

Fanuc LTD

Power Mate i Series

Ethernet Driver

Supported version TOP Design Studio V4.0 or higher



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

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Describes how to set up communication for external devices.
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Refer to this section to check the addresses which can communicate with an external device.

1. System configuration

The following driver is the "Fanuc LTD. Power Mate i Series".

The system configuration with an external device supported by this driver is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
Fanuc Series			Ethernet (TCP)	3.1 Settings example 1 (Page 4)	5.1. Cable table 1 (Page 9)

***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.

■ Connectable configuration

- 1:1 connection (one TOP and one external device) connection



- N:1 connection (multiple TOPs and one external device) connection

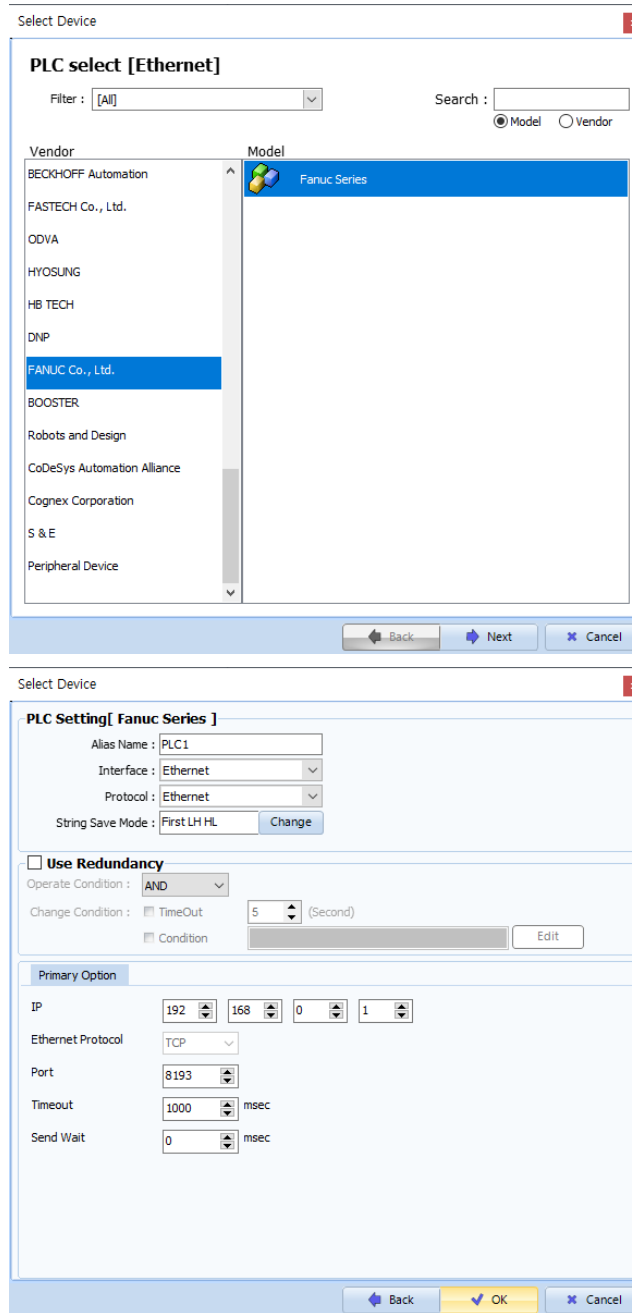


- 1:N connection (one TOP and multiple external devices) connection



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. Please select "Fanuc 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>Fanuc Series</td> <td>Ethernet</td> <td>Ethernet</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	Fanuc Series	Ethernet
Model	Interface	Protocol					
Fanuc Series	Ethernet	Ethernet					

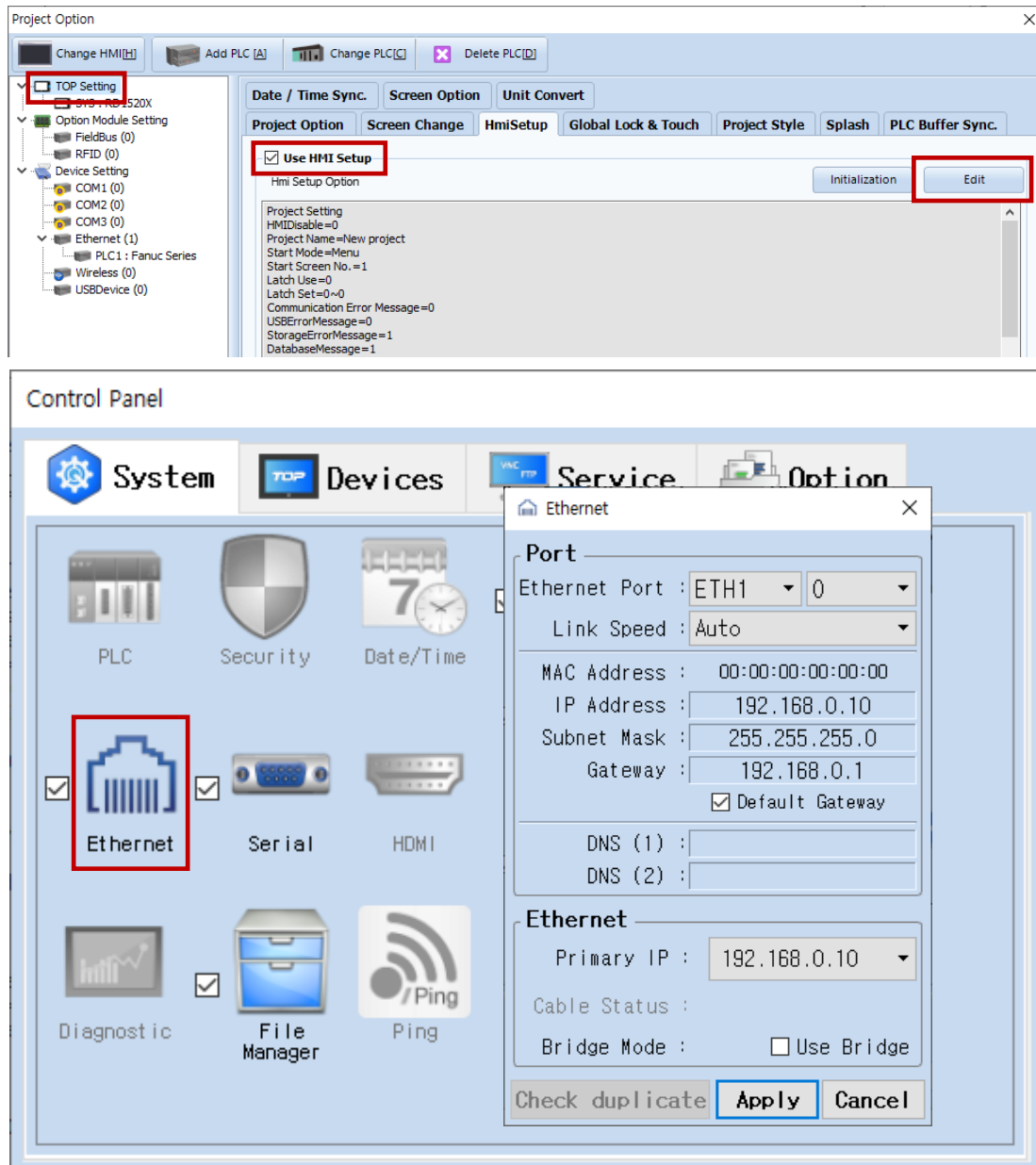
3. TOP communication setting

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.

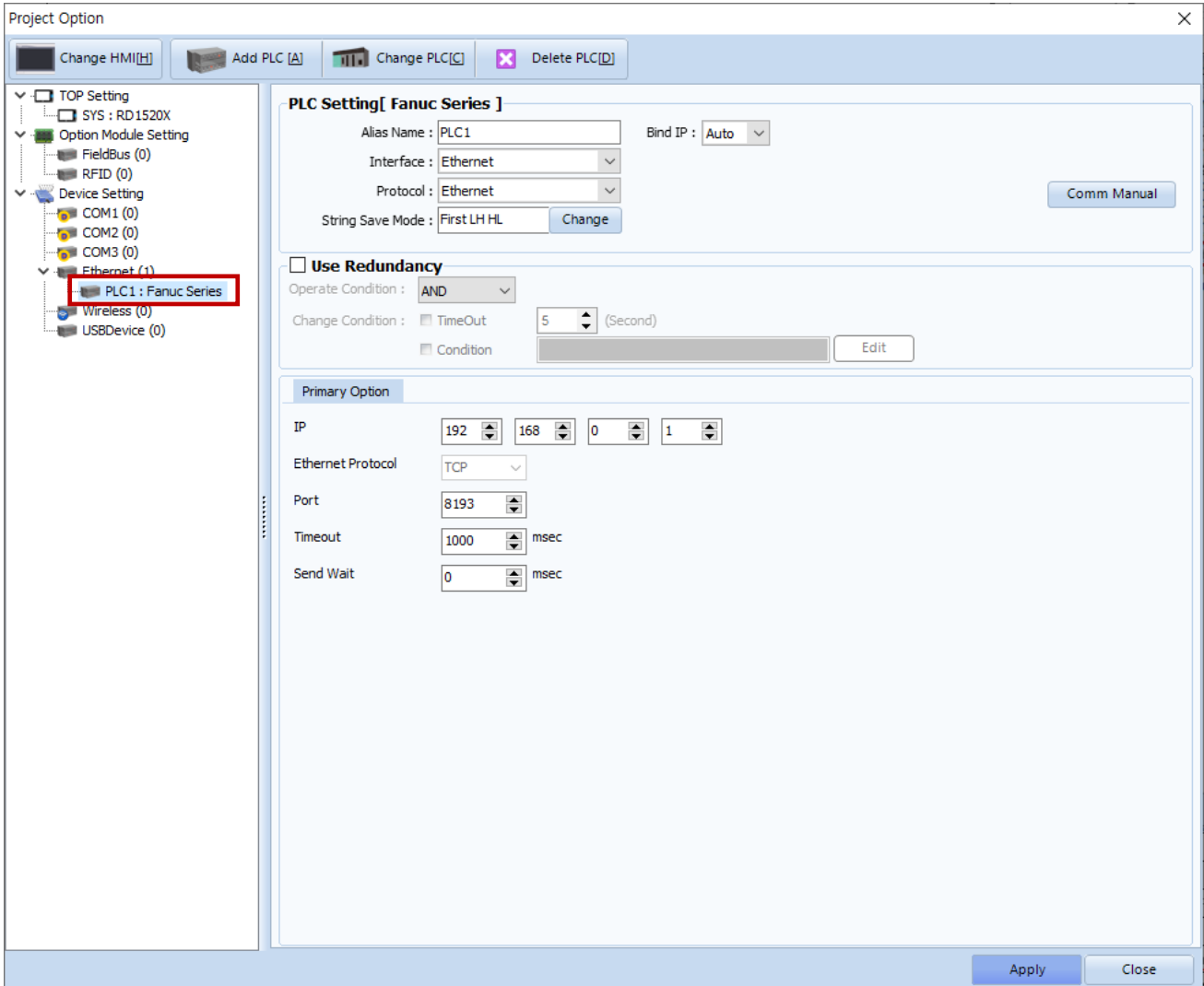


* The above settings are examples recommended by the company.

Items	TOP	External device	Remarks
IP Address*Note 1) Note 2)	192.168.0.10	192.168.0.1	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	
Port	Don't Care	8193	
Protocol	TCP		

(2) Communication option setting

- [Project > Project Property > Device Setting > Ethernet > "PLC1 : Fanuc Series"]
 – Set the options of the **Power Mate i Series** communication driver in TOP Design Studio.



Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection" .
Protocol	Select "Ethernet".	
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.	

3.2 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 ETH port 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.

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
	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

Refer to the vendor's user manual to identically configure the communication settings of the external device to that of the TOP.

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.

- 0i-MODEL B (PMC: SB7)

Device	Bit Address	Word Address	32 BIT
PMC->CNC Signal	G0000.0 - G0767.7	G0000 - G0766	
	G1000.0 - G1767.7	G1000 - G1766	
	G2000.0 - G2767.7	G2000 - G2766	
CNC->PMC Signal	F0000.0 - F0767.7	F0000 - F0766	
	F1000.0 - F1767.7	F1000 - F1766	
	F2000.0 - F2767.7	F2000 - F2766	
PMC->Machine Signal	Y0000.0 - Y0127.7	Y0000 - Y0126	
	Y0200.0 - Y0327.7	Y0200 - Y0326	
Machine->PMC Signal	X0000.0 - X0127.7	X0000 - X0126	
	X0200.0 - X0327.7	X0200 - X0326	
Message Request	A0000.0 - A0249.7	A0000 - A0248	
	A9000.0 - A9249.7	A9000 - A9248	
Internal Relay	R0000.0 - R7999.7	R0000 - R7998	
	R9000.0 - R9499.7	R9000 - R9498	
Extend Relay	E0000.0 - E7999.7	E0000 - E7998	
Variable Timer	T0000.0 - T0499.7	T0000 - T0498	
	T9000.0 - T9499.7	T9000 - T9498	
Keep Relay	K0000.0 - K0099.7	K0000 - K0098	
	K0900.0 - K0919.7	K0900 - K0918	
Counter	C0000.0 - C0399.7	C0000 - C0398	
	C5000.0 - C5199.7	C5000 - C5198	
Data Table	D0000.0 - D9999.7	D0000 - D9998	

- 30i-MODELA (PMC: 1st PMC)

Device	Bit Address	Word Address	32 BIT
PMC->CNC Signal	G0000.0 - G0767.7	G0000 - G0766	
	G1000.0 - G1767.7	G1000 - G1766	
	G2000.0 - G2767.7	G2000 - G2766	
	G3000.0 - G3767.7	G3000 - G3766	
	G4000.0 - G4767.7	G4000 - G4766	
	G5000.0 - G5767.7	G5000 - G5766	
	G6000.0 - G6767.7	G6000 - G6766	
	G7000.0 - G7767.7	G7000 - G7766	
	G8000.0 - G8767.7	G8000 - G8766	
	G9000.0 - G9767.7	G9000 - G9766	
CNC->PMC Signal	F0000.0 - F0767.7	F0000 - F0766	
	F1000.0 - F1767.7	F1000 - F1766	
	F2000.0 - F2767.7	F2000 - F2766	

Device	Bit Address	Word Address	32 BIT
	F3000.0 - F3767.7 F4000.0 - F4767.7 F5000.0 - F5767.7 F6000.0 - F6767.7 F7000.0 - F7767.7 F8000.0 - F8767.7 F9000.0 - F9767.7	F3000 - F3766 F4000 - F4766 F5000 - F5766 F6000 - F6766 F7000 - F7766 F8000 - F8766 F9000 - F9766	
PMC->Machine Signal	Y0000.0 - Y0127.7 Y0200.0 - Y0327.7 Y0400.0 - Y0527.7 Y0600.0 - Y0727.7 Y1000.0 - Y1127.7	Y0000 - Y0126 Y0200 - Y0326 Y0400 - Y0526 Y0600 - Y0726 Y1000 - Y1126	
Machine->PMC Signal	X0000.0 - X0127.7 X0200.0 - X0327.7 X0400.0 - X0527.7 X0600.0 - X0727.7 X1000.0 - X1127.7	X0000 - X0126 X0200 - X0326 X0400 - X0526 X0600 - X0726 X1000 - X1126	
Message Request	M0000.0 - M0767.7	M0000 - M0766	
Internal Relay	N0000.0 - N0767.7	N0000 - N0766	
Extend Relay	A0000.0 - A0249.7 A9000.0 - A9249.7	A0000 - A0248 A9000 - A9248	
Variable Timer	R0000.0 - R7999.7 R9000.0 - R9499.7	R0000 - R7998 R9000 - R9498	
Keep Relay	E0000.0 - E9999.7	E0000 - E9998	
Counter	T0000.0 - T0499.7 T9000.0 - T9499.7	T0000 - T0498 T9000 - T9498	
Data Table	K0000.0 - K0099.7 K0900.0 - K0999.7	K0000 - K0098 K0900 - K0998	