OPTICON

Barcode Scanner

Ethernet (Image) Driver

Supported version TOP Design Studio V1.4.11.0 or higher

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

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Describes connectable devices and network configurations.

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Select a TOP model and an external device.

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Describes how to set the TOP communication.

4. External device setting Page 12

Describes how to set up communication for external devices.

1. System configuration

The system configuration of TOP and "OPTICON – Barcode Scanner" is as follows:

Series	Link I/F	Communication method	System setting	Cable
NLV-□□□□ *Note 1)	Ethernet Port	TCP	3. TOP communication setting 4. External device setting	Twisted pair cable *Note 2)

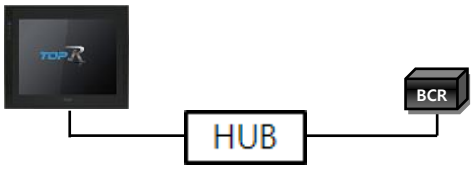
*Note 1) Confirm whether the model has Image capture/Transfer mode.

*Note 2) Twisted pair cable

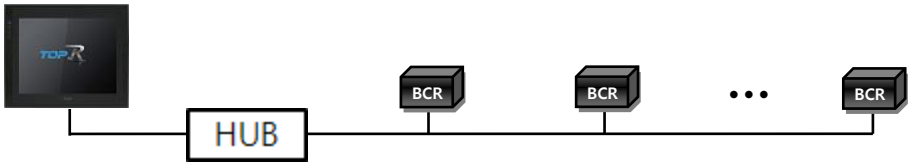
- Refer to STP (Shielded Twisted Pair Cable) or UTP (Unshielded Twisted Pair Cable) Category 3, 4, 5.
- Depending on the network configuration, you can connect to components such as the hub and transceiver, and in this case, use a direct cable.

■ Connectable configuration

・1:1 connection

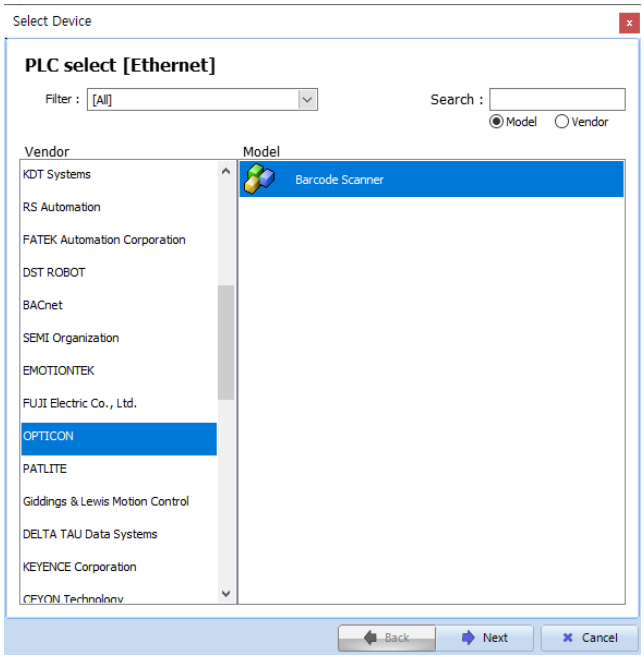


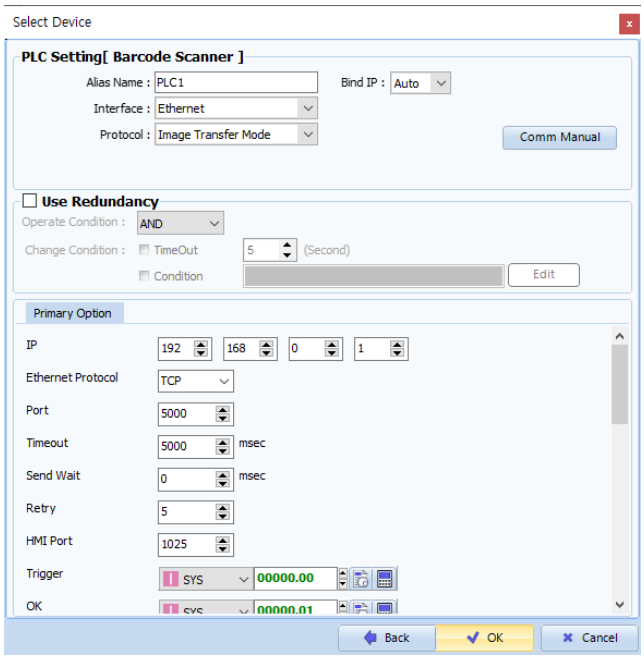
・1:N connection



2. External device selection

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





Settings		Contents
TOP	Model	Select the TOP model.
External device	Vendor	Select the vendor of the external device. Select "OPTICON".
	Model	Select the external device to be connected to the TOP. **Model** / **Interface** / **Protocol** Barcode Scanner / Ethernet / Image Transfer Mode 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

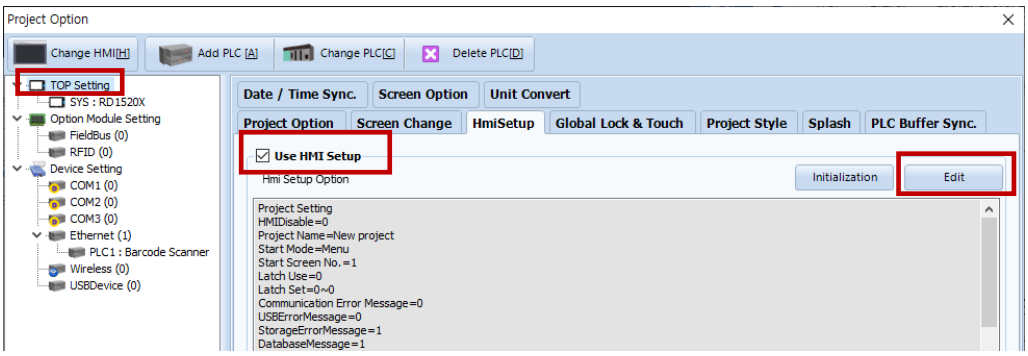
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

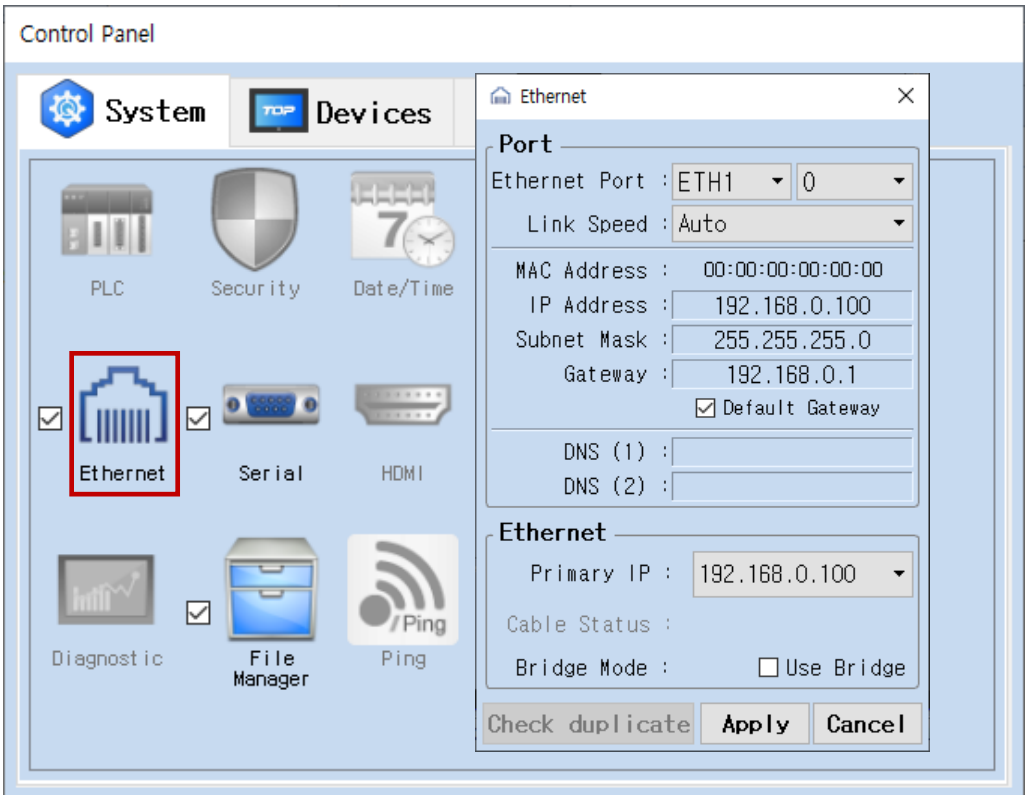
3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project] → [Property] → [TOP Setting] → [HMI Setup] → [Use HMI Setup Check] → [Edit] → [System] → [Ethernet]

– Set the TOP communication interface in TOP Design Studio.





Items	TOP	External device	Remarks
IP Address	192.168.0.100	192.168.0.50	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

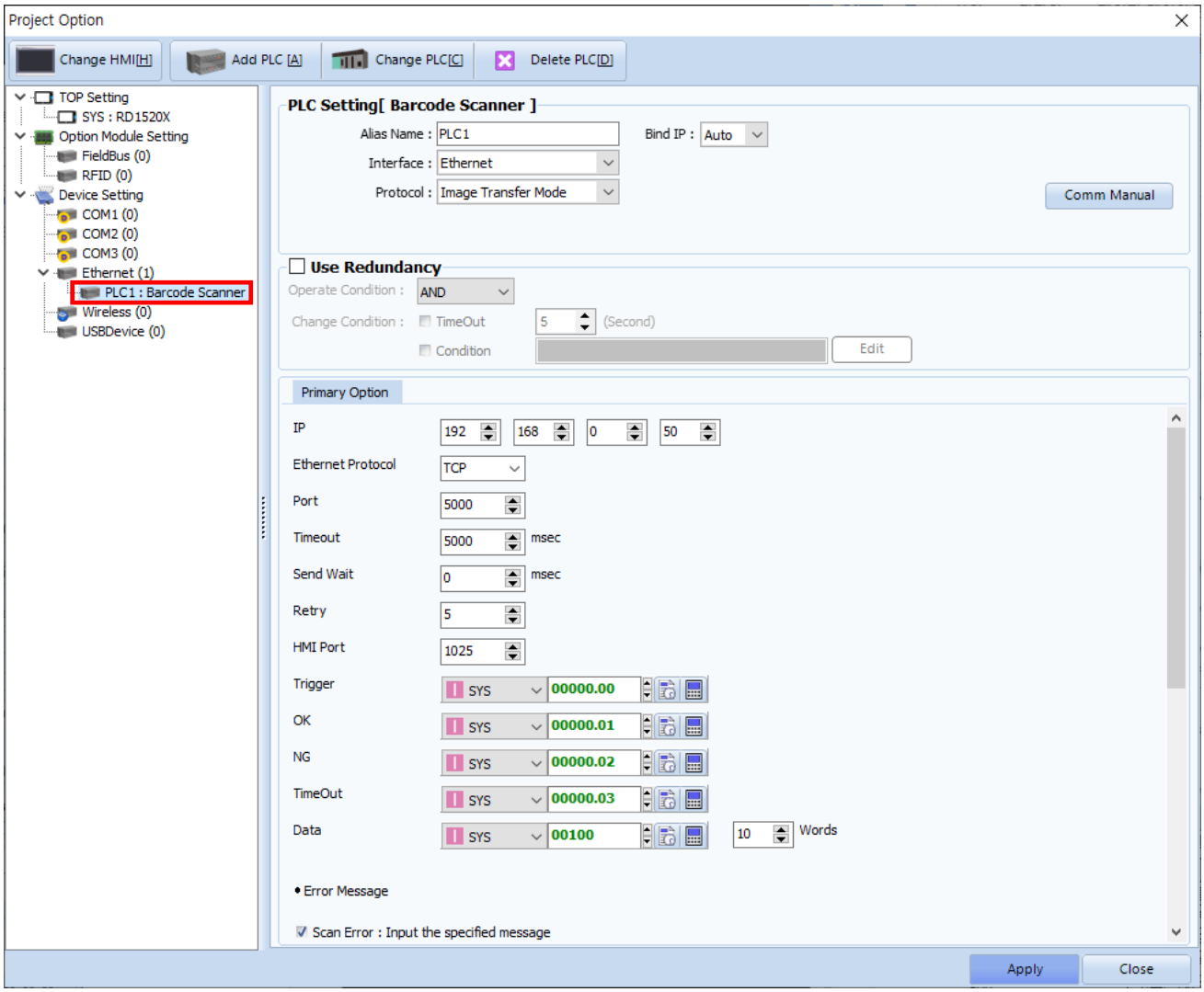
* The above settings are examples recommended by the company.

Items	Description
IP Address	Set the IP address of the TOP.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Project] → [Project Property] → [Device Setting > Ethernet > Barcode Scanner]

– Set the options of the Barcode Scanner communication driver in TOP Design Studio.



* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Select the Ethernet protocol between the TOP and an external device.	
Port	Enter the Ethernet communication port number of an external device.	
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.	
HMI Port	Enter the Ethernet communication port number of the TOP.	
Trigger	Configures the Bit address for executing barcode scan.	
OK	Configures the enabled Bit address upon successful barcode scan.	
NG	Configures the enabled Bit address upon failed barcode scan.	
TimeOut	Set the bit address which becomes ON when timeout occurs.	
Data	Configures the address and word length for entering barcode data.	

*Note 1) Set it longer than the receiving queue time of the barcode scanner.

● **Error Message**

Enter designated message upon failed barcode scan.		
Scan Error : Input the specified Message	Configure to enable or disable.	
Message	Message	
Destination	Enter to data storage address.	
Enter reference message upon failed barcode scan.		
Scan 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	Word
Enter designated message upon timeout.		
Time Out : Input the specified Message	Configure to enable or disable.	
Message	Message	
Destination	Enter to data storage address.	
Enter reference message upon timeout.		
Time Out : Input a message from address	Configure to enable or disable.	
Message	Message reference address	
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Size	Configures the buffer size of the message reference/input address	Word

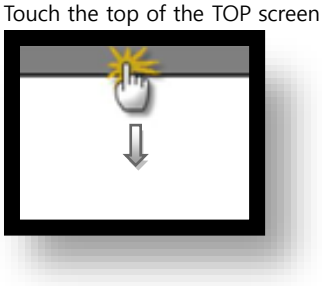
※ Error log feature

The following communication driver is equipped with a feature to record incoming/outgoing messages and operation details onto the SD card if it fails to receive data from its counterpart device due to time outs or scan failure. The recorded text files are stored chronologically in the ₩media₩sdcard1₩HMI₩Driver_Log₩ folder of the SD card. Operation in TOP-VIEW mode, saves the files to C:₩Program Files (x86)₩M2I Corp₩TOP Design Studio₩SCADA₩UserData₩Driver_Log₩.

3.2. Communication setting in TOP

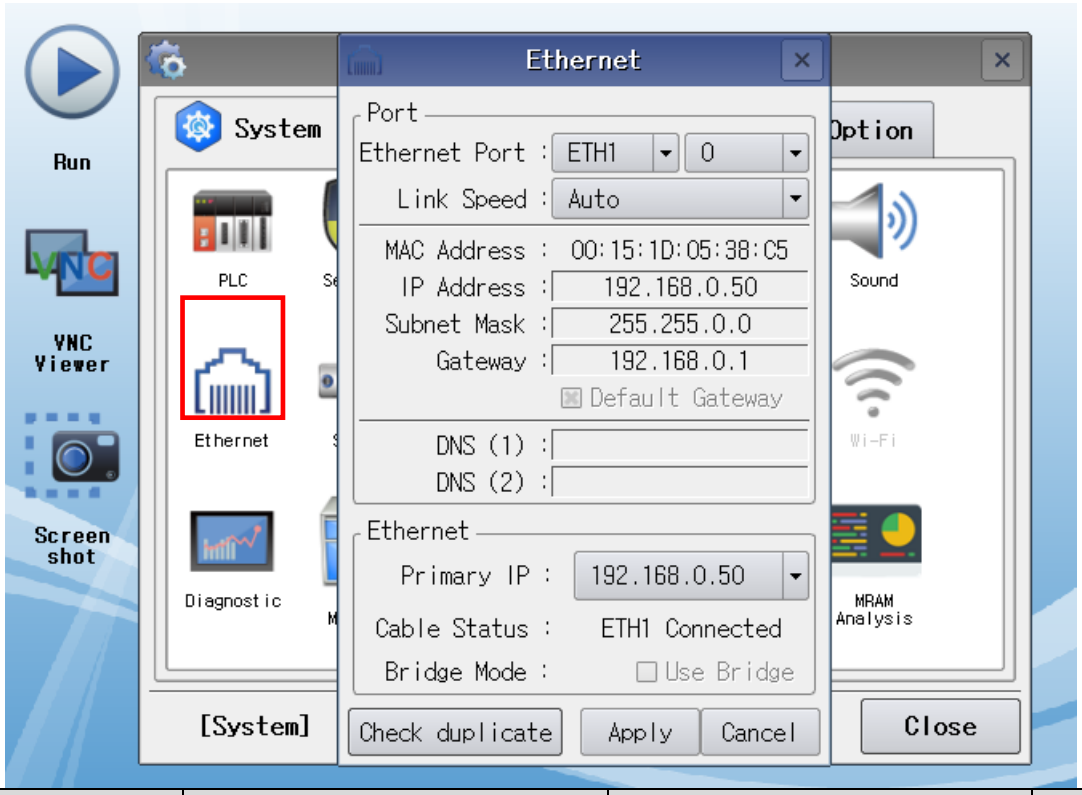
*** This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.**

■ 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

■ [Control Panel] → [System] → [Ethernet]



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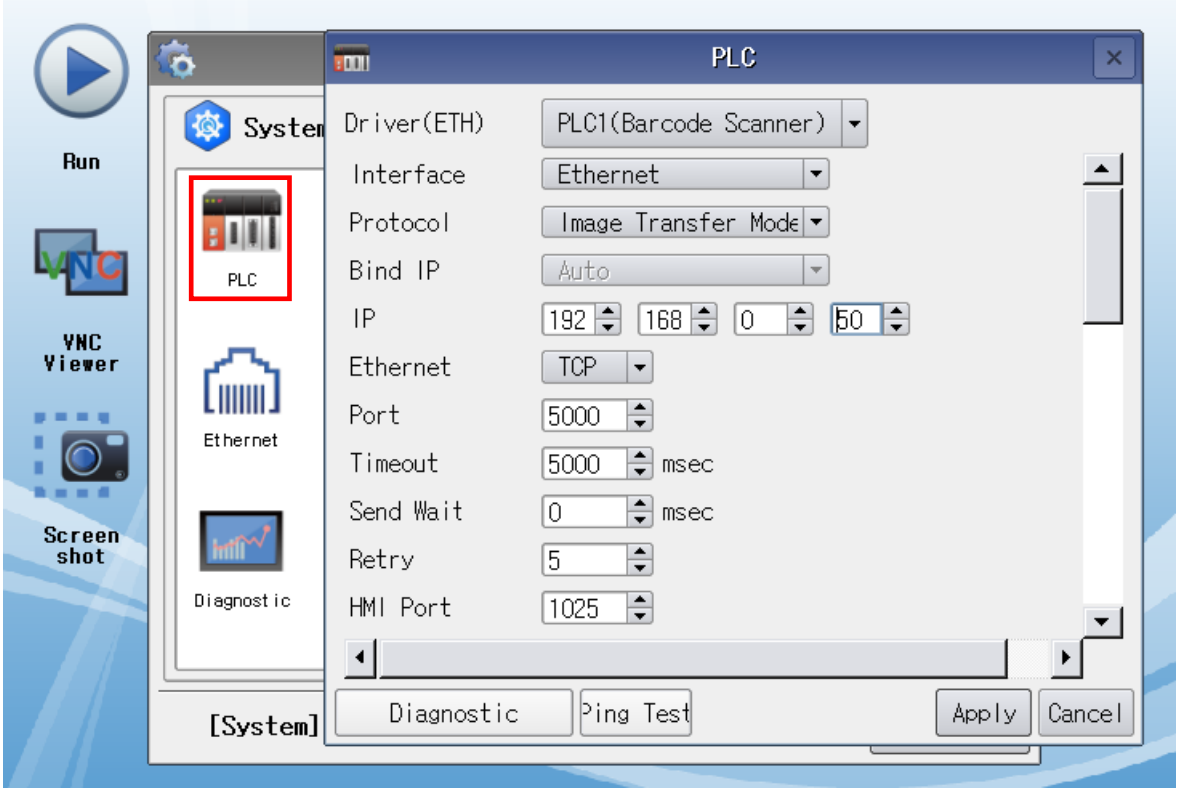
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

* The above settings are examples recommended by the company.

Items	Description
IP Address	Set the IP address of the TOP.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Control Panel] → [System] → [PLC]



* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Select the Ethernet protocol between the TOP and an external device.	
Port	Enter the Ethernet communication port number of an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	*Note 1)
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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 that the settings of the connected ports in [Control Panel] → [System] → [Ethernet] are the same as the settings of the external device.

■ Diagnosis of whether the port communication is normal or not

- Touch "Communication Diagnostics" in [Control Panel] → [System] → [PLC].
- Check whether communication is connected or not.

Communication diagnostics succeeded	**Communication setting normal**
Error message	**Communication setting abnormal** - Check the cable, TOP, and external device settings. (Refer to 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	
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	OK	NG	
		Gateway	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	
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	OK	NG	
		Gateway	OK	NG	

4. External device setting

Configure the IP and port number of the external device by referring to the vendor's user manual.