

NOVAKON

HMI – Your Intelligent IIoT Gateway Solutions

iFACE Designer

Siemens S7-1200/1500 PLC Connection Guide

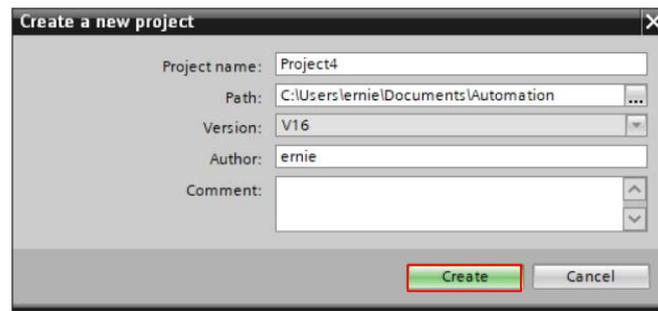
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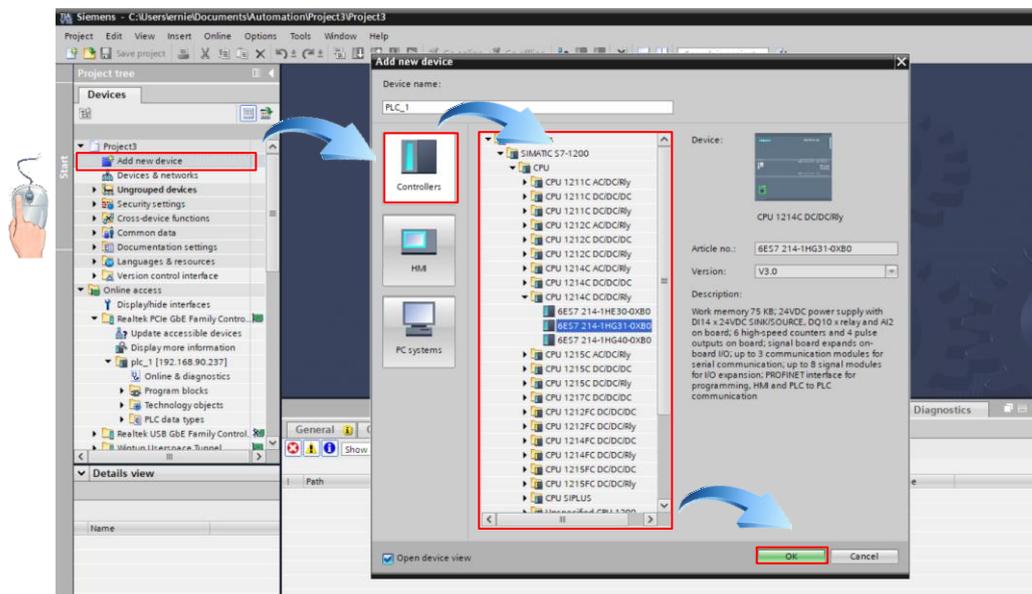
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3. The PLC information found by the system will be displayed in the table of [Accessible nodes of the selected interface]. After selecting the PLC to be connected, click [Show] at the bottom right to enter the editing interface.

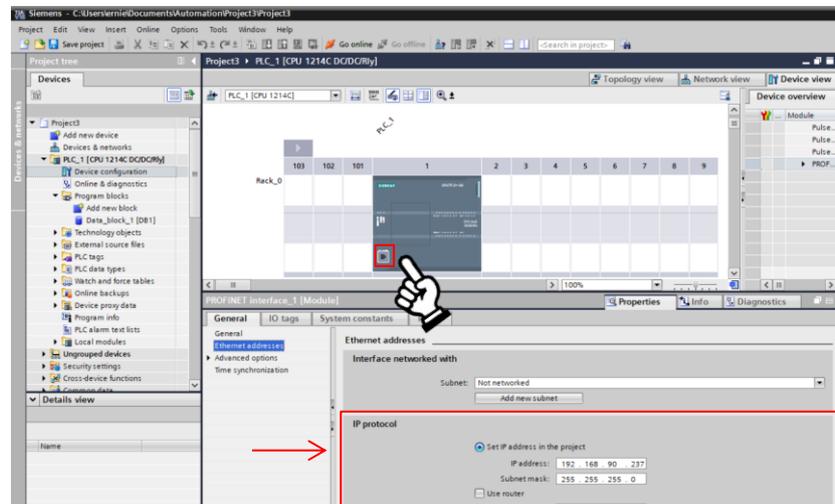
4. Click the [New project] icon on the upper left to create a new project. After entering the project information (such as file name/path, etc.), click [Create].



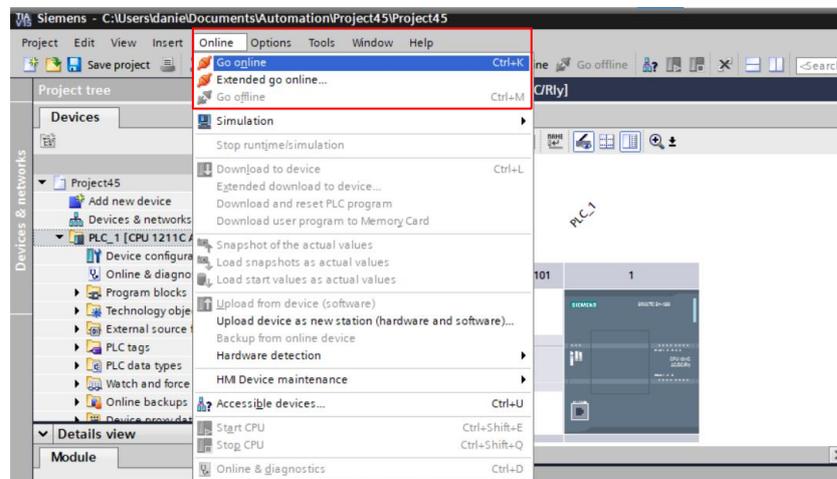
5. After double-clicking at [Project tree]→[Add new device], click [Controllers] to select the correct model of the PLC to be connected, and click [OK] after selection.



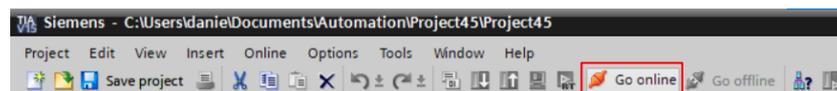
6. Double click on the Ethernet port in the PLC icon to open the window below. Enter [General] → [Ethernet addresses] → [IP protocol] to enter the IP address of the PLC (in this example: 192.168.90.237) and Subnet Mask (in this example: 255.255.255.0).



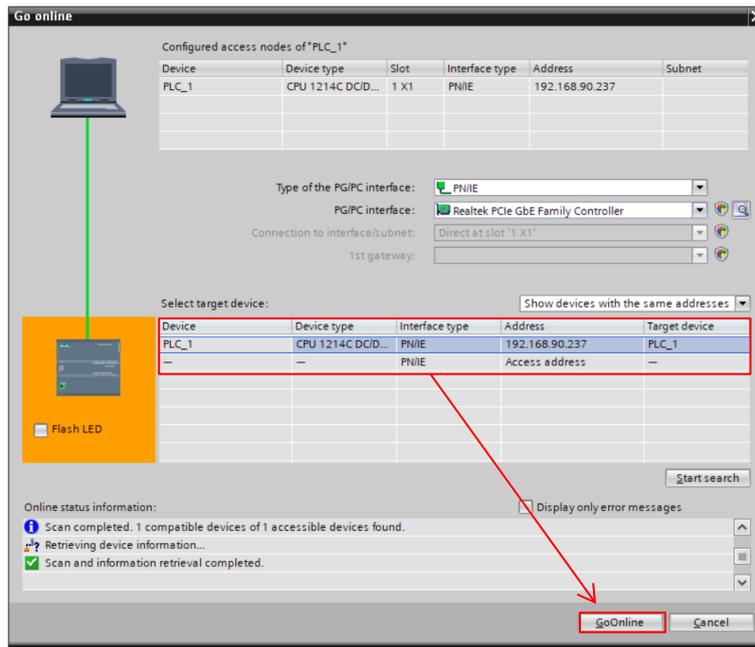
7. From the upper menu [Online] → [Go online] , connect to the PLC.



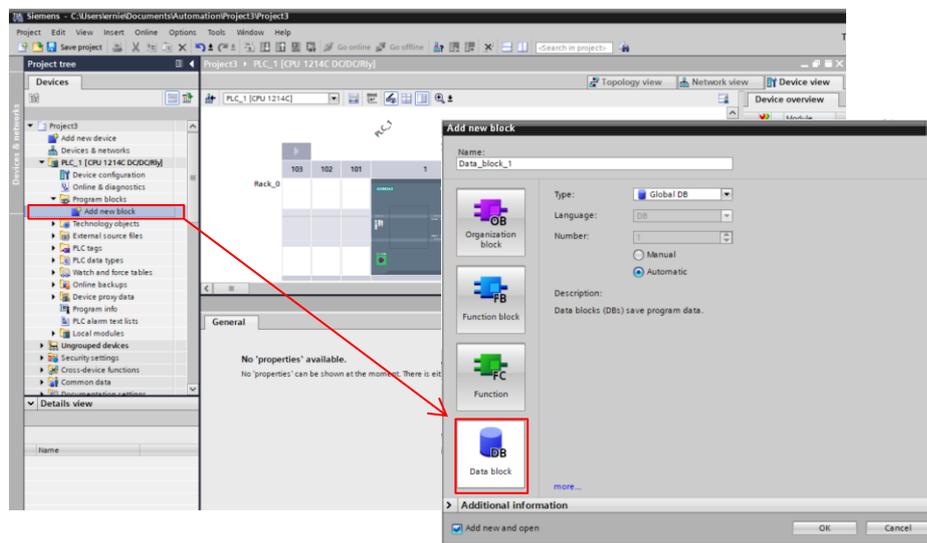
You can also directly click on the red box below [Go online].



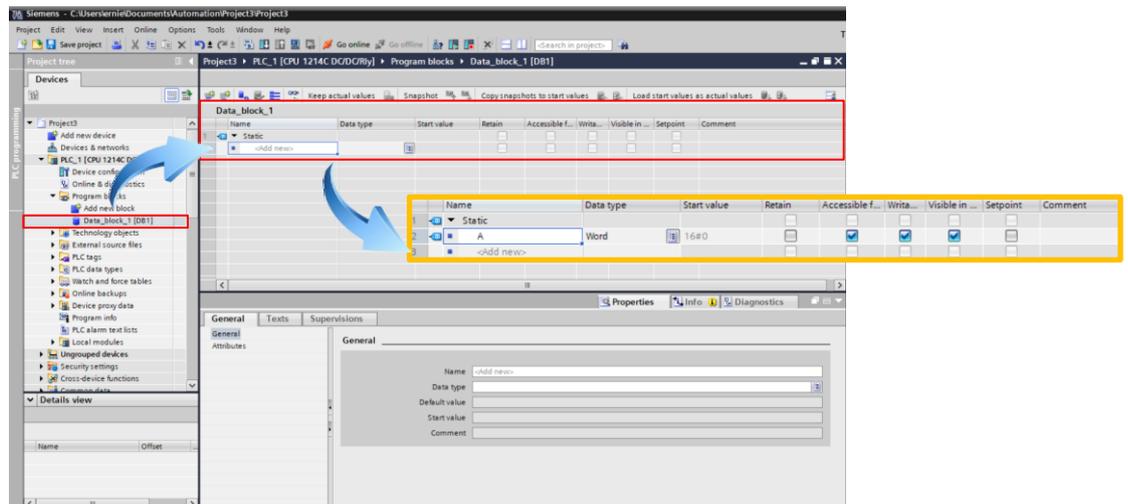
8. After selecting the specified PLC IP address, click [GoOnline].



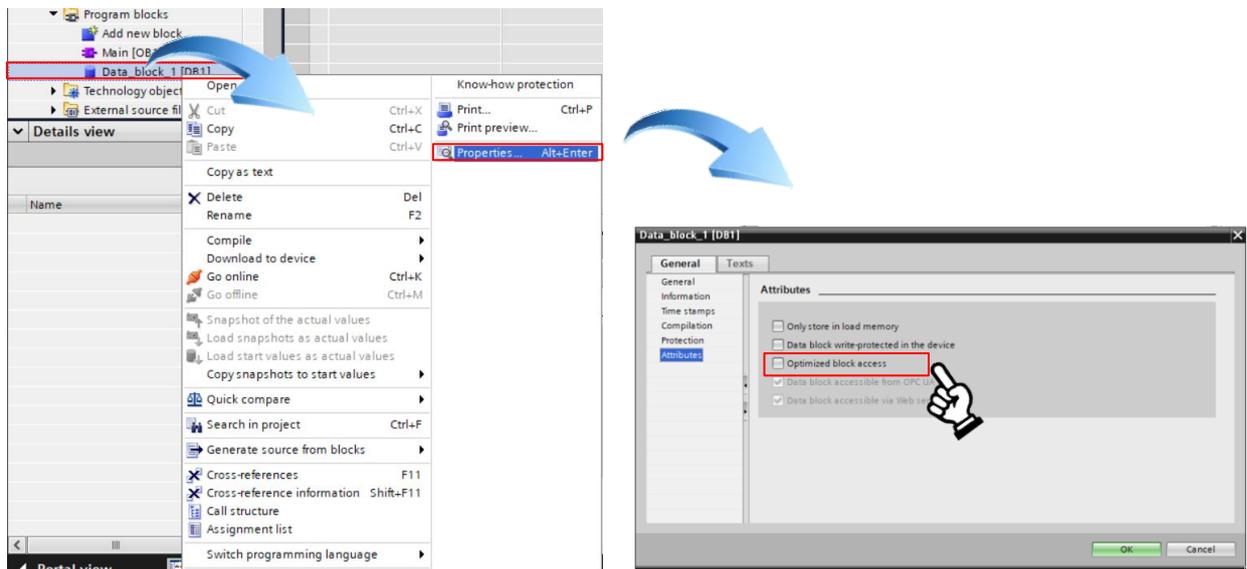
9. Open the PLC project from [Project tree], click to open [Program blocks] and double-click on [Add new block] to open the [Add new block] window. Click [Data block] to specify the number of the data block to be opened (the default is automatic numbering, and you can also specify the data block number according to the actual situation). After the setting is completed, click [OK].



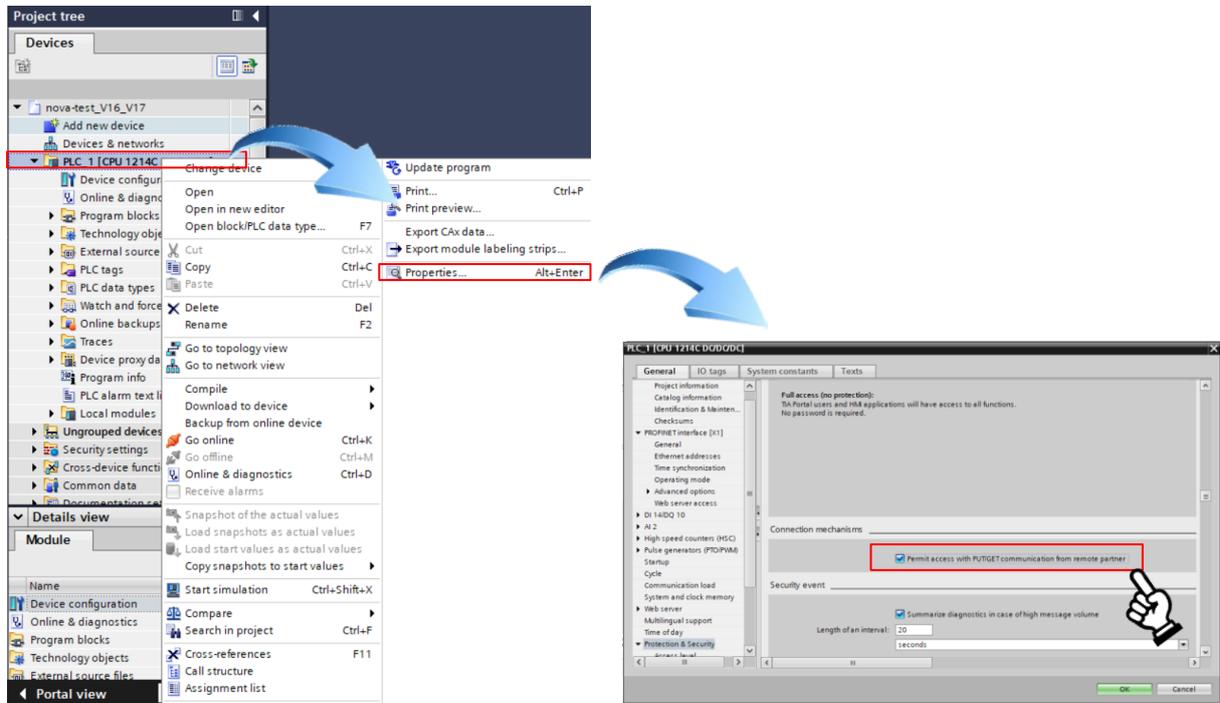
10. Create a variable (name is set to [A], Data type is set to [Word]).



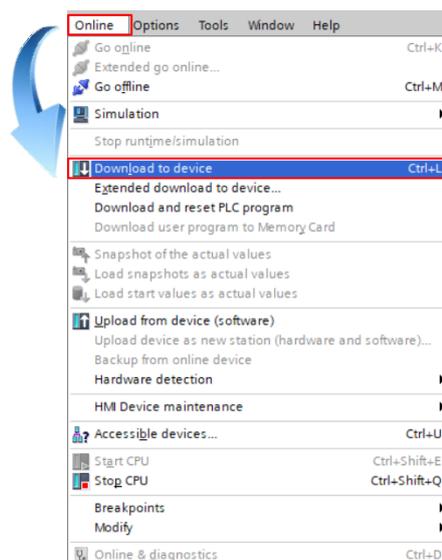
11. Move the cursor to [Data block] and right click it to pop up a menu. Click [Properties...] → [General] → [Attributes] and uncheck the [Optimized block access] option. Click [OK] when finished.



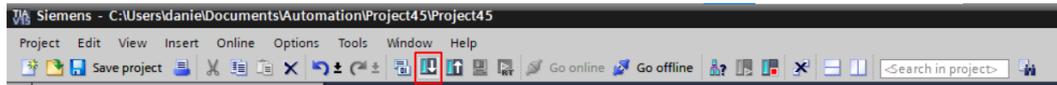
12 Move the cursor to [PLC_1[CPU12XX]] and right click it to pop up a menu. Click [Properties...] → [General] → [Protection&Security] and check the [Permit access with PUT/GET communication from remote partner] option. Click [OK] when finished.



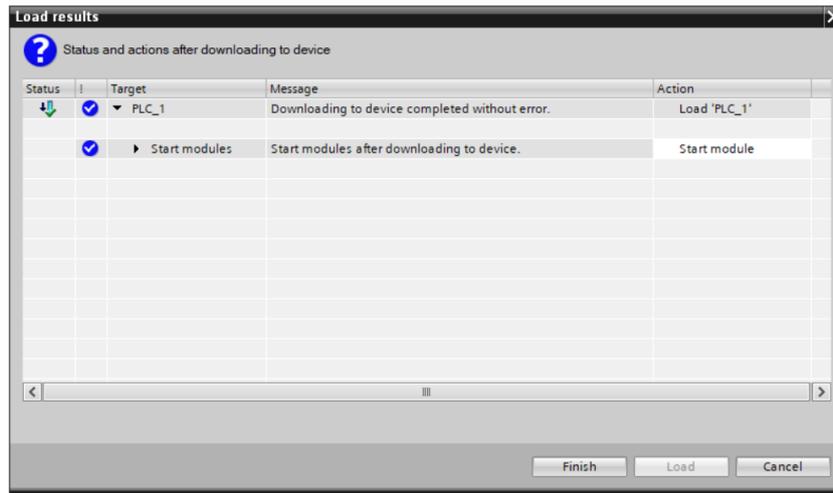
13. After the setting and programming are completed, you can download the project to the PLC from the upper menu [Online] → [Download to device].



Or click the icon below to download.

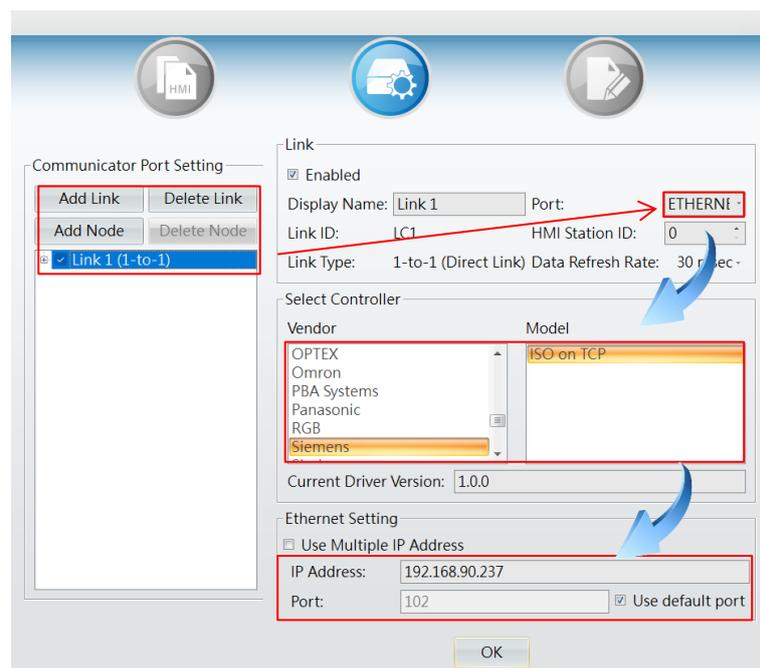


14. The download is complete.

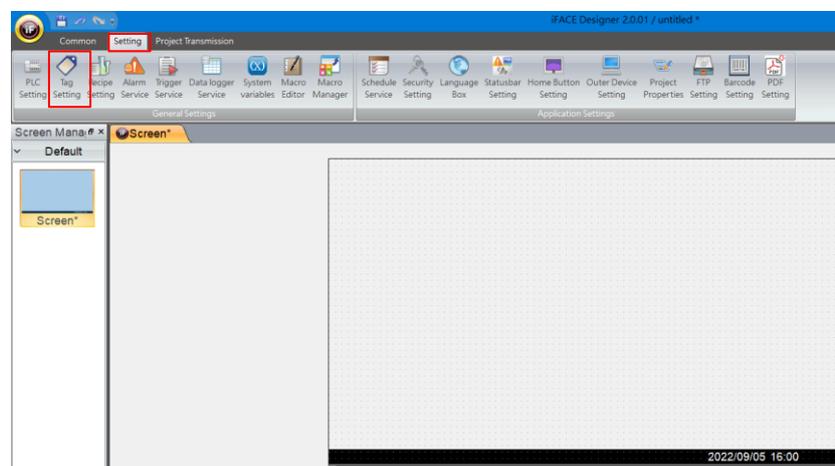


2. HMI Settings

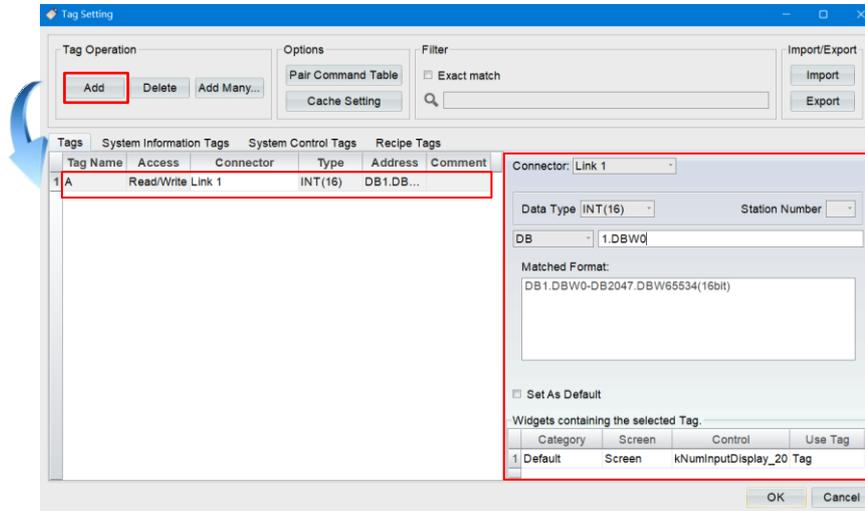
1. Open iFACE Designer and follow the steps in the iFace Quick Guide to add a Link. When using Ethernet communication between S7-1200 and S7-1500, select [ETHERNET] for the Port; select [Siemens ISO on TCP] for the model of the PLC; set the IP address (192.168.90.237 in this example) and Port (Default is 102). After the setting is completed, click [OK] to enter the editing screen.



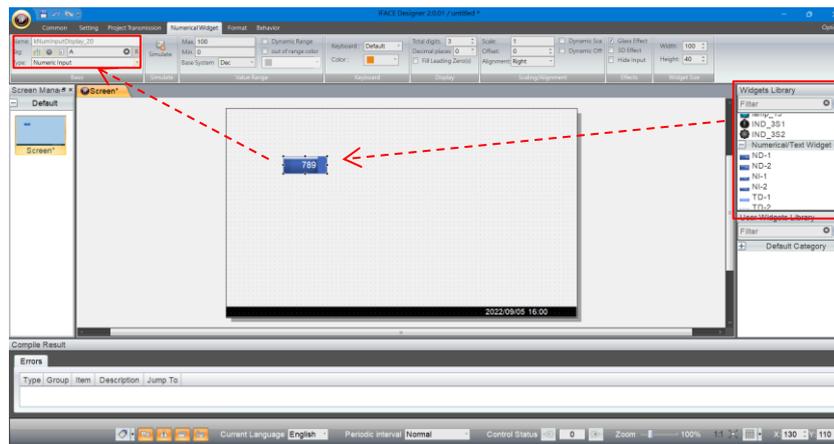
2. Click [Setting]→[Tag Setting] on the ribbon to open the tag setting dialog box, to create the corresponding tag.



3. Add a new tag (designate the tag name as [A]) and set the address as [DB1.DBW0]. After inputting, click [OK].



4. Drag a numeric input widget from the widget library and assign the tag as [A].

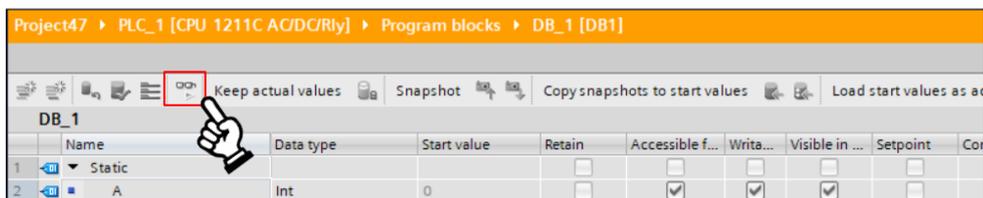


5. Finally save and compile the file before proceeding for simulation test. The table below is a comparison table of data types used by Siemens PLC registers and iFACE. For detailed operation instructions of iFACE Designer, please refer to NOVAKON official website.

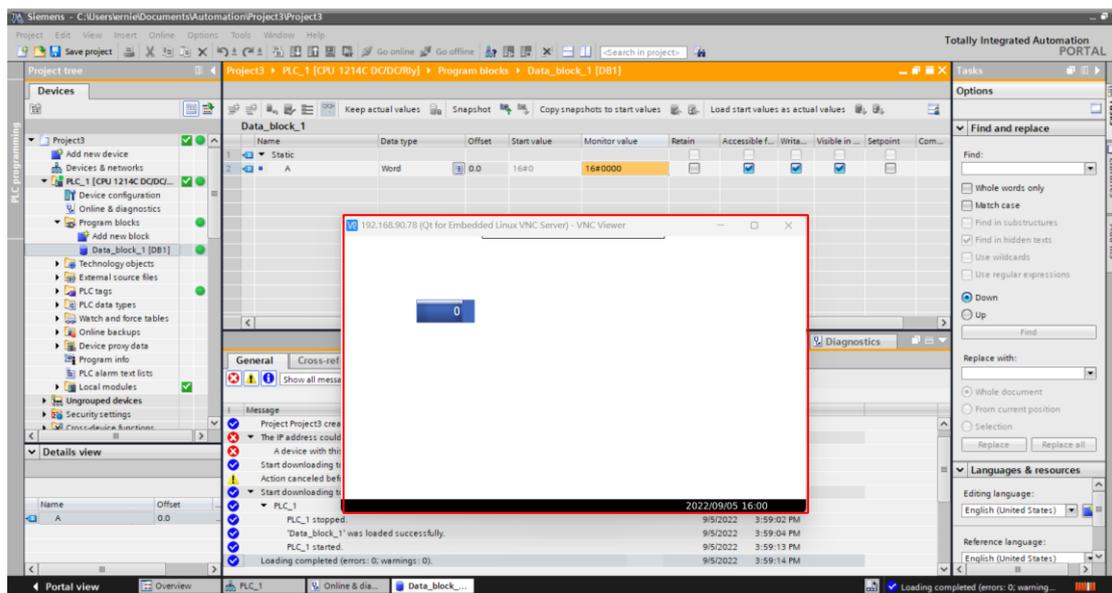
Siemens		iFACE
Bool	DBn.DBXn.n	Bit
Byte	DBn.DBBn	INT(8)
Dint	DBn.DBDbn	INT(32)
DWord	DBn.DBDbn	INT(32)
Int	DBn.DBWn	INT(16)
Lreal	DBn.DBDbn	INT(32)
Real	DBn.DBDbn	INT(32)
UDint	DBn.DBDbn	UINT(32)
UInt	DBn.DBWn	UINT(16)
USInt	DBn.DBBn	UINT(8)
Word	DBn.DBWn	INT(16)

3. Online Simulation

1. Enable the Siemens PLC monitoring function.



2. Run the HMI and connect to the PLC. In order to display of the results, this example uses VNC to show the HMI screen. From the figure below, we can see that the HMI and PLC are communicated normally.



3. When the HMI changes the value (in this example, changing it to [a], which is 10 in decimal), the value of [DB1.DBW0] is also changed to [000A] through PLC monitoring.

The screenshot displays the Siemens TIA Portal interface for a project named 'Project3'. The main window shows the configuration for a data block named 'Data_block_1'. A table lists the data points:

Name	Data type	Offset	Start value	Monitor value	Retain	Accessible f...	Write...	Visible in...	Setpoint	Com...
Static										
A	Word	0.0	16#0	16#000A						

A red box highlights the 'Monitor value' '16#000A' in the table. A red arrow points from this value to a 'VNC Viewer' window. The VNC Viewer window title is '192.168.90.78 (Qt for Embedded Linux VNC Server) - VNC Viewer'. Inside the VNC Viewer, a blue box highlights the character 'A', which is the hexadecimal value 16#000A converted to its ASCII representation. The background shows the 'Devices' tree on the left, the 'Details view' at the bottom, and the 'Find and replace' and 'Languages & resources' panels on the right. A message log at the bottom indicates the successful loading of the data block.

4. Communication & Connection

Communication Format:

PLC Model	Siemens S7-1200 Ethernet Port
Preset Format	Port : 102

Wiring diagram:

