Panasonic Electric Works Co., Ltd.

FP Series

Computer Link Driver

Compatible version	OS	4.0.0.0 or higher
	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 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 Page 5

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 details Page 24

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 27

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

6. Support address Page 45

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	FP2 FP2SH	CPU내장 Tool 포트	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
		CPU내장 RS232C 포트	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.2 Cable Table 2 (27 page)
		FP2-CCU (포트1) (AFP2462)	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.2 Cable Table 2 (27 page)
		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	3.1 설정 예제 13.1 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)
	FP-X	CPU내장 Tool 포트	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.1 Cable Table 1 (26 page)
		AFPX-COM1	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.5 Cable Table 5 (30 page)
		AFPX-COM2 (COM1)	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.6 Cable Table 6 (31 page)
		AFPX-COM2 (COM2)	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.7 Cable Table 7 (32 page)
		AFPX-COM3 (COM1)	RS-485	3.3 Configuration Exercise 3 (10 page)	5.8 Cable Table 8 (33 page)
		AFPX-COM4 (COM1)	RS-485 (2wire)	3.3 Configuration Exercise 3 (10 page)	5.9 Cable Table 9 (34 page)
		AFPX-COM4 (COM2)	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.10 Cable Table 10 (35 page)
		AFPX-COM6 (COM1)	RS-485 (2wire)	3.3 Configuration Exercise 3 (10 page)	5.11 Cable Table 11 (36 page)
		AFPX-COM6 (COM2)	RS-485 (2wire)	3.3 Configuration Exercise 3 (10 page)	5.12 Cable Table 12 (37 page)
	FP∑	CPU내장 Tool 포트	RS-232C	3.4 Configuration Exercise 4 (14 page)	5.1 Cable Table 1 (26 페이지)

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

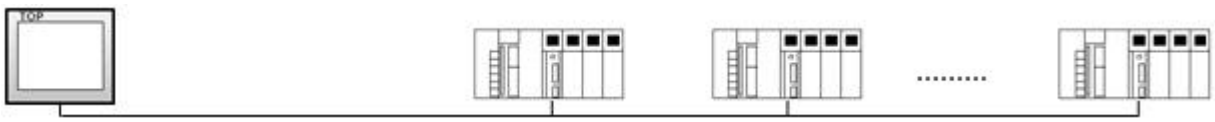
Series	CPU	Link I/F	Method	System settings	Cable
FP	FP0	CPU Integrated Tool Port	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
		CPU Integrated RS232C Port	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.13 Cable Table 13 (38 page)
	FP-e	CPU Integrated Tool Port	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
		AFPE224300	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.10 Cable Table 10 (35 page)
		AFPE224305	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.10 Cable Table 10 (35 page)
		AFPE224325	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.10 Cable Table 10 (35 page)
		AFPE224302	RS-485 (2wire)	3.5 Configuration Exercise 5 (16 page)	5.9 Cable Table 9 (34 page)
		AFPE224322	RS-485 (2wire)	3.5 Configuration Exercise 5 (16 page)	5.9 Cable Table 9 (34 page)
	FP-M	CPU Integrated Tool Port	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.1 Cable Table 1 (26 page)
		CPU Integrated RS232C Port	RS-232C	3.1 설정 예제 13.1 Configuration Exercise 1 (5 page)	5.2 Cable Table 2 (27 page)
	FP10SH	CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
		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

				Exercise 6 (20 page)	(27 page)
	FP10S	CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
		AFP3462	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)
	FP3	CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
		AFP3462	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)
	FP1	CPU Integrated Tool Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.1 Cable Table 1 (26 page)
		CPU Integrated RS232C Port	RS-232C	3.6 Configuration Exercise 6 (20 page)	5.2 Cable Table 2 (27 page)

■ Connection configuration

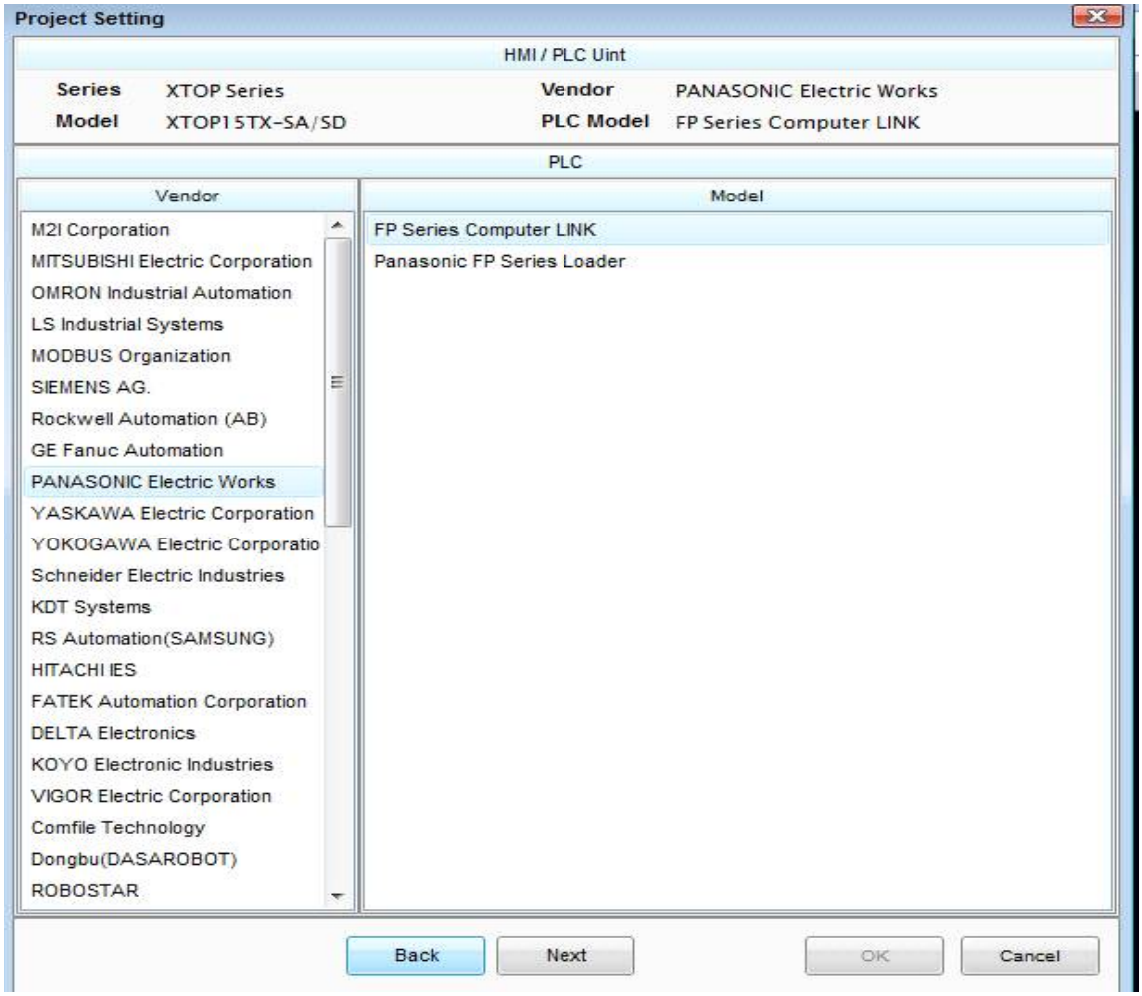
• 1 : 1(1 TOP and 1 External Device) Connection - it is for RS232C/422 communication.

• 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.



Setting details		Contents
TOP	Series	Select the name of a TOP series that is to be connected to PLC. Before downloading the settings, install the OS version specified in the table below according to TOP series. Series: XTOP / HTOP — Version name: V4.0
	Name	Select the model name of TOP product.
External device	Manufacturer	Select the manufacturer of external devices to be connected to TOP. Please select “PANASONIC Electric Works Co., Ltd”.
	PLC	Select the model series of external devices to be connected to TOP. Please select “FP Series Computer Link”. Please check, in the “1. System configuration”, if the relevant external 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.

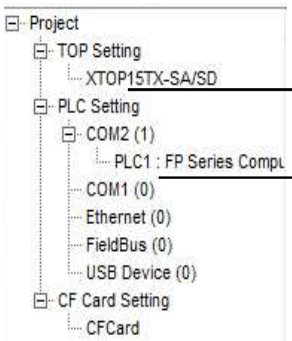
3.1 Example of settings 1

The system is set as below.

Details		TOP	"FP SERIES"	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232C	User settings
Address(PLC Address)		—	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]	ODD		User settings

(1) XDesignerPlus setup

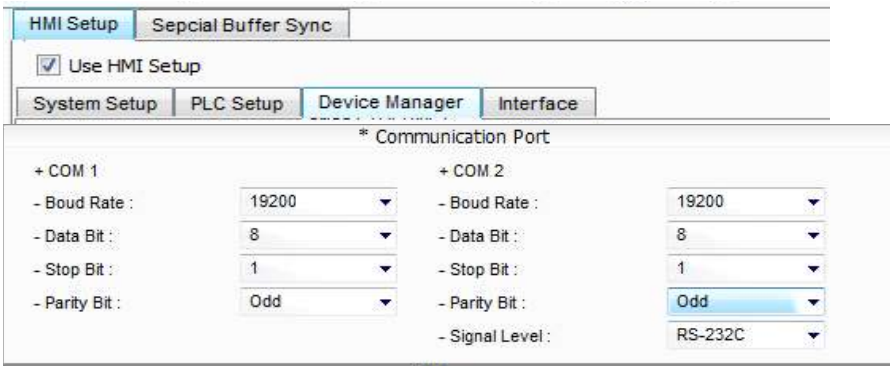
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project Property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setting > Check "Use HMI Setup" > Device Manager]



■ External device settings

Set the option of Communication Driver of "FP SERIES Computer Link"

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

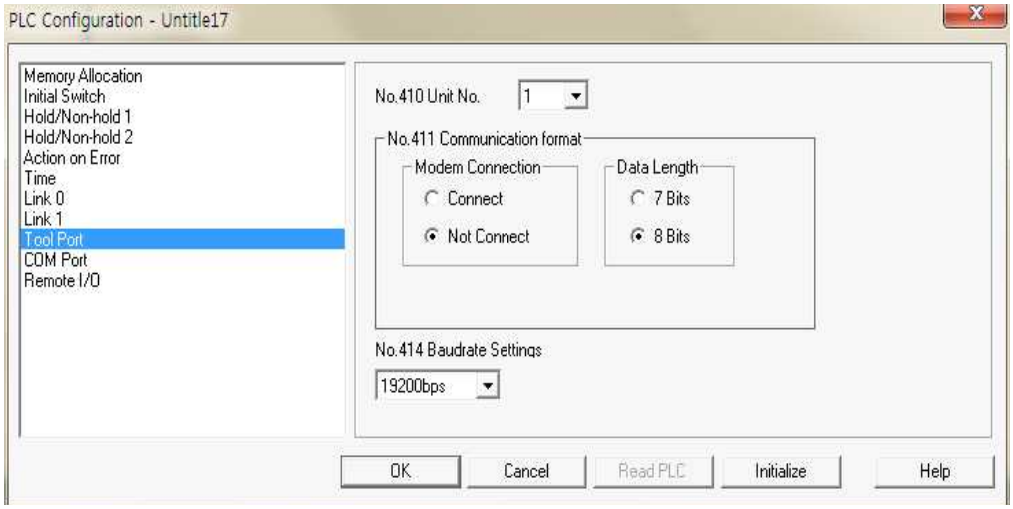
(2) External device settings

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.

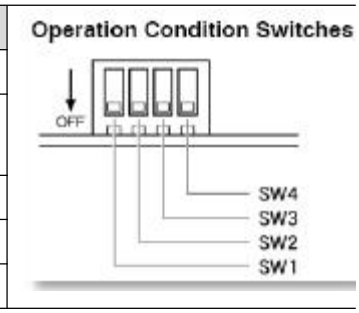
Download the contents to PLC after running the part that is desired to utilize.

■ 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.



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



■ FP2/FP2SH/FP3 [AFP2462]

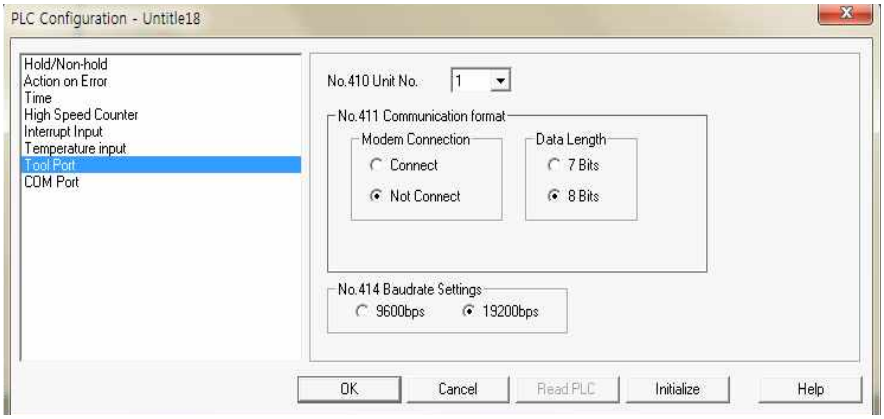
1. Set the dip switch which is located in the back of communication module as below.

Dip Switch (Mode Setting)	Settings	Contents		
Switch 1	ON	COM1	reserved for system	
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

Continue on the next page.

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

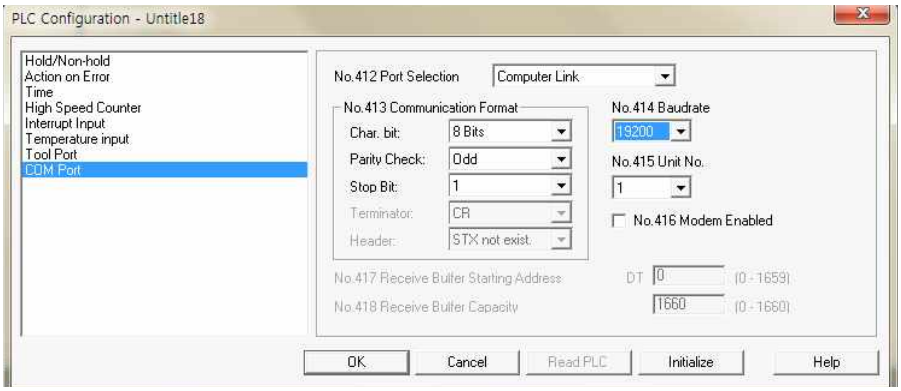
1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [Tool port setting] Tap.



Details		Contents	
Unit Number		1	
Communication Format	Modem Connection	Do not Execute	
	Data length	8 bit	
Setting Communication speed		19200bps	
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.



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.

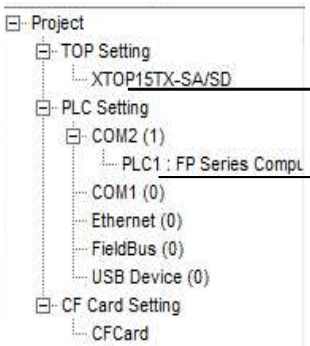
3.2 Example of Settings 2

The system is set as below.

Details		TOP	"FP SERIES"	Remark
Serial level (port/channel)		RS-422	RS-422	User settings
Address(PLC Address)		—	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]	ODD		User settings

(1) XDesignerPlus setup

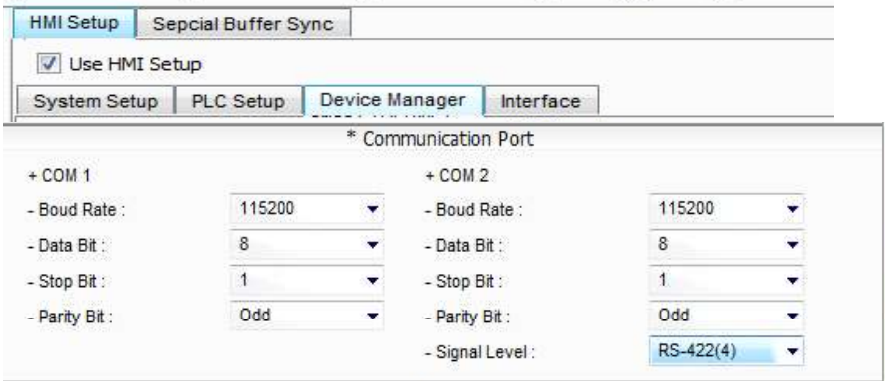
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project Property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setting > Check "Use HMI Setup" > Device Manager]



■ External device settings

This sets the option of "FP SERIES Computer Link" communication driver.

- 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 + AFP2404]

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

Dip Switch (Mode Setting)	Settings	Contents		
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.

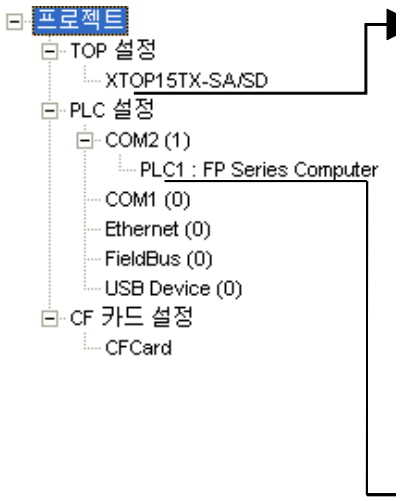
3.3 Examples of Setting 3

The system is set as below.

Details		TOP	"FP SERIES"	Remark
Serial level (port/channel)		RS-485 (2 wire)	RS-485	User settings
Address(PLC Address)		—	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]	ODD		User settings

(1) XDesignerPlus setup

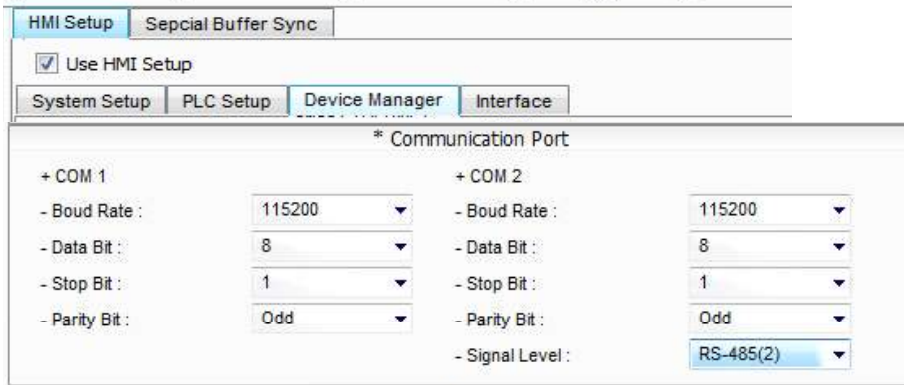
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project attributes > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setting > Check "Use HMI Setting" > Device Manager]



■ External device settings

This sets the option of "FP SERIES Computer Link" communication driver.

- 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 Setting)	Settings	Contents		
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.

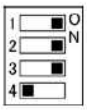
Rotary Switch	Settings	Contents
(Address setting)	1	Sets the address of MCU module.

■ [AFPX-COM3] COM1 Port setting

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

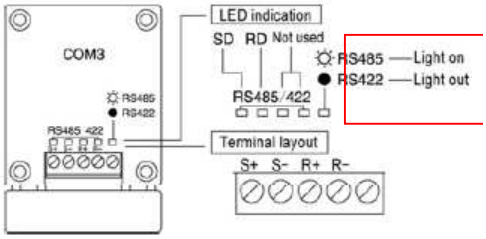
Settings	Setting Information Confirm

Cassette backside switch

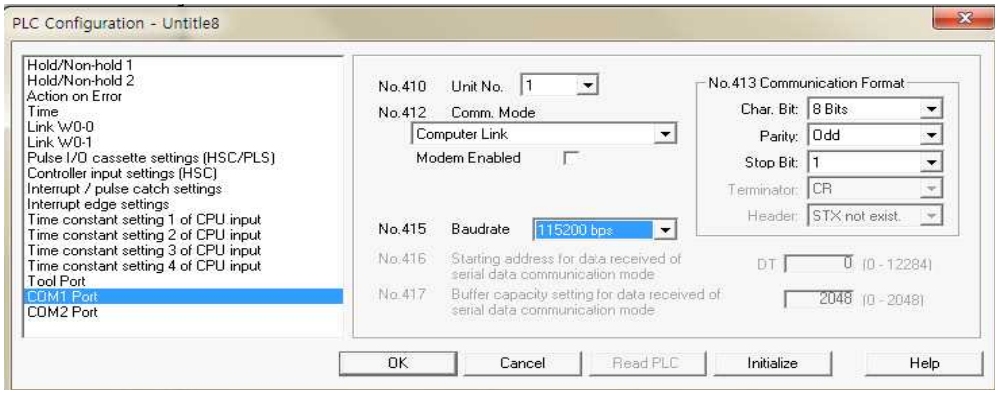


SW1	RS485	RS422
1 2 3	ON	OFF
4	ON for terminal unit	

Change the switch at the back of the cassette depending on the state of the communication.



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



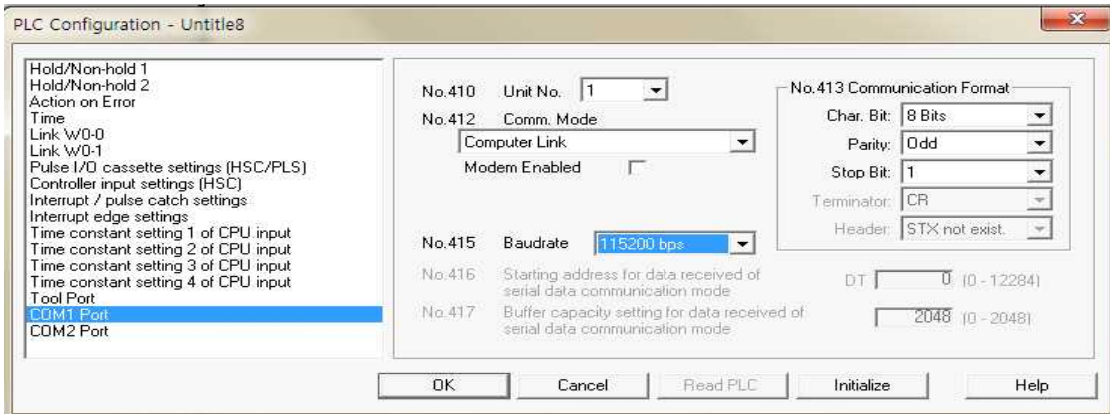
Details			Settings	
Unit number (PLC address)		1	Connect Modem	OFF
Communication Mode		Computer Link	Communication speed	115200
Transmit Format	Data length	8 bit		

	Parity bit	Odd	
	Stop bit	1	

☞ 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.



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
	Stop bit	1

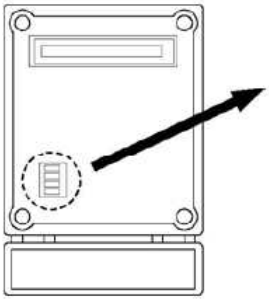
■ FP-X [AFPX-COM6] COM1/COM2 Port setting

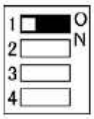
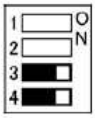
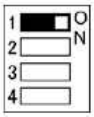
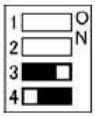
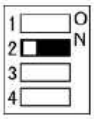
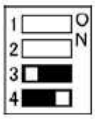
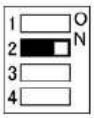
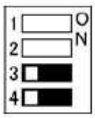
1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM1 port setting] / [COM2 port setting] Tap.

Details		Settings
Unit number (PLC 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

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

Cassette backside switch

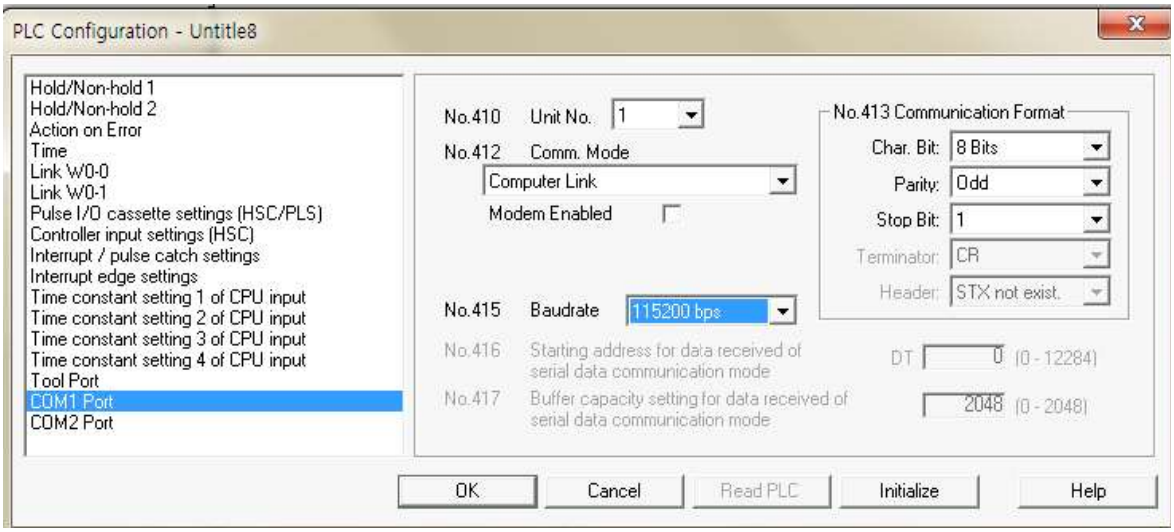


Terminal resistance		COM2 Baud rate Note)	
	COM1 general unit (Default)		115200bps
	COM1 terminal unit		115200bps
	COM2 general unit (Default)		19200bps
	COM2 terminal unit		9600bps (Default)

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.



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

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

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

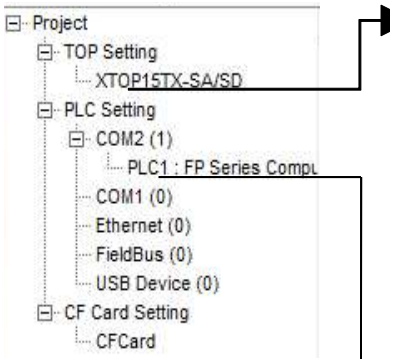
3.4 Examples of Setting 4

The system is set as below.

Details		TOP	"FP SERIES"	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232C	User settings
Address(PLC Address)		—	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]	ODD		User settings

(1) XDesignerPlus setup

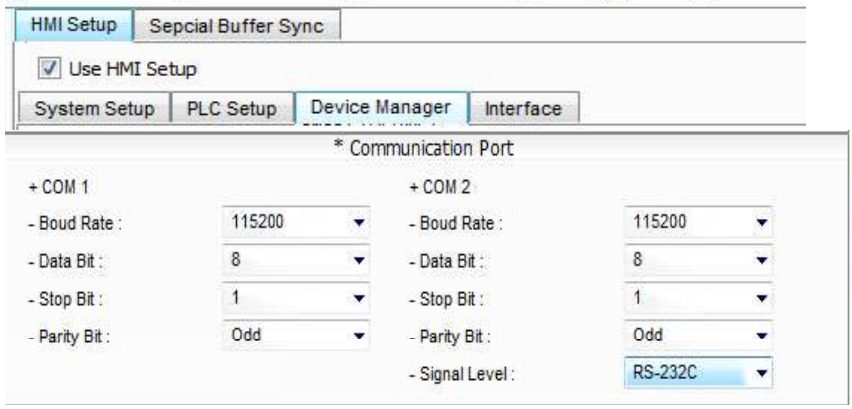
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project Property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setting > Check "Use HMI Setup" > Device Manager]



■ External device settings

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

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

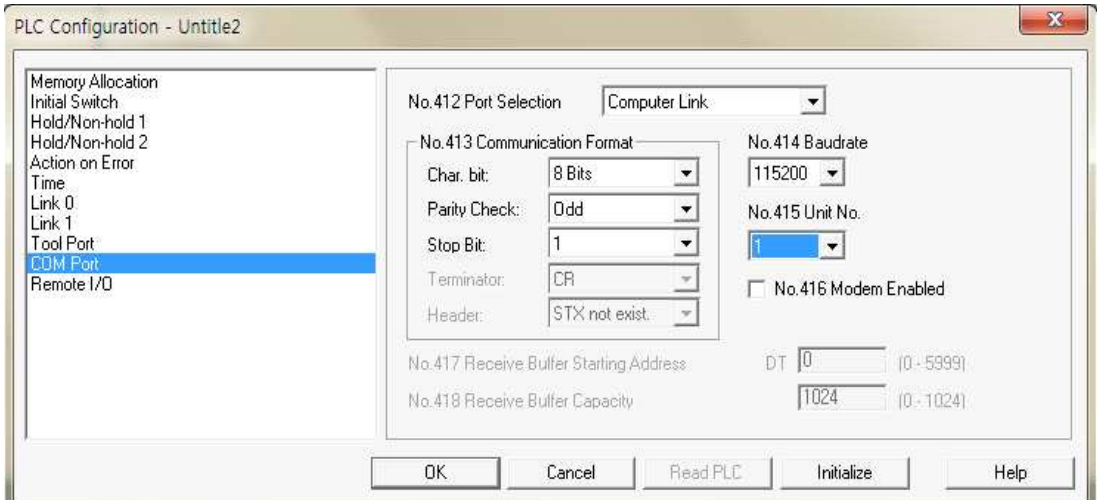
(2) External device settings

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.

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

■ FP-M [CPU Integrated RS232C Port]

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



Details		Settings
Move Select		Computer Link
Unit Number		1
Communication speed		115200
Transmit Format	Data length	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 Setting)	Settings	Contents		
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.

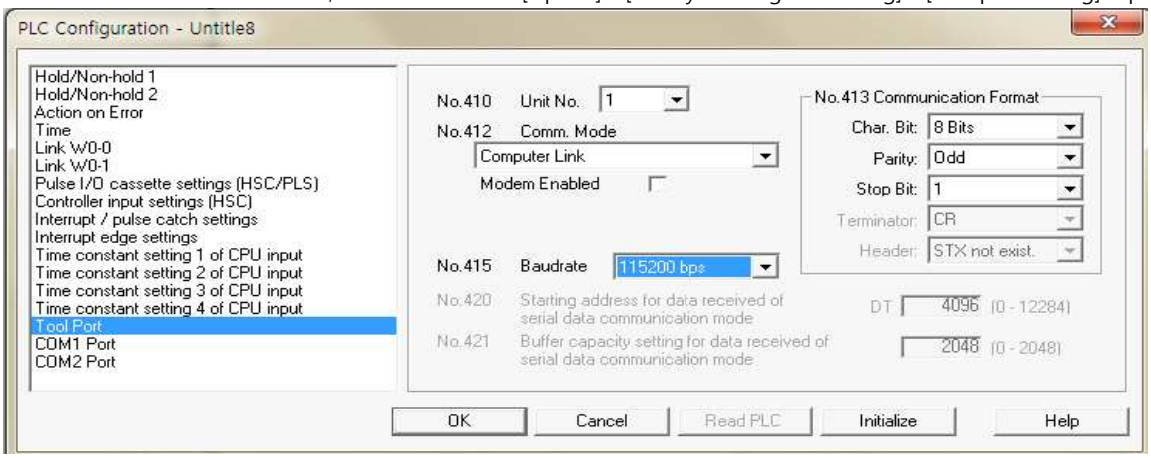
Rotary Switch	Settings	Contents
(Address setting)	1	Sets the address of MCU module.

☞ 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.

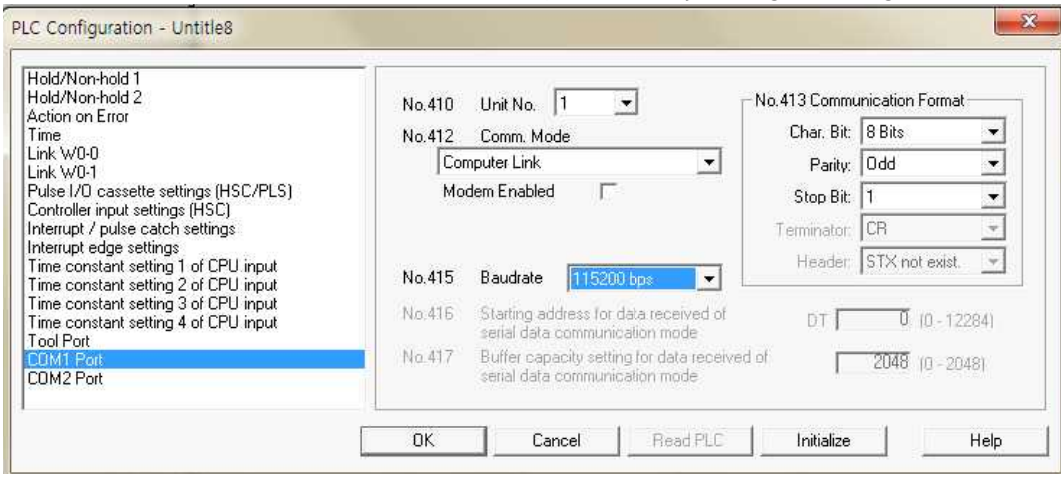


Details		Settings
Unit number (PLC address)		1
Communication Mode		Computer Link
Connect Modem		OFF
Communication speed		115200
Transmit Format	Data length	8 bit
	Parity bit	Odd Numbers
	Stop bit	1

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

FP∑ [AFPG801] COM1 Port Setting / [AFPG802] COM1 Port Setting

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

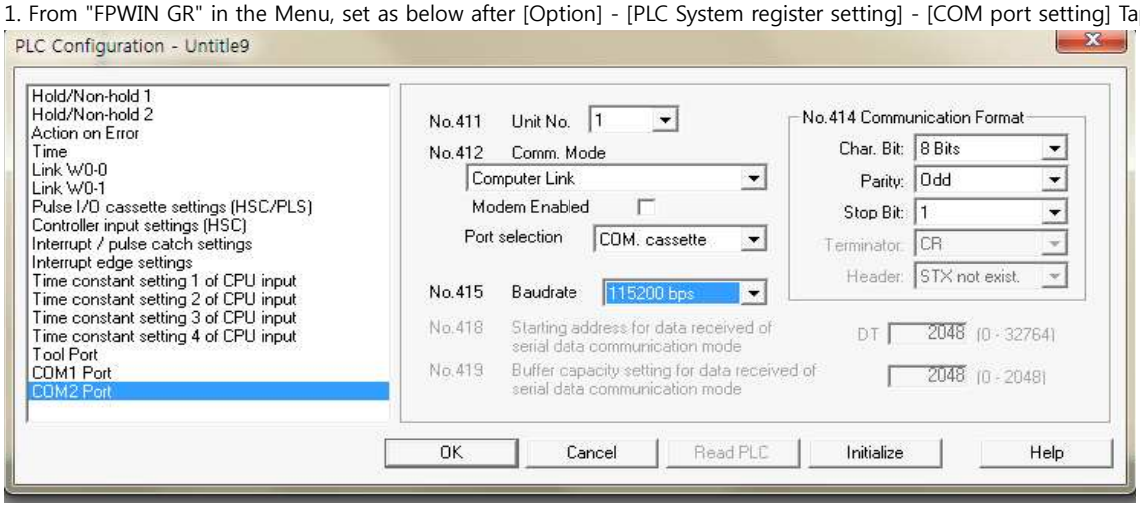


Details		Settings
Unit number (PLC address)		1
Communication Mode		Computer Link
Connect Modem		OFF
Communication speed		115200
Transmit Format	Data length	8 bit
	Parity bit	Odd Numbers
	Stop bit	1

☞ Continue on the next page.

■ FP-X [AFPX-COM2] COM2 Port Setting / [AFPX-COM4] COM2 Port Setting

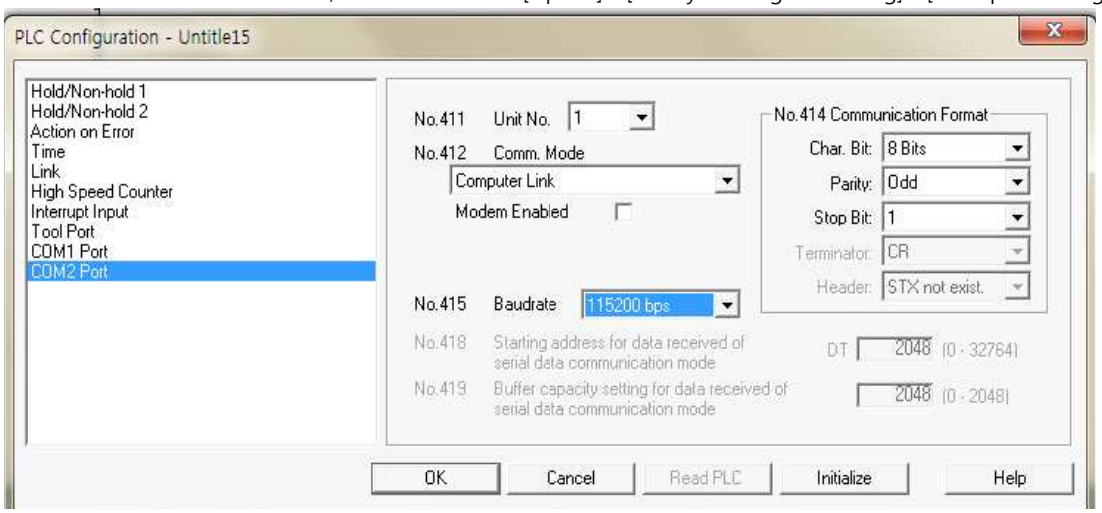
1. From "FPWIN GR" in the Menu, set as below after [Option] - [PLC System register setting] - [COM port setting] Tap.



Details		Settings
Port Settings		COM. cassette
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

■ 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.



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

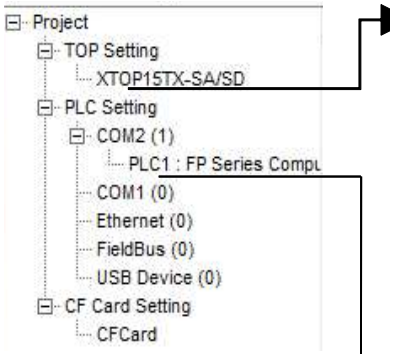
3.5 Examples of Setting 5

The system is set as below.

Details		TOP	"FP SERIES"	Remark
Serial level (port/channel)		RS-485(2 wire, COM2)	RS-485(COM2)	User settings
Address(PLC Address)		—	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]	ODD		User settings

((1) XDesignerPlus setup

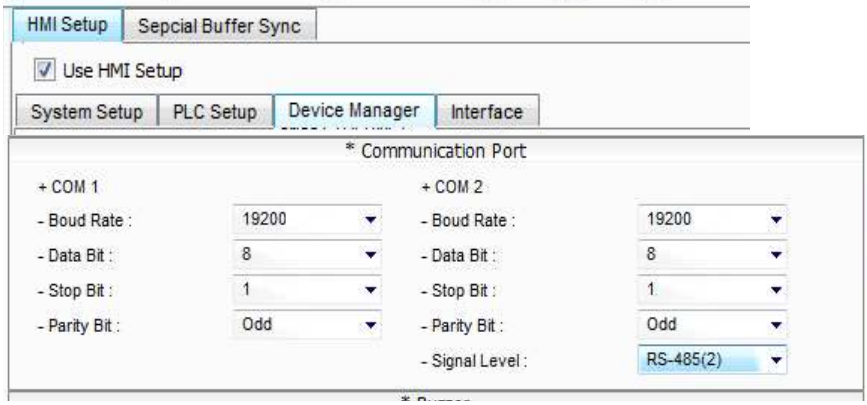
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project Property > Project > Settings > TOP Name]

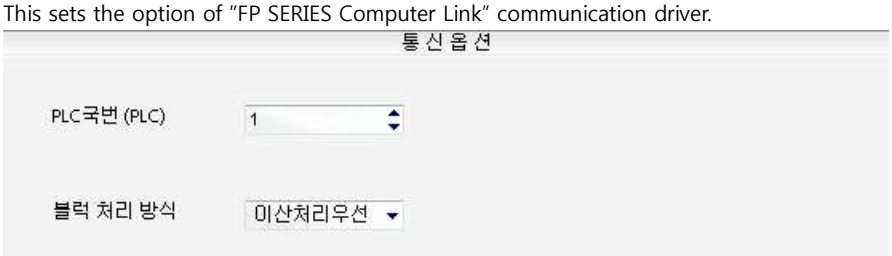
Set the communication interface of TOP tool.

- From right window [HMI Setting > Check "Use HMI Setup" > Device Manager]



■ External device settings

This sets the option of "FP SERIES Computer Link" communication driver.



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

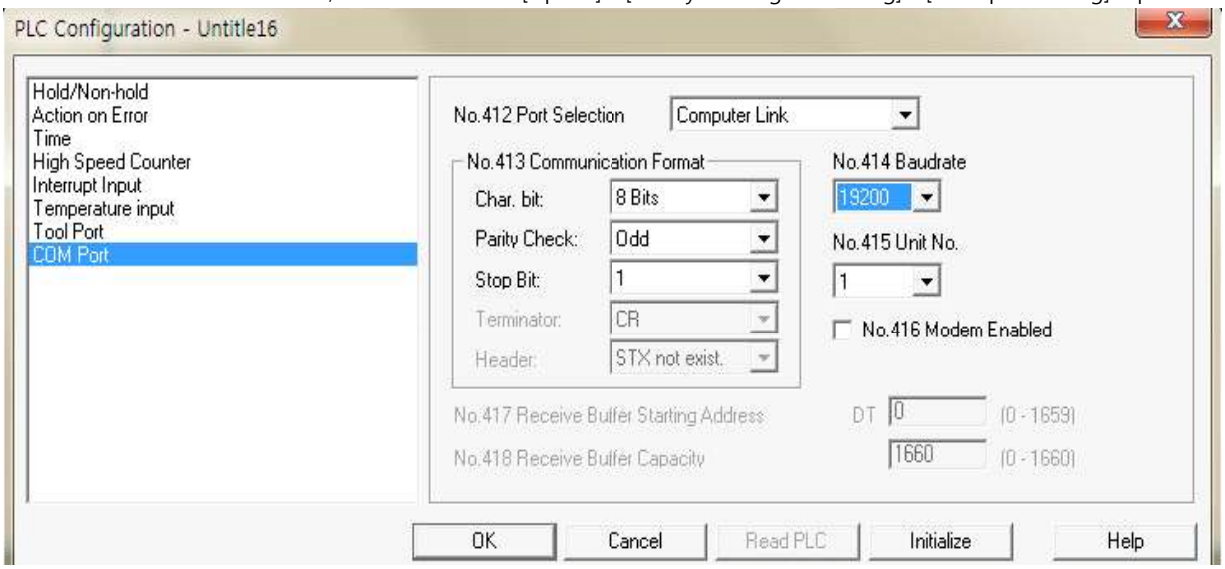
(2) External device settings

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.

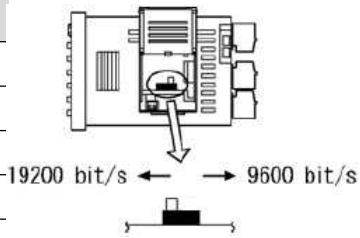
Download the contents to PLC after running the part that is desired to utilize.

■ 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.



Details		Settings
Move Select		Computer Link
Unit Number		1
Communication speed		19200
Transmit Format	Data length	8 bit
	Parity Check	Odd Numbers
	Stop bit	1
Modem Connection		OFF



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

Details	Contents
Internal Switch	19200bps

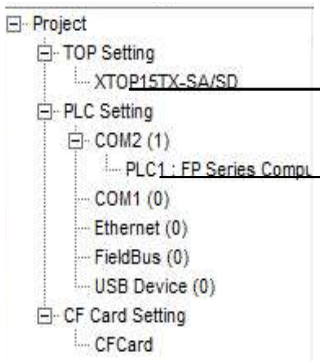
3.6 Examples of Setting 6

The system is set as below.

Details		TOP	"FP SERIES"	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232C	User settings
Address(PLC Address)		—	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]	ODD		User settings

(1) XDesignerPlus setup

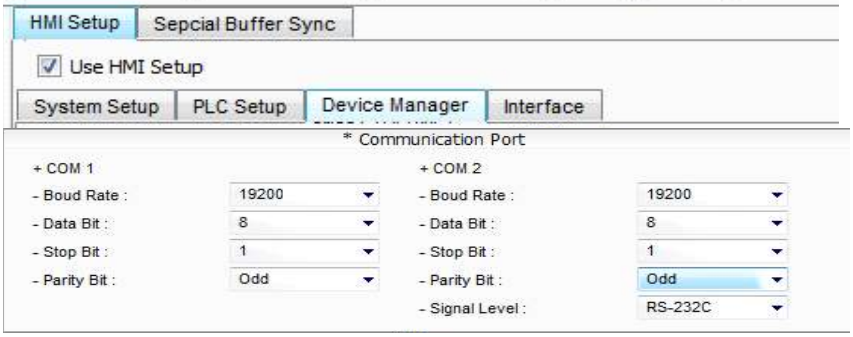
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project Property > Project > Settings > TOP Name]

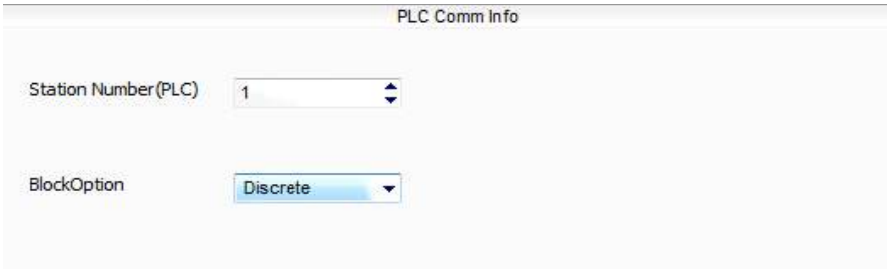
Set the communication interface of TOP tool.

- From right window [HMI Setting > Check" Use HMI Setup" > Device Manager]



■ External device settings

This sets the option of "FP SERIES Computer Link" communication driver.



- 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.

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

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

☞ Continue on the next page.

■ AFP3462

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.

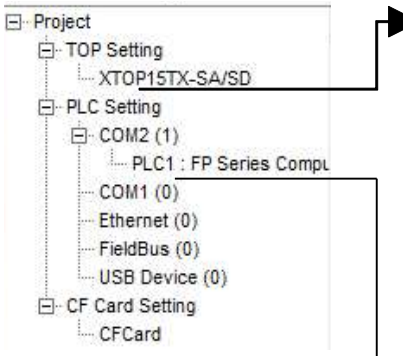
Details	Contents
Communication speed	19200
Data length	8
parity bit	Odd
Stop bit	1
Motion mode	Computer Link
Modem Connection	Do not execute modem connection.
Not performing automatic transfer to 2400BPS	OFF
Unit Number	1

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

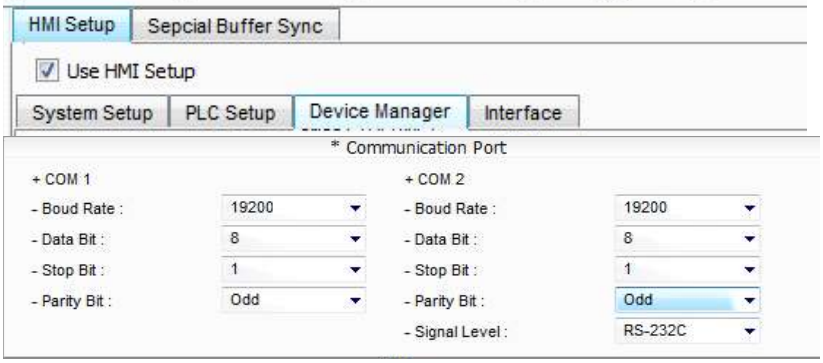
Select [Project > Project attributes] to show the below window.



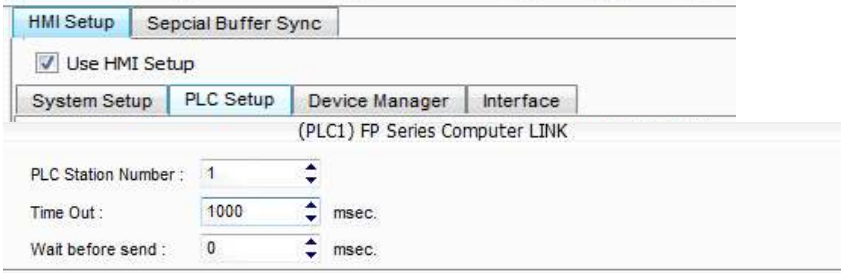
■ [Project > Project Property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setting > Check "Use HMI Setup" > Device Manager]



- From right window [HMI Setting > check Use HMI Setup > PLC Setting]



■ External device settings

This sets the option of "FP SERIES Computer Link" communication driver.

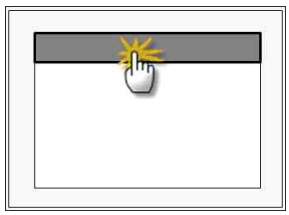
■ Communication Interface Settings

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 mSec] Receiving Wait Time [x10 mSec]	Set up TOP's waiting time between response receiving – next command request transmission from external device at [0 – 5000] x 1 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 TOP according to below **Step1 → Step2**.
  (Press "TOP COM 2/1 setup" in **Step1** to change setup at **Step2**.)



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	Communication Interface Settings

Step 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 - Baud Rate : 19200 [BPS] - Data bit : 8 [BIT] - Stop bit : 1 [BIT] - Parity Beat : ODD [BIT] - Signal level : RS – 232C	COM 1 Port Communication Interface Settings
+ COM-2 Port - Baud Rate : 19200 [BPS] - Data bit : 8 [BIT] - Stop bit : 1 [BIT] - Parity Beat : ODD [BIT] - Signal level : RS – 232C	COM-2 Port Communication Interface Settings

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 Version		O.S Version				
Details	Contents				Confirm	
System configuration	Name of CPU				OK	NG
	Name of confront port that is communicating				OK	NG
	System Connection Method	1:1	1:N	N:1	OK	NG
Connection Cable	Name of Cable				OK	NG
PLC setup	Setup address				OK	NG
	Serial baud rate	[BPS]			OK	NG
	Serial data bit	[BIT]			OK	NG
	Serial Stop bit	[BIT]			OK	NG
	Serial parity bit	[BIT]			OK	NG
	Assigned Address Limit				OK	NG
TOP setup	Setup port	COM 1	COM 2		OK	NG
	Name of Driver				OK	NG
	Confront Address	Project Property Setup			OK	NG
		When Diagnosing Communication			OK	NG
	Serial baud rate	[BPS]			OK	NG
	Serial data bit	[BIT]			OK	NG
	Serial Stop bit	[BIT]			OK	NG
	Serial parity bit	[BIT]			OK	NG

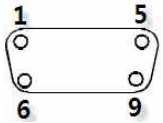
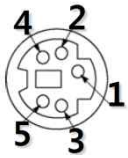
5. Cable diagram

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

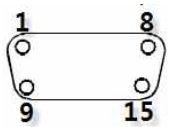
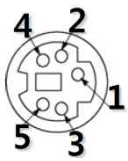
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

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

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

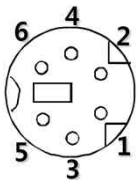
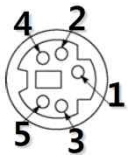
(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arrangement * caution 1)**
 Front View of D-SUB 15 Pin (male, convex)	CD	1	•	1	SG	 Front View of D-SUB 6 Pin (male, convex)
	RD	2	•	2	SD	
	SD	3		3	RD	
	DTR	4		4	-	
	SG	5		5	+5V	
	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			Cable Connection	PLC		
pin arrangement *	Name	Pin		Pin	Name	**pin arrangement ***

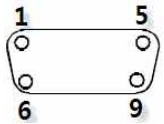
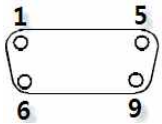
caution 1)	of Signal	Number		Number	of Signal	caution 1)
 Front View of D-SUB 6 Pin (male, convex)		1		1	SG	 Front View of D-SUB 6 Pin (male, convex)
	RD	2		2	SD	
	SG	3		3	RD	
		4		4	-	
		5		5	+5V	
	SD	6				

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

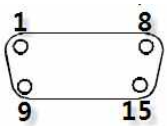
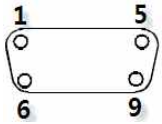
5.2 Cable diagram 2

■ 1 : 1 Connection

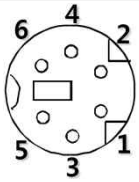
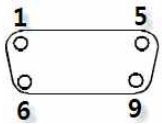
(A) XTOP COM 2 Port (9 pin)

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

(B) XTOP COM 2 Port (15 pin)

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

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

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

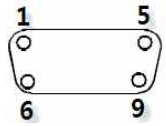
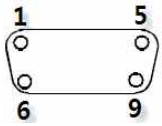
		4		4	RS	
		5		5	CS	
	SD	6		6	-	
				7	SG	
				8	-	
				9	ER	

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

5.3 Cable Table 3

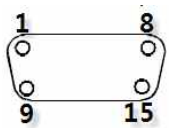
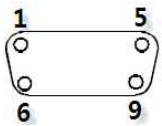
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arrangement * caution 1)**
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		1	(NC)	 Front View of D-SUB 9 Pin (male, convex)
		2		2	SD+	
		3		3	RD+	
	RDB	4		4	SD–	
	SG	5		5	RD–	
	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)

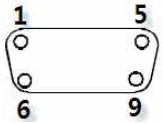
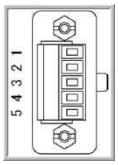
XTOP COM2			Cable Connection	PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arrangement * caution 1)**
 Front View of D-SUB 15 Pin (male, convex)	-	1		1	(NC)	 Front View of D-SUB 9 Pin (male, convex)
	(Pass)			2	SD+	
				3	RD+	
	-	10		4	SD–	
	RDA	11		5	RD–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

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

5.4 케이블 표 4

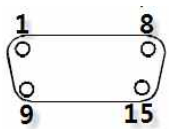
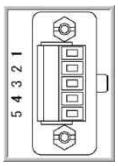
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arrangement * caution 1)**
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		1	E	 Based on the front side of Communication cable connecter Terminal Block 5pin
		2		2	–	
		3		3	+	
	RDB	4		4	–	
	SG	5		5	+	
	SDA	6				
		7				
		8				
	SDB	9				

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

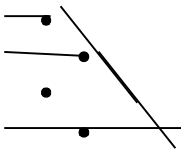
(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC		
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arrangement * caution 1)**
 Front View of D-SUB 15 Pin (male, convex)	–	1		1	E	 Based on the front side of Communication cable connecter Terminal Block 5pin
				2	–	
				3	+	
	-	10		4	–	
	RDA			5	+	
	RDB					
	SDA	13				
	SDB	14				
	SG	15				

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

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

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

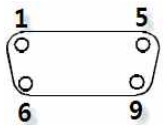
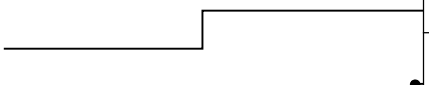
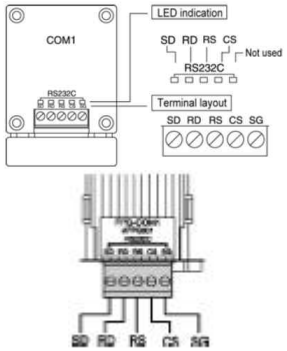
TOP	Cable Connection and Signal Direction	PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal		Name of Signal
RDA		+		+
RDB		–		–
SDA		+		+
SDB		–		–
SG				

f

5.5 Cable Table 5

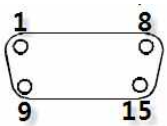
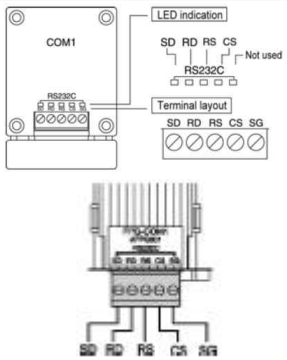
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

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

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

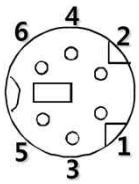
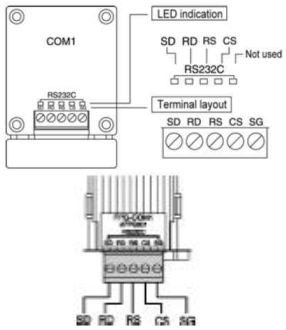
(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	CD	1		SD	
	RD	2		RD	
	SD	3		RS	
	DTR	4		CS	
	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 Port			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement

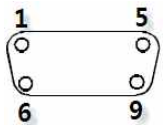
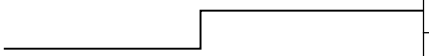
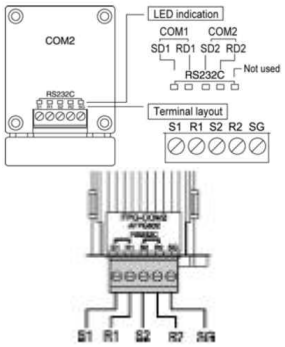
 Front View of D-SUB 6 Pin (male, convex)		1		SD	
	RD	2		RD	
	SG	3		RS	
		4		CS	
		5		SG	
	SD	6			

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

5.6 케이블 표 6

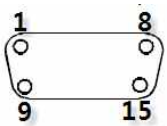
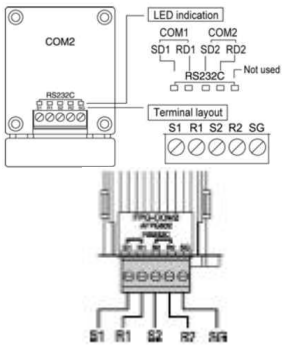
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	CD	1		S1	
	RD	2		R1	
	SD	3		S2	
	DTR	4		R2	
	SG	5		SG	
	DSR	6			
	RTS	7			
	CTS	8			
		9			

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

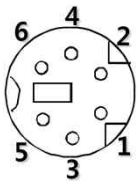
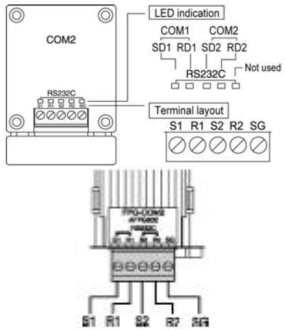
(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	CD	1		S1	
	RD	2		R1	
	SD	3		S2	
	DTR	4		R2	
	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 Port			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement

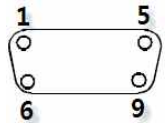
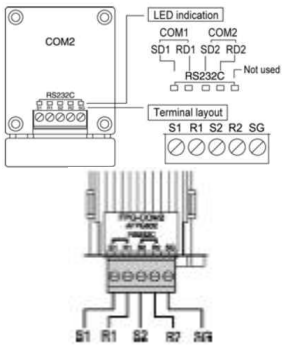
 Front View of D-SUB 6 Pin (male, convex)		1	•	S1	
	RD	2		R1	
	SG	3		S2	
		4		R2	
		5		SG	
	SD	6			

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

5.7 케이블 표 7

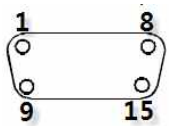
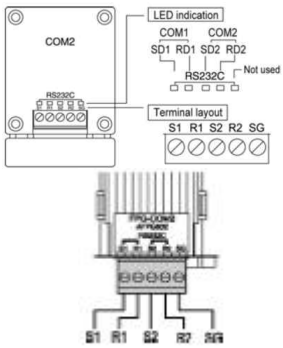
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	CD	1		S1	
	RD	2		R1	
	SD	3		S2	
	DTR	4		R2	
	SG	5		SG	
	DSR	6			
	RTS	7			
	CTS	8			
		9			

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

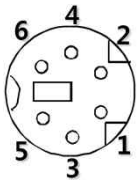
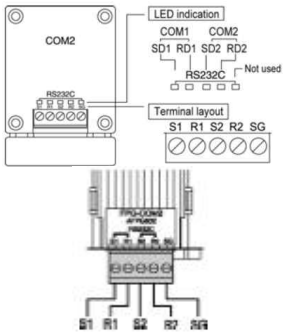
(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	CD	1		S1	
	RD	2		R1	
	SD	3		S2	
	DTR	4		R2	
	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 Port			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement

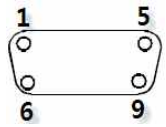
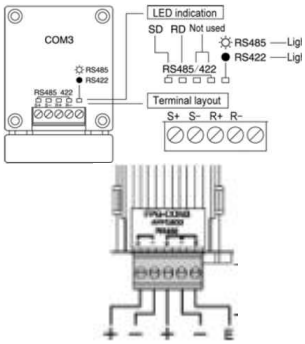
 Front View of D-SUB 6 Pin (male, convex)		1	•	S1	
	RD	2		R1	
	SG	3		S2	
		4		R2	
		5		SG	
	SD	6			

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

5.8 케이블 표 8

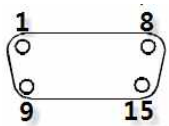
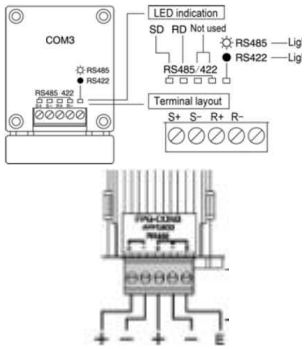
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		S+	
		2		S–	
		3		R+	
	RDB	4		R–	
	SG	5			
	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			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	–	1		S+	
				S–	
				R+	
	-	10		R–	
	RDA				
	RDB				
	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 Addressed Device)

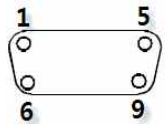
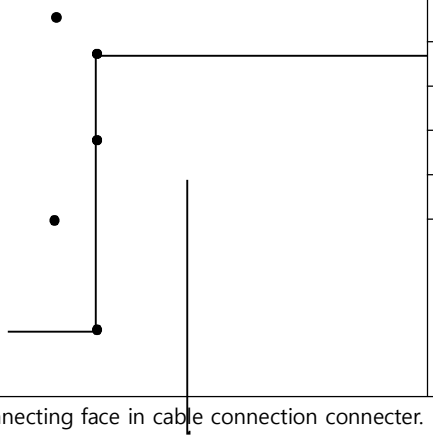
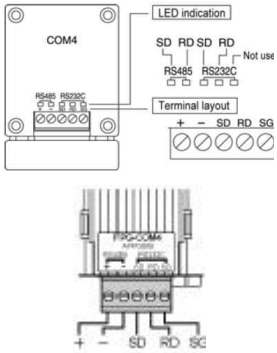
TOP	Cable Connection and Signal Direction	PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal		Name of Signal
RDA		S+		S+
RDB		S–		S–
SDA		R+		R+
SDB		R–		R–
SG				

1112

5.9 Cable Table 9

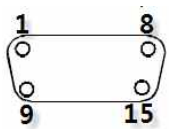
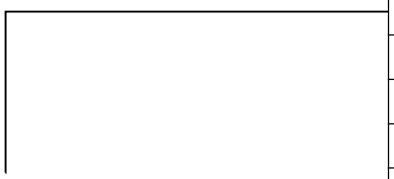
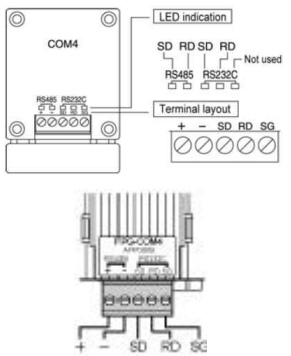
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		485(+)	
		2		485(–)	
		3		SD	
	RDB	4		RD	
	SG	5		SG	
	SDA	6			
		7			
		8			
	SDB	9			

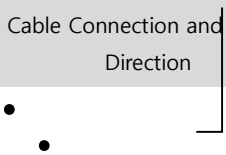
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	–	1		485(+)	
	(Pass)			485(–)	
				SD	
	-	10		RD	
	RDA			SG	
	RDB				
	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 Addressed Device)

TOP	Cable Connection and Signal Direction	PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal		Name of Signal
RDA		**485(**+)		485(+)

RDB
SDA
SDB
SG

• •

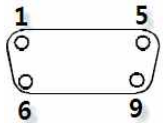
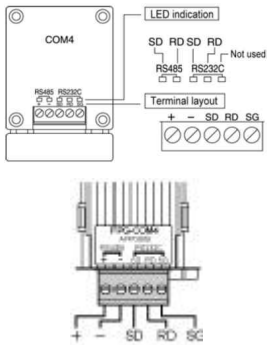
485(–)

485(–)

5.10 Cable Table 10

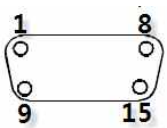
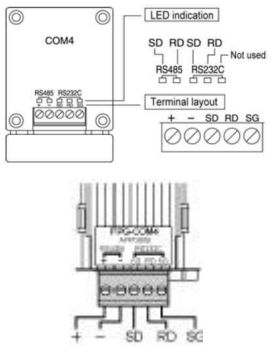
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

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

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

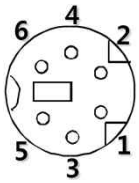
(B) XTOP COM 2 Port (15 pin)

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

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

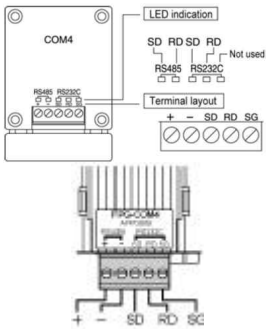
(C) XTOP/ATOP COM 1 Port (6 Pin)

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



Front View of
D-SUB 6 Pin
(male, convex)

	1	•	SD
RD	2		RD
SG	3	•	SD
	4		RD
	5		SG
SD	6		



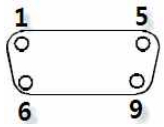
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

5.11 케이블 표 11

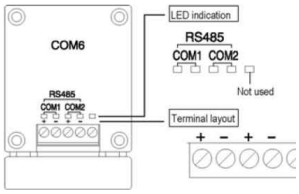
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
	RDA	1		+	
		2		–	
		3		+	
	RDB	4		–	
	SG	5			
	SDA	6			
		7			
		8			
	SDB	9			



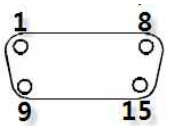
Front View of D-SUB 9 Pin (male, convex)



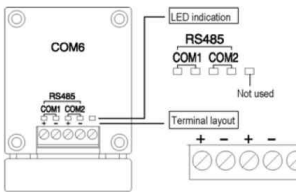
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
	–	1		+	
				–	
				+	
	-	10		–	
	RDA				
	RDB				
	SDA	13			
	SDB	14			
	SG	15			



Front View of D-SUB 15 Pin (male, convex)



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

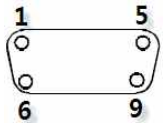
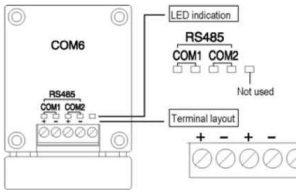
■ 1 : N Connection - Please connect referring to 1:1 connection as below. (Please connect '-' and 'E terminal' for End Line Address Device)

TOP	Cable Connection and Signal Direction	PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal		Name of Signal
RDA		+		+
RDB		–		–
SDA		+		+
SDB		–		–
SG				

5.12 Cable Table 12

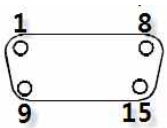
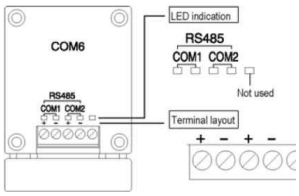
■ 1 : 1 Connection

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

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		+	
		2		–	
		3		+	
	RDB	4		–	
	SG	5			
	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			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	–	1		+	
				–	
				+	
	-	10		–	
	RDA				
	RDB				
	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)

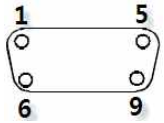
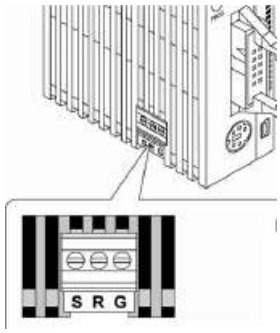
TOP	Cable Connection and Signal Direction	PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal		Name of Signal
RDA		+		+
		–		–

RDB		
SDA	+	+
SDB	–	–
SG		

5.13 케이블 표 1311

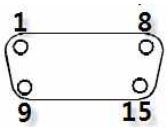
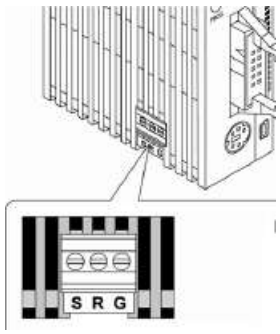
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

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

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

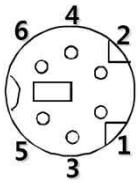
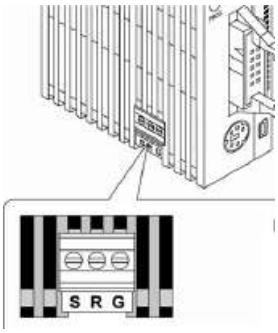
(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	**pin arrangement * caution 1)**
 Front View of D-SUB 15 Pin (male, convex)	CD			SD	
	RD	2		RD	
	SD	3		SG	
	DTR	4			
	SG	5			
	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			Cable Connection	PLC	
pin arrangement * caution 1)	Name of Signal	Pin Number		Pin Number	**pin arrangement * caution 1)**

 Front View of D-SUB 6 Pin (male, convex)		1	•	SD	
	RD	2		RD	
	SG	3		SG	
		4			
		5			
	SD	6			

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

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
X	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 *주1
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~X12F 16 bit data

*Caution) A special register (DT) can be used only on FP2/2SH/10SH only