Panasonic Electric Works Co., Ltd. FP Series Computer Link Driver

Compatible version

4.0.0.0 or higher

OS

XDesignerPlus 4.0.0.0 or higher

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

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It explains device for connection, setup of, cable and structural system. Please choose proper system referring to this point.

2. Selecting TOP model and

Page 5

external devices

Select TOP model and external device..

3. Example of system settings Page 6

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

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details 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

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Explains cable specifications required for access.

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

6. Support address

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



1. System configuration

The system configuration of TOP and PANASONIC Electric Works Co., Ltd - FP Series Computer Link" is as below.

Series	CPU	Link I/F	Method	System settings	Cable
FP		CPU내장 Tool 포트	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
		CPU내장 RS232C 포트	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.2 Cable Table 2 (27 page)
		FP2-CCU (포트1) (AFP2462)	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 (5 page)	5.2 Cable Table 2 (27 page)
	FP2 FP2SH	FP2-CCU (포트2) (AFP2462)	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.2 Cable Table 2 (27 page)
		FP2-MCU + FP2-CB232 (AFP2465 + AFP2803)	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 (5 page)	5.2 Cable Table 2 (27 page)
		FP2-MCU + FP2-CB422 (AFP2465 + AFP2804)	RS-422 (4wire)	3.2 Configuration Exercise 2 (8 page)	5.3 Cable Table 3 (28 page)
		FP2-MCU + FP2-CB485 (AFP2465 + AFP2805)	RS-485 (2wire)	3.3 Configuration Exercise 3 (10 page)	5.4 Cable Table 4 (29 page)
		CPU내장 Tool 포트	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	<u>5.1 Cable Table 1</u> (26 page)
		AFPX-COM1	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	<u>5.5 Cable Table 5</u> (<u>30 page)</u>
		AFPX-COM2 (COM1)	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.6 Cable Table 6 (31 page)
		AFPX-COM2 (COM2)	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.7 Cable Table 7 (32 page)
	FP-X	AFPX-COM3 (COM1)	RS-485	<u>3.3 Configuration</u> Exercise <u>3</u> (10 page)	<u>5.8 Cable Table 8</u> (<u>33 page)</u>
		AFPX-COM4 (COM1)	RS-485(2wire)	3.3 Configuration Exercise 3 (10 page)	<u>5.9 Cable Table 9</u> (<u>34 page)</u>
		AFPX-COM4 (COM2)	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.10 Cable Table 10 (35 page)
		AFPX-COM6 (COM1)	RS-485(2wire)	<u>3.3 Configuration</u> Exercise <u>3</u> (10 page)	<u>5.11 Cable Table 11</u> (<u>36 page)</u>
		AFPX-COM6 (COM2)	RS-485 (2wire)	3.3 Configuration Exercise 3 (10 page)	5.12 Cable Table 12 (37 page)
	FPΣ	CPU내장 Tool 포트	RS-232C	3.4 Configuration Exercise 4 (14 page)	<u>5.1</u> Cable Table 1 <u>(26 페이지)</u>

		TOP	대한민국대표 터치패널 Touch Operation Panel
AFPG801	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	<u>5.5 Cable Table 5</u> <u>(30 page)</u>
AFPG802 (포트1)	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.6 Cable Table 6 (31 page)
AFPG802 (포트2)	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.7 Cable Table 7 (32 page)
AFPG803 (포트1)	RS-485 (2wire)	<u>3.3 Configuration</u> Exercise 3 (10 page)	<u>5.8 Cable Table 8</u> (33 page)
AFPG806 (포트1)	RS-485 (2wire)	<u>3.3 Configuration</u> Exercise 3 (10 page)	5.9 Cable Table 9 (34 page)
AFPG806 (포트2)	RS-232C	<u>3.4 Configuration</u> Exercise 4 (14 page)	5.10 Cable Table 10 (35 page)

Series	CPU	Link I/F	Method	System settings	Cable
FP	EDO	CPU Integrated Tool Port	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
	FFU	CPU Integrated RS232C Port	RS-232C	<u>3.1 설정 예제 13.1</u> <u>Configuration Exercise 1</u> <u>(5 page)</u>	<u>5.13 Cable Table 13</u> (<u>38 page)</u>
		CPU Integrated Tool Port	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 <u>(5 page)</u>	<u>5.1 Cable Table 1</u> (26 page)
		AFPE224300	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 <u>(5 page)</u>	5.10 Cable Table 10 (35 page)
	ED o	AFPE224305	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 <u>(5 page)</u>	<u>5.10 Cable Table 10</u> (<u>35 page)</u>
	FF-e	AFPE224325	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 <u>(5 page)</u>	<u>5.10 Cable Table 10</u> (<u>35 page)</u>
		AFPE224302	RS-485 (2wire)	3.5 Configuration Exercise 5 (16 page)	<u>5.9 Cable Table 9</u> (34 page)
		AFPE224322	RS-485 (2wire)	3.5 Configuration Exercise 5 (16 page)	<u>5.9</u> <u>Cable Table 9</u> (<u>34 page)</u>
		CPU Integrated Tool Port	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
	FP-M	CPU Integrated RS232C Port	RS-232C	<u>3.1 설정 예제 13.1</u> Configuration Exercise 1 <u>(5 page)</u>	<u>5.2 Cable Table 2</u> (27 page)
		CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
	FP10SH	CPU Integrated RS232C Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)
		AFP3462	RS-232C	3.6 Configuration	5.2 Cable Table 2

			TOP	대한민국대표 터치패널 Touch Operation Panel
			Exercise 6 (20 page)	<u>(27 page)</u>
FD10C	CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
FP105	AFP3462	RS-232C	<u>3.6 Configuration</u> Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)
502	CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
FF 3	AFP3462	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)
FD1	CPU Integrated Tool Port	RS-232C	<u>3.6 Configuration</u> Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
IFI	CPU Integrated RS232C Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)

Connection configuration

• 1 : 1(1 TOP and 1 External Device) Connection - it is for RS232C/422 communication.

BL	12		
I HIT	11		
1911	10	_	

• 1 : N(1 TOP and Several External Devices) Connection - It is for RS422 Communication.











2. Selecting TOP model and external devices

Select the external devices to connect to TOP.

			HMI / PLC Uint		
Series Model	XTOP Series XTOP15TX-SA/S	5D	Vendor PLC Model	PANASONIC Electric Works FP Series Computer LINK	
		12	PLC		
	Vendor			Model	
M2I Corporat	ion	FP Ser	ries Computer LINK		
MITSUBISHI E OMRON Indu LS Industrial MODBUS Org SIEMENS AG Rockwell Au GE Fanuc Au	Electric Corporation strial Automation Systems ganization i. tomation (AB) utomation	Panas	sonic FP Series Loader		
PANASONIC	Electric Works				
YASKAWA	Electric Corporation				
YOKOGAWA Schneider El KDT Systems RS Automatii HITACHI IES FATEK Autor DELTA Electri KOYO Electri VIGOR Electri Comfile Tech	A Electric Corporatio ectric Industries s on(SAMSUNG) mation Corporation ronics onic Industries ric Corporation inology				

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 accord				
		TOP series.				
		Series				
		XTOP / HTOP				
	Name	Select the model name of TOP p	product.			
External device	Manufacturer	Select the manufacturer of exter	nal devices to be connected to T	OP.		
		Please select "PANASONIC Electr	ic Works Co., Ltd".			
	PLC	Select the model series of extern	nal devices to be connected to T	OP.		
		Please select "FP Series Compute	er Link".			
		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

Regarding of communication interface settings in TOP and external devices, we suggest as below.

3.1 Example of settings 1

The system is set as below.

Details		ТОР	"FP SERIES"	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232C	User settings
Address(PLC Address)			1	User settings
Serial baud rate [BPS]		192	00	User settings
Serial data bit [Bit]		8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	OD	D	User settings

(1) XDesignerPlus setup

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

Ė COM2 (1)	HMI Setup	Sepcial Buffer S	Inc			
PLC1 : FP Series Compl COM1 (0)	Use HMI	Setup				
Ethernet (0)	System Setur	p PLC Setup	Device Manage	r Interface		
FieldBus (0)	. 17		* Communi	cation Port		
USB Device (0)	+ COM 1		+ (COM 2		
Er Card Setting	- Boud Rate :	19200	- E	Boud Rate :	19200	*
1500-10	- Data Bit :	8	▼ - [)ata Bit :	8	*
	- Stop Bit :	1	▼ -5	Stop Bit :	1	•
	- Parity Bit :	Odd	💌 - F	Parity Bit :	Odd	•
			-5	ignal Level :	RS-232C	*
l	External dev Set the opt Station Nu BlockOption	vice settings tion of Com mber(PLC) 0 n [[munication Di	river of <u>"FP</u>	SERIES Compu	ter Link"

- Block process method : Choose the protocol method.



X

(2) External device settings

Please set as below by using "FP SERIES" Ladder Software "FPWIN GR". Please refer the PLC user manual for more detailed information if you need.



Download the contents to PLC after running the part that is desired to utilize.

■ FP2/FP2SH [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool port setting] Tap.

				**1	•	UIV.		the	
PL(C Co	nfig	urat	ion -	1	Intitle	17		

Memory Allocation Initial Switch Hold/Non-hold 1 Hold/Non-hold 2 Action on Error Time Link 0 Link 1 Tool Port COM Port Remote I/O	No.410 Unit No. 1 No.411 Communication form Modem Connection Connect Not Connect	▼ at □ Data Length □ 7 Bits □ 8 Bits		
	No. 414 Baudrate Settings	Restor	Initializa	Hein

Details	Settings		Operation Condition Switche	
Unit number (PLC	1			
Communication Modem		Do	not	
Format	Connection	Execute		
	Data length	8 bit		SW4
Setting Communication speed		19200		
Operation Condition Switches *Caution 1)		SW1 : OF	F	

■ FP2/FP2SH/FP3 [AFP2462]

1. Set the dip switch which is located in the back of communication module as below.

Dip Switch (Mode	Settings	Content	s	
Setting)				
Switch 1	ON	COM1	reserved for syst	tem
Switch 2	ON		Baud rate	19200 bps
Switch 3	OFF			
Switch 4	ON		Character bit	8 bit
Switch 5	ON	COM2	reserved for system	
Switch 6	ON		Baud rate	19200 bps
Switch 7	OFF			
Switch 8	ON		Character bit	8 bit

PPP

Continue on the next page.



■ FP0 [CPU Integrated Tool Port] FP-e [CPU Integrated Tool Port] FP-M [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool port setting] Tap.

Hold/Non-hold Action on Error Time High Speed Counter Interrupt Input Temperature input Tool Port COM Port	No. 410 Unit No. 1 No. 411 Communication forma Modern Connection Connect Not Connect No. 414 Baudrate Settings C 9600bps © 132	Data Length C 7 Bits C 8 Bits 100bps
	OK Cancel	Read PLC Initialize Help
Details		Contents
Unit Number		1
Communication Format	Modem Connection	Do not Execute
	Data length	8 bit
Setting Communicatio	n sneed	19200bps

Setting Communication speed	19200pb	
Not performing automatic transfer to 2400BPS	OFF	It's the section which only FP-M
		might have.

FP0	[CPU Integrated RS232C Port]
FP-e	[AFPE224300] / [AFPE224305] / [AFPE224325]
FP-M	[CPU Integrated RS232C Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool port setting] Tap.

Hold/Non-hold Action on Error Time High Speed Counter	No.412 Port Selection Computer Link No.413 Communication Format No.414 Baudrate				
Interrupt Input Temperature input	Char. bit: 8 Bits 🔹 19200 💌				
Tool Port	Parity Check: Odd 💌 No. 415 Unit No.				
elenvinel.v	Stop Bit: 1 💌 1 💌				
	Terminator: CR 🚽 🔽 No. 416 Modem Enabled				
	Header: STX not exist.				
	No.417 Receive Buller Stating Address DT 0 (0 - 1659) No.418 Receive Buller Capacity 1660 (0 - 1660)				

Details		Contents		
Move Select		Computer Link		
Unit Number		1		
Communication speed		19200		
Transmit Format	Data length	8 bit		
	Parity Check	Odd		
	Stop bit	1		
Modem Connection		OFF		
Not performing automatic transfer to 2400BPS		OFF	It's the section which only FP-M might	
			have.	





3.2 Example of Settings 2

The system is set as below.

Details		ТОР	"FP SERIES"	Remark
Serial level (port/cha	annel)	RS-422	RS-422	User settings
Address(PLC Address	s)	_	1	User settings
Serial baud rate	[BPS]	1152	200	User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	OD	D	User settings

(1) XDesignerPlus setup

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



- Block process method : Choose the protocol method.



(2) External device settings

Please set as below by using "FP SERIES" Ladder Software "FPWIN GR". Please refer the PLC user manual for more detailed information if you need.



Execute communication setting through the switch in the back of the module.

■ FP2/FP2SH [AFP2465 + AFP2404]

1. Set the dip switch which is located in the back of communication module as below.

Dip Switch (Mode	Settings	Content	Contents			
Setting)						
Switch 1	ON	COM1	Motion mode	Computer Link		
Switch 2	ON					
Switch 3	OFF		Baud rate	115200 bps		
Switch 4	OFF					
Switch 5	ON	COM2	Motion mode	Computer Link		
Switch 6	ON					
Switch 7	OFF		Baud rate	115200 bps		
Switch 8	OFF					

* If Switch 3,4 / Switch 7,8 set to (OFF, OFF), affiliated ports will be set the speed to 115200 bps.

2. Set the Rotary Switch which is located in the back of communication module as below.

Rotary Switch	Settings	Contents
(Address setting)	1	Sets the address of MCU module.



3.3 Examples of Setting 3

The system is set as below.

Details		ТОР	"FP SERIES"	Remark
Serial level (port/cha	innel)	RS-485 (2 wire)	RS-485	User settings
Address(PLC Address	5)	—	1	User settings
Serial baud rate	[BPS]	1152	200	User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	OD	D	User settings

(1) XDesignerPlus setup

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



- PLC address (PLC) : External device setting address
- Block process method : Choose the protocol method.



(2) External device settings

Please set as below by using "FP SERIES" Ladder Software "FPWIN GR". Please refer the PLC user manual for more detailed information if you need.



Execute communication setting through the switch in the back of the module.

■ FP2/FP2SH [AFP2465 + AFP2405]

1. Set the dip switch which is located in the back of communication module as below.

Dip Switch (Mode	Settings	Content	s	
Setting)				
Switch 1	ON	COM1	Motion mode	Computer Link
Switch 2	ON			
Switch 3	OFF		Baud rate	115200 bps
Switch 4	OFF			
Switch 5	ON	COM2	Motion mode	Computer Link
Switch 6	ON			
Switch 7	OFF		Baud rate	115200 bps
Switch 8	OFF			
* If Switch 3,4 / Switch 7,8 s	et to (OFF, C) DFF), affilia	ited ports will be	set the speed to 115200 bps.
Rotary Switch	Settings	Contents		
(Address setting)	1	Sets the address of MCU module.		

■ [AFPX-COM3] COM1 Port setting

1. Set the Dip Switch which is located in the back of cassette.



2. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM1 port setting] Tap.

Hold/Non-hold 1 Hold/Non-hold 2 Action on Error Time Link W0-0 Link W0-0 Pulse I/O cassette Controller input sett Interrupt / pulse ca Interrupt / pulse ca Interrupt edge setti Time constant setti Time constant setti Time constant setti Tool Port COM1 Port COM2 Port	settings (HSC/PLS) ings (HSC) tch settings ngs ng 1 of CPU input ng 2 of CPU input ng 3 of CPU input ng 4 of CPU input	No.410 Unit No. No.412 Comm. M Computer Link Modem Enable No.415 Baudrate No.416 Starting - serial dat No.417 Buffer ca serial dat		113 Comm Char. Bit: Parity: Stop Bit: erminator: Header DT	B Bits I 0 dd I 1 I CR I STX not exist. I 0 (0 - 12284) 2048 (0 - 2048)
Details			Settings		
Unit numbe	er (PLC address)	1	Connect Modem		OFF
Communica	ntion Mode	Computer	Communication		115200
		Link	speed		
Transmit	Data length	8 bit		•	
Format					





 Parity bit	Odd
Stop bit	1

Section Continue on the next page.



FP-X

[AFPX-COM4] COM1 Port setting

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM1 port setting] Tap.

old/Non-hold 1 old/Non-hold 2 ction on Error ime non nk W0-0 nk W0-1 ulse I/O cassette settings (HSC) terrupt / pulse catch settings terrupt edge settings ime constant setting 1 of CPU ir ime constant setting 2 of CPU ir ool Port CIMI Port OM2 Port	/PLS) No.41 put put put put put No.41 No.41 No.41 No.41	Unit No. 1 Comm. Mode omputer Link Iodem Enabled Baudrate Starting address for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode Buffer capacity setting for data received of serial data communication mode	9 n Format ▼ ▼ ▼ ▼ ▼ ▼ 1 1 1 1 1 1 1 1			
	DK	Cancel Read PLC Initialize	Help			
Details		Settings				
Unit number (PLC ad	ddress)	1	1			
Communication Mo	de	Computer Link	Computer Link			
Connect Modem		OFF				
Communication spe	ed	115200				
Transmit Format	Data length	8 bit				
	Parity bit	Odd				

■ FP-X [AFPX-COM6] COM1/COM2 Port setting

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM1 port setting] / [COM2 port setting] Tap.

Details		Settings
Unit number (PLC ad	ddress)	1
Communication Mod	de	Computer Link
Connect Modem		OFF
Communication spe	ed	115200
Transmit Format	Data length	8 bit
	Parity bit	Odd Numbers
	Stop bit	1

2. Set the Dip Switch which is back of the cassette as below.



Cassette backside switch



Term	inal resistance	COM2 E	Baud rate ^{Note)}
1O 2N 3 4	COM1 general unit (Default)		115200bps
1 0 2 N 3 4	COM1 terminal unit		115200bps
1O 2N 34	COM2 general unit (Default)		19200bps
1 0 2 N 3 4	COM2 terminal unit		9600bps (Default)

Note) The baud rate for the COM1 port is specified only by the system register. However, for the COM2 port, it should be specified by the switches and the system register.





■ FP∑ [AFPG803]의 COM1 Port Setting / [AFPG806]의 COM1 Port Setting

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM1 port setting] Tap.

Hold/Non-hold 1 Hold/Non-hold 2	No.410	Unit No. 1 💌	-No.413 Comm	unication Format
Action on Error Time Link W0-0 Link W0-1 Pulse 1/D cassette settings (HSC Controller input settings (HSC) Interrupt / pulse catch settings Interrupt edge settings Interrupt edge setting 1 of CPU i Time constant setting 2 of CPU i Time constant setting 3 of CPU i Tool Port COM1 Port COM2 Port	C/PLS) No.412 Cor Mo No.415 No.416 No.417	Comm. Mode mputer Link dem Enabled Baudrate Starting address for data received of serial data communication mode Buffer capacity setting for data receiv serial data communication mode	Char. Bit: Parity: Stop Bit: Terminator: Header: DT DT	8 Bits ▼ Odd ▼ 1 ▼ CR ▼ STX not exist. ▼ 0 (0 - 12284) 2048 (0 - 2048)
	ОК	Cancel Read PLC	Initialize	Help
Details		Settings		
Unit number (PLC ad	dress)	1		
Communication Mode		Computer Link		
Connect Modem		OFF		
Communication speed		115200		
Transmit Format	Data length	8 bit		

2. In case of [AFPG806] please set the integrated switch as below.

Parity bit

Stop bit

Dip switch	Settings	Contents		
SW1-1	don`t care	End Line Resistance	-	
SW1-2	ON	Transmit speed	115200 bps	

Odd Numbers

1



3.4 Examples of Setting 4

The system is set as below.

Details		ТОР	"FP SERIES"	Remark
Serial level (port/cha	annel)	RS-232C (COM2)	RS-232C	User settings
Address(PLC Addres	s)	_	1	User settings
Serial baud rate	[BPS]	115200		User settings
Serial data bit	[Bit]	8	User settings	
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	OD	D	User settings

(1) XDesignerPlus setup

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



External device settings

Set the option of "FP SERIES Computer Link" communication driver".

		PLC C	omm info		
Station Number(PLC)	1	\$			
BlockOption	Discrete	•			

- PLC address (PLC) : External device setting address
- Block process method : Choose the protocol method.



(2) External device settings

Please set as below by using "FP SERIES" Ladder Software "FPWIN GR". Please refer the PLC user manual for more detailed information if you need.



FP-M

Download the contents to PLC after running the part that is desired to utilize.

[CPU Integrated RS232C Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM port setting] Tap.

Memory Allocation Initial Switch Hold/Non-hold 1 Hold/Non-hold 2	No.412	Port Selection 3 Communication	Computer Lini	No.414 Baudrate	
Action on Error Time	Char.	bit: 8 Bi	ts 💌	115200 💌	
Link 0 Link 1	Parity	Check: Odd	<u> </u>	No.415 Unit No.	
Lool Port	Stop	Bit: 1	<u> </u>		
Remote I/O	Head	er STX	(not exist. 👻	No.416 Modem Enabled	
	No.418	Receive Bulfer C	apacity	1024 (0 - 1024) d PLC Initialize Help	
Details		Setti	ngs		
Move Select		Com	Computer Link		
Unit Number		1			
Communication spee	d	1152	00		
Transmit Format	Data length	8 bit	8 bit		
	Parity Check	Odd	Numbers		
	Stop bit	1			
Modem Connection		OFF			

■ FP2/FP2SH [AFP2465 + AFP2403]

1. Set the dip switch which is located in the back of communication module as below.

Dip Switch (Mode	Settings	Settings Contents			
Setting)					
Switch 1	ON	COM1	Motion mode	Computer Link	
Switch 2	ON				
Switch 3	OFF		Baud rate	115200 bps	
Switch 4	OFF				
Switch 5	ON	COM2	Motion mode	Computer Link	
Switch 6	ON				
Switch 7	OFF		Baud rate	115200 bps	
Switch 8	OFF				

* If Switch 3,4 / Switch 7,8 set to (ON, OFF), affiliated ports will be set the speed to 19200 bps.

2. Set the dip switch which is located in the back of communication module as below.

Rotary Switch	Settings	Contents
(Address setting)	1	Sets the address of MCU module.



Section Continue on the next page.



■ FP-X [CPU Integrated Tool Port]

FP∑ [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool port setting] Tap.

Hold/Non-hold 1 Hold/Non-hold 2 Action on Error Time Link W0-0 Link W0-1 Pulse 1/0 cassette settings (HSC) Interrupt / pulse catch setting Interrupt edge settings Time constant setting 1 of CP Time constant setting 2 of CP Time constant setting 3 of CP Time constant setting 4 of CP Tool Port COM1 Port COM2 Port	SC/PLS) s U input U input U input U input No. No.	410 412 Cor Mo 415 420 421	Unit No. 1 Comm. Mode mputer Link dem Enabled Baudrate Starting address for data receiv serial data communication mode Buffer capacity setting for data serial data communication mode	No.413 Cor Char. I Par Stop I Terminal Head ed of DT received of	No. 413 Communication Char. Bit: 8 Bits Parity: 0dd Stop Bit: 1 Terminator: CR Header: STX DT 409 red of 204	
		ĸ	Cancel Read	PLC Initial	lize	Help
Details			Settings			
Unit number (PLC ad	ddress)		1			
Communication Mode			Computer Link			
Connect Modem		OFF				
Communication spe	ed		115200			
Transmit Format	Data length		8 bit			
	Parity bit		Odd Numbers			

■ FP-X FP∑ [AFPX-COM1] COM1 Port Setting / [AFPX-COM2] COM1 Port Setting [AFPG801] COM1 Port Setting / [AFPG802] COM1 Port Setting

1

Stop bit

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM1 port setting] Tap.

Hold/Non-hold 2 Action on Error Firme	No.410 Unit No. 1 ▼ No.413	3 Communication Format
Link W0-0	Computer Link	Parity: Odd 🗸
Pulse I/D cassette settings (HSC/PLS)	Modem Enabled	Stop Bit: 1
Lontroller input settings (HSL) Interrupt / pulse catch settings	Ten	minator: CR 🚽
Interrupt edge settings Time constant setting 1 of CPU input Time constant setting 2 of CPU input	No.415 Baudrate 115200 bps	Header: STX not exist. 💽
Time constant setting 3 of CPU input Time constant setting 4 of CPU input Tool Port	No.416 Starting address for data received of serial data communication mode	DT 0 (0-12284)
COM1 Port COM2 Port	No.417 Buffer capacity setting for data received of serial data communication mode	2048 (0 - 2048)
	OK Cancel Read PLC I	nitialize Help

Details		settings
Unit number (PLC address)		1
Communication Mode		Computer Link
Connect Modem		OFF
Communication speed		115200
Transmit Format	Data length	8 bit
Parity bit		Odd Numbers
	Stop bit	1



Section Continue on the next page.



FP-X

[AFPX-COM2] COM2 Port Setting / [AFPX-COM4] COM2 Port Setting

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM port setting] Tap.

Hold/Non-hold 1 Hold/Non-hold 2 Action on Error	No.411	Unit No. 1	o.414 Commu	unication Format	_
lime	No.412	Comm. Mode	Char. Bit:	8 Bits	-
.ink W0-0 ink W0-1	Con	nputer Link 🗾 🚽	Parity:	Odd	-
Pulse I/O cassette settings (HSC/PLS) Controller input settings (HSC) Interrupt / pulse catch settings	Mod	lem Enabled 🦳	Stop Bit:	1	-
	Port	selection COM, cassette 💌	Terminator:	CR	~
nterrupt edge settings Fime constant setting 1 of CPU input Fime constant setting 2 of CPU input	No.415	Baudrate 115200 bps 💌	Header:	STX not exist.	~
ime constant setting 3 of CPU input ime constant setting 4 of CPU input	No.418	Starting address for data received of serial data communication mode	DT 📘	2048 (0 - 3276	41
Tool Port COM1 Port COM2 Port	No.419	Buffer capacity setting for data received of serial data communication mode	Γ	2048 (0 - 2048	i.
	ОК	Cancel Read PLC	Initialize	1 +	lelp

Details		Settings
Port Settings		COM. cassette
Unit number (PLC a	ddress)	1
Communication Mode		Computer Link
Connect Modem		OFF
Communication spe	ed	115200
Transmit Format	Data length	8 bit
	Parity bit	Odd Numbers
	Stop bit	1

■ FP∑

[AFPG802] COM2 Port Setting / [AFPG806]의 COM2 Port Setting

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM port setting] Tap.

Hold/Non-hold 1 Hold/Non-hold 2 Action on Fired	No.411 Unit No. 1 💌 No.41	4 Communication Fo	rmat
Time	No.412 Comm. Mode	Char. Bit: 8 Bits	•
Link High Speed Counter	Computer Link	Parity: Odd	-
nterrupt Input	Modem Enabled	Stop Bit: 1	•
Tool Port COM1 Port COM2 Port	Te	minator. CR	*
		Header: STX not e	xíst 👻
	No.415 Baudrate 115200 bps	1-	-
	No.418 Starting address for data received of serial data communication mode	DT 2048 (0	· 327641
	No.413 Buffer capacity setting for data received of serial data communication mode	2048 (0	- 2048)

Details		Settings
Unit number (PLC a	ddress)	1
Communication Mo	de	Computer Link
Connect Modem		OFF
Communication spe	ed	115200
Transmit Format	Data length	8 bit
	Parity bit	Odd Numbers
	Stop bit	1



3.5 Examples of Setting 5

The system is set as below.

Details		ТОР	"FP SERIES"	Remark
Serial level (port/channel)		RS-485(2 wire, COM2)	RS-485(COM2)	User settings
Address(PLC Address	5)	_	1	User settings
Serial baud rate	[BPS]	19200		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	OD	D	User settings

((1) XDesignerPlus setup

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



- Block process method : Choose the protocol method.



(2) External device settings

Please set as below by using "FP SERIES" Ladder Software "FPWIN GR". Please refer the PLC user manual for more detailed information if you need.



Download the contents to PLC after running the part that is desired to utilize.

■ FP-e [AFPE224302] / [AFPE224322] [CPU Integrated COM Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM port setting] Tap.

Hold/Non-hold Action on Error Time High Speed Counter	No.41 ⊢No.4	2 Port Selection 13 Communication I	Computer Link	▼ No.414 Baudrate	
Interrupt Input Temperature input Teol Port	Cha	r. bit: 8 Bits		19200 🔻	
COM Port	Par	ty Check: Odd		No. 415 Unit No.	
	Ter Hez	minator: CR ider: STX	v not exist.	∏ No.416 Modem	Enabled
	No.41	7 Receive Bulfer St 3 Receive Bulfer Ca	arting Address apacity	DT 0 1660	(0 - 1659) (0 - 1660)
Details	OK	Cance Settings	Read F	PLC Initialize	
Move Select		Computer	Link		
Unit Number		1			
Communication spee	d	19200			10200 bit/o d
Transmit Format	Data length	8 bit			9000
	Parity Check	Odd Numl	bers		<u>→</u> →
	Stop bit	1			
Modem Connection		OFF			
Please set the internal s	wtich after downloading	settings through	n Ladder Softwa	are.	
Details		Contents			
Internal Switch		19200bps			



3.6 Examples of Setting 6

The system is set as below.

Details		ТОР	"FP SERIES"	Remark
Serial level (port/channel) RS-232C (COM2)		RS-232C (COM2)	RS-232C	User settings
Address(PLC Address	5)	_	1	User settings
Serial baud rate	[BPS]	19200		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	OD	D	User settings

(1) XDesignerPlus setup

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



- Block process method : Choose the protocol method.



(2) External device settings

Please set as below by using "FP SERIES" Ladder Software "FPWIN GR". Please refer the PLC user manual for more detailed information if you need.



Download the contents to PLC after running the part that is desired to utilize.

■ FP10S [CPU Integrated Tool Port] // FP10SH [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Port setting] Tap.

Details	Contents
Communication speed	19200

2. Please set the internal switch after downloading settings through Ladder Software.

Dip Switch	Settings	
Dip Switch 1	OFF	Communication Speed 192 BPS
Dip Switch 2	OFF	Data length 8 Bit
Dip Switch 3	OFF	Do not execute modem connection.

3. Please set the Rotary switch as below.

Rotary Switch	Settings
Communication Address	1

■ FP-10S [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Port setting] Tap.

Details	Contents
RS232C Port Modem Connection	OFF

2. Please set the internal switch after downloading settings through Ladder Software.

Dip Switch	Settings	
Dip Switch 4	OFF	Communication Speed 192 BPS
Dip Switch 5	ON	Data length 8 Bit
Dip Switch 6	ON	Parity Bit Checked
Dip Switch 7	OFF	Parity Bit Odd Number Set up
Dip Switch 8	OFF	Stop bit 1 bit
7 DI 1 1 D 1	••••	

3. Please set the Rotary switch as below.

Rotary Switch	Settings
Communication Address	1

■ FP3 [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool Port setting] Tap.

Details	Contents
Data length	8
Modem Connection	Do not execute modem connection.
Unit Number	1

2. Please set the internal switch after downloading settings through Ladder Software.

Dip Switch	Settings	;
Dip Switch 2	OFF	Communication Speed 19200 BPS





1. Please set the Dip switch as below.

Dip Switch	Settings	
Dip Switch 1	ON	Communication Speed 19200 BPS
Dip Switch 2	OFF	
Dip Switch 3	OFF	
Dip Switch 4	ON	Data length 8 Bit
Dip Switch 5	ON	Parity Bit Checked
Dip Switch 6	OFF	Parity Bit Odd Number Set up
Dip Switch 7	OFF	Stop bit 1 bit
Dip Switch 8	OFF	Don't set CS, CD Settings

■ FP1 [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool Port setting] Tap. Please set the speed through [Baud Rate Toggle Switch] which is located on the side of programming tool.

Details	Contents
Communication speed	19200
Data length	8
Modem Connection	Do not execute modem connection.
Not performing automatic transfer to 2400BPS	OFF
Unit Number	1

■ FP1 [CPU Integrated Tool Port]

1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM Port setting] Tap.

Details	Contents
Communication speed	19200
Data length	8
parity bit	Odd
Stop bit	1
Motion mode	Computer Link
Modem Connection	Do not execute modem connection.
Not performing automatic transfer to	OFF
2400BPS	
Unit Number	1



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.



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 waiting time from external device at [0 - 5000] x 1mSec.	
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]		



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 TOP according to below Step1 -> Step2	
- Set up unver interface at for according to below $3tep1 \rightarrow 3tep2$.	<u> </u>
(Press "TOP COM 2/1 setup" in Step1 to change setup at Step2 .)	

	\bigcirc	
-		

Communication

Interface Settings

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

PLC setup	
-----------	--

PLC 국번 :01

Timeout : 1000 [mSec]

Delay time of transmission : 0 [mSec]

TOP COM 2/1 : RS - 232C , 19200 , 8 , 1 , ODD

TOP COM 2/1 setup communication test

tep 1-Reference.	
Details	Contents
PLC address [0~65535]	Address of other device. Select between [0 - 65535].
Timeout [x1 mSec]	Set up TOP's waiting time from external device at [0 - 5000] x 1mSec.
Delay time of transmission [x1 mSec]	Set up TOP's waiting time between response receiving – next command request transmission 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
- Baud Rate : 19200 [BPS]	Interface Settings
- Data bit : 8 [BIT]	
- Stop bit : 1 [BIT]	
- Parity Beat : ODD [BIT]	
- Signal level : RS – 232C	
+ COM-2 Port	COM-2 Port
- Baud Rate : 19200 [BPS]	Communication
- Data bit : 8 [BIT]	Interface Settings
- Stop bit : 1 [BIT]	
- Parity Beat : ODD [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 Setting > 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 normal
Time Out Error!	Abnormal Communication setting
	- 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 Versior	1	O.S Version								
Details	Contents									
System configuration	Name of CPU			ОК	NG					
	Name of confront port that is communicating			ОК	NG					
	System Connection Method	1:1	1:N N:1	ОК	NG					
Connection Cable	Name of Cable			ОК	NG					
PLC setup	Setup address			ОК	NG					
	Serial baud rate		[BPS]	ОК	NG					
	Serial data bit		[BIT]	ОК	NG					
	Serial Stop bit		[BIT]	ОК	NG					
	Serial parity bit		[BIT]	ОК	NG					
	Assigned Address Limit			ОК	NG					
TOP setup	Setup port	COM 1	COM 2	ОК	NG					
	Name of Driver			ОК	NG					
	Confront Address	Project Property Setup		ОК	NG					
		When Diagnosi Communication	ing	ОК	NG					
	Serial baud rate		[BPS]	ОК	NG					
	Serial data bit		[BIT]	ОК	NG					
	Serial Stop bit		[BIT]	ОК	NG					
	Serial 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 that is introduced in this chapter might be different than suggested for "Panasonic Electric Works co, Ltd.")

5.1 Cable diagram 1

■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)							
XTOP COM2				PLC			
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)	
1 5	CD	1	•	1	SG	4_2	
(Ö Ö)	RD	2	•	2	SD		
6 9	SD	3		3	RD	Leer	
Front View of	DTR	4		4	-	Front View of	
D-SUB 9 Pin	SG	5		5	+5V	D-SUB 6 Pin	
(male, convex)	DSR	6				(male, convex)	
	RTS	7					
	CTS	8					
		9					

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

(B) XTOP COM 2 Port (15 pin)

(B) XIOP CC		13 hill)					
XTOP COM2				PLC			
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)	
	CD	1	•	1	SG		
	RD SD	2	•	2	SD RD		
Front View of	DTR	4		4	-	5 3 Front View of	
D-SUB 15 Pin	SG	5		5	+5V	D-SUB 6 Pin	
(male, convex)	DSR	6				(male, convex)	
	RTS	7					
	CTS	8					
		9					

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

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

XTOP/ATOP	COM 1 Por	ť	Cable Connection	PLC		
pin arrangement *	Name	Pin		Pin	Name	pin arrangement *

				7		한민국대표 터치패널 uch Operation Panel
caution 1)	of Signal	Number		Number	of Signal	caution 1)
		1	f	· 1	SG	
	RD	2		2	SD	
	SG	3	•	3	RD	4_2 () () () () () () () () () () () () ()
5 1		4		4	-	5 3
Front View of		5		5	+5V	Front View of
D-SUB 6 Pin (male, convex)	SD	6				D-SUB 6 Pin (male, convex)



5.2 Cable diagram 2

■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2				PLC		LC
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
	CD	1		1	FG	
	RD	2		2	SD	
1 5 SD	SD	3		3	RD	1 5
õ õ	DTR	4	•	4	RS	õ õ
6 9 Front View of	SG	5	•	5	CS	6 9 Front View of
D-SUB 9 Pin	DSR	6		6	-	D-SUB 9 Pin
(male, convex)	RTS	7		7	SG	(male, convex)
	CTS	8		8	-	
		9		9	ER	

(B) XTOP COM 2 Port (15 pin)

XTOP	COM2			PLC		LC
pin arrangement * caution 1)	Name • of Signal	Pin Numbe <u>r</u>	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
	CD	1		1	FG	
•	RD	2		2	SD	
1 0	SD	3		3	RD	1 5
(° °)	DTR	4	•	4	RS	õ õ
9 15 Front View of D-SUB 15 Pin	SG	5	•	5	CS	6 9 Front View of
	DSR	6		6	-	D-SUB 9 Pin
(male, convex)	RTS	7		7	SG	(male, convex)
	CTS	8		8	-	
		9		9	ER	

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

XTOP/ATOP COM 1 Port		ť			PI	LC
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
6 4 2		1		1	FG	1 E
	RD	2		2	SD	
5 3 1		3		3		6 9 Front View of
Front View of	SG				RD	D-SUB 9 Pin
D-SUB 6 Pin						(male, convex)
(male, convex)						



	4	4	RS
	5	5	CS
SD	6	6	-
		7	SG
		8	-
		9	ER



5.3 Cable Table 3

■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP	COM2				Р	LC
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
	RDA	1	•	1	(NC)	
		2	•	2	SD+	
		3		3		
			•		RD+	
1 5			•			1 5
	RDB	4		4	SD-	
6 9 Front View of D-SUB 9 Pin (male, convex)	SG	5	•	5	RD-	6 9 Front View of D-SUB 9 Pin (male, convex)
	SDA	6		6	_	
		7		7	-	
		8		8	-	
	SDB	9		9		

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

(B) XTOP COM 2 Port (15 pin)

XTOP	COM2				PI	_C
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
	-	1		1	(NC)	
	(Pa	ass)	•	2	SD+	
			•	3		
			• •		RD+	
1 8		1	•			1 5
9 15	-	10	•	4	SD-	6 9
Front View of D-SLIB 15 Pin		11		5		Front View of
(male, convex)	RDA				RD-	(male, convex)
	RDB	12		6	_	
	SDA	13		7	_	
	SDB	14		8	_	
	SG	15		9	_	



5.4 케이블 표 4

■ 1:1 Connection

•(A) XTOP COM 2 Port (9 pin)

XTOP	COM2				PI	_C
• pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
•	RDA	1	•	1	E	
		2		2		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$					-	Based on the front
Front View of D-SUB 9 Pin (male, convex)		3		3	+	side of Communication
	RDB	4		4	-	Terminal Block Spin
	SG	5		5	+	
	SDA	6				
		7				
		8				
	SDB	9				

(B) XTOP	COM 2 Port (15 pin)				
●xto	P COM2				PI	_C
pin arrang <u>ement</u> caution 1)	, Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arrangement * caution 1)
	-	1		1	Е	
		•	•	2	_	
1 8				3	+	432
	-	10		4	-	
9 15	RDA			5	+	Based on the front
Front View of	RDB					side of
(male, convex)	SDA	13				Communication
	SDB	14				cable connecter
	SG	15				тегтппаг вюск эріп

		한민국대표 터치패널 Inch Operation Panel

1112*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

\blacksquare 1 : N connection – connect the cable referring to 1:1 connection as below

(Please connect '-' and 'E Terminal' for End Line Addressed Device)

TOP	Cable Connection and Signal	PLC	Cable Connection and Signal	PLC
Name of Signal	Direction	Name of Signal	Direction	Name of Signal
RDA		+		+
RDB		_		-
SDA	•	+		+
SDB	•	_		-
SG				
f			-	

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■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP	COM2				PLC
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement
	CD	1		SD	
1 5	RD	2	 	RD	
o o	SD	3	•	RS	SD RD RS CS SG
	DTR	4		CS	
6 9 Front View of	SG	5		SG	
D-SUB 9 Pin	DSR	6			688838
(male, convex)	RTS	7			<u>باللہ</u>
	CTS	8			SD RD RS CS SG
		9			

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

(B) XTOP COM 2 Port (15 pin)

XTOP	COM2				PLC
pin arrangement * caution 1)	Name of Signal	Pin e Number	Cable Connection	Pin Number	Pin Arrangement
1 8	• CD	1		SD	COM1 COM1 SD RD RS CS COM1 Researc D D D D SD RD RS CS D D D RS CS SD RD RS CS SG D D RD RS CS SG D D D RS CS SG
	RD	2		RD	
9 15	SD	3		RS	6 70 M CL A
Front View of	DTR	4		CS	
D-SUB 15 Pin	SG	5		SG	SD RD RS CS SG
(male, convex)	DSR	6			
	RTS	7			
	CTS	8			
		9			

*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				PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	



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



■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP	COM2			PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
	CD	1		S1	Contraction	
1 5	RD	2		R1	COM2 SDI RDI SD2 RD2 RS232C Not used	
()	SD	3		S2	Terminal layout S1 R1 S2 R2 SG	
	DTR	4		R2		
6 9 Front View of	SG	5		SG		
D-SUB 9 Pin	DSR	6				
(male, convex)	RTS	7				
	CTS	8			£1 R1 £2 R2 SG	
		9				

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

(B) XTOP COM 2 Port (15 pin)

XTOP COM2				PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
1 8	CD	1		S1	COM2 COM2 COM2 COM2 COM2 COM2 COM1 COM1 COM2 SD1 RD1 SD2 RD2 Not used SD2 COM2 COM2 COM2 COM1 SD1 RD1 SD2 RD2 COM2	
	RD	2		R1	cc	
9 15	SD	3		S2	1 Sten	
Front View of	DTR	4		R2	88888	
D-SUB 15 Pin	SG	5		SG		
(male, convex)	DSR	6				
	RTS	7				
	CTS	8				
		9				

*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				PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement





■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2					PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement		
	CD	1		S1	Decision LED indication		
	RD	2		R1	COM2 COM2 SDF RD1 SD2 RD2 HS222C Not used		
	SD	3		S2	Terminal layout S1 R1 S2 R2 SG		
6 9	DTR	4		R2	e		
Front View of	SG	5		SG			
D-SUB 9 Pin	DSR	6			88888		
(male, convex)	RTS	7					
	CTS	8					
		9					

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

(B) XTOP COM 2 Port (15 pin)

XTOP COM2				PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
1 0	CD	1		S1	COM2 COM2 COM2 COM2 COM2 COM1 COM1 COM2 SD1 RD1 SD2 RD2 SD2 RD1 SD2 RD2 Not used SD2 SD1 RD1 SD2 RD2 SD1 RD1 SD2 SD1 SD2 SD1	
	RD	2		R1		
9 15 Front View of	SD	3		S2	BBBBBB	
D-SUB 15 Pin	DTR	4		R2		
(male, convex)	SG	5		SG		
	DSR	6				
	RTS	7				
	CTS	8				
		9				

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

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

• ;	XTOP/ATOP	COM 1 Por	t •	1		PLC
pin arran cauti	ngement * ion 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement
•						
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■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP	COM2				PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
	RDA	1		S+	C LED indication SD RD Not used	
		2		S–	COM3	
1 5		3		R+	R5445 422 Terminal layout 0 000000	
	RDB	4		R–		
6 9	SG	5			<u> </u>	
Front View of	SDA	6				
(male, convex)		7			00000	
		8			Ţ <u>Ţ</u> Ţ <u>Ţ</u>	
	SDB	9				

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

(B) XTOP CO	JM 2 Port (15 pin)			
TOP	COM2	•	-		PLC
pin arrang <mark>ement*</mark> caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement
	-	1	•	S+	LED indication
l			•	S–	COM3 SD RD Not used COM3 SR R5485 —Lig R5422 —Lig
				R+	
	-	10		R–	S+ S- R+ R-
9 15	RDA				
D-SUB 15 Pin	RDB				
(male, convex)	SDA	13			00000
	SDB	14			
	SG	15			+ - + - E

1112*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

■ 1 : N Connection - Please connect referring to 1:1 connection as below. (Please connect '-' and 'E terminal' for End Line Addressed Device)

ТОР	• Cable Connection and Signal	PLC	Cable Connection and Signal	PLC
Name of S <mark>ignal</mark>	Direction	Name of Signal	Direction	Name of Signal
RDA	• •		•	S+
	• •	S+	•	
	• •		•	
RDB		S–		S–
SDA	-	R+		R+
SDB		R–		R–
SG				







5.9 Cable Table 9

■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2				PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
	RDA	1	•	485(+)	LED indication	
1 5 3	2	•	485(-)	COM4 SD RD SD RD		
		3		SD	PS455 R5220C ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
	RDB	4	•	RD		
6 9	SG	5		SG		
Front View of D-SUB 9 Pin (male, convex)	SDA	6	•		PIG-COM	
		7			eeee	
		8	•			
	SDB	9				

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

(B) XTOP CO	DM 2 Port (15 pin)	-		
XTOP	COM2				PLC
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement
	-	1		485(+)	
		>		485(-)	
	(Pa	ass)		SD	
	-	10		RD	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	RDA			SG	COM4 COM4 COM4 SD RD SD RD SD RD SD RD SD RD SD RD SD RD SD RD SD RD SD RD SD RD SD RD SD RD S
Front View of	RDB				6
D-SUB 15 Pin	SDA	13			
(male, convex)	SDB	14			88888
	SG	15			+ - 80 RO 86

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

■ 1 : N Connection - Please connect referring to 1:1 connection as below. (Please connect '-' and 'E Terminal' for End Line Addressed Device)

ТОР	Cable Connection and Signal	PLC	Cable Connection and Signal	PLC
Name of Signal	Direction	Name of Signal	Direction	Name of Signal
RDA	•	485(+)		485(+)

TOS	대한민국대표 터치패널
	Touch Operation Panel

485(-)

 RDB	
 SDA	
 SDB	
SG	

. .

485(–)			



5.10 Cable Table 10

■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2				PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
	CD	1		SD	LED indication	
1 5 0 0 6 9 Front View of D-SUB 9 Pin (male, convex)	RD	2	RD SD RD SG	RD	COM4 SD RD SD RD	
	SD	3		SD		
	DTR	4		RD		
	SG	5		SG		
	DSR	6			00000	
	RTS	7				
	CTS	8				
		9				

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

(B) XTOP COM 2 Port (15 pin)

XTOP	COM2			PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement
1 0	CD	1		SD	COM4 COM4
	RD	2		RD	
9 15 Front View of	SD	3		SD	00000
D-SUB 15 Pin	DTR	4		RD	
(male, convex)	SG	5		SG	
	DSR	6			
	RTS	7			
	CTS	8			
		9			

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

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

XTOP/ATOP	COM 1 Por	ť		PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement





■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP	XTOP COM2					PLC
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connect	ion	Pin Number	Pin Arrangement
	RDA	1	•		+	
		2	f		-	СОМ6 (Н5485) СОМ1 СОМ2 ССМ1 СОМ2
$ \begin{array}{ccc} 1 & 5 \\ 0 & 0 \\ 0 & 0 \end{array} $		3			+	RS485 COMI COM2 COMI COM2 COMI COM2 COMI COM2 COMI COM2
	RDB	4	•		_	
6 9	SG	5				
	SDA	6	•			
(male, convex)		7				
		8	·•			
	SDB	9				

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

(B) XTOP COM 2 Port (15 pin)						
•XTOP	COM2			PLC		
pin arrang <u>ement</u> * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
	_	1		+		
				_	СОМ6 <u>RS485</u> СОМ1 СОМ2	
				+	RS485 Not used	
	-	10		_		
9 15	RDA					
D-SUB 15 Pin	RDB					
(male, convex)	SDA	13				
	SDB	14				
	SG	15				

1112*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

1 : N Connection - Please connect referring to 1:1 connection as below. (Please connect '-' and 'E terminal' for End Line Address Device)

ТОР	Cable Connection and Signal	PLC	Cable Connection and Signal	PLC
Name of Signal	Direction	Name of Signal	Direction	Name of Signal
RDA	• _	+		+
	•		-	
RDB		_		_
SDA		+		+
SDB		_		_
SG				





■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)1112

	XTOP COM2				PLC	
pin arrang cautio	ement * n 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement
		RDA	1	•	+	COM6
			2	•	_	Control Control Control Control
			3		+	
1 0 6 Front Vie D-SUB 9	5 0 9 ew of 9 Pin	RDB	4	•	_	
(male, co	onvex)	SG	5	l		
		SDA	6			
			7			
			8			
		SDB	9			

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

(B) XTOP COM 2 Port (15 pin)

XTOP	COM2	1.2		PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Pin Arrangement	
	Ι	1		+	LED indication	
				-	СОМ6 <u>RS485</u> СОМ1 СОМ2	
				+	RS485 COMI COM2	
	-	10		_		
9 15	RDA					
Front View of	RDB					
(male, convex)	SDA	13				
	SDB	14				
	SG	15				

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

1 : N Connection - Please connect referring to 1:1 connection as below. (Please connect '-' and 'E terminal' for End Line Address Device)

TOP	Cable Connection and Signal	PLC	Cable Connection and Signal	PLC
Name of Signal	Direction	Name of Signal	Direction	Name of Signal
RDA	•	+		+
	•			_



표 터치패널	
ration Panel	

+

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 RDB	
 SDA	
SDB	
SG	

+	
_	



5.13 케이블 표 1311 ■ 1 : 1 Connection (A) XTOP COM 2 Port (9 pin) XTOP COM2 PLC Name Cable Connection pin arrangement * Pin Pin pin arrangement * caution 1) of caution 1) Number Number Signal CD SD 2 RD RD 50 SD 3 SG 6 DTR 4 0 0 9 6 SG 5 Front View of DSR 6 D-SUB 9 Pin RTS 7 (male, convex) CTS 8 9

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

(B) XTOP COM 2 Port (15 pin)

XTOP COM2				PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	pin arrangement * caution 1)
	CD			SD	
1 8	RD	2		RD	
	SD	3		SG	17 C
	DTR	4			
9 15	SG	5			
Front View of D-SLIB 15 Pin	DSR	6			
(male, convex)	RTS	7			000
	CTS	8			SRG
		9			Construction of the Constr

*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				PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	pin arrangement * caution 1)

				7	대한민국대표 터치패널 Touch Operation Panel
		1		SD	
$\begin{array}{c} 4 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$		2	•		
	RD		•	RD	
	SG	3		SG	
		4			
		5			
(male, convex)	SD	6			SRG



6. Support address

Devices that are usable with TOP are 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.

Operand	Name	DATA Type	Number
Х	External Input Relay	bit	0 ~ 511F *Caution1
Y	External Output Relay		0 ~ 511F *Caution1
R	Internal Relay		0 ~ 886F *Caution1
L	Link Relay		0 ~ 639F *Caution1
R	Special Relay		9000 ~ 910F * [*]
T/C	Timer/Counter Touching Point		0 ~ 3071
DT	Data Register	워드	0 ~ 9999
FL	File Register		0 ~ 32764
Ld	Link Register		0 ~ 8477
DT	Special Register		90000 ~ 90511
SV	Timer/Counter Setting Range		0 ~ 3071
EV	Timer/Counter Elapse Range		0 ~ 3071

*Caution1) If it's X, Y, R, L case, it can be processed bit / word. If processed as bits, 1 unit is hexadecimal, and decimal from ten unit. (예) X12C

In case of processing as word, put W in front to process (example) $WX12 = 120 \sim X12F 16$ bit data *Caution) A special register (DT) can be used only on FP2/2SH/10SH only