Profinet User Manual

V1.0

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1 Installation of Portal V 15

The installation of Portal follow the guide of official douments.

2 Camera parameter configuration

After selecting the corresponding project, register the master control in the editing interface and select Communication Setup to add profinet communication
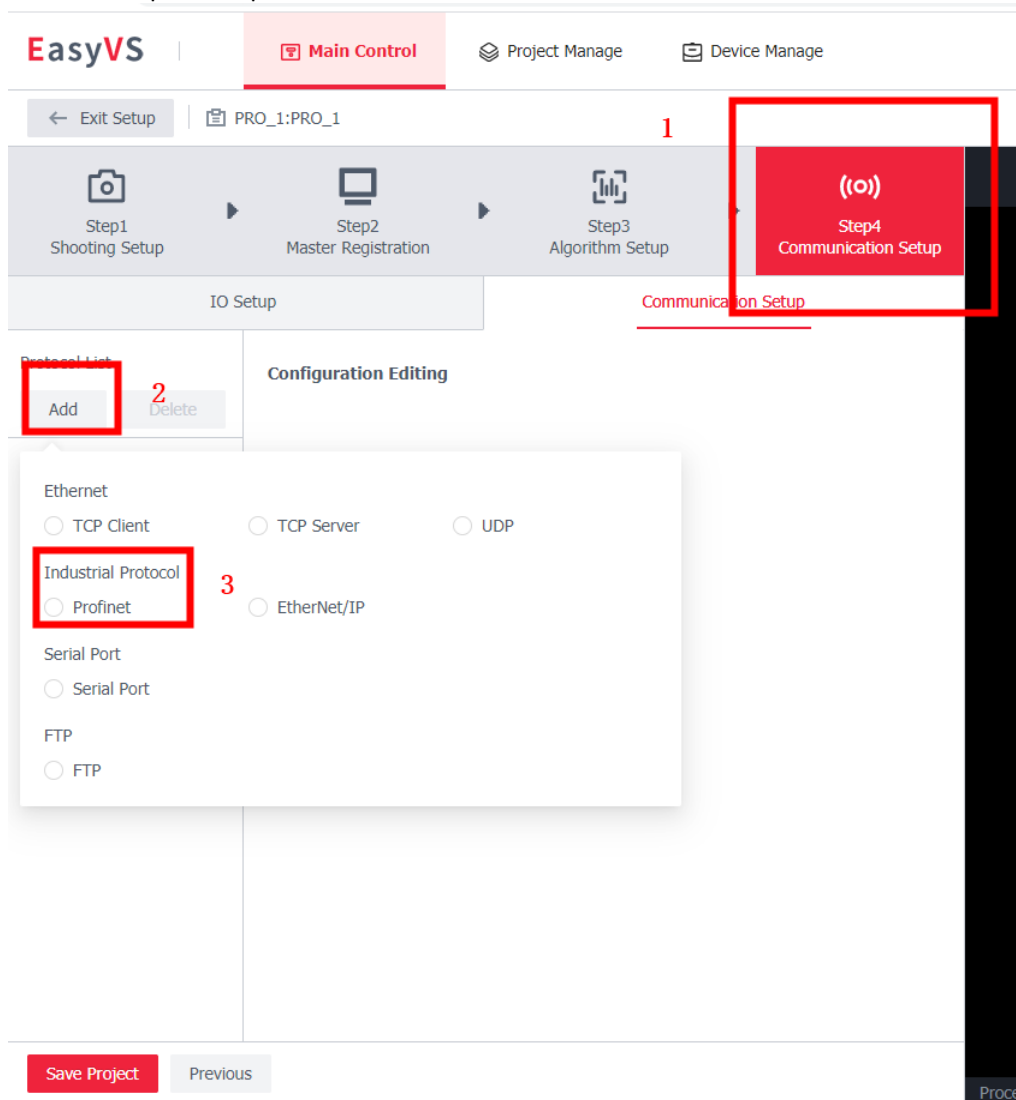

Figure 2-1 Add Profinet tool

3 Construction of communication environment
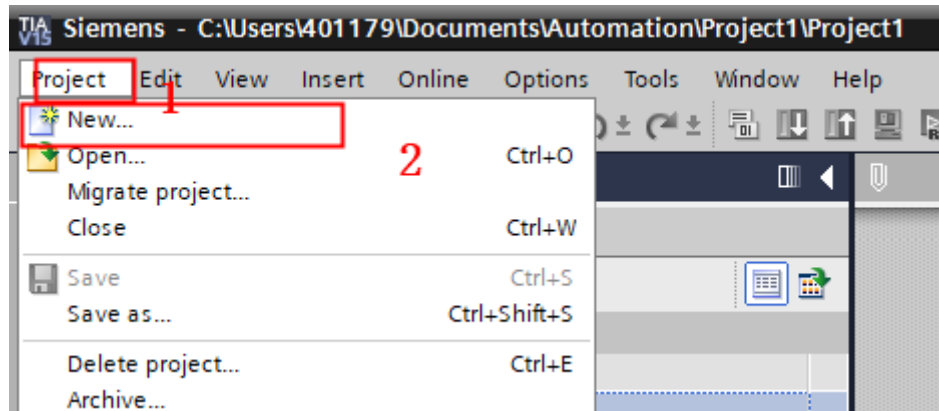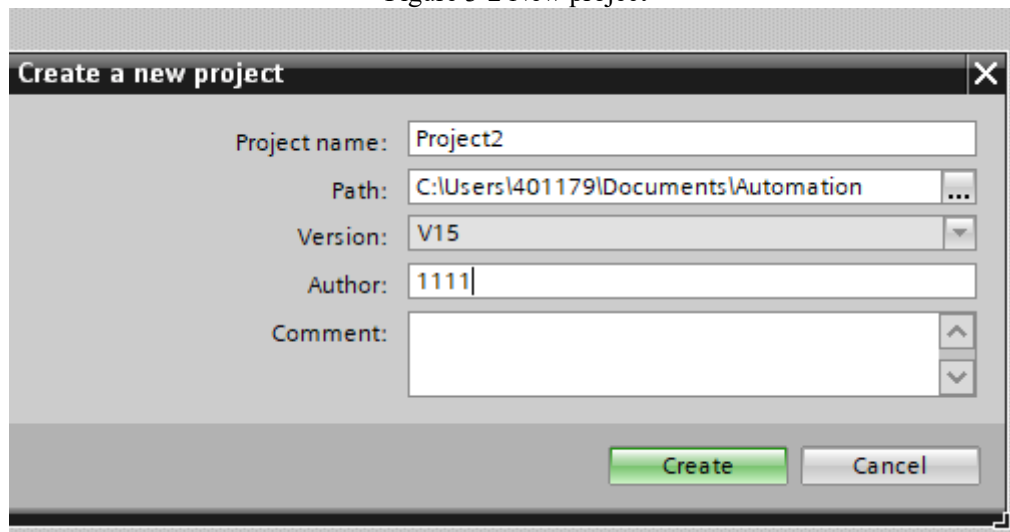
3.1 Create a new project

Figure 3-2 New project

Figure 3-2 Create a new project
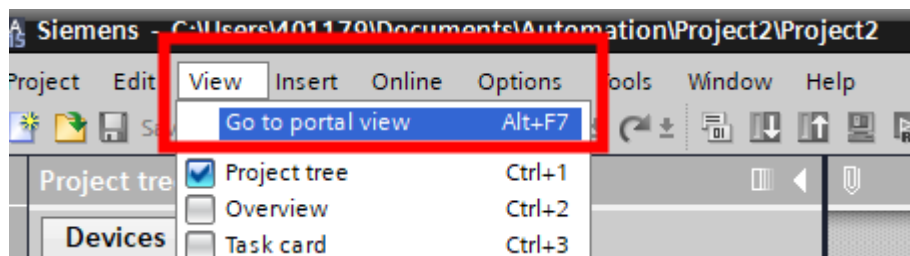
3.2 Open the project view
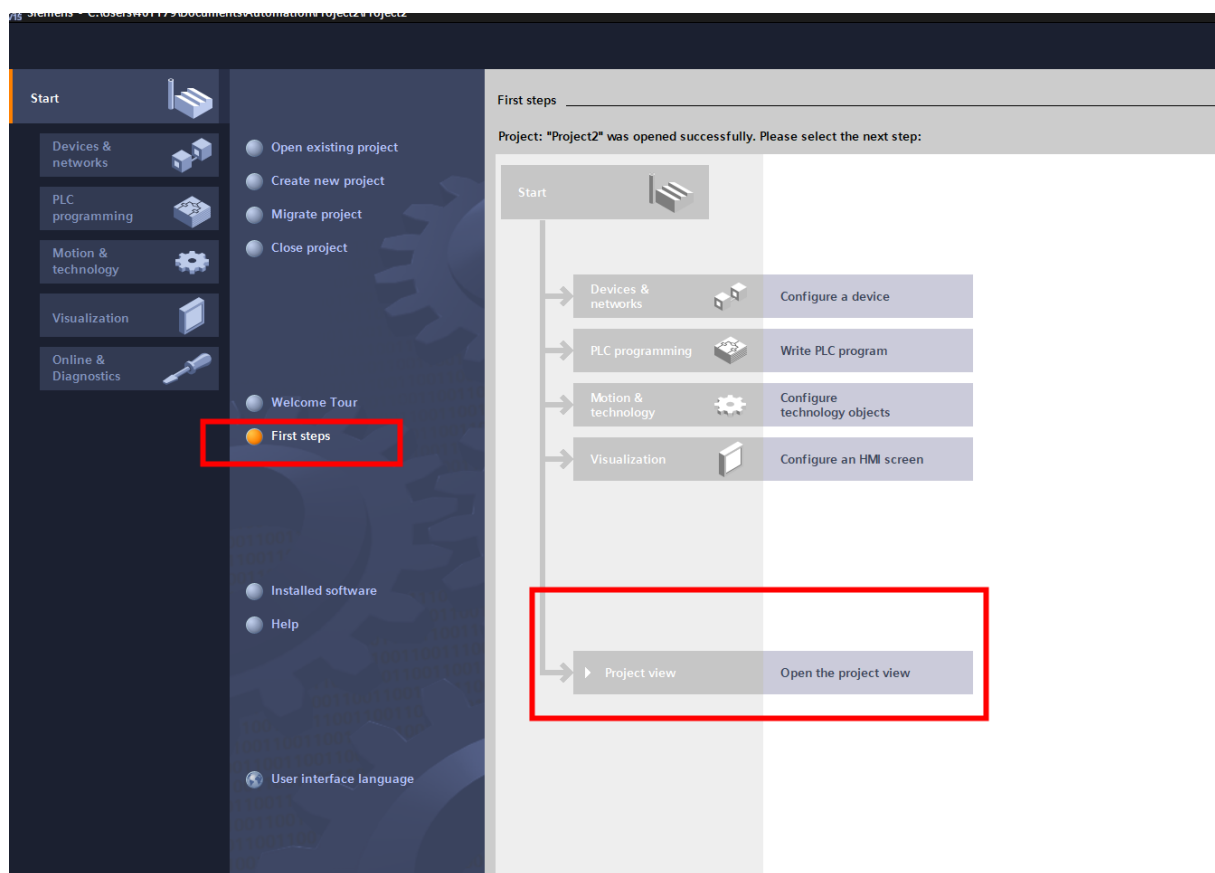

Figure 3-3 Go to portal view

Figure 3-4 Open the project view
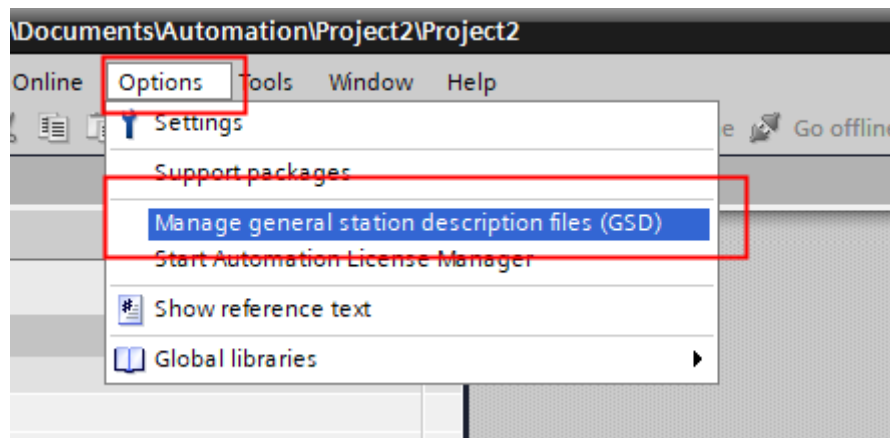
3.3 Import GSD file

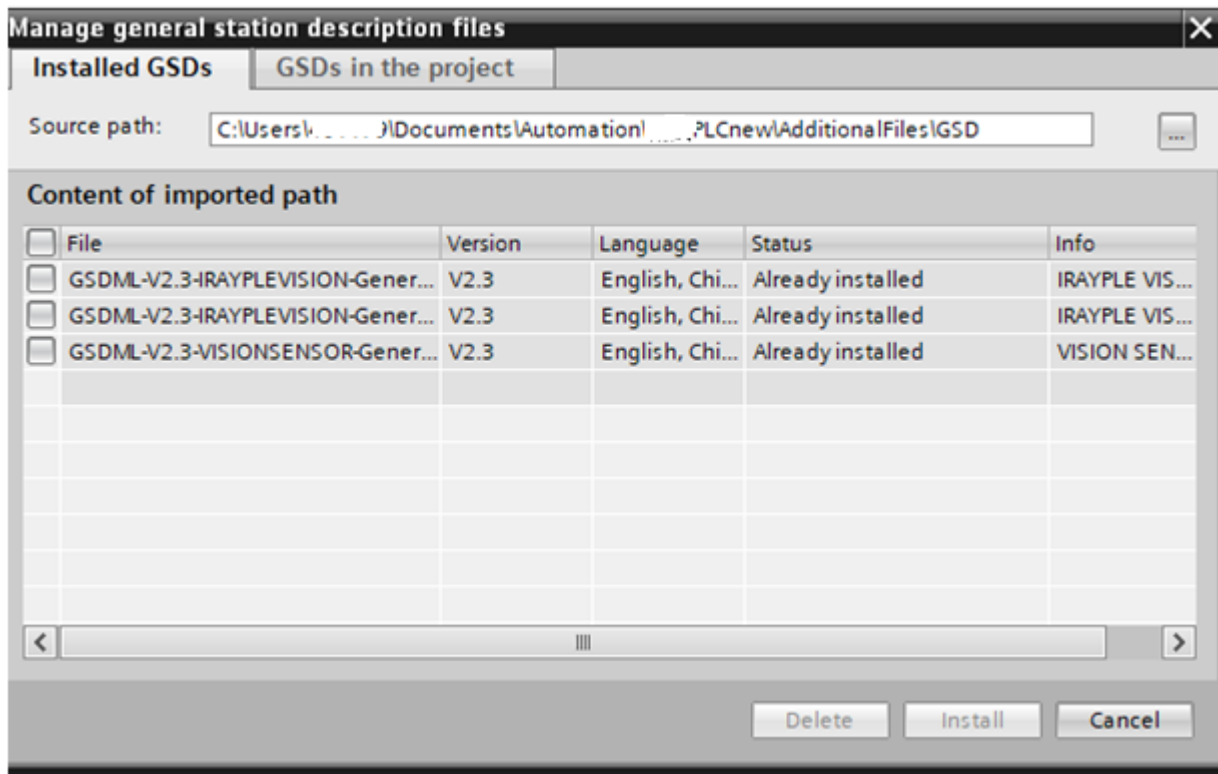Figure 3-5 Manage general station description files(GSD)

Figure 3-6 Import GSD file
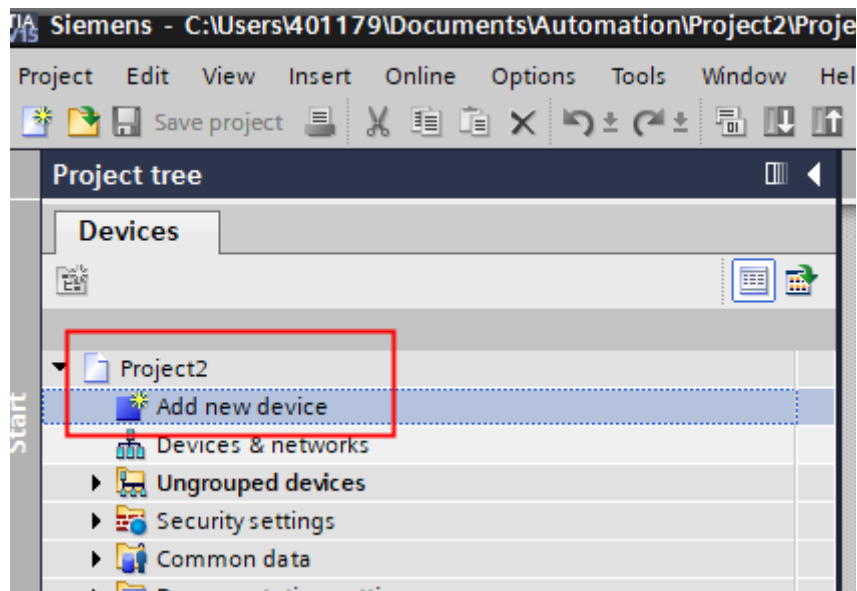
3.4 Add PLC to the project
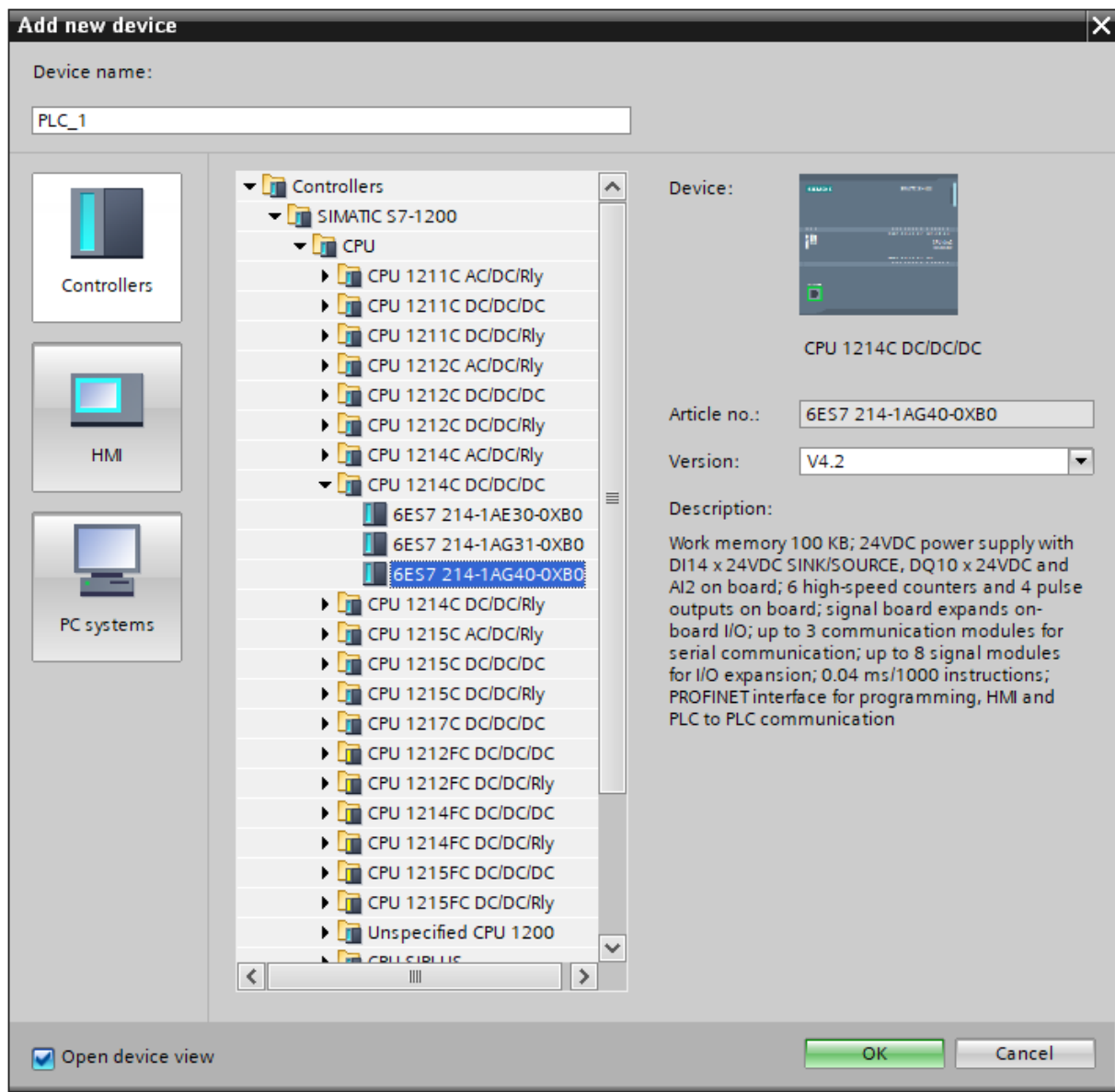

Figure 3-7 Add new device

Figure 3-8 Select the corresponding PLC model

Note: correspond to the PLC actually used.
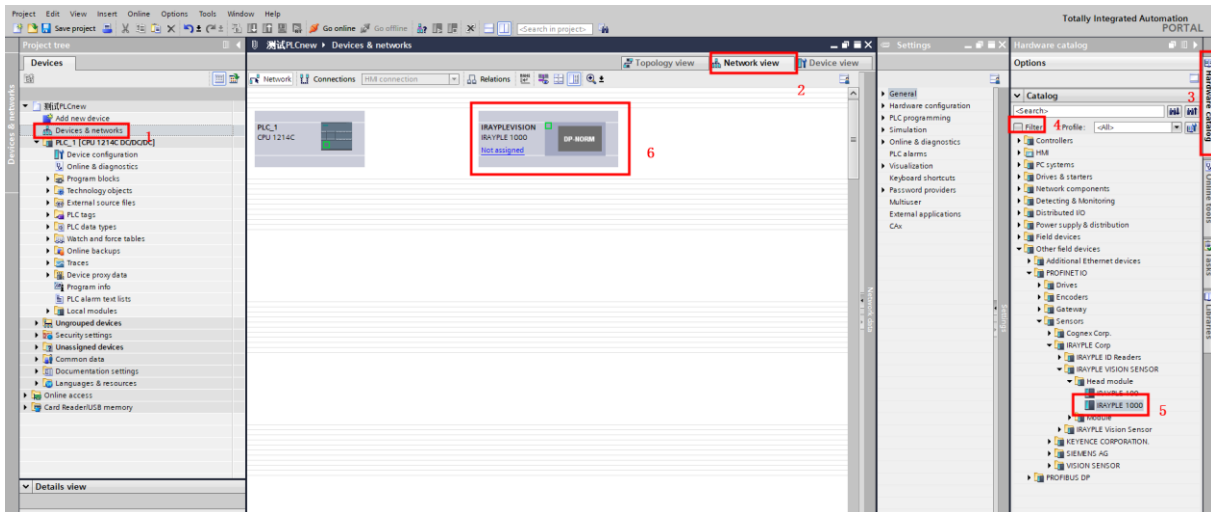
3.5 Add the camera device to the project

Figure 3-9 Add sensor module

①Double-click the device and network, switch the ②interface of the device and network to the network view, and cancel the filtering option at ④ in the hardware directory of ③ that pops up. Drag the front-end module into the network view in the other field device — PROFINET IO — Sensor — IRAYPLE Corp — IRAYPLEVISION SENSOR — IRAYPLE 1000 in the hardware directory, as shown in ⑥.
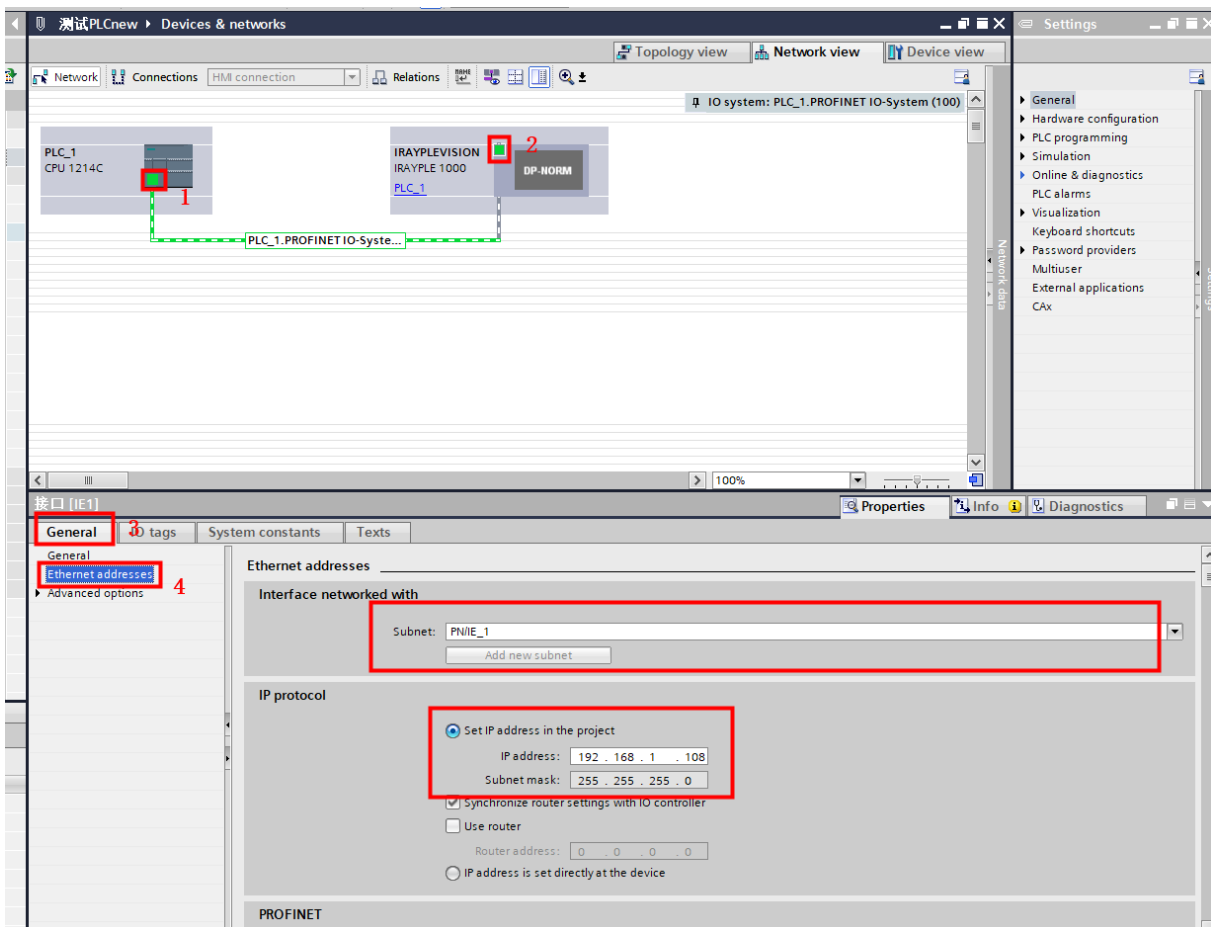

Figure 3-10 Modify the network properties of the sensor module

In the network view under device and network interface, connect ① and ② to construct the same subnet. ②Right click to select properties, and then select ③ from the interface that pops up below

interface, and then select ④ Ethernet address to modify the parameter (IP, subnet, user ID) of the visual sensor.
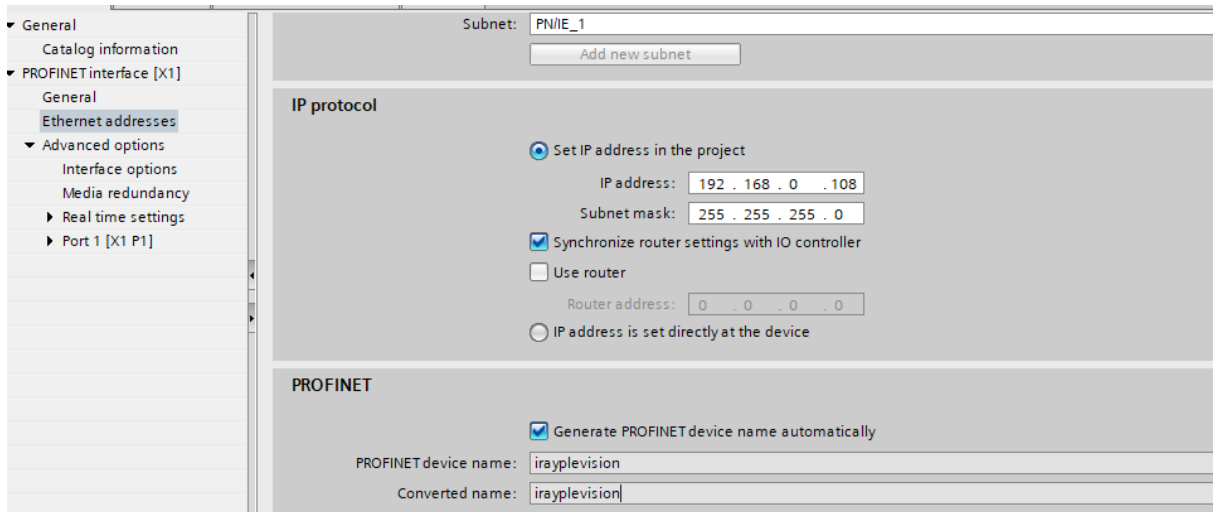

Figure 3-11 Modify the device name of the sensor module

The PROFINET device name configured on the web page or EasyVS should be consistent with the PROFINET device name in the figure above.
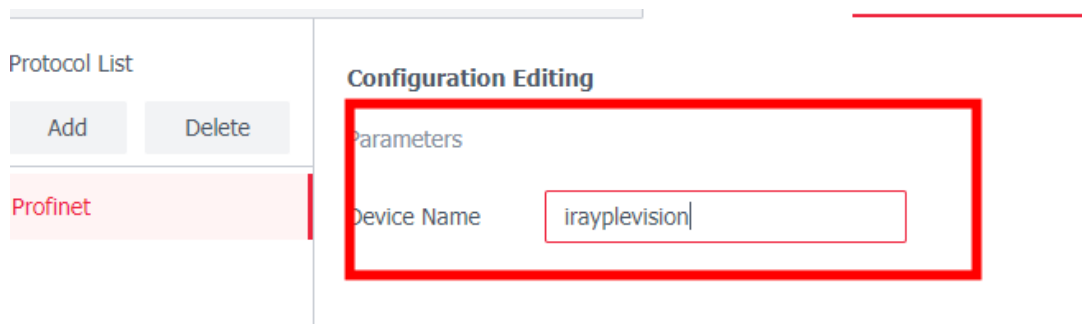

Figure 3-12 Modify the device name of the visual sensor interface for Profinet

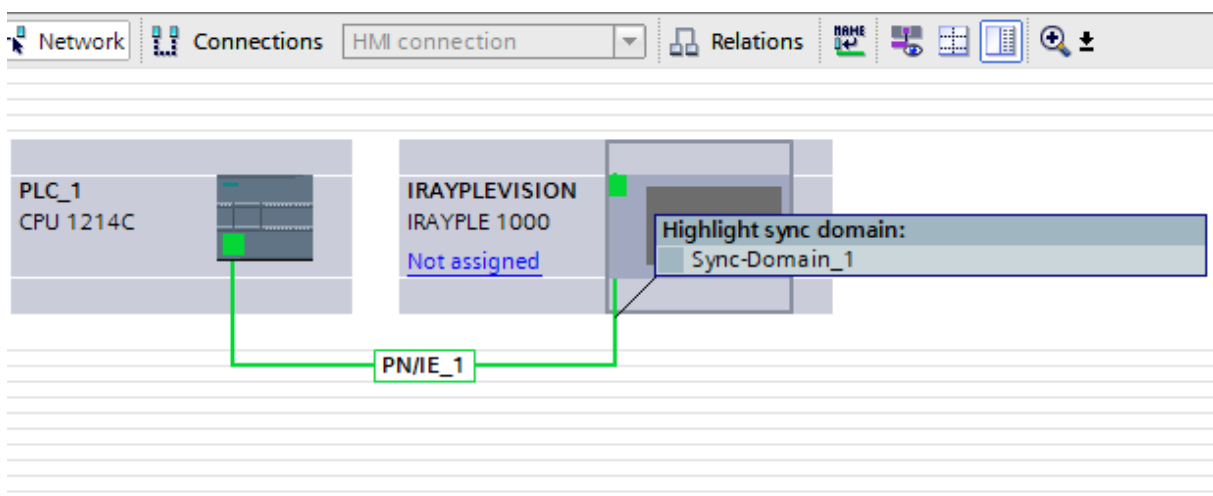## 3.6 Build device configuration and compile

Figure 3-13 Schematic diagram of placing sensors and PLC on the same subnet

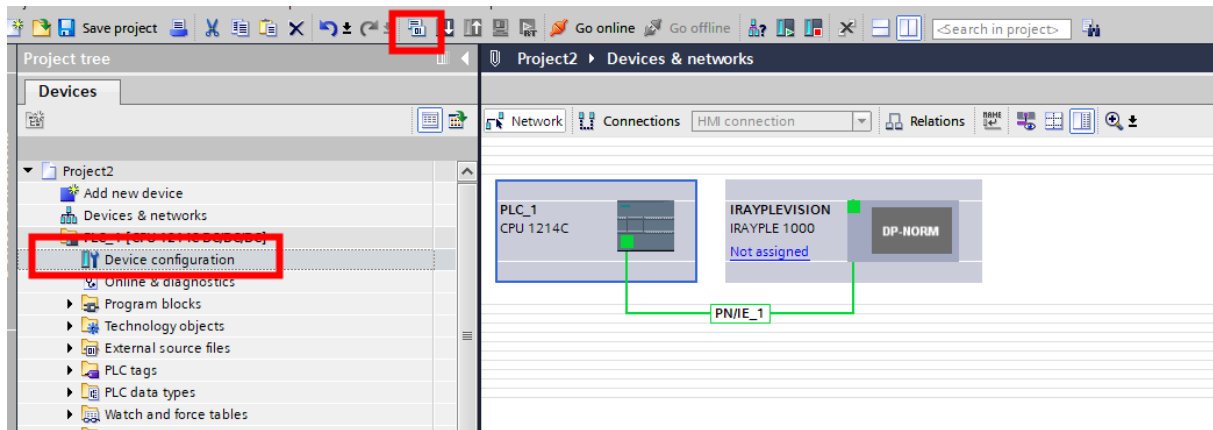Setting up device configuration is a simple 1 to 1 relationship

Figure 3-14 Compile device configuration

Double-click the device configuration and click the Compile button to compile the saved device configuration.

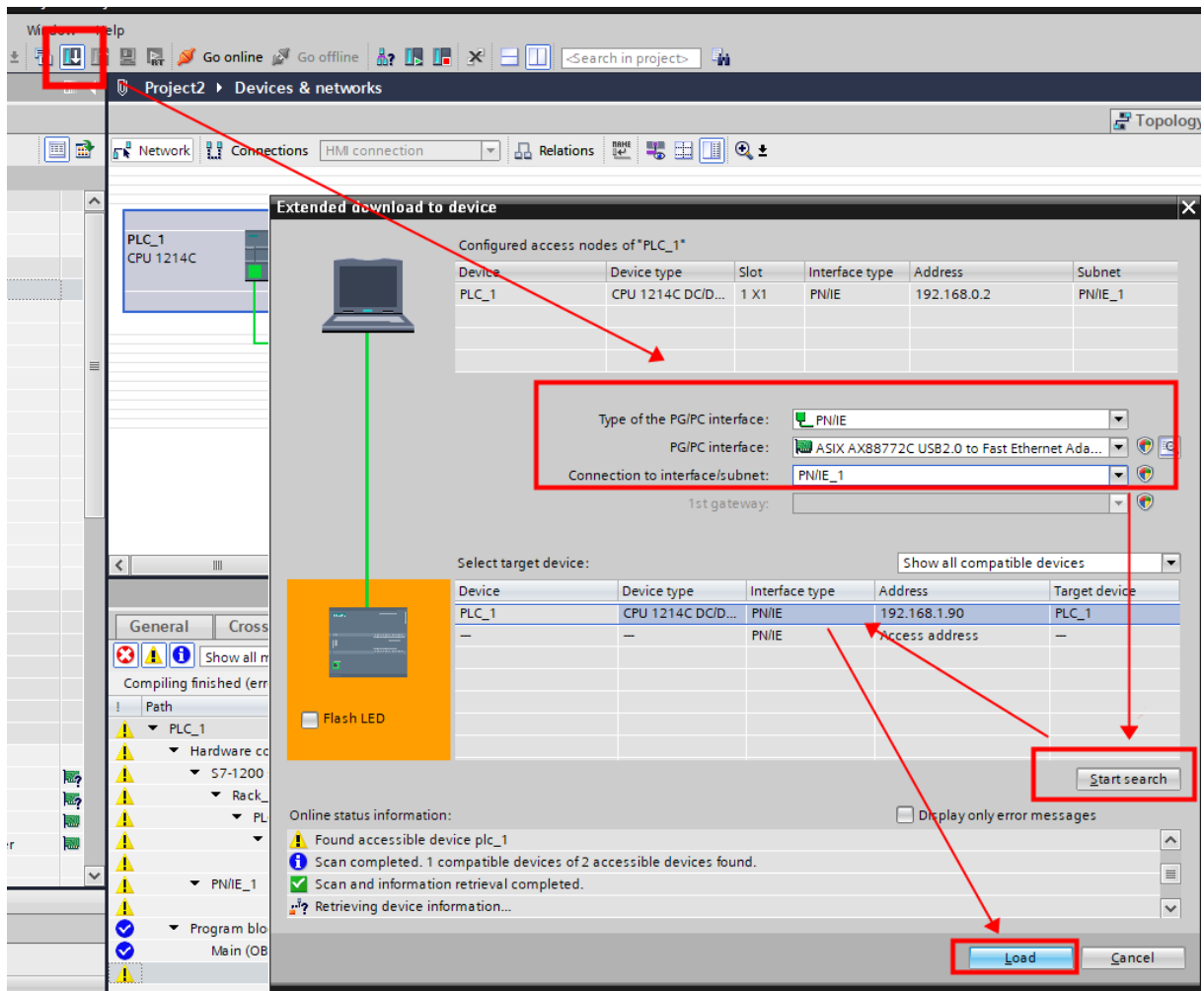## 3.7 Download the device configuration to the controller and go online

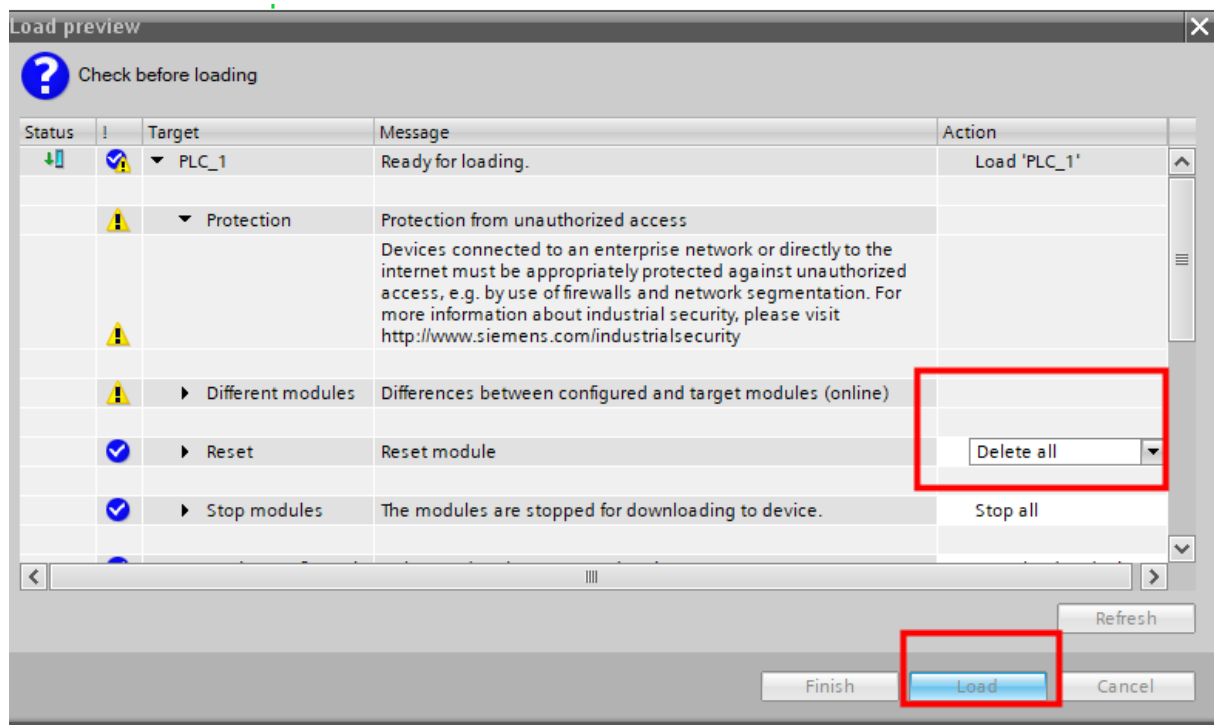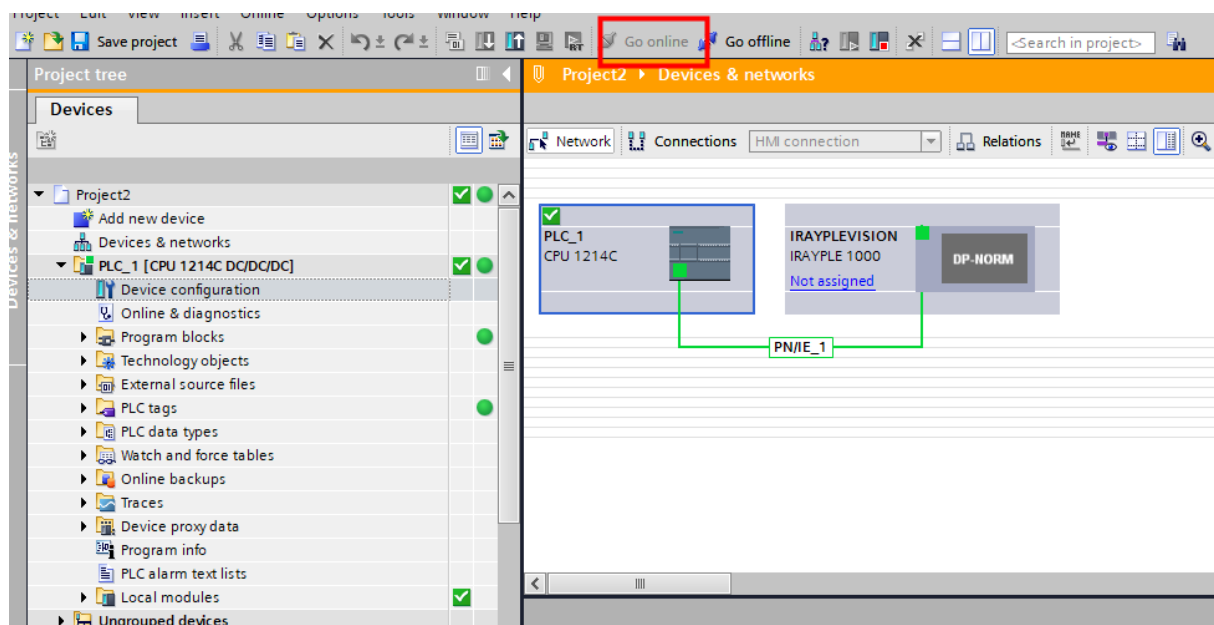Figure 3-15 Device download process flowchart

Figure 3-16 Download preview

Figure 3-17 Device online

After switching to online, it means that the basic environment has been built.

3.8 Create a monitoring table

Configure the corresponding address to be monitored according to the register address assigned to the device by the PLC in the device overview

Figure 3-18 Device view overview

(The reserved Q addresses of the acquisition control and completion clearing modules allocated in this device are not used yet, so the Q addresses are valid starting from 4.0)

The monitoring table can be used to control the triggering of the camera and obtain the results. The specific operations are described in the next section.
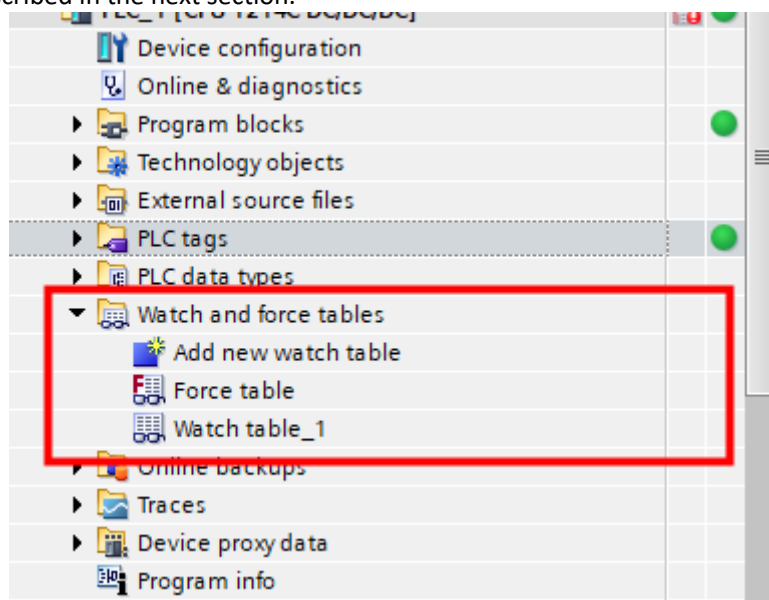

Figure 3-19 Create monitoring table

Click the picture above to add a monitoring table

4 Examples

4.1 Writing address format in monitoring table

Q: indicates the monitored Q address, i.e. the address of PLC output data
I: indicates the monitored I address, i.e. the address of PLC receive data

Prefix Abbreviation	Type of data	Data length	Example
/	Bool	1-bit	%Q4.0 indicates the first bit of the fourth byte of the Q address
B	Byte (1 byte)	8-bit	%IB76 means getting the content of the 76th byte of the I address
W	Word	16- bit	%IW76 means getting the contents of the 76th byte and two bytes after the I address
D W	DWord	32-bit	%ID76 means to get the content of the 76th byte and the next four bytes of the I address

Table 4-1 Parameter description

4.2 Example of PLC sending data to a sensor
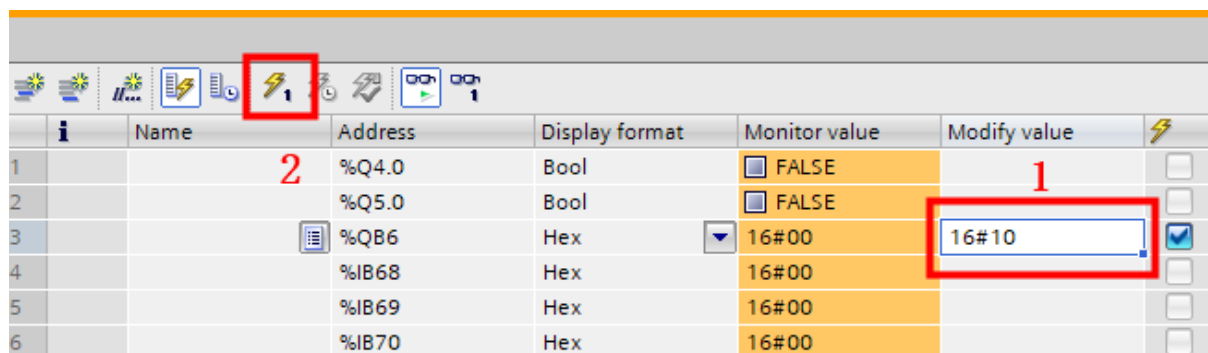
Figure 4-1 Examples of formatted input

PLC address at the device's formatted input string as shown in the figure (although some data types are bit However, this device still uses a byte of space as a placeholder).

Methods for modifying values in the monitoring table:

Figure 4-2 Diagram of value modification

After pre-editing the desired value in the Modify Value column, click ② in the figure to modify all selected values immediately.

Figure 4-3 Successfully modified

Therefore, in this example, you can set %Q4.0 to true or false (if the trigger mode in the shooting configuration-trigger configuration is set to industrial Ethernet in the editing interface) to start and stop the device from pulling the stream, set %Q5.0 to true to achieve the statistical reset function (the number of ok and ng is set to 0), and modify the corresponding format value in %QB6.0 to switch t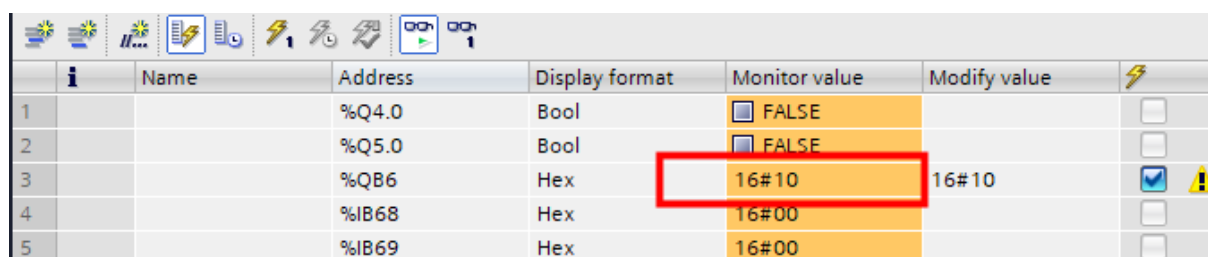o the corresponding project. In this example, the hexadecimal %QB6.0 bit is modified to 0x10 to achieve the function of switching to project 16 .

4.3 Example of sensor sending data to PLC

The data that the device needs to send can be added through interface operation. Integers and floating-point numbers occupy 4 bytes. The string type can expand or reduce the number of bytes sent through interface operation. The part with insufficient data will be filled with ASCII code "0" (that is, the interface content is hexadecimal 0x30) to reach the byte length set by the interface.

Figure 4-4 Formatting output configuration

Here, one integer, one floating point number, and one string type are added. In the above example, the output content is 23 bytes, but the sending byte length configured in the configuration interface is 26 , so the "0" value of 3 bytes is added.

Figure 4-5 Device overview

the address assigned by PLC in the device overview, we can see that the content sent by the device to PLC starts from %IB68, so the address of the monitoring table starts to monitor the value from %IB68 . The monitoring result is as follows:

	i	名称	地址	显示格式	监视值	修改值	⚡	注释
4			%IB68	十六进制	16#63		☐	
5			%IB69	十六进制	16#00		☐	
6			%IB70	十六进制	16#00		☐	
7			%IB71	十六进制	16#00		☐	
8			%IB72	十六进制	16#BE		☐	
9			%IB73	十六进制	16#1F		☐	
10			%IB74	十六进制	16#43		☐	
11			%IB75	十六进制	16#44		☐	
12			%IB76	十六进制	16#38		☐	
13			%IB77	十六进制	16#53		☐	
14			%IB78	十六进制	16#53		☐	
15			%IB79	十六进制	16#44		☐	
16			%IB80	十六进制	16#35		☐	
17			%IB81	十六进制	16#31		☐	
18			%IB82	十六进制	16#4D		☐	
19			%IB83	十六进制	16#33		☐	
20			%IB84	十六进制	16#37		☐	
21			%IB85	十六进制	16#31		☐	
22			%IB86	十六进制	16#37	16#01	☑ ⚠	
23			%IB87	十六进制	16#39		☐	
24			%IB88	十六进制	16#41		☐	
25			%IB89	十六进制	16#56		☐	
26			%IB90	十六进制	16#4C		☐	
27			%IB91	十六进制	16#43		☐	
28			%IB92	十六进制	16#33		☐	
29			%IB93	十六进制	16#42		☐	
30			%IB94	十六进制	16#39		☐	
31			%IB95	十六进制	16#41		☐	
32			%IB96	十六进制	16#32		☐	
33			%IB97	十六进制	16#4B		☐	
34			%IB98	十六进制	16#47		☐	
35			%IB99	十六进制	16#30		☐	
36			%IB100	十六进制	16#30		☐	

Figure 4-6 Monitoring table monitoring real-time values of registers

According to the configured number of placeholder bytes, the first 4 bytes can be output as integer content, the following four bytes are output as floating-point type, and the rest are output as configured string type.