SIEMENS AG.

SIMETIC S7 Series

PROFIBUS DP Slave(PACKET)

Compatible version	OS	Over 4.0
	XDesignerPlus	Over 4.0.0.0

CONTENTS

Thank you for using M2I's "Touch Operation Panel(M2I TOP) Series". Please read out this manual and make sure to learn connection method and process of TOP – External device"

1. System configuration

■ Please confirm informations below for PROFIBUS communication.

(1) PROFIBUS communication can be operated through "ABCC-DPV1" PROFIBUS DP Module which is sold separately.
Please use D-Sub 9 pin which is integrated in the module after installing "ABCC-DPV1" PROFIBUS DP Communication Special Module in the XTOP Fieldbus slot.

(2) XTOP is possible to connect to PROFIBUS NETWORK as "PROFIBUS DP Slave".

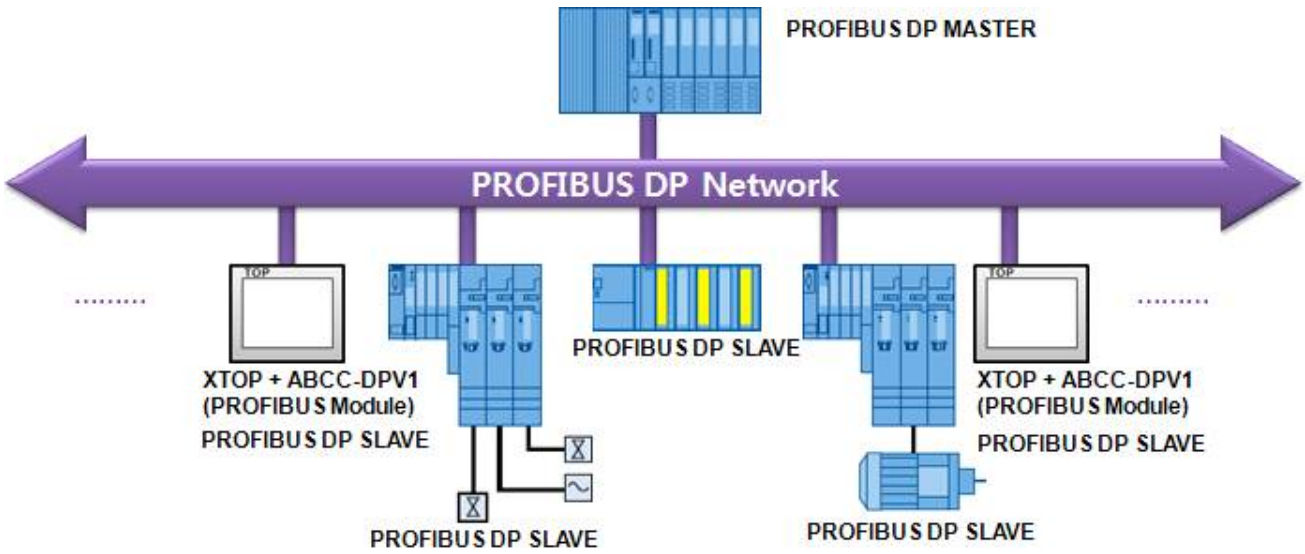
・Please download files from the homepage for (SIMETIC S7 Series) settings in the PROFIBUS DP Master side.

For DP Master side settings using the files that are downloaded, please check "page 3 System Settings Example" in this manual.

■ The system configuration of "XTOP-PROFIBUS DP Slave Device" and "SIEMENS AG. - PROFIBUS DP Master Device" is as below.

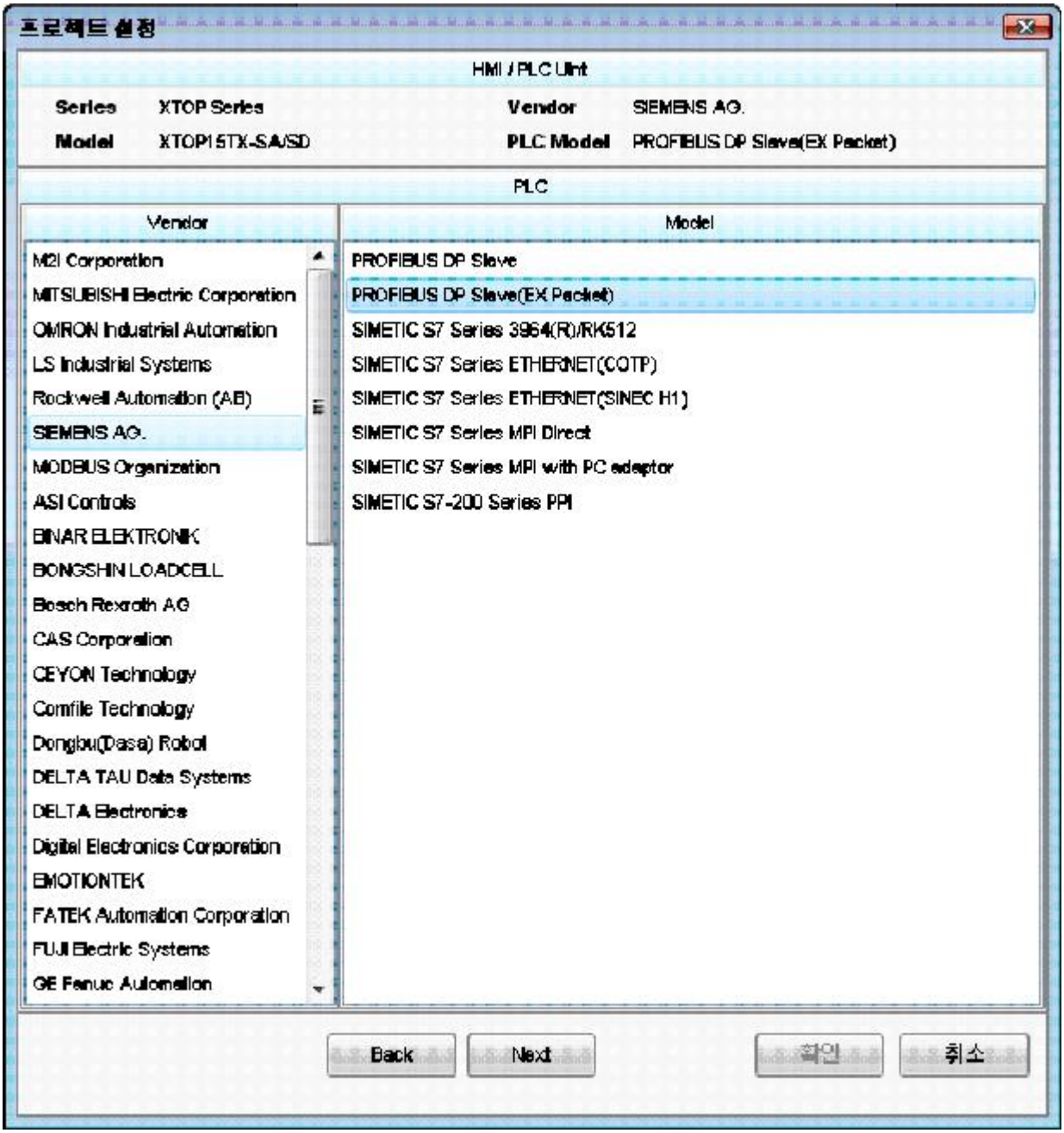
Series	CPU	Link I/F	Method	System settings	Cable
SIMETIC S7	CPU 313C-2 DP CPU 314C-2 DP CPU 315-2 DP CPU 315-2 PN/DP CPU 315F-2 DP CPU 315F-2 PN/DP CPU 316-2 DP CPU 317-2 PN/DP CPU 317F-2 PN/DP CPU 319-3 PN/DP	DP port on CPU unit	PROFIBUS	3.1 설정 예제 13.1 Setting Example 1 (Page 4)	5.1 Cable diagram 1 (Page 10)
		CP342-5 CP342-5 FO CP343-5	PROFIBUS	3.1 설정 예제 13.1 Setting Example 1 (Page 4)	5.1 Cable diagram 1 (Page 10)
	CPU 412-2 DP CPU 413-2 DP CPU 414-2 DP CPU 414-3 DP CPU 416-2 DP CPU 416-3 DP	DP port on CPU unit	PROFIBUS	3.1 설정 예제 13.1 Setting Example 1 (Page 4)	5.1 Cable diagram 1 (Page 10)
		CP443-5 Basic CP443-5 Extended	PROFIBUS	3.1 설정 예제 13.1 Setting Example 1 (Page 4)	5.1 Cable diagram 1 (Page 10)

■ **Possible Connecting Configuration**



2. Selecting TOP model and external devices

Select the external devices to connect to TOP.



Setting details		Contents
TOP	Series	Select the name of a TOP series that is to be connected to PLC. Before downloading the settings, install the OS version specified in the table below according to TOP series. Series: XTOP — Version name: V4.0
	Name	Select the model name of TOP product.
External device	Manufacturer	Select the manufacturer of external devices to be connected to TOP. Select "SIEMENS AG".
	PLC	Select the model series of external devices to be connected to TOP. Please select "PROFIBUS DP Slave(PACKET)". Please check, in the "1. System configuration", if the relevant external device is available to set a system configuration.

3. Example of system settings

For the communication interface setting between TOP and PROFIBUS DP Slave Device, we suggest as below.

3.1 Example of settings 1

The system is set as below.

Details	"PROFIBUS DP Master Device"	TOP	Remark
Operating Mode	DP Master	DP Slave	Mandatory Setting
Node Address	2	10	–
Transmission Rate	1.5 Mbps	1.5 Mbps	–
Profile	DP	DP	–

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.

■ External device settings

Set options of communication driver for "PROFIBUS DP Slave Device"

-TOP Node Number : Input PROFIBUS DP Slave Node Address which is given to TOP.

Continue on the next page.

(2) External device settings

Setup as below using SIEMTIC S7 Ladder Software STEP 7. Please reboot the external device after finish downloading configuration data.

Please refer to the User's Manual of external devices for more detailed settings.

Please download "PROFIBUS.ZIP" file from our homepage.

■ Creating a Project

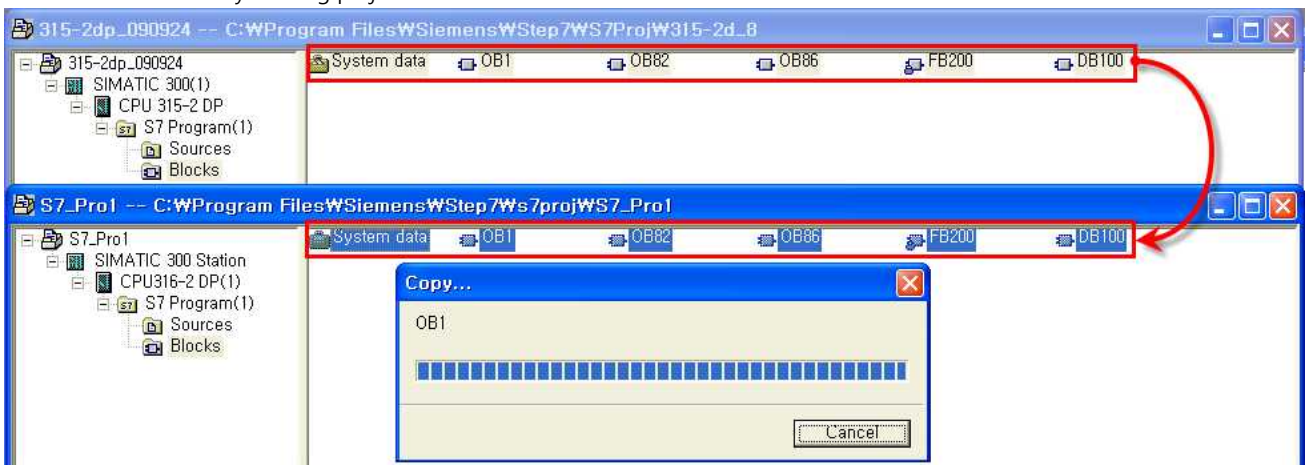
1. Create a new project in [New Project] at upper bar of main menu of [SIMETIC Manager].

2. Select menu [Insert] > [Station] > [1 SIMETIC 400 Station] or [2 SIMETIC 300 Station]. → Add CPU

■ PLC Program/Software Configuration for transmitting PACKETs : Retrieve "315-2DP.zip" file and copy Block

3. [SIMETIC Manager] Main Menu Tool bar [File] - Select [Retrieve] to open "315-2DP.zip" file.

Overwrite by copy(Keyboard Shortcut :Ctrl + C) and paste (Keyboard Shortcut:Ctrl + V) 6 Blocks of "315-2dp_090924" projects that are retrieved to currently working project.

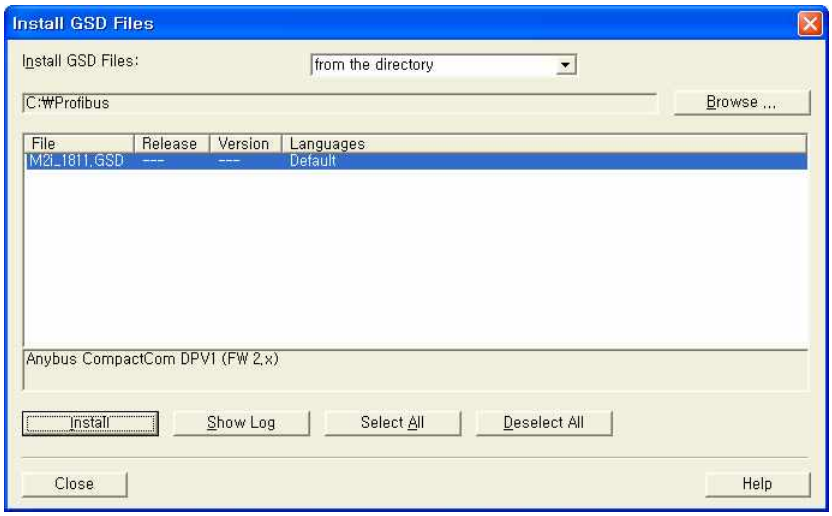


<Fig. 1> System/Group/Function/Data Block Copy

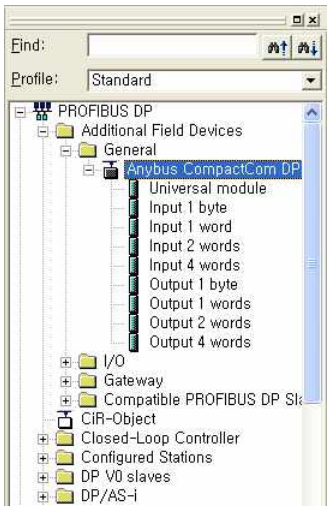
■ GSD File Install

4. Double click added "[SIMETIC 400(1)]" or [SIMETIC 300(1)] CPU > Relevant CPU [Hardware] (New [HW Config] window appears.

5. Select Tool bar [Options] - [Install GSD File...] of [HW Config] window menu. (A New [Install GSD Files] window will be appeared.) Click [Browse...] from [Install GSD Files] window, select the path of "M2I_1811.GSD", click [Install] button to start installing. 이 후의 Click [YES] button when message window pops up to go to next progress, and click [OK] when "Installation was completed successfully." message window pops up, click [OK] button to finish installing.



<Fig. GSD File Install



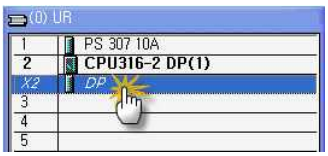
<Fig. 3> Adding complete to H/W Catalog Tree

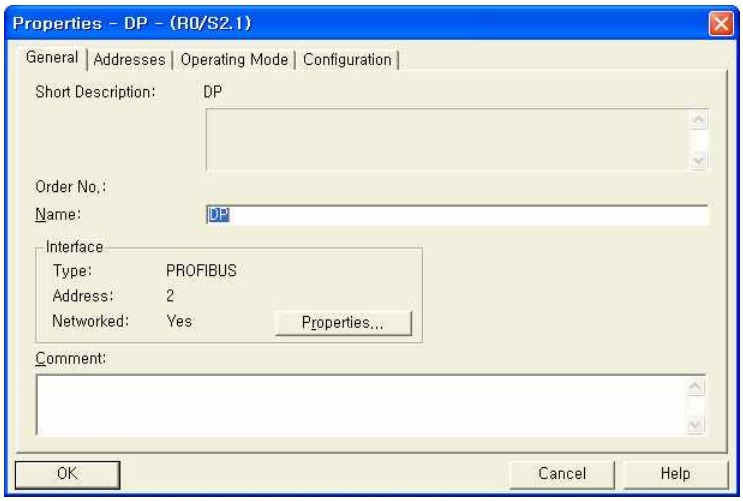
Continue on the next page.

■ PROFIBUS DP Master activation : SIMETIC S7 Series

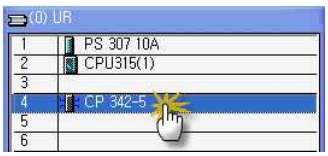
6. Register modules that are desired to use on current Rack which are installed in the Slot location such as "Power Unit" or etc. to [HW Config] window by Dragging & Dropping.

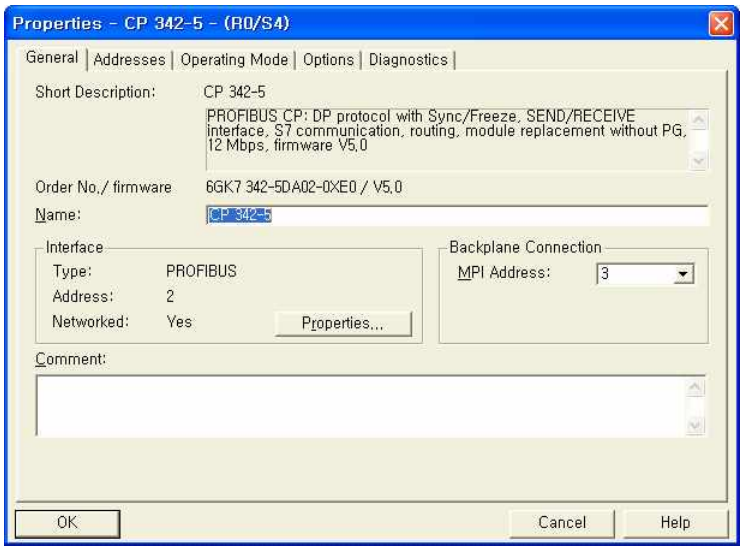
7. Double click slot where the PROFIBIS Port is registered. ("Properties" register/setting window will appear.)





<Fig. 4> DP port on CPU unit





<Fig. 5> PROFIBUS Module

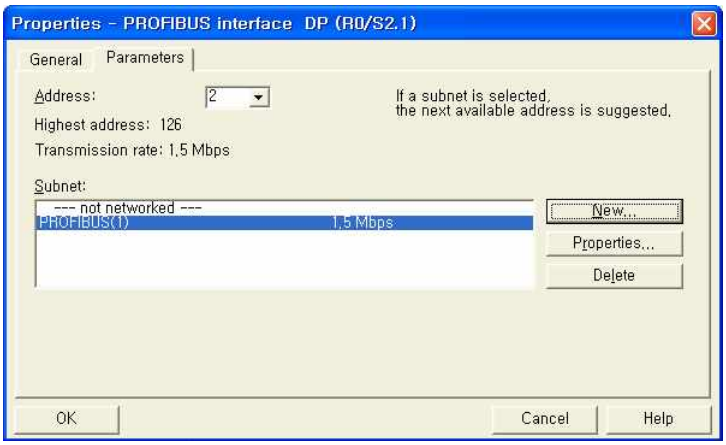
8. ON "Properties" window [General] Tap [Interface] Box, click [Properties...] Button ("Properties - PROFIBUS interface" window will appear.)

9. Set as below on [Parameter] Tap of "Properties - PROFIBUS interface" window.

10. Click [New...] button of "Subnet" Box.

("Properties-PROFIBUS" window will appear.)

Click [OK] button when PROFIBUS Subnet information registration is complete to save the setting information, move to <Fig. 4> or <Fig. 5>.

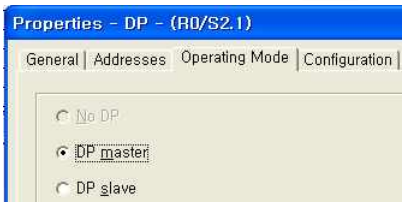


Contents	setting	Descriptions
Address	2	PROFIBUS MASTER Node address

Contents	setting	Descriptions
Transmission Rate	1.5Mbps	Possible to change
Profile	DP	Fixed

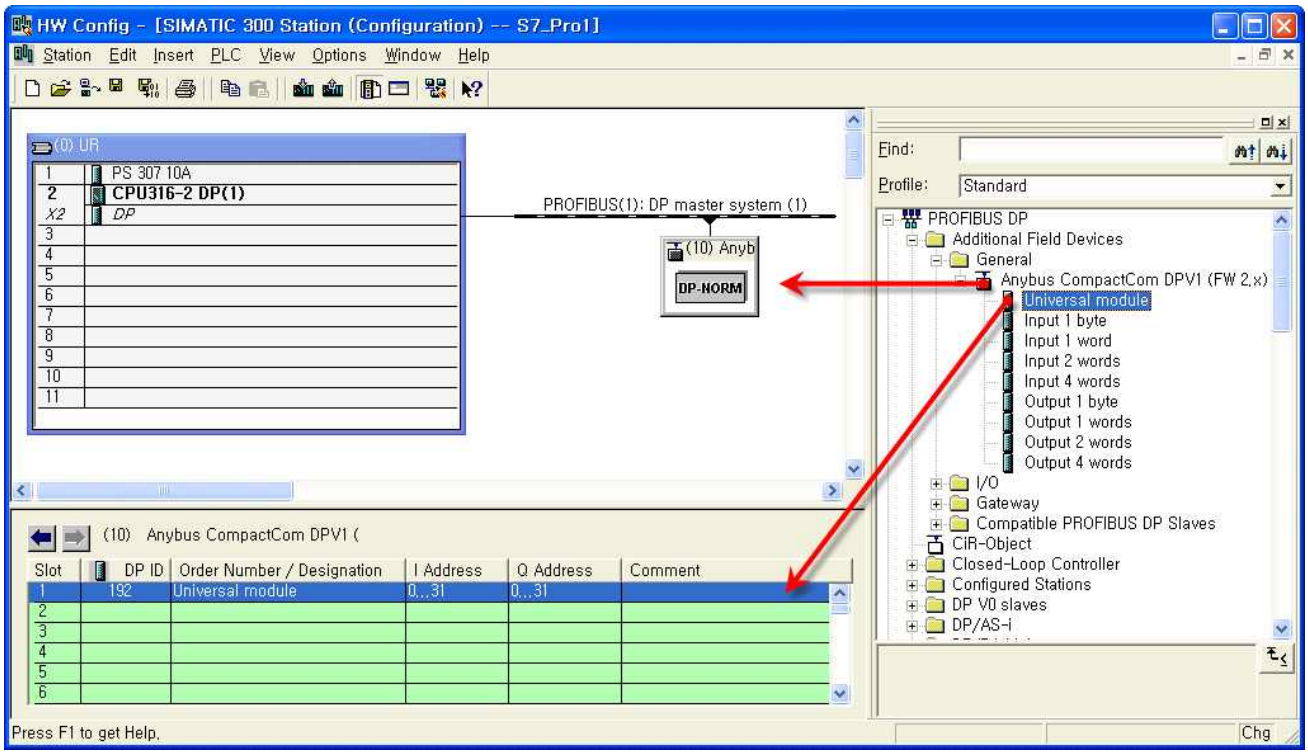
11. <Fig. 4> or <Fig. 5> "Properties" window - Set **"DP Master"** from [Operating Mode] Tap.

12. Save the setting information and complete activation process of PROFIBUS DP Master by clicking [OK] button.



<Fig.7> Properties – Operating Mode

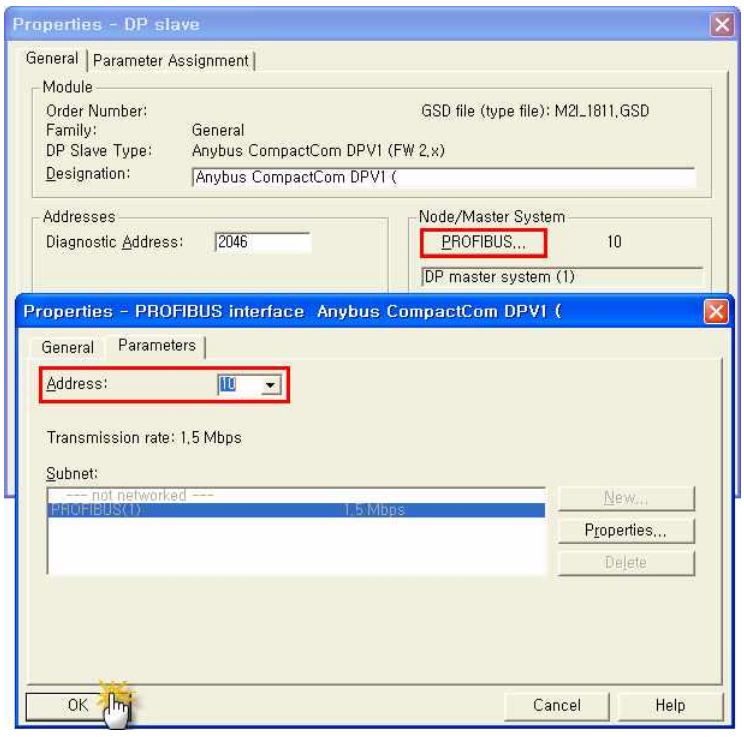
■ PROFIBUS DP Slave Activation : XTOP Series



<Fig. 8> On PROFIBUS Network, TOP(DP Slave) Information Registration Table

13. From [HW Config] window, register "Anybus CompactCom DPV1(FW 2.x)" that is previously saved to <Fig. 3> H/W Catalogue Tree "PROFIBUS DP - Additional Field Devices - General to "PROFIBUS:DP master system" network image by Dragging & Dropping.

14. Double click the registered "Anybus CompactCom DPV1(FW 2.x)" image.
("Properties - Slave" window will appear.)
: Set PROFIBUS Slave Node Address on related window. When input is complete, click [OK] button to save the setting.

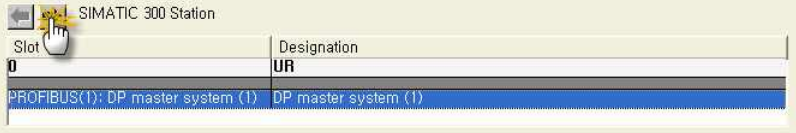


<Fig. 9> PROFIBUS Slave Node Address Setting

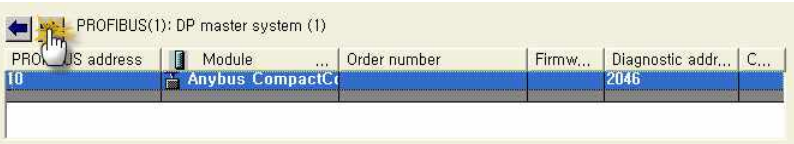
Continue on the next page.

15. Register the Universal module information on already saved "Anybus CompactCom DPV1(FW 2.x)" Slave Node.

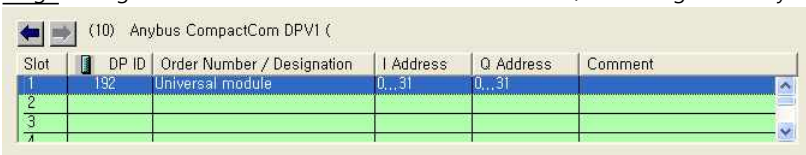
❶



❷

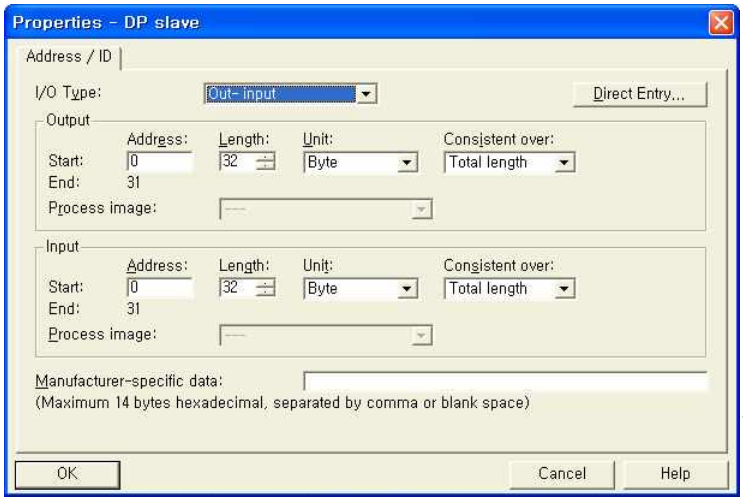


❸ <Fig. 3> Register the "Universal module" information on H/W Catalogue Tree by Drag & Drop.



<Fig. 10> Universal module Registration Process

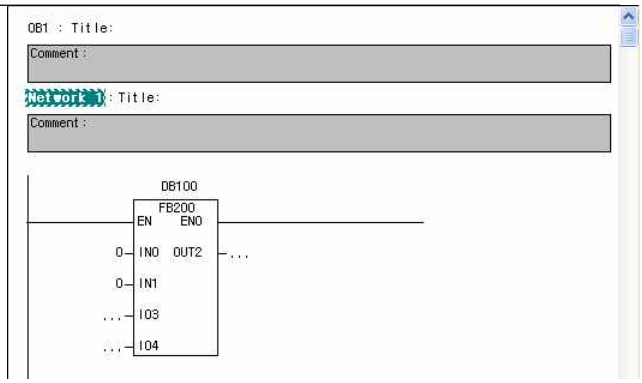
16. Set as below by double clicking slot where "Universal module" is registered.



<Fig. 11> Properties - Slave I/O Type Setting

Contents		Settings	Descriptions
I/O Type		Out-input	Fixed
INPUT	Address*주1)	0	[OB1] "FB200"의 "IN0" input detail what registered on <Fig.1>
	Length	32	Fixed
	Unit	Byte	Fixed
	Consistent over	Total length	Fixed
OUTPUT	Address*주1)	0	[OB1] "FB200"의 "IN1" input detail what registered on <Fig.1>
	Length	32	Fixed
	Unit	Byte	Fixed
	Consistent over	Total length	Fixed

* Caution1) If change the Input/Output Address to other value than "0", Set the [OB1]'s "IN0/IN1" exactly same.



17. Compile by selecting [Station] > [Save and Compile], and download setup details into PLC.

4. Communication settings details

Communication settings are available at XDesignerPlus or TOP main menu. Communication settings must be identical with the external devices.

4.1 XDesignerPlus settings details

Select [Project > Project attributes] to show the below window.

■ External device settings

Set options of communication driver for "PROFIBUS DP Slave Device"

■ External device settings

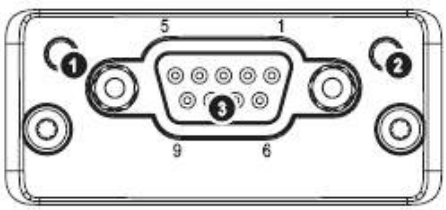
Details	Contents
TOP Note Number	-TOP Node Number : Input PROFIBUS DP Slave Node Address which is given to TOP.

4.2 ABCC-DPV1 (PROFIBUS Option Module) by M2I

You can use it by installing "ABCC-CCL" module in the Field Bus Option Slot of TOP main device. (Basic Serial Port COM1/2 not usable)

■ ABCC-DPV1(PROFIBUS Option Module) Specification

No.	Contents	Comment	
❶	Operating Mode	Off	Not Connected/No Power
		Green	Connected (Data is transmitting)
		Green Light Blinking	Connected (Normal)
		Red Blinking	Error Status
❷	Situation	Off	No Power/No reset
		Green	Reset
		Green Light Blinking	Reset, In Test
		Red	Error Status
❸	PROFIBUS Connecter	D-SUB 9 PIN (Female)	

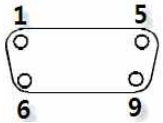
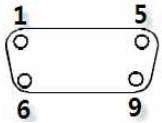


5. Cable diagram

This Chapter is to introduce the Cable diagram for regular communication between TOP and relative devices. (The Cable diagram which are going to be introduced in this chapter might be different than what "SIEMENS AG." recommends.)

5.1 Cable diagram 1

■ XTOP + **ABCC-DPV1**(PROFIBUS Option Module)

ABCC-DPV1(PROFIBUS Option Module)			Cable Connection	**"PROFIBUS DP Master Device"**		
pin arangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arangement * caution 1)**
	–	1		1	–	
	–	2		2	–	
	RxD/TxD+	3		3	+RxD/TxD	
	–	4		4	–	
	GND	5		5	GND	
	–	6		6	–	
	–	7		7	–	
	RxD/TxD–	8		8	–RxD/TxD	
	–	9		9	–	

Front View of D-SUB 9 Pin male (Male, convex)

Front View of D-SUB 9 Pin male (Male, convex)

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

6. Support address

Devices that are usable with TOP is as below.

There might be difference in the range of device (address) by type / series of CPU module TOP series supports the maximum address range that external device series use Please refer each CPU module user manual carefully for devices that you desired to use to prevent not getting out of range.

	Bit address		Word address		32 bits	Remark
Input Relay * caution1)	I00000.0 – I00127.7	E00000.0 – E00127.7	IW00000 – IW00126	EW00000 – EW00126	H/L *Caution3)Caution4)	—
Output Relay * caution2)	Q00000.0 – Q00127.7	A00000.0 – A00127.7	QW00000 – QW00126	AW00000 – AW00126		—
Data Block	DB00001 : DBX00000 – DB65535 : DBX65533.7		DB00001 : DBW00000 – DB65535 : DBW65532			—
Internal Memory	M00000.0 – M00511.7		MW00000 – MW00510			—

*Caution1) Input Device (I,IW) might not be able to input read on the address of IW0 ~ IW2 because depends on the type of CPU, it becomes subordinate in the integrated I/O. Please refer to the PLC Manual.

*Caution2) Output Device (Q, QW, QD) can write value only in the Run Mode. Output value will be reset if it's STOP Mode.

*Caution 4) Regarding on Word device, 32 but Data will be saved in the order of from High / Low, 16 bit each.

(Example) VW00000 (32bit data, 0x12345678) ➔ VW00000(16bit, 0x1234) VW00002(16bit, 0x5678)

*Caution4) Checks "Word Swap" function when 32BIT address is being used.