

Siemens S7 300 (Direct MPI)

HMI Factory Setting:

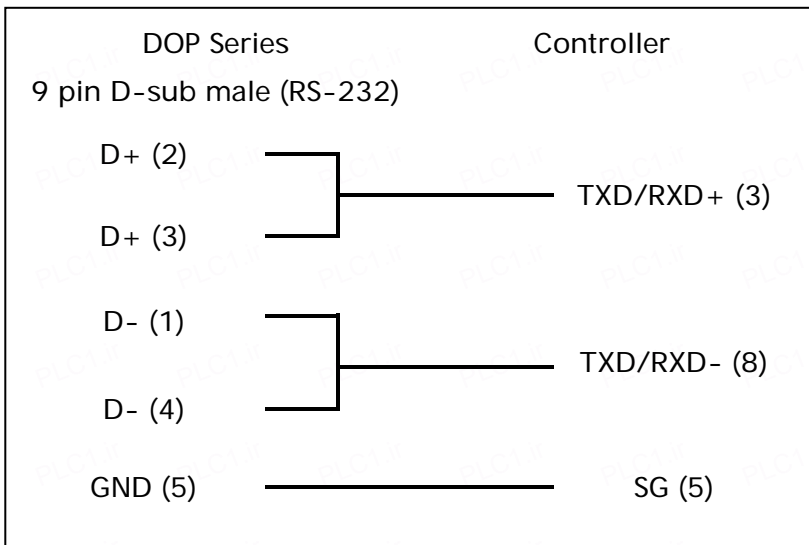
Baud rate: 187500, 8, Even, 1 (RS-485) ([Note1](#))

Controller Station Number: 2([Note2](#), [Note3](#), [Note4](#))

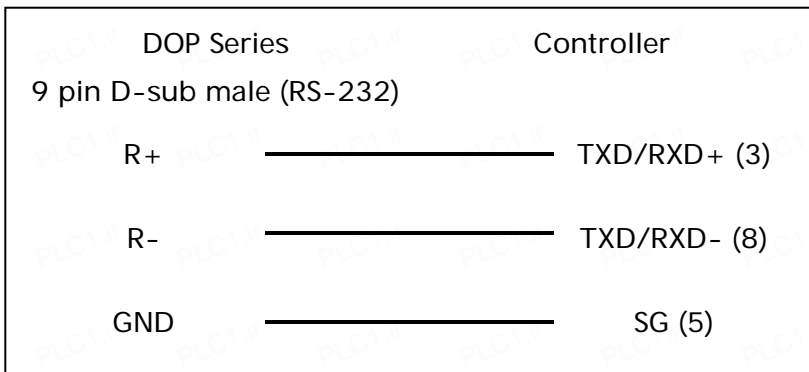
Control Area / Status Area: DBW0/DBW20

Connection

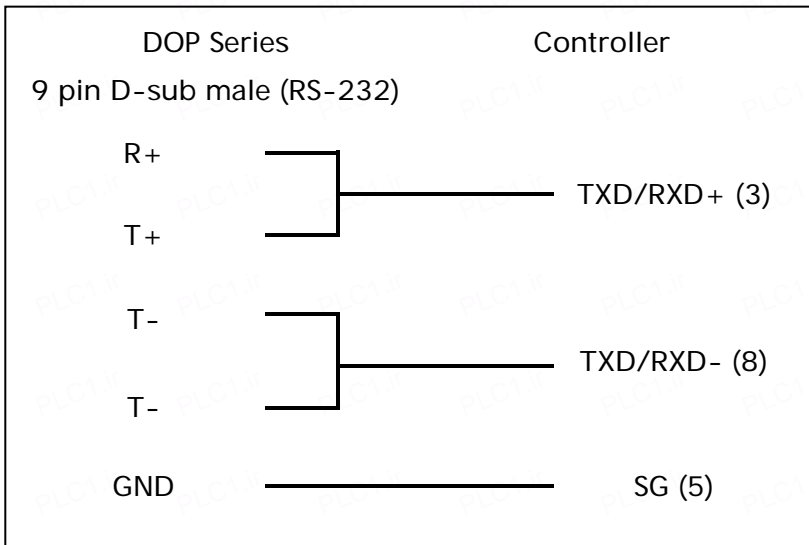
a. RS-485 (DOP-A/AE Series)



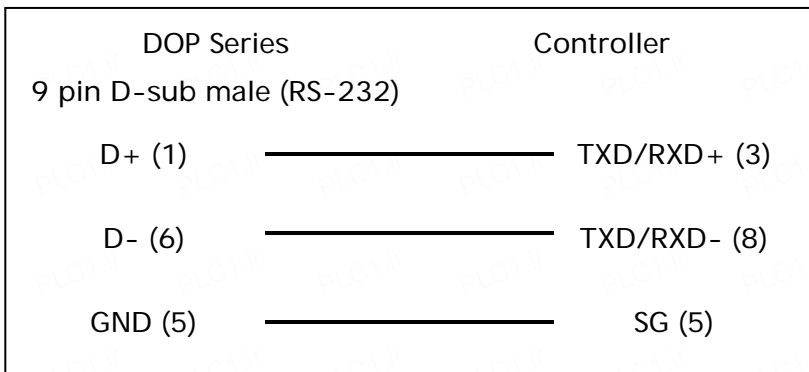
b. RS-485 (DOP-AS57 Series)



c. RS-485 (DOP-AS35/AS38 Series)



d. RS-485 (DOP-B Series)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n) Bank No.(m)			
Input Image	IWn	IW0 - IW65534	Word	
	IDn	ID0 - ID65532	Double Word	
Output Image	QWn	QW0 - QW65534	Word	
	QDn	QD0 - QD65532	Double Word	
Internal Bits	MWn	MW0 - MW65534	Word	
	MDn	MD0 - MD65532	Double Word	
Data Area	DBm.DBWn	DB1.DBW0 - DB65535.DBW65534	Word	5
	DBm.DBDn	DB1.DBD0 - DB65535.DBW65532	Double Word	5

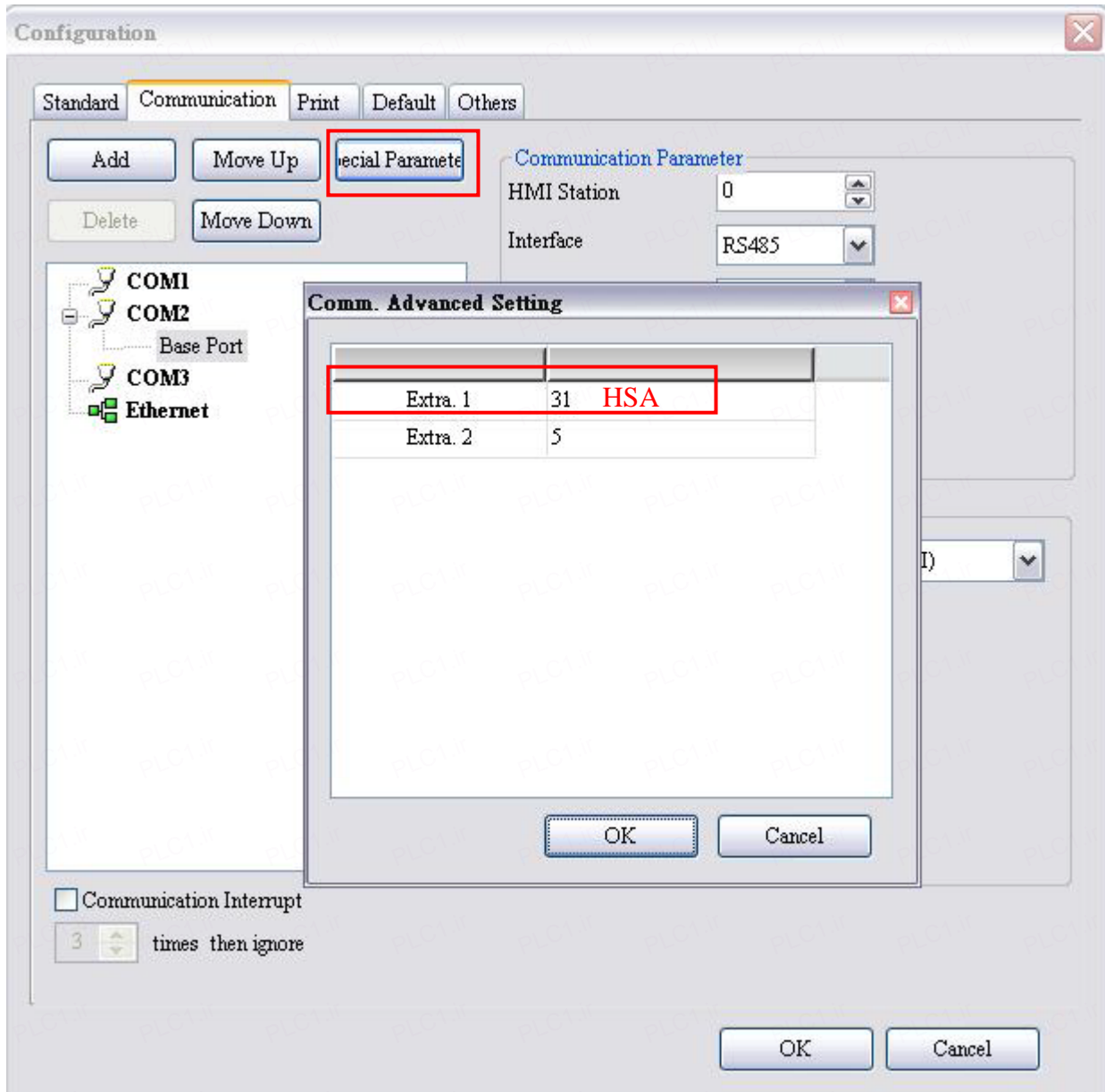
Type	Format	Read/Write Range	Data Length	Note
	Word No.(n) Bank No.(m)			
Data Area (DB10)	DBWn	DBW0 – DBW65534	Word	
	DBDn	DBD0 – DBD65532	Double Word	
	VWn	VW0 – VW65534	Word	
	VDn	VD0 – VD65532	Double Word	
Timer	Tn	T0 – T65535	Word	6
Counter	Cn	C0 – C65535	Double Word	6

b. Contacts

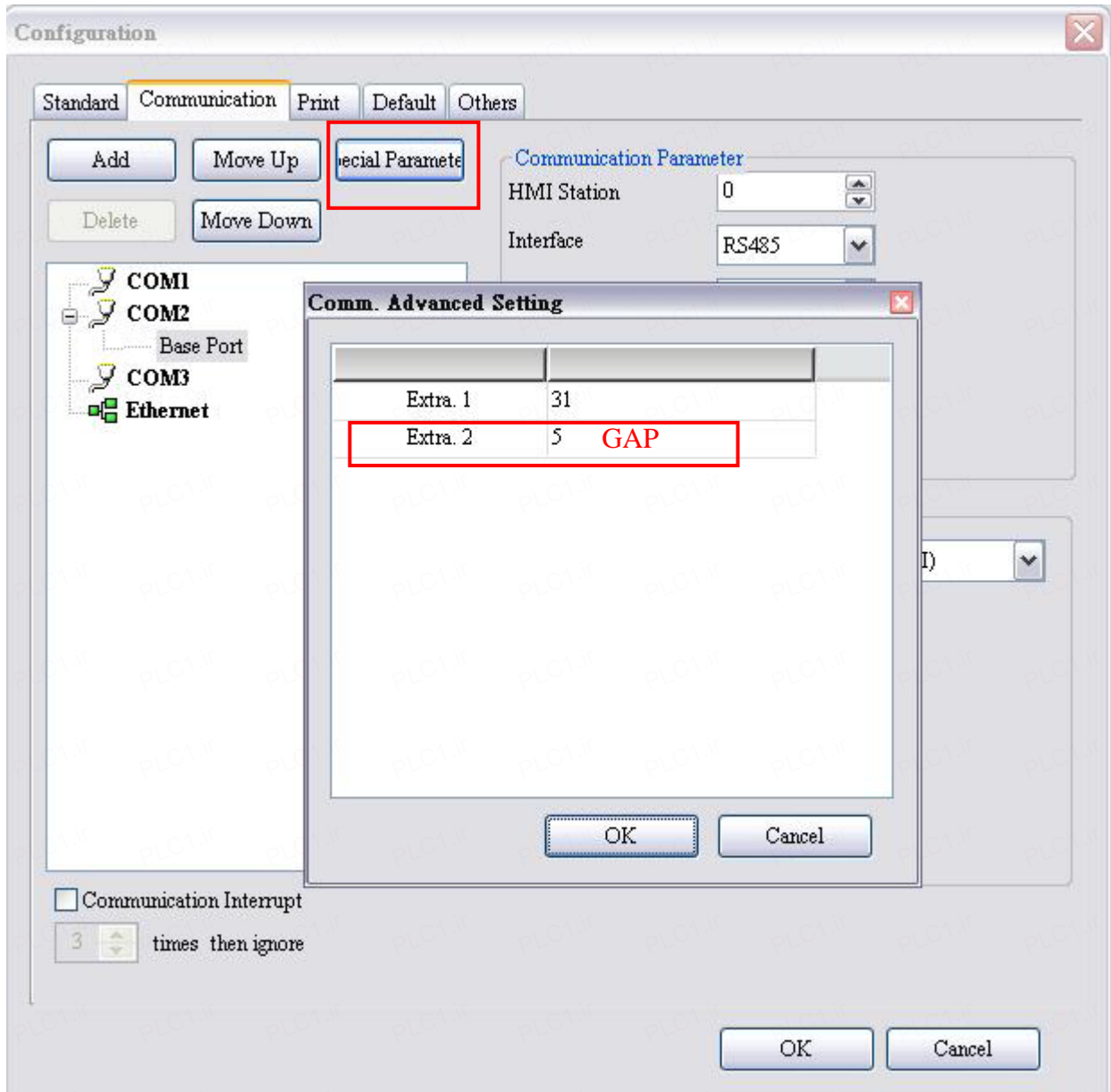
Type	Format	Read/Write Range	Note
	Word No.(n) ; Bank No.(m) ; Bit No.(b)		
Input Image	In.b	I0.0 – I65535.7	
Output Image	Qn.b	Q0.0 – Q65535.7	
Internal Bits	Mn.b	M0.0 – M65535.7	
Data Area	DBm.DBXn.b	DB1.DBX0.0 – DB65535.DBX65535.7	5
Data Area (DB10)	DBXn.b	DBX0.0 – DBX65535.7	
	Vn.b	V0.0 – V65535.7	

 **NOTE**

- 1) This communication protocol only supports 187500 bps. Only one COM port can use this communication protocol for one project (it supports COM2 and COM3 ports, but it does not support COM1 port).
- 2) This communication protocol supports multiple HMI to multiple PLC connection. However, it is still recommend connecting a maximum of two HMI to a PLC at a time. A connection of more than two HMI would cause low baud rate and time out error may occur.
- 3) In order to set Highest Station Address(HSA) click Option > Configuration > Special Parameter > Extra. The default setting for HSA is 31, max. value is 126 and Min. value is 2. The setting for HSA must be in consistent with PLC setting.



- 4) In "Communication" section, click on "Extra" setting, and update GUF coefficient of GAP in setting 2. The GUF coefficient is the frequency of the HMI checking the existence of controller within the communication network. If coefficient is larger, the frequency of update will be low, in another word, it takes longer waiting time for other devices to join the network. The default setting of GUF is 5, maximum value is 31 and minimum value is 1. If multiple HMI connections are required, it is recommended to lower GUF coefficient in order to shorten the waiting time of newly joined HMI and to prevent the error of "network can not be joined".



- 5) PLC needs to enable DB memory (DBm.DBWn · DBm.DBDn · DBm.DBXn.b) before DB data can be read.
- 6) The valid digit of value for Timer is only up to 3 digits. If a value input is more than 3 digits, the Timer will regards the highest 3 (decimal) and replace the rest by 0. For example, a value 12345 will be written as 12300 in PLC.
- 7) The valid digit of value for Counter is to 3 digits. If a value input is more than 3 digits, the Counter will regards the first 3 digits and leave out the rest. For example, a value 12345 will be written as 123 in PLC.
- 8) Except register Tn and Cn · data type of register is Byte and its order is opposite to usual controller , for example :
 - 1 · IW3 is a word which combined from IB3 and IB4 · High Byte of IW3 is IB3 ; Low Byte of IW3 is IB4.

- 2、 ID3 is Double Word which combined from IB3, IB4, IB5 and IB6, and its order from highest to lowest is IB3, IB4, IB5 and IB6.

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:

- 1、 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 .
- 2、 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.
- 3、 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 和 IB4.