SIEMENS AG.

SIMETIC S7 Series

PROFIBUS DP Slave(PACKET)

Compati OS ble version

XDesignerPlus Over 4.0.0.0

Over 4.0

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 Page 2

It explains device for connection, setup of, cable and structural system.

Please choose proper system referring to this point.

2. Selecting TOP model and

external devices

Select TOP model and external device..

3. Example of system settings Page 4

It explains setup example for communication connection between the device and external terminal.

Select example according to the system you choose in "1. System structure"

4. Communication settings details Page 9

It explains the way of configuring TOP communication.

If external setup is changed, make sure to have same setup of TOP with external device by referring to this chapter.

5. Cable diagram

Page 10

Explains cable specifications required for access.

Select proper cable specifications according to the system you chose in "1. System configuration".

6. Support address

Page 11

Check available addresses to communicate with external devices referring to this chapter.

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Page 3





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
	CPU 313C-2 DP CPU 314C-2 DP CPU 315-2 DP CPU 315-2 PN/DP	DP port on CPU unit	PROFIBUS	<u>3.1 설정 예제</u> <u>13.1 Setting</u> <u>Example 1</u> <u>(Page 4)</u>	<u>5.1 Cable diagram 1</u> (Page 10)
SIMETIC S7	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	CP342-5 CP342-5 FO CP343-5	PROFIBUS	<u>3.1 설정 예제</u> <u>13.1 Setting</u> <u>Example 1</u> <u>(Page 4)</u>	5.1 Cable diagram 1 (Page 10)
	CPU 412-2 DP CPU 413-2 DP CPU 414-2 DP	DP port on CPU unit	PROFIBUS	<u>3.1 설정 예제</u> <u>13.1 Setting</u> <u>Example 1</u> <u>(Page 4)</u>	<u>5.1 Cable diagram 1</u> <u>(Page 10)</u>
	CPU 414-3 DP CPU 416-2 DP CPU 416-3 DP	CP443-5 Basic CP443-5 Extended	PROFIBUS	<u>3.1 설정 예제</u> <u>13.1 Setting</u> <u>Example 1</u> <u>(Page 4)</u>	<u>5.1 Cable diagram 1</u> <u>(Page 10)</u>

Possible Connecting Configuration





2. Selecting TOP model and external devices

Select the external devices to connect to TOP.

	HMI/PLCUINt
Series XTOP Series Model XTOP15TX-SA/SE	Vendor SEMENS AG. PLC Model PROFIBUS DP Slave(EX Packet)
	PLC
Vendor	Micdel
M2I Corporation	PROFIBUS DP Slove
MTSUBISH Bectric Corporation	PROFIBUS DP Slave(EX Packet)
OMRON Industrial Automation	SIMETIC S7 Series 3964(R)/RK512
LS Industrial Systems	SIMETIC S7 Series ETHERNET(COTP)
Rockwell Automation (AB)	SIMETIC S7 Series ETHERNET(SINEC H1)
SEMENS AO.	SIMETIC S7 Series MPI Direct
MODBUS Organization	SIMETIC S7 Series MPI with PC edeptor
ASI Controls	SIMETIC S7-200 Series PPI
BNAR ELEKTRONK	
BONGSHIN LOADCELL	
Bosch Rexroth AG	1
CAS Corporation	
CEYON Technology	
Comfile Technology	
Dongbu(Dasa) Robol	
DELTA TAU Data Systems	-
DELTA Electronics	1
Digital Electronics Corporation	1
Emotiontek	1
FATEK Automation Corporation	
FUJI Electric Systems	-
GE Fanue Automation	-

Setting	details	Contents			
ТОР	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	Version name		
		ХТОР	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 Slav	e(PACKET)".		
		Please check, in the "1. System of	configuration", if the relevant ext	ernal 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"	ТОР	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.



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.





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.

Install GSD Files			
I <u>n</u> stall GSD Files:	from the directory	<u> </u>	
[C:₩Profibus			Browse
File Release Vers	ion Languages		
MELTON, 000	Delabit		
Anybus CompactCom DPV1 (FW	2,x)		i
1			
Install Show	Log Select <u>A</u> ll	Deselect All	
Close			Help



<Fig. GSD File Install

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



■ 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.)

(0) HP	
1 I PS 307 10A	Properties - DP - (R0/S2.1)
2 CPU316-2 DP(1)	General Addresses Operating Mode Configuration
X2 DP	Short Description: DP
<u>4</u>	
5	
	Outpublic (
	Order No.:
	Interface
	Type: PROFIBUS
	Address; 2 Naturalist Van Burnits
	Networkeu. Yes <u>Properties</u>
	<u>C</u> omment:
	OK Cancel Help
	<fig. 4=""> DP port on CPU unit</fig.>
(0) UR	Properties - CP 342-5 - (R0/S4)
1 PS 307 10A	General Addresses Operating Mode Options Diagnostics
2 (M CP0315(1) 3	
4 CP 342-5	Short Description. CP 342-5 DBOEIBUS CP: DB protocol with Super/Ereaze, SEND/RECEIVE
	interface, S7 communication, routing, module replacement without PG,
	iz mops, innware vs.o
	Order No, / firmware 6GK7 342-5DA02-0XE0 / V5,0
	Name: CP 342-5
	Interface Backplane Connection
	Type: PROFIBUS MPI Address: 3 🕶
	Address: 2
	Networked: Yes Properties
	Comment:

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 N	MASTER Node address	
Contents		setting	Descriptions	
Transmission Rate		1.5Mbps	Possible to change	
Profile		DP	Fixed	

<Fig. 5> PROFIBUS Module

OK

Address: 2 T If a subnet is selected, Highest address: 126 Transmission rate: 1,5 Mbps Subnet: PHOFIEUS(1) 1,5 Mbps: Properties Properties	General Parameters	(80/52.1)	
Subnet: not networked PHOHBUS(1) 1,5 Mbps. Properties	Address: 2 ▼ Highest address: 126 Transmission rate: 1,5 Mbps	If a subnet is selected, the next available address is sugge	sted,
PROFIBUS(1) 1,5 Mbps: Properties	Subnet:		
1.0001000	HIGHEUS(I)	.5 Mbps Properties	
Delete		Delete	
	1		
	<u>ок</u>	Cancel	Holp

Cancel

Help



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



<Fig.7> Properties - Operating Mode



<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.

Urder Number;		GSD file (type file): M2L1811.GSD
Family:	General	
DP Slave Type: Designation:	Anybus CompactCom	
- *	hinybus compacteoni	
Addresses Disapoetic Address	2046	PROFIBILS 10
Diagnostic Eddres.	5. J2040	
		JDP master system (1)
operties - PRO	FIBUS interface Anyl	bus CompactCom DPV1 (
General Paramet	ters	
<u>A</u> ddress:	10 ·	
Transmission rate:	1,5 Mbps	
Subnet:		
not network	ad be	5Mbos
annoni bibler iz.		Properties
		Delete
1		
1		

<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.

0 PROFIBUS(1): DP m	UR aster system (1) DP master s	system (1)				
PROFIBUS PROUS address	S(1): DP master system (1) ☐ Module (☐ Anybus CompactCt	Order number	Firn	nw Diagnostic a 2046	ddr	
			1	1	10	
<u>Fig.</u> 3> Registe	er the "Universal mod	ule" inform	ation on ⊦	/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.

-	5		<u> </u>
operties - DP	slave		
ddress / ID			1
I/O T <u>v</u> pe:	Out- input]	Direct Entry
- Output Add	ir <u>e</u> ss: <u>L</u> ength: <u>U</u> nit:	Consistent over:	
Start: 0 End: 31	32 🛨 Byte	▼ Total length ▼	
P <u>r</u> ocess image		<u> </u>	
Input	in the state of the fact		
Start: 0	32 🛨 Byte	Total length	
End: 31 Process image			
Lincess mage	. 1		
Manufacturer-spe (Maximum 14 but	ecific data:	omma er blank onace)	
	ies nevauecimai, separateu by c	onnia or blank space/	<fig. 11=""> Properties - Slave I/O Type Setting</fig.>
ОК		Canci	el Help
Contents		Settings	Descriptions
I/O Type		Out-input	Fixed
INPUT	Address*주1)	0	[OB1] "FB200"의 "IN0" input detail what registered on <fig.1></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></fig.1>
	Length	32	Fixed
	Unit	Byte	Fixed
	Consistent over	Total length	Fixed

 \ast 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.

OB1 : Title:		
Comment:		3
Netvork 1):	Title:	
Comment:		12
4		20 20
	DB100	
ĉ		
	0-1N0 0UT2	
	0- IN1	
	103	



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.

드 TOP 열정 	Set options of cor	nmunication d	river for "PROFIBU	S DP Slave Device"	
⊡ PLC 설정			PLC Comm	into	
COM2 (0)	TOP Node	10	\$		
COM1 (0)					
Ethernet (0)					
FieldBus (1)					
PLC1 : PROFIBUS EX	(Pac				
USB Device (0)					
白 CF 카드 설정					
CFCard					

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)

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

ABCC-DPV1(PROFIBUS	Ontion	Module)	Specification
	option	would)	specification





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

ABCC-DPV1(PRO	FIBUS Option	Module)		"PRO	ofibus dp m	aster Device"
pin arangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arangement * caution 1)
	-	1		1	-	
	RxD/TxD+	3		3	+RxD/TxD	
6 9	_	4		4	_	6 9
Front View of D-SUB 9 Pin	GND	5		5	GND	D-SUB 9 Pin
male	-	6		6	-	male
(Male, convex)	_	7		7	-	(Male, convex)
	RxD/TxD-	8		8	-RxD/TxD	
	_	9		9	_	

XTOP + ABCC-DPV1(PROFIBUS Option Module)

*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 a	ddress	Word address		32 bits	Remark
Input Relay * caution1)	I00000.0 – I00127.7	E00000.0 – E00127.7	IW00000 – IW00126	EW00000 – EW00126		_
Output Relay * caution2)	Q00000.0 - Q00127.7	A00000.0 – A00127.7	QW00000 – QW00126	AW00000 – AW00126	H/L	
Data Block	DB00001 : DBX00000 – DB65535 : DBX65533.7		DB00001 : DBW00000 – DB65535 : DBW65532		¹ ^Caution3)Caution4)	_
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.

Data Size	16bit	32bit	Vord Swap