

## Siemens S7-1200/S7-1500 (S7CommPlus, Symbolic Addressing) (Ethernet)

Supported Series: Siemens S7-1200 Firmware V4.6.1 or previous versions, S7-1500 Firmware V1.8.0 ~ V3.1.0, ET2000SP Series

PLC simulation SIMATIC PLCSIM Advanced V3.0 and V4.0

Website: <http://www.siemens.com/entry/cc/en/>

### HMI Setting:

Parameters	Recommended	Options	Notes
<b>PLC type</b>	Siemens S7-1200/S7-1500 (S7CommPlus, Symbolic Addressing) (Ethernet)		
<b>PLC I/F</b>	Ethernet		
<b>Port no.</b>	102		

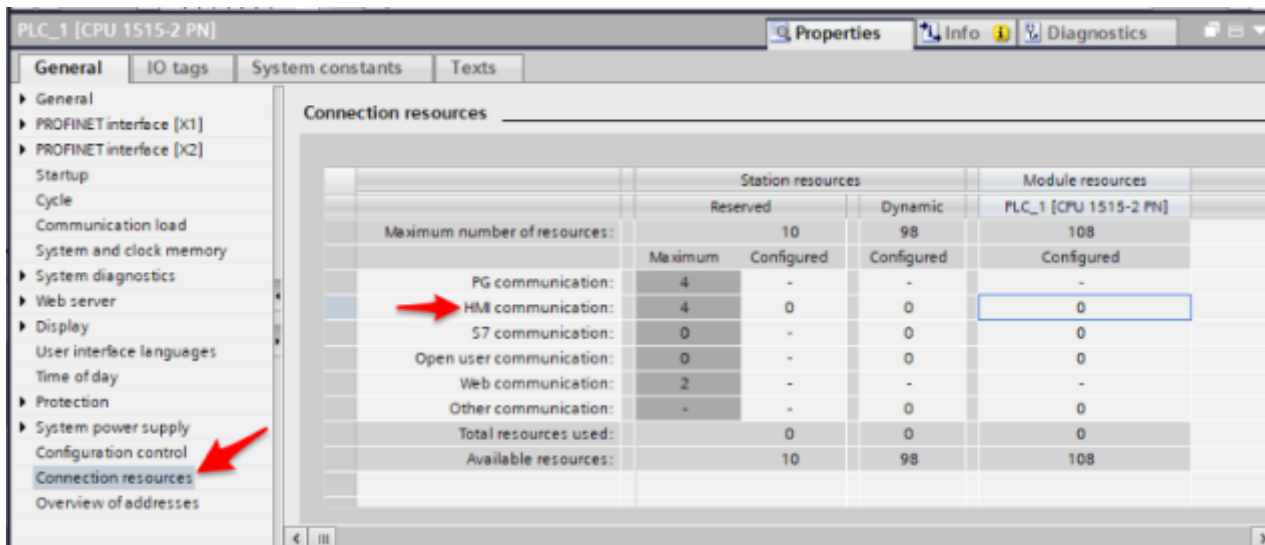
<b>On-line simulator</b>	Yes	<b>Multi-HMI connect</b>	TIA Settings *Note
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### Limitations:

Not supported on iP/iE Series HMI models.

\*Note:

According to Connection resource / HMI Communication settings



The screenshot displays the 'Connection resources' window in SIMATIC Manager. The left sidebar shows the 'Connection resources' tab selected. The main table shows the following data:

	Station resources		Dynamic	Module resources
	Reserved	Configured		
Maximum number of resources:	10		98	108
	Maximum	Configured	Configured	Configured
PG communication:	4	-	-	-
HMI communication:	4	0	0	0
S7 communication:	0	-	0	0
Open user communication:	0	-	0	0
Web communication:	2	-	-	-
Other communication:	-	-	0	0
Total resources used:	0	0	0	0
Available resources:	10		98	108

## PLC Settings:

- **Support PLC firmware version V2.80 and previous versions**

To support CPU 1510SP F-1 PN (ET200S), the access level must be set to full access incl.

Select the access level for the PLC. Update password encryption

Access level	Access				Access per...
	HMI	Read	Write	Fail-safe	
<input checked="" type="radio"/> Full access incl. fail-safe (no protection)	✓	✓	✓	✓	
<input type="radio"/> Full access (no protection)	✓	✓	✓		
<input type="radio"/> Read access	✓	✓			
<input type="radio"/> HMI access	✓				
<input type="radio"/> No access (complete protection)					

**Full access incl. fail-safe (no protection):**  
TIA Portal users and HMI applications will have access to all standard and fail-safe functions.  
No password is required.

PLCs (S71200/FW4.2/ & S7-1500/FW1.7/) firmware version and above support HMI access using password function

Note: If the user sets the HMI access level, the password of full access or read access must be used to communicate.

IP Address Settings

IP address : 192 . 168 . 1 . 111  
Port no. : 302

Password Setting

☒ Enable  
Password : pAsswOrd

Timeout (sec) : 1.0 Turn around delay (ms) : 0

The number of resending commands : 0

OK Cancel

- **Legacy and secure PG/PC communication permitted**

**[Only allow secure PG/PC and HMI communication]** This setting item is not supported, please do not check it.

**Legacy and secure PG/PC communication permitted:**

- Communication security to PG/PC and HMI according to the options of both communication partners
- Communication to TIA Portal < V17 and HMI systems < V17 is possible. Higher TIA Portal versions require a separate activation of the Legacy communication.
- Communication performance might be higher when only legacy PG/PC communication is used

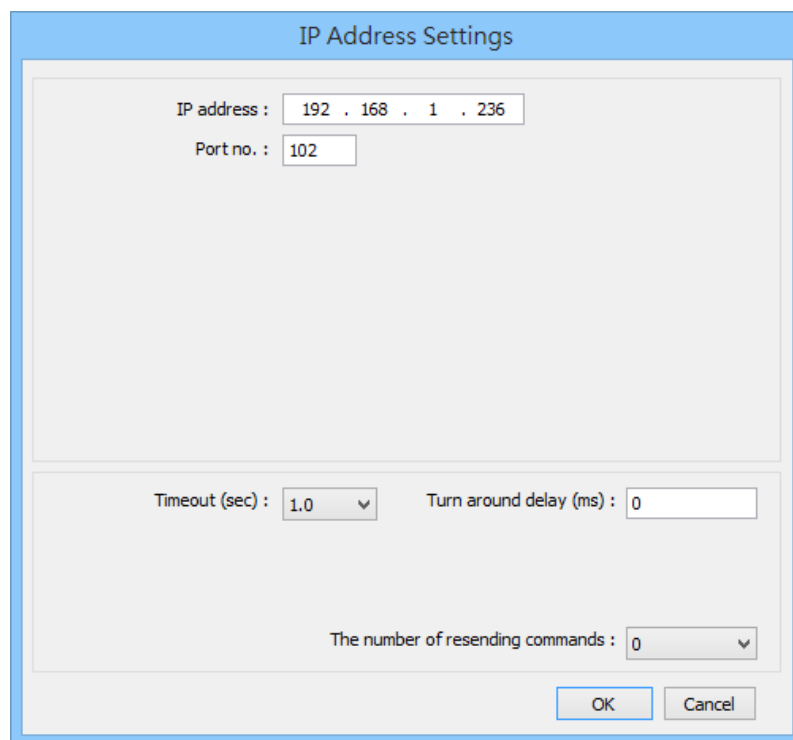
☐ Only allow secure PG/PC and HMI communication

## Get Tag Info:

1. In S7-1500 program software create PLC program and tag and then download to PLC.
2. Select Go offline, EasyBuilder will connect to PLC and get tag data. In PLC type select **“Siemens S7-1200/S7-1500 (S7CommPlus, Symbolic Addressing) (Ethernet)”**.



- Click “**Settings...**”, input PLC IP address.



IP Address Settings

IP address : 192 . 168 . 1 . 236

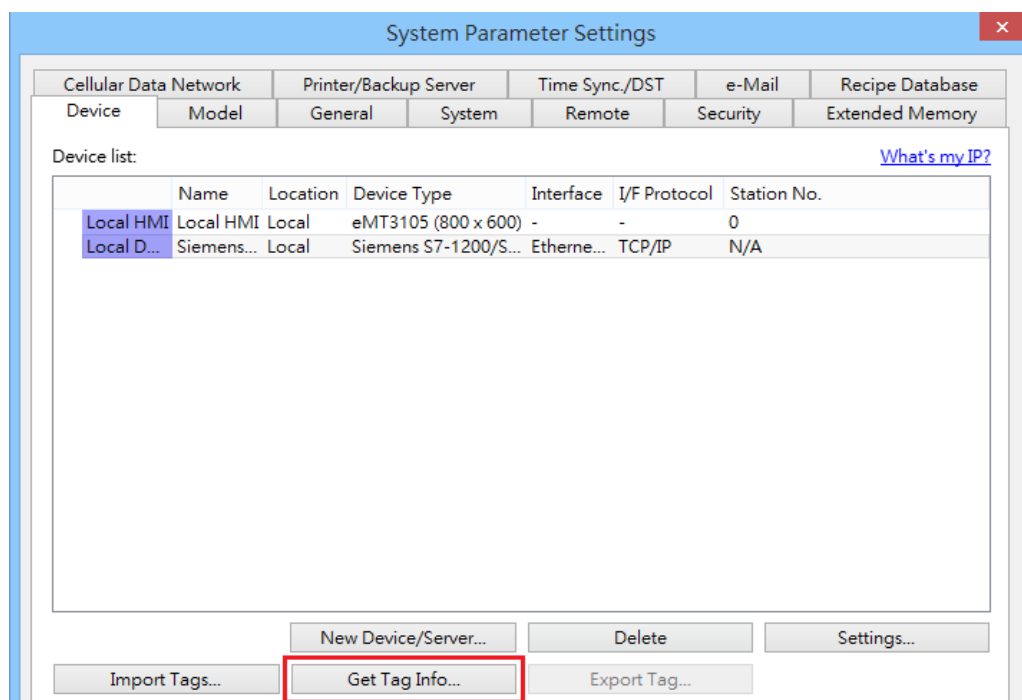
Port no. : 102

Timeout (sec) : 1.0 Turn around delay (ms) : 0

The number of resending commands : 0

OK Cancel

- Check the PLC that is not connected to any PC. Click “**Get Tag Info...**”.



System Parameter Settings

Cellular Data Network Printer/Backup Server Time Sync./DST e-Mail Recipe Database

Device Model General System Remote Security Extended Memory

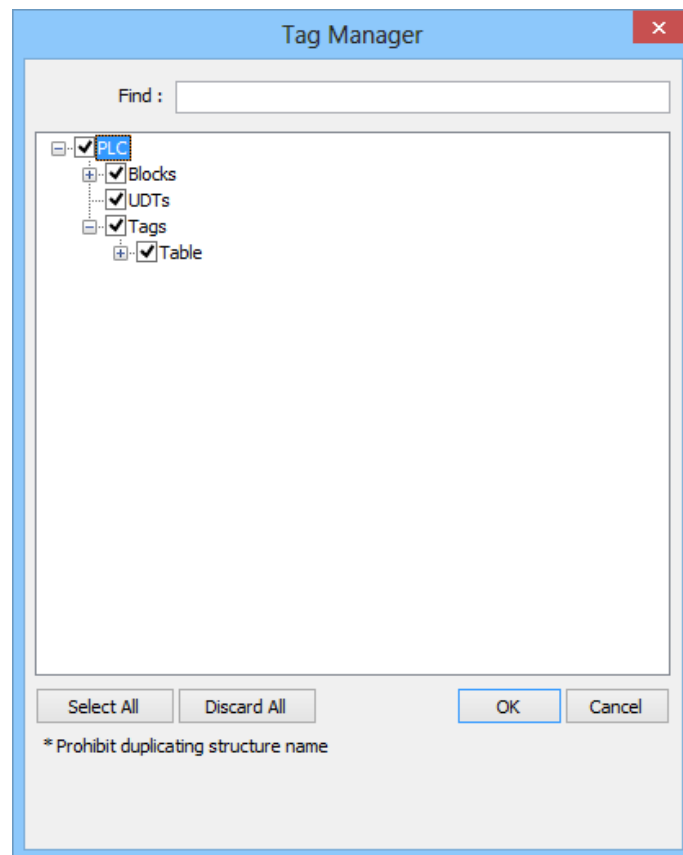
Device list: [What's my IP?](#)

	Name	Location	Device Type	Interface	I/F Protocol	Station No.
Local HMI	Local HMI	Local	eMT3105 (800 x 600)	-	-	0
Local D...	Siemens...	Local	Siemens S7-1200/S...	Etherne...	TCP/IP	N/A

New Device/Server... Delete Settings...

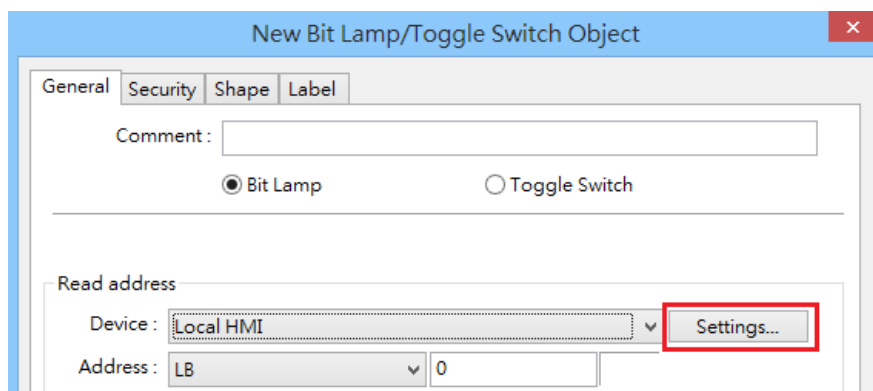
Import Tags... **Get Tag Info...** Export Tag...

5. Added Tag Manager that allows selecting the Siemens S7-1500 PLC tags to be imported.

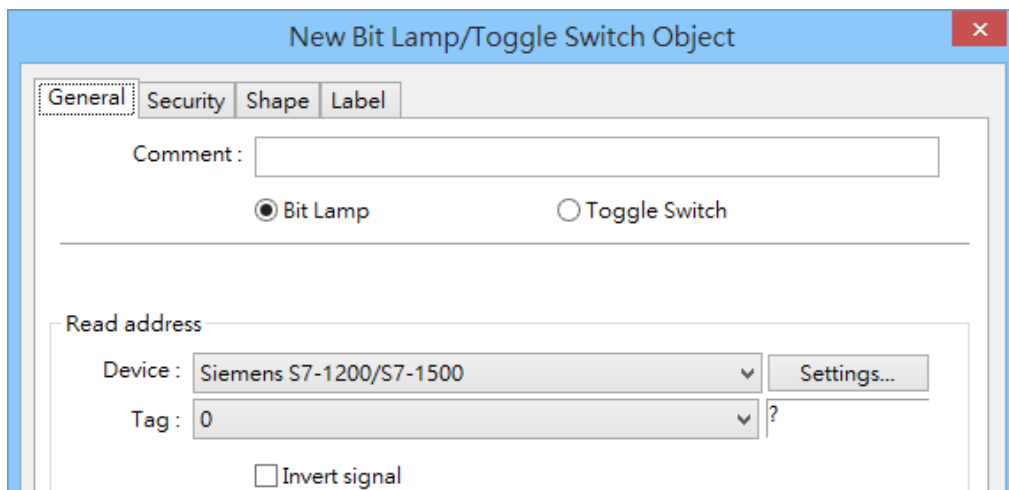


\*Note: Prohibit duplicating structure name

6. Create an object and click read address “**Settings...**”



7. In PLC name select S7-1200/1500 then click Tag.



**New Bit Lamp/Toggle Switch Object**

General Security Shape Label

Comment :

☒ Bit Lamp ☐ Toggle Switch

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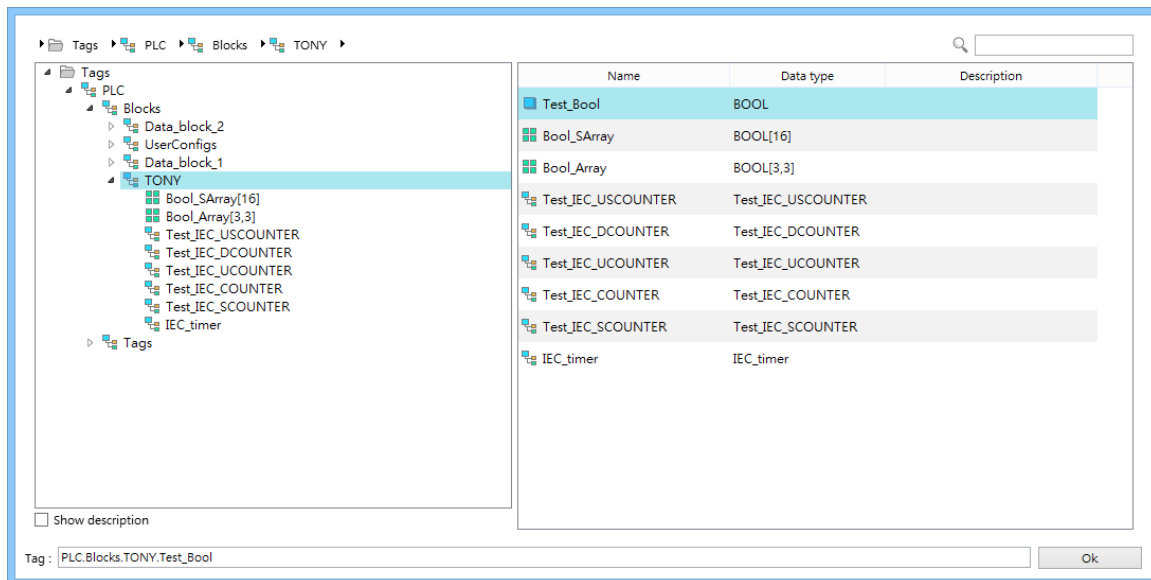
Read address

Device : Siemens S7-1200/S7-1500

Tag : 0

☐ Invert signal

8. Select PLC tag.



Tags PLC Blocks TONY

Tags

- PLC
  - Blocks
    - Data\_block\_2
    - UserConfigs
    - Data\_block\_1
    - TONY
      - Bool\_SArray[16]
      - Bool\_Array[3,3]
      - Test\_IEC\_USCOUNTER
      - Test\_IEC\_DCOUNTER
      - Test\_IEC\_UCOUNTER
      - Test\_IEC\_COUNTER
      - Test\_IEC\_SCOUNTER
      - IEC\_timer

Tags

Name	Data type	Description
Test_Bool	BOOL	
Bool_SArray	BOOL[16]	
Bool_Array	BOOL[3,3]	
Test_IEC_USCOUNTER	Test_IEC_USCOUNTER	
Test_IEC_DCOUNTER	Test_IEC_DCOUNTER	
Test_IEC_UCOUNTER	Test_IEC_UCOUNTER	
Test_IEC_COUNTER	Test_IEC_COUNTER	
Test_IEC_SCOUNTER	Test_IEC_SCOUNTER	
IEC_timer	IEC_timer	

☐ Show description

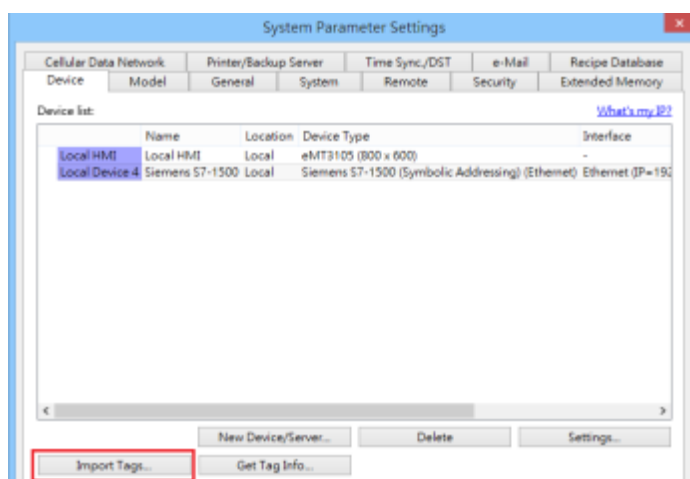
Tag : PLC.Blocks.TONY.Test\_Bool

## Import Tags

Apart from using Get Tag on HMI, tags from Siemens TIA project can be imported in EasyBuilder Pro.

**\* At least one db file must be imported. If only plc tags cannot be imported successfully.**

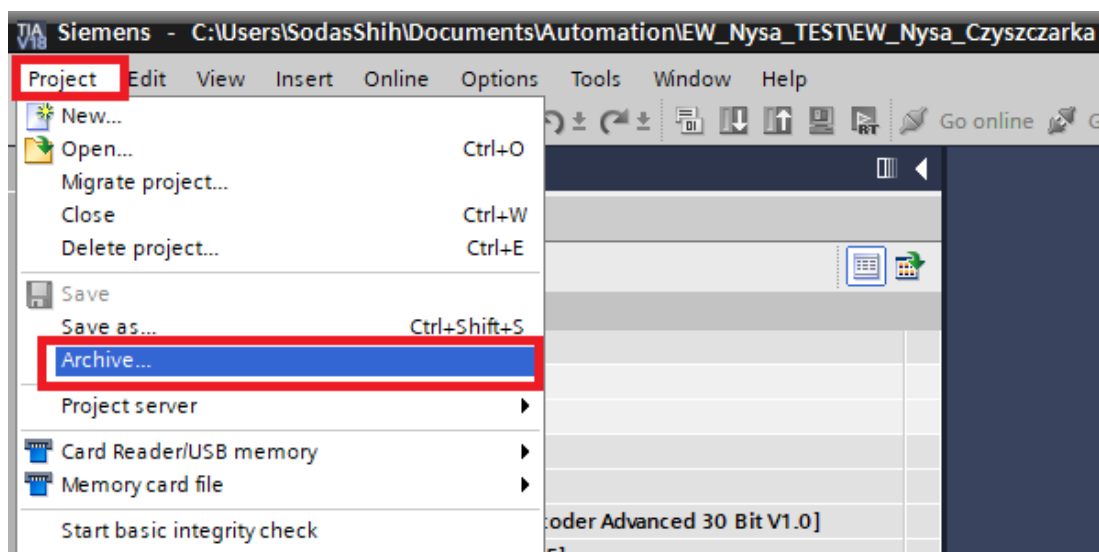
1. In System Parameter Settings add S7-1200/1500 into the device list and then click **[Import Tags...]**.

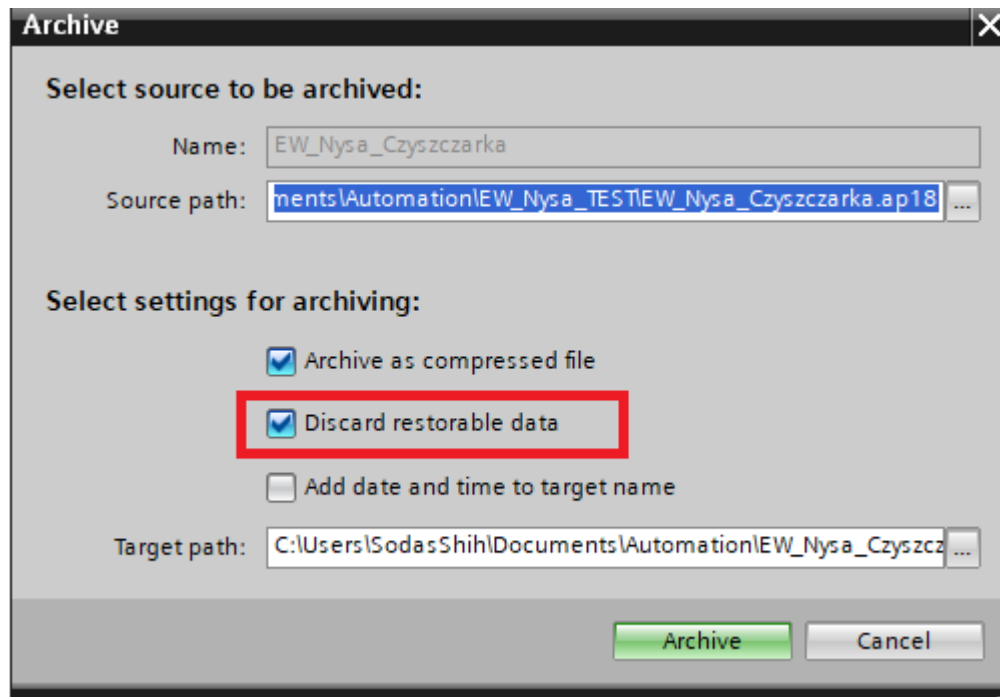


2. Select the **\*.ap(\*.apxx)** file.

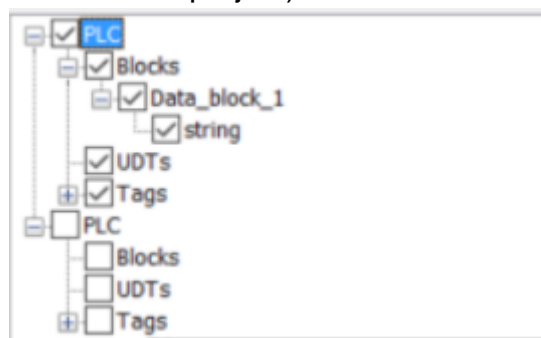
When the \*.ap file cannot be imported, you can try **[Project]** -> **[Archive]** and then import it again.

\*Note1. Before importing TIA Files, users need to compile the file and download it to the PLC.

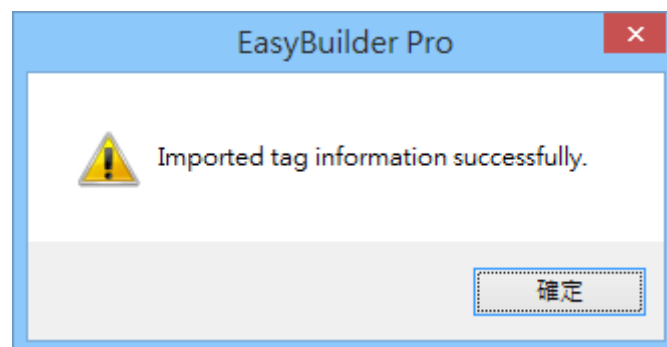




3. Select the tags to be imported and then click **OK**.  
(Support multiple devices in the same project)



4. Tags are imported successfully.

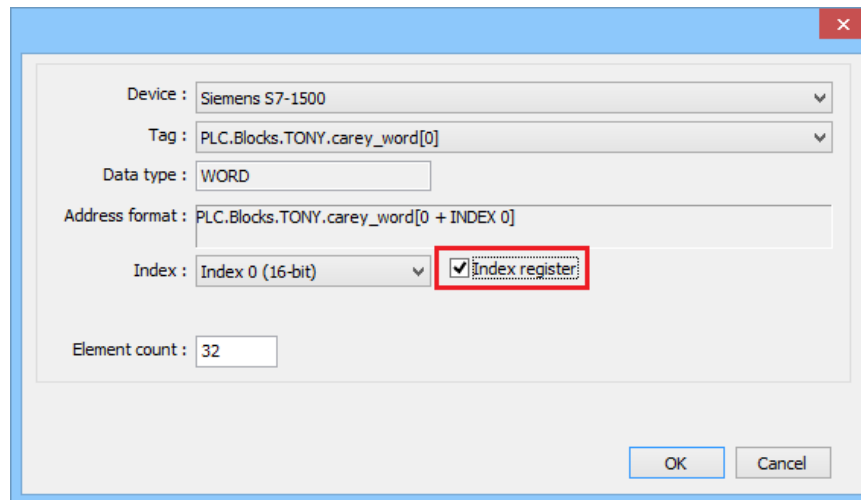




## Support Device Type:

Data type	EasyBuilder data format	Memo
Bool	bit	
Byte	16-bit BCD, Hex, Binary, Unsigned	8-bit
SInt	16-bit BCD, Hex, Binary, Signed	8-bit
USInt	16-bit BCD, Hex, Binary, Unsigned	8-bit
Word	16-bit BCD, Hex, Binary, Unsigned	16-bit
Int	16-bit BCD, Hex, Binary, Signed	16-bit
UInt	16-bit BCD, Hex, Binary, Unsigned	16-bit
DWord	32-bit BCD, Hex, Binary, Unsigned	32-bit
DInt	32-bit BCD, Hex, Binary, Signed	32-bit
Real	32-bit Float	32-bit
UDInt	32-bit BCD, Hex, Binary, Unsigned	32-bit
String		Max: 256
WString		
DTL		Read only
IEC_COUNTER		
IEC_DCOUNTER		
IEC_SCOUNTER		
IEC_UCOUNTER		
IEC_UDCOUNTER		
IEC_USCOUNTER		
Time	32-bit BCD, Hex, Binary, Unsigned	DWord
Time_Of_Day	32-bit BCD, Hex, Binary, Unsigned	DWord
Array		Bool, Byte, SINT, USInt, Word, Int, UInt, DWord, Dint, Real, UDInt, String
Struct		Bool, Byte, SINT, USInt, Word, Int, UInt, DWord, Dint, Real, UDInt, String

- String array can be used with index register.



- Both single-dimensional arrays and multi-dimensional arrays can start with non-zero values.  
Example: [1..9] , or [1..3,2..5]
- Importing data types other than those in the above table may result in failure to communicate.
- Address tags do not allow the use of special characters, such as: [ ] " ,. etc., which may cause unexpected situations such as import exceptions or communication exceptions.

## Wiring Diagram:

### Ethernet cable:

