

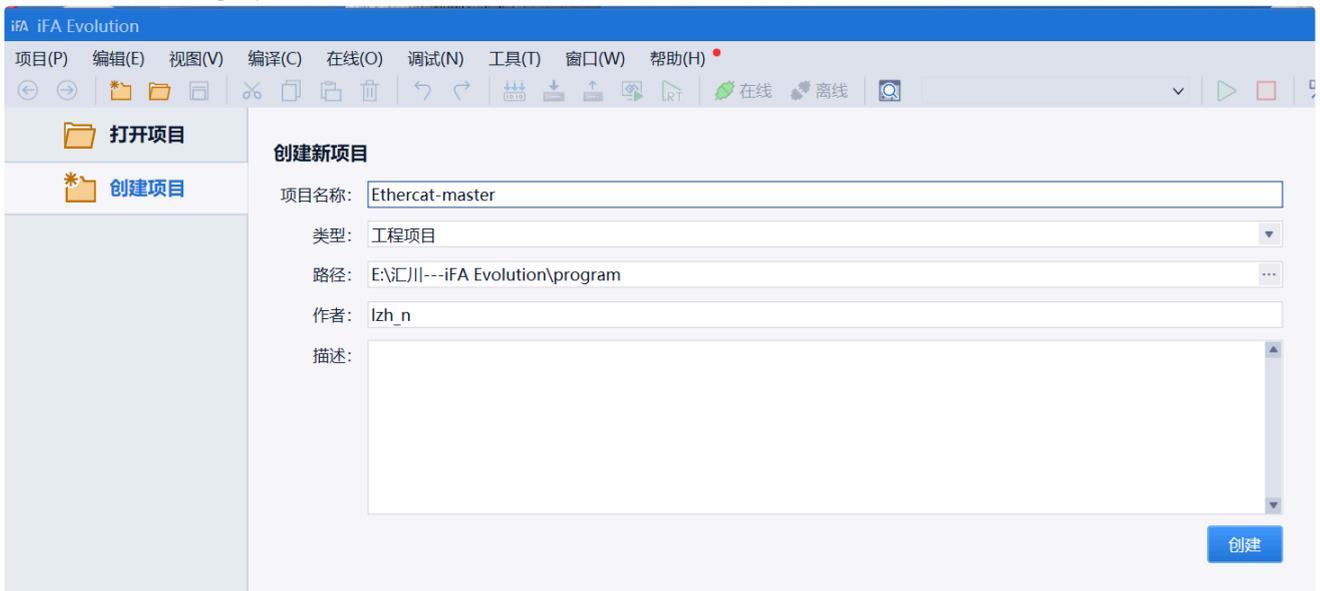
## 1. Project & Hardware Connection Example

In this example, an **Inovance EVO521 PLC** is used. The connected devices (in series) are:

- EtherCAT IO-Link Master: **ELCT-8IOL-0001**
- An 8-channel 4–20 mA analog input sub-station connected to **Port 2** of the master: **SIOL-M12-8AI**
- An EtherCAT 8DI 8DO remote I/O module connected **downstream** of the master: **ELCT-IOM88-0001**

## 2. Configuration Steps

1. Open the Inovance programming software **iFA Evolution**, create a new project, set the project name and storage path, then click **“Create”**.

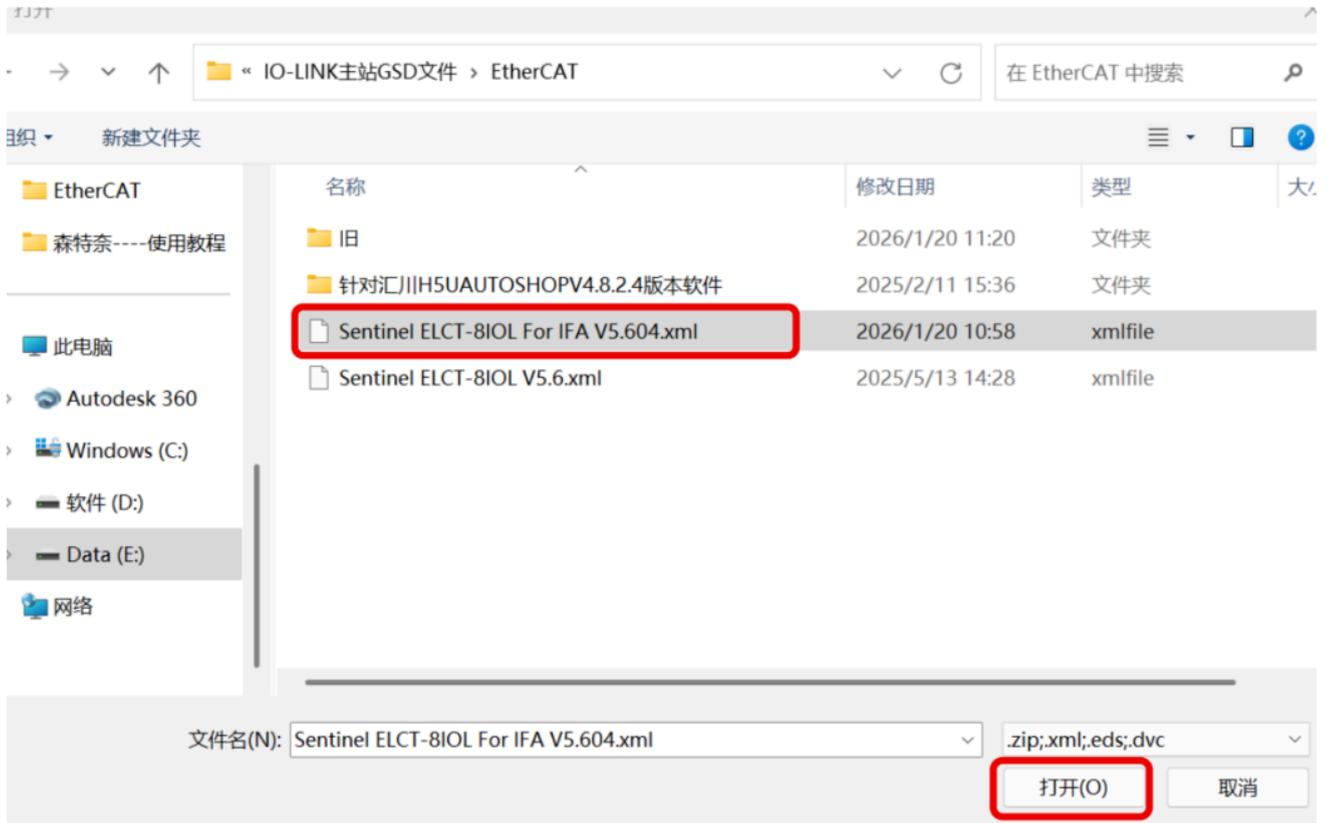


2. Install the EtherCAT module **ESI file: Tools → Device Library → Install**.

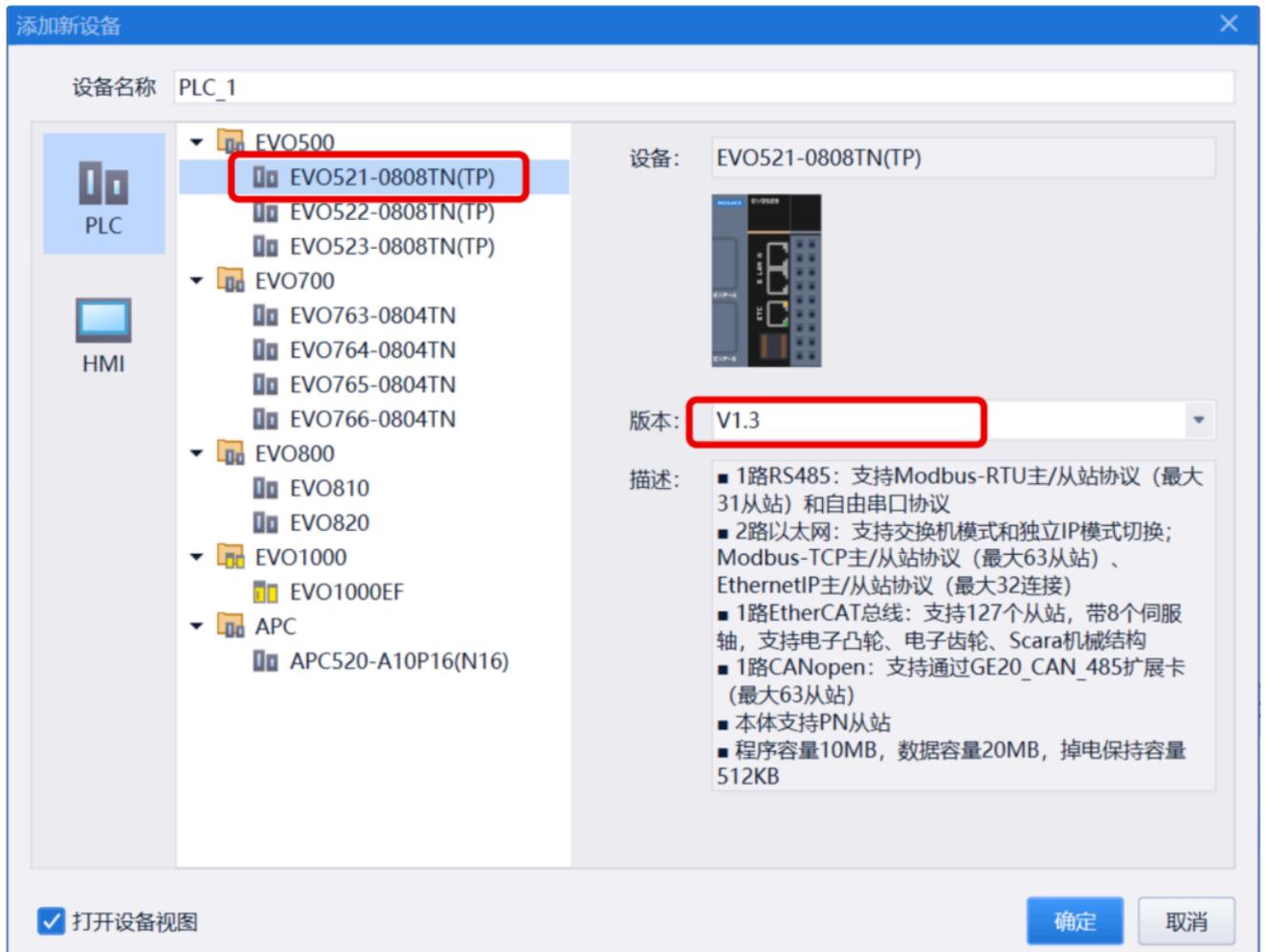


3. In the pop-up window, select the ESI file and click “Open” to complete installation. The ESI installation for ELCT-IOM88-0001 is the same.

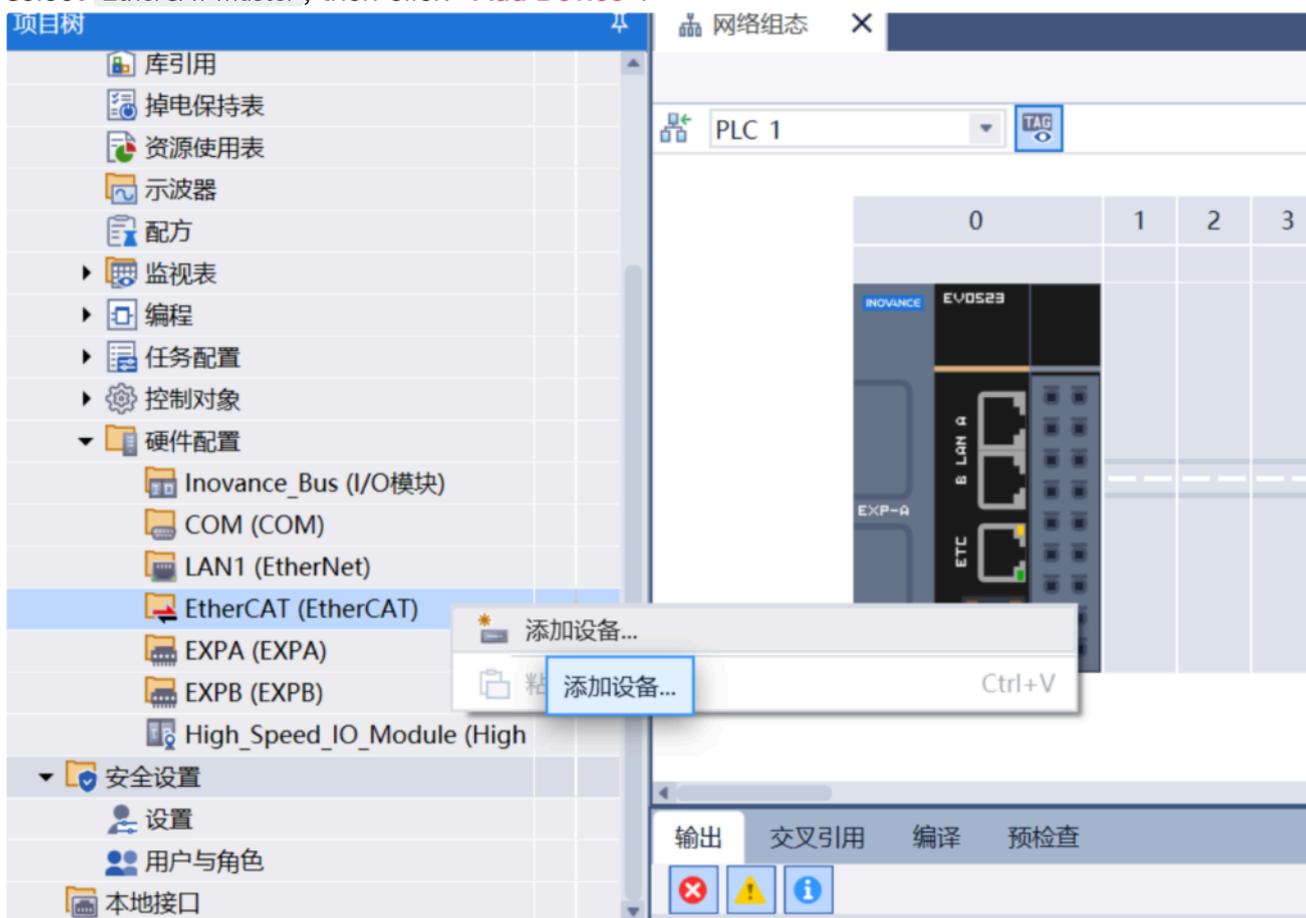
**Note:** For EVO series PLCs, all EtherCAT devices must use the **ESI files specifically for the EVO series PLC.**

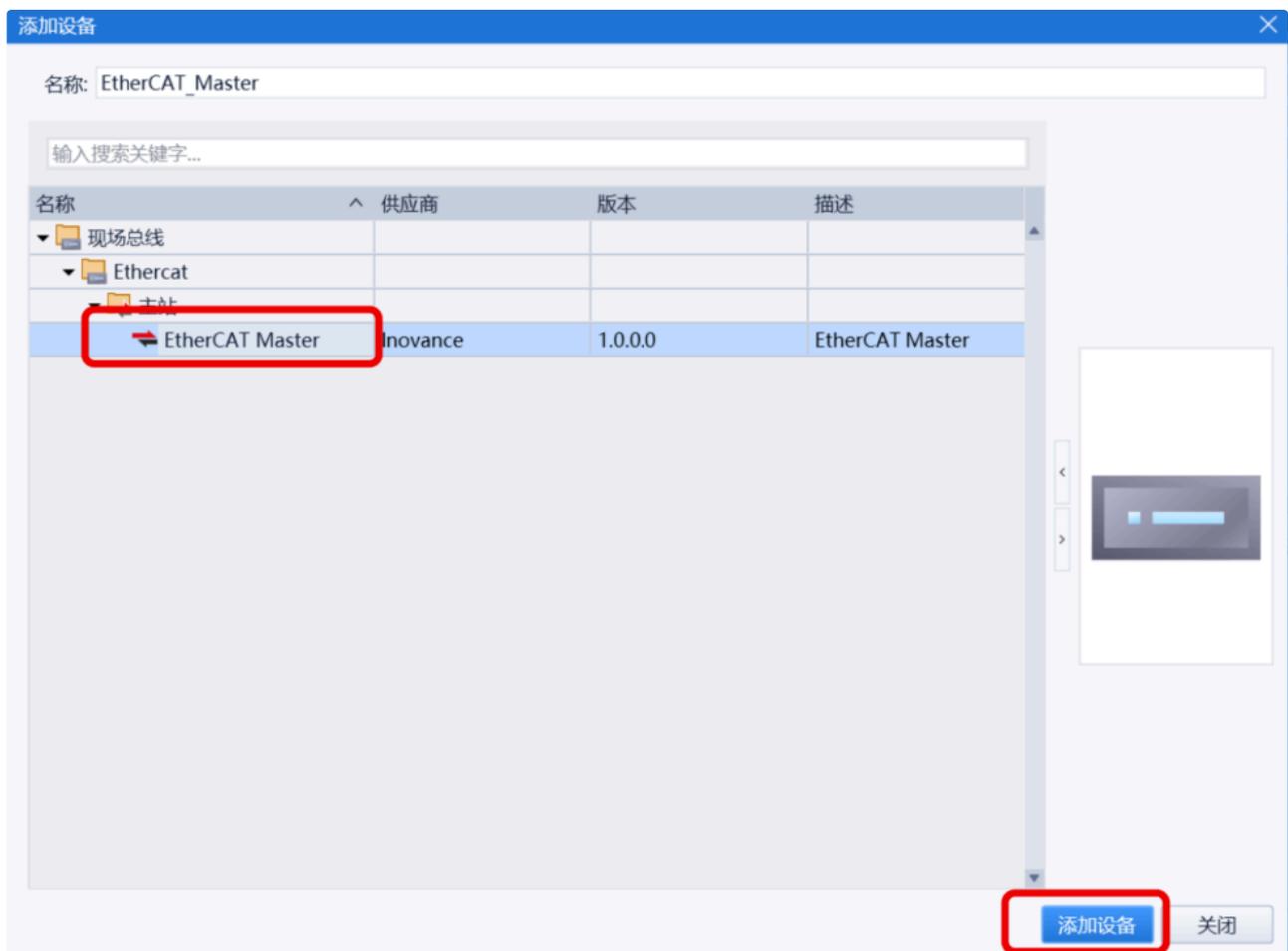


4. Double-click “Add Device” on the left, select the correct PLC model (in this example: **EVO521-0808 TP (TN)**, version **V1.3**), then click “OK”.



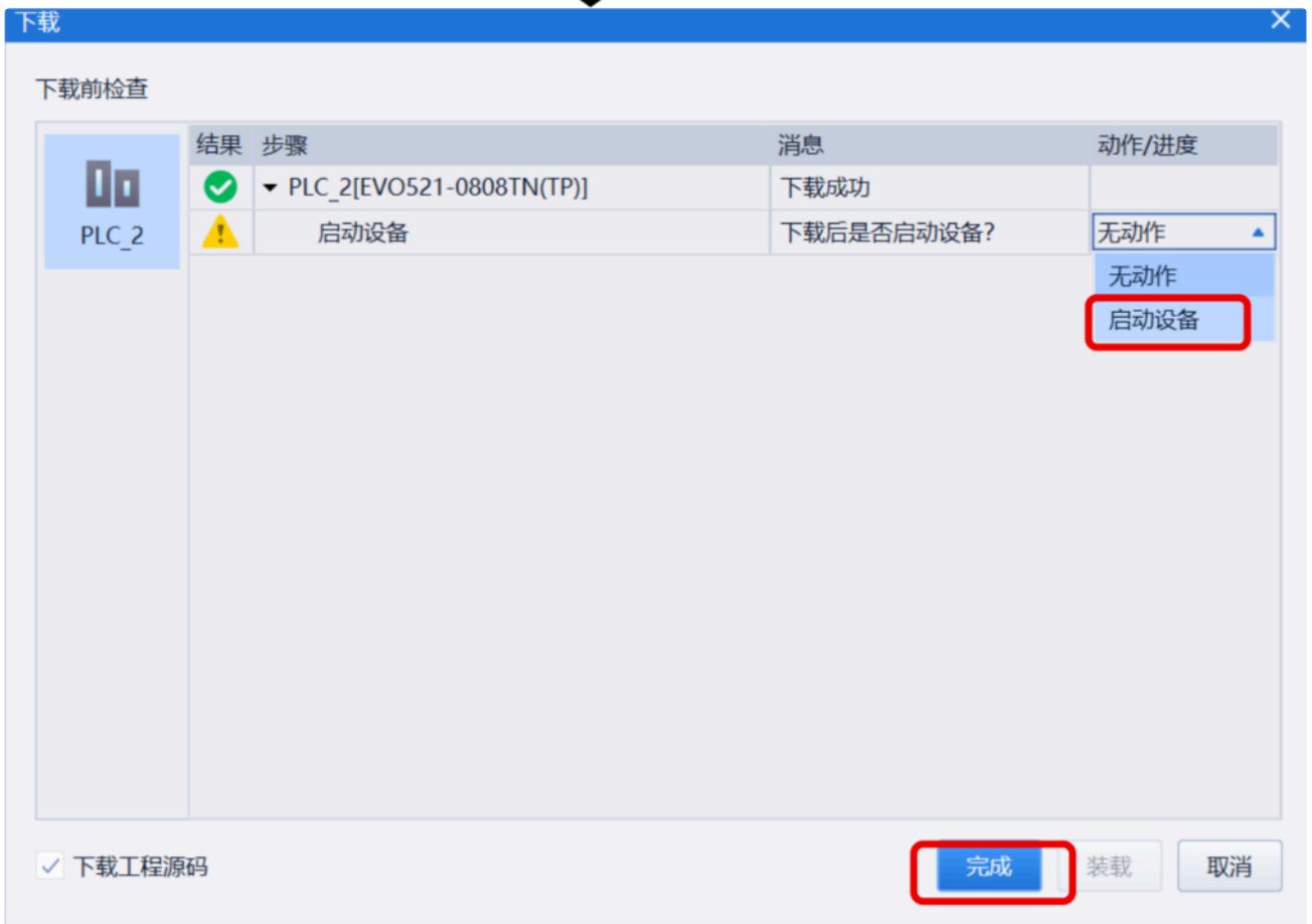
5. In the left project tree: Hardware Configuration → Ethercat (Ethercat), right-click “Add Device”, select EtherCAT master, then click “Add Device”.



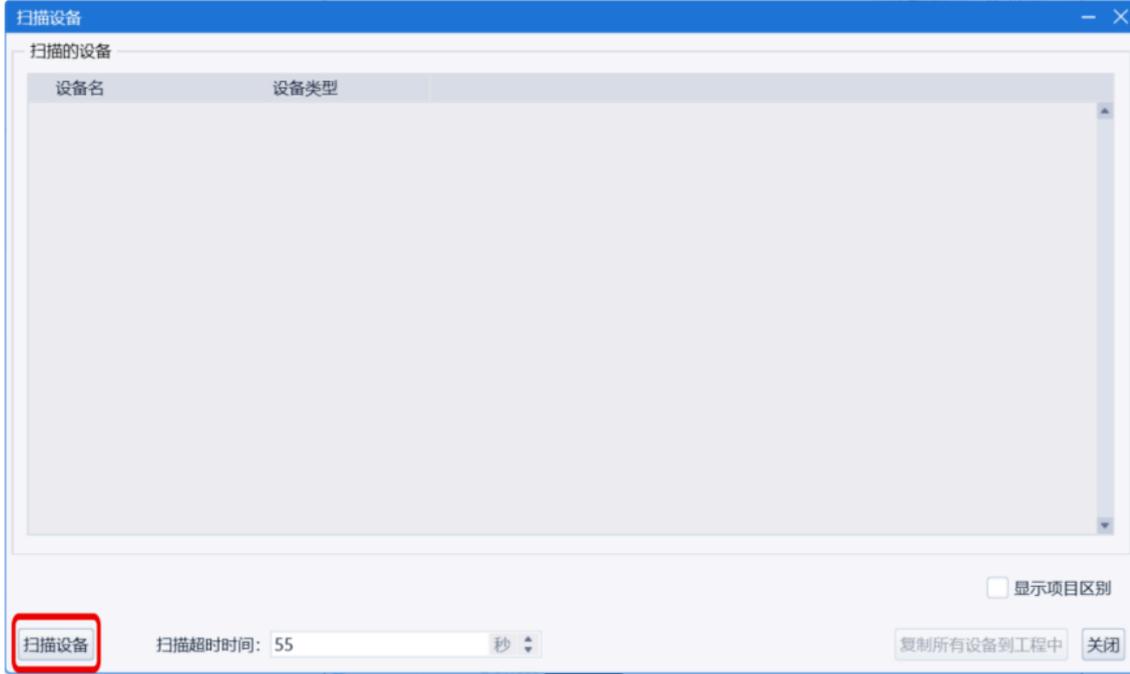


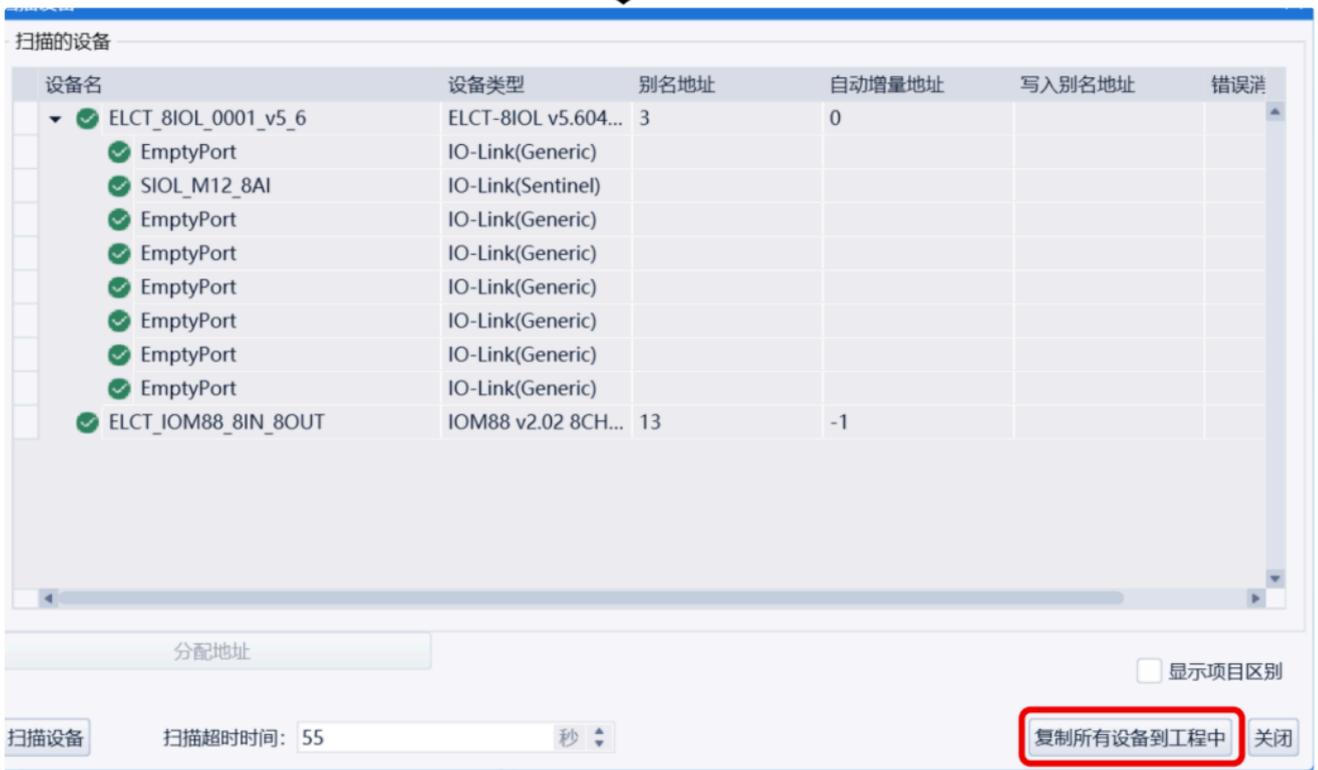
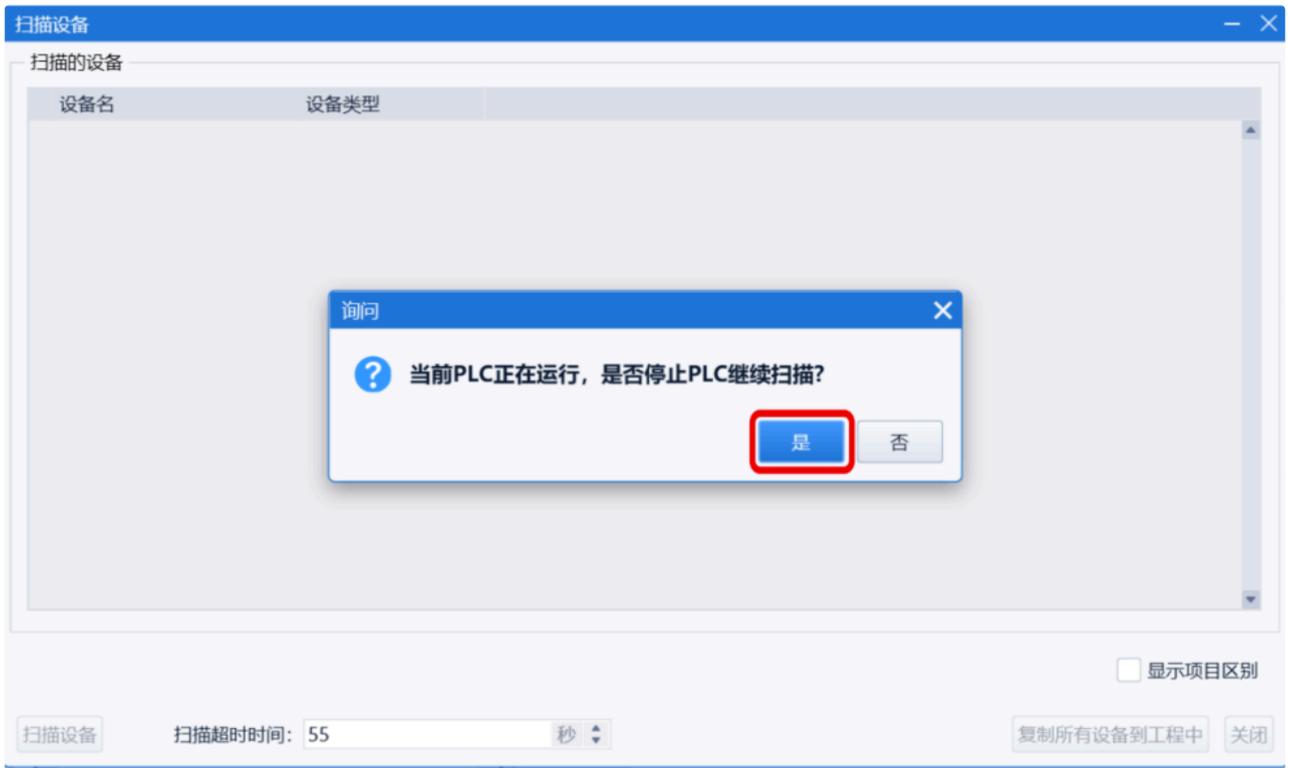
6. Under the Ethercat node, an Ethercat Master will be added. Download the program first: click the **Download** icon and complete the download procedure.



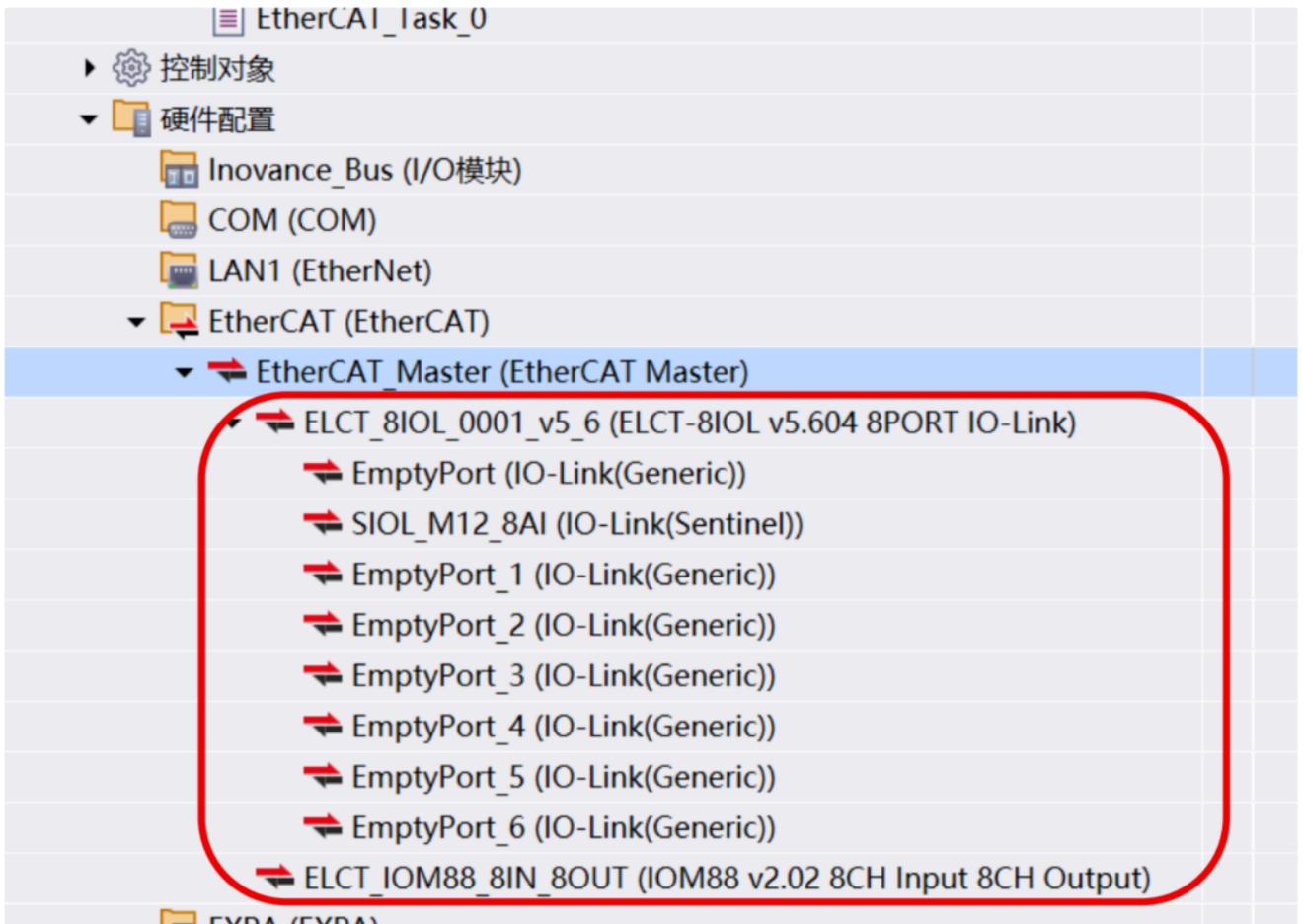


7. After downloading, right-click Ethercat Master → “Scan Devices”. In the dialog, click “Scan Devices” at the bottom-left (follow the on-screen prompts to finish scanning).



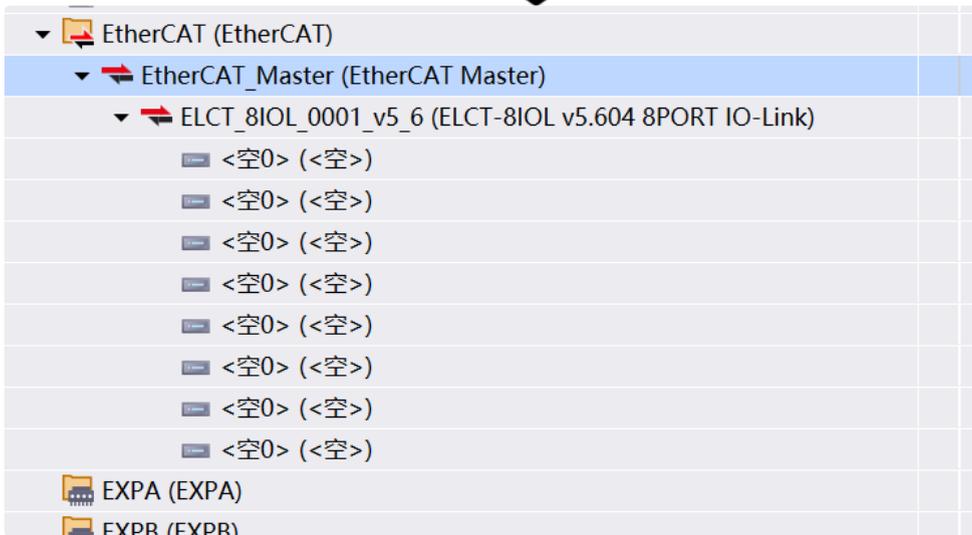
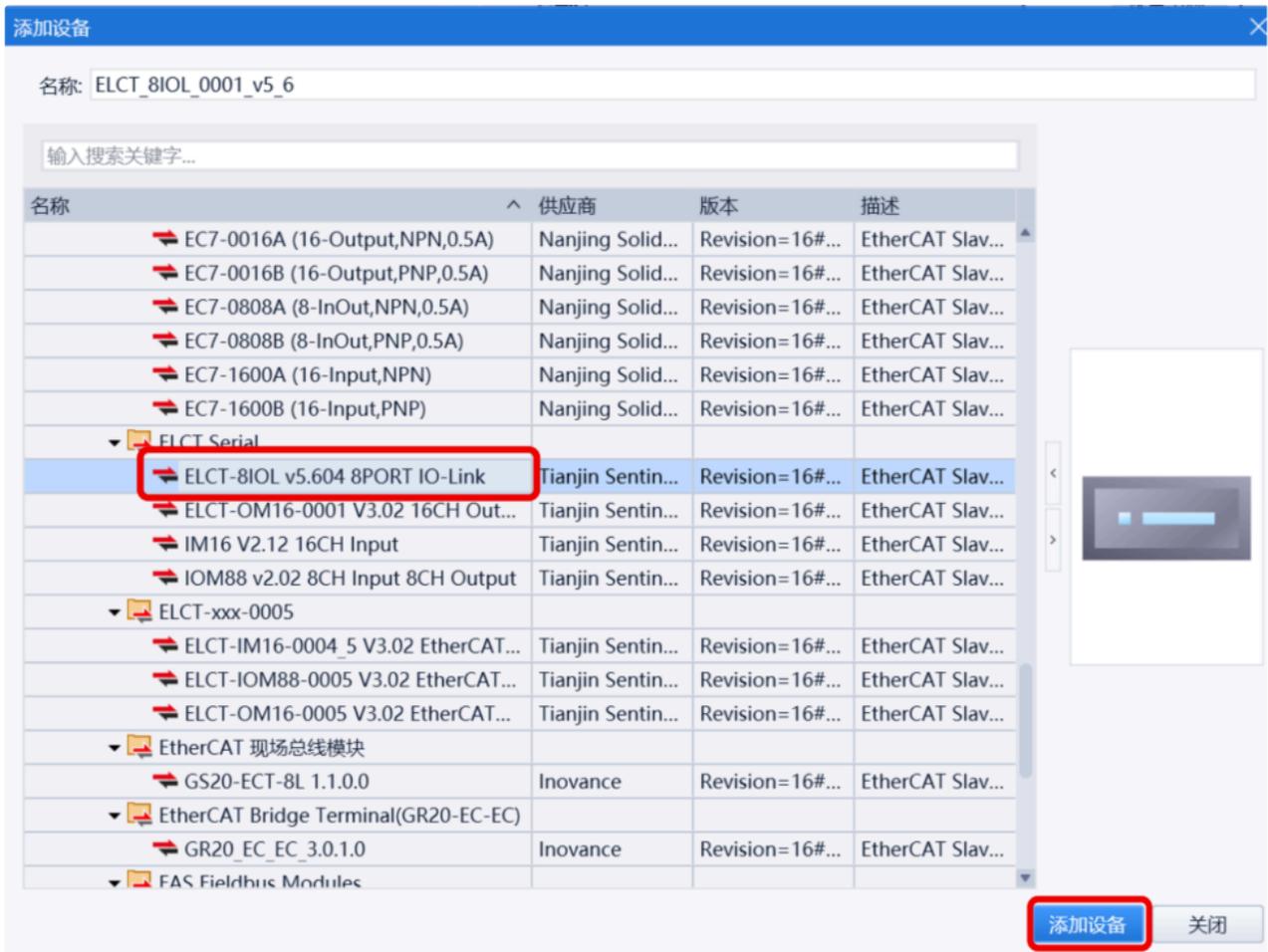


8. Verify the scanned modules match the actual wiring, then click “Copy all devices to the project” at the bottom-right.



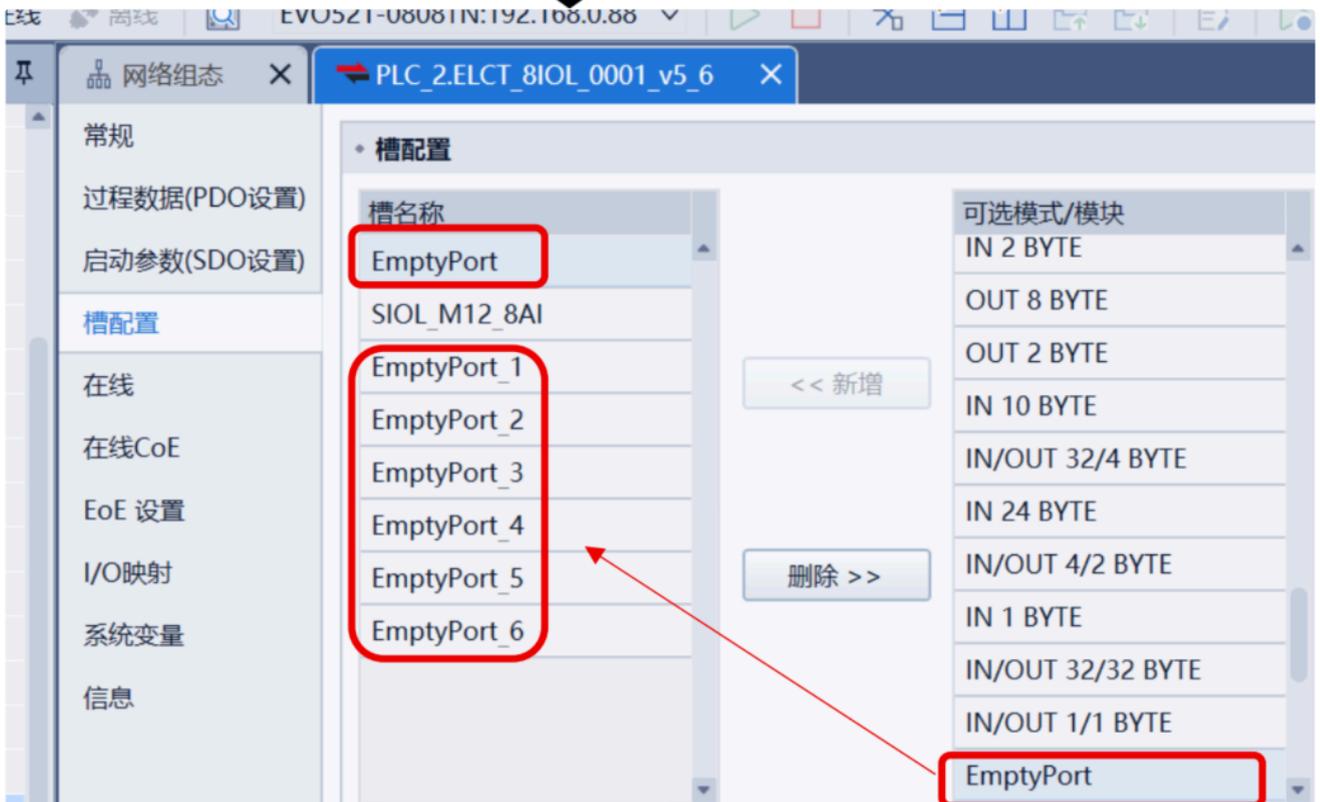
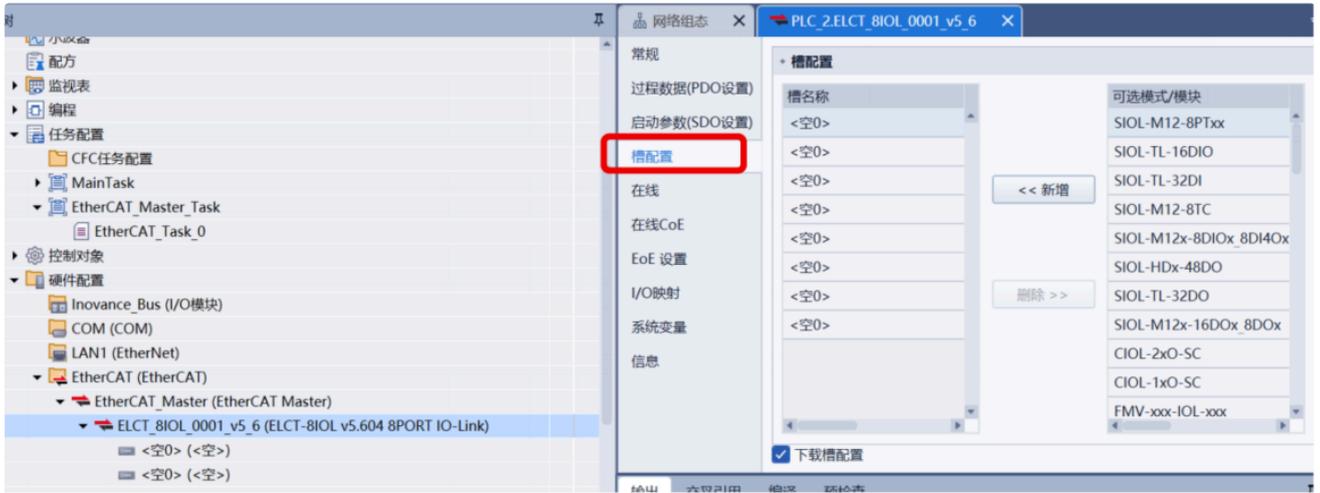
9. In addition to configuration by **Scan**, you can also configure **Manually**: right-click Ethercat Master → **“Add Device”**, select ELCT-8IOL... in the dialog, then click **“Add Device”**.



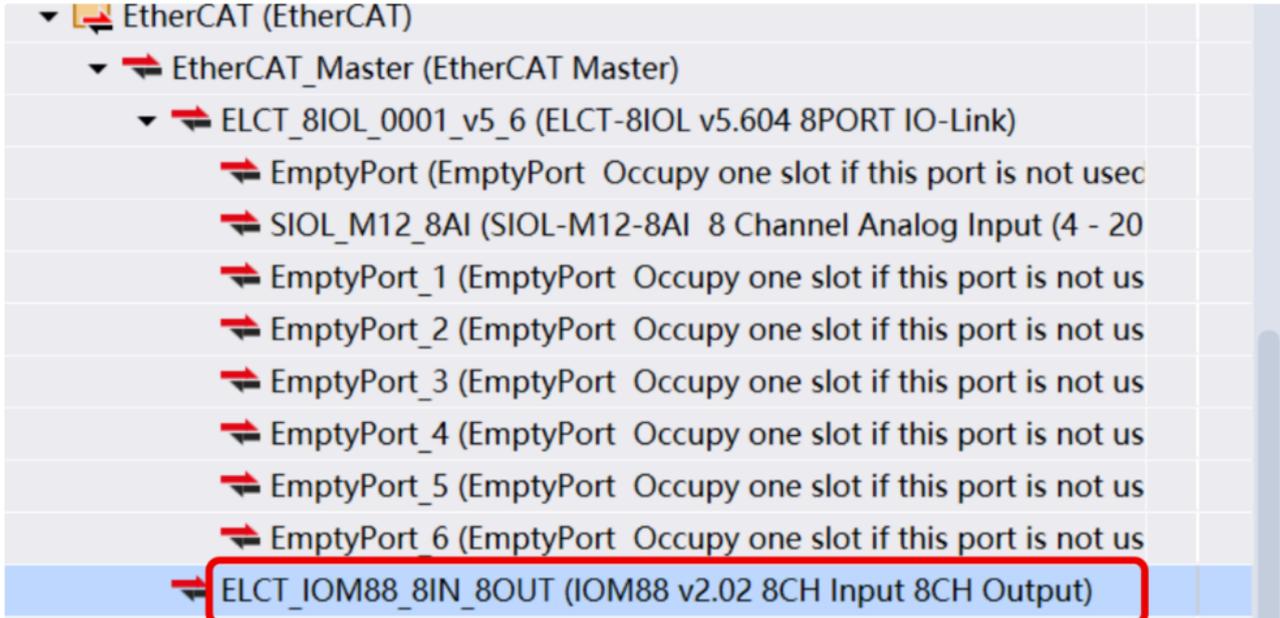


10. Double-click `ELCT_8IOL_0001_v5_6`, then click “Slot Configuration” on the right. Add `SIOL-M12-8AI` to **Port 2**.

**Important:** All other `<Empty>` ports must be filled with `Empty Port` on the right (there must be **no** remaining `<Empty>` ports).



11. Similarly, continue to add the ELCT-IOM88-0001 remote I/O module.



12. The above are the two configuration methods (**Scan / Manual**).

13. Double-click ELCT\_8IOL\_0001\_v5\_6, click **"I/O Mapping"** on the right, and map the **2 bytes** of Port 1 data from the SIOL-M12-8AI sub-station to byte variables a1 and a2. After combining a1 and a2, you obtain the analog input value of **Port 1**.

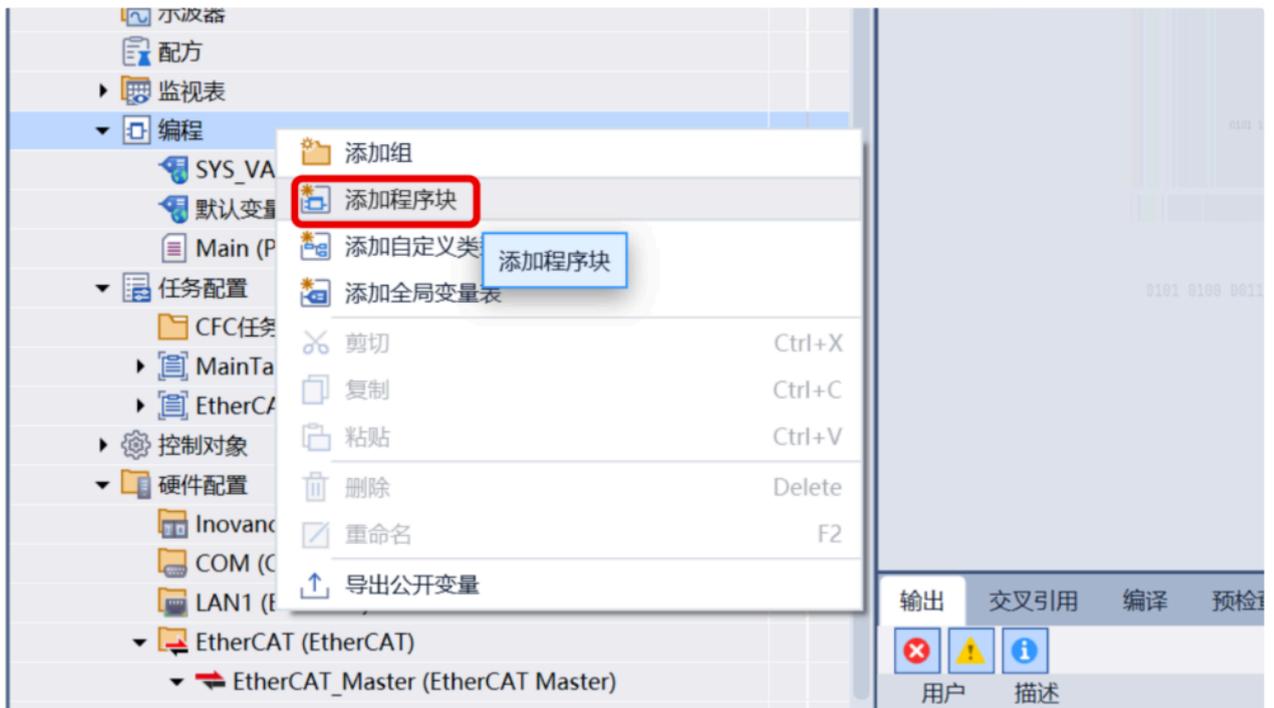


14. Download again. After that, click **"Online"** to view Port 1 data: the example shows the value when **4 mA** is applied. After scaling, the Port 1 value is **4000**, which represents **4 mA** (for this analog module, 4–20 mA corresponds to **4000–20000**).

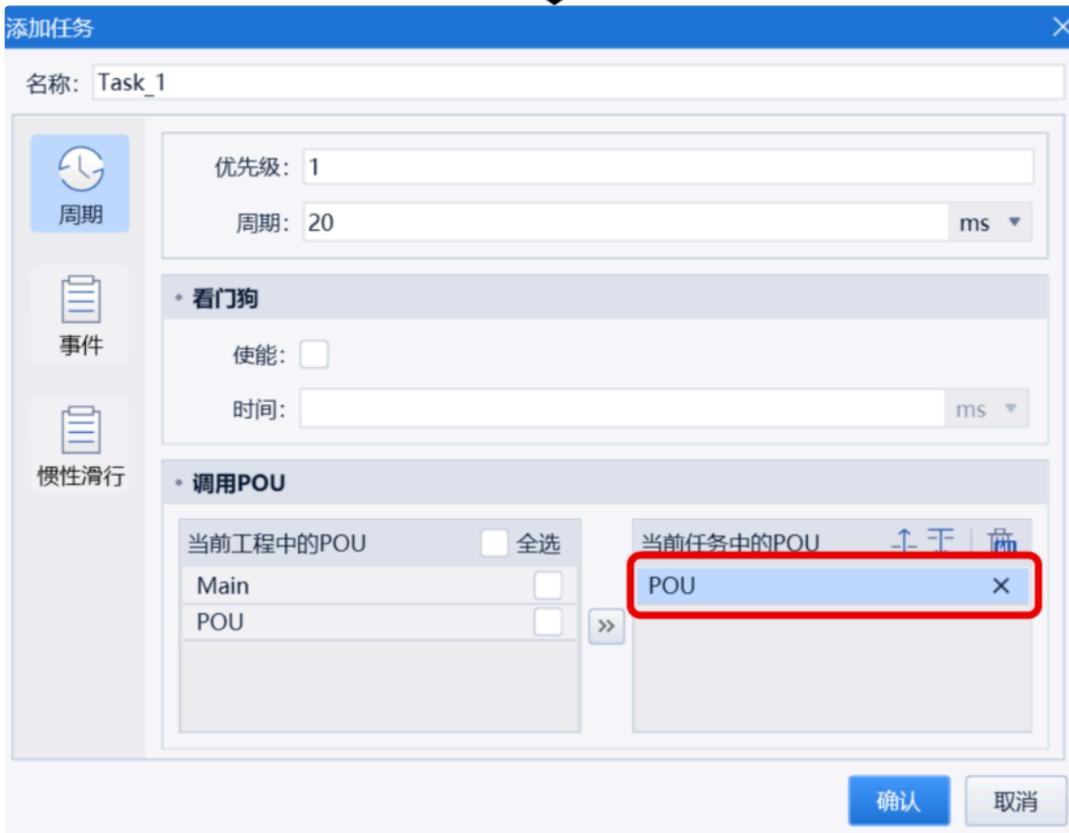
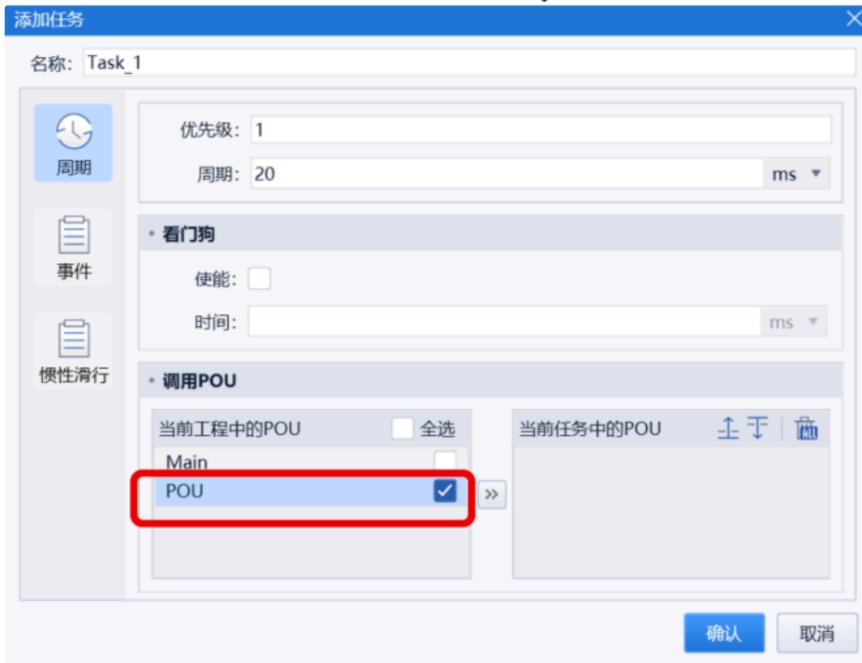
Variable	Table	Address	Bit	Format	Value
a1	默认变量表	SIOL_M12_8AI Port0_HighByte	%IB14	BYTE	15
a2	默认变量表	SIOL_M12_8AI Port0_LowByte	%IB15	BYTE	159
		SIOL_M12_8AI Port1_HighByte	%IB16	BYTE	0
		SIOL_M12_8AI Port1_LowByte	%IB17	BYTE	0

15. If ladder programming is required: right-click the **Programming** node → **"Add Program Block"**. In the dialog:

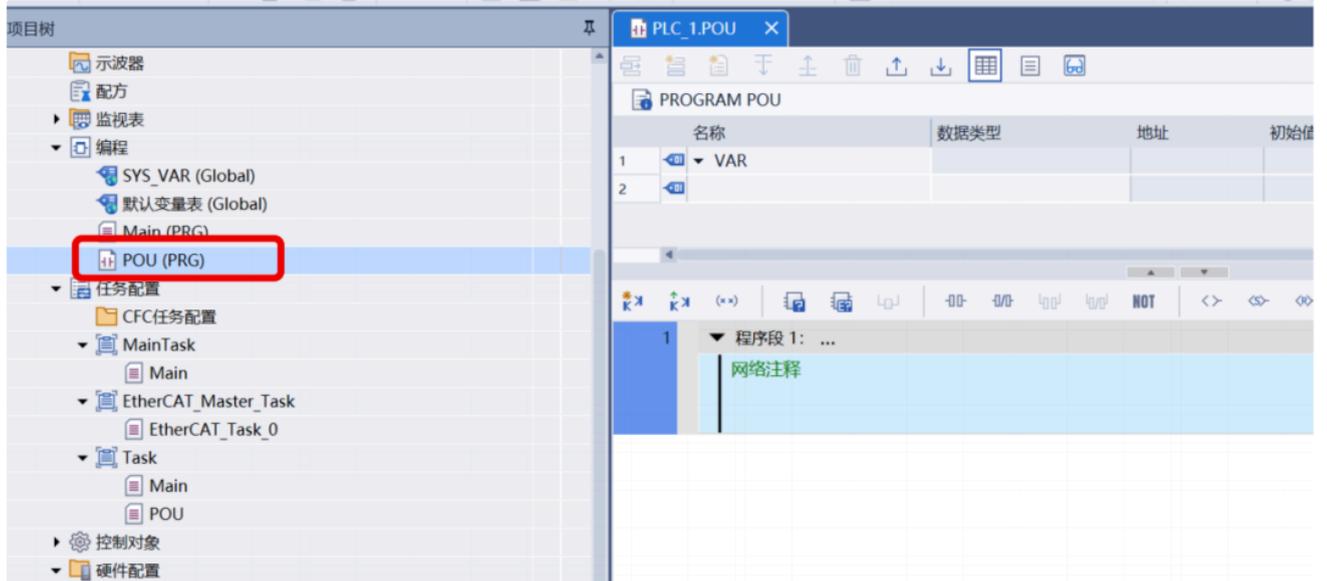
- **Type:** Select **Program**
  - **Language:** Select **Ladder Diagram (LD)**
- Click **OK**; a new POU ( PRG ) will be created on the left.



16. Right-click **Task Configuration** → “**Add Task**”. In the pop-up, select the **POU** of the current project and add it into **POUs in current task**, then click **Confirm**.



17. Double-click **POU (PRG)** under the **Programming** node to edit the ladder program on the right.



18. Example (IOM88 remote module): map one byte variable **X1** for the input byte and one byte variable **Y1** for the output byte. In ladder logic, assign **X1** to **Y1**. After downloading, as long as an input signal is applied to the IOM88 module, the corresponding output will turn on.



PLC\_1.POU x PLC\_1.ELCT\_IOM88\_8IN\_8OUT x

PROGRAM POU

名称	数据类型	地址	初始值	掉电保持	常
1	VAR				
2					

1 程序段 1: ...

网络注释



常规  
过程数据(PDO设置)  
在线  
在线CoE  
I/O映射  
系统变量  
信息

I/O映射

查找: 过滤: 显示所有 重置映射 连续IO地址 通道地址跟随变量地址

变量	变量表	通道	地址	类型	默认值	当前值	准备值	单位	描述
▼ y1	默认变量表	Output	%QB1	BYTE		192			Output
+		Bit0	%QX1.0	BOOL	FALSE	FALSE			Output
+		Bit1	%QX1.1	BOOL	FALSE	FALSE			Output
+		Bit2	%QX1.2	BOOL	FALSE	FALSE			Output
+		Bit3	%QX1.3	BOOL	FALSE	FALSE			Output
+		Bit4	%QX1.4	BOOL	FALSE	FALSE			Output
+		Bit5	%QX1.5	BOOL	FALSE	FALSE			Output
+		Bit6	%QX1.6	BOOL	FALSE	TRUE			Output
+		Bit7	%QX1.7	BOOL	FALSE	TRUE			Output
▼ x1	默认变量表	Input	%IB14	BYTE		192			Input
+		Bit0	%IX14.0	BOOL	FALSE	FALSE			Input
+		Bit1	%IX14.1	BOOL	FALSE	FALSE			Input
+		Bit2	%IX14.2	BOOL	FALSE	FALSE			Input
+		Bit3	%IX14.3	BOOL	FALSE	FALSE			Input
+		Bit4	%IX14.4	BOOL	FALSE	FALSE			Input
+		Bit5	%IX14.5	BOOL	FALSE	FALSE			Input
+		Bit6	%IX14.6	BOOL	FALSE	TRUE			Input
+		Bit7	%IX14.7	BOOL	FALSE	TRUE			Input