SERIAL BARCODE READER

Supported version TOP Design Studio V1.4.4.0 or higher

CONTENTS

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

1. System configuration

The system configuration of TOP and "SERIAL BARCODE READER" is as follows:

Series	Communication method	System setting	Cable
BARCODE READER -	RS–232C, RS-422, RS-485	3.1 Settings example 1 (Page 4)	5.1. Cable table 1 (Page 8)

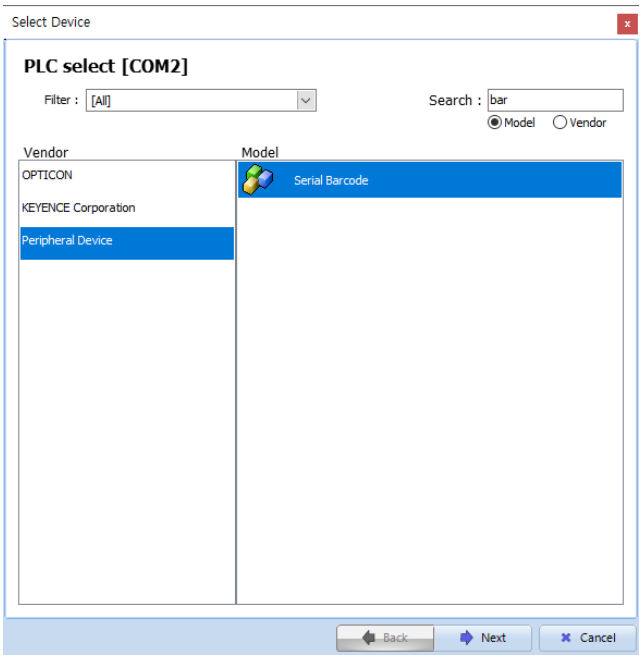
■ Connection configuration

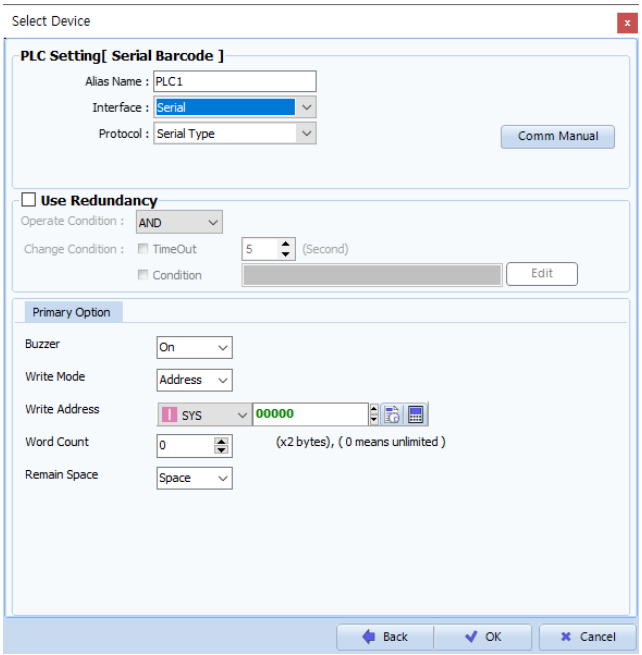
・1:1 (one TOP and one external device) connection – configuration which is possible in RS232C/422/485 communication.

*Unable to use 1:N

2. External device selection

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





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 "SERIAL BARCODE READER".
	PLC	Select an external device to connect to TOP. **Model** / **Interface** / **Protocol** SERIAL BARCODE READER / SERIAL / SERIAL TYPE 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.

3. TOP communication setting

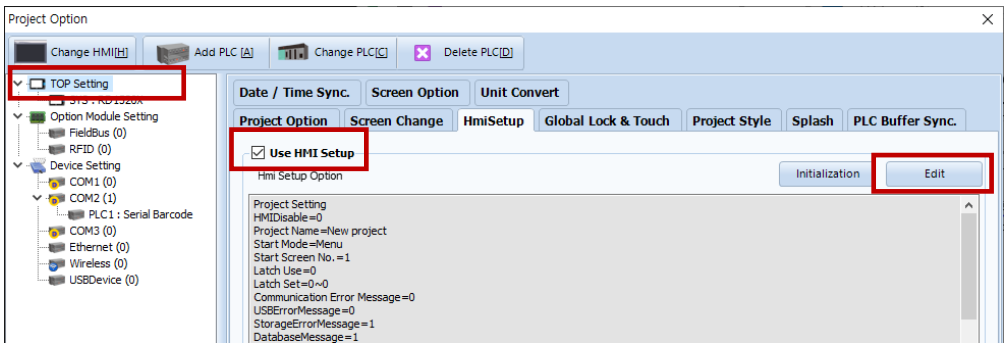
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

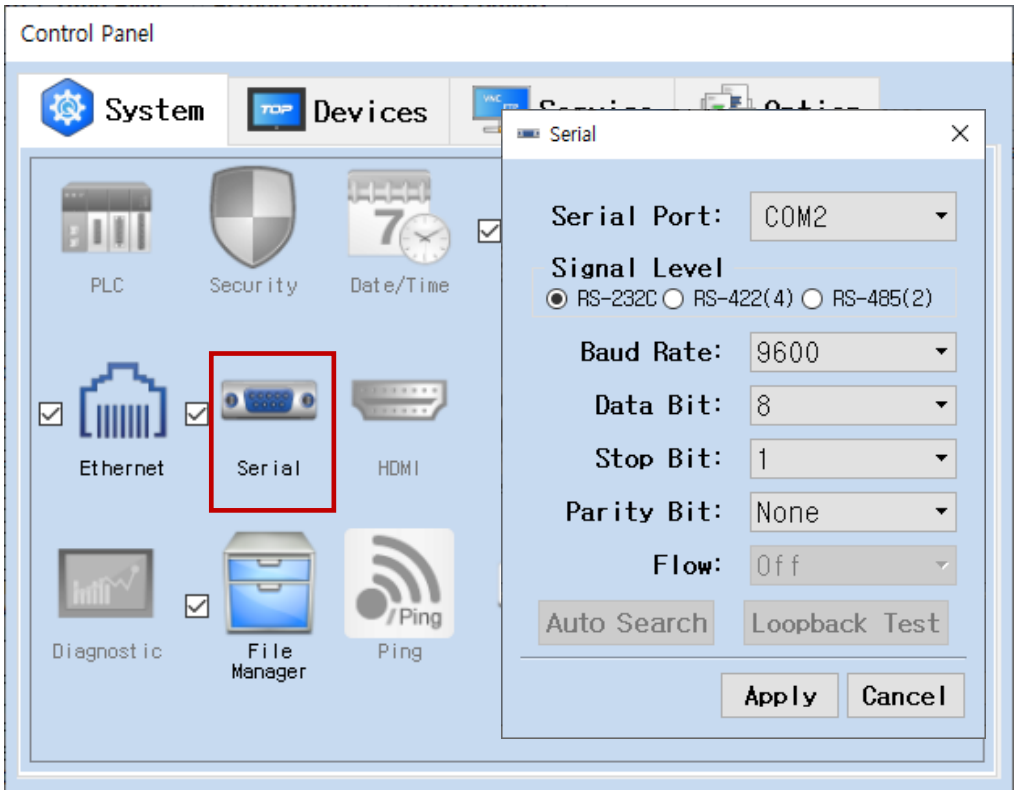
3.1 Communication setting in TOP Design Studio

(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-422/485	RS-232C RS-422/485	
Baud Rate	9600		
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 > COM1 > "PLC1 : SERIAL BARCODE READER"]

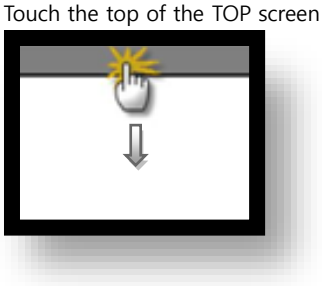
Set the options of the communication driver in TOP Design Studio.

Items	Settings	Remarks
Interface	Select "SERIAL".	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 attempts	
Write Address	Configure the address to store data read by BARCODE.	
Word Count	Configure the display word count. Setting it to 0 displays raw value.	
Buzzer	Enable or disable buzzer upon read	

3.2. Communication setting in TOP

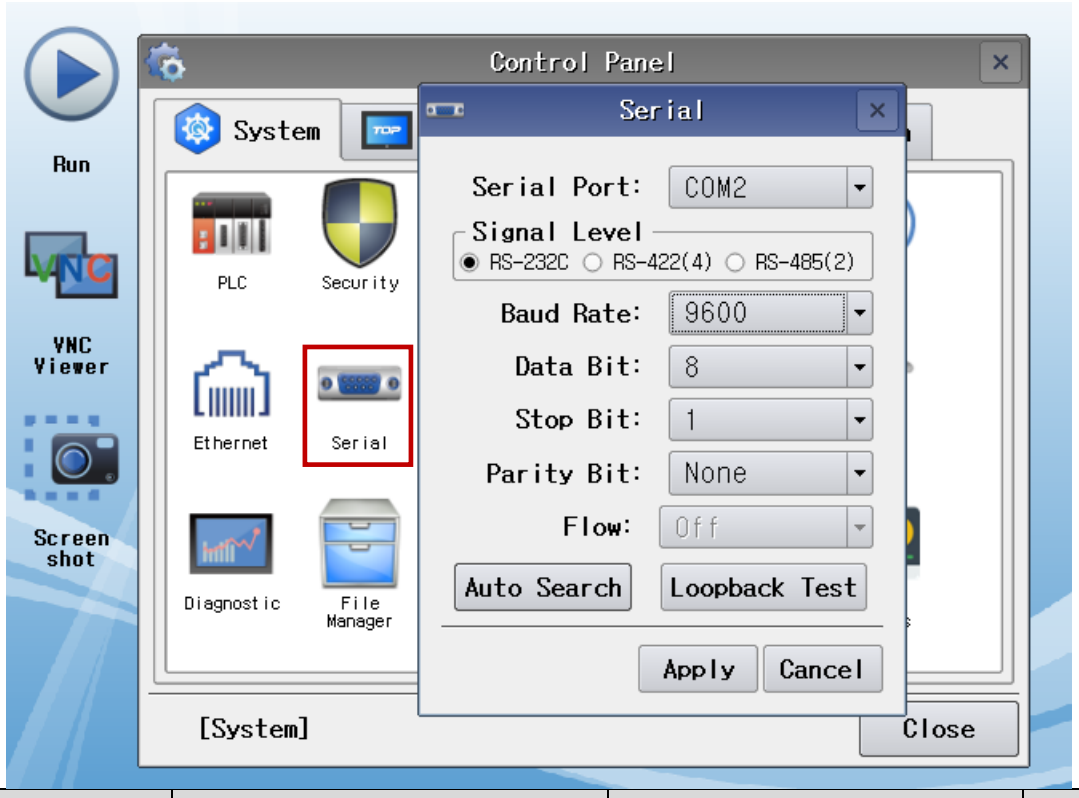
*** This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.**

■ 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]



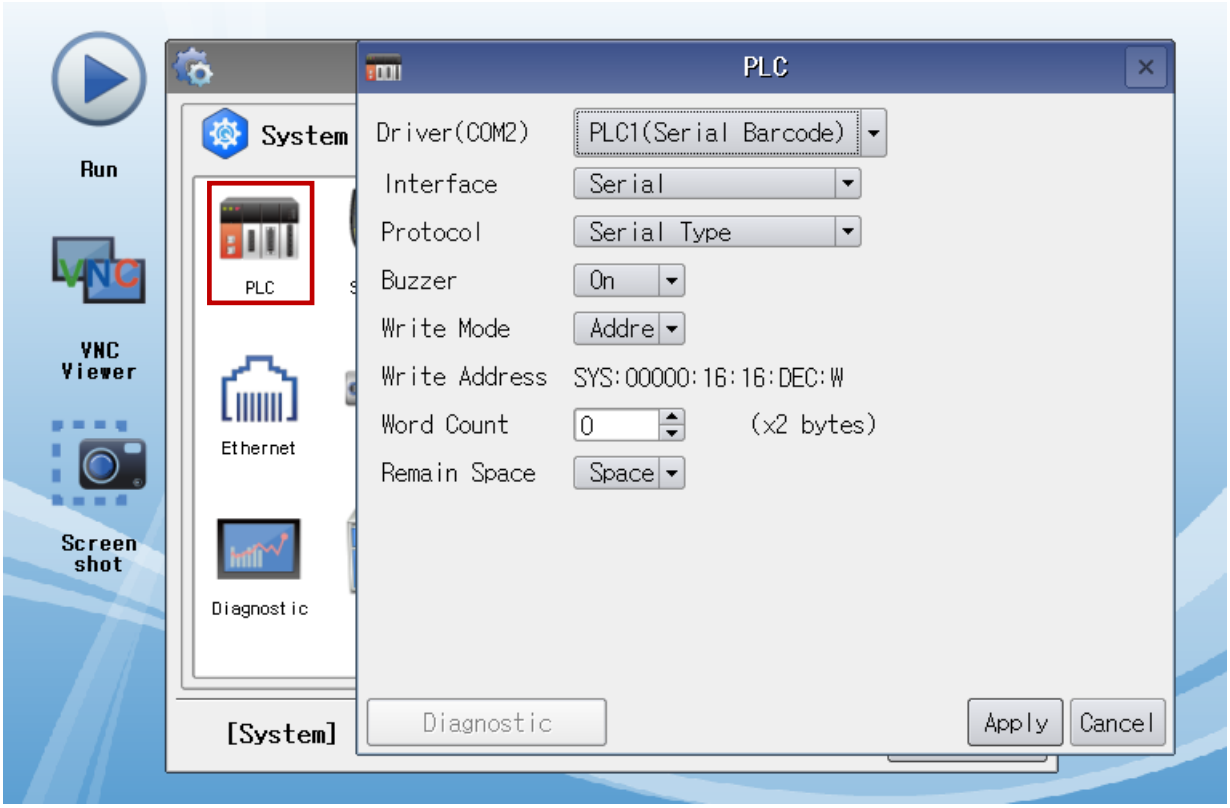
Items	TOP	External device	Remarks
Signal Level (port)	RS-232C RS-422/485	RS-232C RS-422/485	
Baud Rate	9600		
Data Bit	8		
Stop Bit	1		
Parity Bit	NONE		

* 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 "SERIAL".	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 attempts	
Write Address	Configure the address to store data read by BARCODE.	
Word Count	Configure the display word count. Setting it to 0 displays raw value.	
Buzzer	Enable or disable buzzer upon read	

3.3 Communication diagnostics

■ Check the interface setting status between the TOP and an 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. 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 "**PLC1 : SERIAL BARCODE READER**")

■ 1:1 connection

TOP COM Port (9 pin)

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

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

■ RS422/485

TOP COM Port (9 pin)

TOP COM (RS-422)			Cable connection	External device
Pin arrangement*Note 1)	Signal name	Pin number		Signal name
1 5 / 6 9	RDA	1		SDA
		2		SDB
		3		RDA
	RDB	4		RDB
Based on communication cable connector front, D-SUB 9 Pin male (male, convex)	SG	5		SG
	SDA	6		
		7		
		8		
	SDB	9		

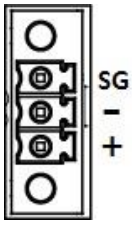
*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.

TOP COM Port (9 pin)

TOP COM (RS-485)			Cable connection	External device
Pin arrangement*Note 1)	Signal name	Pin number		Signal name
1 5 / 6 9	RDA	1		+
		2		–
		3		SG
	RDB	4		
Based on communication cable connector front, D-SUB 9 Pin male (male, convex)	SG	5		
	SDA	6		
		7		
		8		
	SDB	9		

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

TOP COM3 Port

TOP COM		Cable connection	External device
Pin arrangement	Signal name		Signal name
	+		+
	−		−
	SG		SG

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

5. Supported addresses

The devices available in TOP are as follows:

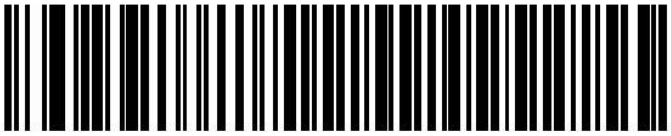
The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to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

*Barcode settings example)

1. **Set All Defults**

Set All Defaults

2. **Interface**



Standard RS-232[1]

3. **Enter Value Setting**

Scan Options

<DATA> <SUFFIX>

Enter