidu.com">http://www.baidu.com</a>	
6	AO00020002	<a href="http://www.baidu.com">http://www.baidu.com</a>	
7	AO00020003		
8	AO00020004	<a href="http://www.163.com">http://www.163.com</a>	
9	AO00020005	<a href="http://www.163.com">http://www.163.com</a>	
10	AO00020006	<a href="http://www.163.com">http://www.163.com</a>	
11	AO00020007	<a href="http://www.163.com">http://www.163.com</a>	
12	pid1	<a href="http://www.163.com">http://www.163.com</a>	<a href="http://www.google.com">http://www.google.com</a>
13	pidex1	<a href="http://www.163.com">http://www.163.com</a>	<a href="http://www.google.com">http://www.google.com</a>

**Figure 4-14 QRCode information table**

Configuration process of QRCode information table should follow the following rules:

- The "Tag Name" column is used to configure tag name.
- The "QRCode1" column can be used to configure the address of QRCode of the AI, AO, PID and PIDEX tag.
- The "QRCode2" column is only used to configure the address of QRCode of the PID and PIDEX tag.

### Import QRCode

OMC tag supported QRCode configuration includes the AI, AO, PID and PIDEX tag. By following steps, you can import the QRCode information table (.csv file) into tag configuration software.

- 1) Select the menu command **File/QRCode Import** to bring up the **Open** dialog.
- 2) Select a csv file that met the configuration rules of QRCode information table and click "Open" to import.

### 4.7.3 Export and Modify QRCode Information Table in Batch

The current configuration of tags' QRCode can be exported to the QRCode information table. Export information table, modify it in batch to decrease the work of QRCode import configuration.

Following steps can be used to export the QRCode information table and modify in batch.

- 1) Select the menu command **File/QRCode Export** to bring up the **Save as** dialog box.
- 2) Select the location where you want to place export file and enter the name of export file.
- 3) Modify csv file according to the configuration rules of QRCode information table.

### 4.7.4 View QRCode in Real-time Monitoring

After enabled QRCode in system builder software and tag associated with QRCode, QRCode can

be viewed in the real-time monitoring software by following methods:

- View QRCode through graphic
  - When configured the "ShowQRCode" script for AI, AO, PID and PIDEX tag in graphic script, and the script executed in the real-time monitoring, QRCode information associated with the tag will pop up.
  - In monitoring screen of graphic, user can view QRCode by clicking "Pop-up QRCode" through the right-click menu of AI, AO, PID and PIDEX tag. If the tag does not have QRCode, the "Pop-up QRCode" menu item is not displayed.
- View QRCode through Instruction Panel
 

During the monitoring, QRCode is included in device panel of AI, AO, PID and PIDEX tag. Click QRCode on the extension panel of tag, and the QRCode shown as below popup.

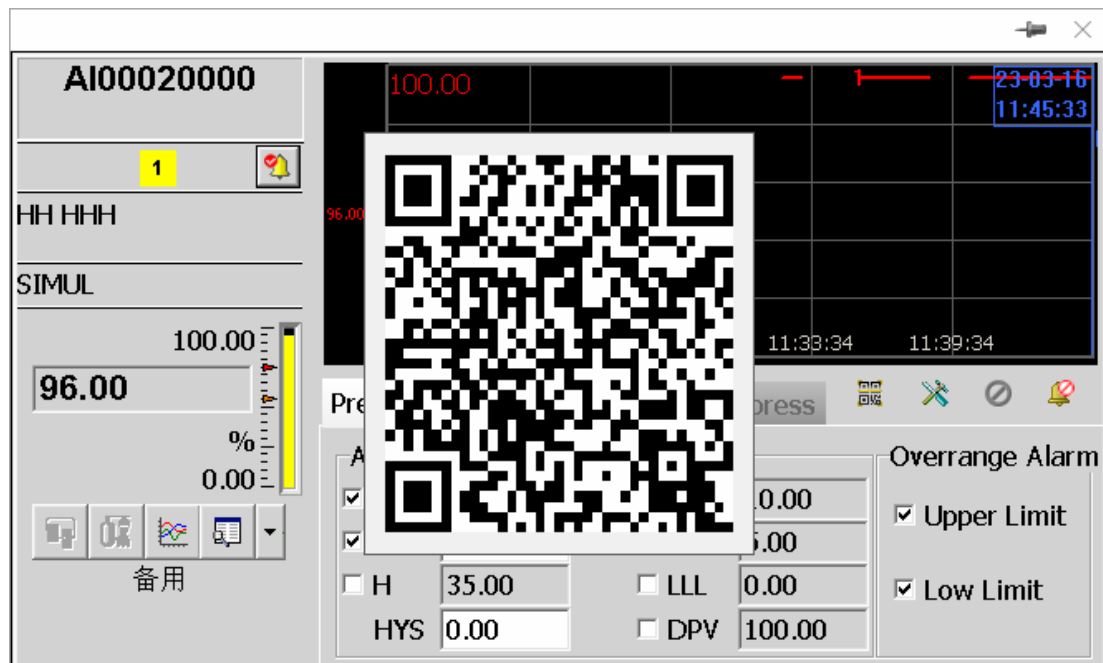


Figure 4-15 QRCode button

## 4.8 View Tag that is linked to the IDM Device Information

During real-time monitoring, you can view the IDM device information linked to AI and AO tags to acquire the information of the field device type and status of relevant tags.

### Configuration Instructions

#### 1) IDM Server Configuration

In the VFSysBuilder Software, configure the global IDM Server or IDM Server of specific control station.

- Select "Global Default Settings > IDM Server", you can configure the IDM server address

that is linked to the project.

- Select control station, and specify the IDM server address linked to specific control station in the properties configuration area.

The IDM server address form is like, "Server Address: Port Number", for example "192.168.20.23:8012".

## 2) Enable View Device Information Function of the tag

In the VFTAGBuilder, select the tag and select "Enable" in the "Supervision Setting > Enable Device Information" item.

## Supervision Effect

When viewing IDM device information in the real-time monitoring, you can switch to IDM device information page linked to tag, as shown in the following figure.

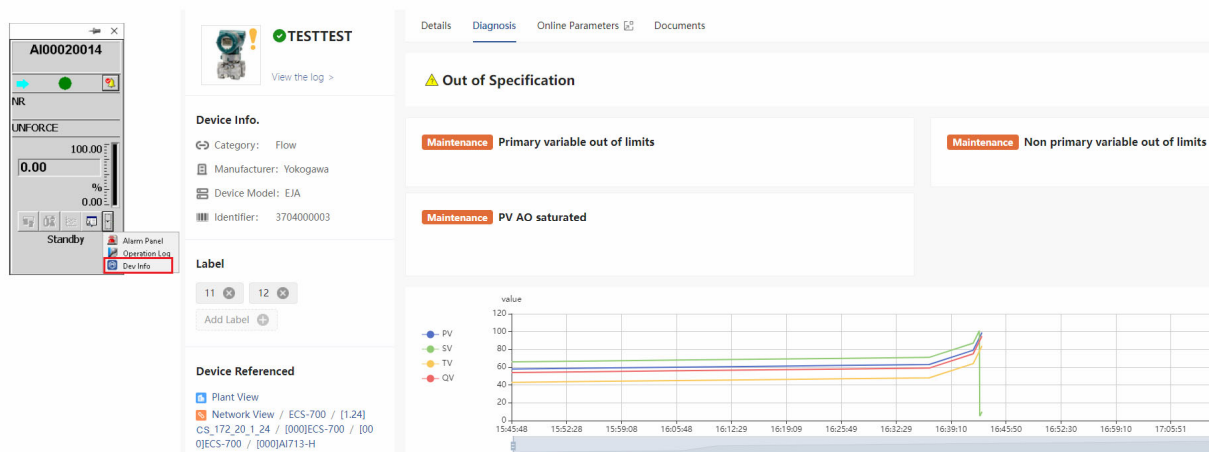



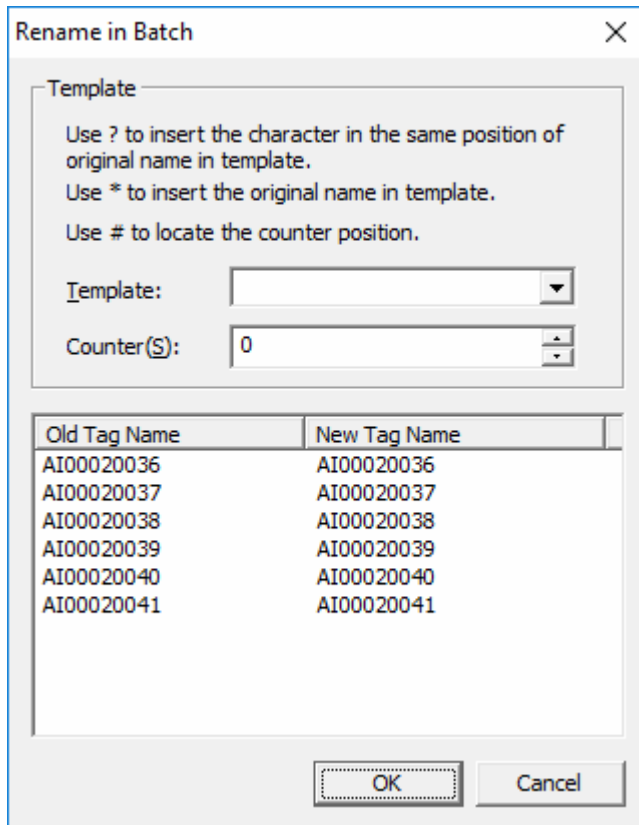
Figure 4-15 Example of IDM device information

## 4.9 Rename in Batch

The function of "Rename in Batch" can rename more than 2 tags synchronously. Rename template can be generated for this function.

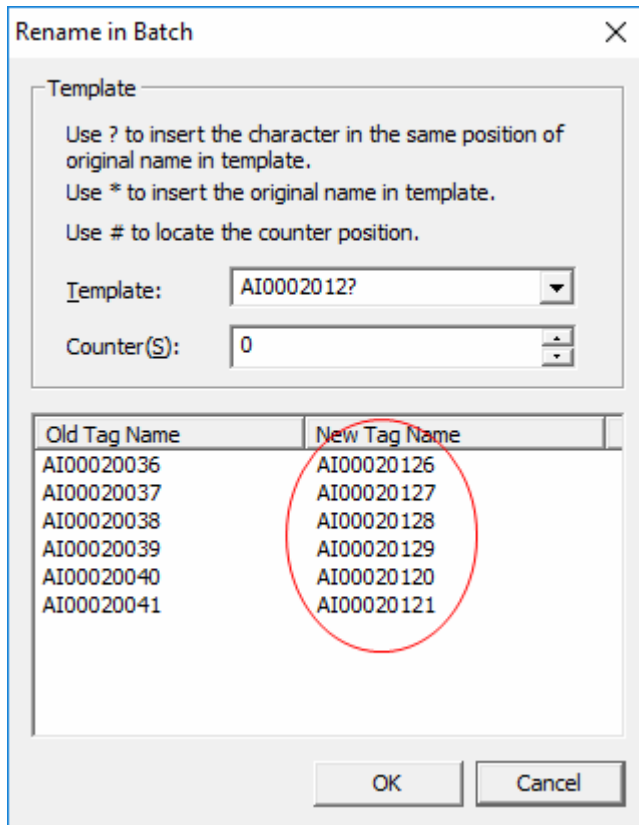
Select several tags in the work area and then select the menu **Edit/Rename in Batch** or click the

button  on Toolbar, then pop up the dialog box "Rename in Batch", as shown in Figure 4-16.



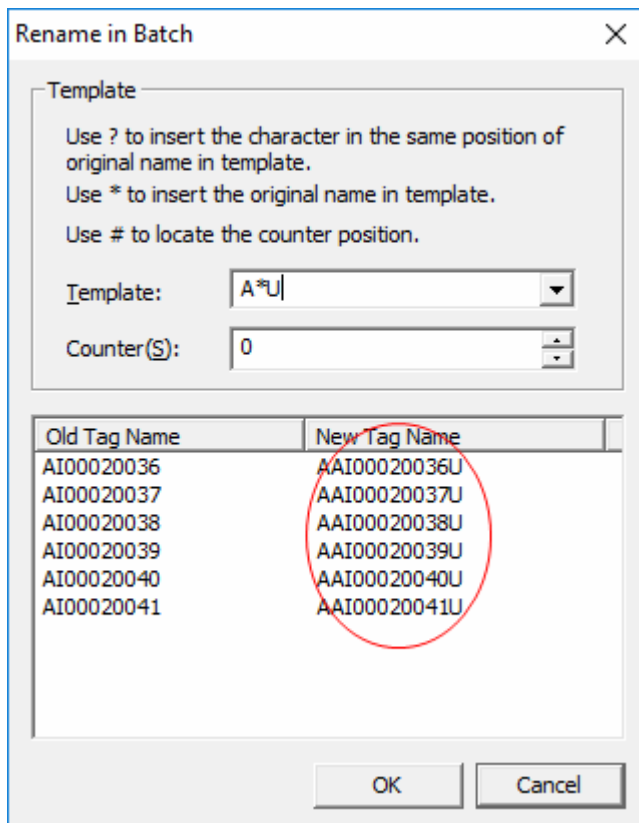
**Figure 4-16 Rename tags in batch**

"?" is used to designate the position where to insert the character in the same position of the original name in the template. For example, when "AI0002012?" is input in Template box, new tag names will be shown in Figure 4-17.



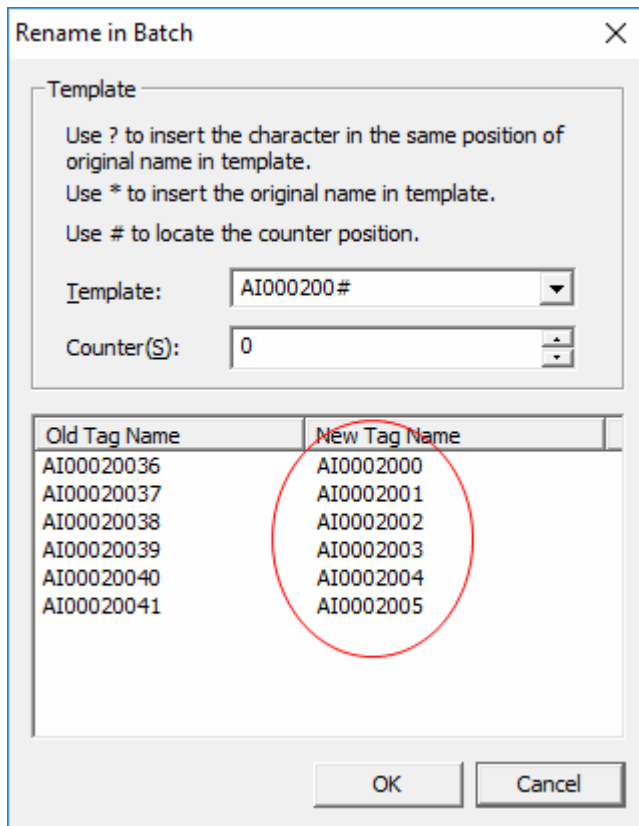
**Figure 4-17 Use "?" when renaming tags in batch**

"\*" is used to designate the position where to insert the original names in the template. For example, when "A\*U" is input in Template box, new tag names will be shown in Figure 4-18.



**Figure 4-18 Use "\*" when rename tags in batch**

"#" is used to designate the position where the counter is used. For example, when "AT29#" is input in Template box and "11" in Counter(S) box, new tag names will be shown in Figure 4-19.

**Figure 4-19 Use "#" when renaming tags in batch**

## 4.10 Scan Tags from Channels

Scan Tags from Channels includes Scan New Added and Communication Tag Strategy.

- Scan New Added: Idle channels generate channel tags according to the hardware configuration. Current tags will be reserved.
- Communication Tag Strategy: Communication tag configuration strategies.

### 4.10.1 Scan New Added

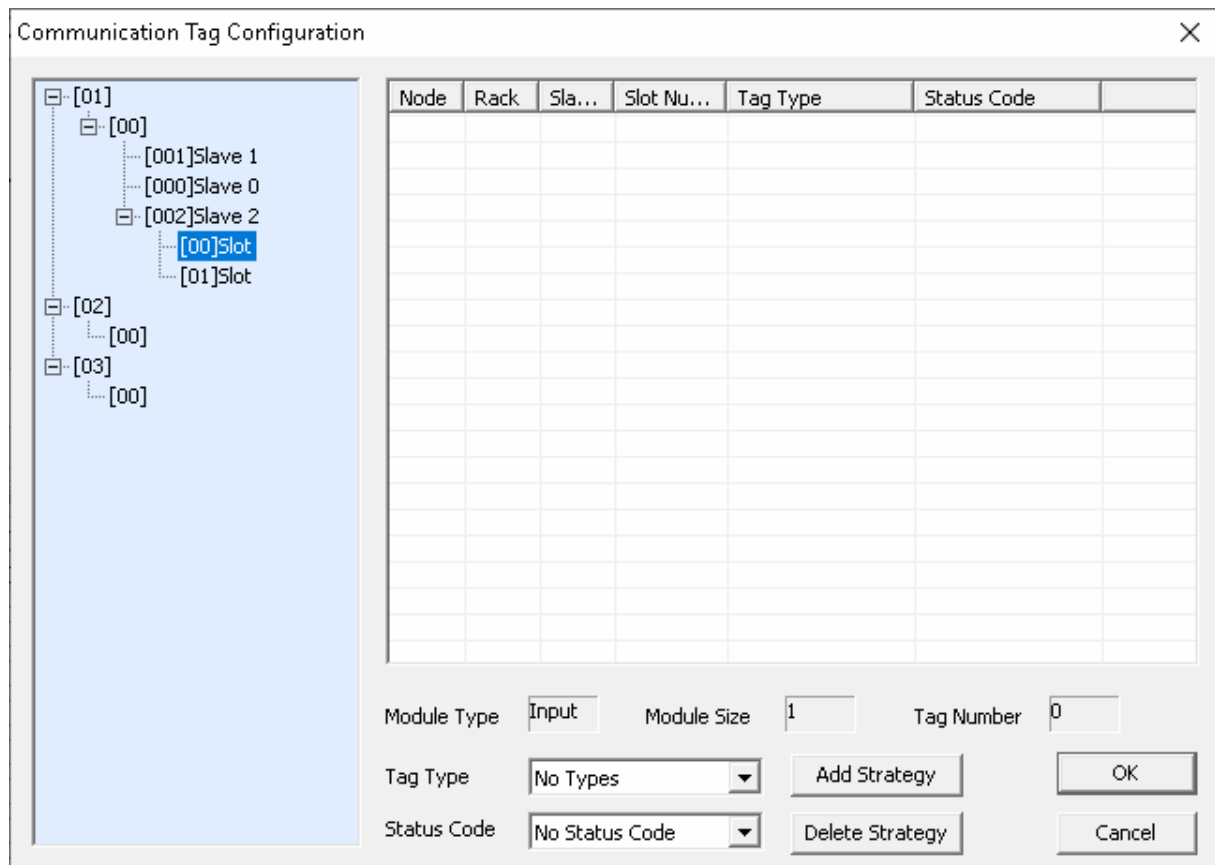
Select the menu **Operation/ Scan Tags from Channels / Scan New Added**, and VFTAGBuilder generates tags according to the hardware configuration automatically.

After scanning, "Finish Scanning" will be prompted in the output bar.

If the hardware is not configured, "No hardware configuration channel information" will pop up in the output bar. And "Failed to load hardware configuration" will be prompted when failed to read the configuration file.







**Figure 4-21 Communication Tag Configuration 2**

Then select "Add Strategy", and there will generate the corresponding tag information on the right, including tag address, tag type, and status code.

Click "OK" and exit the dialog box of Communication Tag Configuration. Then select the menu **Operation/ Scan Tags from Channels /Scan New Added**, VFTAGBuilder will generate corresponding communication tags according to the tag strategies of the former configuration. Prompts will be displayed in the output bar.



**When DP module is not configured in the hardware configuration, the function of Communication Tag Strategy is invalid;**

**The function of Communication Tag Strategy generates corresponding tags only by DP module.**

The function of “Check All Tags” is used to implement parameters check for all tags in the current controller, including the tag number check, the check of tag name repeated, I/O tag address conflict check, tag properties check (tag type; SOE tag; signal type; module type; Max./Min.of parameters; items associated with Max./Min of parameters) , alarm setting etc. , Prompt will be displayed in the output bar after check.

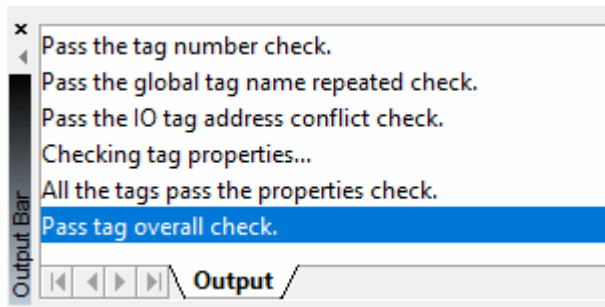


Figure 4-23 “Check All Tags” information



**Tips:**

- When implementing Check All Tags/Check Tag Properties/Exit, VFTAGBuilder will update SOE tag, signal type, and module parameters.
- Double-click the check information in the output bar to locate corresponding tags.
- Tags that are new or modified can be used by custom program or found in the global search only after checking all tags. (Check All Tags also will be implemented when exits VFTAGBuilder).

## 4.12 Check Tag Properties

"Check Tag Properties" is used to check parameters of single tag or several tags, including tag number check; the check of tag name repeated; I/O address conflict check; tag type matching check; SOE tag check; signal type check (module type check included); Max./Min. of parameters check; the check of items associated with Max./Min of parameters and so on.

Select one tag or several tags and select the menu **Operation/Check Tag Properties** information of tag check will be shown in the output bar, as shown in Figure 4-24.

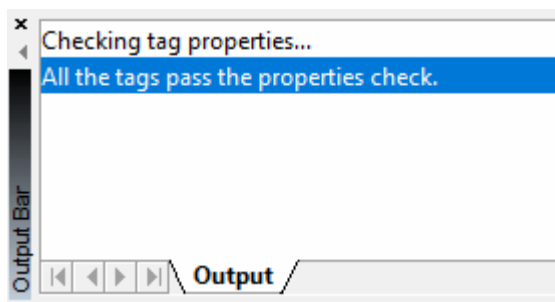


Figure 4-24 Tag check information

## 4.13 Default Tag Type Settings

"Default Tag Type Settings" is used to set the configuration information of certain tag as template and make the new added tag whose configuration information is identical with it. It also supports

template import/export.

#### 4.13.1 Set As Type Template

Select Tag AI001 in the tag list area and select the menu **Operation/ Default Tag Type Settings/Set As Type Template**, There prompts "Succeed to set the default type AI, original type is AI001!" in the output bar. Initial values of parameters of new tags of this type will be consistent with those of the template of this type.



##### Tips:

- If no tag is selected or selected tags are function block tags, the item "Set As Type Template" is in gray and not available.
- If several tags are selected at the same time, as shown in Figure 4-25, and select "Set As Type Template", then the tag at the bottom of the list will be set as the type template. There will prompts in the output bar: "Succeed to set the default type AI, original type is AI00020004!"
- When selecting various types of tags, each type of tag at the bottom of the list, will be set as the type template of corresponding type.
- After the type template has been set successfully, even if the original type (tag) is modified by tag configuration imported from .xls file or generated by Scanning Tags from Channels, initial values of parameters of new tags will remain consistent with those of the type template before being overwritten. That is, once the type template is set, it is independent with original type.
- Before setting, please cancel "Automatically Set As Type Template".

ID	Type	Name	Description	Minimum	Maximum
0	Anal...	AI00020000	Standby	0.0000	100.0000
1	Anal...	AI00020001	Standby	0.0000	100.0000
2	Anal...	AI00020002	Standby	0.0000	100.0000
3	Anal...	AI00020003	Standby	0.0000	100.0000
4	Anal...	AI00020004	Standby	0.0000	100.0000
5	Anal...	AI00020005	Standby	0.0000	100.0000
6	Anal...	AI00020006	Standby	0.0000	100.0000
7	Anal...	AI00020007	Standby	0.0000	100.0000

<

× Succeed to set the default type AI, original type is AI00020004!

Figure 4-25 Select several tags simultaneously

#### 4.13.2 Automatically Set As Type Template

It is used to set the tag added as template of this type automatically. Select this function, and add a new tag. The new tag will become the template of this type automatically and be template for tags

added afterwards.



**Tip:**

Please cancel "Automatically Set As Type Template" before selecting "Set As Type Template" or "Restore to Original Settings" to set the type template.

### 4.13.3 Restore to Original Settings

It is used to restore the type template to original template after using "Set As Type Template". After restoration, initial values of new tags will be consistent with original tag template.

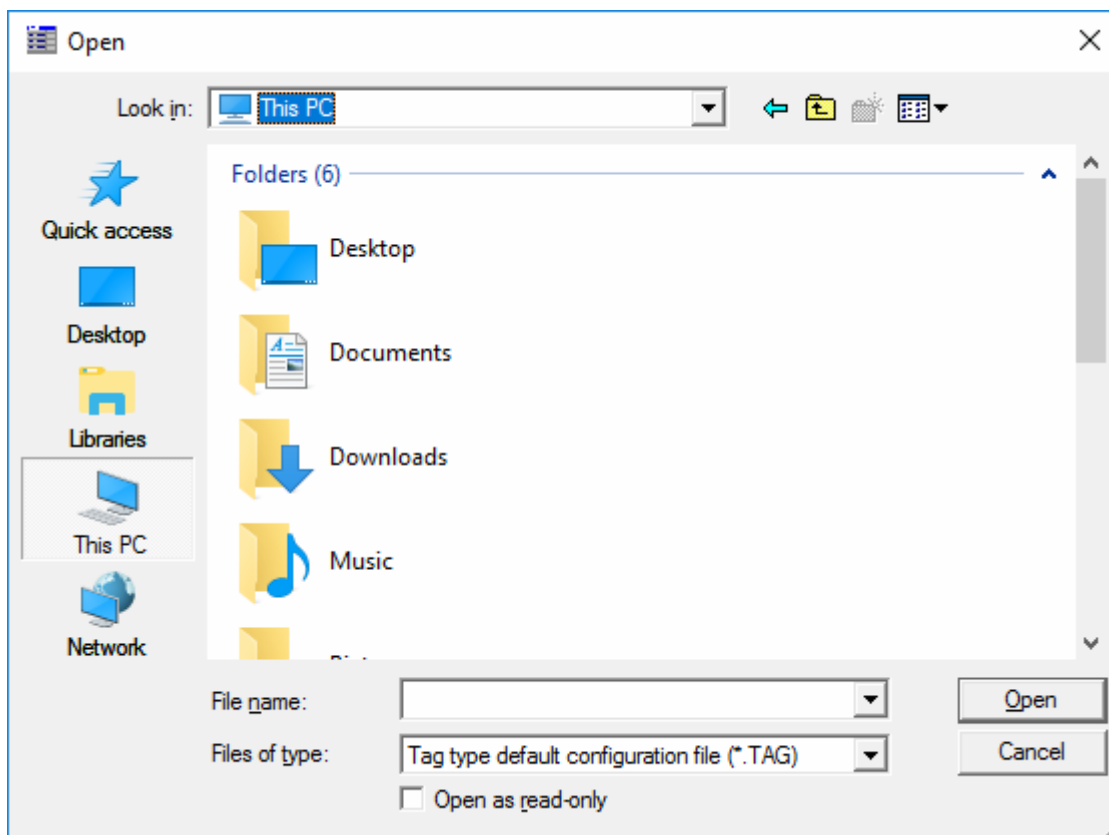


**Tip:**

After restoring to original setting, values of some parameters will be restored to those of "Common Default Settings", like decimal digits.

### 4.13.4 Import Default Type

Select the menu **Operation/ Default Tag Type Settings/Import Default Type**, and then pop up a dialog box, as shown in Figure 4-26



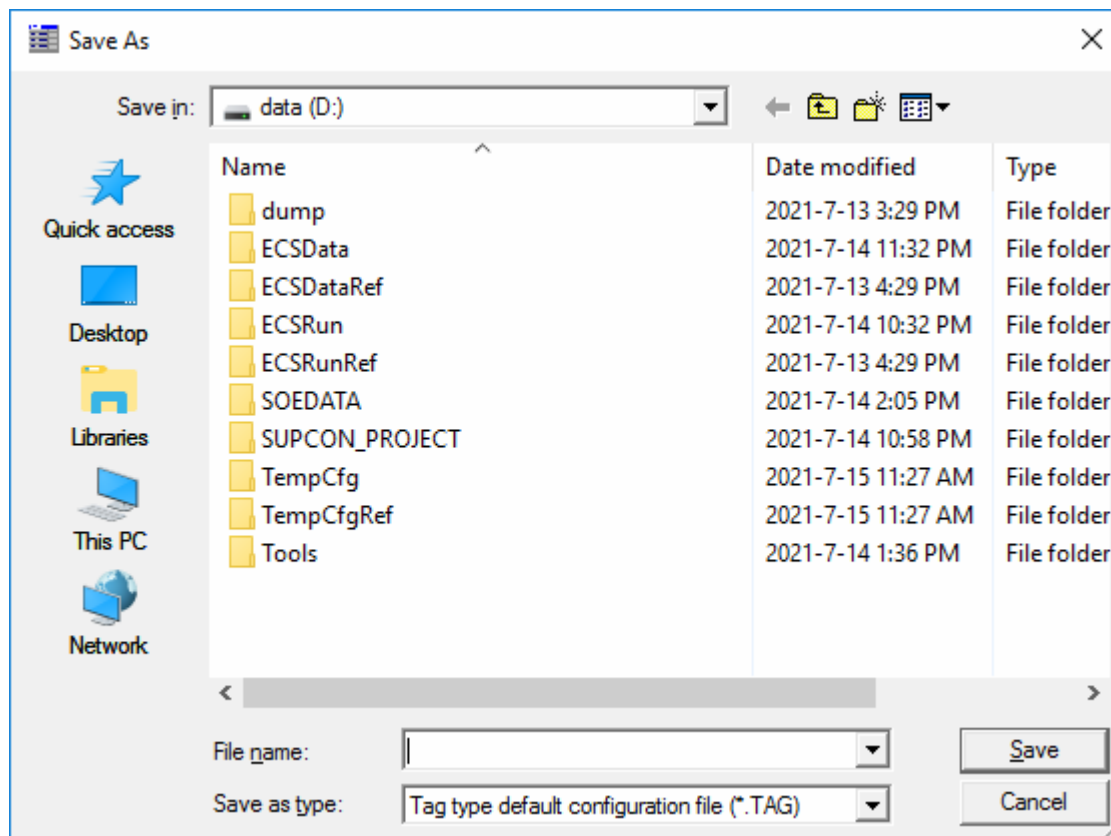
**Figure 4-26 Dialog box "Import tag Default Type"**

Select the configuration file (.TAG); click the button "Open". Initial values of tags newly generated will be same with those of configuration files.

Type templates of all kinds of tags can be generated automatically by importing configuration files; Values of parameters of type templates can be modified by modifying configuration files.

#### 4.13.5 Export Default Type

Select the menu **Operation/ Default Tag Type Settings/Export Default Type** in the interface of VFTAGBuilder, and then pop up a dialog box, as shown in *Figure 4-27*.

**Figure 4-27 Dialog box "Export tag Default Type"**

After input the filename, click the button "Save". VFTAGBuilder will generate a configuration file according to parameters of all kinds of templates and save it in the designated directory.

For tags of certain type without type template set, VFTAGBuilder will generate configuration files according to the original setting values of this type.

If an existed filename is input, it will prompt "Do you want to replace" when the file is saved.

## 4.14 Sequencing

VFTAGBuilder supports the function of tag sorting. Tags can be sorted by "ID", "Name", "Type",

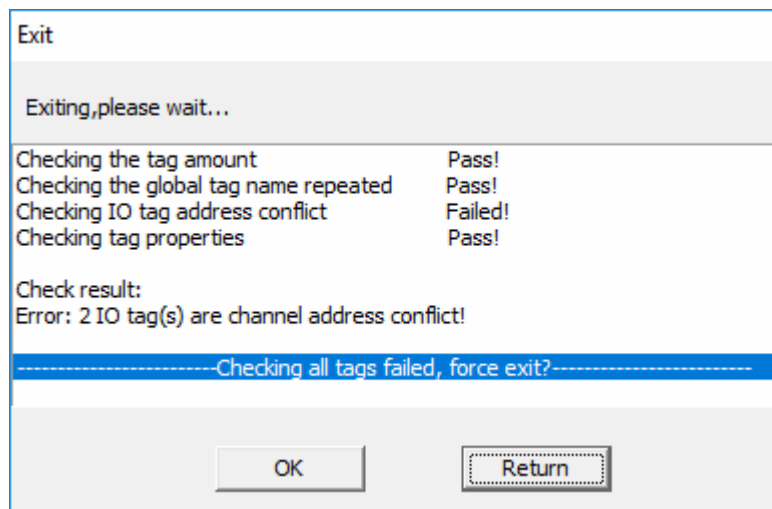
"Description", "Unit" and "Address".

Click one of listed titles, and the mark ▲ (sort tags by ascending) or ▼ (sort tags by descending) appears.

- Click title "ID", then tags will be sorted by serial number in work area: Ascending from 0.
- Click title "Name", then tags will be sorted by name in work area: Ascending from 0 to 9 and from A to Z.
- Click title "Type", then tags are will be sorted by type in work area.
- Click title "Description", then tags will be sorted by description in work area: Ascending from none, number to characters.
- Click title "Unit", then tags will be sorted by unit in work area.
- Click title "Address", then tags will be sorted by I/O channel address in work area.

## 4.15 Exit

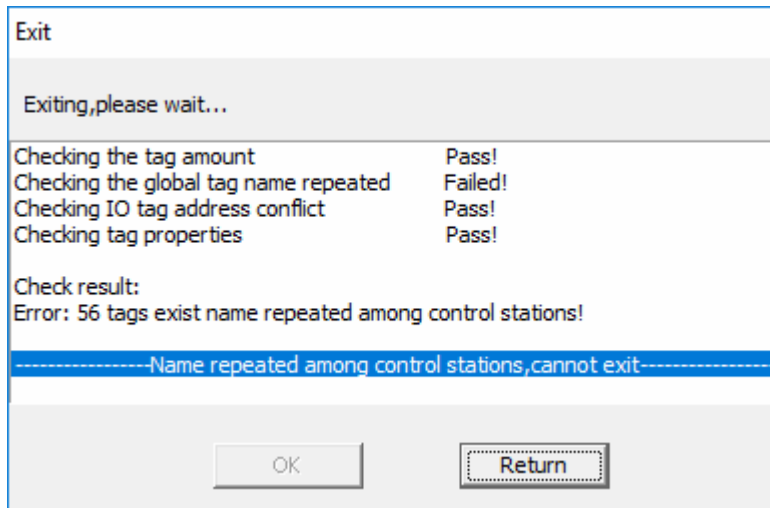
Select the menu **File/Exit**, and then pop up the dialog box of Exit, as shown in *Figure 4-28*.



**Figure 4-28 Exit when there are errors in whole check**

VFTAGBuilder will execute "Check All Tags" of the configuration automatically when exits. When the configuration is invalid, for example, addresses of I/O tags conflict or IO tag doesn't conform with hardware configuration channel, "Failed" and error prompt will be displayed and users need to confirm whether to be force to exit, as shown in *Figure 4-28*. If names are repeated between stations, users cannot exit VFTAGBuilder, as shown in *Figure 4-29*.





**Figure 4-29**Unable to exit when rename occurs in two stations

VFTAGBuilder will exit automatically only when configurations are valid.

## 4.16 Restore Tag Configuration (Used after Force UNLOCK)

After force unlocking one control station in System Builder, users should execute Restore Tag Configuration, selecting the menu **Operation/Restore Tag Configuration (Used after Force Unlock)**.



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**Tip:**

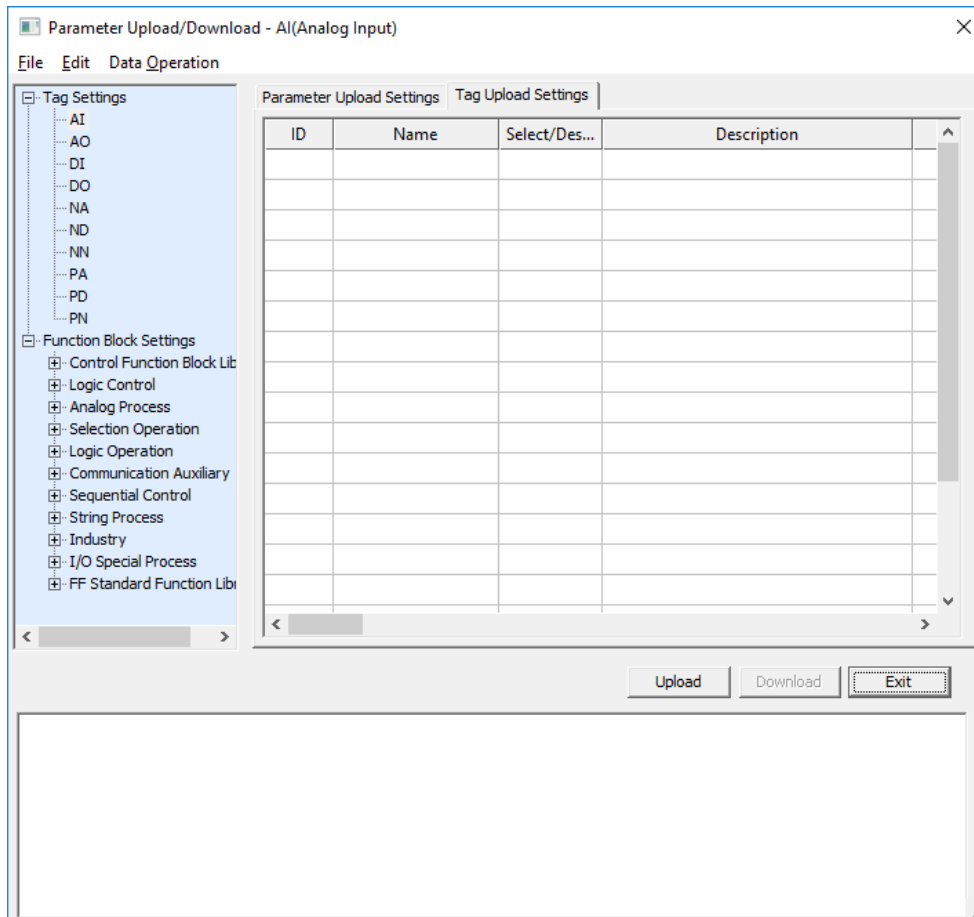
The function of Restore Tag Configuration should be used after forced unlock and make sure to restore tag configuration after forced unlock.

If VFTAGBuilder logs out abnormally, tag configuration will be restored automatically when it is opened again.

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## 4.17 Parameter Upload

Parameter Upload is used to upload important parameter information for project backup or for users as project information. As shown in Figure 4-30.

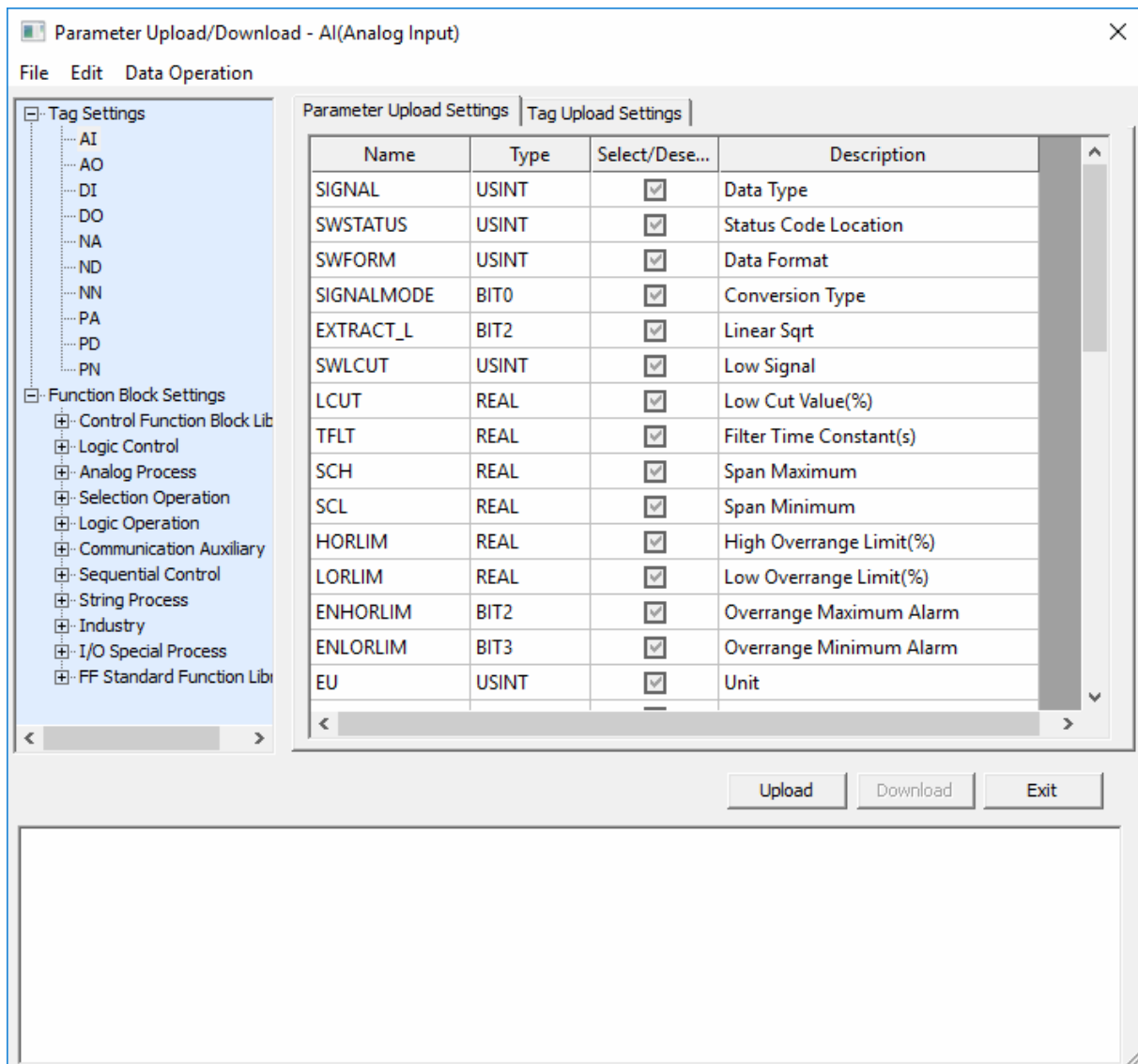


**Figure 4-30 Interface of Parameter Upload/Download**

- Users can select the tag type and function block type to be set from tree diagram at the left in *Figure 4-30*. There are two labels at the right: parameter list and tag list of certain tag or function block be uploaded.
- Parameter Upload: Select parameter items to be uploaded, and upload all parameters by default.
- Tag Upload: Select tags to be uploaded.

### Parameter Upload

It is used to filter the data uploaded and data of parameters not to upload will be ignored. In the interface as shown in *Figure 4-30*, select the label "Parameter Upload Settings", as shown in *Figure 4-31*.



**Figure 4-31 Upload parameter setting page**

Select certain item (such as AI) in the left window, all parameters of AI tags will be listed in the right interface where users can select parameter types to upload.

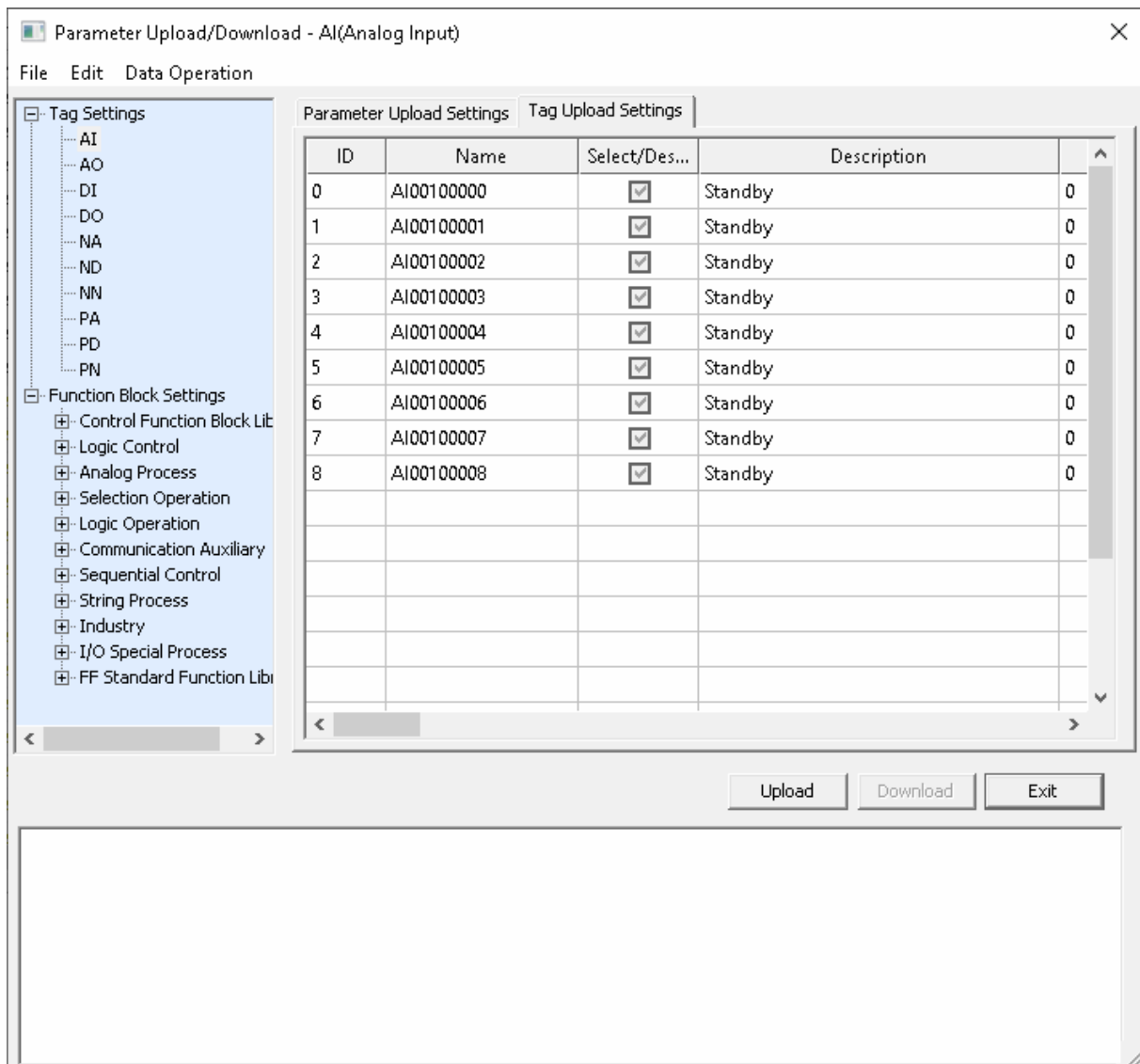


**Tips:**

- Before uploading parameters, the uploading tag list should be created first.
- Parameter "INITVALUE" of tags in types NA, ND, NN, PA, PD and PN are not selected in default.

### Create uploading tag list

Select a tag or several tags in the tag list area. Right-click the selected tag and select the item "Add" to Upload Tag List in the pop-up menu or select the menu **Operation/Add to Upload Tag List**. Select corresponding tag types in the pop-up interface as shown in *Figure 4-32*. Tags selected before will be added to "Tag Upload Settings".



**Figure 4-32 Tag Upload Settings**

Select tags to be upload their parameters in the interface and parameters to be uploaded are those of types set in the page of "Parameter Upload Settings".

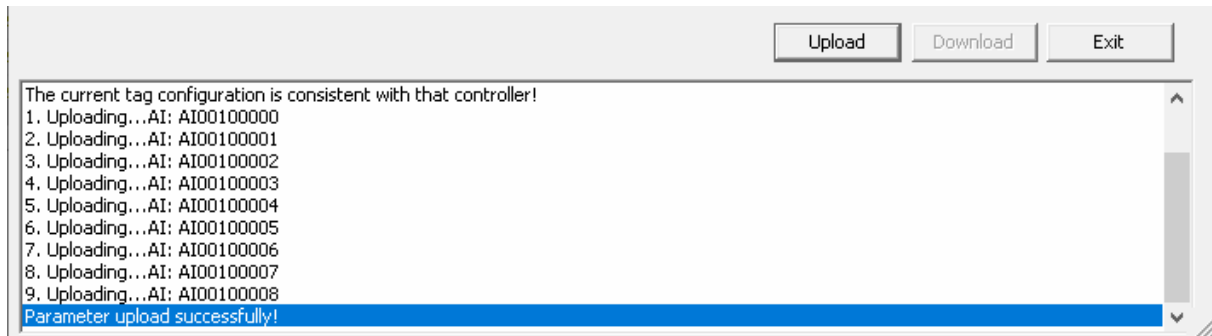


**Tip:**

Only tags downloaded by configuration can be select to upload.

## Parameter Upload

After setting parameters and tags to be uploaded, click the button "Upload" and please operate following the pop-up prompt. Then tag parameters will be uploaded after confirmation. Prompt will be displayed at the bottom of the interface of Parameter Upload/Download after upload has finished.



**Figure 4-33 Prompt after uploading**



**Tips:**

- Click the button "Upload", the command of parameter upload will be sent to controllers.
- Parameter will be uploaded in unit of tag parameter.
- If the current tag configuration is not consistent with that in the controller, parameter upload would fail.

## Update configuration

After completing parameter uploading, select “Data operation > Update configuration” in the menu bar and update the uploaded parameters from the controller to the configuration.

## Export

Parameters uploaded can be exported to EXCEL file (.XLS) for view and analysis.

## 4.18 Tag Usage

It is used to check the usage information of tags in a custom program.

Select a tag and then select the menu **Operation/Tag Usage**. Information in which the programs tag is used will be listed in the output bar. Click the tag usage on the list, it will switch to the program that referenced this tag.

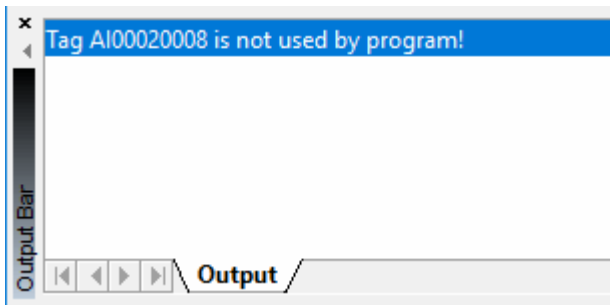


Figure 4-34 Usage of Tag PT1117

## 4.19 Vacant Channel Information

It is used to get statistics of module channels without corresponding tags. Select the menu **Operation / Vacant Channel Information** and corresponding prompts will be displayed in the output bar, as shown in Figure 4-35.

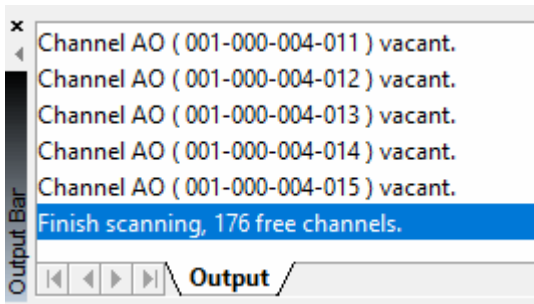


Figure 4-35 Vacant Channel Information

## 4.20 Hardware Statistics

It is used to get statistics of I/O tags without corresponding channels. Select the menu **Operation / Hardware Statistics** and "XXX tag(s) with no corresponding channel address exist(s) in current I/O tags" will be prompted in the output bar.

## Section 5 Revision

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*Table 5-1 Retrofit list of the version*

Document Version	Applicable software version	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First release
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots.