

HCFA V300 Series HMI Tag Communication Operating Instructions



Product Function Instruction
浙江禾川科技股份有限公司

本文档使用硬件设备和软件工具

- Hardware: Hechuan HCQ0-1200-D
- Q-series programming software CODESYS V3.5 SP14
- V300 Software:HC Touch VPro (V1.2.99)

Note: This document uses the online simulation function of the touch screen configuration software for testing. **Testing with the V300 HMI requires hardware support and requires V310E (hardware version 3.0 or above, first two digits of PN code are 30, 256M memory) or V315E for support.**

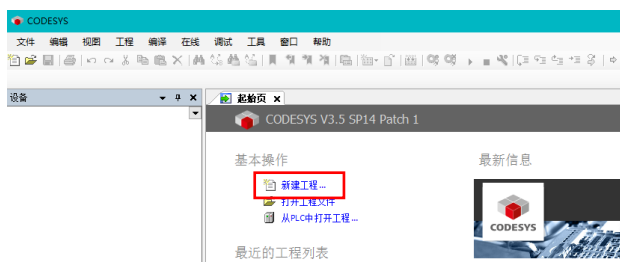
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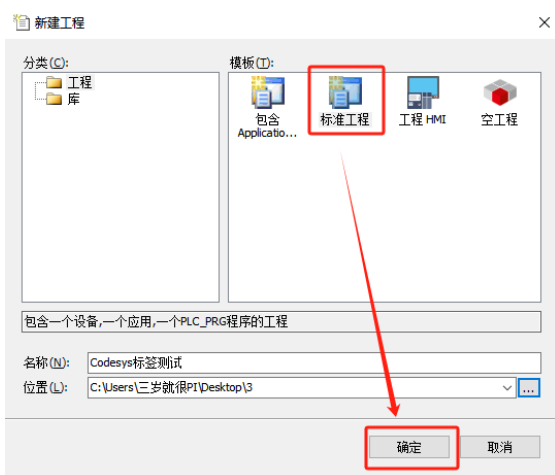
1. Device connection and use

1.1 New project

Double-click to open the CODESYS V3.5 SP14 software, and click [New Project].



Select [Standard Project], where users can modify the file name and set the file storage location. Once completed, click [OK].

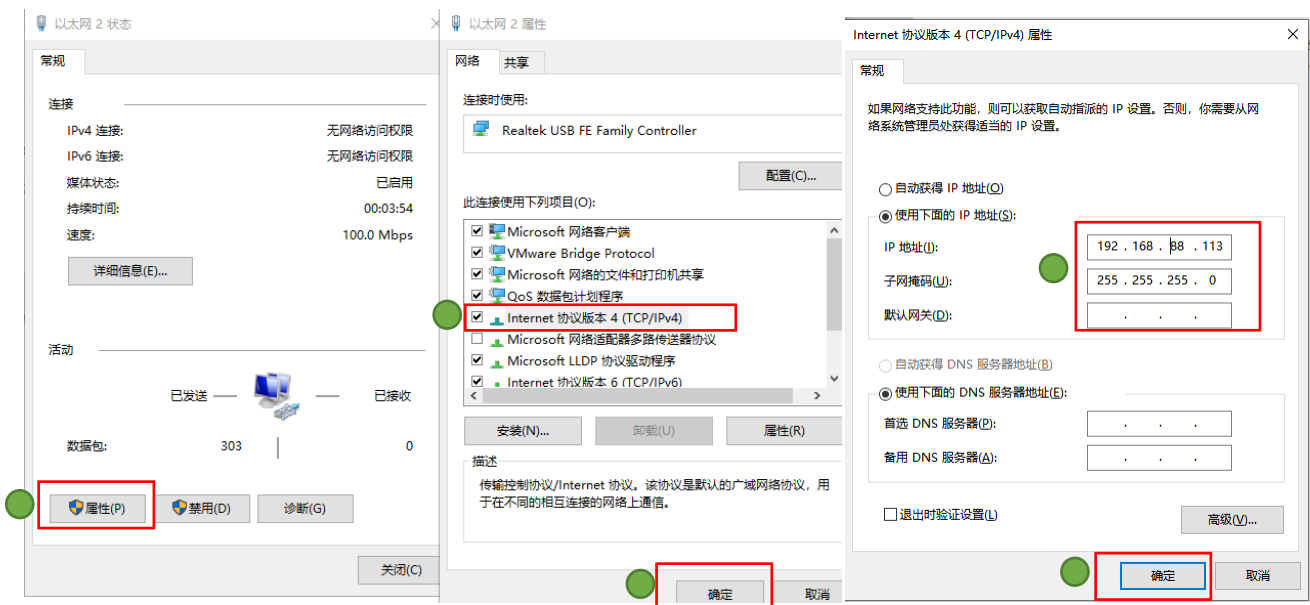


In the pop-up window, select the programming platform as HCQ0-1200-D from the drop-down menu in the Device column, set the programming language to Structured Text (ST), click OK, and the new project is complete (this step requires that the Q0 description file be installed on the PC).

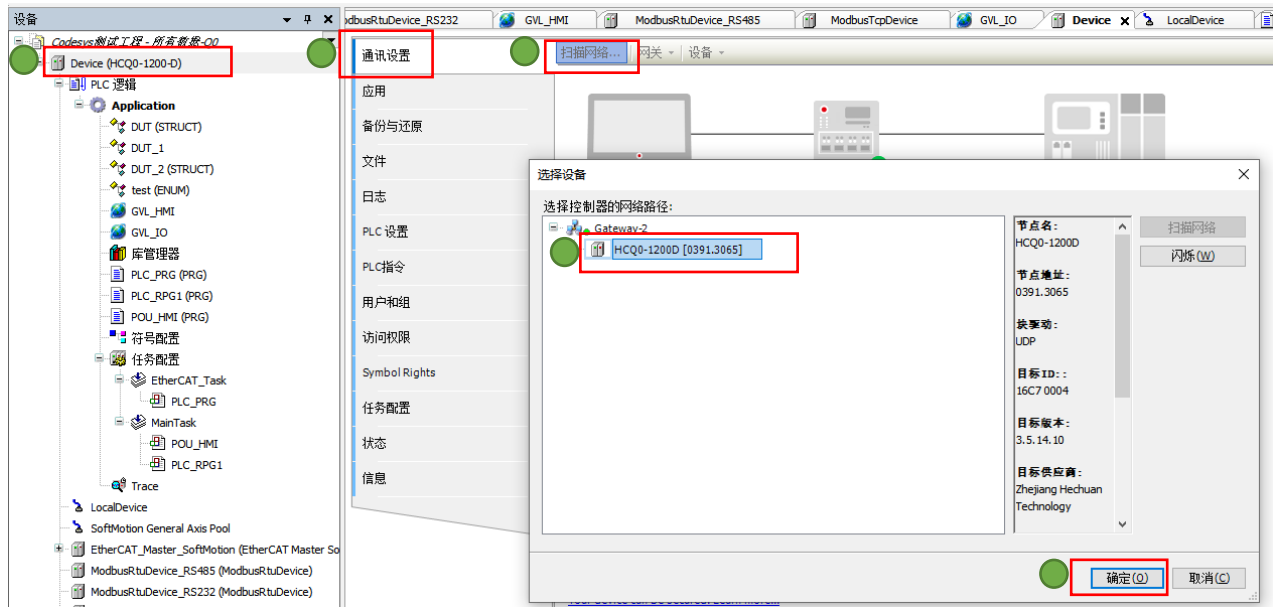


1.2 Communication Settings

The default IP address for Port1 of Q0 is **192.168.88.100**, with a subnet mask of 255.255.255.0. Connect the PC network port to the Q0 Port1 port. ModbusTCP communication is an Ethernet-based communication method. First, ensure that the PC network port and Q0 are on the same local area network. Refer to the following settings (the IP address set here must not be identical to the IP address of the Q0 Port port). After completing the settings, click [OK] to close all windows.



Back to the software, double-click the tree menu on the left side [Device], click [Communication Settings] on the pop-up page, click [Scan Network] in the upper left corner, select the scanned HCQ0-1200-D, click [OK], and establish communication.



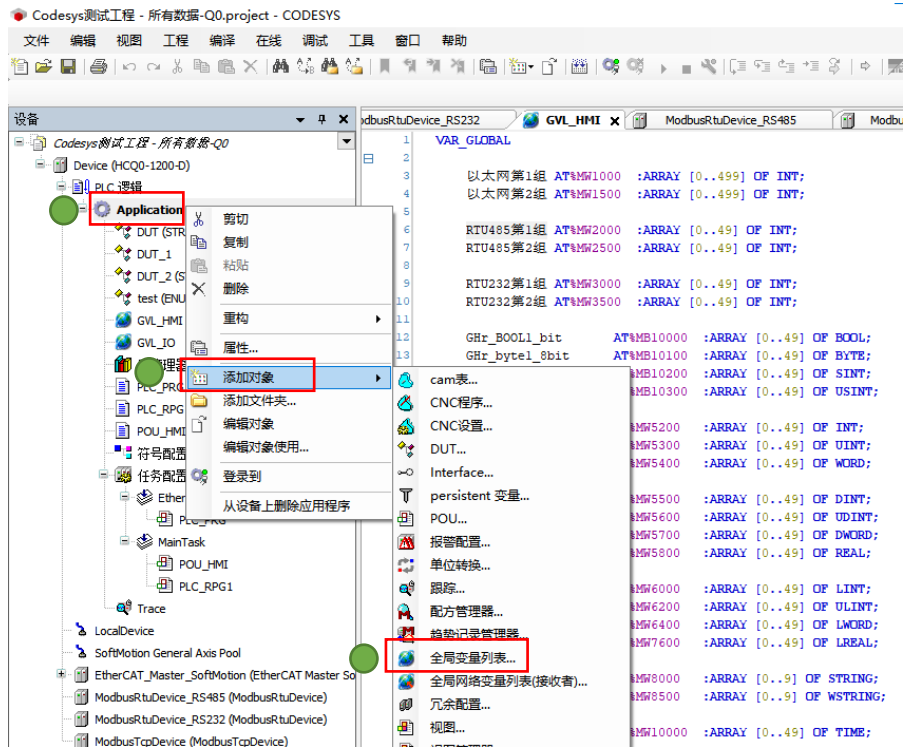
2. Tag symbol export configuration

2.1 Create the required variables in the global variable table

Right-click on the tree menu on the left side [Application], click [Add Object], and select [Global Variable Table].

Note: 1) Ensure that the variable names are in English, otherwise the tag data cannot be recognized when exported later.

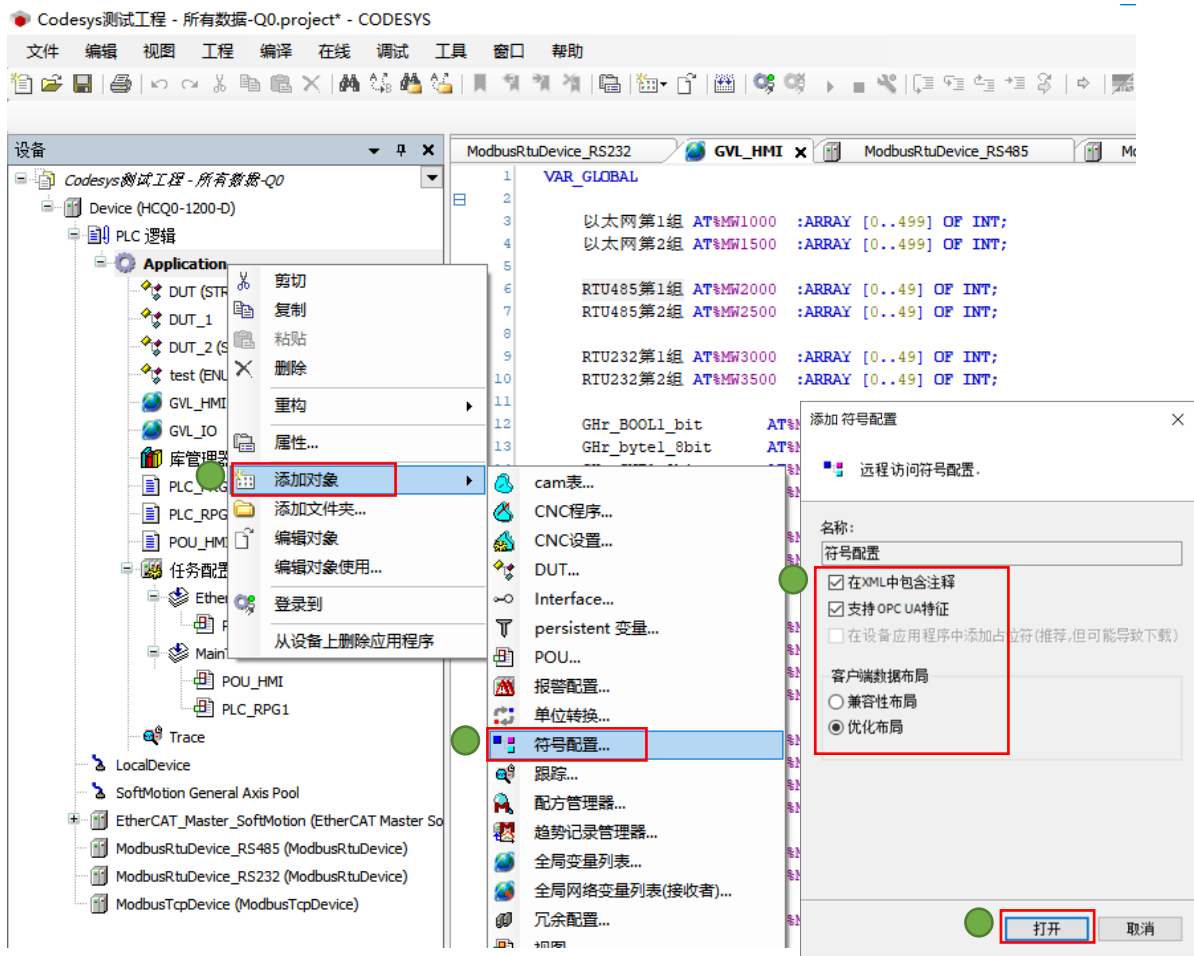
2) Variables used for tag communication must be used in the program, otherwise the symbol configuration table will not be able to scan them.



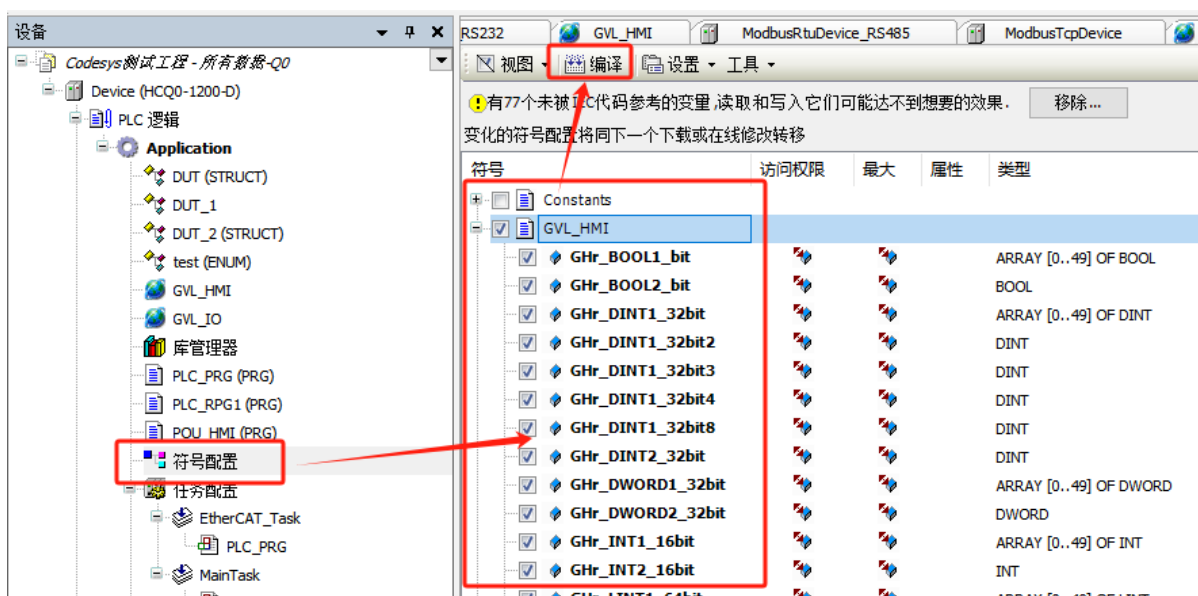
2.2 Add Symbol Configuration

Right-click on the tree menu on the left side [Application], click [Add Object], and select [Symbol Configuration].

When adding symbol configuration, make sure to check “Include comments in XML.”

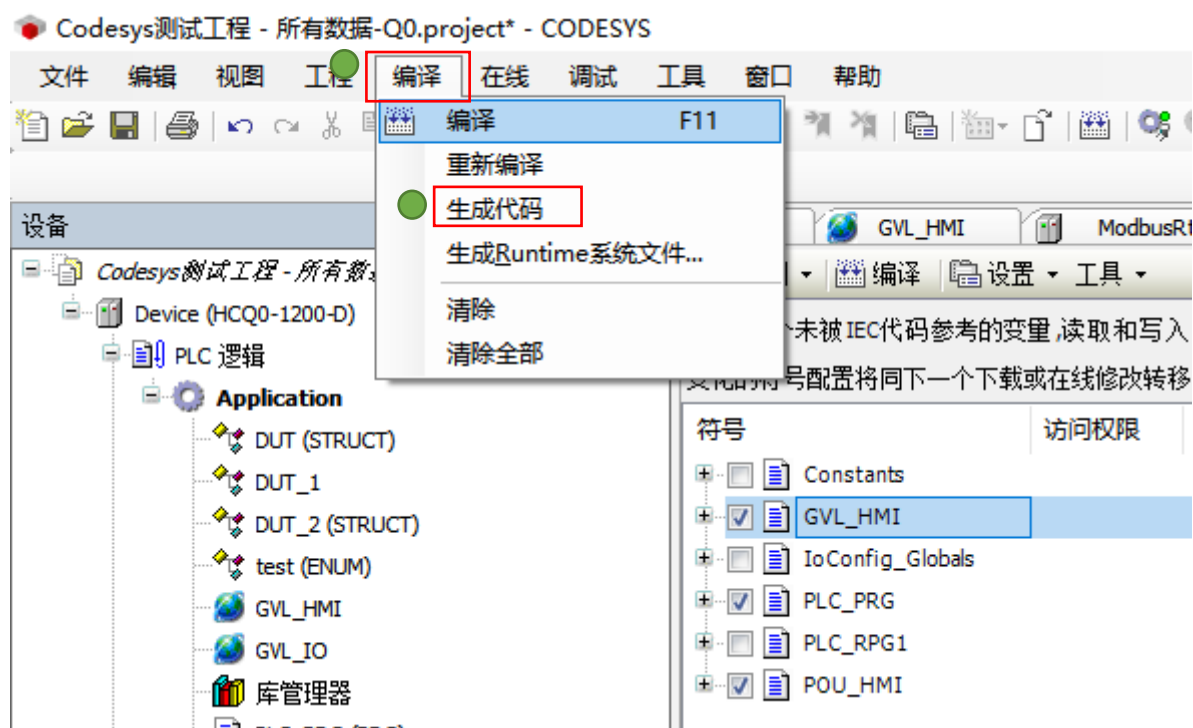


Enter the symbol configuration interface, click Compile Scan to display the global variable table, and select it.



Click [Compile] in the toolbar, then click [Generate Code].

Note: The generated XML document is in the same file as the current program.



Codesys测试工程 - 所有数据-Q0.Device.Application.9990d232-...	2024/12/12 16:40	BOOT
Codesys测试工程 - 所有数据-Q0.Device.Application.9990d232-...	2024/12/12 16:40	BOOT
Codesys测试工程 - 所有数据-Q0.Device.Application.9990d232-105...	2024/12/12 16:40	COMP
Codesys测试工程 - 所有数据-Q0.Device.Application.xml	2024/12/12 16:39	Micro:
Codesys测试工程 - 所有数据-Q0.project	2024/12/11 12:13	PROJE
Codesys测试工程 - 所有数据-Q0.project~u	2024/12/17 11:01	~U 文
Codesys测试工程 - 所有数据-Q0.projectarchive	2024/10/9 10:34	HCPW
Codesys测试工程 - 所有数据-Q0-AllUsers.opt	2024/12/17 10:32	OPT 文
Codesys测试工程 - 所有数据-Q0-User-HZD0000622.opt	2024/12/17 10:32	OPT 文

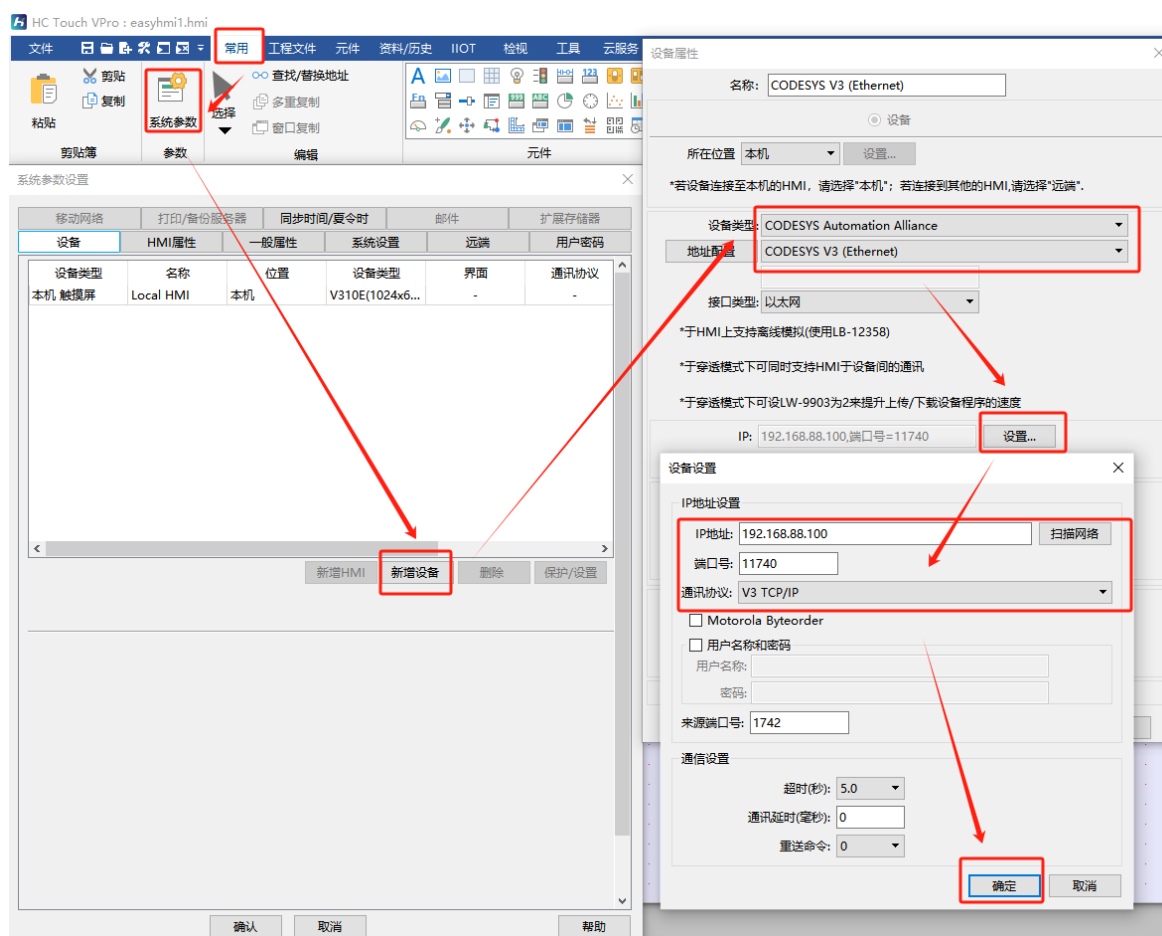
3. HMI software configuration

The HMI demonstration uses the HC Touch VPro software from the HCFA V300 series HMI software, which is displayed through software simulation.

3.1 HMI Communication Address Configuration

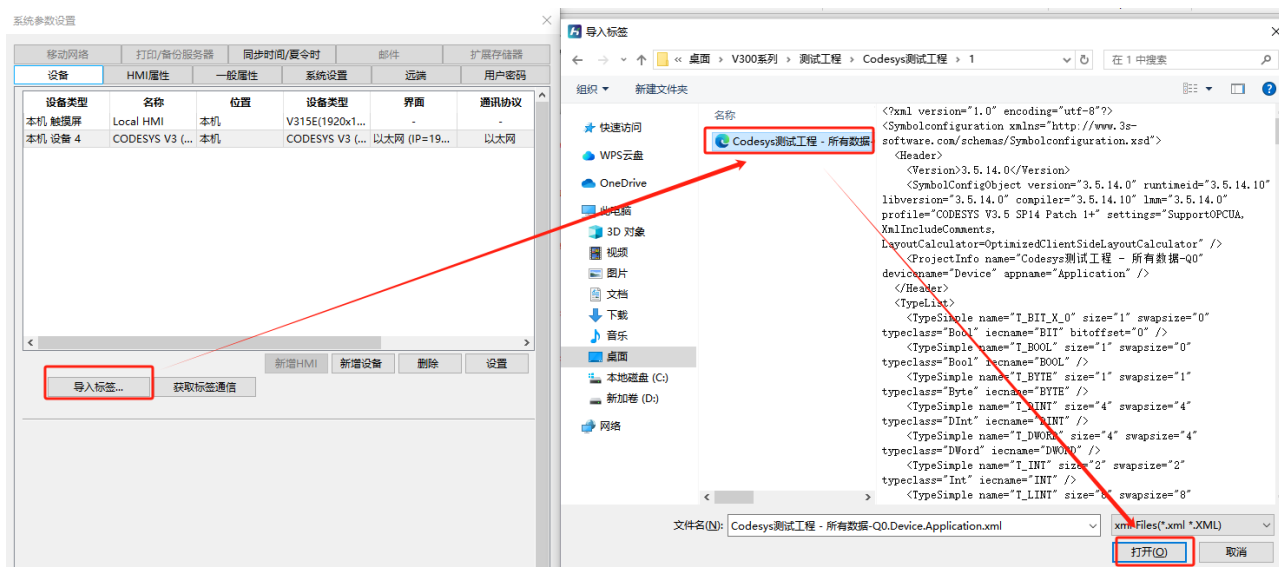
In the HC Touch VPro software toolbar, click [Common], then click [System Parameters]. Under [Device], click [Add Device]. In the drop-down menu under [Device Type], locate <CODESYS Automation Alliance>, then select <CODESYS V3 (Ethernet)>. Click 【OK】 to return to the 【Device Properties Interface】. Click 【Settings】 in the 【IP】 field to enter the 【IP Address Settings Interface】. Enter the current Q0 parameter in the 【IP Address】 field as shown below:

IP Address: 192.168.88.100, Port Number: 11740, Communication Protocol: V3 TCP/IP.

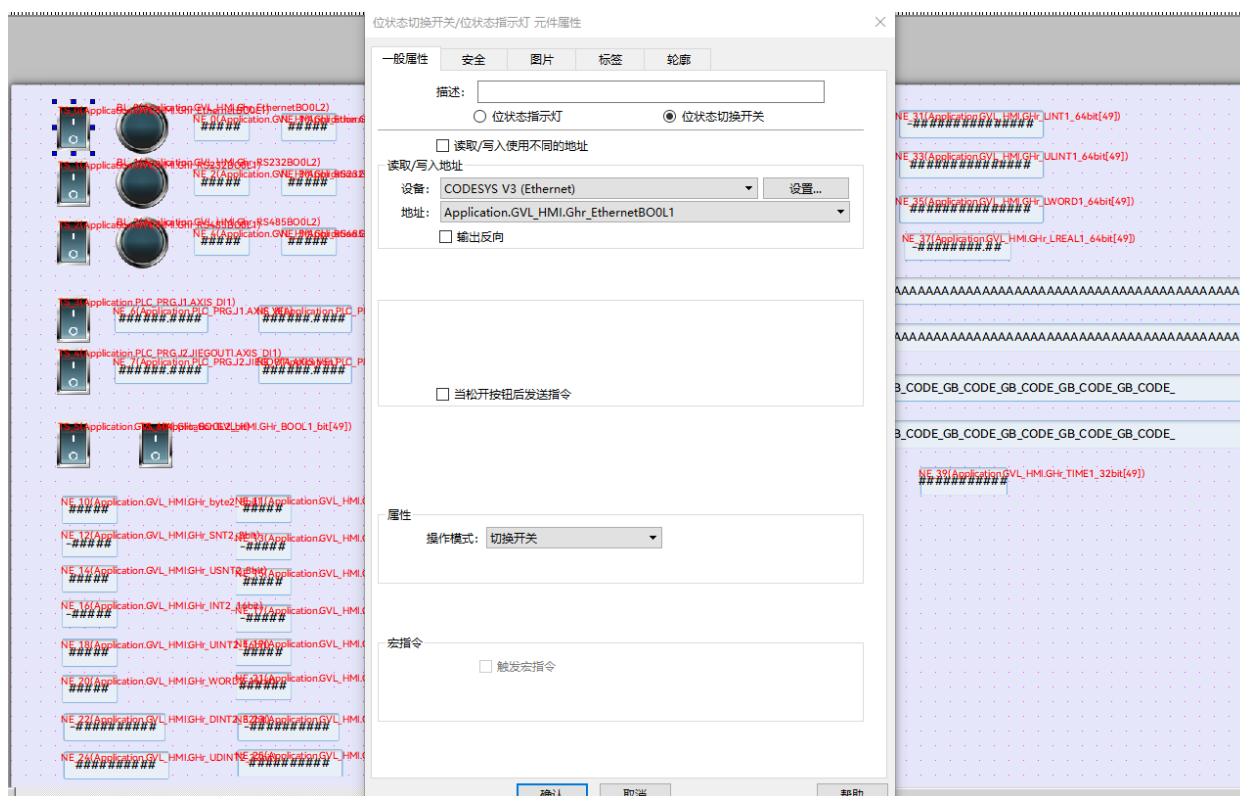


3.2 Import symbol configuration document

In the HC Touch VPro software toolbar, click [Common], then click [System Parameters], then click [Local Device 4] generated in the previous step, select the import tab, and then find the XML file generated by Codesys to open it.



Add components to the project screen of HC Touch VPro software and configure component tag communication addresses



4. Simulation results

Login Codesys software and start Q0. In the HC Touch VPro software menu bar, click [Project File] and then [Online Simulation]. In the simulation interface, enter values and click buttons, and the PLC will also receive changes to the variable data corresponding to the tags.

The screenshot shows the Codesys IDE interface for a simulation project. The top window displays the 'Variable Declaration' table for the 'GVL_HMI' application. The bottom window shows the HMI control panel with buttons and indicators. A red box highlights the 'TRUE' values in the 'Value' column of the table, and a red arrow points from this box to the '85' button on the HMI panel.

名称	类型	值	准备值	地址	注释
Ghr_Restart	BIT	FALSE		%MX1000.0	
Ghr_RS485U1NT1	UINT	85		%MW1000	
Ghr_RS485U1NT2	UINT	0		%MW1100	
Ghr_RS485B00L1	BIT	TRUE		%MX3000.0	
Ghr_RS485B00L2	BIT	FALSE		%MX3100.0	
Ghr_RS422U1NT1	UINT	0		%MW2000	
Ghr_RS422U1NT2	UINT	0		%MW2100	
Ghr_RS422B00L1	BIT	FALSE		%MX5000.0	
Ghr_RS422B00L2	BIT	FALSE		%MX5100.0	
Ghr_RS232U1NT1	UINT	9		%MW3000	
Ghr_RS232U1NT2	UINT	0		%MW3100	
Ghr_RS232B00L1	BIT	TRUE		%MX7000.0	
Ghr_RS232B00L2	BIT	FALSE		%MX7100.0	
Ghr_EthernetU1NT1	UINT	6		%MW4000	
Ghr_EthernetU1NT2	UINT	0		%MW4100	
Ghr_EthernetB00L1	BIT	TRUE		%MX9000.0	
Ghr_EthernetB00L2	BIT	FALSE		%MX9100.0	