

IDEC IZUMI

MicroSmart Series

FC3/FC4A/FC5A Ethernet Driver

Supported version TOP Design Studio V1.4.4 or higher



CONTENTS

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.

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. External device setting [Page 9](#)

Describes how to set up communication for external devices.

5. 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 "IDEC MicroSmart" is as follows:

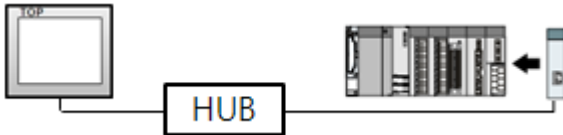
Series	CPU	Link I/F	Communication method	System setting	Cable
MicroSmart Series	FC3/FC4A/FC5A	Port on CPU unit	Ethernet (TCP)	3.1 Settings example	Twisted pair cable* Note 1)

***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.

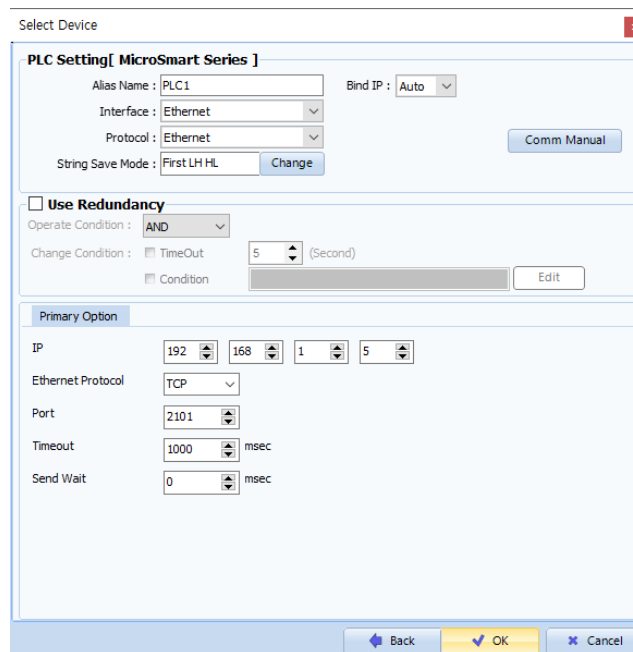
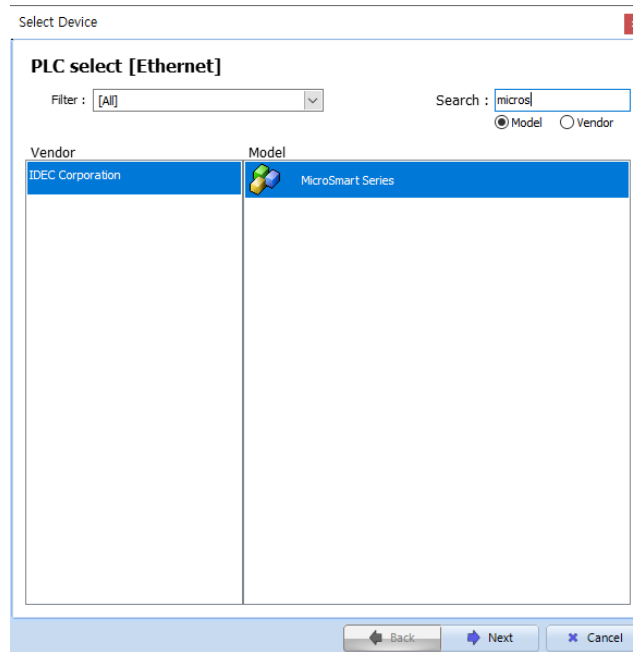
■ Connection configuration

- 1:1 connection (one TOP and one external device) 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 "IDEC"					
	PLC	Select an external device to connect to 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>MicroSmart</td> <td>Ethernet</td> <td>MicroSmartProtocol</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	MicroSmart	Ethernet
Model	Interface	Protocol					
MicroSmart	Ethernet	MicroSmartProtocol					

3. TOP communication setting

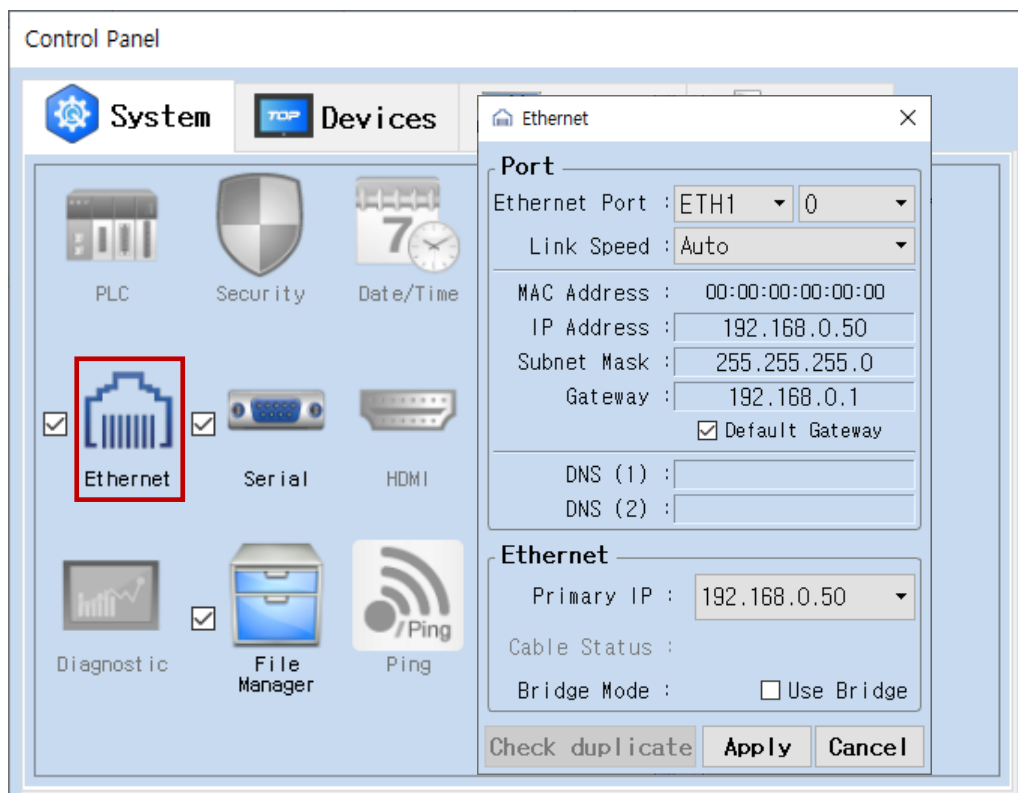
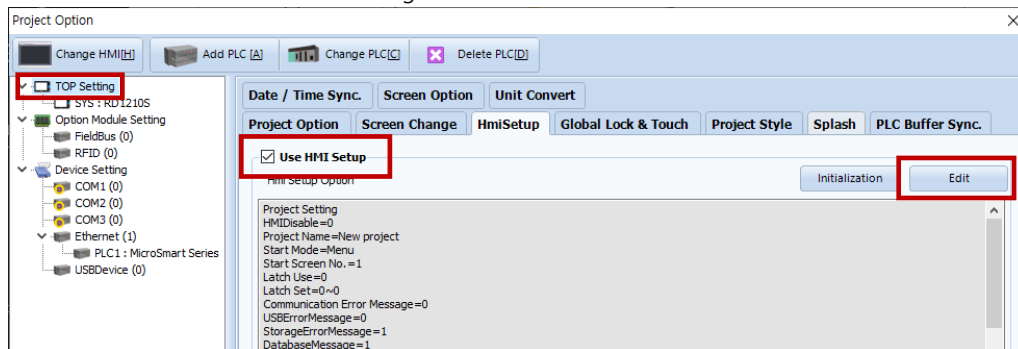
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

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* Note 1) Note 2)	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.

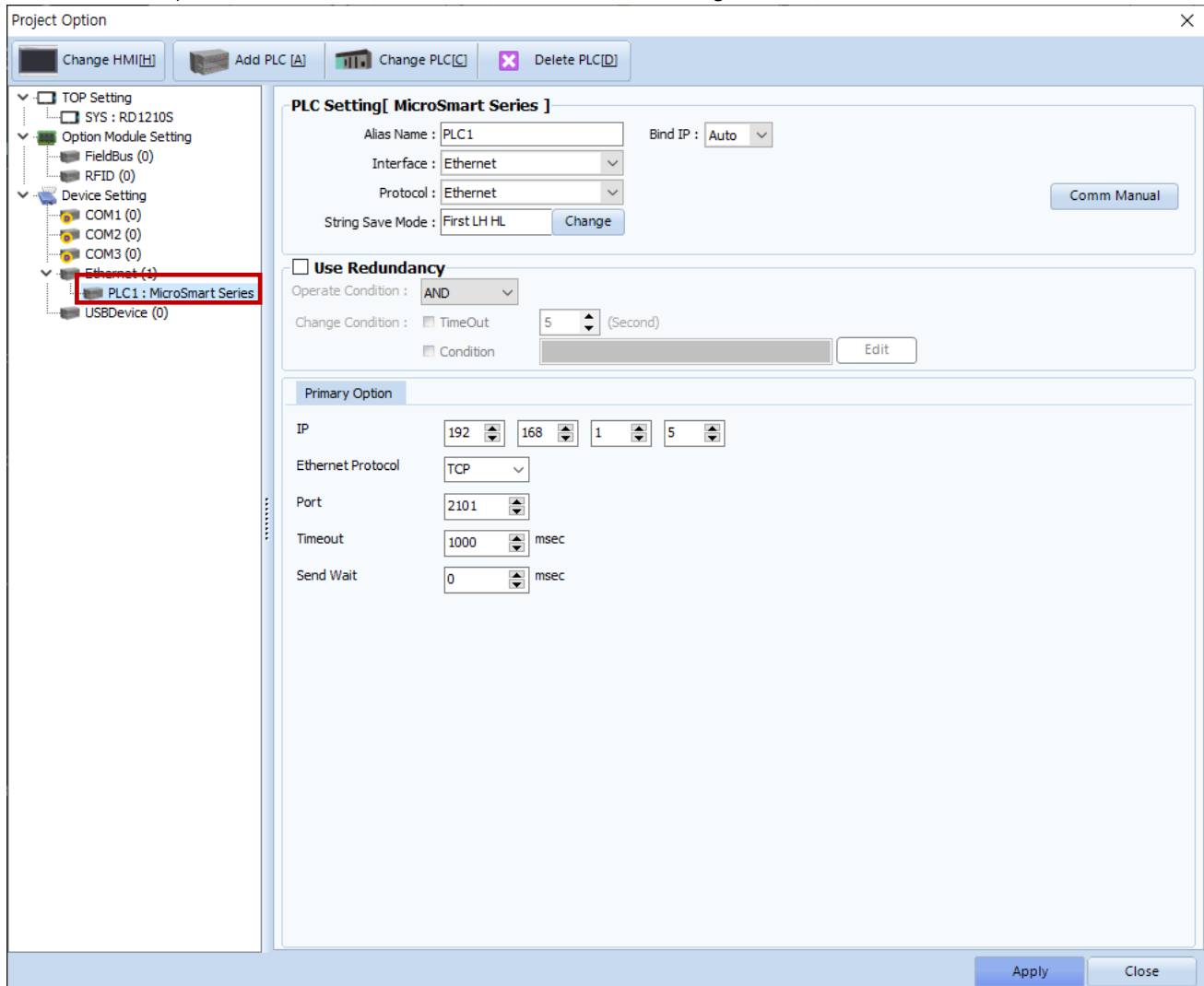
*[Note 2](#)) Do not use duplicate IP addresses over the same network.

* 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 : MicroSmart"]
 – Set the options of the MicroSmart 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 "Ethernet".	Refer to "2. External device selection".
IP	Enter the IP address of the external device.	
Ethernet Protocol	Selects the Ethernet protocol <u>TCP</u> between the TOP and an external device.	Fixed
Port	Enter <u>2101</u> , which is the TCP/IP port number 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.	

3.2. Communication setting in TOP

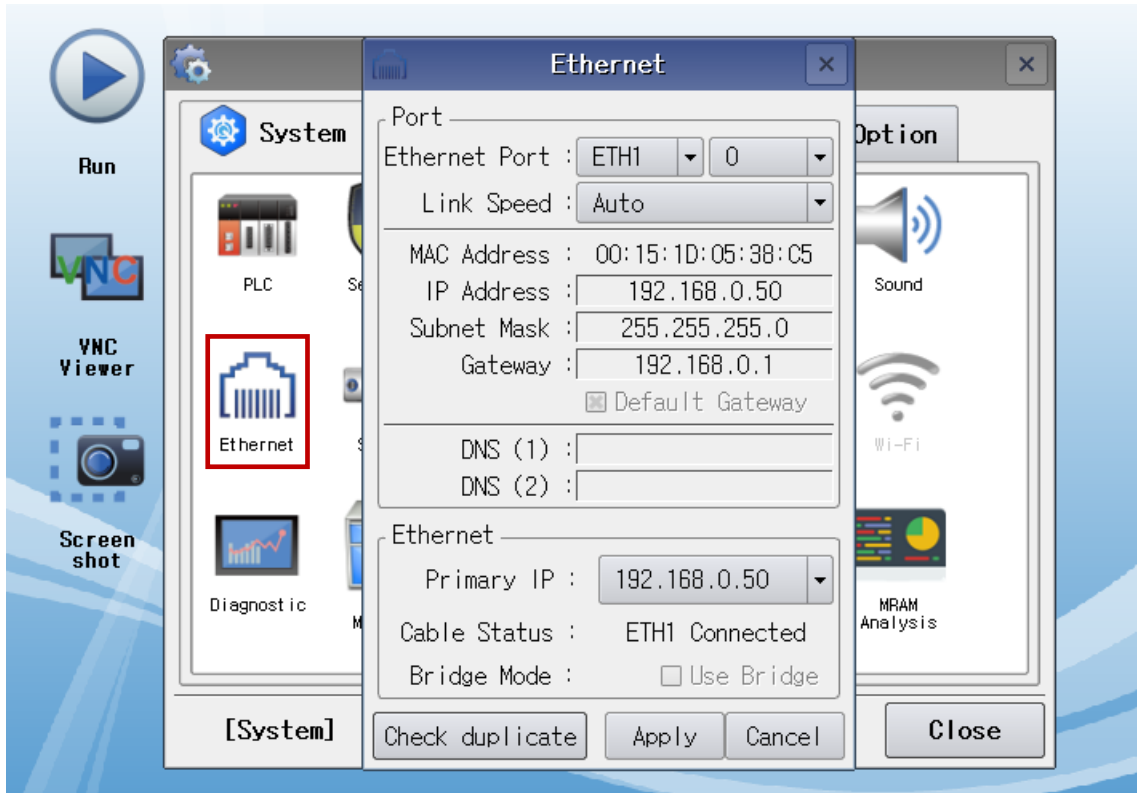
* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- 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
IP Address* Note 1 Note 2)	192.168.1.118	192.168.1.5	
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 . 1 , 0) should match.

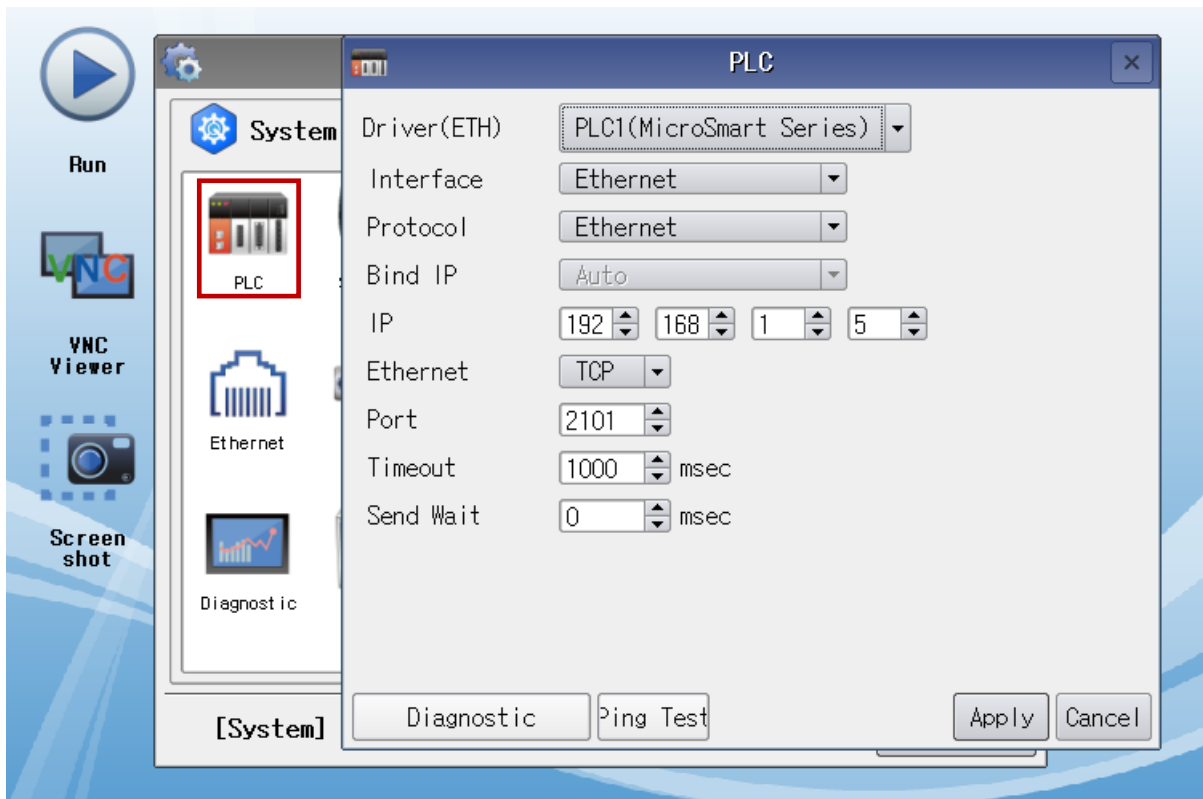
*[Note 2](#)) Do not use duplicate IP addresses over the same network.

* 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 "Ethernet".	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Selects the Ethernet protocol <u>TCP</u> between the TOP and an external device.	Fixed
Port	Enter <u>2101</u> , which is the Ethernet communication port number 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.	

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 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		
Check address range		OK	NG	5. Supported addresses (For details, please refer to the PLC vendor's manual.)	

4. External device setting

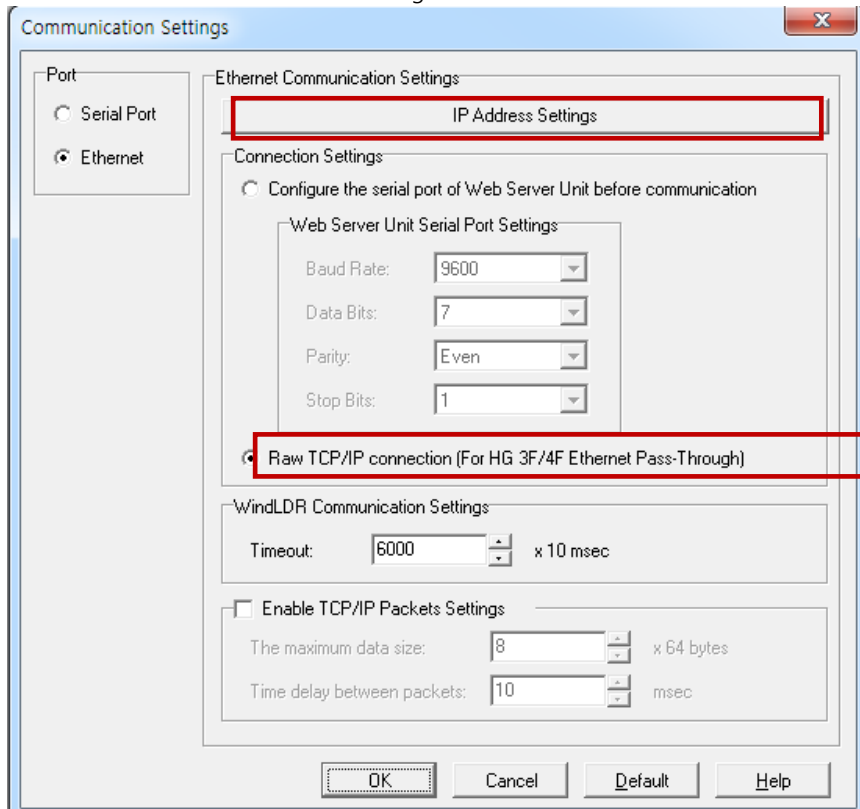
Set as below using "IDEC PLC Series" "MicroSmart".

For more detailed setting method than that described in this example, refer to the PLC user manual.

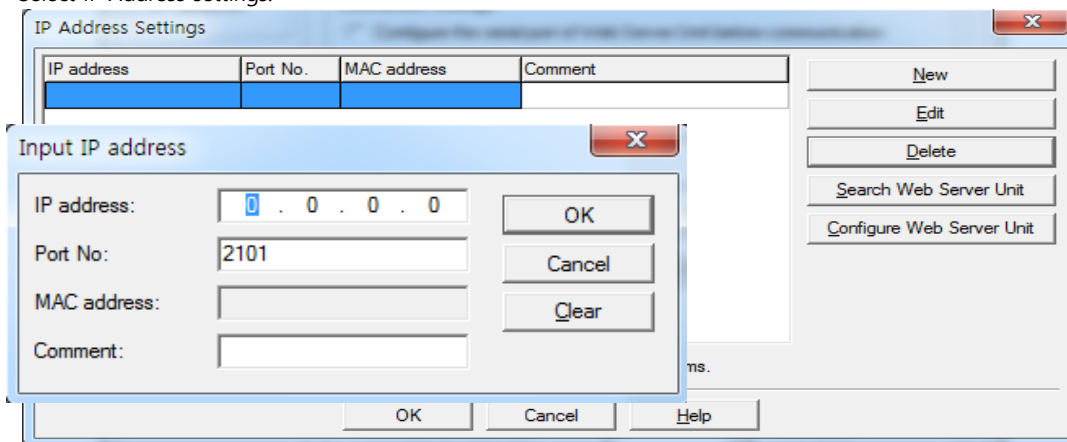


Do not use duplicate IP addresses over the same network.

1. Run the WINDLDR SW.
2. Go to Configure .>> PLC Select to choose the desired PLC,
3. Select ETHERNET at communication settings.



4. Select IP Address settings.



5. Select "New" and configure the port and IP.

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 careful not to deviate from the address range supported by the device you want to use.

Device	Contents	Bit Address	Word Address	Remarks
X	Input	0000 ~ 0627	0000 ~ 0062	
Y	Output	0000 ~ 0627	0000 ~ 0062	
M	Internal Relay	0000 ~ 2557	0000 ~ 0254	
	Special Internal Relay	8000 ~ 8317	0800 ~ 0830	
R	Shift Register	0000 ~ 0255	0000 ~ 0240	
TS	Timer(Preset Value)	-	0000 ~ 0255	
TN	Timer(Current Value)	-	0000 ~ 0255	
CS	Counter(Preset Value)	-	0000 ~ 0255	
CN	Counter(Current Value)	-	0000 ~ 0255	
D	Data Register	0000.00 ~ 1999.15	0000 ~ 1999	
	Special Data Register	8000.00 ~ 8199.15	8000 ~ 8199	
	Extended Data Register	2000.00 ~ 7999.15	2000 ~ 7999	

Does not support Extra Data Register.