

SHINHAN INDICATOR Series

Computer Link Driver

Supported version TOP Design Studio V1.4.3.2 or higher



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We want to thank our customers who use the Touch Operation Panel.

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Describes how to set up communication for external devices.
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Describes the cable specifications required for connection.
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Refer to this section to check the addresses which can communicate with an external device.

1. System configuration

The system configuration of TOP and "SHINHAN INDICATOR" is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
SHINHAN	INDICATOR	RS-232C I/O Port	RS-232C RS422,485	3. TOP communication setting 4. External device setting	5. Cable table

■ Connection configuration

- 1:1 connection (one MASTER and one TOP) connection



- 1:N connection (one MASTER and multiple TOPs) connection



2. External device selection

- Select a TOP model and a port, and then select an external device.

The first screenshot shows the 'Select Device' dialog box with the title 'PLC select [COM2]'. It includes a 'Filter' dropdown set to '[All]', a 'Search' field containing 'SHINHAN', and radio buttons for 'Model' and 'Vendor' (with 'Vendor' selected). Below is a table with two columns: 'Vendor' and 'Model'. The table contains one entry: 'SHINHAN Electronics' under Vendor and 'Loadcell Indicator SH Series' under Model. At the bottom are 'Back', 'Next', and 'Cancel' buttons.

The second screenshot shows the 'Select Device' dialog box with the title 'PLC Setting [Loadcell Indicator SH Series]'. It has several sections: 'Alias Name' (text field: PLC1), 'Interface' (dropdown: Computer Link), 'Protocol' (dropdown: SH Indicator Link), and 'String Save Mode' (text field: First LH HL, with a 'Change' button). There is a 'Comm Manual' button. A 'Use Redundancy' checkbox is unchecked. Below it, 'Operate Condition' is set to 'AND', and 'Change Condition' has 'TimeOut' checked with a value of 5 (Second) and 'Condition' checked with an empty field and an 'Edit' button. The 'Primary Option' section includes: 'Timeout' (300 msec), 'Send Wait' (0 msec), 'Retry' (5), 'Station Num' (0), and 'Mode' (Stream Mode). At the bottom are 'Back', 'OK', and 'Cancel' buttons.

Settings		Contents					
TOP	Model	Check the TOP display and process to select the touch model.					
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "Indicator Series".					
	PLC	Select an external device to connect to TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: black; color: white;">Model</th> <th style="background-color: black; color: white;">Interface</th> <th style="background-color: black; color: white;">Protocol</th> </tr> </thead> <tbody> <tr> <td>SHINHAN INDICATOR</td> <td>Computer Link</td> <td>SH Indicator Link</td> </tr> </tbody> </table> <p>Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.</p>	Model	Interface	Protocol	SHINHAN INDICATOR	Computer Link
Model	Interface	Protocol					
SHINHAN INDICATOR	Computer Link	SH Indicator Link					

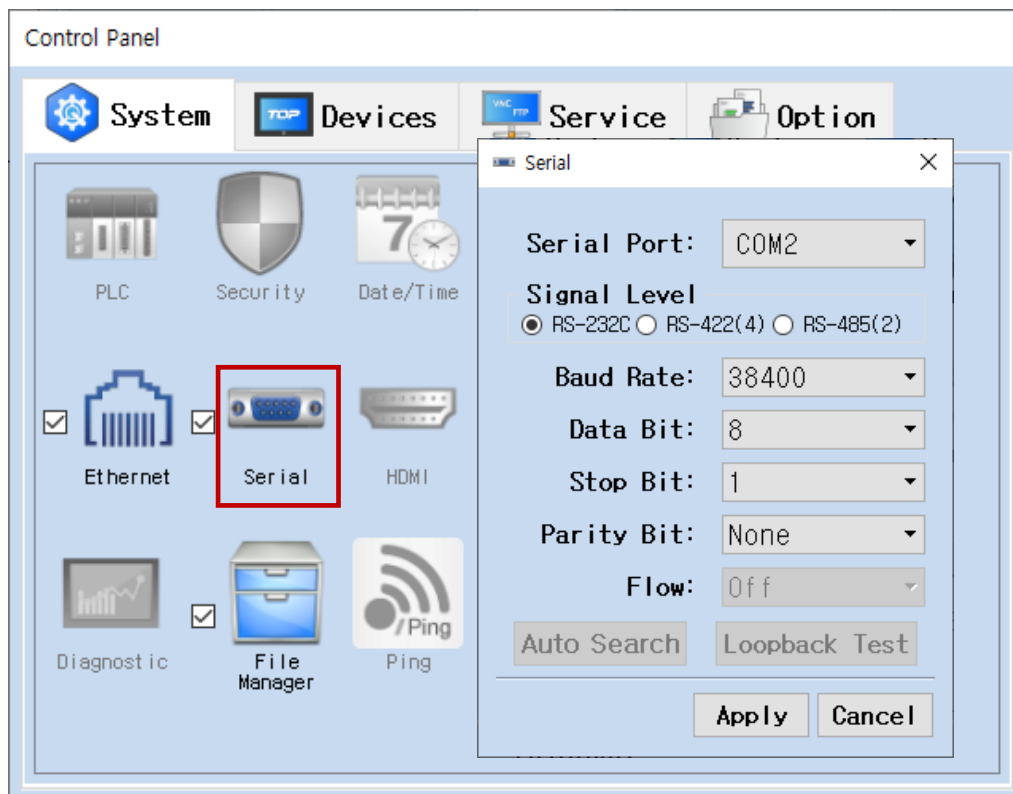
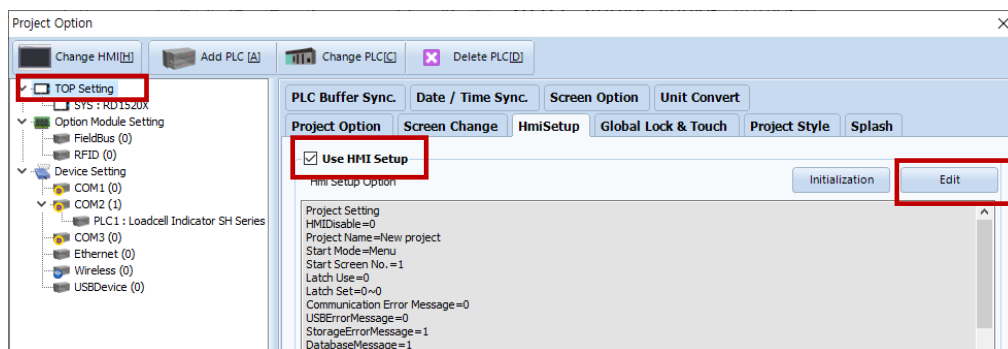
3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

- [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Serial]
- Set the TOP communication interface in TOP Design Studio.



Items	TOP	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate		38400	
Data Bit		8	
Stop Bit		1	
Parity Bit		NONE	

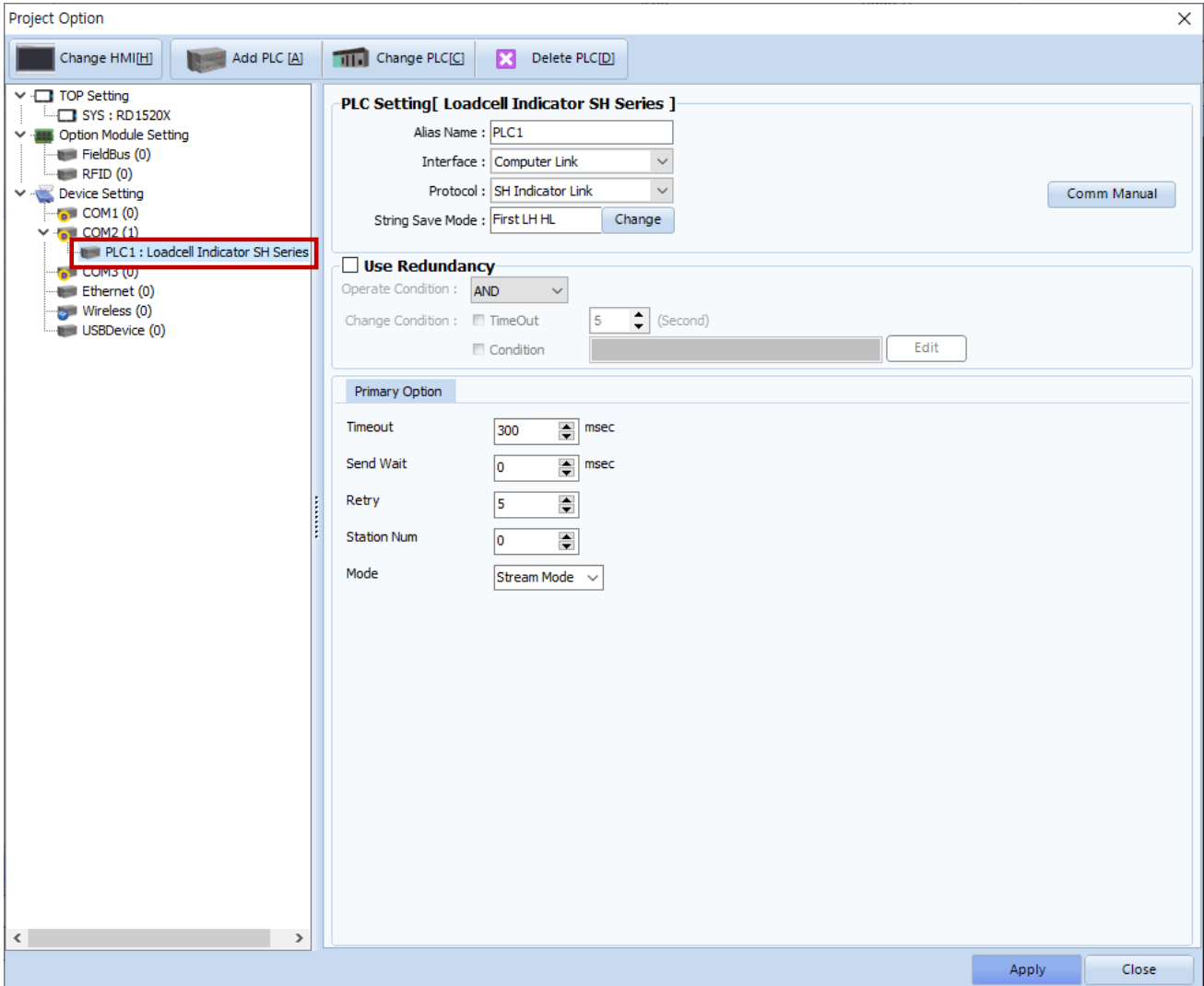
* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

- [Project > Project Property > Device Setting > COM > "PLC1 : SHINHAN SH"]

Set the options of the communication driver in TOP Design Studio.

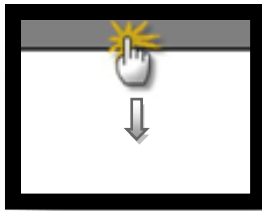


Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Retry	Retry attempt	
Station Num	Prefix	
MODE	MASTER,STREAM MASTER = send upon data request STREAM = continuous communication	

3.2. Communication setting in TOP

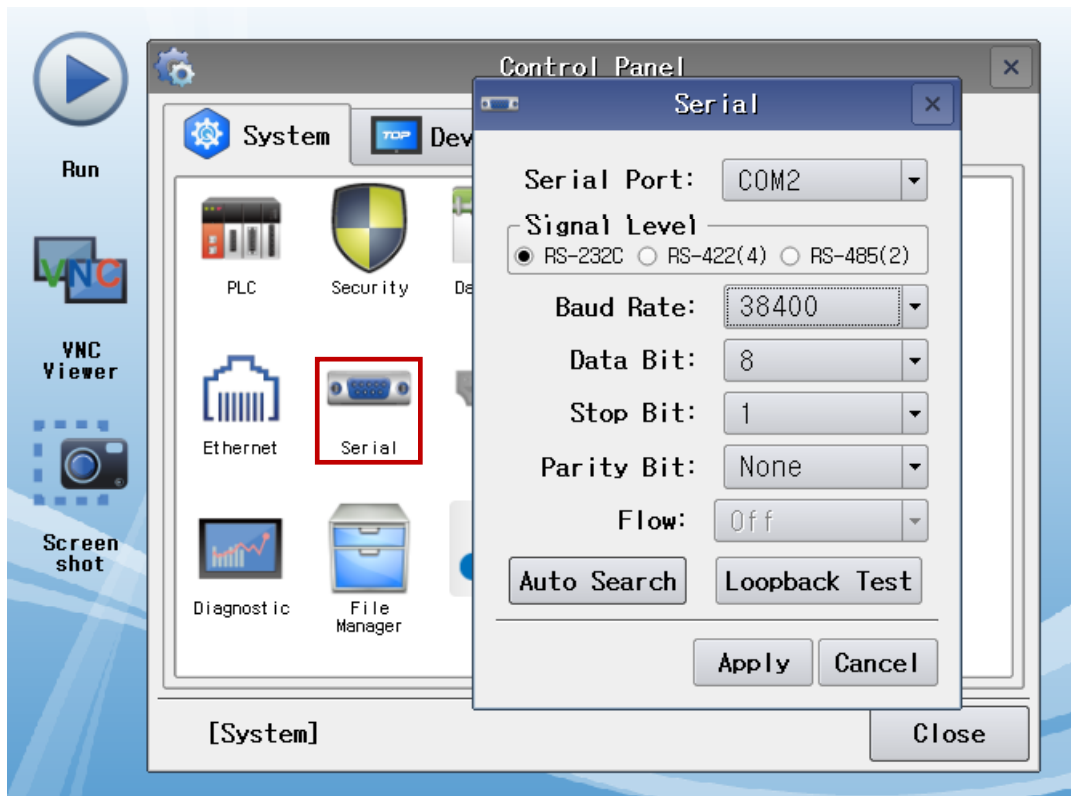
* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

- [Main Screen > Control Panel > Serial]



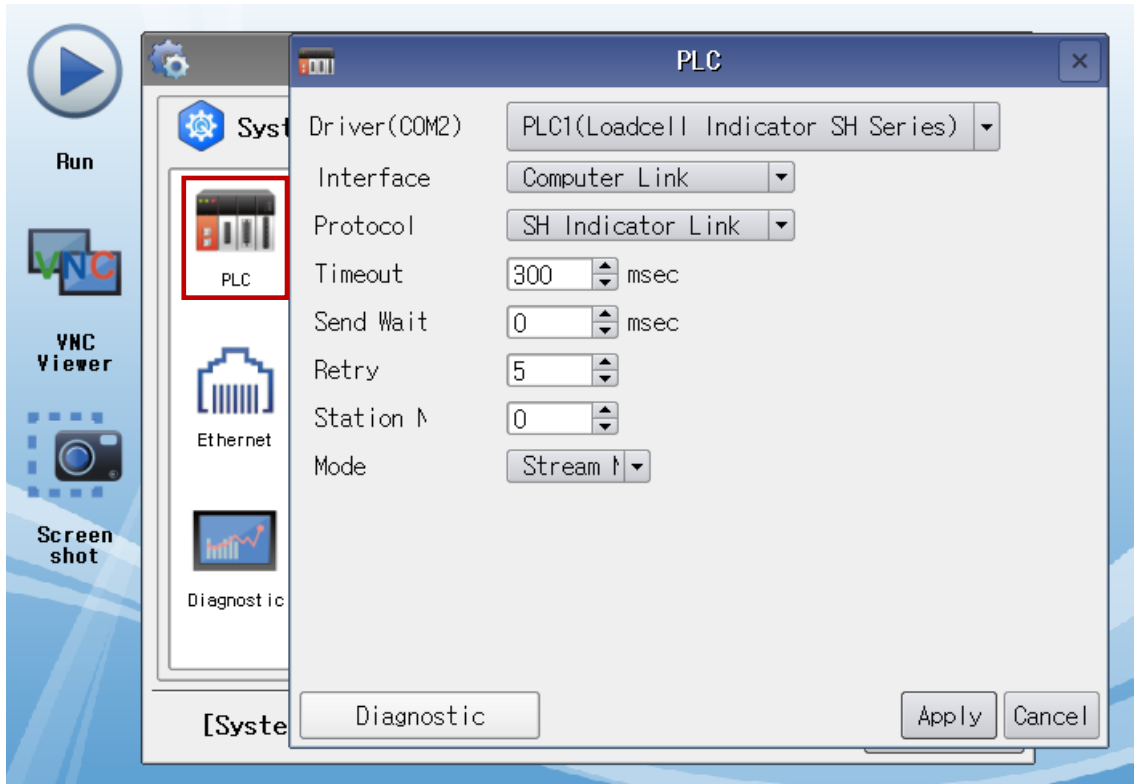
Items	TOP	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	38400		
Data Bit	8		
Stop Bit	1		
Parity Bit	none		

* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

■ [Main Screen > Control Panel > PLC]



Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Retry	Retry attempt	
Station Num	Prefix	
	MASTER,STREAM MASTER = send upon data request STREAM = continuous communication	

3.3 Communication diagnostics

- Check the interface setting status between the TOP and external device.
 - Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
 - Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.

- Diagnosis of whether the port communication is normal or not
 - Touch "Communication diagnostics" in [Control Panel > PLC].
 - The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

OK	Communication setting normal
Time Out Error	Communication setting abnormal - Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

■ Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Contents	Check		Remarks	
System configuration	How to connect the system	OK	NG	1. System configuration	
	Connection cable name	OK	NG		
TOP	Version information	OK	NG	2. External device selection 3. Communication setting	
	Port in use	OK	NG		
	Driver name	OK	NG		
	Other detailed settings	OK	NG		
	Relative prefix	Project setting	OK		NG
		Communication diagnostics	OK		NG
	Serial Parameter	Transmission Speed	OK		NG
Data Bit		OK	NG		
Stop Bit		OK	NG		
Parity Bit		OK	NG		
External device	CPU name	OK	NG	4. External device setting	
	Communication port name (module name)	OK	NG		
	Protocol (mode)	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings	OK	NG		
	Serial Parameter	Transmission Speed	OK		NG
		Data Bit	OK		NG
		Stop Bit	OK		NG
Parity Bit		OK	NG		
Check address range	OK	NG	6. Supported addresses (For details, please refer to the PLC vendor's manual.)		

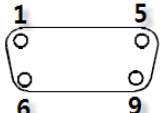
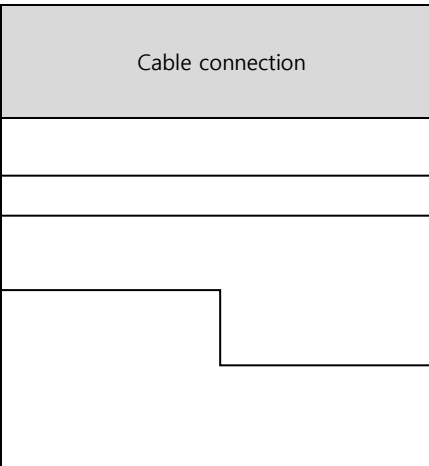
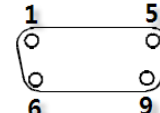
4. External device setting

Configure the communication setting of the external device by referring to its user manual.

5. Cable table

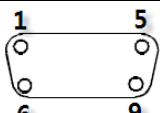
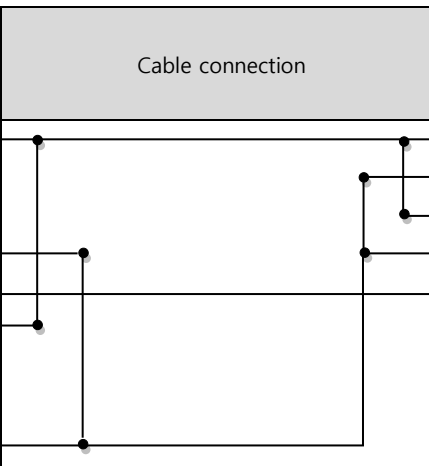
This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.
 (The cable diagram described in this section may differ from the recommendations of **SHINHAN INDICATOR**)

■ RS-232C (1:1 connection)

COM			Cable connection	External device	
Pin arrangement* <i>Note 1</i>	Signal name	Pin number		Signal name	Pin arrangement* <i>Note 1</i>
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	CD	1			 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>
	RD	2		SD(15)	
	SD	3		RD(16)	
	DTR	4			
	SG	5			
	DSR	6			
	RTS	7		SG(17)	
	CTS	8			
		9			

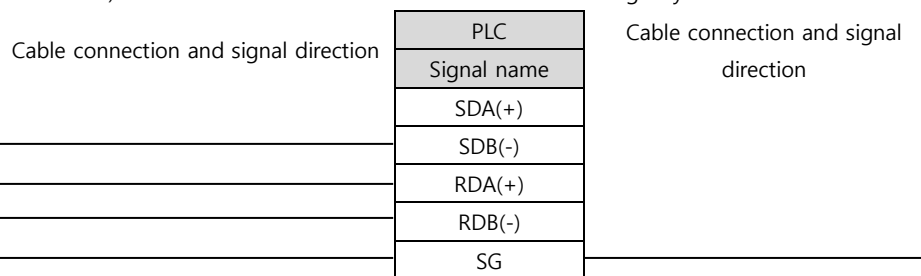
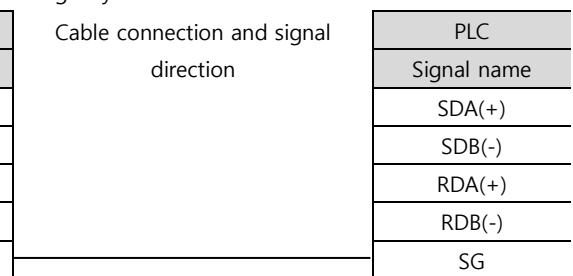
**Note 1*) The pin arrangement is as seen from the connecting side of the cable connection connector.

■ RS-485 (1:1 connection)

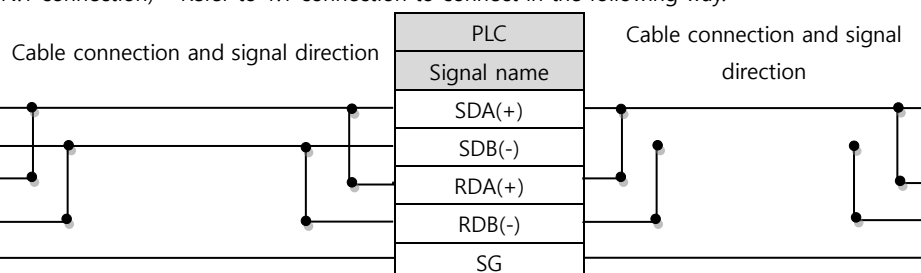
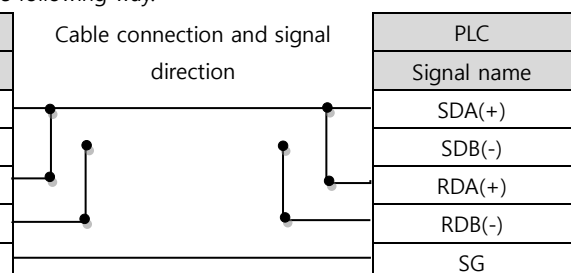
COM			Cable connection	PLC	
Pin arrangement* <i>Note 1</i>	Signal name	Pin number		Signal name	
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	RDA(+)	1		SDA(+)(15)	
		2		SDB(-)(16)	
		3		RDA(+)(17)	
	RDB(-)	4		RDB(-)(18)	
	SG	5		SG	
	SDA(+)	6			
		7			
		8			
	SDB(-)	9			

**Note 1*) The pin arrangement is as seen from the connecting side of the cable connection connector.

■ RS-422 (1:N connection) – Refer to 1:1 connection to connect in the following way.

TOP	Cable connection and signal direction	PLC	Cable connection and signal direction	PLC
Signal name		Signal name		Signal name
RDA(+)		SDA(+)		SDA(+)
RDB(-)		SDB(-)		SDB(-)
SDA(+)		RDA(+)		RDA(+)
SDB(-)		RDB(-)		RDB(-)
SG		SG		SG

■ RS-485 (1:N/N:1 connection) – Refer to 1:1 connection to connect in the following way.

TOP	Cable connection and signal direction	PLC	Cable connection and signal direction	PLC
Signal name		Signal name		Signal name
RDA(+)		SDA(+)		SDA(+)
RDB(-)		SDB(-)		SDB(-)
SDA(+)		RDA(+)		RDA(+)
SDB(-)		RDB(-)		RDB(-)
SG		SG		SG

6. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

	Bit Address	Word Address	32 bits	Remarks
Weight	D0.00–D0.31	D0–D0	L/H	