SIEMENS S7 300 SIMATIC Controller Instructions

Contents

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Product Information

The product is a PLC1.ir device that is used for industrial automation. It has a HMI (Human Machine Interface)

and supports TCP/IP communication. The HMI’s factory setting is PLC1.ir IPPLACd1d.irress:P1L9C21..i1r 68.0P.1LC1.ir. It has a COM Port: 102 CPoLnCt1r.oirl ArePaL/C1S.tiratus PALrCea1.:irDBWP0L/C1D.iBr W20PLC1.ir. The device can be connected to a PLC and controlled through the HMI CPoLCn1n.eirct i onPLMCa1n.iru al PLC1.ir.

- **Siemens S7 300 (ISO TCP)**
- **HMI Factory Setting:**
- **IP Address:** 192.168.0.1
- **COM Port:** 102
- **Control Area** / **Status Area:** DBW0 / DBW20

Connection

Standard Jumper Cable / Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a.Registers

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Input Image	**IW**n	**IW**0 – **IW**65534	Word	
	IDn	**ID**0 – **ID**65532	Double Word	
Output Image	**QW**n	**QW**0 – **QW**65534	Word	
	QDn	**QD**0 – **QD**65532	Double Word	
Internal Bits	**MW**n	**MW**0 – **MW**65534	Word	
	MDn	**MD**0 – **MD**65532	Double Word	
Data Area	**DB**m.DBWn	**DB**1.DBW0 – **DB**65535.DBW65534	Word	1
	DBm.DBDn	**DB**1.DBD0 – **DB**65535.DBW65532	Double Word	1
Data Area (DB10)	**DBW**n	**DBW**0 – **DBW**65534	Word	
	DBDn	**DBD**0 – **DBD**65532	Double Word	
	VWn	**VW**0 – **VW**65534	Word	
	VDn	**VD**0 – **VD**65532	Double Word	
Timer	**T**n	**T**0 – **T**65535	Word	2
Counter	**C**n	**C**0 – **C**65535	Double Word	3

b.Contacts

Type	Format Word No.(n) Bank No.(m) Bit No .(b)	Read/Write Range	Note
Input Image	**I**n.b	**I**0.0 – **I**65535.7	
Output Image	**Q**n.b	**Q**0.0 – **Q**65535.7	
Internal Bits	**M**n.b	**M**0.0 – **M**65535.7	
Data Area	**DB**m.DBXn.b	**DB**1.DBX0.0 – **DB**65535.DBX65535.7	
Data Area (DB10)	**DBX**n.b	**DBX**0.0 – **DBX**65535.7	
	Vn.b	**V**0.0 – **V**65535.7	

NOTE

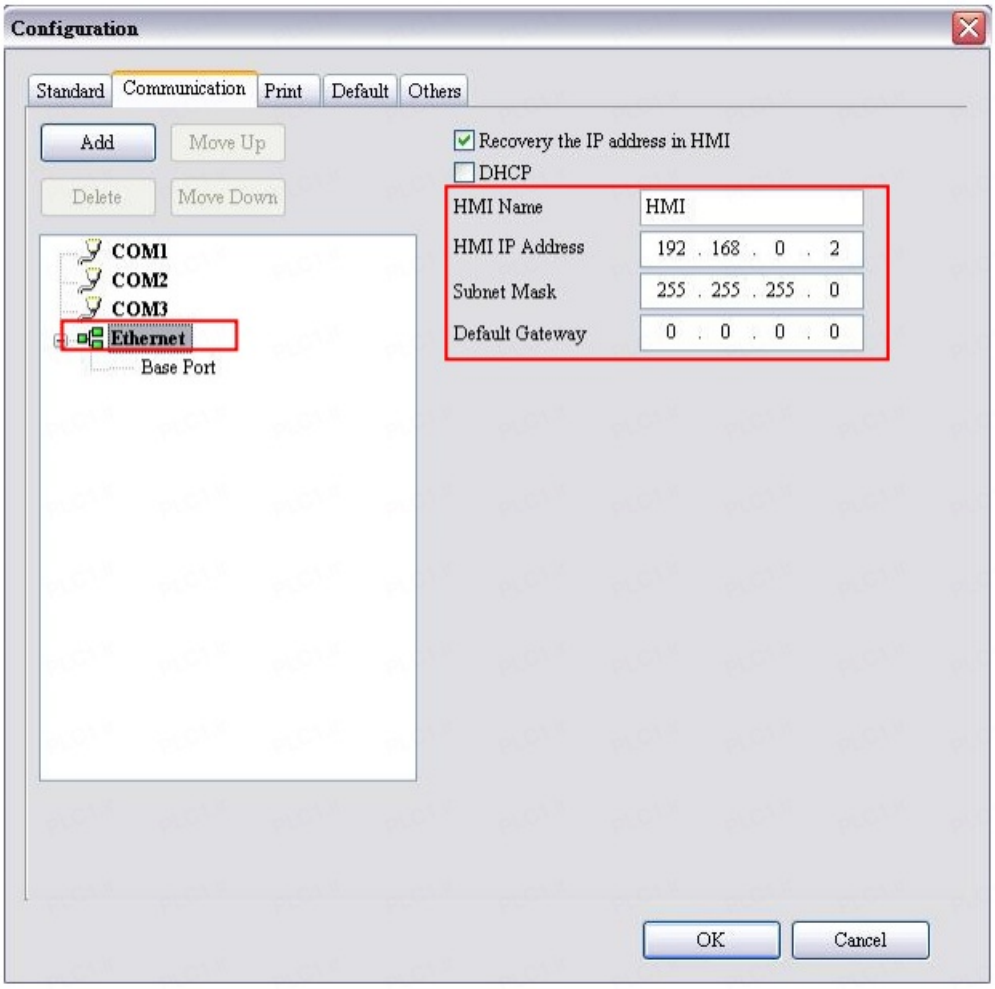
1. PLC needs to enable DB memory (DBm.DBWn DBm.DBDn DBm.DBXn.b) before DB datacan be read.
2. Timer reads only up to 3 digits. If a value input is more than 3 digits, the Timer willregards the highest 3 (decimal) and replace the rest by 0. For example, a value 12345will be written as 12300 in PLC.
3. Counter reads only up to 3 digits. If a value input is more than 3 digits, the Counter willregards the first 3 digits and leave out the rest. For example, a value 12345 will bewritten as 123 in PLC.
4. Except register Tn and Cn data type of register is Byte and its order is opposite to usualcontroller , for example :
    - IW3 is a word which combined from IB3 and IB4 High Byte of IW3 is IB3 Low Byte of IW3 is IB4.
    - ID3 is Double Word which combined from IB3, IB4, IB5 and IB6, and its order from highest to lowest is IB3, IB4, IB5 andIB6.

      And please be attentive to use these registers, because their Data type is different with Data Length, it will need more than one register for each access, for example:
        - AIW6 which Data Type is Byte and Data Length is 1 Word, when it used for one word Numeric Entry , it will occupy two addresses AIB6 and AIB7
        - MD12 which Data Type is Byte and Data Length is Double Word when it used for one word Numeric Entry, it will occupy four addresses MB12,MB13,MB14 and MB15; But data only stored in MB14 and MB15.
        - IW3 which Data Type is Byte and Data Length is 1 Word , when it used for double word Numeric Entry, it will occupy for addresses IB3,IB4,IB5 and IB6 order from highest to lowest byte is IB5,IB6,IB3 IB4.

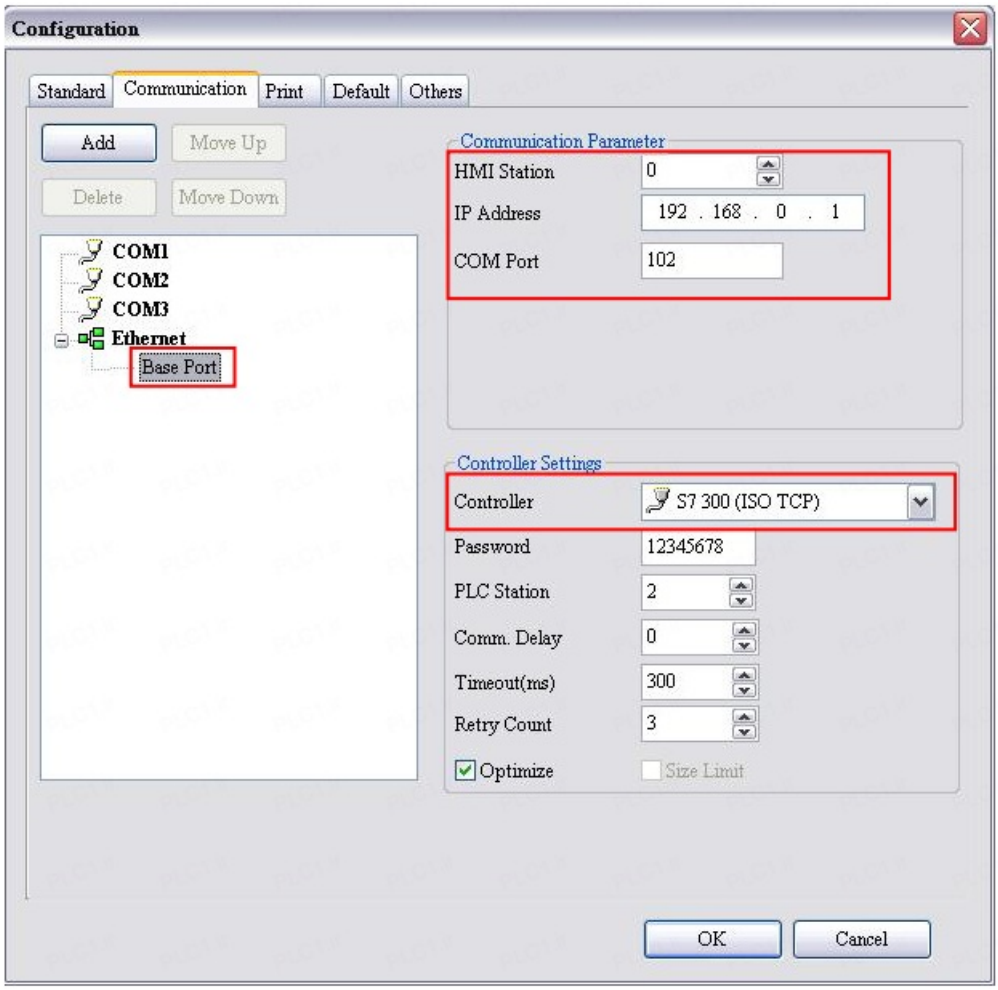
Settings

Screen Editor

1. HMI Ethernet Setting

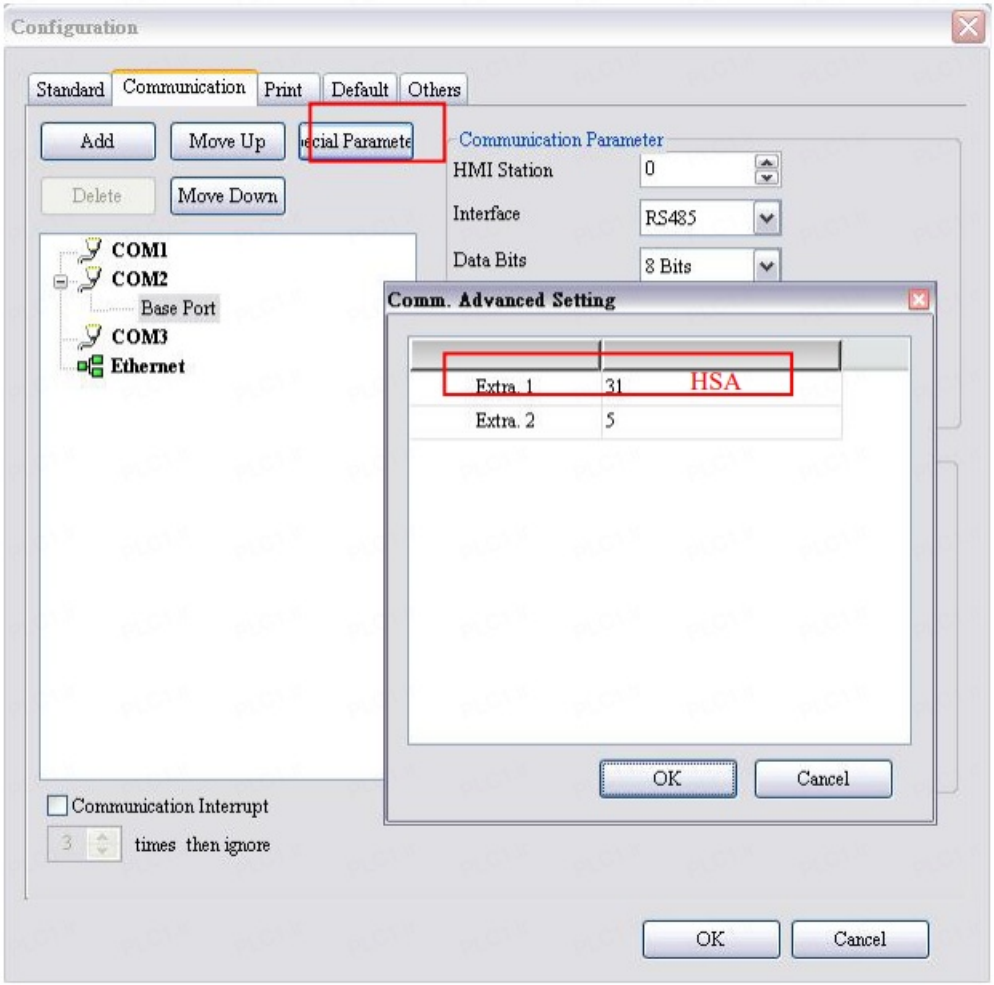


2. PLC Ethernet Setting



Simatic (V5.4)

- Right click on “CP343-1 Lean” module and select “Object Properties”, on this page set up “IP address” and “Subnet mask” for CP343-1 Lean Module. Please be aware that the “IP address” setting must be the same as PLC Ethernet setting in Screen Editor and the “Subnet mask” setting must be the same as the HMI Ethernet setting in Screen Editor.
- To add a new “Other station”, right click on “Object Properties”, add a new Interface and set the “Type” as “Industrial Ethernet”. To set up HMI “IP address” and “Subnet mask”, go to “Ethernet interface” > “Properties”, please be aware that this setting must be the same as the HMI Ethernet setting in Screen Editor. As the setting is completed, left click on the green box above “Other station” and drag to link with the green line above.
- Right click on the CPU module and select “Insert New Connection”, for “Connection Partner” select “Unspecified” and for “Type” select “TCP connection”. Then go to “Properties – TCP connection” >”Options”, and set “Mode” to “Fetch passive”; please follows the restriction for “Address” setting, set “Address” to Local Port No. must be the same as PLC Ethernet setting in Screen Editor, to Partner’s IP must be the same as HMI Ethernet setting in Screen Editor, but Port No. can be any Port No. depending on the structure of network connection.
- Right click on another CPU to add a new “TCP connection” and repeats setting 3, except the “Mode”, go to “Options” > “Mode” and select “Write passive”.
- After setting 1~4 is done, you will see two “TCP connection” at the bottom of PLC Ethernet setting page. PLC Ethernet setting is completed.
- For detail on parameter setting, please refer to Siemens PLC user manual.



Documents / Resources

	**SIEMENS S7 300 SIMATIC Controller** [pdf] Instructions S7 300 SIMATIC Controller, S7 300, SIMATIC Controller, Controller