S & E

TMS Series

Ethernet Driver

Supported version TOP Design Studio V1.4.11.37 or higher

CONTENTS

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

1. System configuration

The system configuration of TOP and "S & E TMS Series" is as follows.

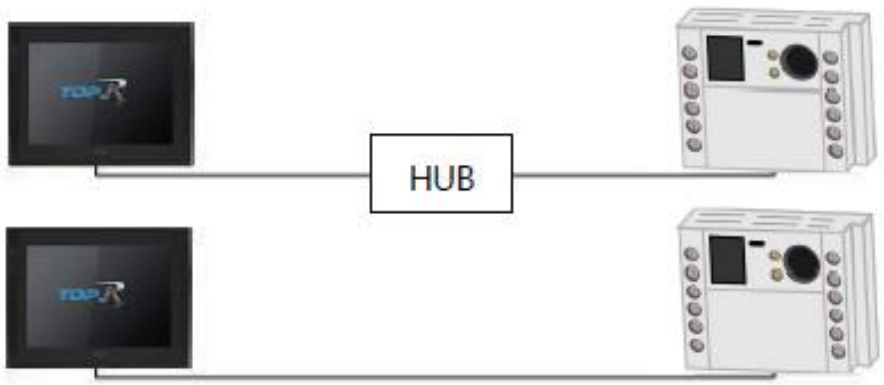
Series	Communication method	System setting	Cable
TMS-080 TMS-160 TMS-160W	Ethernet (TCP)	3. TOP communication setting	Twisted pair cable*Note 1)

*Note 1) 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.

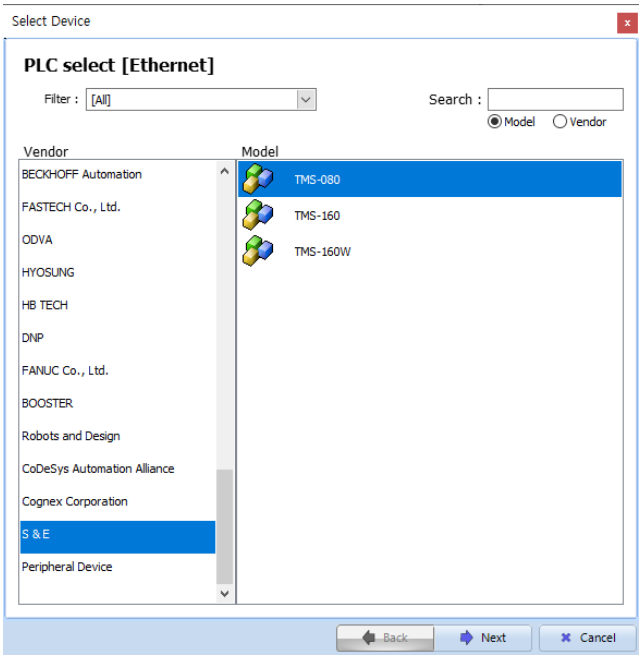
■ Connection configuration

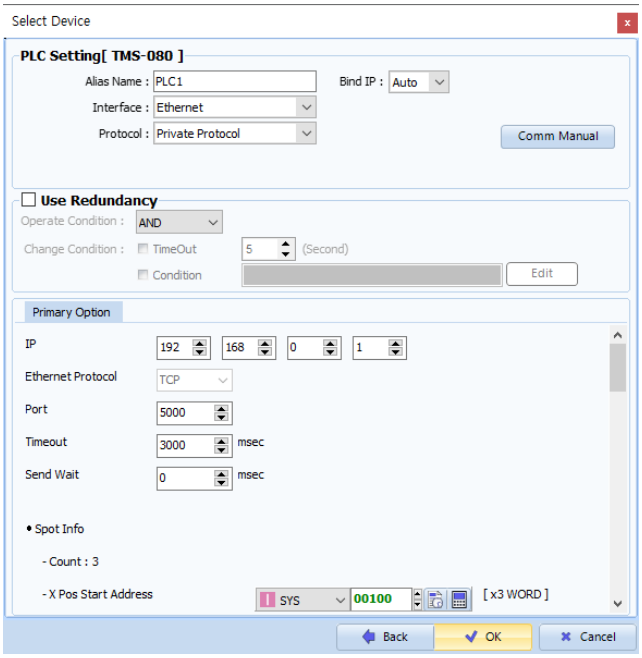
・1:1 connection



2. External device selection

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





Settings		Contents
TOP	Model	Check the display and process of TOP to select the touch model.
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "S & E".
	Model	Select the external device to be connected to the TOP. **Model** / **Interface** / **Protocol** TMS-080, TMS-160, TMS-160W / Ethernet / Private Protocol 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

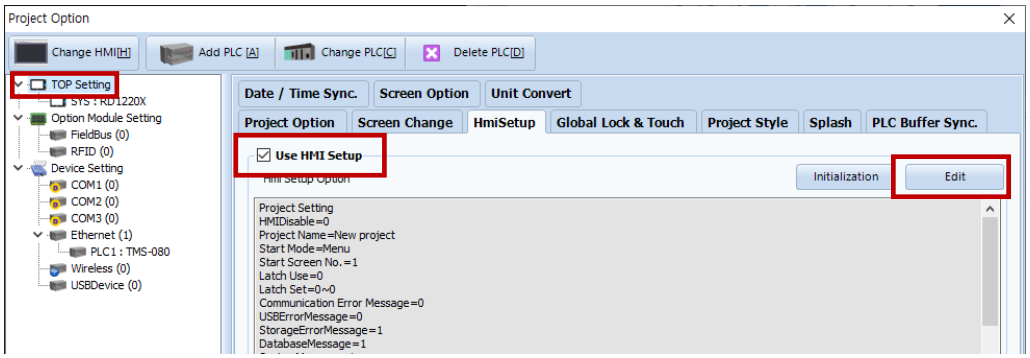
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

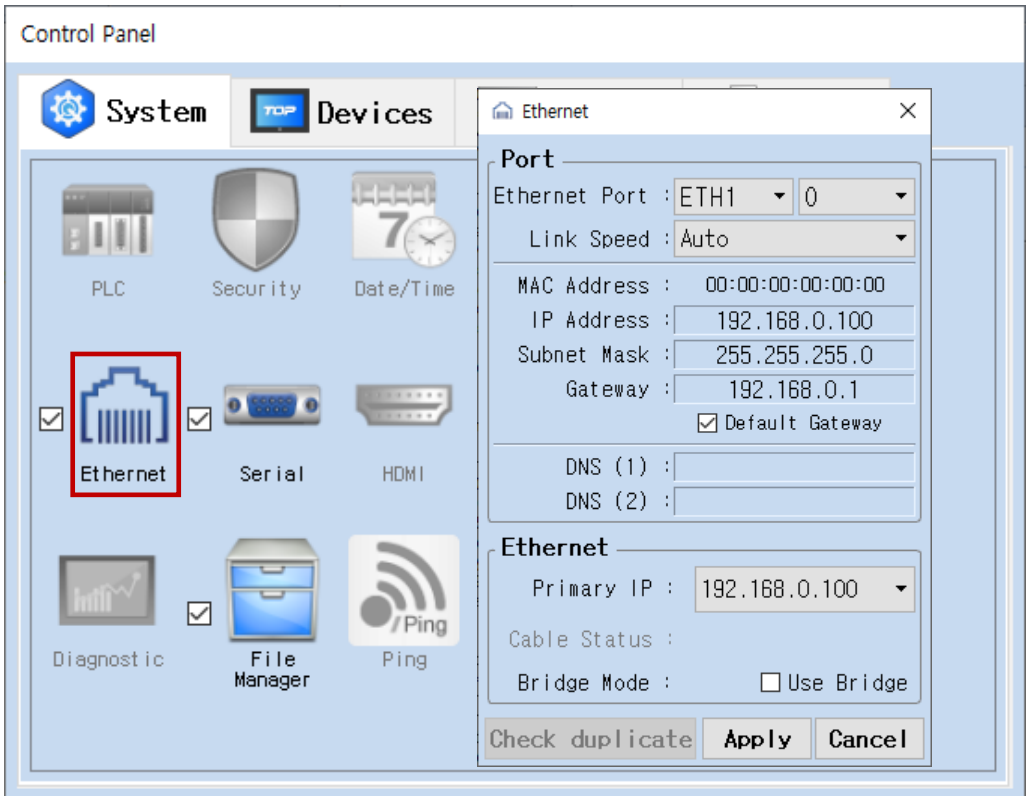
3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project properties > TOP settings] → [HMI settings > Check "Use HMI settings" > Edit > Ethernet]

- Set the TOP communication interface in TOP Design Studio.





Items	TOP	External device	Remarks
IP Address*Note 1) Note 2)	192.168.0.100	192.168.0.1	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, 192 . 168 . 0 . 0) should match.

*Note 2) Do not use duplicate IP addresses over the same network.

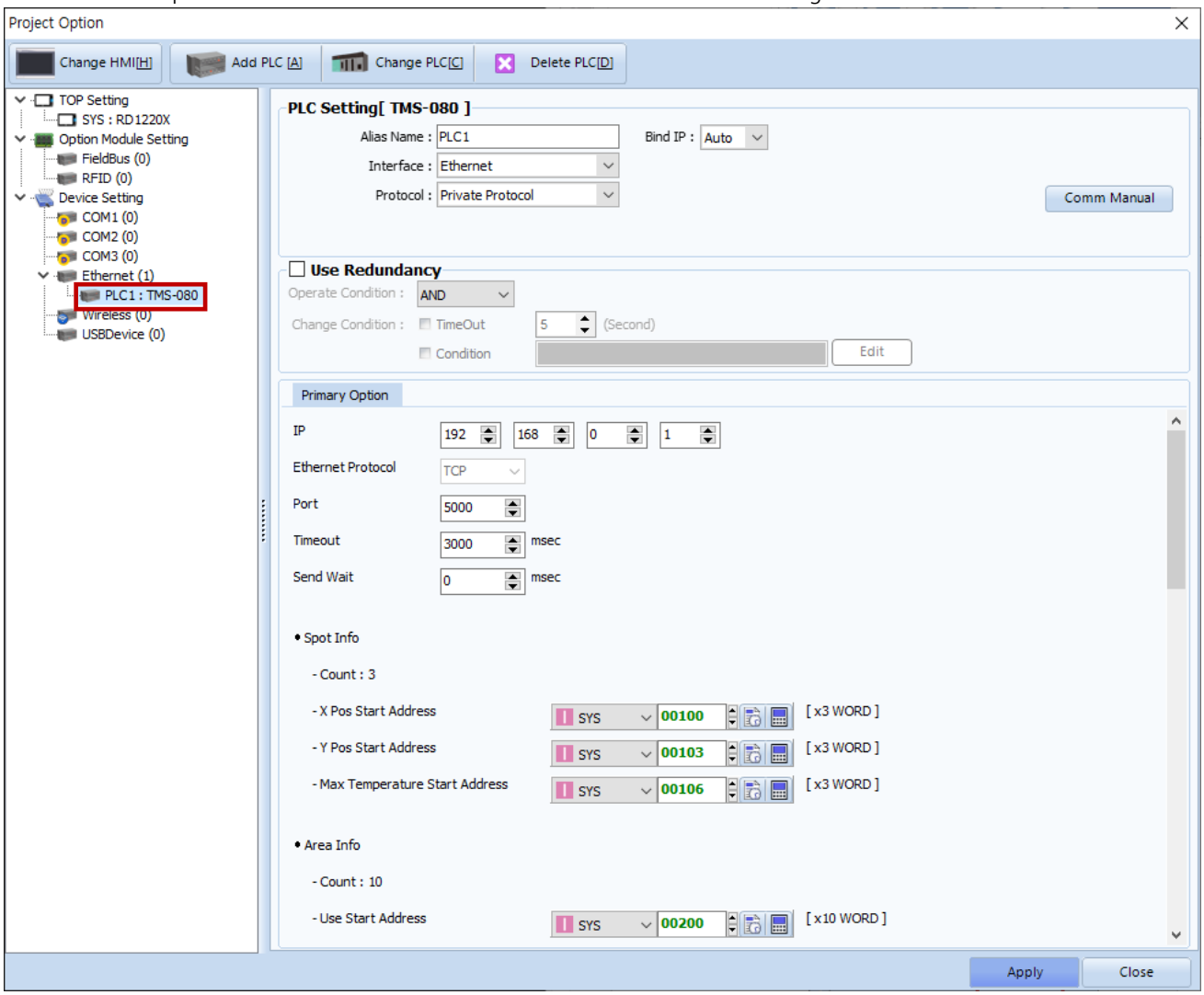
* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Project > Project properties > Device setting > Ethernet > "PLC1 : TMS-080"]

– Set the options of the communication driver of TMS Series Ethernet 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 "Private Protocol".	
IP	Enter the IP address of the 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.	Not used

● Spot Info

Count	The number of spots of the corresponding thermal imaging camera.	
X Pos Start Address	Set the start address of the X coordinate.	
Y Pos Start Address	Set the start address of the Y coordinate.	
Max Temperature Start Address	Set the start address of the maximum temperature value.	***Note 1)**

● **Area Info**

Count	The number of areas of the corresponding thermal imaging camera.	
Use Start Address	Set the start address of the Enabled/Disabled value.	Enabled: 1, Disabled: 0
TopLeft X Pos Start Address	Set the start address of the upper left X coordinate.	
TopLeft Y Pos Start Address	Set the start address of the upper left Y coordinate.	
BottomRight X Pos Start Address	Set the start address of the lower right X coordinate.	
BottomRight Y Pos Start Address	Set the start address of the lower right Y coordinate.	
Max Temperature Start Address	Set the start address of the maximum temperature value.	***Note 1)**
Alarm State Start Address	Set the start address of the alarm status value.	Occurrence: 1, Non-occurrence: 0
Warning1 State Start Address	Set the start address of the warning 1 status value.	Occurrence: 1, Non-occurrence: 0
Warning2 State Start Address	Set the start address of the warning 2 status value.	Occurrence: 1, Non-occurrence: 0
Alarm Temperature Start Address	Set the start address of the temperature value where the alarm occurs.	***Note 1)**
Warning1 Temperature Start Address	Set the start address of the temperature value where warning 1 occurs.	***Note 1)**
Warning2 Temperature Start Address	Set the start address of the temperature value where warning 2 occurs.	***Note 1)**
Target Distance Start Address	Set the start address of the subject distance.	***Note 1)**
Emissivity Start Address	Set the start address of the emissivity.	***Note 2)**

● **Window Info**

X Pos Address	Set the address of X cooridinate.	
Y Pos Address	Set the address of Y cooridinate.	
Max Temperature Address	Set the address of the maximum temperature value.	***Note 1)**
Alarm State Address	Set the address of the alarm status value.	Occurrence: 1, Non-occurrence: 0
Warning1 State Address	Set the address of the warning 1 status value.	Occurrence: 1, Non-occurrence: 0
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Emissivity Address	Set the start address of the emissivity.	***Note 2)**

● **Camera Info**

Index Address	Set the address to display the index of the corresponding index.	
Name Address	Set the address to display the name of the corresponding index.	10 words fixed
ColorMap	Set the colormap to use for the thermal image.	
Video Display Type	Select the pixel type displayed on the screen.	
Min	Set the minimum for absolute value.	
Max	Set the maximum for absolute value.	

※ Addresses used in the above communication options can be only **read**.

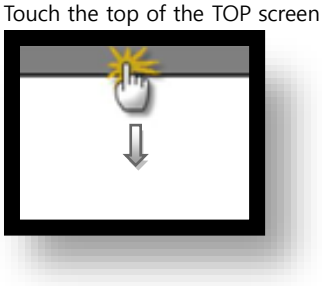
***Note 1) The actual value is the value obtained by giving one decimal place to the data value. ex) 1234 -> 123.4**

***Note 2) The actual value is the value obtained by giving two decimal place to the data value. ex) 1234 -> 12.34**

3.2. Communication setting in TOP

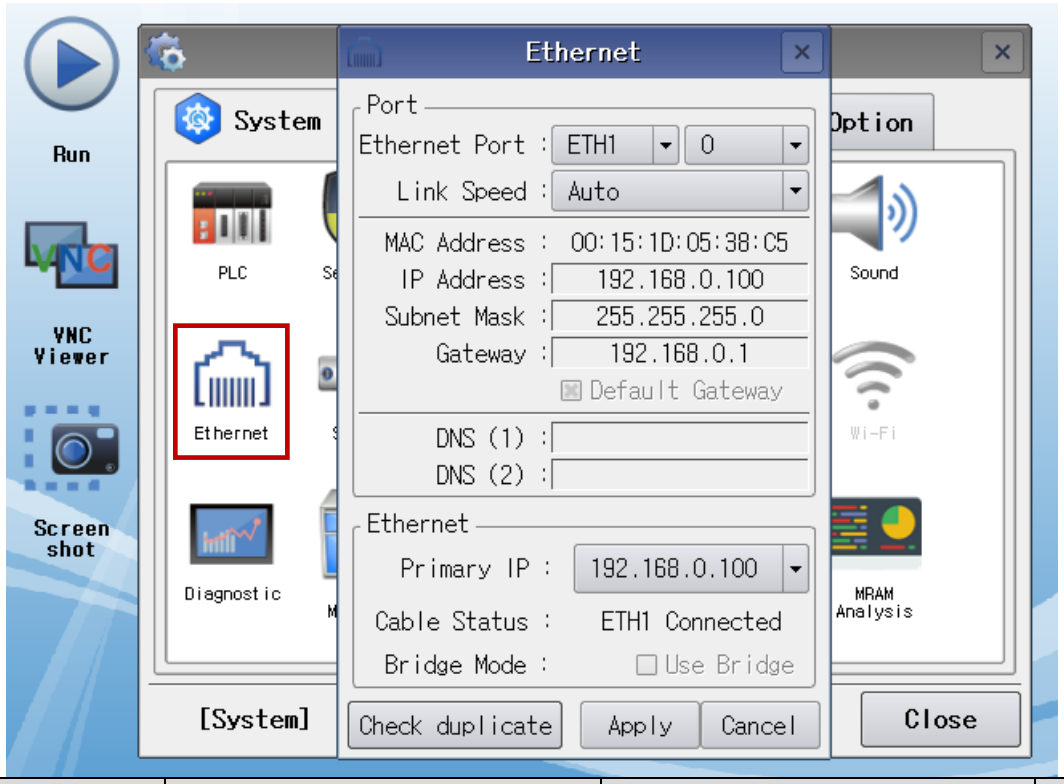
*** This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.**

■ 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 > Ethernet]



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*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, 192 . 168 . 0 . 0) should match.

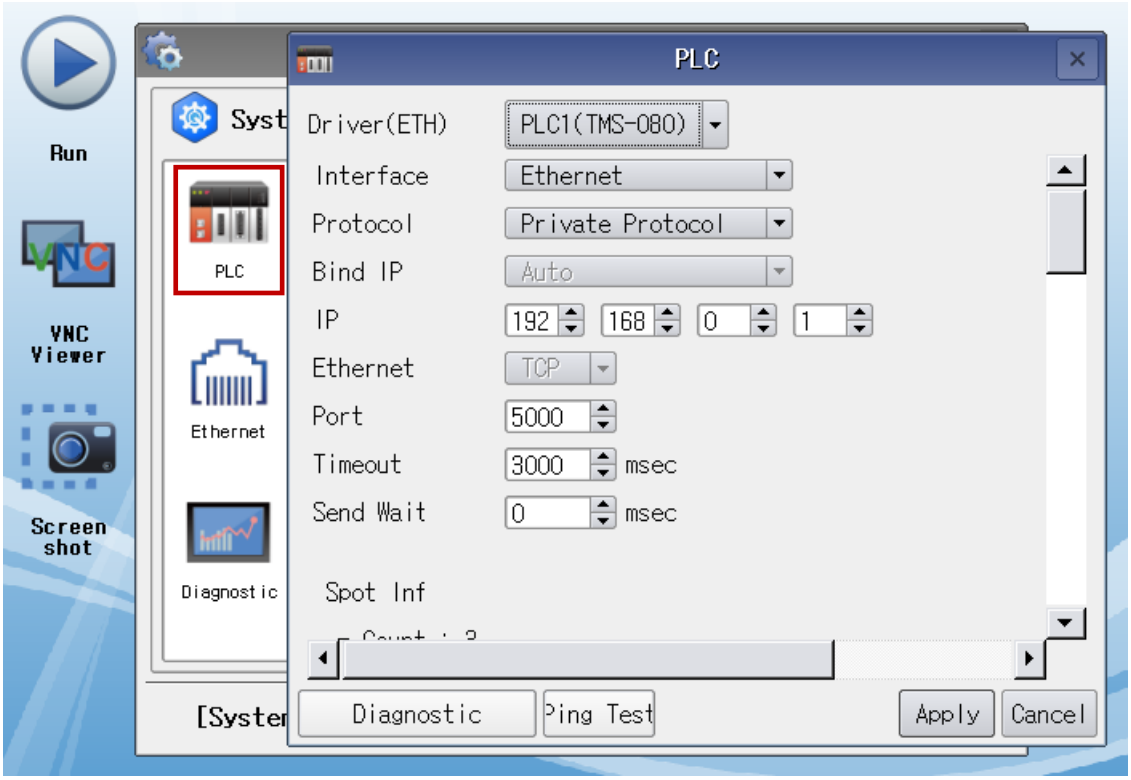
*Note 2) Do not use duplicate IP addresses over the same network.

* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Main screen > Control panel > PLC]



* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection".
Protocol	Select "Private Protocol".	
IP	Enter the IP address of the 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.	Not used

● Spot Info

Count	The number of spots of the corresponding thermal imaging camera model.	
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X Pos Address	Set the address of X coordinate.	
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※Addresses used in the above communication options can be only read.

***Note 1) The actual value is the value obtained by giving one decimal place to the data value. ex) 1234 -> 123.4.**

***Note 2) The actual value is the value obtained by giving two decimal place to the data value. ex) 1234 -> 12.34.**

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 whether the port (ETH1/ETH2) settings you want to use are the same as those of the external device in [Control panel > Ethernet].

■ 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	
	Port in use		OK	NG	
	Driver name		OK	NG	
	Other detailed settings		OK	NG	
	Relative prefix	Project setting	OK	NG	2. External device selection 3. Communication setting
		Communication diagnostics	OK	NG	
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	OK	NG	
		Gateway	OK	NG	
External device	CPU name		OK	NG	
	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

For external device communication setting, refer to the external device's manual.