Rockwell Automation, Inc.

ROC_ETIP_29

3/2025

EtherNet/IP Driver

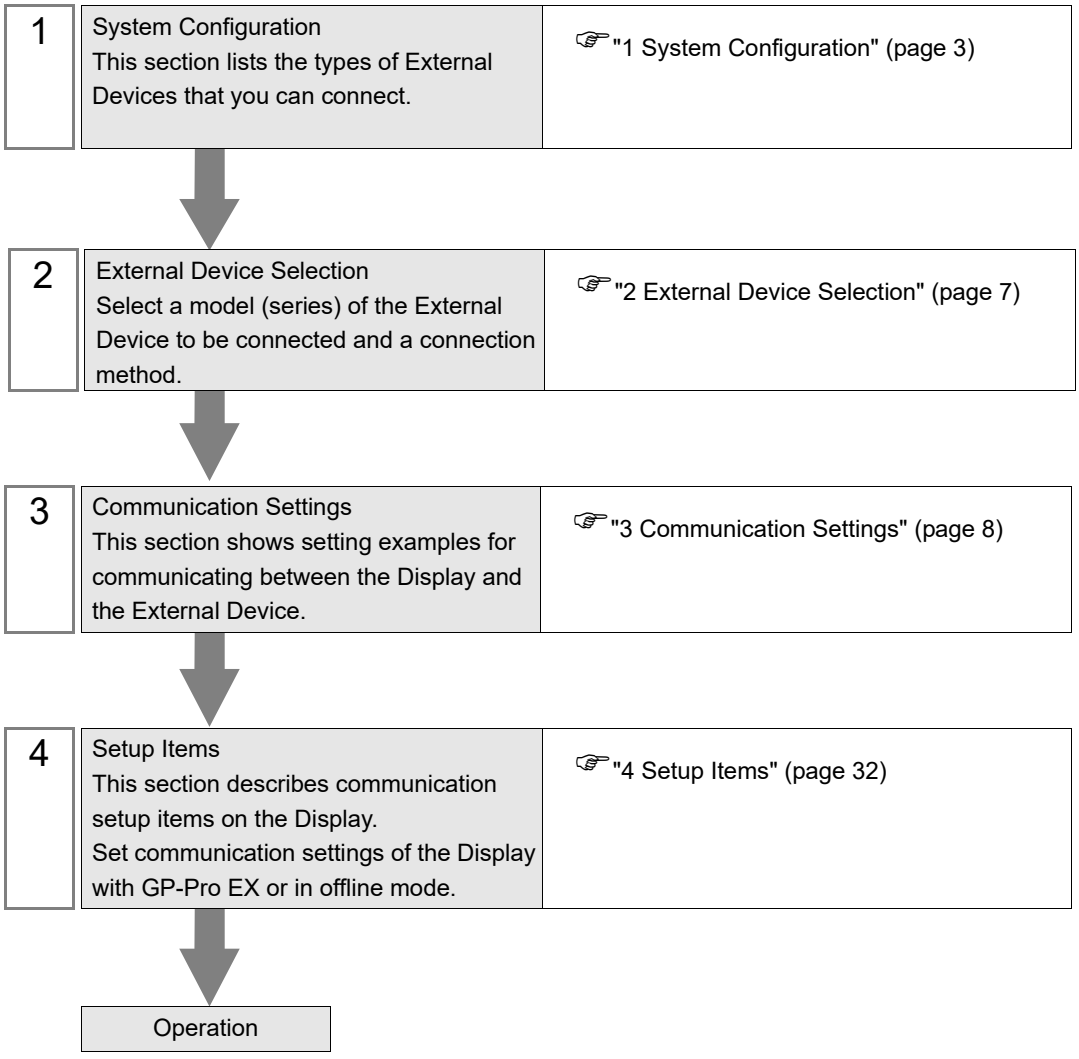
IMPORTANT

- The below Displays are no longer sold nor maintained by Pro-face. To reduce unplanned downtime due to aged hardware and to maximize your cyber security environment we recommend replacing your devices with a new, successor model. For details, please visit our homepage for "Recommended Substitution". Discontinued from GP-Pro EX 5.00 onwards: GP3000 Series, LT3000 Series, ST3000 Series, GP-4100 Series (Monochrome model), PL Series, PS3000/4000 Series, PE4000 Series.
- For details on the Displays supported by the driver, please check the "Connectable Devices" on our website.
  http://www.pro-face.com/trans/en/manual/1064.html

Introduction

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

In this manual, the connection procedure is described in the sections identified below:



1 System Configuration

The system configuration in the case when the External Device and the Display are connected is shown.

Series Name	CPU	Link I/F	Communication Method	Setting Example
SLC500	SLC 5/05	CPU Direct (channel1)*1	Ethernet (TCP)	Setting Example 1 (page 8)
	SLC 5/03 SLC 5/04 SLC 5/05	1761-NET-ENI		Setting Example 2 (page 10)
PLC-5	All CPUs that support the link I/F on the right	1761-NET-ENI		Setting Example 3 (page 12)
ControlLogix	All CPUs that support the link I/F on the right	1756-ENET/B 1756-ENET 1756-ENBT 1756-EN2T/A		Setting Example 4 (page 14)
		1761-NET-ENI		Setting Example 5 (page 16)
ControlLogix Native*2	All CPUs that support the link I/F on the right	1756-ENET/B 1756-ENET 1756-ENBT 1756-EN2T/A		Setting Example 9 (page 24)
		1761-NET-ENI*3		Setting Example 10 (page 26)
MicroLogix	MicroLogix 1000 MicroLogix 1100 MicroLogix 1200 MicroLogix 1500	1761-NET-ENI		Setting Example 6 (page 18)
	MicroLogix 1100	CPU Direct (channel1)		Setting Example 7 (page 20)
CompactLogix	All CPUs that support the link I/F on the right	1761-NET-ENI		Setting Example 5 (page 16)
	All CPUs that have Built-in EtherNet/IP port	CPU Direct		Setting Example 8 (page 22)
CompactLogix Native*2	All CPUs that support the link I/F on the right	1761-NET-ENI*3		Setting Example 10 (page 26)
	All CPUs that have Built-in EtherNet/IP port*4	CPU Direct		Setting Example 11 (page 28)

Series Name	CPU	Link I/F	Communication Method	Setting Example
FlexLogix	All CPUs that support the link I/F on the right	1788-ENBT/A	Ethernet (TCP)	Setting Example 4 (page 14)
		1761-NET-ENI		Setting Example 5 (page 16)
FlexLogix Native*2	All CPUs that support the link I/F on the right	1788-ENBT/A		Setting Example 9 (page 24)
Micro800	Micro850	CPU Direct		Setting Example 12 (page 30)

*1 Rockwell EtherNet/IP driver for Display 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 Control/Compact/Flex Logix Native when using Native tag names on External Devices.

*3 To use the 1761-NET-ENI with the "Control/Compact/Flex Logix Series Native", the module must be Series B or later.

*4 Refer to the following for the CPU that generates a controller tag of Embedded I/O when the L5K file is imported.

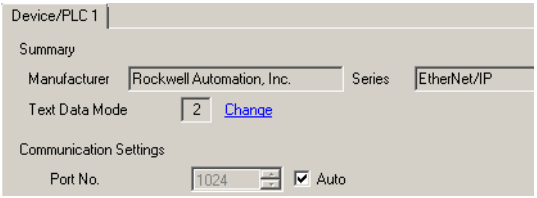
" ■ Data Type Defined Module List" (page 52)

IMPORTANT

- Projects created with the Ethernet/IP Driver Version 1.12.06 or later can be used with applications (GP-Pro EX and Pro-Server EX) that have a driver of that version or greater installed.
  A project cannot be used with applications that use an earlier driver version than that used in the project.
- If the driver version is older than V1.12.06, download the latest driver from the support site.
  http://www.pro-face.com/trans/en/manual/1001.html
- When using an EtherNet/IP Driver with Version V1.14.12 or later, and a project is opened in an application with an earlier driver version installed, the configuration will be changed as follows.
  - •A tag data block with the tag data name “NoData” and the controller tag “DINT” will be created.
  - •The addresses set on screens and other locations are changed to "Undefined".
  - •When the project is saved, changed data overwrites the previous data.
- If a project was created with an earlier version of the driver, save it in the application with the newer driver installed before transferring to the Display.

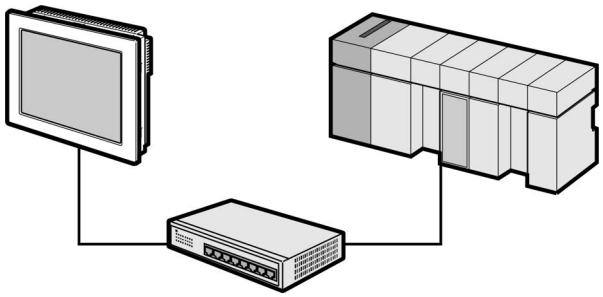
NOTE

- The device storage order of data varies depending on the device/PLC. Change the Text Data Mode to match the device order same as a device/PLC.To change the Text Data Mode, click [Change] in [Text Data Mode] to display a dialog box.

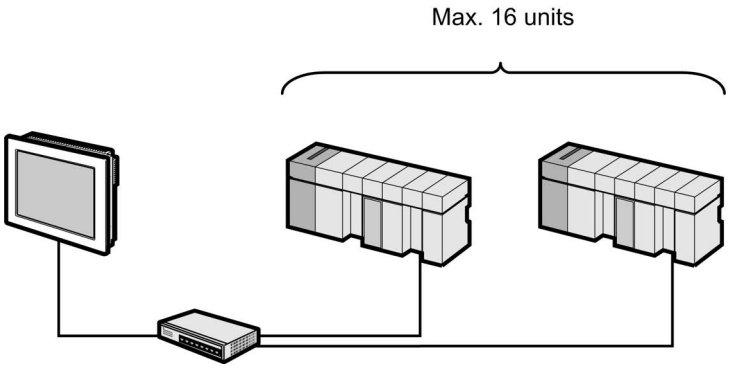


■ Connection Configuration

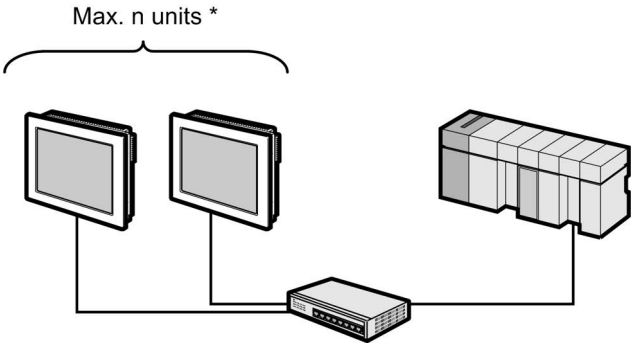
- 1:1 Connection



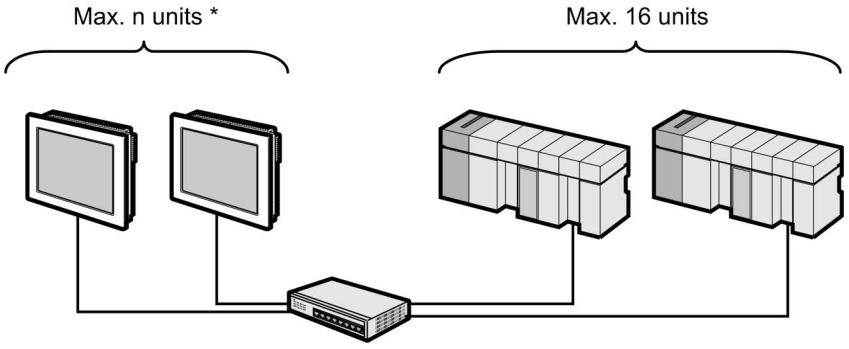
- 1:n Connection



- n:1 Connection



- n:m Connection

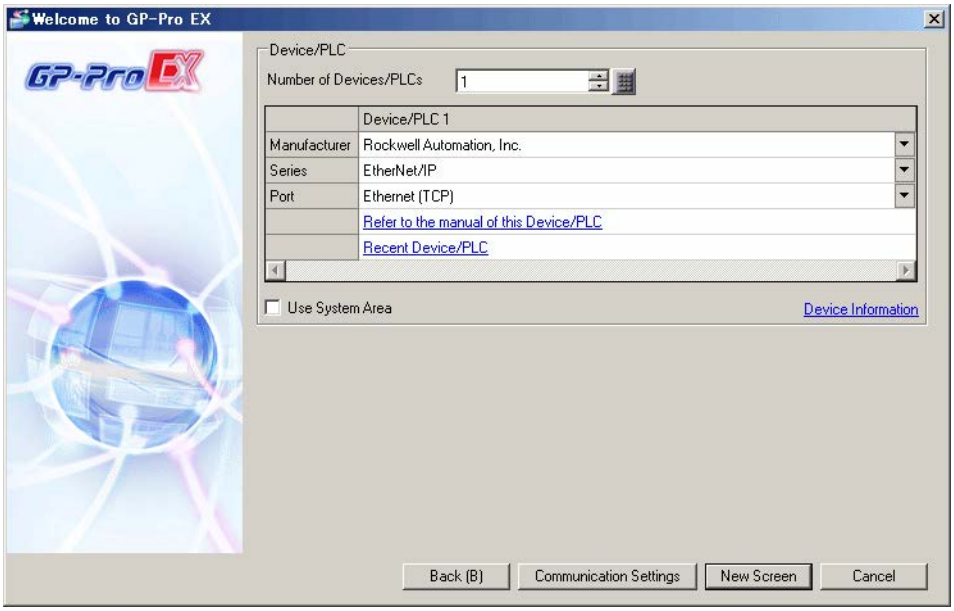


* The maximum number of sustainable units differs depending on the series and the link I/F. Refer to the table below for the maximum number of sustainable units for each series and link I/F.

Series Name	Link I/F	The max number of Display
SLC500	CPU Direct	8
	1761-NET-ENI	4
PLC-5	1761-NET-ENI	4
ControlLogix CompactLogix	Ethernet module	12
	1761-NET-ENI	4
FlexLogix	Ethernet module	12
MicroLogix	CPU Direct	16
	1761-NET-ENI	4
Micro800	CPU Direct	16

2 External Device Selection

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Number of Devices/ PLCs	Enter an integer from 1 to 4 to define the number of Devices/PLCs to connect to the display.
Manufacturer	Select the manufacturer of the External Device to connect. Select "Rockwell Automation, Inc.".
Series	Select the External Device model (series) and the connection method. Select "EtherNet/IP". In System configuration, make sure the External Device you are connecting is supported by "EtherNet/IP". ☞ "1 System Configuration" (page 3)
Port	Select the Display port to connect to the External Device.
Use System Area	Check this option to synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the External Device's ladder program to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)" This feature can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "System Settings [Display Unit] - [System Area] Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings"

3 Communication Settings

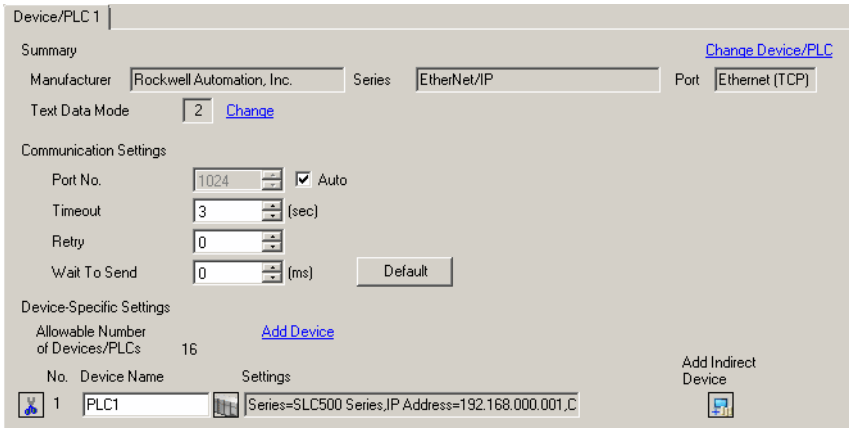
Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

3.1 Setting Example 1

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

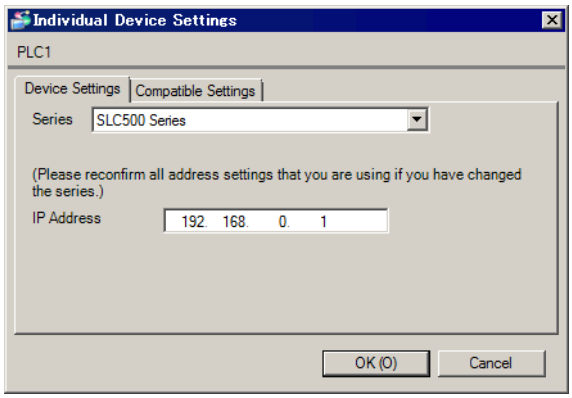


◆ Device Setting

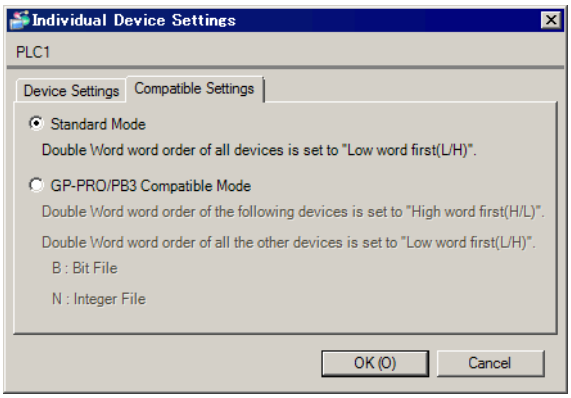
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use RSLogix500 for communication setting.

Please refer to the manual of RSLogix500 for more details.

1. Start up RSLogix500 and create a new project. Select the CPU to be used when creating a 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

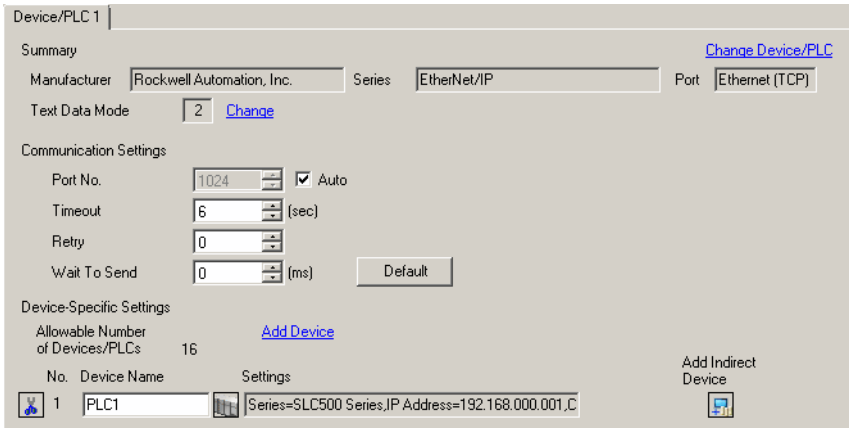
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.2 Setting Example 2

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



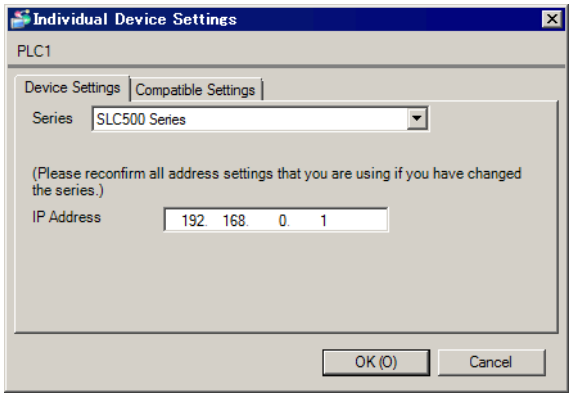
NOTE • When using 1761-NET-ENI, you need to set the timeout to 6 seconds or more.

◆ Device Setting

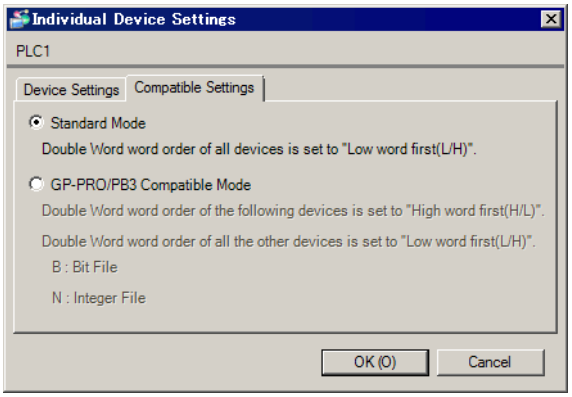
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

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

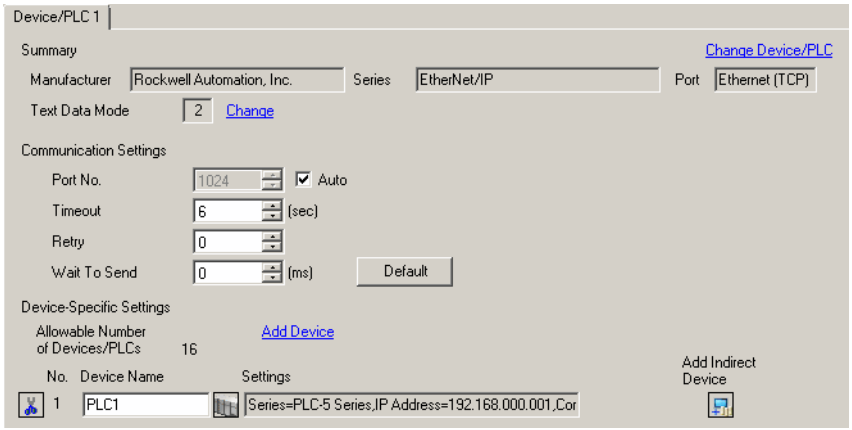
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.3 Setting Example 3

■ GP-Pro EX Settings

◆ Communication Settings

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



NOTE

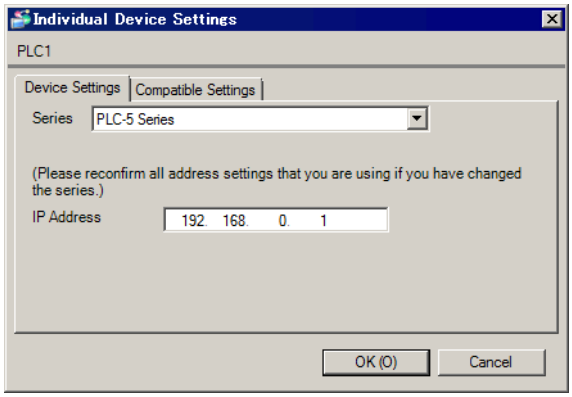
- When using 1761-NET-ENI, you need to set the timeout to 6 seconds or more.

◆ Device Setting

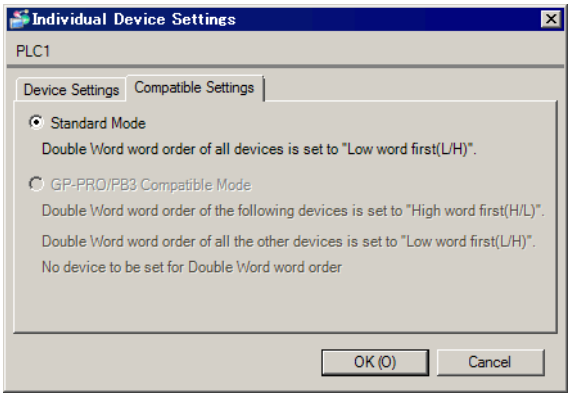
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

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

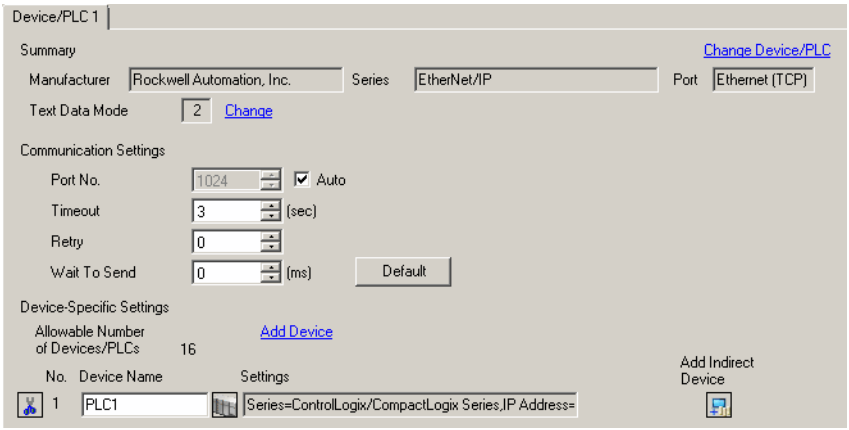
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.4 Setting Example 4

■ GP-Pro EX Settings

◆ Communication Settings

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

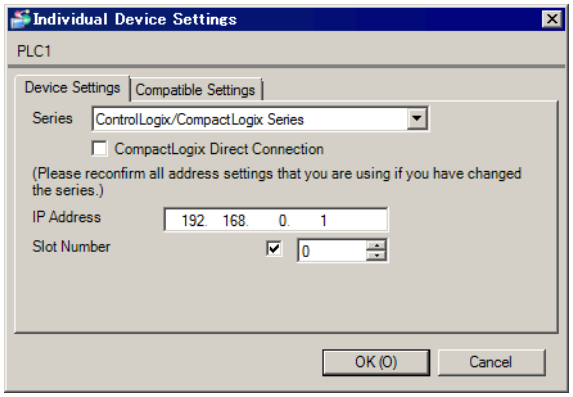


◆ Device Setting

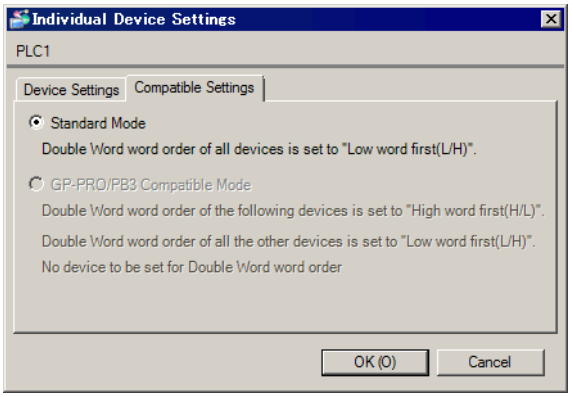
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use Studio5000 (formerly RSLogix5000) for communication setting.

Please refer to the manual of Studio5000 for more details.

1. Select [New Module] from the menu displayed by right-clicking [I/O Configuration] in the Project tree of Studio5000.
2. Select a module in the [Select Module] dialog box and click [OK].
3. Select [Properties] from the menu displayed by right-clicking the module added in the Project tree.
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

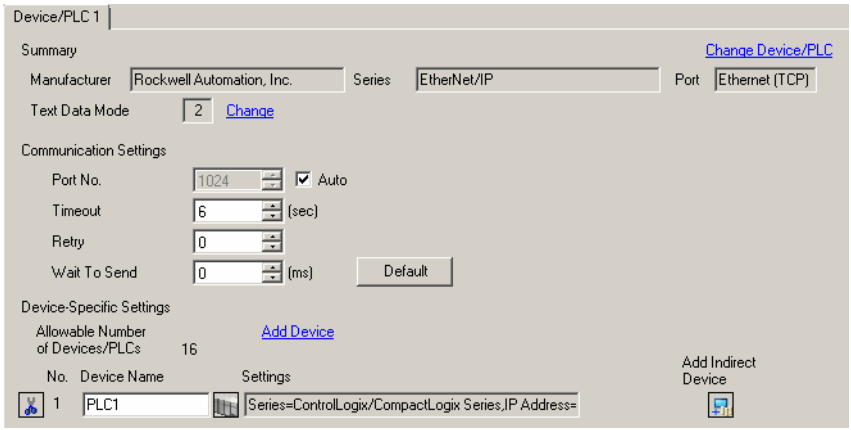
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.5 Setting Example 5

■ GP-Pro EX Settings

◆ Communication Settings

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



NOTE

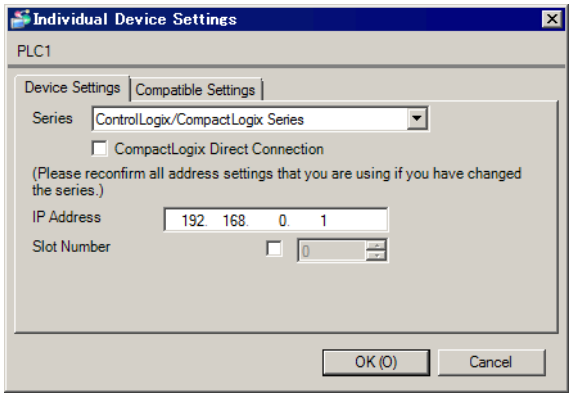
- When using 1761-NET-ENI, you need to set the timeout to 6 seconds or more.

◆ Device Setting

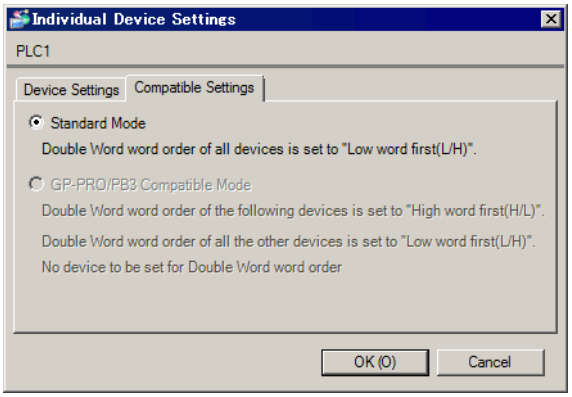
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



NOTE

- When using 1761-NET-ENI, uncheck the [Slot Number] check box.

■ External Device Settings

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

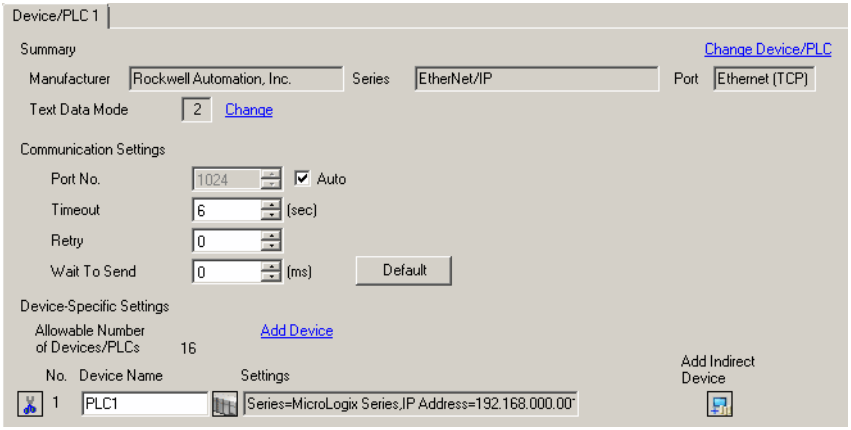
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.6 Setting Example 6

■ GP-Pro EX Settings

◆ Communication Settings

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



NOTE

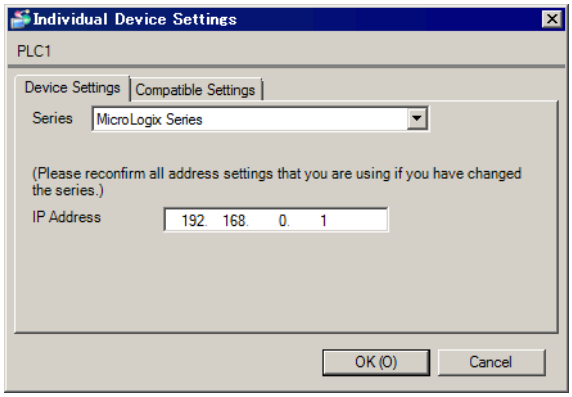
- When using 1761-NET-ENI, you need to set the timeout to 6 seconds or more.

◆ Device Setting

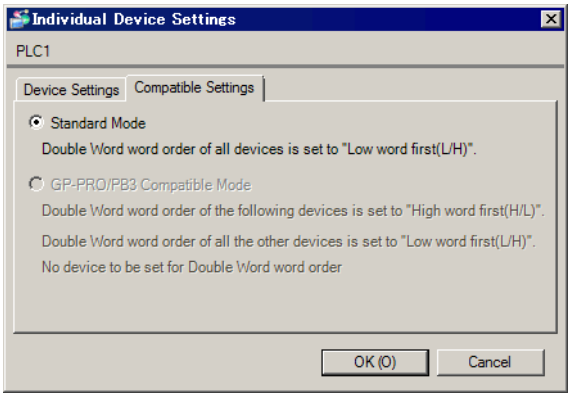
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

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

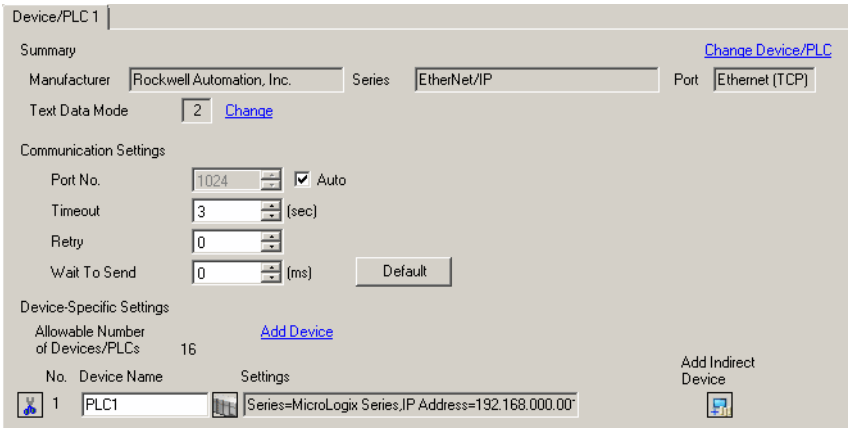
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.7 Setting Example 7

■ GP-Pro EX Settings

◆ Communication Settings

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

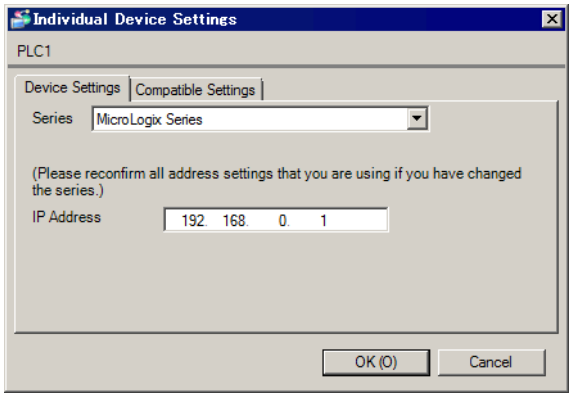


◆ Device Setting

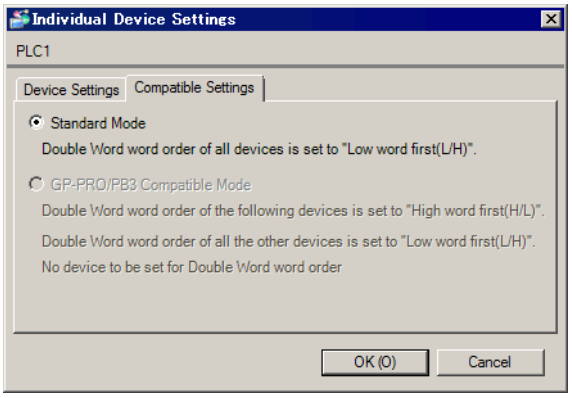
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use RSLogix500 for communication setting.

Please refer to the manual of RSLogix500 for more details.

1. Start up RSLogix500 and create a new project. Select the CPU to be used when creating a 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

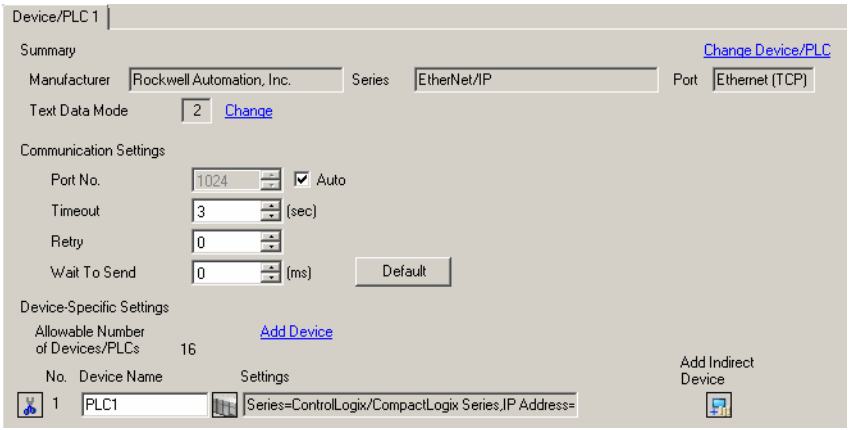
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.8 Setting Example 8

■ GP-Pro EX Settings

◆ Communication Settings

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

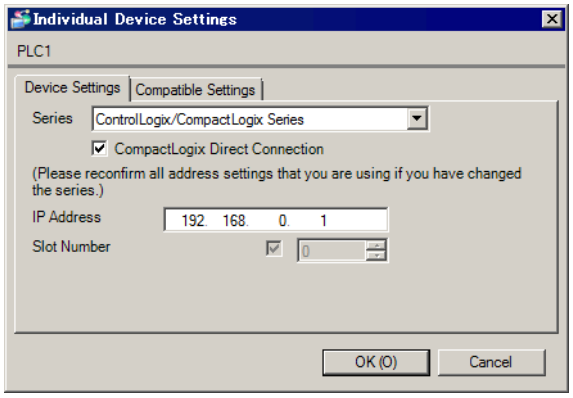


◆ Device Setting

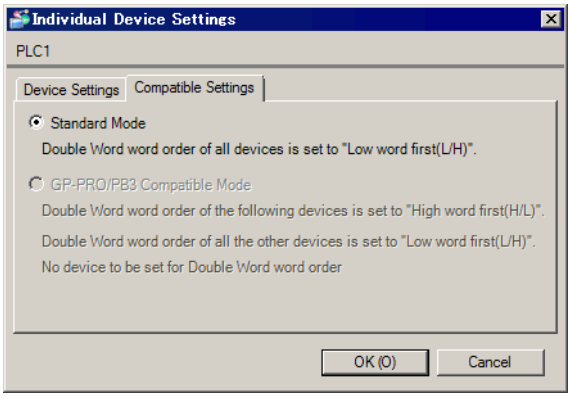
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use Studio5000 (formerly RSLogix5000) for communication setting.

Please refer to the manual of Studio5000 for more details.

1. Use Studio5000 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

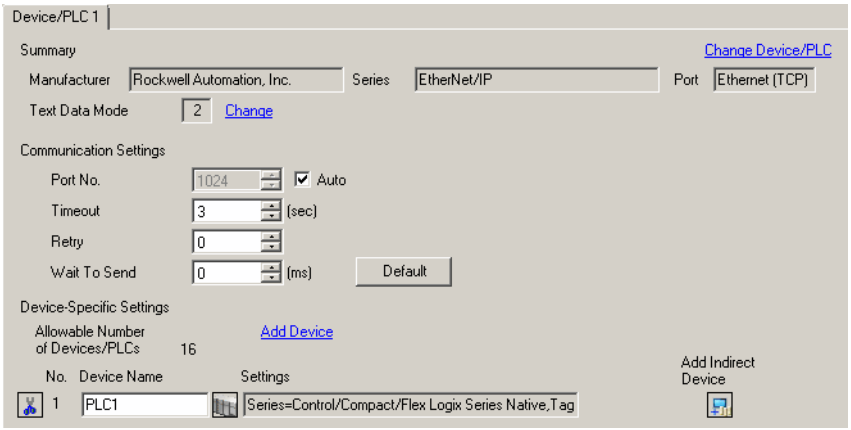
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.9 Setting Example 9

■ GP-Pro EX Settings

◆ Communication Settings

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

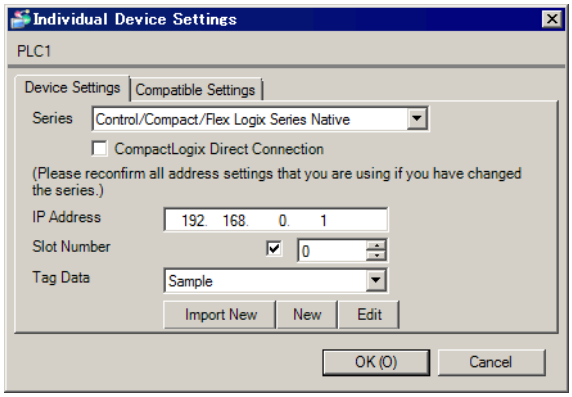


◆ Device Setting

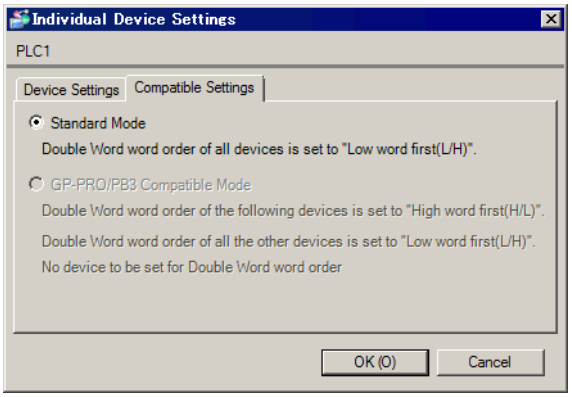
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use Studio5000 (formerly RSLogix5000) for communication setting.

Please refer to the manual of Studio5000 for more details.

1. Select [New Module] from the menu displayed by right-clicking [I/O Configuration] in the Project tree of Studio5000.
2. Select a Link Interface module in the [Select Module] dialog box and click [OK].
3. Select [Properties] from the menu displayed by right-clicking the module added in the Project tree.
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

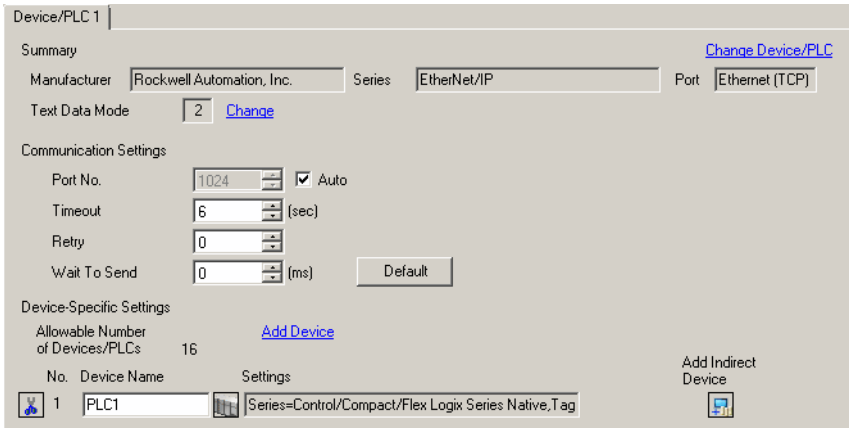
- When selecting "Control/Compact/Flex Logix Series Native", you need to create a Tag Data Block.
  ☞"5.5 Control/Compact/Flex Logix Series Native" (page 47)
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.10 Setting Example 10

■ GP-Pro EX Settings

◆ Communication Settings

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



NOTE

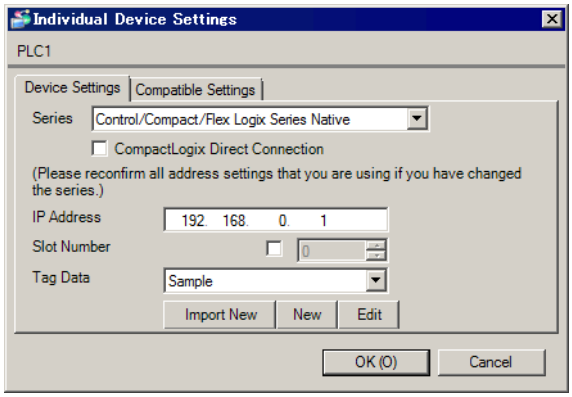
- When using 1761-NET-ENI, you need to set the timeout to 6 seconds or more.

◆ Device Setting

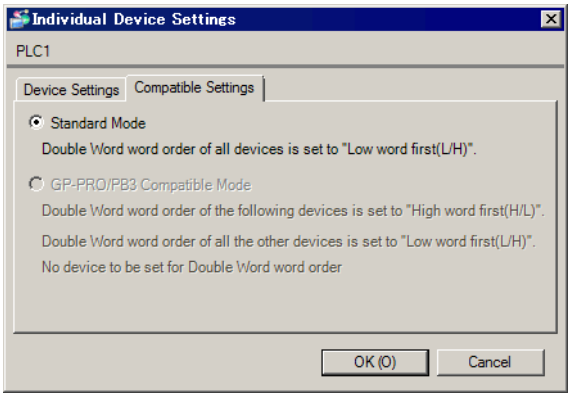
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



NOTE

- When using 1761-NET-ENI, uncheck the [Slot Number] check box.

■ External Device Settings

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

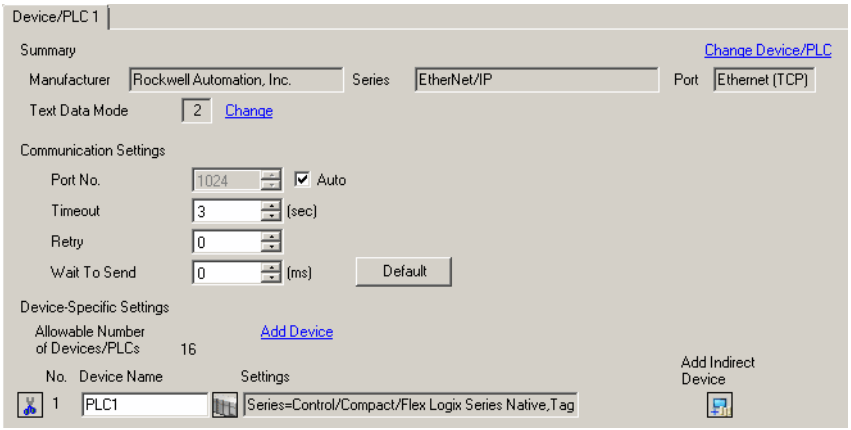
- When selecting "Control/Compact/Flex Logix Series Native", you need to create a Tag Data Block.
  ☞"5.5 Control/Compact/Flex Logix Series Native" (page 47)
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.11 Setting Example 11

■ GP-Pro EX Settings

◆ Communication Settings

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

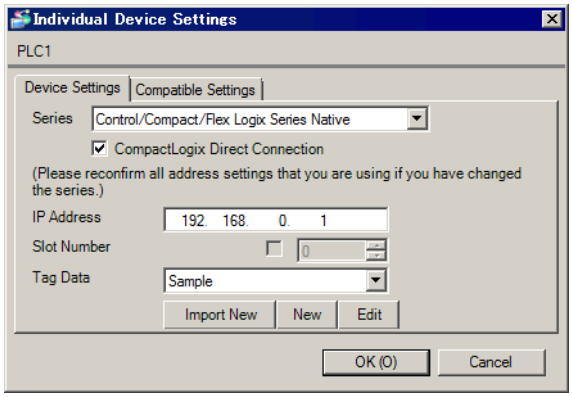


◆ Device Setting

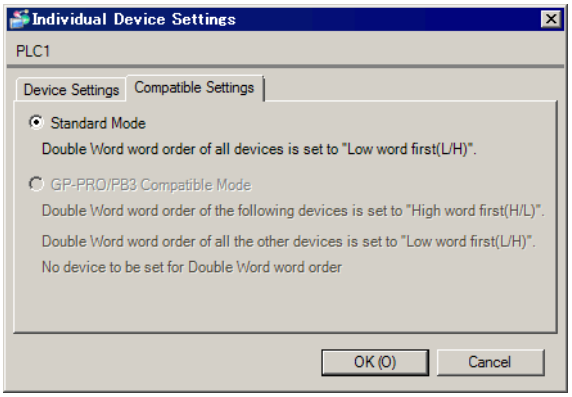
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use Studio5000 (formerly RSLogix5000) for communication setting.

Please refer to the manual of Studio5000 for more details.

1. Use Studio5000 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 to the External Device and restart the External Device.

◆ Notes

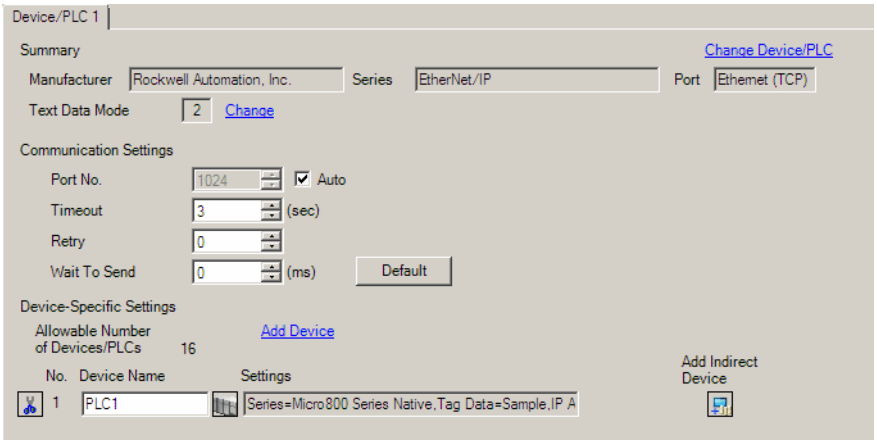
- When selecting "Control/Compact/Flex Logix Series Native", you need to create a Tag Data Block.
  ☞"5.5 Control/Compact/Flex Logix Series Native" (page 47)
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

3.12 Setting Example 12

■ GP-Pro EX Settings

◆ Communication Settings

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

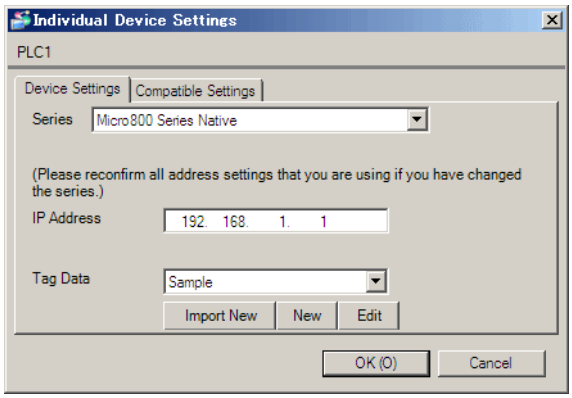


◆ Device Setting

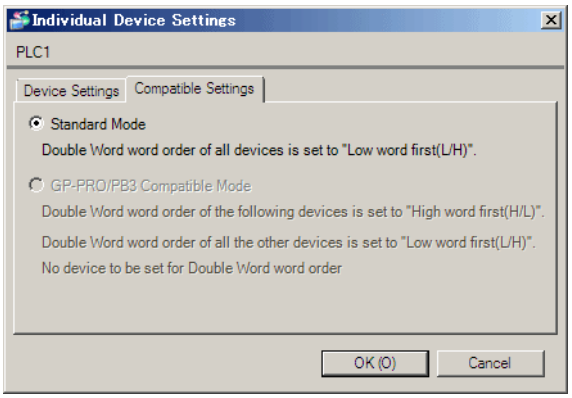
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Device Settings]



[Compatible Settings]



■ External Device Settings

Use Connected Components Workbench for communication setting.

Please refer to the manual of Connected Components Workbench for more information.

1. Connect the PC and External Device with an Ethernet cable.
2. Start Connected Components Workbench.
3. From the menu bar, select [File]-[New…], and create a new project.
4. In the Add Device window, select the appropriate controller.
5. Click [Select]-[Add To Project].
6. In the project tree view select [Micro850], and in the Micro850 tree view select [Ethernet].
7. In the Internet Protocol (IP) Settings, select [Configure IP address and settings], and set the following properties.

Setup Items	Setting Value
IP Address	192.168.1.1
Subnet Mask	255.255.255.0

◆ Notes

- When selecting "Micro 800 Series Native", you need to create a Tag Data Block.
  ☞"5.6 Micro800 Series Native" (page 70)
- 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 offline mode of the Display.

4 Setup Items

Set up the Display's communication settings in GP-Pro EX or in the Display's offline mode.

The setting of each parameter must match that of the External Device.

☞"3 Communication Settings" (page 8)

NOTE

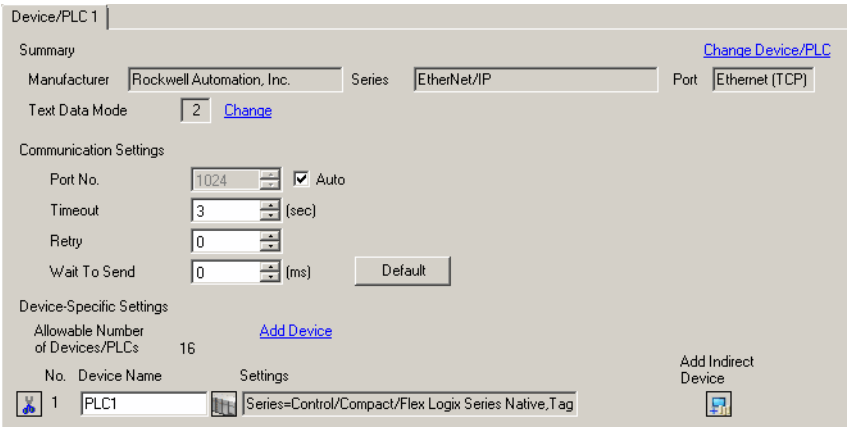
- Set the Display's IP address in offline mode.

  Cf. Maintenance/Troubleshooting Guide "Ethernet Settings"

4.1 Setup Items in GP-Pro EX

■ Communication Settings

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



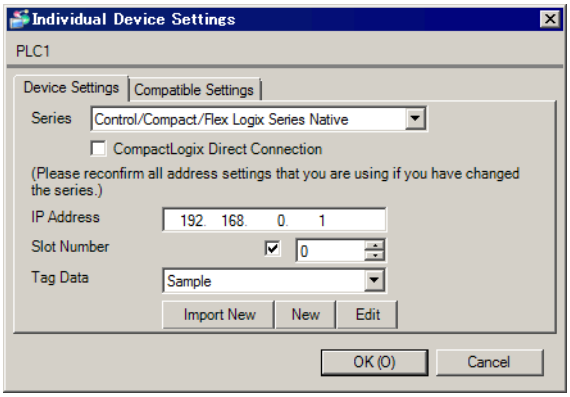
Setup Items	Setup Description
Port No.	Use an integer from 1024 to 65535 to enter the port number of the Display. When you check the option of [Auto Assign], the port number will be automatically set.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	If there is 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 the amount of standby time (ms) the Display counts from the time it receives a packet to the time it transmits the next packet.

■ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

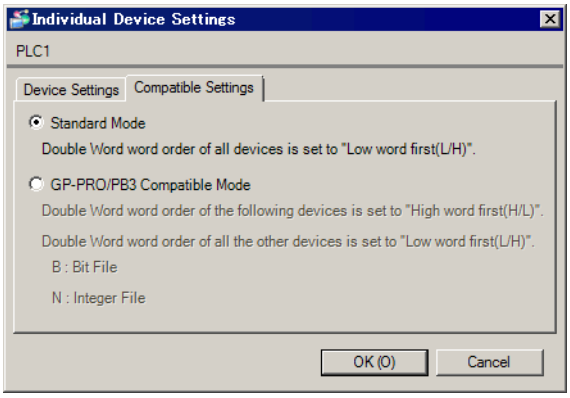
To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

◆ [Device Settings] tab



Setup Items	Setup Description
Series	Select a model of the External Device.
CompactLogix Direct Connection	Check this box when CompactLogix series is connected in CPU Direct.
IP Address	Set IP address of the External Device. **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.
Slot Number	When connecting to Control/Compact/Flex Logix, check this box and use "0 to 20" to select the slot number where the CPU unit is installed. **NOTE** • When using 1761-NET-ENI, uncheck this check box.
Tag Data	Select Tag Data Block to define the Tag in the External Device when selecting "Control/Compact/Flex Logix Series Native" or "Micro800 Series Native" for [Series]. Click [New] to make new Tag Data Block. ☞"5.5 Control/Compact/Flex Logix Series Native" (page 47) ☞"5.6 Micro800 Series Native" (page 70)

◆ [Compatible Settings] tab



Setup Items	Setup Description
Compatible Settings	Select either "Standard Mode" or "GP-PRO/PB3 Compatible Mode". When "Standard Mode" is selected, the Double Word word order of all devices is set to "Low word first [L/H]". When "GP-PRO/PB3 Compatible Mode" is selected, the Double Word word order of some devices is set to "High word first [H/L]". ☞"5 Supported Devices" (page 37) **NOTE** • You can select "GP-PRO/PB3 Compatible Mode" only when "SLC500 Series" is selected for the [Series] in the [Device Settings] tab.

4.2 Offline Mode Settings

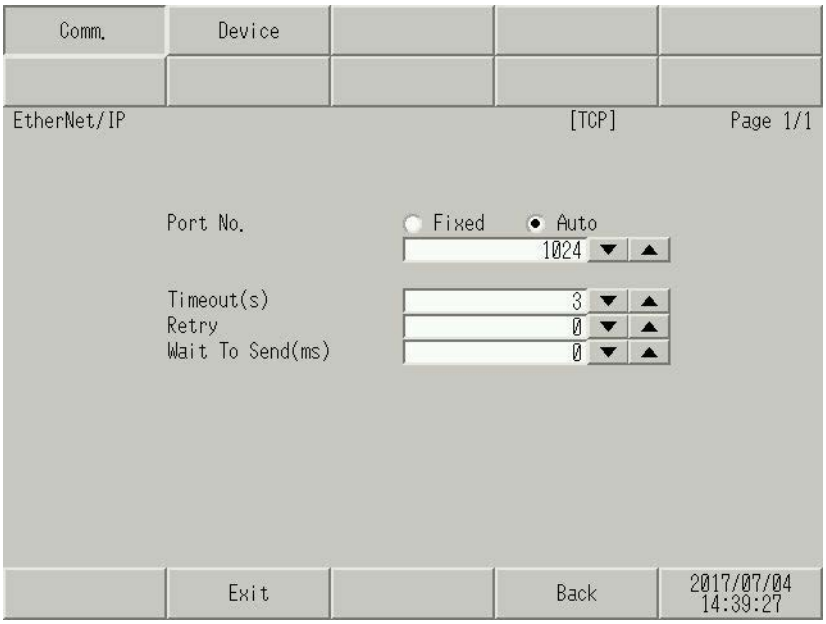
NOTE

- Refer to the Maintenance/Troubleshooting guide for information on how to enter offline mode or about the operation.

  Cf. Maintenance/Troubleshooting Guide "Offline Mode"

■ Communication Settings

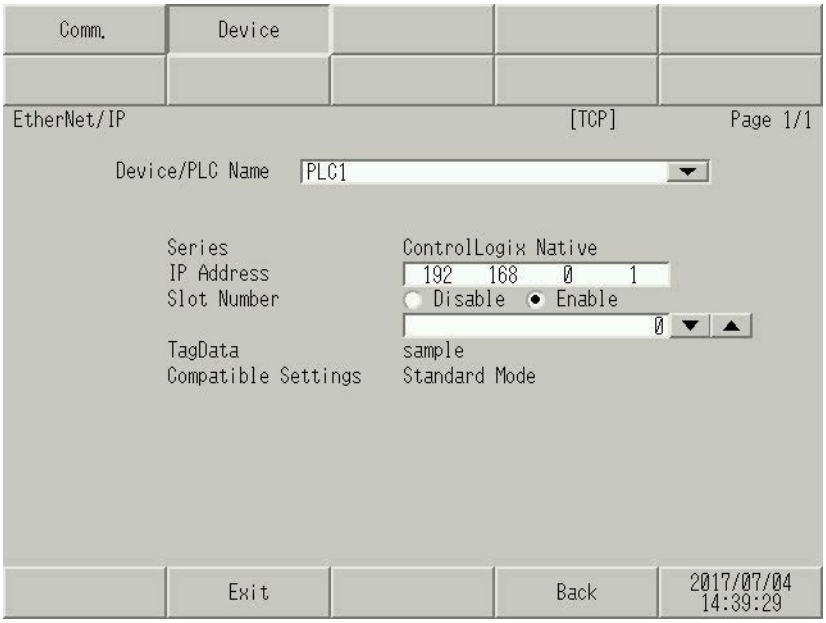
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings] in the offline mode. Touch the External Device you want to set from the displayed list.



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	If there is 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 the amount of standby time (ms) the Display counts from the time it receives a packet to the time it transmits the next packet.

■ Device Setting

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



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 the External Device model.
IP Address	Set IP address of the External Device. **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.
Slot Number	When connecting to Control/Compact/Flex Logix, select "Enable" and use "0 to 20" to set the slot number where the CPU unit is installed. **NOTE** • When using 1761-NET-ENI, select "Disable".
TagData	Displays TagData which is set to define the Tag in the External Device. When any other option than "Control/Compact/Flex Logix Series Native" is selected in [Series], TagData name will not be displayed.
Compatible Settings	Compatible Settings are either "Standard Mode" or "GP-PRO/PB3 Compatible Mode".

5 Supported Devices

The following table shows the range of supported device addresses.

5.1 SLC500 Series

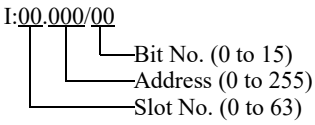
This address can be specified as system data area.

Device		Bit Address		Word Address		32 bit	Remarks
Input File		I:00.000/00-I:63.255/15		I:00.000-I63.255			*1
Output File		O:00.000/00-O:63.255/15		O:00.000-O:63.255		L / H	*1
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		L / H or H / L *2	
Timer File	Enable	T004:000/-T004:255/ T009:000/-T255:255/	EN	T004:000.-T004:255. T009:000.-T255:255.	-	L / H	
	Timing		TT		-		
	Done		DN		-		
	Preset		-		PRE		
	Accumu-lated		-		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		
	Accumu-lated		-		ACC		

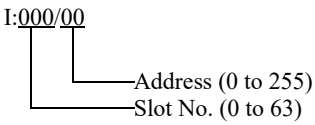
Device		Bit Address		Word Address		32 bit	Remarks
Control File	Enable	R006:000/-R006:255/ R009:000/-R255:255/	EN	R006:000.-R006:255. R009:000.-R255:255.	-	L/H	
	Enable Unload		EU		-		
	Done		DN		-		
	Empty		EM		-		
	Error		ER		-		
	Unload		UL		-		
	Inhibit Comp.		IN		-		
	Found		FD		-		
	Length		-		LEN		
	Position		-		POS		
Integer File		-		N007:000-N007:255 N009:000-N255:255		L/H or H/L *2	
Floating Point File		-		F008:000-F008:255 F009:000-F255:255		-	32 Bit Access Only
String File		-		ST009:000-ST255:255		L/H	*3 *4
ASCII File		-		A009:000-A255:255			

*1 Input/Output File Address Designation is as shown below.

• Bit Designation



• Word Designation



*2 Specify high/low order of stored data from the [Individual Device Settings] dialog box's [Compatible Settings].

■ Device Setting (page 33)

*3 String File device is not compatible with the device monitor.

*4 When String File device addresses are assigned to a symbol variable array, use array elements in multiples of 64 to access each device address.

Example: ST009:000 is assigned to symbol variable "String" with 1024 array elements.

Symbol variable	String[0]	String[64]	String[128]	-	String[960]
Device address	ST009:000	ST009:001	ST009:002	-	ST009:015

NOTE

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

  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"

- 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			
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.	-		
	Timing		TT		-		
	Done		DN		-		
	Preset		-		PRE		
	Accumu-lated		-		ACC		
Counter File	Up Enable	C003:000/-C999:999/	CU	C003:000.-C999:999.	-	L / H	
	Down Enable		CD		-		
	Done		DN		-		
	Overflow		OV		-		
	Underflow		UN		-		
	Update Acc.		UA		-		
	Preset		-		PRE		
	Accumu-lated		-		ACC		
Control File	Enable	R003:000/-R999:999/	EN	R003:000.-R999:999.	-		
	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			

Device	Bit Address	Word Address	32 bit	Remarks
Floating Point File	-	F003:000-F999:999	-	32 Bit Access Only
String File	-	ST003:000-ST999:999	L / H	*1 *2
ASCII File	-	A003:000-A999:999		
BCD File	-	D003:000-D999:999		

*1 String File device is not compatible with the device monitor.

*2 When String File device addresses are assigned to a symbol variable array, use array elements in multiples of 64 to access each device address.

Example: ST009:000 is assigned to symbol variable "String" with 1024 array elements.

Symbol variable	String[0]	String[64]	String[128]	-	String[960]
Device address	ST009:000	ST009:001	ST009:002	-	ST009:015

NOTE

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

  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"

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

  ☞ "Manual Symbols and Terminology"

5.3 MicroLogix Series

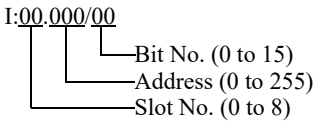
This address can be specified as system data area.

Device		Bit Address		Word Address		32 bit	Remarks
Input File		I:00.000/00-I:08.255/15		I:00.000-I08.255			*1
Output File		O:00.000/00-O:08.255/15		O:00.000-O:08.255			*1
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		
	Accumu-lated		-		ACC		
Counter File	Up Enable	C005:000/-C005:255/ C009:000/-C255:255/	CU	C005:000.-C005:255. C009:000.-C255:255.	-	L / H	
	Down Enable		CD		-		
	Done		DN		-		
	Overflow		OV		-		
	Underflow		UN		-		
	Update Acc.		UA		-		
	Preset		-		PRE		
	Accumu-lated		-		ACC		
Control File	Enable	R006:000/-R006:255/ R009:000/-R255:255/	EN	R006:000.-R006:255. R009:000.-R255:255.	-		
	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			

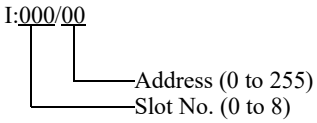
Device	Bit Address	Word Address	32 bit	Remarks
Floating Point File	-	F008:000-F008:255 F009:000-F255:255	-	32 Bit Access Only
String File	-	ST009:000-ST255:255	L/H	*2 *3
Long Word File	-	L009:000-L255:255	-	

*1 Input/Output File Address Designation is as shown below.

• Bit Designation



• Word Designation



*2 String File device is not compatible with the device monitor.

*3 When String File device addresses are assigned to a symbol variable array, use array elements in multiples of 64 to access each device address.

Example: ST009:000 is assigned to symbol variable "String" with 1024 array elements.

Symbol variable	String[0]	String[64]	String[128]	-	String[960]
Device address	ST009:000	ST009:001	ST009:002	-	ST009:015

NOTE

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

Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"

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

☞ "Manual Symbols and Terminology"

5.4 ControlLogix/CompactLogix/FlexLogix 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 *2
INT	-	INT000:000 - INT999:999	L/H	Bit 15 *1
REAL	-	REAL000:000 - REAL999:999	-	*1
DINT	-	DINT000:000 - DINT999:999		Bit 31 *1
SINT	-	SINT000:000 - SINT999:998	L/H	Bit 7 ÷ 2 *1

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

*2 The BOOL device descriptions used in the GP-Pro EX manual and the Studio5000 (formerly RSLogix5000) manual are different. Please be aware of these differences when setting up BOOL devices.

GP-Pro EX	000:000/00 - 000:000/31	000:001/00 - 000:001/31	000:002/00 - 000:002/31	-	000:999/00 - 000:999/31
Studio5000	0 - 31	32 - 63	64 - 95	-	31968 - 31999

The following procedure shows how to assign the device in the Studio5000 software and specify the address in GP-Pro EX.

(1) External Device Tag Setting

Create a Tag Name in the Studio5000 software, and set the Data Type (normally an array the size of the number of registers desired).

Tag Name	Set as desired.
Type	Select the data type from the following to set the Element. Match the device name of GP-Pro EX. BOOL(32bit data type) INT(word data type) DINT(dword data type) SINT(byte data type) REAL(float data type)

NOTE

- When the device name of GP-Pro EX does not match the data type of a Tag, Display may not run normally.
- Set the range used in GP-Pro EX for the Element. The maximum Element that GP-Pro EX can access is 999.
  If you do not define the Tag as an array, only one register is available to use.
  (Example) Tag Name: When you set INT8, Type: INT, you can use only one 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 200 elements

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

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

(2) Mapping

Map the created Tag Name to a File Number.

File Number	Assign the Tag Name created by Studio5000 to the optional File Number. You can not assign different Tag Names to the same File Number.

<Example 2>

File Number	Name
2	DATA2
1	DINT1
7	INT7

(3) 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]
DNT1:2	⟷	DINT 1[2]

NOTE

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

  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"

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

  ☞ "Manual Symbols and Terminology"

5.5 Control/Compact/Flex Logix 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>	L / H	*1 *2*4
	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>	L / H	Bit 7 ÷ 2 *1 *2 *5
	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]		

Device		Bit Address	Word Address	32bits	Remarks
STRING	Single Tag	-	<TAGNAME>	-	*1 *2 *6
	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]		

*1 <TAGNAME>: Tag Name including structure name in case of structure. The maximum number of characters for Tag Name is 255 including delimiters and element number. The maximum number of characters when using D-Script is limited to 54.

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"

You can use alphanumeric characters (uppercase and lowercase) as well as the underscore for tag names. The following naming rules also apply.

- Maximum 40 single-byte characters.
- A number or the underscore cannot be the first character.
- The following character strings cannot be used as the first character.
  LS, USR, SCR, PRT
- You cannot enter two or more underscore characters consecutively.
- You cannot enter underscore as the last character.

*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 By default, 16 words are used for the system data area. If you want to use less than 16 words, first you need to map an array tag greater than 16 words and define the items for the system data area.

*5 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 an odd array, the upper byte is set to 0.

*6 Parts for which a STRING device is set do not support the Duplicate - Automatically Increment Address feature.

NOTE

- A maximum of 65535 Controller Tag Indices can be consumed for each PLC. One index for each Tag or Array of an atomic type.
  When the data type of a Tag is a structure, calculate the number of indices used with the following formula:
  <Number of Controller Tag Indices>= (1 + <Number of Structure Members>) x <Number of Array Elements>
  Ex: Timer[16]
  Number of Controller Tag Index = (1 + 9) x 16

To use controller tags set up in the Studio5000 software on GP-Pro EX, the L5K file needs to be imported. The L5K file is exported by the Studio5000 software. The L5K data imported into GP-Pro EX is saved as a Tag Data Block.

IMPORTANT
- GP-Pro EX will not import L5K or CSV files for Studio5000 software version lower than 13.
- When controller tags created with the Studio5000 software have settings to limit external access, please allow for external access.

In addition to controller scope or global tags, Studio5000 also provides for Program Scope Tags which are only valid within the PLC program they are created. GP-Pro EX will import these Program Scope Tags from L5K or CSV files exported from Studio5000.

The following derivative data types are provided by Studio5000, and are supported in GP-Pro EX.

- Predefined data type: a structure data type defined in Studio5000. Predefined data types for Studio5000 version 13, 15, 16, 17, 18, 19, 20, 28, 29, 30, 31, 32, 33, 34, 35, 36 and 37. (FS, LS, OV, and ER of TIMER Predefined types are not supported).

NOTE
- Among the predefined data types in Studio5000 version 34 and above, CAM_EXTHENDED and CAM_PROFILE_EXTHENDED cannot be imported because they contain LREAL data types.

- Module defined data type: Data type defined according to a physical module being used in an Studio5000 project. GP-Pro EX determines the tags and data types needed for module definitions found in the L5K file. (Please refer to "Data Type Defined Module List" for all modules supported in GP-Pro EX).

☞" ■ Data Type Defined Module List" (page 52)

- User defined data type: data type defined by the user in RSLogix. Its definition is exported into the L5K file.
- Alias: A tag name which refers to another tag or alias on the PLC.
- This driver cannot use 64-bit data types such as ULINT, LREAL, DT, LDT, LTIME, and TIME.
- LINT Data Type

Any LINT data type in the file exported by RSLogix is imported to GP-Pro EX as LINT_TC data type. LINT_TC data type is separated into data and time components.

To display LINT data type in GP-Pro EX as a date or time, use one of the submembers of the LINT_TC data type. (eg. MyLINT.MONTH will show the month in the LINT register). To display LINT as two 32 bit integer numbers, use the LINT_D data type for the tag after importing.

IMPORTANT
- If the exported file is imported after changing a tag to LINT_D data type, LINT_D is overwritten and changed to LINT_TC.

- Add-on-Instruction Data Type

Add-on-Instruction Data Type members specified with a Usage value of "InOut" will not be imported into GP-Pro EX.

- Custom String Data Type

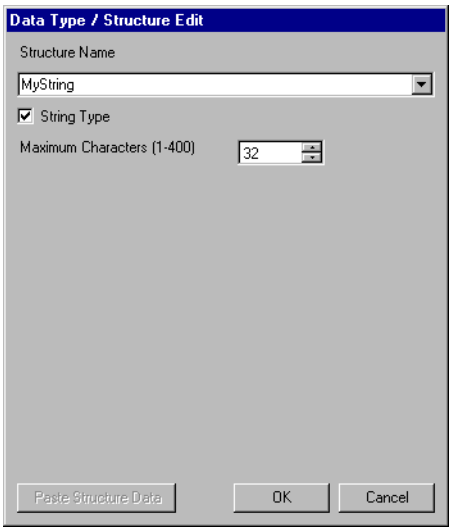
The Ethernet/IP driver's Custom String Data Type supports text up to 400 characters. (The STRING device supports text up to 82 characters.)
Custom String Data Types defined with text over 400 characters will not be imported into GP-Pro EX. Import results will be recorded in the error log.

NOTE

- When you use GP-Pro EX where V1.16.15 or later driver is installed and import the tag data in the project that is created with the driver lower than V1.16.15, the structure of custom String is overwritten and changed to the custom String data type.
  When you wish to use the structure where String has been set, create the structure of custom String data type and make the tag settings once again.
  ☞"• Create Custom String Structure" (page 51)

- Create Custom String Data Type

To create a Custom String Data Type in GP-Pro EX, select "String Type" in the [Data Type / Structure Edit] dialog box and set the [Maximum Characters].



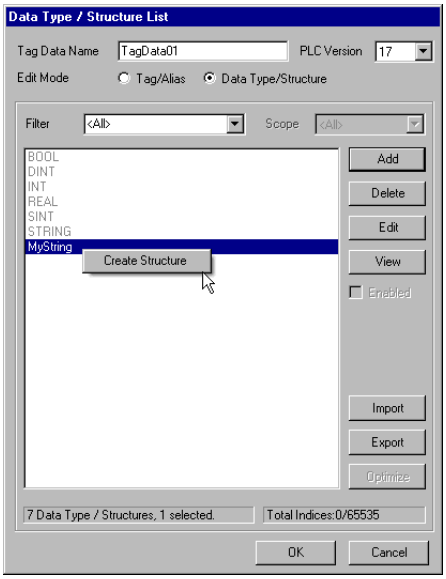
- Create Custom String Structure

When importing a L5K file:

Select [Create Custom String Structure] in the import dialog box.

Using the [Data Type / Structure List] dialog box:

Right-click a Custom String Data Type and click [Create Structure] from the right-click menu.



NOTE

- The name of the created Custom String Structure will be changed to "Custom String Data Type Name_Struct". If a Custom String Data Type with the same name is imported or created, a number will be placed after "_Struct", which will be incremented with every identical name that is imported or created. If the Custom String Data Type Name exceeds 40 characters, it will be changed as follows.
  For Custom String Data Type Name "MyString...abcd" (34 characters):
  •MyString...abc_Struct
  •MyString...ab_Struct1
  •MyString...a_Struct10

■ Data Type Defined Module List

◆ Modules that do not generate tags or data type/structures on import

Embedded	1756-L1	1756-L53
1756-HYD02	1756-EWEB/A	1768-ENBT/A
1756-L55	1756-L60M03SE	1756-L61
1756-L61S	1756-L62	1756-L62S
1756-LSP	1756-L63	1756-L64
1756-M02AE	1756-M02AS	1756-M03SE
1756-M08SE	1756-MO8SEG	1756-M16SE
1768-L43	1768-EWEB/A	1769-L20
1769-L30	1769-L31	1769-L32E Ethernet Port
1769-L32E	1769-L35CR	1769-L35E
1769-L35E Ethernet Port	1788-ENBT/A	1788-EWEB/A
1789-L60	1794-L33	1794-L34
CompactBus	Emulator	ETHERNET-BRIDGE
1769-L23E-QB1 Ethernet Port	1769-L23E-QBFC1 Ethernet Port	Drivelogix5730 Ethernet Port
1769-L30ER	1769-L30ERM	1769-L30ER-NSE
1769-L33ER	1769-L36ERM	1756-63S
1756-L72S	1756-L73S	1768-CNB/A
1756-L71	1756-L71S	1756-L72
1756-L73	1756-L74	1756-L75
1769-L30ERMS	1769-L33ERM	1769-L33ERMS
1769-L36ERMS	1769-L37ERM	1769-L37ERMO
1769-L37ERMOS	1769-L37ERMS	1769-L38ERM
1769-L38ERMS	-	-

◆ Modules that generate controller tags or data type/structures on import

NOTE

- Depending on your system structure, controller tags may not generate properly. When tags do not generate properly, use the [Edit], [Add] and [Delete] commands.

☞" ■ Tag Data Dialog Settings" (page 56)

1734-ACNR/A	1734-IA2/C	1734-IB2/C
1734-IB4/C	1734-IB8/C	1734-IE2C/C
1734-IE2V/C	1734-IJ/C	1734-IK/C
1734-IM2/C	1734-IR2/C	1734-IT2I/C
1734-IV2/C	1734-IV4/C	1734-IV8/C
1734-MODULE	1734-OA2/C	1734-OB2/C
1734-OB2E/C	1734-OB2EP/C	1734-OB4/C

1734-OB4E/C	1734-OB8/C	1734-OB8E/C
1734-OE2C/C	1734-OE2V/C	1734-OV2E/C
1734-OV4E/C	1734-OV8E/C	1734-OW2/C
1734-OW4/C	1734-OX2/C	1734-SSI/C
1734-VHSC24/C	1734-VHSC5/C	1738-ACNR/A
1738-IA2M12AC3/A	1738-IA2M12AC4/A	1738-IB2M12/A
1738-IB4M12/A	1738-IB4M8/A	1738-IB8M12/A
1738-IB8M23/A	1738-IB8M8/A	1738-IE2CM12/A
1738-IE2VM12/A	1738-IJM23/A	1738-IR2M12/A
1738-IT2IM12/A	1738-IV4M12/A	1738-IV8M12/A
1738-IV8M23/A	1738-IV8M8/A	1738-MODULE
1738-OA2M12AC3/A	1738-OB2EM12/A	1738-OB2EPM12/A
1738-OB4EM12/A	1738-OB4EM8/A	1738-OB8EM12/A
1738-OB8EM23/A	1738-OB8EM8/A	1738-OE2CM12/A
1738-OE2VM12/A	1738-OV4EM12/A	1738-OW4M12/A
1738-OW4M12AC/A	1738-SSIM23/A	1738-VHSC24M23/A
1747-ASB	1756-CFM/A	1756-CN2/A
1756-CN2/B	1756-CN2R/A	1756-CN2R/B
1756-CNB/A	1756-CNB/B	1756-CNB/D
1756-CNB/E	1756-CNBR/A	1756-CNBR/B
1756-CNBR/D	1756-CNBR/E	1756-DHRIO/B
1756-DHRIO/C	1756-DHRIO/D	1756-DMA30
1756-DMA31	1756-DMA50	1756-DMB30
1756-DMD30	1756-DMF30	1756-DNB
1756-EN2F/A	1756-EN2T/A	1756-ENBF/A
1756-ENBT/A	1756-ENET/B	1756-HSC
1756-IA16	1756-IA16I	1756-IA8D
1756-IB16	1756-IB16D	1756-IB16I
1756-IB16ISOE	1756-IB32	1756-IB32/A
1756-IB32/B	1756-IC16	1756-IF16
1756-IF4FXOF2F/A	1756-IF4FXOF2F/B	1756-IF6CIS/A
1756-IF6I	1756-IF8	1756-IG16/A
1756-IH16I	1756-IH16ISOE	1756-IM16I
1756-IN16	1756-IR6I	1756-IT6I
1756-IT6I2	1756-IV16/A	1756-IV32/A
1756-MODULE	1756-OA16	1756-OA16I
1756-OA8	1756-OA8D	1756-OA8E
1756-OB16D	1756-OB16E	1756-OB16I

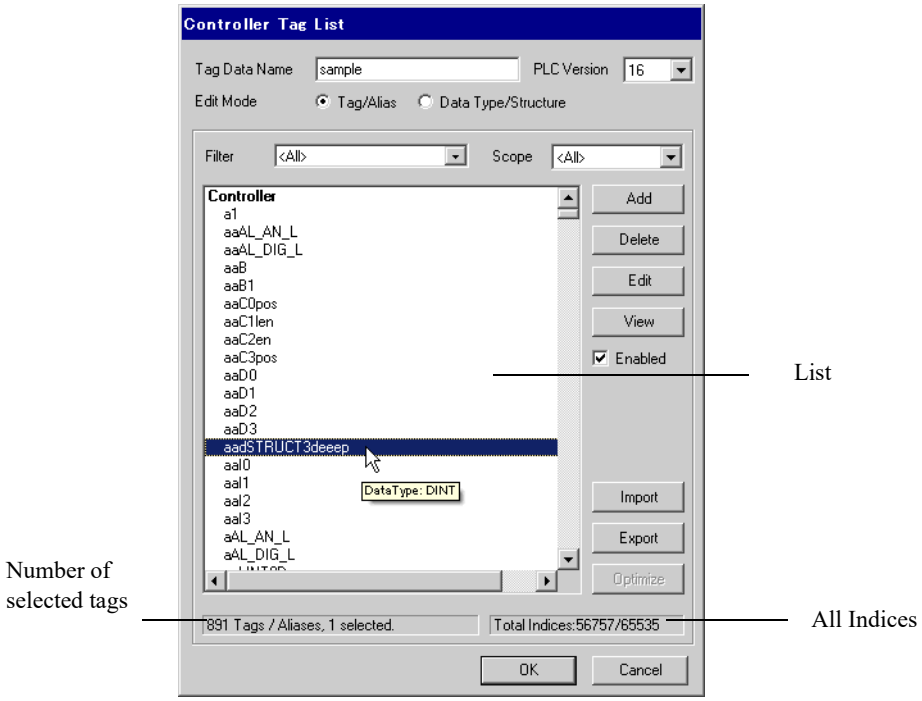
1756-OB16IS	1756-OB32	1756-OB8
1756-OB8EI	1756-OC8	1756-OF4
1756-OF6CI	1756-OF6VI	1756-OF8
1756-OG16/A	1756-OH8I	1756-ON8
1756-OV16E/A	1756-OV32E/A	1756-OW16I
1756-OX8I	1756-PLS/B	1756-REG
1756-SYNCH/A	1769-HSC	1769-HSC/A
1769-IA16	1769-IA16/A	1769-IA8I
1769-IA8I/A	1769-IF4/A	1769-IF4/B
1769-IF4I/A	1769-IF4XOF2/A	1769-IF8/A
1769-IM12/A	1769-IQ16/A	1769-IQ16F/A
1769-IQ32/A	1769-IQ6XOW4/A	1769-IQ6XOW4/B
1769-IR6/A	1769-IT6/A	1769-MODULE
1769-OA16/A	1769-OA8/A	1769-OA8/B
1769-OB16/A	1769-OB16/B	1769-OB16P/A
1769-OB16P/B	1769-OB32/A	1769-OB8/A
1769-OF2/A	1769-OF2/B	1769-OF4CI/A
1769-OF4VI/A	1769-OF8C/A	1769-OF8V/A
1769-OV16/A	1769-OV16/B	1769-OW16/A
1769-OW8/A	1769-OW8/B	1769-OW8I/A
1769-OW8I/B	1769-SDN/A	1769-SDN/B
1771-ASB	1788-EN2DN/A	1794-ACN15/C
1794-ACNR15/C	1794-AENT/A	1794-AENT/B
1794-ASB	1794-IA16/A	1794-IA8/A
1794-IA8I/A	1794-IB10XOB6/A	1794-IB16/A
1794-IB16XOB16P/A	1794-IB32/A	1794-IB8/A
1794-IB8S/A	1794-IC16/A	1794-ID2/B
1794-IE4XOE2/B	1794-IE8/B	1794-IF2XOF2I/A
1794-IF4I/A	1794-IJ2/A	1794-IM8/A
1794-IP4/B	1794-IR8/A	1794-IRT8
1794-IRT8/A	1794-IT8/A	1794-IV16/A
1794-OA16/A	1794-OA8/A	1794-OA8I/A
1794-OB16/A	1794-OB16P/A	1794-OB32P/A
1794-OB8/A	1794-OB8EP/A	1794-OC16/A
1794-OE4/B	1794-OF4I/A	1794-OM8/A
1794-OV16/A	1794-OV16P/A	1794-OW8/A
1794-VHSC/A	1797-ACNR15/C	1797-IBN16/A
1797-IE8/A	1797-IE8NF/A	1797-IJ2/A

1797-IRT8/A	1797-OB4D/A	1797-OE8/A
56AMXN	CIP-MODULE	ETHERNET-MODULE
FlexBus	FLEX-MODULE	RIO-ADAPTER
1756-OB8I	EtherNet/IP	1734-AENT/A
1738-AENT/A	1794-OE12/A	1794-IT8/B
1769-IQ32T/A	1769-L16ER-BB1B	1769-L18ER-BB1B
1769-L18ERM-BB1B	1769-L23E-QB1	1769-L23E-QBFC1
1769-L23-QBFC1	1769-L24ER-QB1B	1769-L24ER-QBFC1B
1769-L27ERM-QBFC1B	5069-IB16/A	5069-OB16/A
5069-L340ER	1756-ENET/A	1756-EN2TR
1734-AENTR/B	1734-AENTR/C	-

■ Tag Data Dialog Settings

- Controller Tag List

  The controller tag to be used in GP-Pro EX needs to be registered in [Controller Tag List]. The controller Tag List is displayed when "Tag/Alias" is selected in the [Edit Mode] of the tag data dialog.

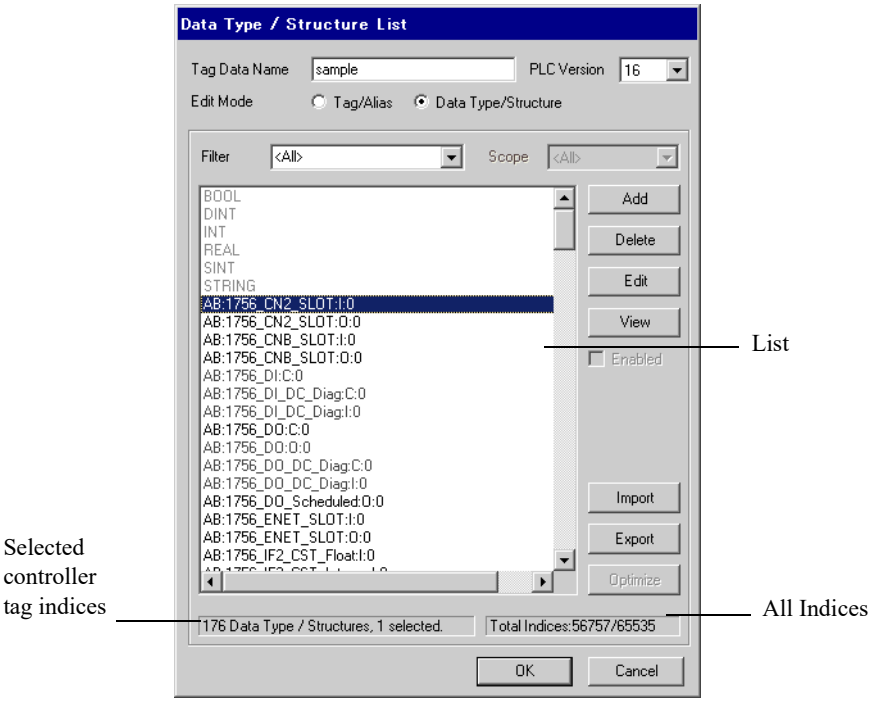


Setup Items	Setup Description
Tag Data Name	Input the Tag Data Block name to save the controller tag and data type/structure information.
PLC Version	Select a PLC firmware version for the External Device.
Edit Mode	Changes the edit mode to a tag or data type.
Filter	Filters tags displayed in the list using an arbitrary string. To filter by data type, select the data type from the pull down menu. Tags can be filtered by the following conditions from the pull down menu. • All Displays all tags. • Unused Displays tags that are not used in screen settings. • In Use Displays tags used in screen settings. • Disabled Displays tags set to "Disabled" in the list. • Enabled Displays tags set to "Enabled" in the list.
Scope	Filters tags displayed in the list. To filter by scope, select a scope from the pull down menu. • Controller Displays controller scope tags. • RPG Displays program scope tags.
List	Displays controller tags and aliases that are registered in the Tag Data Block. If a cursor is moved over a controller tag, the data type and size are displayed.

Setup Items	Setup Description
Add	Creates a new tag.
Delete	Deletes a selected tag.
Edit	Edits a selected tag.
View	Displays the configuration of the selected tag.
Enabled	Changes a selected tag to enable or disable. Select the check box to enable the tag.
Import	Opens the dialog box to import an L5K or CSV file into the current Tag Data Block.
Export	Exports the Tag Data to CSV file. A delimiter can be selected from among a comma, semi-colon, and tab.
Optimize	Disables all unused tags.
The number of selected tags	Displays the total number of controller tags/aliases in the filtered display and the number currently selected.
Total Indices	Displays the total number of controller tag indices registered in the Tag Data Block, and the maximum available (65535).

- Data Type/Structure List

  The data type/structure to be used for the controller tag needs to be registered in [Data Type / Structure List]. Data Type/Structure List is displayed when "Data Type/Structure" is selected in the [Edit Mode] of the tag data dialog.



Setup Items	Setup Description
Tag Data Name	Input the Tag Data Block name to save the controller tag and data type/structure information.
PLC Version	Select a PLC firmware version for the External Device.
Edit Mode	Change the edit mode to a tag or data type.
Filter	Filter tags that are displayed in the list using an arbitrary string. To filter by data type, select the data type from the pull down menu. Tags can be filtered by the following conditions from the pull down menu. • All Displays all tags. • Unused Displays tags that are not used in screen settings. • In Use Displays tags used in screen settings.
List	Data types or structures registered in the tag data block are displayed. Displayed Text Colors mean: Light Gray: Data type/structure that is defined in the system. Cannot be deleted. Dark Gray: Data type/structure in use by other tags or structures. Can be deleted after the tags or structures using it are deleted. Black: Can be deleted.
Add	Creates a new data type or structure.
Delete	Deletes a selected data type or structure.
Edit	Edits a selected data type or structure.

Setup Items	Setup Description
View	Displays the configuration of the selected data type or structure.
Enabled	Changes a selected data type or structure to enable or disable. Select the check box to enable a data type or structure.
Import	Opens the dialog box to import an L5K or CSV file into the current Tag Data Block.
Export	Exports the configuration to CSV file. A delimiter can be selected from among a comma, semicolon, and tab.
Optimize	Disables all unused controller tag indices.
Selected tag controller index	Displays the total number of data type/structures appearing in the filtered display and the number currently selected.
Total Indices	Displays the total number of controller tag indices registered in the Tag Data Block, and the maximum available (65535).

NOTE

- An L5K or CSV file to be imported should be the same version as that selected in the [PLC version] in the [Controller Tag List] dialog.
  When an L5K or CSV file of a different PLC version is imported, the predefined definitions are converted to those matching the selected PLC Version. In addition, if a version 16 to 20 and 28 to 37 import file containing LINT data type tags is imported into a tag data block in which version 15 or 13 is selected, the LINT data type (and tags using it) will not be imported.
- GP-Pro EX can export to CSV file in two formats. The first is RSLogix compatible and only exports the tags from the Tag Data Block. This format can be imported into RSLogix provided the necessary data types are defined in the RSLogix project. It does not export any aliases imported to GP-Pro EX. The second is a Pro EX format which saves all tags, aliases and data type information. Importing it into another GP-Pro EX project will allow using all the same Tag Data in that project.

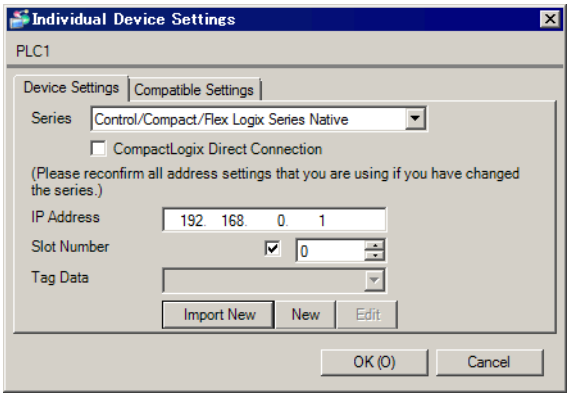
■ Importing Tag Data

1) Make a TagName using Studio5000 software and set the data type.
2) From [File] menu, select [Save As], and save the controller tag information in the L5K file.

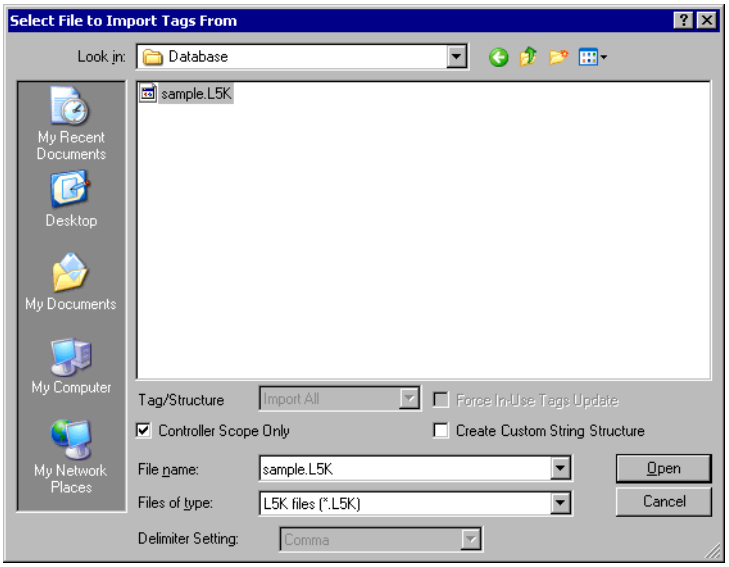
NOTE

- Import can also use CSV file. To export CSV from Studio5000, select [Export] from the [Tools] menu.
- CSV only includes tag information. Data type information is not included.

3) Go to the [Individual Device Settings] dialog box using GP-Pro EX and select "Control/Compact/Flex Logix Series Native" in the [Series] selector.



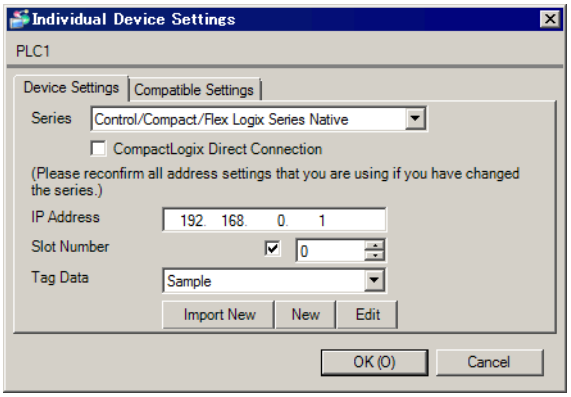
4) Click [Import New]. Select the L5K file to be imported and click [Open].



NOTE

- When importing controller scope tags only, select the [Controller Scope Only] check box beside the [Tag/Structure] list. To import Controller Scope tags and Program Scope tags deselect this box.
- To create a Custom String Structure, select "Create Custom String Structure" under [Tag/Structure].
  ☞"• Custom String Data Type" (page 50)
- To import a CSV file, select a CSV file delimiter from [Delimiter Setting]. A CSV file exported with GP-Pro EX in which the driver version lower than V1.18.19 is installed is comma-delimited.

5) Import is executed and Tag Data Block is generated.

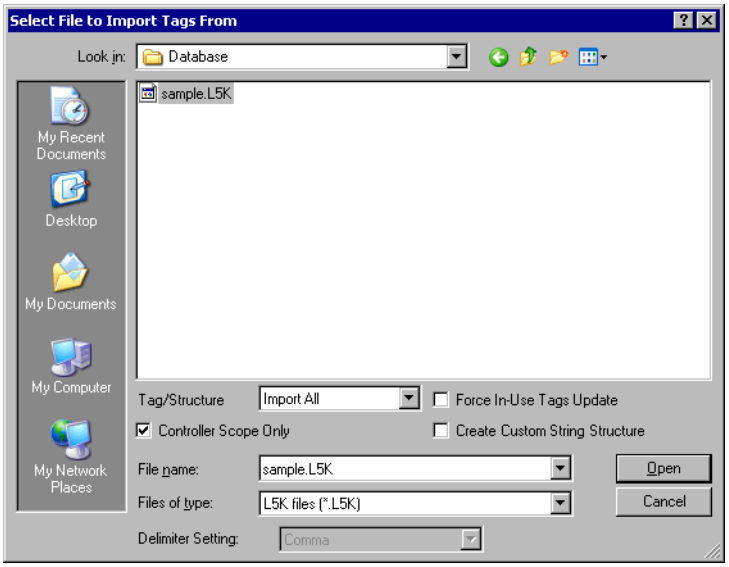


NOTE

- If any unsupported data types or tags are found during import, a log file can be generated. Using the dialog box displayed, set the name and the location of the log file to be saved. Import results can be confirmed in the log file.
- If a CSV file with tags of user defined data types is imported, and the types are not already defined in GP-Pro EX, the tags will not import. Review the log file for the tags not imported.
  ☞" ■ Making a New Data Type" (page 65)
- A tag data block can be assigned to multiple external devices. Once a tag data block is created it can be selected in the [Individual Device Settings] dialog box for setting up a new External Device. If a tag data block assigned to multiple external devices is edited, the changes will affect all External Devices to which it is assigned.
  Multiple tag data blocks can be set up in a project as required (Max. 18).
- Clicking on the [Import New] button will cause the newly imported Tag Data Block to be assigned to the External Device in place of the current Tag Data Block.
- On closing the [Individual Device Settings] dialog box, any unassigned Tag Data Blocks can be deleted.

◆ Import into Existing Tag Data Block

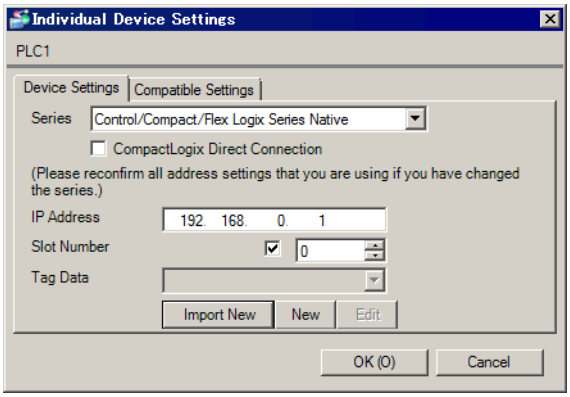
When importing using the Import Button in the Controller Tag List Dialog, the Tag / Structure selector will be enabled and can be used to narrow the information to import.



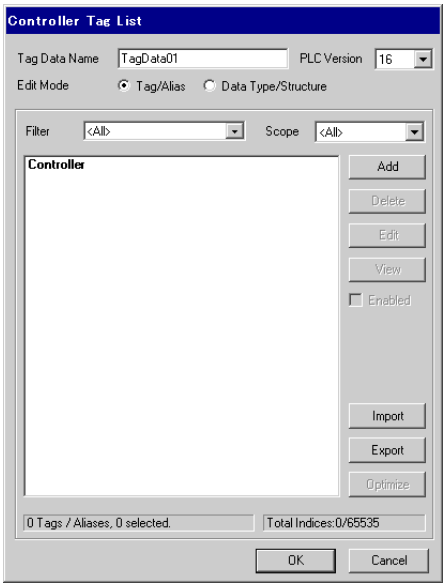
Setup Items	Setup Description
Tag/Structure	Select tag data to be imported. • Import All: Imports all tag data into the current Tag Data Block. Tags and Data Types existing in the current Tag Data Block will be overwritten. • Import New Only: Imports only the Tag Data which does not already exist in the current Tag Data Block. • Import Matching Only: Imports only the Tag Data which already exists in the current Tag Data Block. Tags and Data Types will be overwritten.
Force In-Use Tags Update	Select this check box to update tag data in use.
Controller Scope Only	Select this check box only when importing controller scope tags. Remove the check mark when importing controller tags and program scope tags.
Create Custom String Structure	To create a Custom String Structure, select "Create Custom String Structure". ☞"• Custom String Data Type" (page 50)
Delimiter Setting	Select a "Comma", "Semicolon", or "Tab" for a CSV file delimiter when importing the CSV file. A CSV file exported with GP-Pro EX in which the driver version lower than V1.18.19 is installed is comma-delimited.

■ Making a New Tag

1) Go to the [Individual Device Settings] dialog box using GP-Pro EX, select "Control/Compact/Flex Logix Series Native" from [Series].

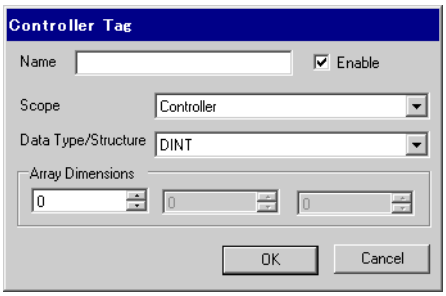


2) Click [New]. Input the tag data name to be made in [Tag Data Name] and select a PLC firmware version for the external device in the [PLC Version] selector.

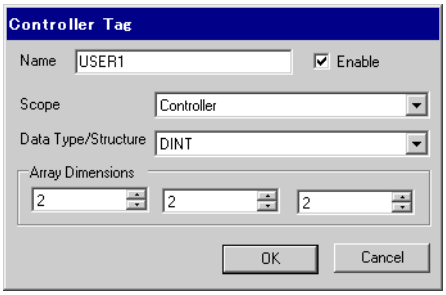


3) Select [Tag/Alias] from [Edit Mode].

4) Click [Add] to display the [Controller Tag] dialog box.



5) Input the Controller Tag Name, Scope, Data Type/Structure, and Array Dimensions. To use a created tag, select [Enable] and then click [OK].

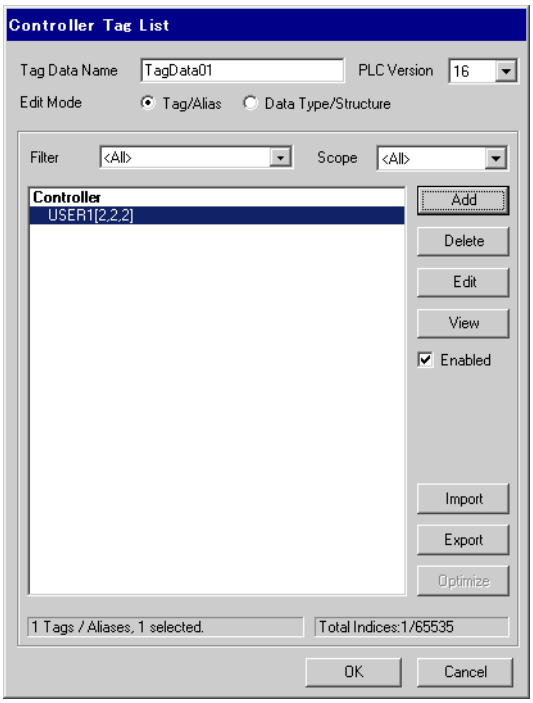


NOTE

- Only registered data types can be selected at [Data Type/Structure]. Register data types as necessary.

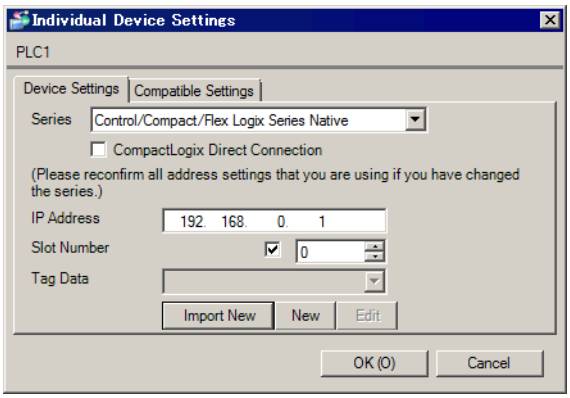
☞" ■ Making a New Data Type" (page 65)

The newly created controller tag is displayed in the list.

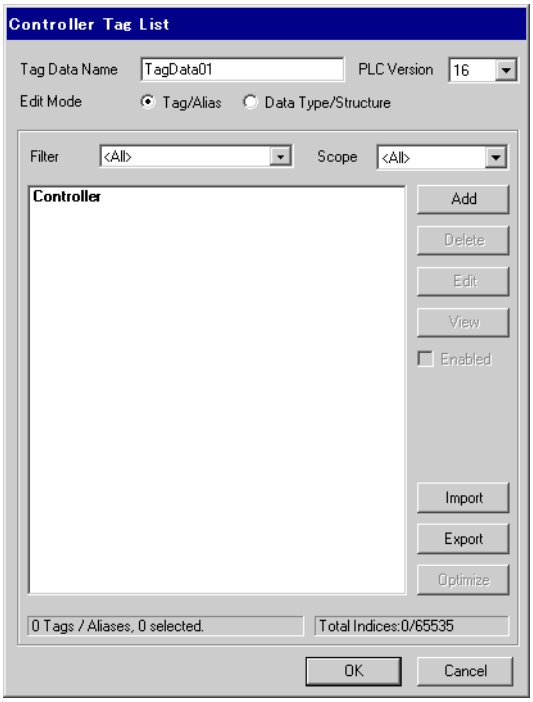


■ Making a New Data Type

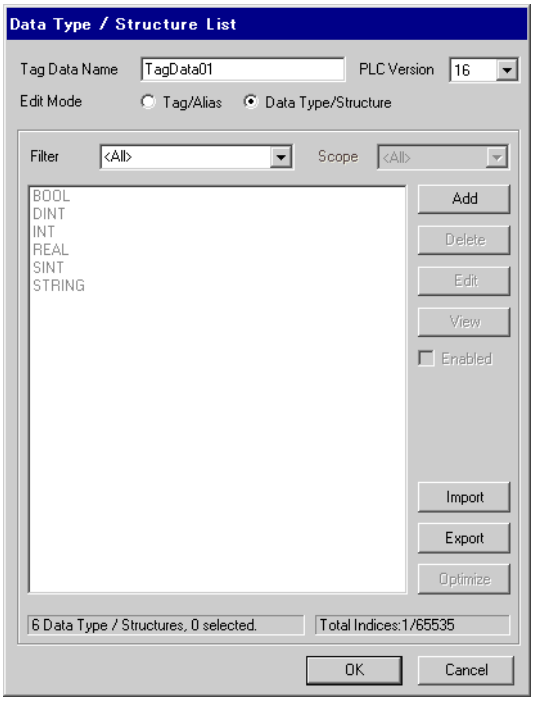
1) Go to the [Individual Device Settings] using GP-Pro EX, and select "Control/Compact/Flex Logix Series Native" from [Series].



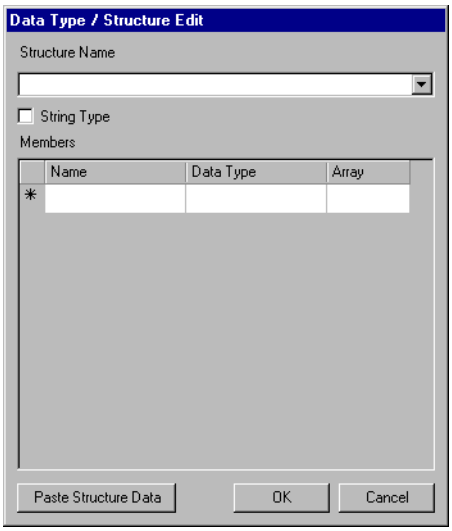
2) Click [New]. Input the name of the tag data block to be made in [Tag Data Name].



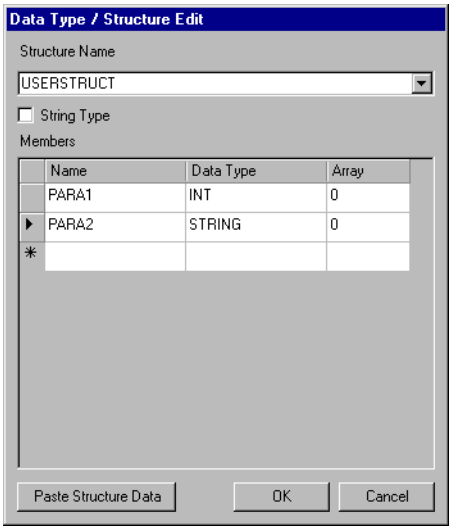
3) Select [Data Type/Structure] for the [Edit Mode].



4) Click [Add] to display [Data Type/Structure Edit] dialog box.



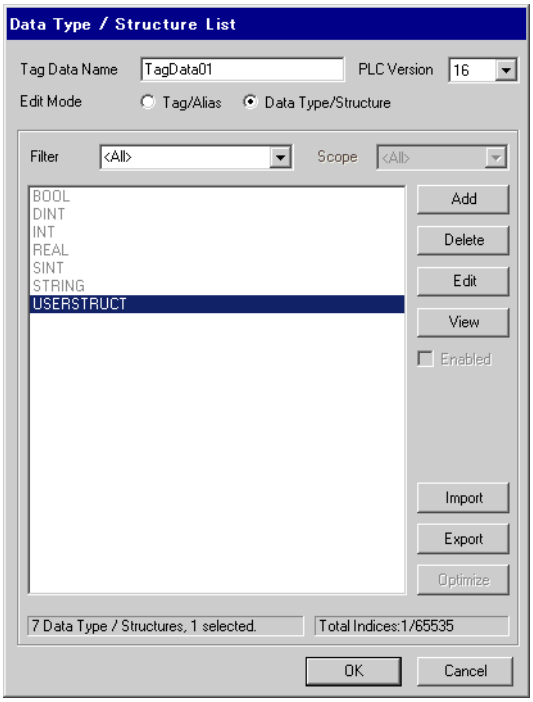
5) Input the name of Data Type/Structure and members desired, then click [OK].



NOTE

- To copy the structure of the data type supported by GP-Pro EX directly from Studio5000 software into the [Data Type / Structure Edit] dialog box, select the desired structure in Studio5000 software and copy the [Name] and [Data Type] columns. Paste the copied data into a structure in GP-Pro EX using the [Paste Structure Data] button.
- For using Predefined structures, select the structure to be used from the [Structure Name] drop-down list, and click [OK].
  Note that if the data type for the member of the Predefined structure is not defined in GP-Pro EX, the member [Data Type] will be blank. Just click [OK] to automatically create the required data type.
- Only one-dimensional arrays can be used as structure members.

The newly created data type/structure is displayed in the list. Registered data type/structures can be used for importing, adding and editing controller tags.



NOTE

- A warning message " Display Unit Illegal address. Define a correct address." may appear during Error Check if no non-BOOL tags exist in the Tag Data Block. This indicates that the default value assignment for one or more system settings were not made since there were no suitable tags available. This is not related to screen settings and system settings made by the user.
- When you use [Copy from Another Project] ([Project] menu in GP-Pro EX - [Utility] - [Copy from Another Project]) with Control/Compact/Flex Logix Series Native, the address settings specified for the copied screen may be changed to "Undefined". Check the address settings after copying a screen.
  When [Copy from Another Project] is used in GP-Pro EX V2.60 or later, the project where Rockwell Automation, Inc. EtherNet/IP driver is specified can be copied normally. (When the version of the ladder software used in the copy source project is higher than the one in the copy destination, the PreDefined Structure settings in the copy destination may be "Undefined".)
- When the String device is specified in Text Display of Data Display, the last address is displayed as "-".
- The first 1 word of each String is displayed in the String device map display of the External Device address.
- The String device does not support the Duplicate function.
- The String device does not support the Simulation function.
- Please refer to the GP-Pro EX Reference Manual for system data area.

  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

5.6 Micro800 Series Native

This address can be specified as system data area.

Device		Bit Address	Word Address	32 bit	Remarks
BOOL	Single Tag	<TAGNAME>	-	-	*1 *2 *3
	1D Array	<TAGNAME>[0]- <TAGNAME>[x-1]			
INT	Single Tag	<TAGNAME>.00- <TAGNAME>.15	<TAGNAME>	L / H	*1 *2 *4
	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>		Bit 7 ÷ 2 *1 *2 *5
	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]		

Device		Bit Address	Word Address	32 bit	Remarks
STRING	Single Tag	-	<TAGNAME>	-	*1 *2 *6
	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]		
USINT	Single Tag	<TAGNAME>.0- <TAGNAME>.7	<TAGNAME>	L/H	Bit 7 ÷ 2 *1 *2 *5
	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]		
UINT	Single Tag	<TAGNAME>.00- <TAGNAME>.15	<TAGNAME>		*1 *2 *4
	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]		
UDINT	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]		
DATE	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]		

Device		Bit Address	Word Address	32 bit	Remarks
TIME	Single Tag	-	<TAGNAME>	L / H	*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]		
BYTE	Single Tag	<TAGNAME>.0- <TAGNAME>.7	<TAGNAME>		Bit 7 ÷ 2 *1 *2 *5
	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]		
WORD	Single Tag	<TAGNAME>.00- <TAGNAME>.15	<TAGNAME>		*1 *2 *4
	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]		
DWORD	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]		

*1 <TAGNAME>: Tag Name including structure name in case of structure. The maximum number of characters for Tag Name is 255 including delimiters and element number. The maximum number of characters when using D-Script is limited to 54.

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"

You can use alphanumeric characters (uppercase and lowercase) as well as the underscore for tag names. The following naming rules also apply.

- Maximum 40 single-byte characters.
- A number or the underscore cannot be the first character.
- The following character strings cannot be used as the first character.
  LS, USR, SCR, PRT
- You cannot enter two or more underscore characters consecutively.
- You cannot enter underscore as the last character.

*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 The system data area is initially set up with 16 words of items. If you set up less than 16 words of items, after allocating a 16 word or larger array of tags in the system data area, select only the necessary items.

*5 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 an odd array, the upper byte is set to 0.

*6 STRING device is not supported by the simulation function.

NOTE

- A maximum of 65535 Controller Tag Indices can be consumed for each PLC. One index for each Tag or Array of an atomic type.
  When the data type of a Tag is a structure, calculate the number of indices used with the following formula:
  <Number of Controller Tag Indices>= (1 + <Number of Structure Members>) x <Number of Array Elements>
- This driver cannot use 64-bit data types such as LINT, ULINT, and LREAL.
- Set the number of array elements with the Dimension parameter in the Connected Components Workbench. Set array numbers from address 0 ([0..xxx]).

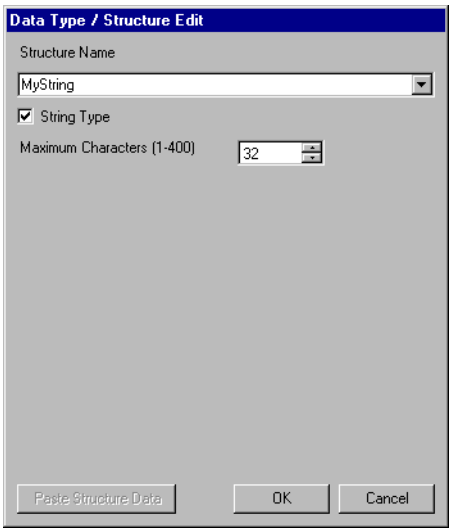
- Custom String Data Type

The Ethernet/IP driver's Custom String Data Type supports text up to 400 characters. (The STRING device supports text up to 82 characters.)

Custom String Data Types defined with text over 400 characters will not be imported into GP-Pro EX. Import results will be recorded in the error log.

- Create Custom String Data Type

To create a Custom String Data Type in GP-Pro EX, select "String Type" in the [Data Type / Structure Edit] dialog box and set the [Maximum Characters].



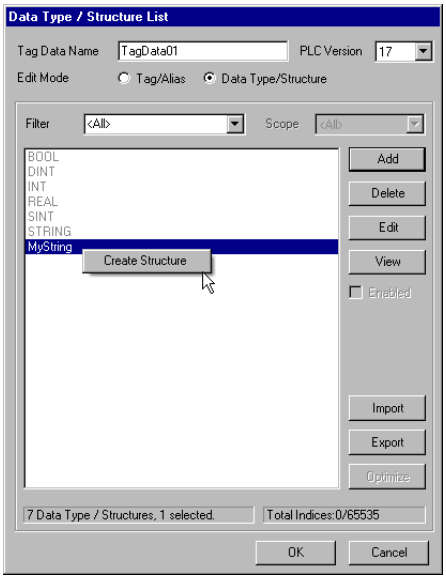
- Create Custom String Structure

When importing a CSV file:

Select [Create Custom String Structure] in the import dialog box.

Using the [Data Type / Structure List] dialog box:

Right-click a Custom String Data Type and click [Create Structure] from the right-click menu.



NOTE

- The name of the created Custom String Structure will be changed to "Custom String Data Type Name_Struct". If a Custom String Data Type with the same name is imported or created, a number will be placed after "_Struct", which will be incremented with every identical name that is imported or created. If the Custom String Data Type Name exceeds 40 characters, it will be changed as follows.
  For Custom String Data Type Name "MyString...abcd" (34 characters):
  •MyString...abc_Struct
  •MyString...ab_Struct1
  •MyString...a_Struct10

- PreDefined Structure Data Types

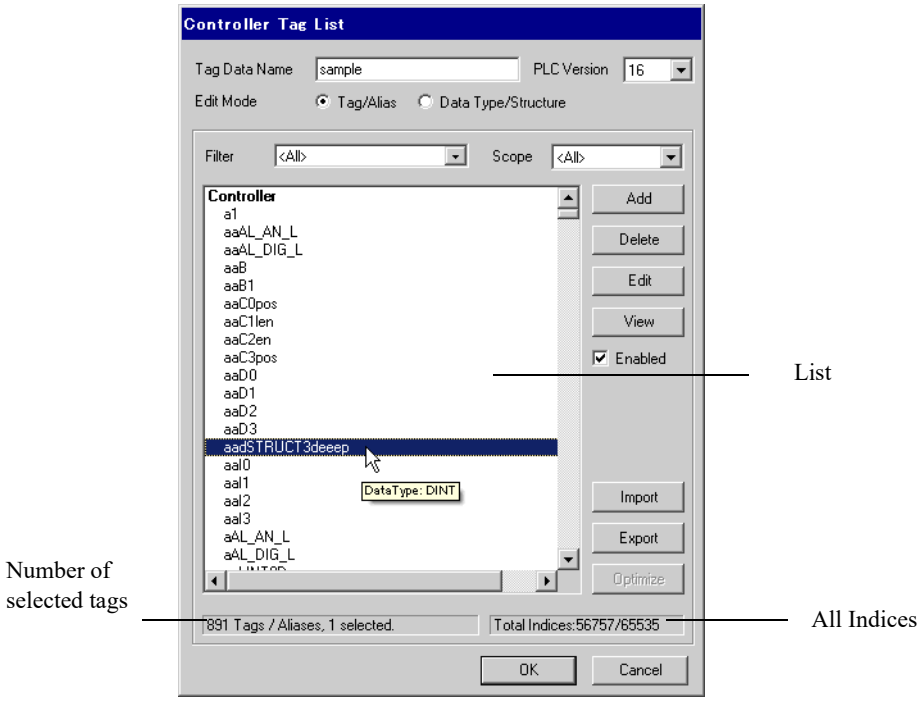
The names of PreDefined Structure data types supported by this driver are as follows.

IRQSTI	IRQHSC	DOYDATA
PLS	AWAAWT	GAIN_PID
AHLI	MODBUSLOCPARA	MODBUSTARPARA
MODBUS2LOCPARA	MODBUS2TARPARA	CIPCONTROLCFG
CIPTARGETCFG	CIPAPPCFG	CIPSYMBOLICCFG
CIPSTATUS	ABLACB	ARDARL
AT_PARAM	AXIS_REF	FB_AXIS_REF
MOTION_DIAG	HSCSTS	HSCAPP
HSCE_CHANNEL	IRQUPM	TOWDATA
MMCATNUM	IRQEII	RTC
MMINFO	SYSINFO	ACLI
SOCKADDR_CFG	SOCK_STATUS	PID_GAINS
FF_LF_CON		

■ Tag Data Dialog Settings

- Controller Tag List

  The controller tag to be used in GP-Pro EX needs to be registered in [Controller Tag List]. The controller Tag List is displayed when "Tag/Alias" is selected in the [Edit Mode] of the tag data dialog.

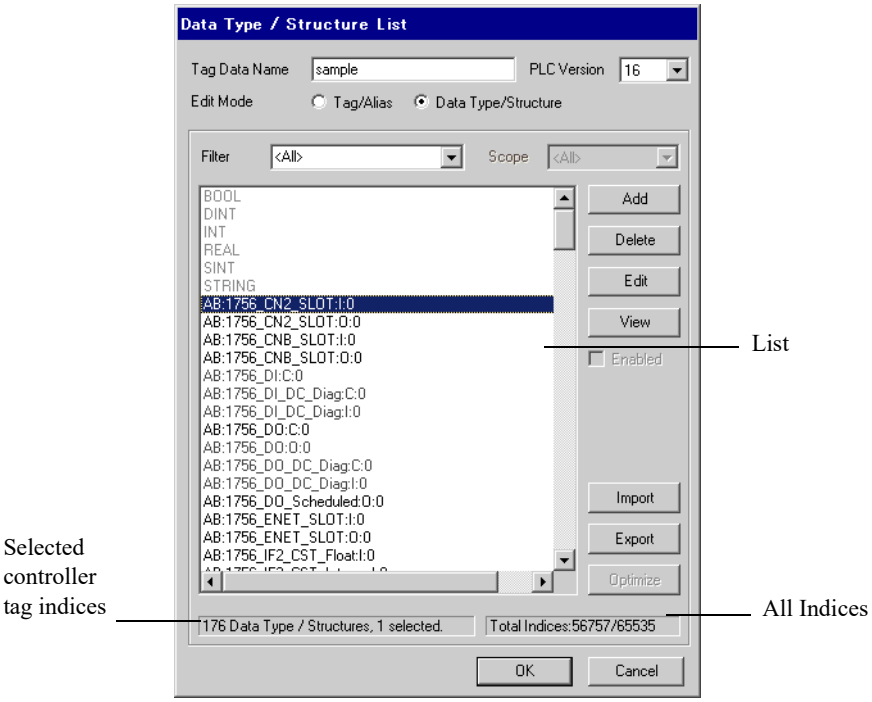


Setup Items	Setup Description
Tag Data Name	Input the Tag Data Block name to save the controller tag and data type/structure information.
Edit Mode	Changes the edit mode to a tag or data type.
Filter	Filters tags displayed in the list using an arbitrary string. To filter by data type, select the data type from the pull down menu. Tags can be filtered by the following conditions from the pull down menu. • All Displays all tags. • Unused Displays tags that are not used in screen settings. • In Use Displays tags used in screen settings. • Disabled Displays tags set to "Disabled" in the list. • Enabled Displays tags set to "Enabled" in the list.
Scope	Filters tags displayed in the list. To filter by scope, select a scope from the pull down menu. • Controller Displays controller scope tags. • RPG Displays program scope tags.
List	Displays controller tags and aliases that are registered in the Tag Data Block. If a cursor is moved over a controller tag, the data type and size are displayed.
Add	Creates a new tag.

Setup Items	Setup Description
Delete	Deletes a selected tag.
Edit	Edits a selected tag.
View	Displays the configuration of the selected tag.
Enabled	Changes a selected tag to enable or disable. Select the check box to enable the tag.
Import	Opens the dialog box to import a CSV file into the current Tag Data Block.
Export	Exports the Tag Data to CSV file. A delimiter can be selected from among a comma, semi-colon, and tab.
Optimize	Disables all unused tags.
The number of selected tags	Displays the total number of controller tags/aliases in the filtered display and the number currently selected.
Total Indices	Displays the total number of controller tag indices registered in the Tag Data Block, and the maximum available (65535).

- Data Type/Structure List

  The data type/structure to be used for the controller tag needs to be registered in [Data Type / Structure List]. Data Type/Structure List is displayed when "Data Type/Structure" is selected in the [Edit Mode] of the tag data dialog.

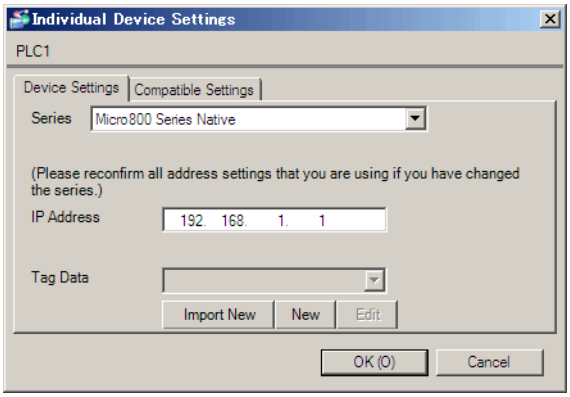


Setup Items	Setup Description
Tag Data Name	Input the Tag Data Block name to save the controller tag and data type/structure information.
Edit Mode	Change the edit mode to a tag or data type.
Filter	Filter tags that are displayed in the list using an arbitrary string. To filter by data type, select the data type from the pull down menu. Tags can be filtered by the following conditions from the pull down menu. • All Displays all tags. • Unused Displays tags that are not used in screen settings. • In Use Displays tags used in screen settings.
List	Data types or structures registered in the tag data block are displayed. Displayed Text Colors mean: Light Gray: Data type/structure that is defined in the system. Cannot be deleted. Dark Gray: Data type/structure in use by other tags or structures. Can be deleted after the tags or structures using it are deleted. Black: Can be deleted.
Add	Creates a new data type or structure.
Delete	Deletes a selected data type or structure.
Edit	Edits a selected data type or structure.
View	Displays the configuration of the selected data type or structure.

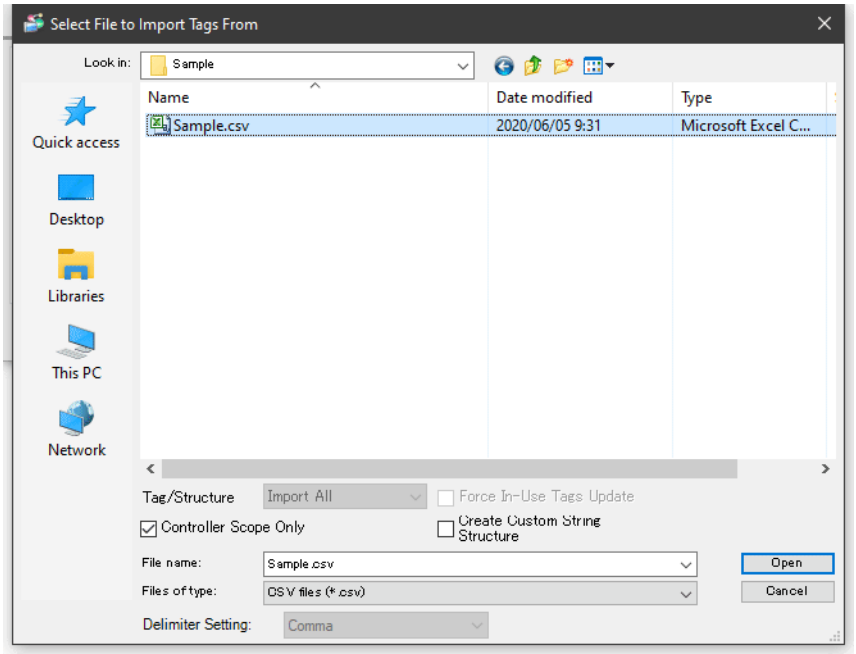
Setup Items	Setup Description
Enabled	Changes a selected data type or structure to enable or disable. Select the check box to enable a data type or structure.
Import	Opens the dialog box to import a CSV file into the current Tag Data Block.
Export	Exports the configuration to CSV file. A delimiter can be selected from among a comma, semicolon, and tab.
Optimize	Disables all unused controller tag indices.
Selected tag controller index	Displays the total number of data type/structures appearing in the filtered display and the number currently selected.
Total Indices	Displays the total number of controller tag indices registered in the Tag Data Block, and the maximum available (65535).

■ Importing Tag Data

1) In the Connected Components Workbench software, create a variable.
2) From the [Device] menu, select [Export]-[Variables], and save as a Comma Separated Values Files (CSV file).
3) Go to the [Individual Device Settings] dialog box using GP-Pro EX and select "Micro800 Series Native" in the [Series] selector.



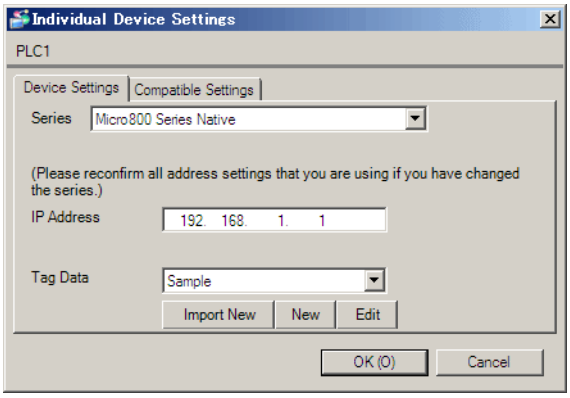
4) Click [Import New]. Select the CSV file to be imported and click [Open].



NOTE

- When importing controller scope tags only, select the [Controller Scope Only] check box beside the [Tag/Structure] list. To import Controller Scope tags and Program Scope tags deselect this box.
- To create a Custom String Structure, select "Create Custom String Structure" under [Tag/Structure].
  ☞"• Custom String Data Type" (page 74)
- To import a CSV file, from [Delimiter Setting] select a CSV file delimiter. CSV files exported from GP-Pro EX are comma delimited.

5) Import is executed and Tag Data Block is generated.

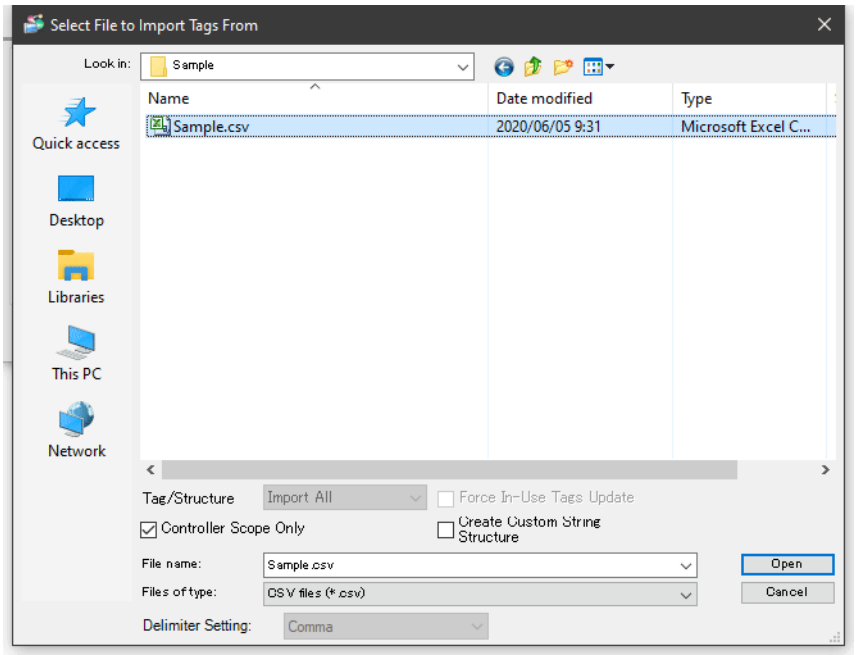


NOTE

- If any unsupported data types or tags are found during import, a log file can be generated. Using the dialog box displayed, set the name and the location of the log file to be saved. Import results can be confirmed in the log file.
- If a CSV file with tags of user defined data types is imported, and the types are not already defined in GP-Pro EX, the tags will not import. Review the log file for the tags not imported.
  ☞" ■ Making a New Data Type" (page 86)
- A tag data block can be assigned to multiple external devices. Once a tag data block is created it can be selected in the [Individual Device Settings] dialog box for setting up a new External Device. If a tag data block assigned to multiple external devices is edited, the changes will affect all External Devices to which it is assigned.
  Multiple tag data blocks can be set up in a project as required (Max. 18).
- Clicking on the [Import New] button will cause the newly imported Tag Data Block to be assigned to the External Device in place of the current Tag Data Block.
- On closing the [Individual Device Settings] dialog box, any unassigned Tag Data Blocks can be deleted.

◆ Import into Existing Tag Data Block

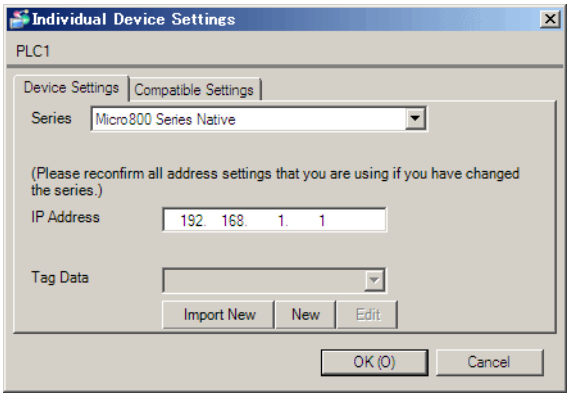
When importing using the Import Button in the Controller Tag List Dialog, the Tag / Structure selector will be enabled and can be used to narrow the information to import.



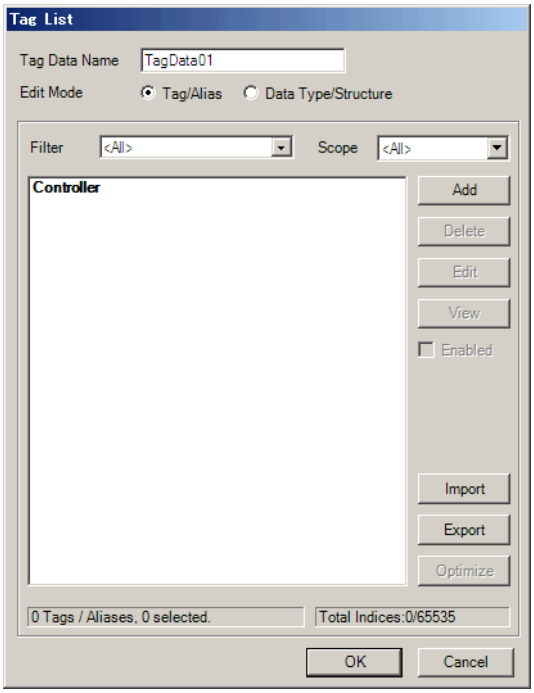
Setup Items	Setup Description
Tag/Structure	Select tag data to be imported. • Import All: Imports all tag data into the current Tag Data Block. Tags and Data Types existing in the current Tag Data Block will be overwritten. • Import New Only: Imports only the Tag Data which does not already exist in the current Tag Data Block. • Import Matching Only: Imports only the Tag Data which already exists in the current Tag Data Block. Tags and Data Types will be overwritten.
Force In-Use Tags Update	Select this check box to update tag data in use.
Controller Scope Only	Select this check box only when importing controller scope tags. Remove the check mark when importing controller tags and program scope tags.
Create Custom String Structure	To create a Custom String Structure, select "Create Custom String Structure". ☞"• Custom String Data Type" (page 74)
Delimiter Setting	When importing a CSV file, select [Comma], [Semicolon], or [Tab] for the CSV file delimiter. CSV files exported from GP-Pro EX are comma delimited.

■ Making a New Tag

1) Go to the [Individual Device Settings] dialog box using GP-Pro EX, select "Micro800 Series Native" from [Series].

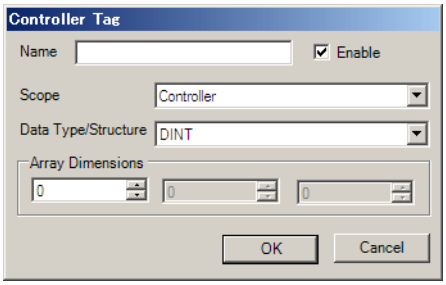


2) Click [New]. Input the tag data name to be made in [Tag Data Name].

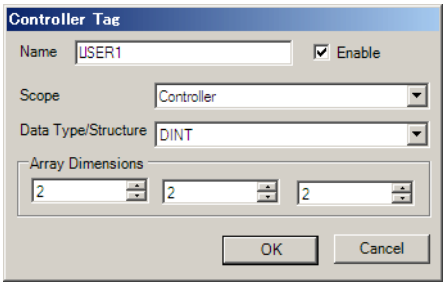


3) Select [Tag/Alias] from [Edit Mode].

4) Click [Add] to display the [Controller Tag] dialog box.



5) Input the Controller Tag Name, Scope, Data Type/Structure, and Array Dimensions. To use a created tag, select [Enable] and then click [OK].

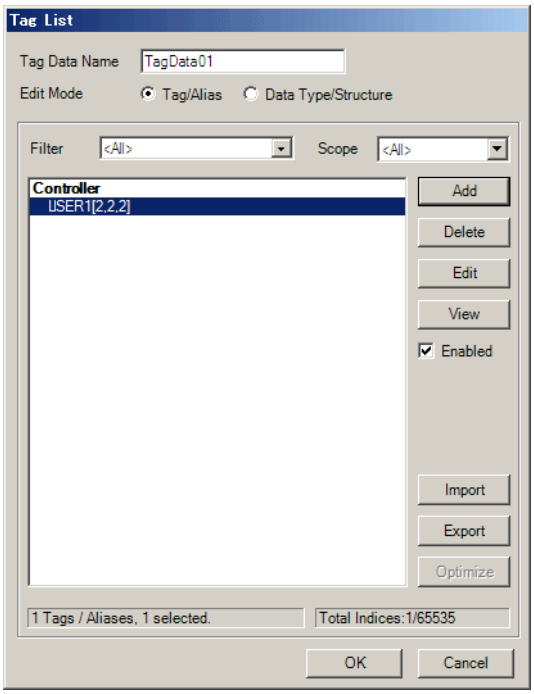


NOTE

- Only registered data types can be selected at [Data Type/Structure]. Register data types as necessary.

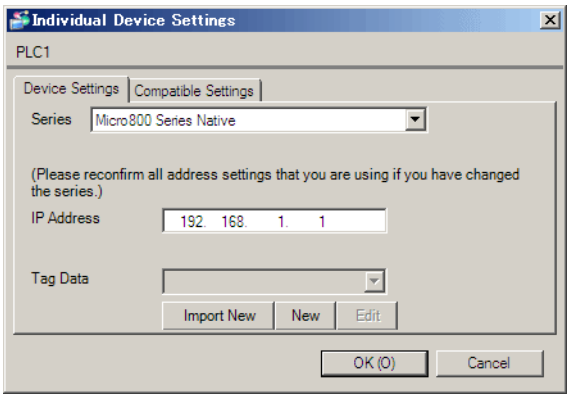
☞" ■ Making a New Data Type" (page 86)

The newly created controller tag is displayed in the list.

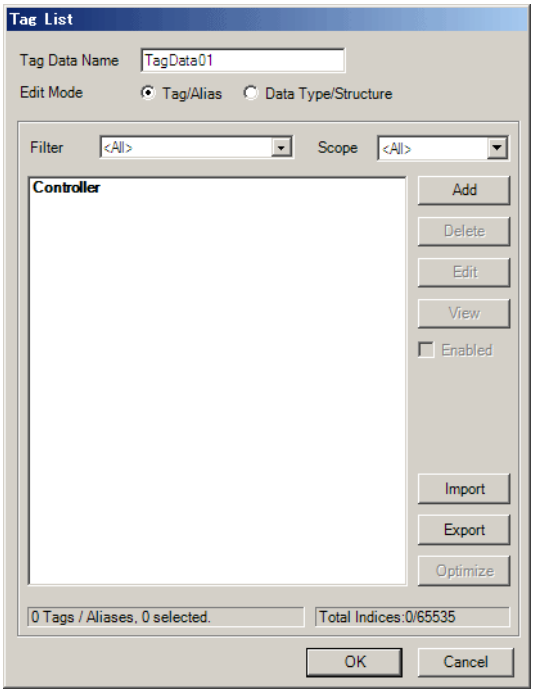


■ Making a New Data Type

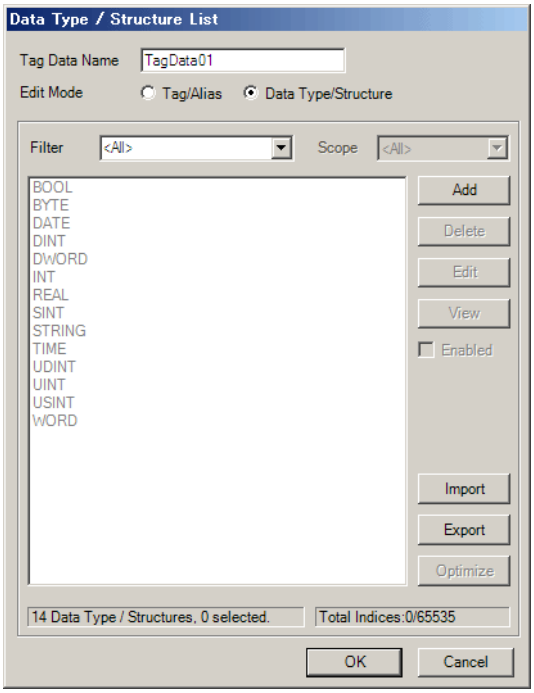
1) Go to the [Individual Device Settings] using GP-Pro EX, and select "Micro800 Series Native" from [Series].



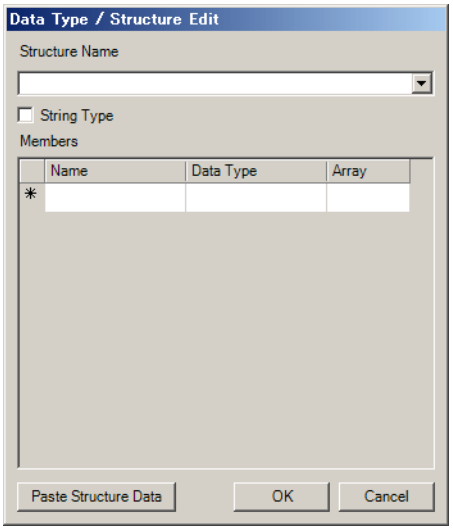
2) Click [New]. Input the name of the tag data block to be made in [Tag Data Name].



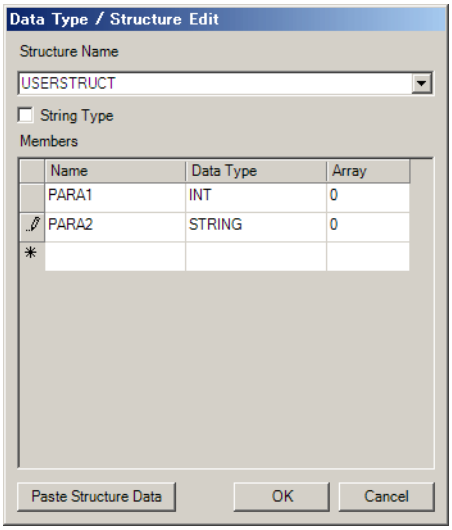
3) Select [Data Type/Structure] for the [Edit Mode].



4) Click [Add] to display [Data Type/Structure Edit] dialog box.



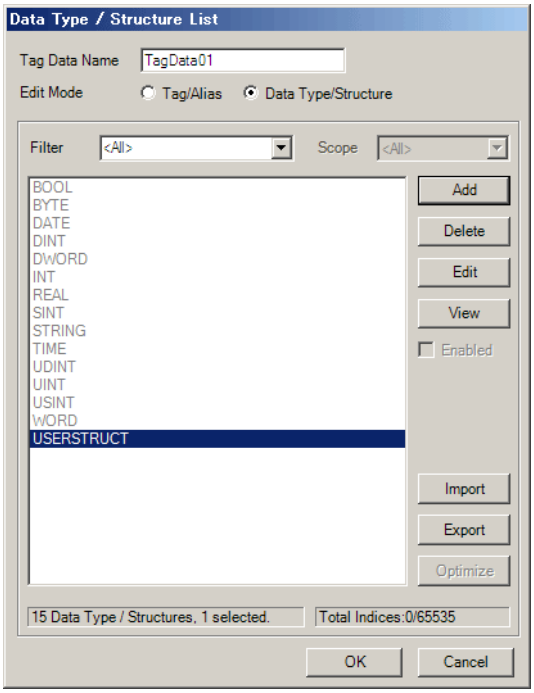
5) Input the name of Data Type/Structure and members desired, then click [OK].



NOTE

- For using Predefined structures, select the structure to be used from the [Structure Name] drop-down list, and click [OK].
  Note that if the data type for the member of the Predefined structure is not defined in GP-Pro EX, the member [Data Type] will be blank. Just click [OK] to automatically create the required data type.
- Only one-dimensional arrays can be used as structure members.

The newly created data type/structure is displayed in the list. Registered data type/structures can be used for importing, adding and editing controller tags.



NOTE

- A warning message " Display Unit Illegal address. Define a correct address." may appear during Error Check if no non-BOOL tags exist in the Tag Data Block. This indicates that the default value assignment for one or more system settings were not made since there were no suitable tags available. This is not related to screen settings and system settings made by the user.
- When you use [Copy from Another Project] ([Project] menu in GP-Pro EX - [Utility] - [Copy from Another Project]) with Micro800 Series Native, the address settings specified for the copied screen may be changed to "Undefined". Check the address settings after copying a screen.
  When [Copy from Another Project] is used in GP-Pro EX V2.60 or later, the project where Rockwell Automation, Inc. EtherNet/IP driver is specified can be copied normally. (When the version of the ladder software used in the copy source project is higher than the one in the copy destination, the PreDefined Structure settings in the copy destination may be "Undefined".)
- When the String device is specified in Text Display of Data Display, the last address is displayed as "-".
- The first 1 word of each String is displayed in the String device map display of the External Device address.
- The String device does not support the Duplicate function.
- The String device does not support the Simulation function.
- Please refer to the GP-Pro EX Reference Manual for system data area.

  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- 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.

NOTE

- When the [Control/Compact/Flex Logix Series Native] or [Micro800 Series Native] are selected for the External Device Series, the device code and address code must not 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 Location)". 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.
Error Message	Displays messages related to the error which occurs.
Error Location	Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device. **NOTE** • 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 (Encapsulation Error Code:[00000002H])"

NOTE

- Refer to your External Device manual for details on received error codes.
- Refer to "Display-related errors" in "Maintenance/Troubleshooting Guide" for details on the error messages common to the driver.

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 (Encapsulation Error 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 (STS Response: [(Hex)]), EXT Response: [(Hex)])	Displayed when error occurs by device read command.
RHxx134	(External Device Name): Error has been responded for device write command (STS Response: [(Hex)], EXT Response: [(Hex)])	Displayed when error occurs by device write command.

Code (HEX)	Error Message	Description
RHxx135	(External Device Name): Internal Error [%XH, %XH, %u]	Displayed when error occurs by device internal error.
RHxx136	(External Device Name): Initial communication failed (CIP Error Code: [%02XH, %XH, %u])	Displayed when error occurs by device initial command. %u is an internal error code.
RHxx137	(External Device Name): Device read failed (CIP Error Code: [%02XH, %XH, %u])	Displayed when error occurs by device read command. %u is an internal error code.
RHxx144	(External Device Name): Device write failed (CIP Error Code: [%02XH, %XH, %u])	Displayed when error occurs by device write command. %u is an internal error code.
RHxx145	(External Device Name): Initial communication failed (Error Code: [%XH, %u])	Displayed when error occurs by device initial command. %u is an internal error code.
RHxx146	(External Device Name): Device read failed (Error Code: [%XH, %u])	Displayed when error occurs by device read command. %u is an internal error code.
RHxx147	(External Device Name): Device write failed (Error Code: [%XH, %u])	Displayed when error occurs by device write command. %u is an internal error code.
RHxx148	(External Device Name): Out of range value in write request (Address: %s)	User tried to write an invalid date/time value into a LINT_TC member.
RHxx149	Incompatible project file. Please confirm the editor and driver's version.	The version of the EXT file is lower than the current version the runtime supports.
RHxx150	Incompatible project file. Please upgrade the EtherNet/IP driver and transfer again.	The version of the EXT file is higher than the current version the runtime supports.