

# FUJI Electric Co., Ltd

## MICREX-F Series

### Ethernet Driver

---

Supported version    TOP Design Studio    V1.4.4.0 or higher



## CONTENTS

---

We would like to thank our customers for using M2I's "Touch Operation Panel (M2I TOP) Series". Read this manual and familiarize yourself with the connection method and procedures of the "TOP and external device".

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

Describes the devices required for connection, the setting of each device, cables, and configurable systems.
- 2. External device selection** [Page 3](#)

Select a TOP model and an external device.
- 3. TOP communication setting** [Page 4](#)

Describes how to set the TOP communication.
- 4. Supported addresses** [Page 10](#)

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

# 1. System configuration

The system configuration of TOP and "FUJI Electric Co., Ltd – MICREX-F Series" is as follows:

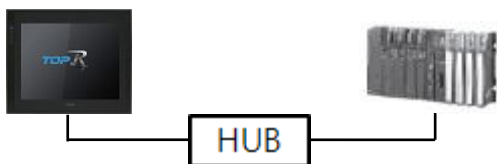
Series	CPU	Link I/F	Communication method	System setting	Cable
MICREX-F	F120S F150S	FFU170B	Ethernet (TCP/UDP)	<a href="#">3. TOP communication setting</a>	Twisted pair cable <b>*Note 1)</b>

**\*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 (one TOP and one external device) connection

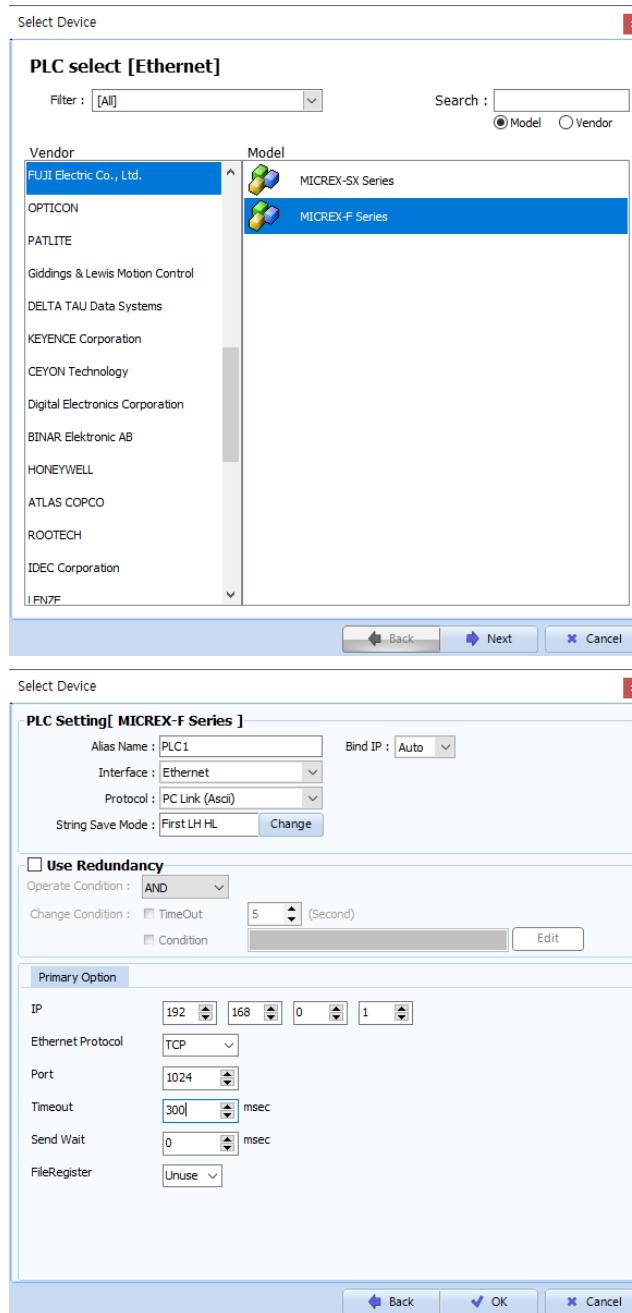


- 1:N (one TOP and multiple external devices) connection



## 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 "FUJI Electric Co., Ltd".									
	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>MICREX-F Series</td> <td>Ethernet</td> <td>Set Users</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #e1eef6;">Supported Protocol</th> </tr> </thead> <tbody> <tr> <td>PC Link (Ascii)</td> <td>PC Link (Binary)</td> </tr> </tbody> </table> 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.	Model	Interface	Protocol	MICREX-F Series	Ethernet	Set Users	Supported Protocol		PC Link (Ascii)
Model	Interface	Protocol									
MICREX-F Series	Ethernet	Set Users									
Supported Protocol											
PC Link (Ascii)	PC Link (Binary)										

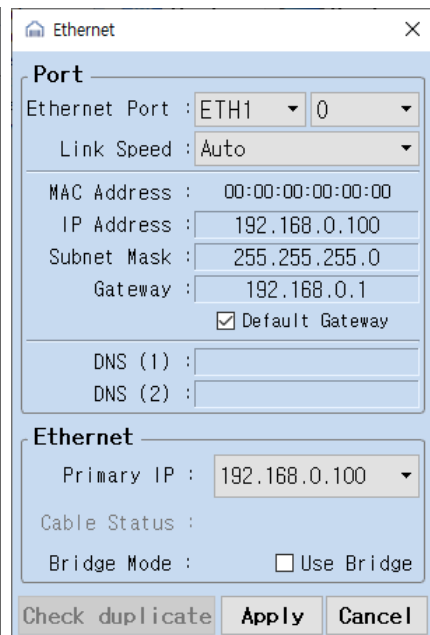
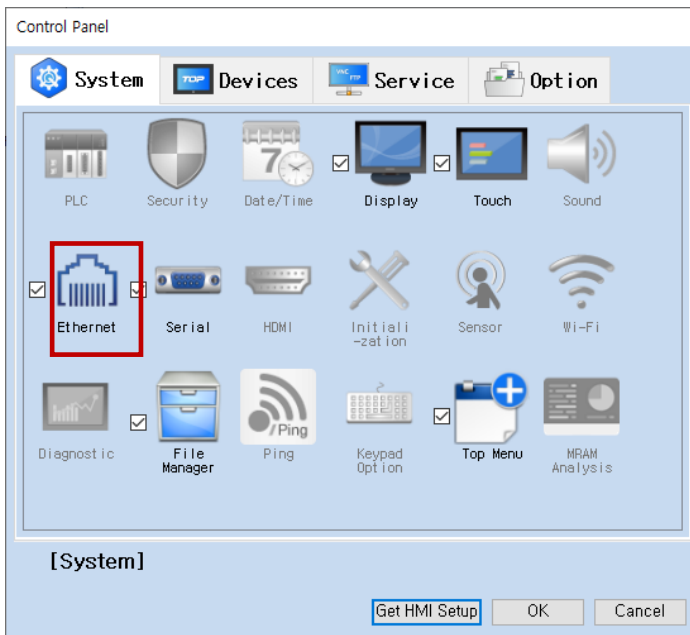
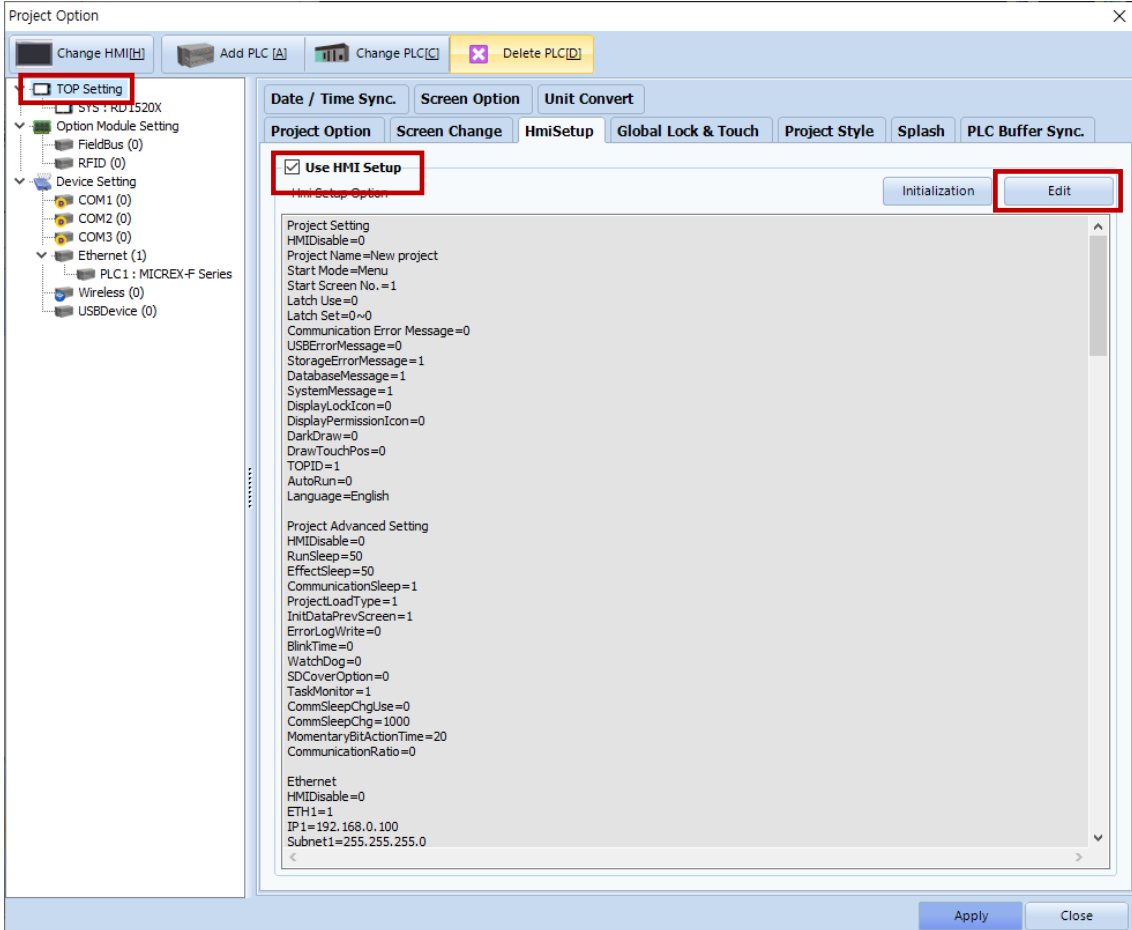
### 3. TOP communication setting

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 > Ethernet]
- Set the TOP communication interface in TOP Design Studio.



Items	TOP	External device	Remarks
IP Address* <a href="#">Note 1</a> ) <a href="#">Note 2</a> )	192.168.0.50	192.168.0.51	
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.

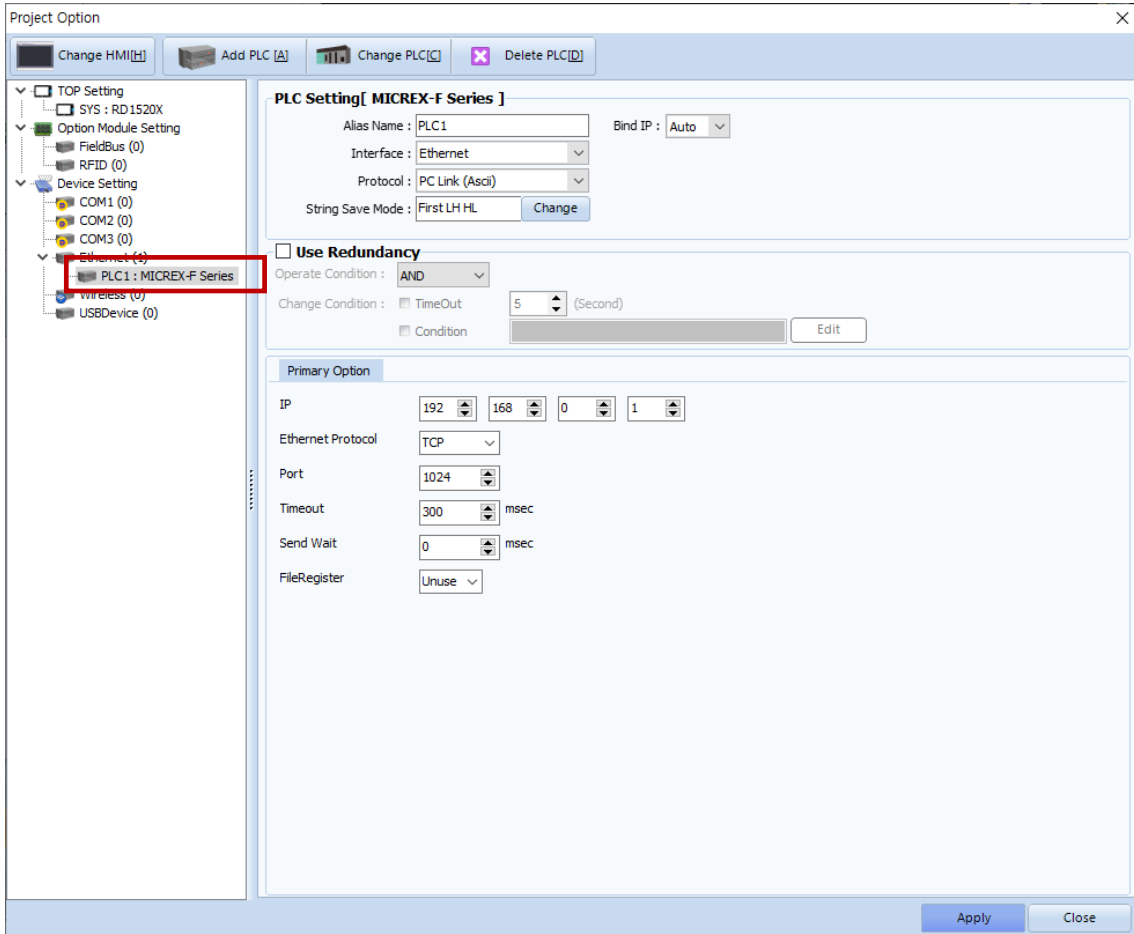
\*[Note 2](#)) Do not use duplicate IP addresses over the same network.

\* 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 Property > Device Setting > ETHERNET > "PLC1 : MICREX-F Series" ]
- Set the options of the MICREX-F Series communication driver in TOP Design Studio.



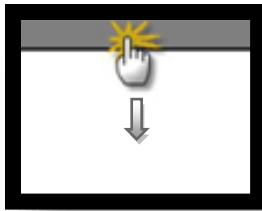
\* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select the TOP communication interface.	<a href="#">Refer to "2. External device selection".</a>
Protocol	Select the TOP communication protocol.	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Selects the Ethernet Protocol between the TOP and an external device.	Fixed
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.	
File Register	Enables or disables the file register device.	

### 3.2. Communication setting in TOP

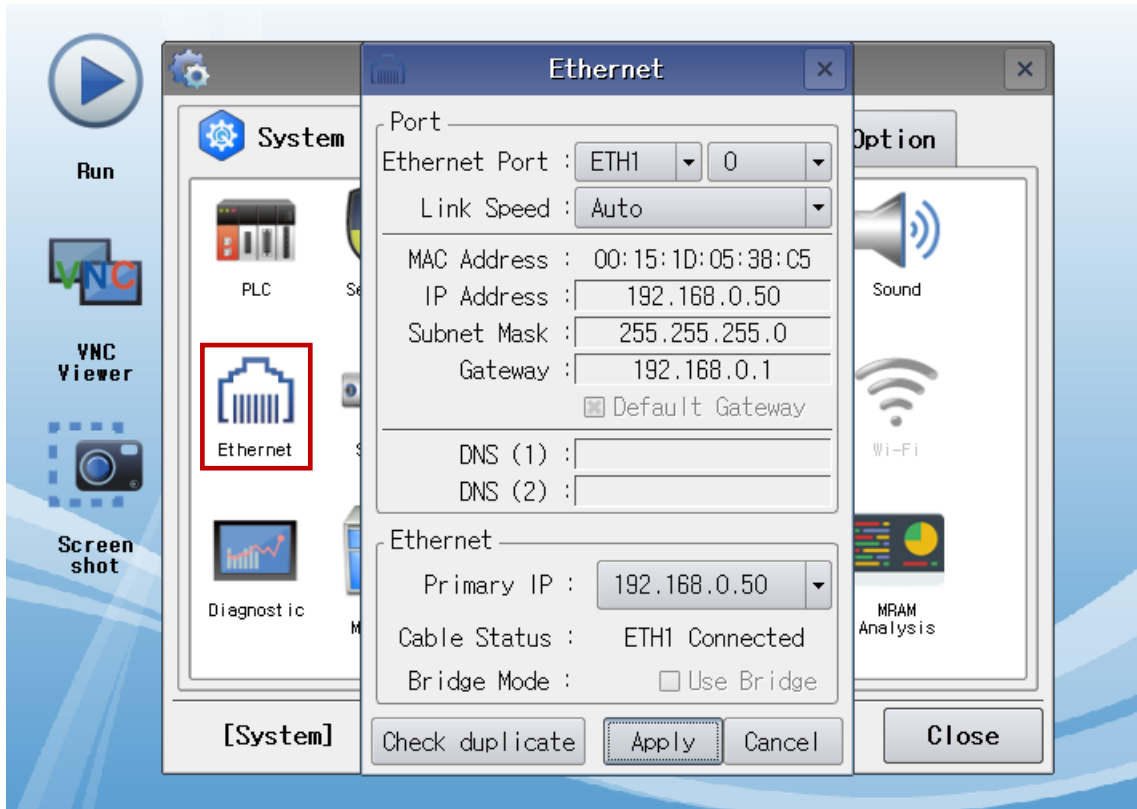
\* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- 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]



Items	TOP	External device	Remarks
IP Address* <a href="#">Note 1</a> ) <a href="#">Note 2</a> )	192.168.0.50	192.168.0.51	
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.

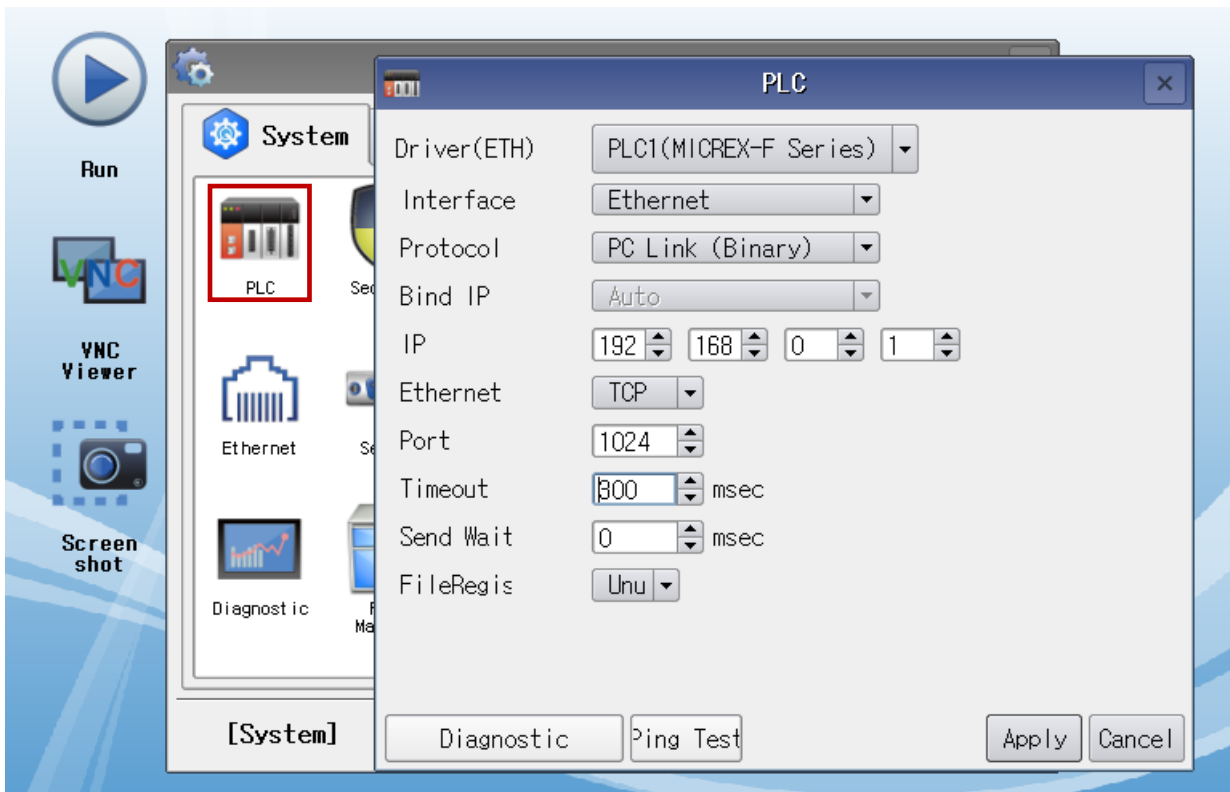
\*[Note 2](#)) Do not use duplicate IP addresses over the same network.

\* 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**

■ [Main Screen > Control Panel > PLC]



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

Items	Settings	Remarks
Interface	Select the TOP communication interface.	<a href="#">Refer to "2. External device selection".</a>
Protocol	Select the TOP communication protocol.	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Selects the Ethernet Protocol between the TOP and an external device.	Fixed
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.	
File Register	Enables or disables the file register device.	



### 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 port (ETH1/ETH2) settings you want to use in [Control Panel > Ethernet] 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
	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
Check address range	OK	NG	<a href="#">4. Supported addresses</a> (For details, please refer to the PLC vendor's manual.)		



## 4. 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.

Device	Description	Bit	Word	Size	Remarks
B	I/O relay	B000.00 – B511.15	B000 – B511	16 bit	
M	Auxiliary relay	M000.00 – M511.15	M000 – M511	16 bit	
K	Keep relay	K00.00 – K63.15	K00 – K63	16 bit	
F	Special relay	F0000.00 – F4095.15	F0000 – F4095	16 bit	
A	Announce relay	A0000.00 – A4095.15	A0000 – A4095	16 bit	
D	Different relay	D00.00 – D63.15	D00 – D63	16 bit	
W9	Current value of 0.1 sec timer	-	W9.000 – W9.511	32 bit	
TS	Set value of timer	-	TS000 – TS511	32 bit	
TR	Current value of timer	-	TR000 – TR511	32 bit	
CS	Set value of counter	-	CS000 – CS255	32 bit	
CR	Current value of counter	-	CR000 – CR255	32 bit	
DB	Data memory	-	BD0000 – BD4095	32 bit	
WL	P-link station 0 memory	No. 1 block	WL000.00 – WL511.15	WL000 – WL511	16 bit
W21		No. 2 block	W21.0000.00 – W21.4095.15	W21.0000 – W21.4095	16 bit
W22		No. 3 block	W22.0000.00 – W22.4095.15	W22.0000 – W22.4095	16 bit
W23		No. 4 block	W23.0000.00 – W23.4095.15	W23.0000 – W23.4095	16 bit
W24	Direct I/O	W24.000.00 – W24.255.15	W24.000 – W24.255	16 bit	
W25	Analog work area	-	W25.000 – W25.511	32 bit	
W26	Last value of differential relay	W26.00.00 – W26.63.15	W26.00 – W26.63	16 bit	
W30 – W109	File memory	W30.0000.00 – W109.4095.15	W30.0000 – W109.4095	16 bit	
W120	P-link station 1 memory	No. 1 block	W120.0000.00 – W120.4095.15	W120.0000 – W120.4095	16 bit
W121		No. 2 block	W121.0000.00 – W121.4095.15	W121.0000 – W121.4095	16 bit
W122		No. 3 block	W122.0000.00 – W122.4095.15	W122.0000 – W122.4095	16 bit
W123		No. 4 block	W123.0000.00 – W123.4095.15	W123.0000 – W123.4095	16 bit
W125	Calender	-	W125.0 – W125.5	16 bit	