SIEMENS AG.

SIMETIC S7 3964(R)/RK512

Compatible version OS



XDesignerPlus Over 4.0.0.0

Over 4.0

CONTENTS

Thank you for using M2I's i°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 12

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 15

Page 3

Explains cable specifications required for access.

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

6. Support address

Page 17

Check available addresses to communicate with external devices referring to this chapter. 1 / 25

Compatible version



1. System configuration

The system configuration of TOP and "SIEMENS AG. - SIEMETIC S7 3964(R)/RK512" is as below.

Series	CPU	Link I/F	Method	System settings	Cable
SIMETIC S7-300	CPU312 IFM CPU313 CPU314 CPU314 IFM CPU315 CPU315(F)-2 DP CPU315(F)-2 PN/DP CPU316	CP341	RS-232C	<u>3.1 설정 예제 13.1</u> <u>Setting Example 1</u> <u>(Page 4)</u>	<u>5.1 Cable Diagram 1</u> <u>(Page 15)</u>
S7-300	CPU316-2 DP CPU317-2 DP CPU317F-2 CPU318-2 CPU317-2 PN/DP CPU319-3 PN/DP CPU614 CPU388	CP341	RS-422 (4 wire)	<u>3.2 설정 예제 23.2</u> <u>Setting Example 1</u> (Page 8)	<u>5.2 Cable Diagram 2</u> (Page 16)
SIMETIC S7-400	CPU412-1 CPU412-2 DP CPU413-1 CPU413-2 DP CPU414-1 CPU414-2 DP CPU414-3 DP		RS-232C	<u>3.1 설정 예제 13.1</u> <u>Setting Example 1</u> (Page 4)	<u>5.1 Cable Diagram 1</u> <u>(Page 15)</u>
	CPU416-1 CPU416-2 DP CPU416-3 DP CPU417-4 CPU414-3PN/DP CPU416-3PN/DP CPU417 CPU486	CP441-2	RS-422 (4 wire)	<u>3.2 설정 예제 23.2</u> <u>Setting Example 1</u> (<u>Page 8)</u>	5.2 Cable Diagram 2 (Page 16)

Connection configuration

• 1:1 connection (TOP 1 vs. external device)





2. Selecting TOP model and external devices

Select the external devices to connect to TOP.

		HMI / PLC Uint		
Series XTOP Series		Vendor SIEMENS AG.		
Model XTOP15TX-SAA	SD	PLC Model SIMETIC S7 Series 3964(R)/RK512		
		PLC		
Vendor		Model		
M2I Corporation		PROFIBUS DP Slave		
MITSUBISHI Electric Corporation	1	PROFIBUS DP Slave(EX Packet)		
OMRON Industrial Automation		SIMETIC S7 Series 3964(R)/RK512		
LS Industrial Systems		SIMETIC S7 Series CPU ETHERNET(OP Communication)		
MODBUS Organization		SIMETIC S7 Series ETHERNET(FETCHAVRITE)		
SIEMENS AG.		SIMETIC S7 Series MPI Direct		
Rockwell Automation (AB)		SIMETIC S7 Series MPI with PC adaptor		
GE Fanuc Automation		SIMETIC S7-200 Series PPI		
PANASONIC Electric Works				
YASKAWA Electric Corporation	n			
YOKOGAWA Electric Corporat	io			
Schneider Electric Industries				
KDT Systems				
RS Automation(SAMSUNG)				
HITACHI IES				
FATEK Automation Corporation	į.			
DELTA Electronics				
KOYO Electronic Industries				
VIGOR Electric Corporation				
Comfile Technology				
Dongbu(DASAROBOT)				

Setting	details		Contents			
ТОР	Series	Select the name of a TOP serie	es that is to be connected to PLC.			
		Before downloading the settin	gs, install the OS version specified	in the table below according to		
		TOP series.				
		Series	Version name	_		
		XTOP / HTOP	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 exte	rnal devices to be connected to T	OP.		
		Please choose "SIEMETIC S7 39	964(R)/RK512".			
		Please check, in the "1. System	n configuration", if the relevant ext	ernal device is available to set a		



	system configuration.



3. Example of system settings

The setup of communication interface between TOP and SIEMTIC S7 is recommended as below.

3.1 Example of settings 1

The system is set as below.

Details		ТОР	Remark	
Serial level (port/cha	annel)	RS-232C (COM2)	RS-232C	User settings
Serial baud rate	[BPS]	768	00	User settings
Serial data bit	[Bit]	8	User settings	
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	EVE	N	User settings
Motion mode		RK5	12	User settings

((1) XDesignerPlus setup

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



- PLC Node No. : Input Node address of External device.



(2) External device settings

Setup as below using SIEMTIC S7 Ladder Software STEP 7. Please refer the PLC user manual for more detailed information if you need.



Setup PLC node address lower than "Highest Node Address".

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].

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

4. Open "[SIMATIC 400] > [RACK-400]" or "[SIMATIC 300] > [RACK-300]" at left tree window in [HW Config], select Base unit model, and register it using Drag & Drop to the right bottom.

5. Select [SIMATIC 400] > [PS-400] or [PS-300] and then appropriate power supply unit, and drag & drop it to the current Rack.

6. Select [SIMATIC 400] > [CPU-400] or [CPU-300] and then appropriate CPU unit and drag& drop it to the current Rack.

(If [Properties] - PROFIBUS interface DP] windows appears, press [Cancel] to finish).

7. Select [SIMATIC 400] > [CPU-400] or [CPU-300] and then appropriate CPU unit and drag& drop it to the current Rack.

🔩 HW	Config - [SIMATIC	300(1) (Configuration)) \$7_Pr	o9]						
💵 <u>S</u> ta	ition <u>E</u> dit Insert <u>P</u> L(C <u>V</u> iew <u>O</u> ptions <u>W</u> indow	/ <u>H</u> elp							- 🗗 X
	<mark>; 2~ 8</mark> 9:14	à 🖻 🛛 🏜 🍈 🗖 😫	<mark>∦ ∖</mark> ?							
(0)	UR						^			
1	~							<u>F</u> ind:		mt mi
2	CPU 315							Profile:	Standard	•
4	H CP 341-F							Ξ₩P	ROFIBUS DP	~
6								± 器 P	ROFINET IO	
0	<u> </u>						~	E 🛄 S	MATIC 300	
<							X		CP-300	
	■ (0) UR							Ē	AS-Interface	
	Madula	l Orden number	1 Elimetri	LADE	í.		Comment	t t		
3 1		Order Humber	FIMIW,		ha	Q	Cumment	Ē	Point-to-Point	
2	CPU 315	6ES7 315-1AF02-0AB0		2	10					~
$\frac{3}{4}$	HE CP 341-BS232C	6ES7 341-1AH01-0AE0	2	2	256	256		6ES7 341	-1AH01-0AE0	TA Es
5	Har CI SHI HOLSES	DECT STIT IN INCO ONES	- 8.	2	200,,	1230,11		connecti	on: RS232C (RK512, ASCII,	
E I			2	2		2 53	<u> </u>	3964(R),	loadable driver)	*
Press F	1 to get Help,									Chg

8. Double click registered CPU name. \rightarrow A new relevant CPU [Properties] window appears.

9. Select [Interface] > [Properties] at [General] tap in [Properties] to popup [Properties - MPI interface CPU xxx-xxx] window.

10. Setup MPI port station number and transmission rate as below at [Properties - MPI interface CPU xxx-xxx] window's [Parameter] tap, (Transmission speed change: Click [Properties] > [Properties] window [Network Settings] tap)

Properties - MPI interface CPU 315-2 DP (R0/S2)	Properties - MPI
General Parameters Address: 12 Highest address: 31 Transmission rate: 187.5 Kbps Subnet: New MPR(I) 187.5 Kbps Delete Delete	General Network Settings Highest MPI address: Iransmission rate: ISC Stops ISC Stops
OK Cancel Help	OK Cancel
Details	Contents
Staion number	2 (Default)
Transmission rate	187500bps (Default)

11. Click [OK] to save the setting details on the [Properties] window.

12. Double click serial communication unit that is registered before on [HW Config] window. (A new [Properties] window will be

appeared.)





13. This confirms the Input Start Address from [Inputs]>[Start] in [Properties] > [Addresses] Tap.

General Addresses Basic Parameters Process image: Start: 256 Process image: End: 271 Fr System Default Outputs Outputs Demological Process image: Process i
Inputs Start: 256 Process image: End: 271 Process image: System Default Outputs Outputs Default Defaul
Start: 256 Process image: End: 271 IF System Default Image:
End: 271
Outputs
Outputs
Diversion Diversion Diversion Diversion
Start: 1256 Process Image:
End: 271
🔽 System Default

14. Click [Parameter...] key in the down side of [Properties] window.

(A new [Assigning Paramet	er to Point-To-Point	Connections] window will b	be appeared.)
🚳 Assigning Parameters to Point-	To-Point Connections	- [CP 341-RS232C (R0/S4) -	🗖 🗖 🔀
<u>File Edit View Options Help</u>			
Protocol: RK512	<u>×</u>		
			<u> </u>
1-7777		1-111	
	Protocol		
			_
4			
Press F1 for help.			

15. Set the [Protocol] to [RK512] from [Assigning Parameter to Point-To-Point Connections] window.

16. Input as below on [RK512] Protocol detail settings after double clicking [Protocol] box in the middle of screen.

K 512 Receiving Data	
- Protocol I⊽ With Block Chec <u>k</u> I⊽ Use Default <u>V</u> alues	Protocol Parameters <u>C</u> haracter Delay Time: 220 ms <u>A</u> cknowledgement Delay Time: 2000 ms Setup Attempts: 6 Iransmission Attempts: 6
Speed Transmission 76800 💌 bps	Character Frame Data Bits: Stop Bits: 8 1 • Even Low
확인	취소 🗍 도움말

Details	Setting Information	Details	Setting Information
With Block Check	Check	Stop Bits	1
Use Default Values	Check	Parity	Even
Transmission Rate	76800 bps	Priority	Low

17. After saving settings by following [File] > [Save], execute [Assigning Parameter to Point-To-Point Connections] turn off the window.



18. Save hardware setting information by selecting [Station] > [Save and Compile].



19. [SIMATIC Manager] on window project tree, select [Name of the CPU that is registered in HW Config] and select [Blocks], double click [OB1]. (If [Properties] window pops up, click [ok].) (Run Ladder software [LAD/STL/FBD])

20. Set the parameter from Ladder software [LAD/STL/FBD]. Please set up after selecting one of examples below following by [Language for selected Blocks] > [STL] or [LAD].

[L	anguage for selected Blocks] > [STL]	[Language for selected Blocks] > [LAD]
CALL "P_F EN_R R LADDR DB_N0 DBB_N0 L_TYP L_N0 L_OFFSET L_CF_BIT NDR ERROR LEN STATUS	XCV_RK", 0B7 :=TRUE :=FALSE :=256 := := := := := := := := := :=	Image: DB7 Image: DB7
Description	-	
Details	Contents	
DB7	DB number that P_RCV_RK will apply for communication can be possible when 'EN_P' sets	to ON
	Communication can be possible when LIN_K sets	
	Input Reset	nod on soquence 12th
	Input Start Address number that has been confirm	nea on sequence 13th

DB_NO Input DB that will be used. Read and Write on communication where it has been given.

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



3.2 Example of Settings 2

The system is set as below.

Details		ТОР	SIEMTIC S7 Series	Remark
Serial level (port/channel)		RS-422 (4 wire, COM2) RS-422		User settings
Serial baud rate	[BPS]	76800		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	EVEN		User settings
Motion mode		RK512		User settings

(1) XDesignerPlus setup

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





(2) External device settings

Setup as below using SIEMTIC S7 Ladder Software STEP 7. Please refer the PLC user manual for more detailed information if you need.



Setup PLC node address lower than "Highest Node Address".

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].

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

4. Open "[SIMATIC 400] > [RACK-400]" or "[SIMATIC 300] > [RACK-300]" at left tree window in [HW Config], select Base unit model, and register it using Drag & Drop to the right bottom.

5. Select [SIMATIC 400] > [PS-400] or [PS-300] and then appropriate power supply unit, and drag & drop it to the current Rack.

6. Select [SIMATIC 400] > [CPU-400] or [CPU-300] and then appropriate CPU unit and drag& drop it to the current Rack.

(If [Properties] - PROFIBUS interface DP] windows appears, press [Cancel] to finish).

7. Select [SIMATIC 400] > [CPU-400] or [CPU-300] and then appropriate CPU unit and drag& drop it to the current Rack.

BN HW	/ Config - [SIMATIC	300(1) (Configuration)	\$7_Pr	o9)							-0	X
DU <u>S</u> ta	ation <u>E</u> dit Insert <u>P</u> LC	2 <u>V</u> iew <u>O</u> ptions <u>W</u> indow	/ <u>H</u> elp								- 8	×
	<mark>}}~ ■ ¶</mark> ¦ 6 ¶) 🖻 🛯 🏜 🍈 🗖 😤	<mark>≹ ∖</mark> ?									
(0)	UR							^				×
1	~							-	<u>F</u> ind:		mt m	14
2	CPU 315								<u>P</u> rofile:	Standard	1	•
4	CP 341-F								E # PF		. 8	^
6									± # PF	IOFINET IO		
0	× .							~	E 🖩 SI	MATIC 300		
<							2			CP-300		
	■ (0) UR								÷.	AS-Interface		
	Madula	Order pumber	Eirmw	Тмрг	ίr		Commont	1	±.	PROFIBUS		
1	Module ,,		1 1111 49	IVIE L.	50	Q	Comment	~	E	Point-to-Point		
2	K CPU 315	6ES7 315-1AF02-0AB0		2	Common of the second					⊞ 🛄 CP 340 ⊟ 🦳 CP 341	1	~
$\frac{3}{4}$	L CP 341-BS232C	6ES7 341-1AH01-0AE0	2	2	256	256	,	-	6ES7 341	-1AH01-0AE0	TA E	· <
5				1					connectio	n: RS232C (RK512, ASCII,		_
I G	1	4	R	I.	1	<u>n</u> 33		11	3964(H),	oadable driver)	2	
Press I	F1 to get Help,										Chg	1

8. Double click registered CPU name. \rightarrow A new relevant CPU [Properties] window appears.

9. Select [Interface] > [Properties] at [General] tap in [Properties] to popup [Properties - MPI interface CPU xxx-xxx] window.

10. Setup MPI port station number and transmission rate as below at [Properties - MPI interface CPU xxx-xxx] window's [Parameter] tap, (Transmission speed change: Click [Properties] > [Properties] window [Network Settings] tap)

Properties - MPI interface CPU 315-2 DP (R0/S2)	Properties - MPI
General Parameters Address: 2 If a subnet is selected, the next available address is proposed. Highest address: 31 Transmission rate: 187.5 Kbps Subnet:	General Network Settings Highest MPI address: Iransmission rate: IS Mops Is Mops B Mops B Mops I 2 Mops I 2 Mops I 2 Mops I 2 Mops
OK Cancel Help	OK
Details	Contents
Staion number	2 (Default)
Transmission rate	187500bps (Default)

11. Click [OK] to save the setting details on the [Properties] window.

12. Double click serial communication unit that is registered before on [HW Config] window. (A new [Properties] window will be

appeared.)





13. This confirms the Input Start Address from [Inputs]>[Start] in [Properties] > [Addresses] Tap.

Properties	- CP 341-RS232	2C - (RO/S4)		
General Ad	dresses Basic Pa	rameters		
Inputs				
Start:	256	Process image:		
End:	271			
IZ S⊻ste	m Default			
- Outputs -				
Start:	256	Process image:		
End:	271			
🔽 Syste	m Default			
<u>.</u>				
	Daramator		Cancal	Holp
OK	Parameter		Cancel	Help

14. Click [Parameter...] key in the down side of [Properties] window.

(A nev	w [Assigning	g Parameter to P	oint-To-Point (Connections] wir	ndow will be a	ppeared.)
📆 Assigni	ng Paramete	rs to Point-To-Poir	nt Connections	- [CP 341-RS232C	(R0/S4)	
<u>File</u> <u>E</u> dit	<u>V</u> iew <u>O</u> ptions	Help				
Protocol:	RK512	<u>_</u>				
						<u> </u>
				1-111	7	
)	
		Pr	otocol			
			<u> </u>			_
			2 X			
4		423 int				<u>`</u>
Press F1 for I	help,				NUN	1 //

15. Set the [Protocol] to [RK512] from [Assigning Parameter to Point-To-Point Connections] window.

16. Input as below on [RK512] Protocol detail settings after double clicking [Protocol] box in the middle of screen.

K 512 Receiving Data	
- Protocol	Protocol Parameters
✓ With Block Check	Character Delay Time: 220 ms
I Use Default <u>V</u> alues	Acknowledgement Delay Time: 2000 ms
	S <u>e</u> tup Attempts: 6 —
	Transmission Attempts: 6
Speed	Character Frame
Transmission	Data Bits: Stop Bits: Parity: Priority:
76800 💌 bps	8 🚽 1 🕂 Even 💌 Low 💌
	AL 1 500

Details	Setting Information	Details	Setting Information
With Block Check	Check	Stop Bits	1
Use Default Values	Check	Parity	Even
Transmission Rate	76800 bps	Priority	Low

17. After saving settings by following [File] > [Save], execute [Assigning Parameter to Point-To-Point Connections] turn off the window.



18. Save hardware setting information by selecting [Station] > [Save and Compile].



19. [SIMATIC Manager] on window project tree, select [Name of the CPU that is registered in HW Config] and select [Blocks], double click [OB1]. (If [Properties] window pops up, click [ok].) (Run Ladder software [LAD/STL/FBD])

20. Set the parameter from Ladder software [LAD/STL/FBD]. Please set up after selecting one of examples below following by [Language for selected Blocks] > [STL] or [LAD].

[Li	anguage for selected Blocks] > [STL]	[Language for selected Blocks] > [LAD]
CALL "P_R EN_R R LADDR DB_N0 DBB_N0 L_TYP L_N0 L_OFFSET L_CF_BIT NDR ERROR LEN STATUS	NCV_RK" , DB7 :=TRUE :=FALSE :=256 := := := := := := := := := :=	Image: DB7 Image: DB7
Description		
Details	Contents	
DB7	DB number that P_RCV_RK will apply for commun	ication receiving.
EN_R	Communication can be possible when 'EN_R' sets	to ON
R	Input Reset	
LADDR	Input Start Address number that has been confirm	ned on sequence 12th

DB_NO Input DB that will be used. Read and Write on communication where it has been given.

21. 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 property] to show the below window.

Project	Project > Proj	ect property > Proj	ect > Settings > TOP I	Name 1	
TOP Setting	Sot the communication	tion interface of TO	R tool		
XTOP15TX-SA/SD					_
─ PLC Setting	- From right wind	low [HMI Setup >	check Use HMI Setup	> Device Manage	er j
Ė- COM2 (1)	HMI Setup Sepcial Bu	ffer Sync			
PLC1 : SIMETIC S7 S	erie 🔽 Use HMI Setup				
COM1 (0)	System Setup PLC S	etup Device Manager	Interface		
Ethernet (0)		* C	ommunication Port		
FieldBus (0)	+ COM 1		+ COM 2		
USB Device (0)	- Boud Rate :	76800	- Boud Rate :	76800	
E CF Card Setting	- Data Bit :	8 .	- Data Bit :	8	•
CFCard	- Stop Bit :	1	- Stop Bit :	1	-
	- Parity Bit :	Even 👻	- Parity Bit :	Even	•
	6846		- Signal Level :	RS-232C	-
	- From right wind	low [HMI Setup >	check Use HMI Setup	> PLC Setup]	
	HMI Setup Sepcial Bu	ffer Sync			
	🔽 Use HMI Setup				
	System Setup PLC S	etup Device Manager	Interface		
		(PLC1) SIMET	TC S7 Series 3964(R)/RKS	512	
	Time Out :	1000 🗘 msec	2		
	Wait before send :	0 🗘 msec			
	External device s	settings			
	Setup communicati	on driver of "SIMET	IC S7-200 Series PPI".		
			PLC Comm In fo		
	PLC Node	0	•		
	162553316265 1535 162609000				
	Comm Module	CP341	-		

■ Communication Interface Settings

Details	Contents
Signal level	External device - select serial communication method between TOPs. (COM1 supplies RS-232C
	only)
Baud rate	External device – select serial communication speed between TOPs.
Data bit	External device – select serial communication data bit between TOPs.
Stop bit	External device – select serial communication stop bit between TOPs.
Parity bit	External device – select serial communication parity bit check method between TOPs.
Time out [x100 mSec]	Set up TOP's response waiting time from external device at [$0 - 5000$] x 1 mSec.
Transmitting Delay Time [x10	Set up TOP's waiting time between response receiving – next command request transmission from
mSec]	external device at [0 – 5000] x 1 mSec.
Receiving Wait Time [x10	
mSec]	
PLC address [0~65535]	Address of other device. Select between [0 - 65535].





4.2 TOP main menu setup item

- When a buzzer is on during the power reset, touch 1 spot at the upper LCD to move to "TOP Management Main" display.

- Set up driver interface at TO	P according to below Step1	→ Step2.
(Press "TOP COM 2/1 setup"	in Step 1 to change setup	at Step 2 .)



Step 1. [PLC setup] - Setup driver interface.

PLC setup				
PLC Address : 00	Communication Interface			
Timeout : 1000 [mSec]	Settings			
Delay time of transmission : 0 [mSec]				
TOP COM 2/1 : RS – 232C , 76800 , 8 , 1 , NONE				
TOP COM 2/1 setup communication test				
Step 1-Reference.				
Details	Contents			
PLC address [0~65535] Address of other device. Select between [0 - 65535].				

PLC address [0~65535]	Address of other device. Select between [0 - 65535].
Timeout [x1 mSec]	Set up TOP's response waiting time from external device at [0 - 5000] x 1 mSec.
Delay time of transmission [Set up TOP's waiting time between response receiving - next command request transmission
x1 mSec]	from external device at [0 – 5000] x 1 mSec.
TOP COM 2/1	TOP's Interface setup to external device.

Step 2. [PLC setup] >[TOP COM2/COM1 setup] - Setup relevant port's serial parameter.

Port Settings	
* Serial communication	COM 1 Port
+ COM-1 Port	Communication Interface
- Baud rate : 76800 [BPS]	Settings
- Data bit : 8 [BIT]	
- Stop bit : 1 [BIT]	
- Parity bit : NONE [BIT]	
- Signal level : RS – 232C	
+ COM-2 Port	COM-2 Port
- Baud rate : 76800 [BPS]	Communication Interface
- Data bit : 8 [BIT]	Settings
- Stop bit : 1 [BIT]	
- Parity bit : NONE [BIT]	
- Signal level : RS – 232C	

Step 2–Reference.	
Details	Contents
Baud rate	External device – select serial communication speed between TOPs.
Data bit	External device – select serial communication data bit between TOPs.
Stop bit	External device – select serial communication stop bit between TOPs.
Parity bit	External device – select serial communication parity bit check method between TOPs.
Signal level	External device – select serial communication method between TOPs.



4.3 Communication diagnosis

■ TOP - Confirming interface setting condition between external devices

- Move to Menu by clicking the top side of LCD screen as resetting the power of TOP.

- Confirms if Port [COM 2 or COM 1] setting that is willing to use in [Communication Settings] matches with the setting of external devices.

Port Communication Issue Diagnosis

- PLC Setup > TOP [COM 2 or COM 1] click "Communication Diagnosis" button.

- Diagnosis dialog box will pop up on the screen, you can judge by following information that are shown on box no. 3 section.

OK!	Communication setting succeeded
Time Out Error!	Communication setting error
	- Error in the setting situation of Cable and TOP / External device
	(reference : Communication Diagnosis sheet)

■ Communication Diagnosis Sheet

- Please refer to the information below if you have a problem between external devices and communication connection.

Designer Version			O.S Versio	n				
Details	Con	tents					Con	firm
System configuration	Nam	ne of CPU					ОК	NG
	Nam com	ne of confront port that is municating					ОК	NG
	Syste	em Connection Method	1:1	1:N	1	N:1	ОК	NG
Connection Cable	Nam	ne of Cable					ОК	NG
PLC setup	Setu	p address					ОК	NG
	Seria	al baud rate			[BPS]	ОК	NG
	Seria	al data bit			[BIT]	ОК	NG
	Seria	al Stop bit			[BIT]	ОК	NG
	Seria	al parity bit			[BIT]	ОК	NG
	Assi	gned Address Limit					ОК	NG
TOP setup	Setu	p port	COM 1			COM 2	ОК	NG
	Nam	ne of Driver					ОК	NG
	Con	front Address	Project Property	Setup			ОК	NG
			Diagnosing Com	municatio	on		ОК	NG
	Seria	al baud rate			[BPS]	ОК	NG
	Seria	al data bit			[]	BIT]	ОК	NG
	Seria	al Stop bit			[]	BIT]	ОК	NG
	Seria	al parity bit			[BIT]	ОК	NG



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

■ 1:1 Connection

		5 pm)					
XTOP COM2				External device			
pin arangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arangement * caution 1)	
	CD	1		1	CD		
		2		2			
	RD				RD		
1 5						1 5	
0	SD	3		3	SD	0	
6 9	DTR	4		4	DTR	6 9	
D-SUB 9 Pin male	SG	5		5	SG	D-SUB 9 Pin male	
(Male, convex)	DSR	6		6	DSR	(Male, convex)	
	RTS	7		7	RTS		
	CTS	8		8	CTS		
		9		9	RI		

(A) XTOP COM 2 Port (9 pin)

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

(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	External device		
pin arangement *	Name	Pin		Pin	Name	pin arangement *
caution 1)	of	Number		Number	of	caution 1)
	Signal				Signal	
1 8	CD	1		1	CD	1 5
9 15	RD	2		2	RD	6 9
Front View of						Front View of
D-SUB 15 Pin	SD	3		3	SD	D-SUB 9 Pin male
male(Male convex)	DTR	4		4	DTR	(Male, convex)
	SG	5		5	SG	
	DSR	6		6	DSR	
	RTS	7		7	RTS	
	CTS	8		8	CTS	
		9		9	RI	

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

(C) XTOP/ATOP COM 1 Port (6 Pin)

XTOP/ATOP COM 1 Port			External device			
pin arangement *	Name	Pin	Cable Connection	Pin	Name	pin arangement *
caution 1)	of	Number		Number	of	caution 1)

					한민국대표 터치패널 ch Operation Panel
	Signal			Signal	
		1	1	CD	
		2	2		
	RD			RD	
\sim \sim 1	SG	3	3	SD	6 9
$3 \xrightarrow{3} -$		4	4	DTR	Front View of
D-SUB 6 Pin male		5	5	SG	D-SUB 9 Pin male
(Male, convex)	SD	6	6	DSR	(Male, convex)
			7	RTS	
			8	CTS	
			9		

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



5.2 Cable diagram 2

■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2				External device			
pin arangement * caution 1)	Signal	Pin	Cable Connection	Pin	Signal	pin arangement * caution 1)	
	RDA	1		1			
6 9 Front View of		2		2	T(A)	9 15 Front View of	
D-SUB 9 Pin male		3		3		D-SUB 15 Pin	
(Male, convex)	RDB	4		4	R(A)	male(Male convex)	
	SG	5		5			
	SDA	6		6			
		7		7			
		8		8	GND		
	SDB	9		9	T(B)		
				10			
				11	R(B)		

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

(B) XTOP COM 2 Port (15 pin)

ХТОР	XTOP COM2		Cable Connection	External device		l device
pin arangement *	Signal	Pin		Pin	Signal	pin arangement *
caution 1)						caution 1)
1 8	-	1		1		1 8
	(생	략)		2	T(A)	
9 15				3		9 15
Front View of				4	R(A)	Front View of
D-SUB 15 Pin male				5		D-SUB 15 Pin male
(Male convex)						(Male convex)
	-	10		6		
	RDA	11		7		
	RDB	12		8	GND	
	SDA	13		9	T(B)	
	SDB	14		10		

7		한민국대표 터치패널 uch Operation Panel	
11	R(B)		

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

15

(C) ATOP COM 2 Port (Terminal Block 5 pin)

SG

XTOP COM2			External device			
pin arangement * caution 1)	Signal	Cable Connection	Pin	Signal	pin arangement * caution 1)	
RS-422 RDA RDB SDA SDB SG FG	RDA		2	Τ(Δ)	1 8 0 0 0 0 9 15	
			2	1(A)	Front View of	
Front View of Terminal Block 5 Pin	SDA		3		D-SUB 15 Pin male	
	SDB		4	R(A)	(Male convex)	
	SG		5			
			6			
			7			
			8	GND		
			9	T(B)		
			10			
			11	R(B)		

*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.

	Support address		Support	address	32 bits	Remark
External Input	I00000.0 –	E00000.0 -	IW00000 –	EW00000 -	H/L	Not
Relay	I00127.7	E00127.7	IW00126	EW00126	*caution4caution5)	writable
* caution1)						
External Output	Q00000.0	A00000.0 -	QW00000 –	AW00000 -		Not
Relay	-	A00127.7	QW00126	AW00126		writable
* caution2)	Q00127.7					
Data length	DB00001 : DBX00000 -		DB00001 : DBW00000 -			
	DB65535 : DBX65533.7		DB65535 : DBW65532			
Internal Memory	M00000.0 - M00511.7		MW00000 - MW00510			Not
						writable
Timer*caution3)	_		T00000 – T00255			Not
						writable
Counter*caution3)	_		C00000 –	Z00000 –		Not
			C00255	Z00255		writable

*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.

*Caution3) Device Restricted to Read only

*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)

*Caution5) Checks "Word Swap" function when Double word address is being used.

Data Size 🔘 16bit 💿 32bit 📝 Word Swap