

# Siemens S7-300

Supported Series: Siemens S7-300 series PLC with PC Adapter Website: <u>https://www.siemens.com/global/en.html</u>

## HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	SIEMENS S7-30	0	
PLC I/F	RS232		
Baud rate	19200	9600,19200	
Data bits	8		
Parity	Odd		
Stop bits	1		
PLC sta. no.	2		Must be same as the PLC setting.

### **Device Address:**

Bit/Word	Device type	Format	Range	Memo
В	I	DDDDo	0 ~ 40957	Input (I)
В	Q	DDDDo	0 ~ 40957	Output (O)
В	М	DDDDo	0 ~ 40957	Bit Memory
В	DBnBit	FFFFFDDDDo	0 ~ 6553599997	Data Register Bit
В	DBxBit	FFFFFDDDDDo	0 ~ 10700655327	
В	DB1Bit ~ DB99Bit	DDDDDo	0 ~ 655327	
W	IW	DDDD	0 ~ 4095	Input (I)
W	QW	DDDD	0 ~ 4095	Output (O)
W	MW	DDDD	0 ~ 4095	Bit Memory
DW	MD	DDDD	0 ~ 4094	
Byte	MB	DDDD	0 ~ 4095	Bit Memory Byte
Byte	DBBn	FFFFFDDDD	0 ~ 655359999	Data Register Byte
Byte	DBBx	FFFFFDDDDD	0 ~ 1070065532	
W	DBx	FFFFFDDDDD	0 ~ 1070065532	
W	DBn	FFFFFDDDD	0 ~ 655359999	Data Register (must be even)
	DBDn	FEEEDDDD	0 ~ 655350000	Data Register Double Word
			0~000099999	(must be even)
DW	DBDx	FFFFFDDDDD	0 ~ 1070065532	
W	DBn_String	FFFFFDDDD	0 ~ 655359999	

	WEINTEK PLC Connection Guide								
Bit/Word	Device type	Format	Range	Memo					
W	DBx_String	FFFFFDDDDD	0 ~ 1070065532						
W	DBn_String1	FFFFDDDD	0 ~ 655359999						
W	DBx_String1	FFFFFDDDDD	0 ~ 1070065532						
	DDDn String			Data Register Double Word					
Dvv	DBDN_String	FFFFDDDD	0~000099999	(must be even)					
DW	DBDx_String	FFFFFDDDDD	0 ~ 1070065532						
W	DB1-DB99	DDDD	0 ~ 8192	Data Register					

\* Double word and floating point value must use DBDn device type.

## How to Import Tag:

SIEMENS STEP 7 program allows building files of user-defined tag (\*.dif file and \*.AWL file), and import these files in EasyBuilder8000/EasyBuilderPro -> System Parameter Settings. The following describes how to build and import these two types of files.

#### 1. Building \*.dif File

a · In "Symbols" create user-defined tag.

SIM/	SIMATIC Manager - [312 C:\Program Files\Siemens\Step7\s7proj\312]								
🗿 File	Edit In	sert PL(	: View	Options	Wind	ow	Help		
🗅 🚔	89	7 X	è C	L 📩 🛛	2 2	6			No Filter >
⊡ <b>2)</b> : ⊡ <b>1</b> I	812 ■ M3 = • <b>■</b> CF = • <b>■</b>	PU 312C   S7 Prog	<mark>ram(3)</mark> rces :ks	🖻 Sou	rces			Blocks	Symbols
	Symbol Editor - [S7 Program(3) (Symbols) 312\M3\CPU 312C]								
			<u></u> ж	<u>ا ه</u> ه	5	ρı.	All Sy	mbols	<u> </u>
	1	Status	Symbo			Ad	<u>dress</u>	Data type	Comment
	2		IO.1			Ī	0.1	BOOL	
	3		I0.2			Ī	0.2	BOOL	
	4		IO.3			I	0.3	BOOL	
	5		IO.4			Ι	0.4	BOOL	
	6		IO.5			Ι	0.5	BOOL	
	7		I0.6			Ι	0.6	BOOL	
	8		I0.7			Ι	0.7	BOOL	

b Click **Export** to export the edited file and click **Save**.

🗟 Symbol Editor - [S7 Program(3) (Symbols) 312\M3\Cl	PU 312C]	
Symbol Table Edit Insert View Options Window Help		Export
Cé Open Close	Ctrl+O Ctrl+F4	Save in: 🞯 Desktop 💽 🔶 💼 📸 📰 -
Save	Ctrl+S	My Documents     Computer     My Computer     My Computer     Normal Sector (2)
Import		Grey 706     Grey 707     Grey 707     Grey 707     Grey 707     Grey 707
Print Print Preview	Ctrl+P	EBproV500
Page Setup		File name: PLC_Tag.dit I Save
2 CPU315_2DP_PN\SIMATIC 300\CPU 315-2 PN/DP\\Symbols     3 CPU315_2DP_PN\SIMATIC 300(3)\CPU 315-2 PN/DP\\Symbols		Save as type: Data Interchange Format (*.DIF)
4 CPU315_2DP_PN\SIMATIC 300(2)\CPU 315-2 PN/DP\\Symbols     Exit	Alt+F4	

#### 2. Building \*.AWF File

a > In **Blocks** create items as shown below:

⊟-∰) 312 ⊡-∭ M3	System data DB4	<ul> <li>OB1</li> <li>DB5</li> </ul>	🖬 DB1 🖬 DB6	<ul> <li>DB2</li> <li>DB7</li> </ul>	🚍 DB3 🚍 DB8
Sources	DB10 DB20 DB42 DB51	DB11 DB30 DB43 DB52	DB14 DB32 DB44 DB53	DB16 DB40 DB45 DB55	DB13 DB41 DB50 DB50
	<ul> <li>DB64</li> <li>DB98</li> <li>DB111</li> </ul>	<ul> <li>DB70</li> <li>DB99</li> <li>DB120</li> </ul>	🕞 DB80 😭 DB100	🕞 DB85 😭 DB101	🖨 DB90 😭 DB110

b • Open LAD/STL, FBD – Programming S7 Blocks, click File -> Generate Source.

🛅 STEP 7	•	🛅 NCM 57 🛛 🕨 🕨	IN LAD/STL/ERD : Program blocks
m STEP 7-MicroWIN V4.0.6.35	•	Configure SIMATIC Workspace	File View Ontions Help
🛅 TD Keypad Designer V1.0.6.35	•	57 Converting S5 Files	New Ctrl+N
im WinCC flexible 2008	•	🔣 LAD, STL, FBD - Programming S7 Blocks	Open Ctrl+O
🎝 SIMATIC Manager		Memory Card Parameter Assignment	Generate Source Ctrl+T
im S7-1200 Documentation	•	🞇 NetPro - Configuring Networks	1.312/M3/CPLL312C11982-Off
🛅 Fatek PLC		🔀 PID Control Parameter Assignment	2 312\M3\CPU 312C\\block
m BrowserPlus			3 312\M3\CPU 312C\\test
🧰 ENI Utility		Setting the PG-PC Interface	4 312\M3\CPU 312C\\DB11-Off
in WinPcap		III TI 405-57 Converting TI Files	Exit Alt+F4
🦳 Wireshark		TI 505-57 Converting TI Files	

### c Select **Sources** as storage path, specify the file name then click **OK**.

New				
Entry point: Project	View: Component view	v 🔽	◯ Online . ☉ Offli	ine
Name: 312	Storage path: C:\Program Files	Siemens\Step7\s7prc	Browse	
→ → 312     → → M3     → → CPU 312C     → → CPU 312C     → → S7 Program(3)     → → Sources     → → Blocks				
	Object name:	Object_Tag		
	Object type:	STL Source		
ОК			Cancel	Help

d > Select the objects to be exported then click **OK**.

Generate source Object_Tag	
Note: Automatic generation of single sources Menu 'Options' > 'Customize' in the 'Sou	per block: urces' tab
Path:       312\M3\CPU 312C\S7 Program(3)\Source         Blocks Not Selected:         DB1         DB3         DB4         DB5         DB7         DB8         DB10         DB16         DB19         C+         DB32         DB40	es Blocks Selected: DB2 DB6 DB11 DB20
Name/Family: Include reference blocks Sort according to program structure Source contains checksum of the blocks	Addresses Absolute Symbolic
ОК	Cancel Help



e • Under **Sources** there will be names of the saved files, select **Export Source** to build **\*.AWL** file.



The generated \*.dif and \*.AWL files can be imported in EasyBuilder8000/EasyBuilderPro **System Parameter Settings**, by clicking **Import Tag**.

2	ystem Param	eter Settings				×				
	Font		Extended	l Memory	Printer/Backup S	erver				
	Device	Model		General Sy	rstem Setting	Security				
	Device list :						_			
	No.	Name	Location	Device type	Interface	I/F Protoc	Imp	ort Address	Tag	×
	Local HMI	Local HMI	Local	MT6070iH/MT8070.	Disable	N/A				
	Local PLC 1	SIEMENS S7-300	Local	SIEMENS S7-300	COM 1 (19200,0,8,1	) R\$232			✓ Import DIF file	
								File parts		
								riie name	C:(Documents and Sectings(ro(泉頃(1)PLC_1ag.dir     BPOWSe	
									Import AWL file	
								File name	e: C:\Documents and Settings\rd桌面\1\Object_Tag.A Browse	
									OK	
						2				
Π						<u> </u>				
	New	Delete		Settings In	nport Tag					

Tag information successfully imported.





## Wiring Diagram:

### **Diagram 1**

#### RS-232 (Siemens S7-300 PC Adapter)

The serial port pin assignments may vary between HMI models, please click the following link for more information.

НМІ		PLC
<u>Link</u>		RS232 9P 9 D-Sub Male
Rx	<>	3 TX
Тх	<>	2 RX
GND	<>	5 GND
		7 RTS
		8 CTS



### Diagram 2

**RS-232** (Systeme Helmholz SSW7-TS)

The serial port pin assignments may vary between HMI models, please click the following link for more information.

НМІ		PLC
Link		RS232 9P 9 D-Sub Male
Rx	◆	3 TX
Tx	<>	2 RX
GND	<>	5 GND
	·	7 RTS
		8 CTS
		4 DTS
		6 DSR