



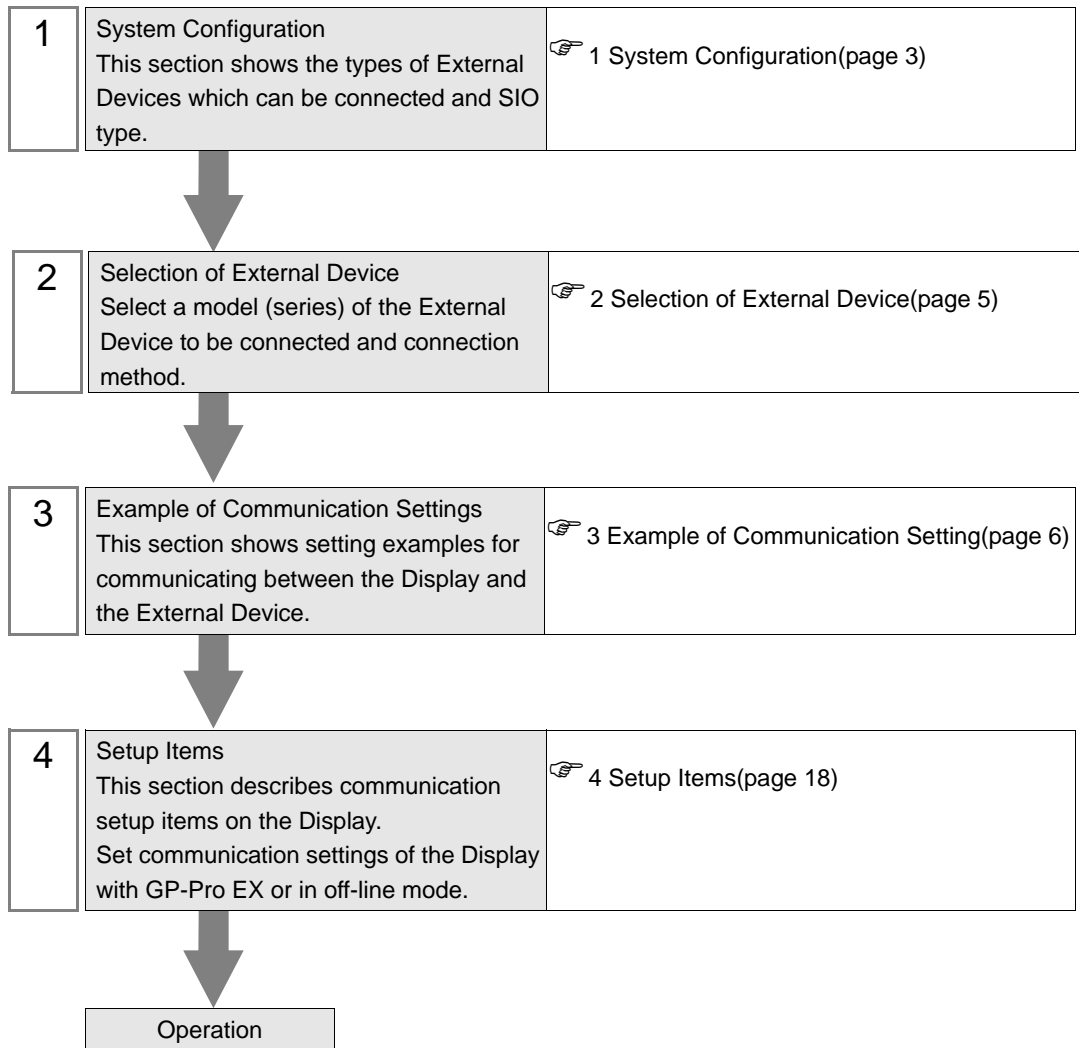
EtherNet/IP Driver

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Introduction

This manual describes how to connect the Display (GP3000 series) and the External Device (target PLC).

In this manual, the connection procedure will be described by following the below sections:



1 System Configuration

The system configuration in the case when the External Device of Rockwell Automation, Inc. and the Display are connected is shown.

Series Name	CPU	Link I/F	SIO Type	Setting Example
SLC500	SLC 5/05	CPU Direct (channel1)*1	Ethernet (TCP)	Setting Example 1 (page 6)
	SLC 5/03 SLC 5/04 SLC 5/05	1761-NET-ENI		Setting Example 2 (page 8)
PLC-5	All CPUs that support the link I/F on the right	1761-NET-ENI		Setting Example 3 (page 9)
ControlLogix	All CPUs that support the link I/F on the right	1756-ENET/B 1756-ENET 1756-ENBT		Setting Example 4 (page 10)
		1761-NET-ENI		Setting Example 5 (page 11)
ControlLogix Native*2	All CPUs that support the link I/F on the right	1756-ENET/B 1756-ENET 1756-ENBT		Setting Example 9 (page 15)
		1761-NET-ENI*3		Setting Example 10 (page 16)
MicroLogix	MicroLogix 1000 MicroLogix 1100 MicroLogix 1200 MicroLogix 1500	1761-NET-ENI		Setting Example 6 (page 12)
	MicroLogix 1100	CPU Direct (channel1)		Setting Example 7 (page 13)
CompactLogix	All CPUs that support the link I/F on the right	1761-NET-ENI		Setting Example 5 (page 11)
	1769-L32E 1769-L35E	CPU Direct		Setting Example 8 (page 14)
CompactLogix Native*2	All CPUs that support the link I/F on the right	1761-NET-ENI*3		Setting Example 10 (page 16)
	1769-L32E 1769-L35E	CPU Direct		Setting Example 11 (page 17)

- *1 Rockwell EtherNet/IP driver for GP uses the CIP protocol. Old revision of SLC 5/05 CPU does not support it. Upgrade CPU Series A to the firmware revision of OS501, FRN5 or later. CPU Series B and C support the CIP protocol.
- *2 Select when using TagName set in the External Device as device name.
- *3 To use the 1761-ENT-ENI with the "ControlLogix/CompactLogix Series Native", the module must be Series B or later.

2 Selection of External Device

Select the External Device to be connected to the Display.

The screenshot shows a 'New Project File' dialog box. It is divided into two main sections: 'Device/PLC' and 'Connection Method'. In the 'Device/PLC' section, the 'Maker' dropdown is set to 'Rockwell Automation, Inc.' and the 'Driver' dropdown is set to 'EtherNet/IP'. There is an unchecked checkbox for 'Use System Area' and a blue hyperlink 'Refer to the manual of this Device/PLC'. In the 'Connection Method' section, the 'Port' dropdown is set to 'Ethernet (TCP)', with a blue hyperlink 'Go to Device/PLC Manual' next to it. At the bottom of the dialog are four buttons: 'Back', 'Communication Detail Settings', 'New Screen', and 'Cancel'.

Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "Rockwell Automation, Inc.".
Series	Select a model (series) of the External Device to be connected and connection method. Select "EtherNet/IP". Check the External Device which can be connected in "EtherNet/IP" in system configuration. 1 System Configuration(page 3)
Use System Area	Check this option when you synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the ladder program of the External Device to switch the display or display the window on the Display. Cf. GP-Pro EXReference Manual "Appendix 1.4 LS Area (only for direct access method)" This can be also set with GP-Pro EX or in off-line mode of the Display. Cf. GP-Pro EX Reference Manual "6.13.6[Setting Guide of [System Setting Window], Setting Guide of [Main Unit Settings], System Area Setting" Cf. GP3000 Series User's Manual "4.3.6 System Area Setting"
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

Examples of communication settings of the Display and the External Device, recommended by Digital Electronics Corp., are shown.

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Driver Port

Text Data Mode [Change](#)

Communication Settings

Port No. ☒ Auto

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Series	IP Address
1	PLC1	Series=SLC500 Series	IP Address=192.168.0.001

◆ Device Setting

To display the setting screen, click ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

Individual Device Settings

PLC1

Series

(Please reconfirm all address settings that you are using if you have changed the series.)

IP Address

■ Settings of External Device

Use RSLogix500 for communication setting.

Please refer to the manual of RSLogix500 for more details.

1. Start up RSLogix500 and create the new project. Select the CPU to be used when creating the new project.
2. Select [Channel Configuration] from [Controller] in the displayed Project tree.

3. Select [Open] from the menu displayed by right-clicking [Channel Configuration] and display the Channel setting screen.
4. Use the [Chan.1 - System] tab to set IP address and other items.
5. Download the setting in the External Device and restart the External Device.

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.2 Setting Example 2

■ Settings of GP-Pro EX


◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

MEMO

- When using 1761-NET-ENI, you need to set the timeout to 6sec or more.

◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the ENI/ENIW Utility for communication setting.

Please refer to the ENI/ENIW Utility manual for more details.

1. Start up the ENI/ENIW Utility.
2. Use the [ENI IP Addr] tab to set IP address and other items.
3. Download the settings in 1761-NET-ENI and restart the External Device.

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.3 Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

MEMO

- When using 1761-NET-ENI, you need to set the timeout to 6sec or more.

◆ Device Setting

To display the setting screen, click ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the ENI/ENIW Utility for communication setting.

Please refer to the ENI/ENIW Utility manual for more details.

1. Start up the ENI/ENIW Utility.
2. Use the [ENI IP Addr] tab to set IP address and other items.
3. Download the settings in 1761-NET-ENI and restart the External Device.

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.4 Setting Example 4

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: Rockwell Automation, Inc. Driver: EtherNet/IP Port: Ethernet (TCP)

Text Data Mode: 1 Change

Communication Settings

Port No.: 1024 Auto

Timeout: 3 (sec)

Retry: 0

Wait To Send: 0 (ms) Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=ControlLogix/CompactLogix Series, IP Address=192.168.0.001, End

◆ Device Setting

To display the setting screen, click ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

Individual Device Settings

PLC1

Series: ControlLogix/CompactLogix Series

(Please reconfirm all address settings that you are using if you have changed the series.)

IP Address: 192.168.0.1

Slot Number: 0

Default

OK (O) Cancel

■ Settings of External Device

Use RSLogix5000 for communication setting.

Please refer to the manual of RSLogix5000 for more details.

1. Select [New Module] from the menu displayed by right-clicking [I/O Configuration] in the Project tree of RSLogix5000.
2. Select [Properties] from the menu displayed by right-clicking the module added in the Project tree.
3. Use the [General] tab to set IP address and other items.
4. Download the setting in the External Device and restart the External Device.

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.5 Setting Example 5

■ Settings of GP-Pro EX


◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

MEMO

- When using 1761-NET-ENI, you need to set the timeout to 6sec or more.

◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the ENI/ENIW Utility for communication setting.

Please refer to the ENI/ENIW Utility manual for more details.

1. Start up the ENI/ENIW Utility.
2. Use the [ENI IP Addr] tab to set IP address and other items.
3. Download the settings in 1761-NET-ENI and restart the External Device.

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.6 Setting Example 6

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: Rockwell Automation, Inc. Driver: EtherNet/IP Port: Ethernet (TCP)

Text Data Mode: 1

Communication Settings

Port No.: 1024 ☒ Auto

Timeout: 6 (sec)

Retry: 0

Wait To Send: 0 (ms) Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=MicroLogix Series, IP Address=192.168.0.001

MEMO

- When using 1761-NET-ENI, you need to set the timeout to 6sec or more.

◆ Device Setting

To display the setting screen, click ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

Individual Device Settings

PLC1

Series: MicroLogix Series

(Please reconfirm all address settings that you are using if you have changed the series.)

IP Address: 192.168.0.1

Default

OK Cancel

■ Settings of External Device

Use the ENI/ENIW Utility for communication setting.

Please refer to the ENI/ENIW Utility manual for more details.

1. Start up the ENI/ENIW Utility.
2. Use the [ENI IP Addr] tab to set IP address and other items.
3. Download the settings in 1761-NET-ENI and restart the External Device.

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.


3.7 Setting Example 7

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use RSLogix500 for communication setting.

Please refer to the manual of RSLogix500 for more details.

1. Start up RSLogix500 and create the new project. Select the CPU to be used when creating the new project.
2. Select [Channel Configuration] from [Controller] in the displayed Project tree.
3. Select [Open] from the menu displayed by right-clicking [Channel Configuration] and display the Channel setting screen.
4. Use the [Chan.1 - System] tab to set IP address and other items.
5. Download the setting in the External Device and restart the External Device.

◆ Notes

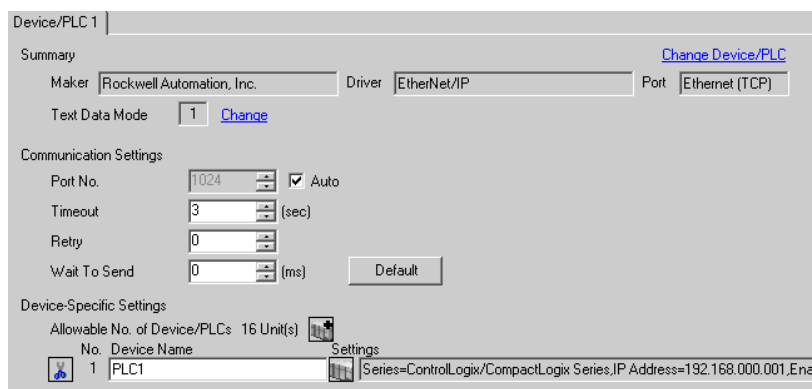
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.8 Setting Example 8


■ Settings of GP-Pro EX

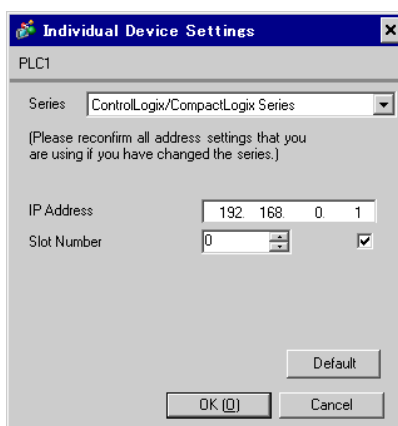
◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].



■ Settings of External Device

Use RSLogix5000 for communication setting.

Please refer to the manual of RSLogix5000 for more details.

1. Use RSLogix5000 to create the new project. Select the CPU to be used when creating the new project.
2. Select the Ethernet port from [I/O Configuration] in the Project tree.
3. Select [Properties] from the menu displayed by right-clicking the Ethernet port.
4. Use the [General] tab to set IP address and other items.
5. Download the setting in the External Device and restart the External Device.

◆ Notes

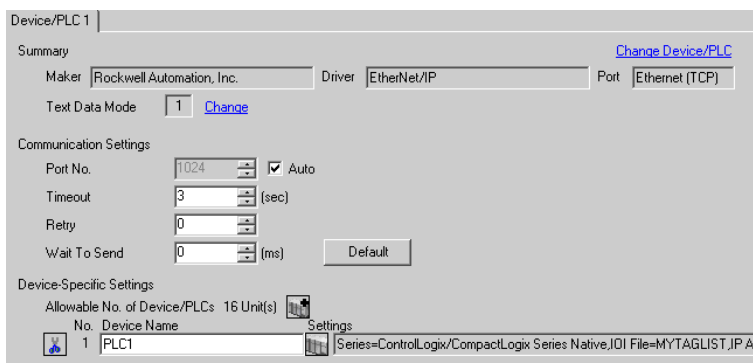
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.9 Setting Example 9


■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].




■ Settings of External Device

Use RSLogix5000 for communication setting.

Please refer to the manual of RSLogix5000 for more details.

1. Select [New Module] from the menu displayed by right-clicking [I/O Configuration] in the Project tree of RSLogix5000.
2. Select [Properties] from the menu displayed by right-clicking the module added in the Project tree.
3. Use the [General] tab to set IP address and other items.
4. Download the setting in the External Device and restart the External Device.

◆ Notes

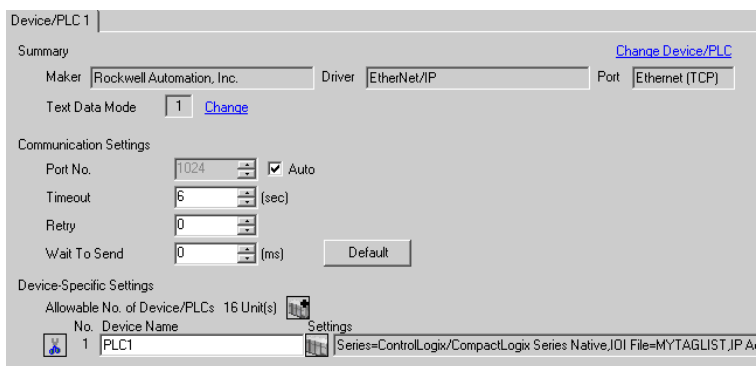
- When selecting "ControlLogix/CompactLogix Series Native", you need to create the IOI file.
 5.5 ControlLogix/CompactLogix Series Native
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.10 Setting Example 10

■ Settings of GP-Pro EX

◆ Communication Settings


To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



MEMO

- When using 1761-NET-ENI, you need to set the timeout to 6sec or more.

◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].




■ Settings of External Device

Use the ENI/ENIW Utility for communication setting.

Please refer to the ENI/ENIW Utility manual for more details.

1. Start up the ENI/ENIW Utility.
2. Use the [ENI IP Addr] tab to set IP address and other items.
3. Download the settings in 1761-NET-ENI and restart the External Device.

◆ Notes

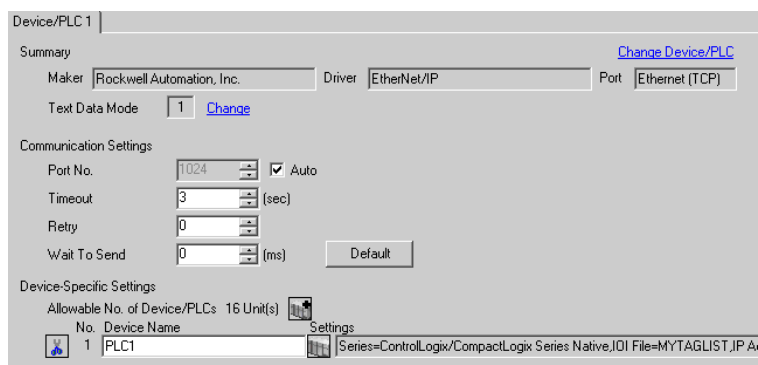
- When selecting "ControlLogix/CompactLogix Series Native", you need to create the IOI file.
 5.5 ControlLogix/CompactLogix Series Native
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

3.11 Setting Example 11


■ Settings of GP-Pro EX

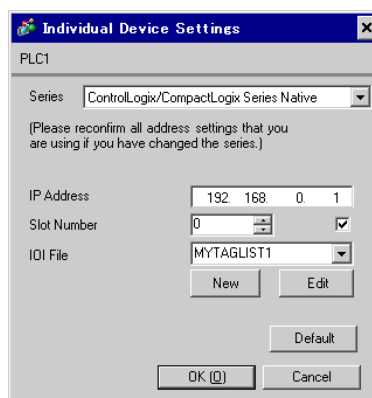
◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].




■ Settings of External Device

Use RSLogix5000 for communication setting.

Please refer to the manual of RSLogix5000 for more details.

1. Use RSLogix5000 to create the new project. Select the CPU to be used when creating the new project.
2. Select the Ethernet port from [I/O Configuration] in the Project tree.
3. Select [Properties] from the menu displayed by right-clicking the Ethernet port.
4. Use the [General] tab to set IP address and other items.
5. Download the setting in the External Device and restart the External Device.

◆ Notes

- When selecting "ControlLogix/CompactLogix Series Native", you need to create the IOI file.
 5.5 ControlLogix/CompactLogix Series Native
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the display.

4 Setup Items

Set communication settings of the Display with GP-Pro Ex or in off-line mode of the Display.

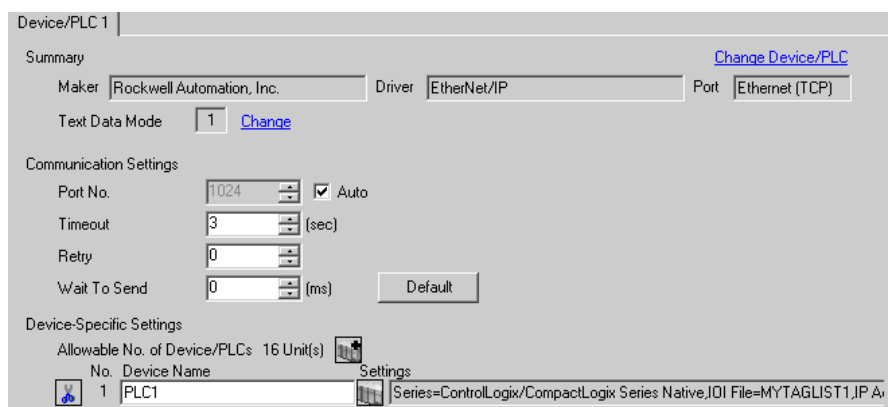
The setting of each parameter must be identical to that of External Device.

 3 Example of Communication Setting(page 6)

4.1 Setup Items in GP-Pro EX

■ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



Device/PLC 1

Summary

Maker: Rockwell Automation, Inc. Driver: EtherNet/IP Port: Ethernet (TCP) [Change Device/PLC](#)

Text Data Mode: 1 [Change](#)

Communication Settings

Port No.: 1024 ☒ Auto

Timeout: 3 (sec)

Retry: 0

Wait To Send: 0 (ms) [Default](#)


Device-Specific Settings


Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=ControlLogix/CompactLogix Series Native,IOI File=MYTAGLIST1,IP Ad...

Setup Items	Setup Description
Port No.	Use an integer from 1024 to 65535 to enter the port No. of the Display. When you check the option of [Auto Assign], the port No. will be automatically set.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

■ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When connecting multiple External Devices, you can click  from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.



Individual Device Settings

PLC1

Series: ControlLogix/CompactLogix Series Native

(Please reconfirm all address settings that you are using if you have changed the series.)

IP Address: 192.168.0.1

Slot Number: 0 ☒

IOI File: MYTAGLIST1

New Edit

Default

OK (O) Cancel

Setup Items	Setup Description
Series	Select a model of the External Device.
IP Address	Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block;">MEMO</div> <ul style="list-style-type: none"> Check with a network administrator about IP address. Do not set the duplicate IP address.
Slot No.	When connecting to ControlLogix or CompactLogix, use "0 to 20" to set the slot No. of the External Device. Communication is not available without checking this option.
IOI File	Select IOIfile to define the Tag in the External Device when selecting "ControlLogix/CompactLogix Series Native" for [Series]. To create a new IOI file, enter the name in [IOI File] and click [New].

4.2 Settings in Off-Line Mode

MEMO

- Please refer to GP3000 Series User's Manual for more information on how to enter off-line mode or about operation.

Cf. GP3000 Series User's Manual "Chapter 4 Setting"

■ Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings] in the off-line mode. Touch the External Device you want to set from the displayed list.

Comm.	Device			
EtherNet/IP [TCP] Page 1/1				
Port No.		<input type="radio"/> Fixed <input checked="" type="radio"/> Auto	<input type="text" value="1024"/> ▼ ▲	
Timeout(s)		<input type="text" value="3"/> ▼ ▲		
Retry		<input type="text" value="0"/> ▼ ▲		
Wait To Send(ms)		<input type="text" value="0"/> ▼ ▲		
Exit		Back		2006/06/01 15:58:15

Setup Items	Setup Description
Port No.	Set the Port No. of the Display. Select either [Fixed] or [Auto]. When you select [Fixed], use an integer from 1024 to 65535 to enter the port No. of the Display. When you select [Auto], the port No. will be automatically assigned regardless of the entered value.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

■ Device Setting

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].


Comm.	Device			
EtherNet/IP		[TCP]		Page 1/1
Device/PLC Name		PLC1		
Series	ControlLogix Native			
IP Address	192	168	0	1
Slot Number	<input type="radio"/> Disable <input checked="" type="radio"/> Enable			
IOI File	MYTAGLIST			
Exit		Back		2006/06/01 15:58:20

Setup Items	Setup Description
Device name	Select the device name for device setting. Device name is a title of the External Device set with GP-Pro EX. (Initial value[PLC1])
Series	Displays a model of the External Device.
IP Address	Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block;">MEMO</div> <ul style="list-style-type: none"> Check with a network administrator about IP address. Do not set the duplicate IP address.
Slot No.	When connecting to ControlLogix or CompactLogix, use "0 to 20" to set the slot No. of the External Device. Communication is not available when setting [Disable].
IOI File	Displays IOI file which is set to define the Tag in the External Device. When any other option than "ControlLogix/CompactLogix Series Native" is selected in [Series], IOI file name will not be displayed.

5 Supported Device

Range of supported device address is shown in the table below.

5.1 SLC500 Series

 This address can be specified as system data area.

Device		Bit Address		Word Address		32 bit	Remarks
Input File		I:00.000/00-I:63.255/15		I:00.000-I63.255		<div>L / H</div>	
Output File		O:00.000/00-O:63.255/15		O:00.000-O:63.255			
Status File		S:000/00-S:163/15		S:000-S:163			
Bit File		B003:000/00-B003:255/15 B009:000/00-B255:255/15		B003:000-B003:255 B009:000-B255:255			
Timer File	Enable	T004:000/-T004:255/ T009:000/-T255:255/	EN	T004:000.-T004:255. T009:000.-T255:255.	-		
	Timing		TT		-		
	Done		DN		-		
	Preset		-		PRE		
	Accumulated		-		ACC		
Counter File	Up Enable	C005:000/-C005:255/ C009:000/-C255:255/	CU	C005:000.-C005:255. C009:000.-C255:255.	-		
	Down Enable		CD		-		
	Done		DN		-		
	Overflow		OV		-		
	Underflow		UN		-		
	Update Acc.		UA		-		
	Preset		-		PRE		
	Accumulated		-		ACC		

Continues to the next page.

Device		Bit Address		Word Address		32 bit	Remarks
Control File	Enable	R006:000/-R006:255/ R009:000/-R255:255/	EN	R006:000.-R006:255. R009:000.-R255:255.	-	[L/H]	
	Enable Unload		EU		-		
	Done		DN		-		
	Empty		EM		-		
	Error		ER		-		
	Unload		UL		-		
	Inhibit Comp.		IN		-		
	Found		FD		-		
	Length		-		LEN		
	Position		-		POS		
Integer File		-		N007:000-N007:255 N009:000-N255:255			[Bit 15]
Floating Point File		-		F008:000-F008:255 F009:000-F255:255		-	32 Bit Access Only
String File		-		ST009:000-ST255:255			
ASCII File		-		A009:000-A255:255		[L/H]	[Bit 15]

MEMO

- Please refer to the GP-Pro EX Reference Manual for system data area.


Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"

- Please refer to the precautions on manual notation for icons in the table.



"Manual Symbols and Terminology"

5.2 PLC-5 Series

 This address can be specified as system data area.

Device		Bit Address		Word Address		32 bit	Remarks	
Input File		I:000/00-I:377/17		I:000-I:377		<div></div>		
Output File		O:000/00-I:377/17		O:000-I:377				
Status File		S:000/00-S:163/15		S:000-S:163				
Bit File		B003:000/00-B999:999/15		B003:000-B999:999				
Timer File	Enable	T003:000/-T999:999/	EN	T003:000.-T999:999.	-		<div>L / H</div>	
	Timing		TT		-			
	Done		DN		-			
	Preset		-		PRE			
	Accumulated		-		ACC			
Counter File	Up Enable	C003:000/-C999:999/	CU	C003:000.-C999:999.	-			
	Down Enable		CD		-			
	Done		DN		-			
	Overflow		OV		-			
	Underflow		UN		-			
	Update Acc.		UA		-			
	Preset		-		PRE			
	Accumulated		-		ACC			

Continues to the next page.

Device		Bit Address		Word Address		32 bit	Remarks
Control File	Enable	R003:000/-R999:999/	EN	R003:000.-R999:999.	-	[L / H]	
	Enable Unload		EU		-		
	Done		DN		-		
	Empty		EM		-		
	Error		ER		-		
	Unload		UL		-		
	Inhibit Comp.		IN		-		
	Found		FD		-		
	Length		-		LEN		
	Position		-		POS		
Integer File		-		N003:000-N999:999			[Bit]15
Floating Point File		-		F003:000-F999:999		-	32 Bit Access Only
String File		-		ST003:000-ST999:999		[L / H]	
ASCII File		-		A003:000-A999:999			[Bit]15
BCD File		-		D003:000-D999:999			[Bit]15

MEMO


- Please refer to the GP-Pro EX Reference Manual for system data area.

Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"

- Please refer to the precautions on manual notation for icons in the table.

☞ "Manual Symbols and Terminology"

5.3 MicroLogix Series

 This address can be specified as system data area.

Device		Bit Address		Word Address		32 bit	Remarks
Input File		I:00.000/00-I:08.255/15		I:00.000-I08.255		<div>L / H</div>	
Output File		O:00.000/00-O:08.255/15		O:00.000-O:08.255			
Status File		S:000/00-S:163/15		S:000-S:163			
Bit File		B003:000/00-B003:255/15 B009:000/00-B255:255/15		B003:000-B003:255 B009:000-B255:255			
Timer File	Enable	T004:000/-T004:255/ T009:000/-T255:255/	EN	T004:000.-T004:255. T009:000.-T255:255.	-		
	Timing		TT		-		
	Done		DN		-		
	Preset		-		PRE		
	Accumulated		-		ACC		
Counter File	Up Enable	C005:000/-C005:255/ C009:000/-C255:255/	CU	C005:000.-C005:255. C009:000.-C255:255.	-		
	Down Enable		CD		-		
	Done		DN		-		
	Overflow		OV		-		
	Underflow		UN		-		
	Update Acc.		UA		-		
	Preset		-		PRE		
	Accumulated		-		ACC		

Continues to the next page.

Device		Bit Address		Word Address		32 bit	Remarks
Control File	Enable	R006:000/-R006:255/ R009:000/-R255:255/	EN	R006:000.-R006:255. R009:000.-R255:255.	-	[L / H]	
	Enable Unload		EU		-		
	Done		DN		-		
	Empty		EM		-		
	Error		ER		-		
	Unload		UL		-		
	Inhibit Comp.		IN		-		
	Found		FD		-		
	Length		-		LEN		
	Position		-		POS		
Integer File		-		N007:000-N007:255 N009:000-N255:255			[Bit 15]
Floating Point File		-		F008:000-F008:255 F009:000-F255:255		-	32 Bit Access Only
String File		-		ST009:000-ST255:255		[L / H]	
Long Word File		-		L009:000-L255:255		-	[Bit 31]

MEMO


- Please refer to the GP-Pro EX Reference Manual for system data area.







Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"

- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

5.4 ControlLogix/CompactLogix Series

 This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
BOOL	BOOL000:000/00 - BOOL999:999/31	BOOL000:000 - BOOL999:999	-	*1
INT	-	INT000:000 - INT999:999		 *1
REAL	-	REAL000:000 - REAL999:999	-	*1
DINT	-	DINT000:000 - DINT999:999		 *1
SINT	-	SINT000:000 - SINT999:998		 *1 

*1 To access those addresses and use them in the program of the External Device, you need to set the External Device first.

The following procedure shows how to assign the device in the RSLogix5000 software and specify the address in GP-Pro EX.

1) Tag setting of External Device

Create the Tag Name in the RSLogix5000 software, and set the Type. Map the created Tag Name to a File Number.

Tag Name	Set optionally.
Type	Select the data type among below to set the Element. Match the device name of GP-Pro EX BOOT(32bit data type) INT(word data type) DINT(dword data type) SINT(byte data type) REAL(float data type)

Set the range used in GP-Pro EX for the Element. Maximum Element GP-Pro EX can access is 999.

When you do not define the Element, only 1 item is available to use.

(Example) Tag Name: When you set INT8, Type: INT, you can use only 1 word for INT8.

<Example 1>

Tag Name	Type
INT7	INT[200]
DINT1	DINT[100]
DATA2	SINT[50]

1st line: Tag Name "INT7" is INT data type with Element 200

2 nd line: Tag Name "DINT1" is DINT data type with Element 100

3 rd line: Tag Name "DATA2" is SINT data type with Element 50

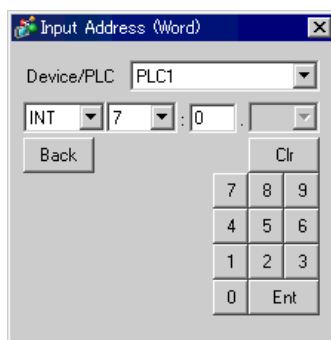
File Number	Assign the Tag Name created by RSLogix5000 to the optional File Number. You can not assign the different Tag Names to the same File Number.
-------------	---

<Example2>

File Number	Name
2	DATA2
1	DINT1
7	INT7

2) Address Specification in GP-Pro EX

When you access the External Device from GP-Pro EX, specify Type, File Number and Element.



<Example of address mapping of GP-Pro EX and External Device>

GP-Pro EX Address		External Device File File No.1 Memory
DINT1:0	↔	DINT 1[0]
DINT1:1	↔	DINT 1[1]
DINT1:2	↔	DINT 1[2]

MEMO


- Please refer to the GP-Pro EX Reference Manual for system data area.





Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"

- Please refer to the precautions on manual notation for icons in the table.

☞ "Manual Symbols and Terminology"

5.5 ControlLogix/CompactLogix Series Native

 This address can be specified as system data area.

Device		Bit Address	Word Address	32bits	Remarks
BOOL	Single Tag	<TAGNAME>	-	-	*1 *2 *3
	1D Array	<TAGNAME>[0]- <TAGNAME>[x-1]			
INT	Single Tag	<TAGNAME>.00- <TAGNAME>.15	<TAGNAME>		*1 *2
	1D Array	<TAGNAME>[0].00- <TAGNAME>[x-1].15	<TAGNAME>[0]- <TAGNAME>[x-1]		
	2D Array	<TAGNAME>[0,0].00- <TAGNAME>[x-1,y-1].15	<TAGNAME>[0,0]- <TAGNAME>[x-1,y-1]		
	3D Array	<TAGNAME>[0,0,0].00- <TAGNAME>[x-1,y-1,z-1].15	<TAGNAME>[0,0,0]- <TAGNAME>[x-1,y-1,z-1]		
REAL	Single Tag	-	<TAGNAME>	-	*1 *2
	1D Array		<TAGNAME>[0]- <TAGNAME>[x-1]		
	2D Array		<TAGNAME>[0,0] <TAGNAME>[x-1,y-1]		
	3D Array		<TAGNAME>[0,0,0]- <TAGNAME>[x-1,y-1,z-1]		
DINT	Single Tag	<TAGNAME>.00- <TAGNAME>.31	<TAGNAME>	-	*1 *2
	1D Array	<TAGNAME>[0].00- <TAGNAME>[x-1].31	<TAGNAME>[0]- <TAGNAME>[x-1]		
	2D Array	<TAGNAME>[0,0].00- <TAGNAME>[x-1,y-1].31	<TAGNAME>[0,0] <TAGNAME>[x-1,y-1]		
	3D Array	<TAGNAME>[0,0,0].00- <TAGNAME>[x-1,y-1,z-1].31	<TAGNAME>[0,0,0]- <TAGNAME>[x-1,y-1,z-1]		
SINT	Single Tag	<TAGNAME>.0- <TAGNAME>.7	<TAGNAME>		  *1 *2 *4
	1D Array	<TAGNAME>[0].0- <TAGNAME>[x-1].7	<TAGNAME>[0]- <TAGNAME>[x-1]		
	2D Array	<TAGNAME>[0,0].0- <TAGNAME>[x-1,y-1].7	<TAGNAME>[0,0]- <TAGNAME>[x-1,y-1]		
	3D Array	<TAGNAME>[0,0,0].0- <TAGNAME>[x-1,y-1,z-1].7	<TAGNAME>[0,0,0]- <TAGNAME>[x-1,y-1,z-1]		

- *1 <TAGNAME>: Tag Name including structure name in case of structure. Maximum number of characters for Tag Name is 255 including delimiters and element number.

Ex.) BOOL type single tag: "BOOLTAG"
 BOOL array element: "BOOLARRAY[0012]"
 INT type single tag: "INTTAG"
 DINT type single address: "DINTTAG.30"
 REAL type 3Darray: "REALARRAY[1,2,3]"
 DINTfrom TIMER structure: "TIMERTAG.PRE"
 SINTfrom STRING structure: "STRINGTAG.DATA[00]"
 BOOL from User Defined Structure: "USERSTRUCTURE_A.USERSTRUCTURE_B.MYTIMER.EN"

- *2 Array Element Number: Number of array element is included in the controller tag information. Since the element number starts from 0, maximum element number is [Element Number - 1].

Ex.) INTARRAY INT[256,256] can be used in the range of INTARRAY[0-255,0-255].

- *3 BOOL type array: Available to define only 1 dimension. Number of array element can be specified by multiples of 32.
- *4 SINT : Handled as 8-bit devices in the External Device, but as 16-bit devices in GP-Pro EX. When using the SINT type array as word, only even element number can be specified. When it is not an array or used for the last element in the odd array, the upper byte will be set to 0

MEMO

- Maximum 65535 Tags can be created.

When Tag is a structure, calculate Tag in the following formula.

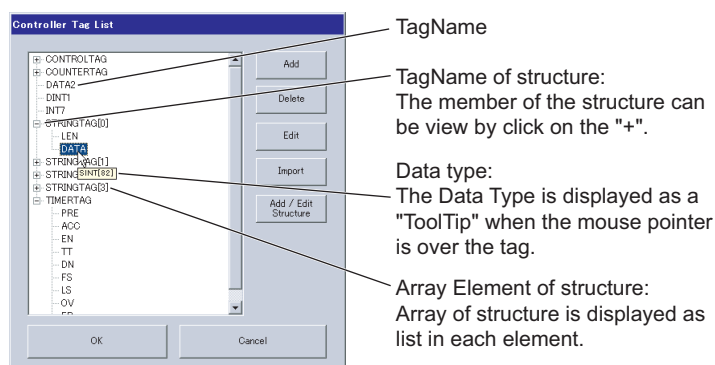
Number of Tag = (1+ Number of Member) x Number of Array Element

Ex: Timer[16]

Number of Tag = (1+9) x 16

To use the Tag set with RSLogix5000 software in GP-Pro EX, it needs to be defined by IOI file. Create an IOI file by importing the data which is exported with RSLogix5000 software in the [Control Tag List] dialog box.

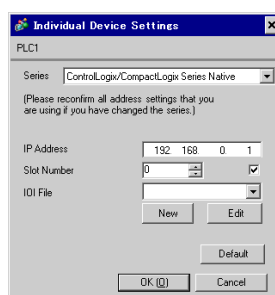
■ [Control Tag List] dialog box



■ Import

- 1) Use RSLogix5000 software to create TagName, and set the data type.
- 2) Select [Export] from the [Tools] menu, and save the Tag setting as csv file.

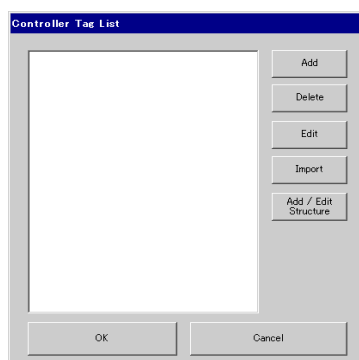
- 3) Display the [Device-Specific Settings] dialog box in GP-Pro EX, and select "ControlLogix/CompactLogix Series Native" from [Series].



- 4) Create an IOI file to define the Tag in the External Device.
Enter an IOI file name to be created in [IOI File] and click [New].



- 5) Click [Import] to import the csv file saved with RSLogix5000 software.

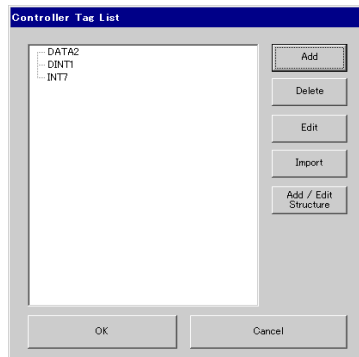

MEMO

- When importing the csv file using a structure with RSLogix5000 software, the error message "An unknown Data Type was found." may be displayed. In that case, set the structure (definition of structure name and member) in the GP-Pro EX and import again.

Note that four structures such as TIMER, COUNTER, STRING, CONTROL have been already set.


■ Structure Setting

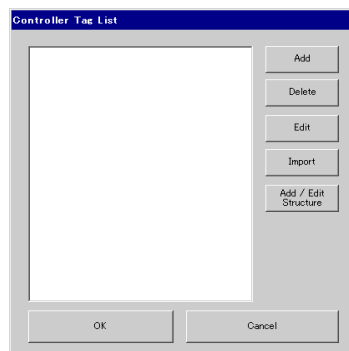
- 6) Confirm the setting of the imported Tag and click [OK].



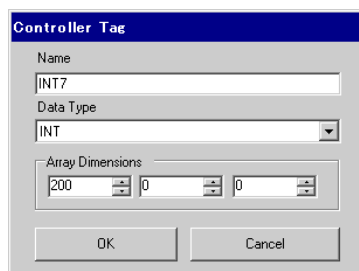
■ Add / Edit

- 1) Click [Add] from the [Controller Tag List] dialog box.

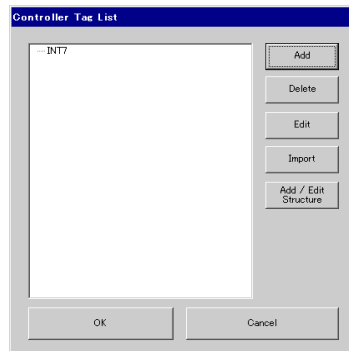
For editing, select TagName to be edited and click [Edit].



- 2) Enter TagName, data type and number of array element to be added.

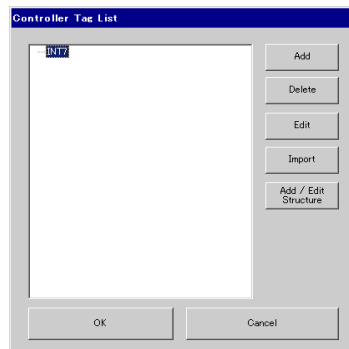


- 3) Click [OK] and finish setting.



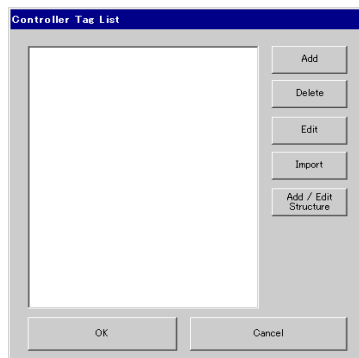
■ Delete

- 1) Select TagName you want to delete from the list of the [Controller Tag List] dialog box and click [Delete].

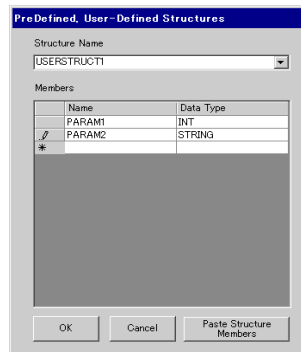


■ Structure Setting

- 1) Click [Add/Edit Structure] from the [Controller Tag List] dialog box.



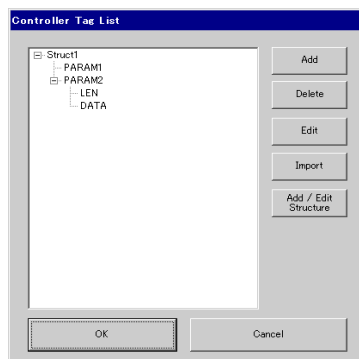
- 2) Enter the structure name, member name and data type.

**MEMO**

- You can select the structure to be set from Data Type of RSLogix5000 software and copy [Name] and [Data Type] displayed to paste the copied description in [Paste Structure Member].
- Only 1 dimension array can be set to the structure member.

- 3) Click [OK] and finish setting.

The set structure will be added in the data type and can be used when importing or adding/editing Tag.

**MEMO**

- You cannot edit the structure used in the Tag registered in the controller tag list. Delete the Tag using the structure before editing.

MEMO

- Please refer to the GP-Pro EX Reference Manual for system data area.

Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"

- Please refer to the precautions on manual notation for icons in the table.

☞ "Manual Symbols and Terminology"

6 Device Code and Address Code

Use device code and address code when you select "Device Type & Address" for the address type in data displays.

MEMO

- When [ControlLogix/CompactLogix Series Native] is selected for the Series of External Device, the device code and address code cannot be used.

Device	Device Name		Device Code (HEX)	Address Code
Integer File	N		0000	(File No.*0x10000) + Word Address
Floating Point File	F		0001	(File No.*0x10000) + Word Address
String File	ST		0002	(File No.*0x10000) + Word Address*0x40
ASCII File	A		0003	(File No.*0x10000) + Word Address
BCD File	D		0004	(File No.*0x10000) + Word Address
Long Word File	L		0005	(File No.*0x10000) + Word Address
INT	INT		0010	(File No.*0x10000) + Word Address
REAL	REAL		0011	(File No.*0x10000) + Word Address
DINT	DINT		0012	(File No.*0x10000) + Word Address
SINT	SINT		0013	(File No.*0x10000) + Word Address/2
Input File	I		0080	0x10000+(Slot Number*0x100) + Word Address
Output File	O		0081	(Slot No.*0x100) + Word Address
Bit File	B		0082	(File No.*0x10000) + Word Address
Status File	S		0083	0x20000 + Word Address
BOOL	BOOL		0090	(File No.*0x10000) + Word Address
Timer File	T	PRE	0060	(File No.*0x10000) + Word Address
		ACC	0061	
Counter File	C	PRE	0062	(File No.*0x10000) + Word Address
		ACC	0063	
Control File	R	LEN	0064	(File No.*0x10000) + Word Address
		POS	0065	

7 Error Messages

Error messages are displayed on the screen of the Display as follows: "No. : Device Name: Error Message(Error Occurrence Area)". Each description is shown below.

Item	Requirements
No.	Error No.
Device Name	Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX.(Initial value[PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	<p>Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">MEMO</div> <ul style="list-style-type: none"> • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is displayed such as "Address: Device address". • Received error codes are displayed such as "[Hex]".

Display Examples of Error Messages

"RHAA130:PLC1: Error has been responded for device write command(EncapsulationError Code:[00000002H])"

MEMO

- Please refer to the manual of the External Device for more detail of received error codes.

■ Driver-Specific Error Messages

Driver-specific error messages are shown below.

Code (HEX)	Error Message	Description
RHxx128	(External Device Name): Error has been responded for initial communication command (EncapsulationError Code: [(Hex)])	Displayed when error occurs by device initial command.
RHxx129	(External Device Name): Error has been responded for device read command (Encapsulation (Error Code: [(Hex)])	Displayed when error occurs by device read command.
RHxx130	(External Device Name): Error has been responded for device write command (Encapsulation Error Code: [(Hex)])	Displayed when error occurs by device write command.
RHxx131	(External Device Name): Error has been responded for device read command (CIP Error Code: [(Hex)])	Displayed when error occurs by device read command.
RHxx132	(External Device Name): Error has been responded for device write command (CIP Error Code: [(Hex)])	Displayed when error occurs by device write command.
RHxx133	(External Device Name):Error has been responded for device read command (STSResponse: [(Hex)]), EXT Response: [(Hex)])	Displayed when error occurs by device read command.
RHxx134	(External Device Name):Error has been responded for device write command (STSResponse: [(Hex)]), EXT Response: [(Hex)])	Displayed when error occurs by device write command.