

# KEYENCE

## Barcode Series

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Supported version    TOP Design Studio    V1.4.11.11 or higher



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

#### **1. System configuration** [Page 2](#)

Describes the devices required for connection, the setting of each device, cables, and configurable systems.

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#### **2. External device selection** [Page 3](#)

Select a TOP model and an external device.

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#### **3. TOP communication setting** [Page 4](#)

Describes how to set the TOP communication.

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#### **4. Cable table** [Page 11](#)

Refer to this section to check the addresses which can communicate with an external device.

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# 1. System configuration

The system configuration of TOP and "KEYENCE Barcode Series" is as follows:

Series	Barcode Reader	Communication method	System setting	Cable table
Barcode BL	BL-1300 Series	RS-232	<a href="#">3. TOP communication setting</a>	<a href="#">4 Cable table</a>

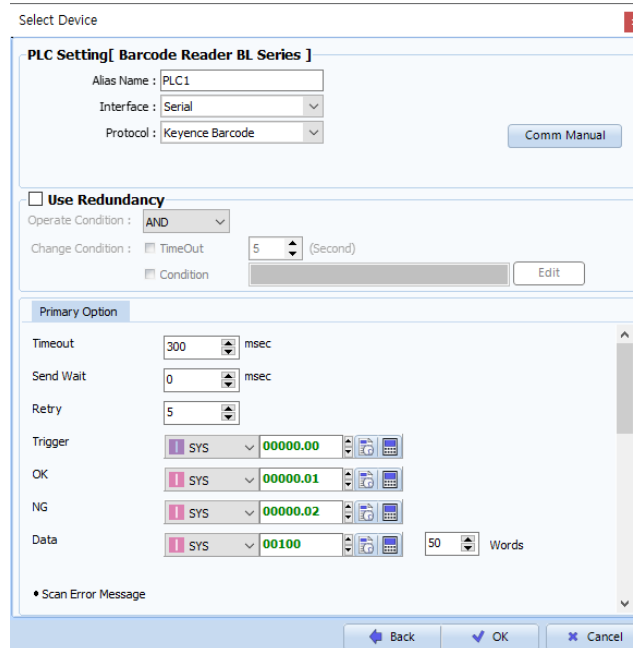
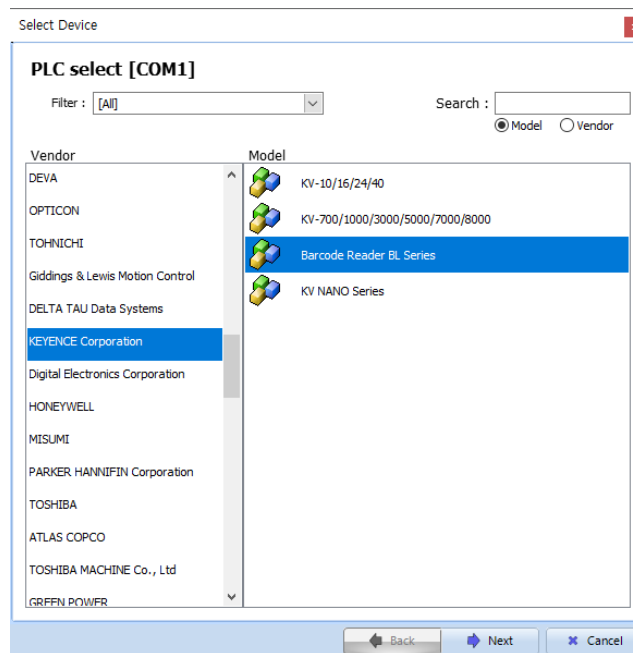
## ■ Connection configuration

- 1:1 connection



## 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 "KEYENCE".					
	PLC	Select the external device to be connected to the TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Model</th> <th>Interface</th> <th>Protocol</th> </tr> </thead> <tbody> <tr> <td>KEYENCE Barcode</td> <td>Serial</td> <td>KEYENCE Barcode</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	KEYENCE Barcode	Serial
Model	Interface	Protocol					
KEYENCE Barcode	Serial	KEYENCE Barcode					

### 3. TOP communication setting

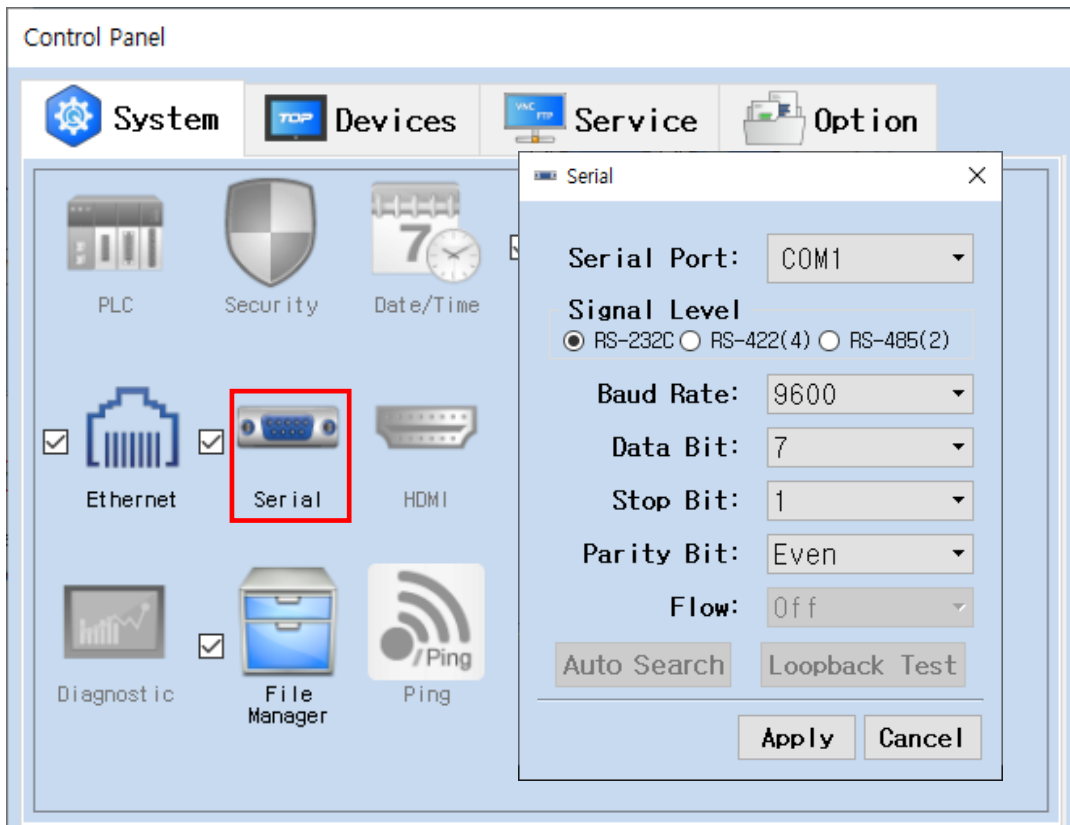
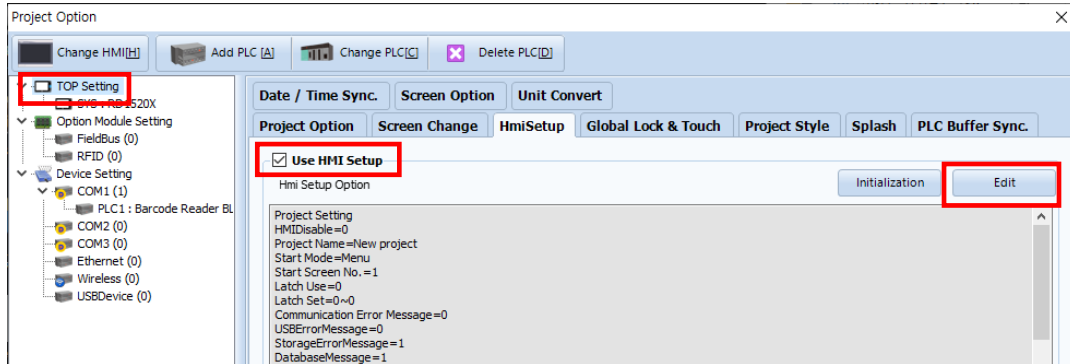
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

#### 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.

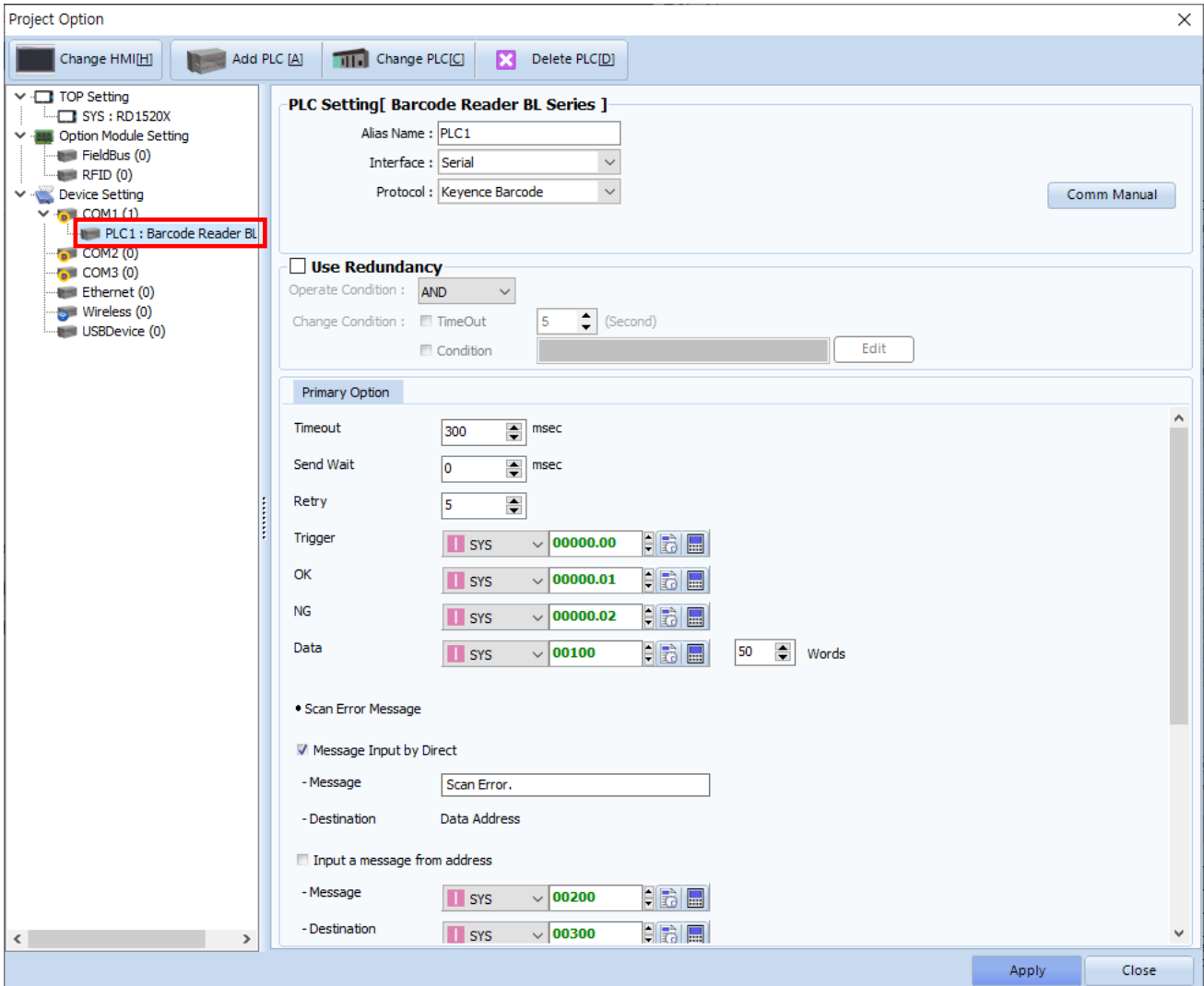


Items	TOP	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate		9600	
Data Bit		7	
Stop Bit		1	
Parity Bit		Even	

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

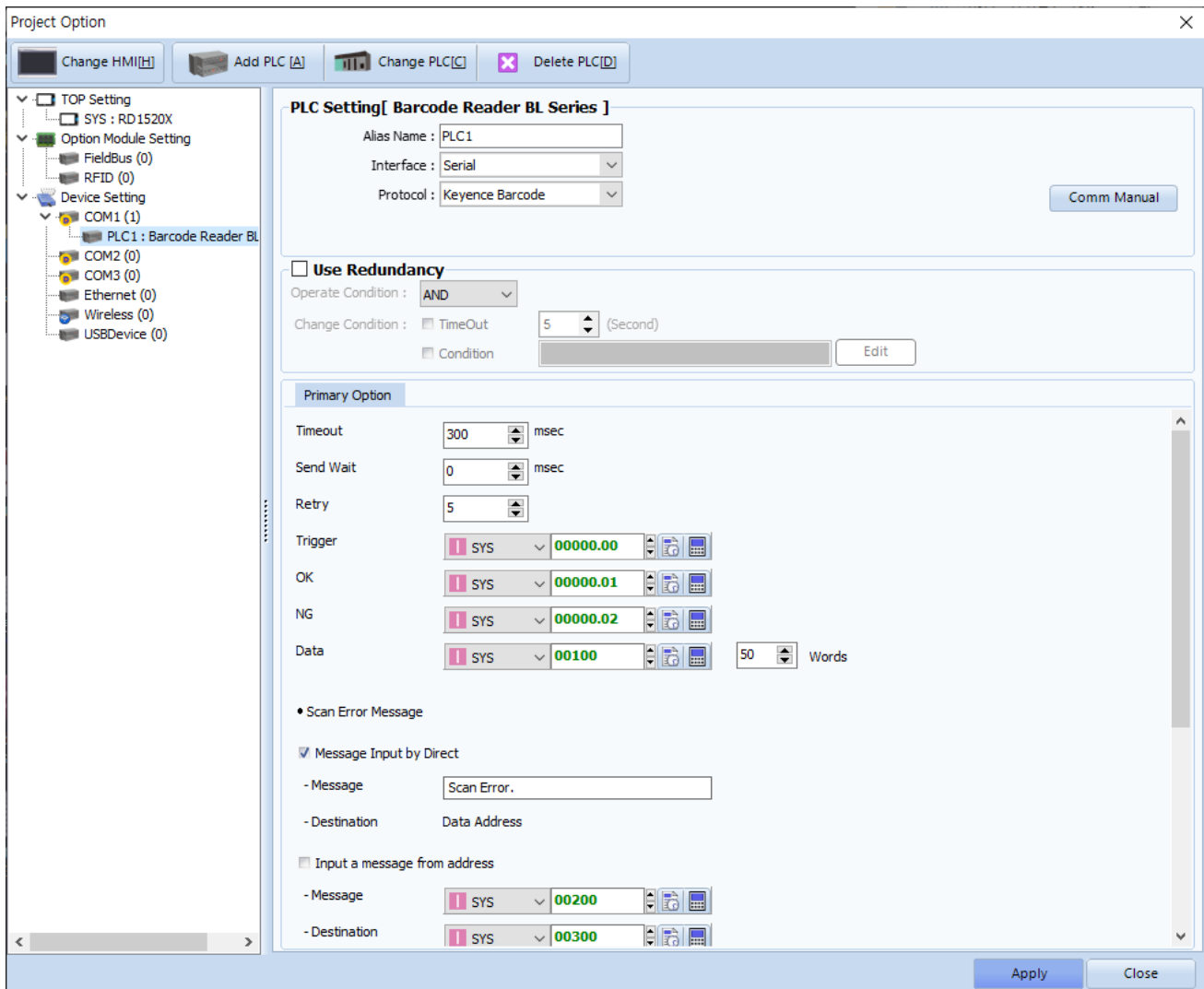
- [Project > Project Property > Device Setting > COM > "PLC1 : KEYENCE Barcode"]  
 – Set the options of the KEYENCE Barcode communication driver in TOP Design Studio.



Items	Settings	Remarks
Interface	Select "Serial".	<a href="#">Refer to "2. External device selection"</a> .
Protocol	Select "Keyence Barcode".	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	<b>*Note 1)</b>
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Retry	Configures the number of attempts for data reception upon failure.	

**\*Note 1)** Configure it to be longer than the receive latency of the barcode scanner.

■ Communication interface setting



Items	Settings	Remarks
Trigger	Configures the Bit address for executing Tag recognition.	
OK	Configures the enabled Bit address upon successful Tag recognition.	
NG	Configures the enabled Bit address upon failed Tag recognition.	
Data	Configures the address and word length for entering Tag data.	

※ Scan Error Message

Enter designated message for "No tag" error		
Message Input by Direct	Configure to enable or disable.	
Message	Message	
Destination	Enter to data storage address.	
Enter reference message for "No tag" error		
Input a message from address	Configure to enable or disable.	
Message	Message reference address	
Destination	Message input address	
Size	Configures the buffer size of the message reference/input address	Unit: word

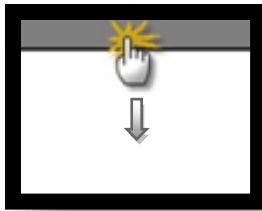
※ Tag Time Out Message

Enter designated message for "Tag read" error		
Message Input by Direct	Configure to enable or disable.	
Message	Message	
Destination	Enter to data storage address.	
Enter reference message for "Tag read" error		
Input a message from address	Configure to enable or disable.	
Message	Message reference address	
Destination	Message input address	
Size	Configures the buffer size of the message reference/input address	Unit: word

### 3.2. Communication setting in TOP

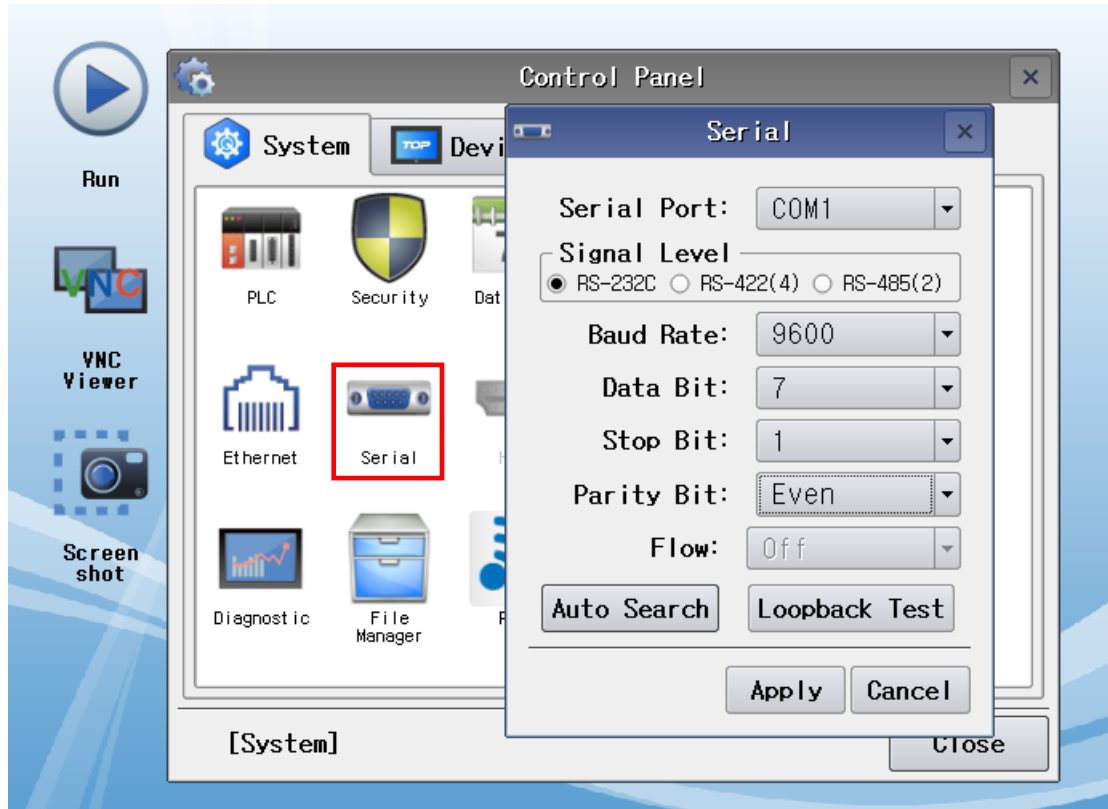
\* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- 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		9600	
Data Bit		7	
Stop Bit		1	
Parity Bit		Even	

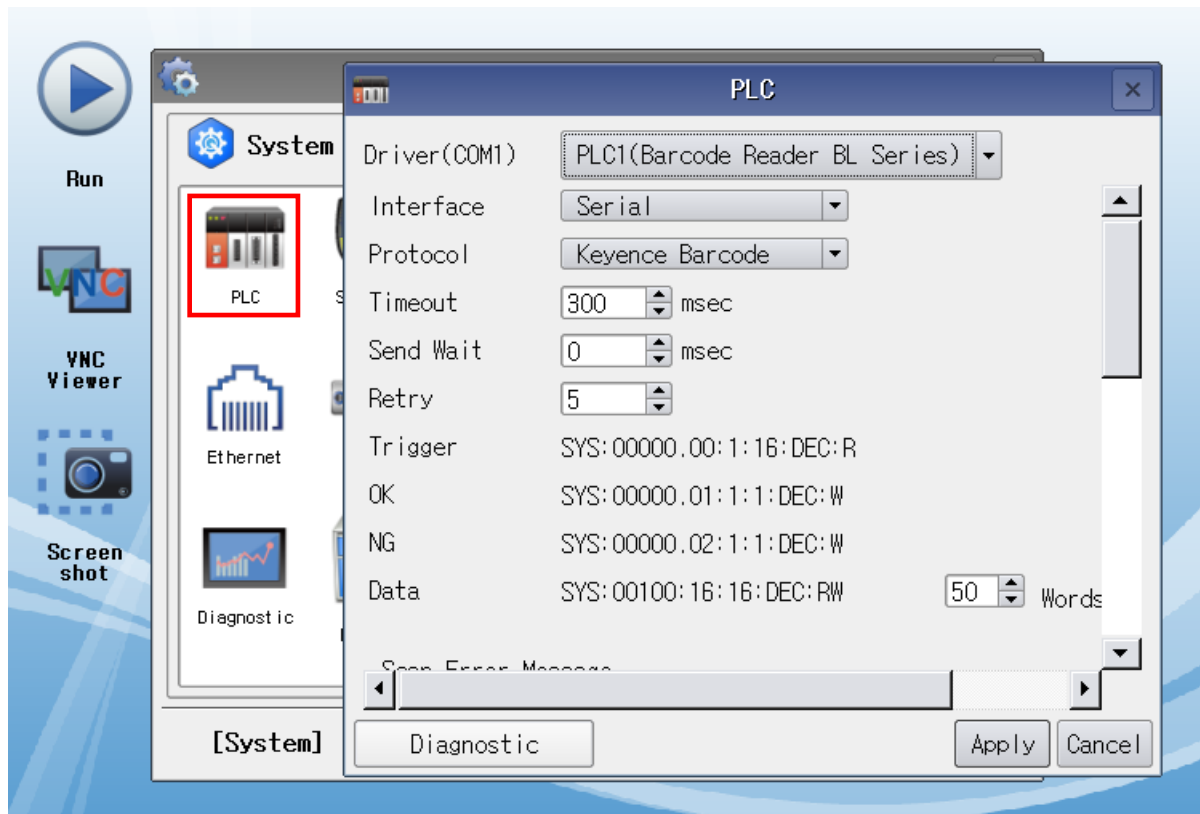
\* The above settings are setting examples recommended by the company.

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".	<a href="#">Refer to "2. External device selection".</a>
Protocol	Select "Keyence Barcode".	<a href="#">Refer to "2. External device selection".</a>
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	*Note 1)
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Retry	Configures the number of attempts for data reception upon failure.	

\*Note 1) Configure it to be longer than the receive latency of the barcode scanner.

### 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 port (COM1/COM2/COM3) 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.

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

■ Communication diagnostics sheet

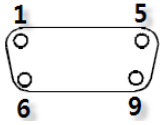
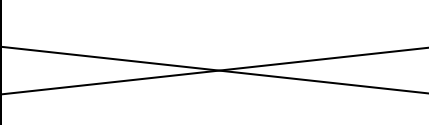
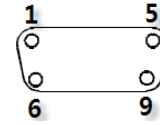
- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Contents	Check		Remarks	
System configuration	How to connect the system	OK	NG	<a href="#">1. System configuration</a>	
	Connection cable name	OK	NG		
TOP	Version information	OK	NG	<a href="#">2. External device selection</a> <a href="#">3. Communication setting</a>	
	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	<a href="#">4. External device setting</a>	
	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	<a href="#">6. Supported addresses</a> (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 "KEYENCE Barcode")

### ■ KEYENCE Barcode (1:1 connection)

COM PORT			Cable connection	RS-232C Port on CPU Unit			
Pin arrangement* <b>Note 1)</b>	Signal name	Pin number		Pin number	Signal name	Pin arrangement* <b>Note 1)</b>	
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	CD	1		1	CD	 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	
	RD	2		2	RD		
	SD	3		3	3		SD
	DTR	4		4	4		DTR
	SG	5		5	5		SG
	DSR	6		6	6		DSR
	RTS	7		7	7		RTS
	CTS	8		8	8		CTS
		9		9	9		

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