



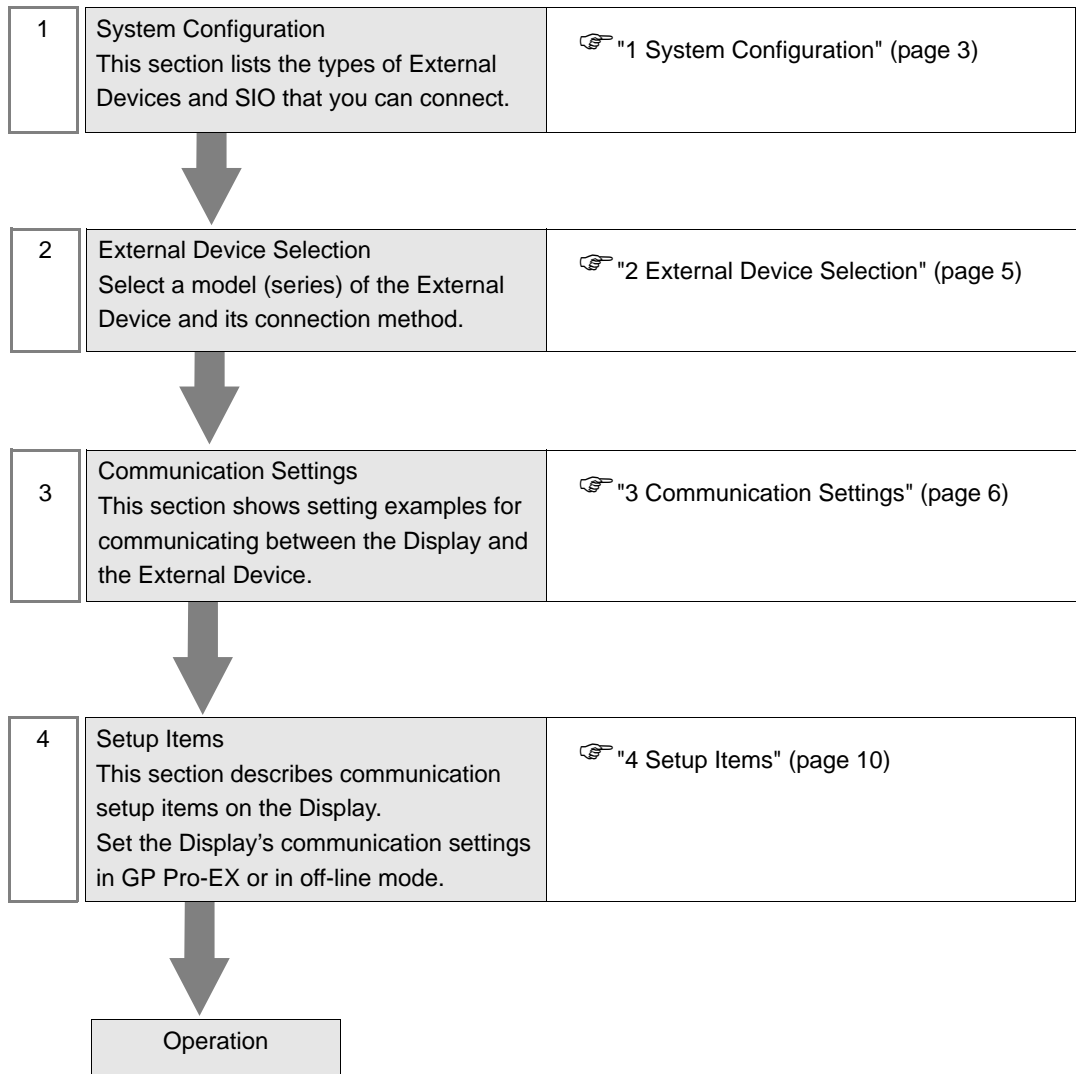
CS/CJ Series EtherNet/IP Driver

1	System Configuration.....	3
2	External Device Selection	5
3	Communication Settings	6
4	Setup Items	10
5	Supported Device Addresses.....	14
6	Device Code and Address Code	27
7	Error Messages.....	29

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:



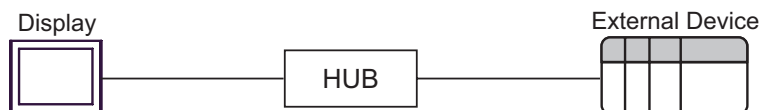
1 System Configuration

The following section shows system configurations for connecting Omron Corporation External Devices and the Display.

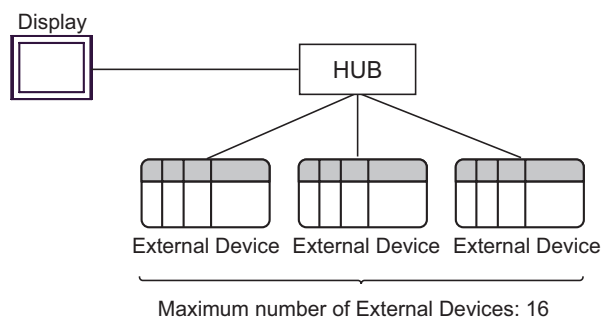
Series	CPU	Link I/F	SIO Type	Setting Example
CS1 Series	CS1H-CPU67H CS1H-CPU66H CS1H-CPU65H CS1H-CPU64H CS1H-CPU63H CS1H-CPU67 CS1H-CPU66 CS1H-CPU65 CS1H-CPU64 CS1H-CPU63 CS1H-CPU67-V1 CS1H-CPU66-V1 CS1H-CPU65-V1 CS1H-CPU64-V1 CS1H-CPU63-V1 CS1G-CPU45H CS1G-CPU44H CS1G-CPU43H CS1G-CPU42H CS1G-CPU45 CS1G-CPU44 CS1G-CPU43 CS1G-CPU42 CS1G-CPU45-V1 CS1G-CPU44-V1 CS1G-CPU43-V1 CS1G-CPU42-V1	CS1W-EIP21	Ethernet (TCP)	Setting Example 1 (page 6)
CJ2 Series	CJ2H-CPU68-EIP CJ2H-CPU67-EIP CJ2H-CPU66-EIP CJ2H-CPU65-EIP CJ2H-CPU64-EIP	EtherNet/IP Port on CPU Unit	Ethernet (TCP)	Setting Example 2 (page 8)

Connection Configuration

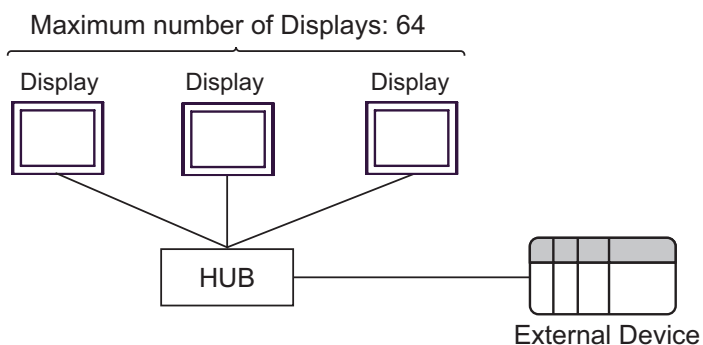
- 1:1 Connection



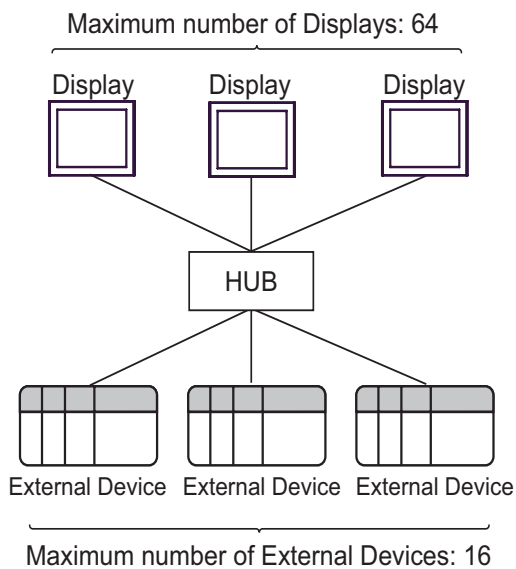
- 1:n Connection



- n:1 Connection

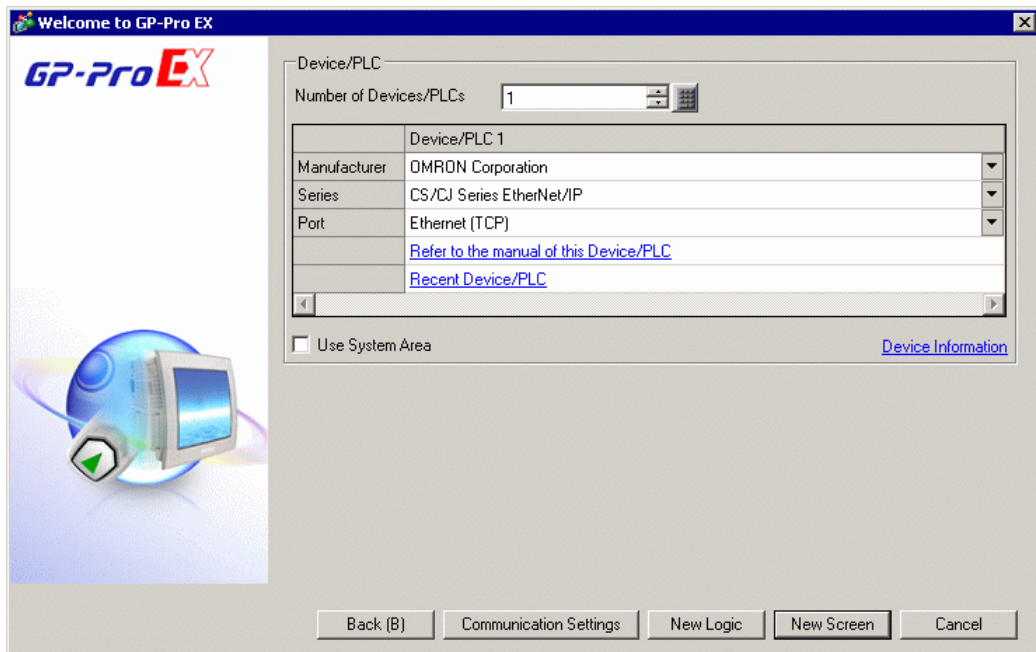


- n:m Connection



2 External Device Selection

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Number of Devices/PLCs	Use an integer from 1 to 4 to enter the number of Devices/PLCs to connect to the Display.
Manufacturer	Select the manufacturer of the External Device to be connected. Select "OMRON Corporation".
Series	Select a model (series) of the External Device and its connection method. Select "CS/CJ Series EtherNet/IP". In System configuration, check to make sure the External Device to which you are connecting is supported in "CS/CJ Series EtherNet/IP". ☞ "1 System Configuration" (page 3)
Port	Select the Display port to be connected 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 ladder program of the External Device to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)" This can be also set with GP-Pro EX or in the Display's off-line mode. Cf. GP-Pro EX Reference Manual "5.17.6 [System Settings] Setting Guide, [Display Unit] Setting Guide, System Area Settings" Cf. Maintenance/Troubleshooting Manual "2.15.1 Settings common to all Display models, [Main Unit Settings] Settings Guide, System Area Settings"

3 Communication Settings

This section provides examples of communication settings recommended by Pro-face for the Display and the External Device.

3.1 Setting Example 1

■ GP-Pro EX Settings

◆ Communication Settings

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

Device/PLC 1

Summary

Manufacturer: OMRON Corporation Series: CS/CJ Series EtherNet/IP Port: Ethernet (TCP) [Change Device/PLC](#)

Text Data Mode: 1 [Change](#)

Communication Settings

Port No.: 1024 ☒ Auto

Timeout: 3 (sec)

Retry: 0

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

Device-Specific Settings

Allowable Number of Devices/PLCs: 16

Number	Device Name	Settings
1	PLC1	Series=CS1 Series,IP Address=192.168.0.001,EIP Unit Version=2.0

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the External Device and click [Settings](#).

Individual Device Settings

PLC1

Series: CS1 Series

If you change the series, please reconfirm all address settings.

IP Address: 192.168.0.1

EIP Unit Version: 2.0

Tag Data: Unused Tag Data

[Import New](#) [New](#) [Edit](#)

[Default](#)

[OK \(O\)](#) [Cancel](#)

◆ Notes

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

■ External Device Settings

Use the ladder software (CX-Programmer) to configure communication settings for the External Device.
Refer to your External Device manual for details.

- 1 Start up the ladder software.
- 2 From [PLC] menu, select [Edit] - [I/O Table and Unit Setup] to display [PLC I/O Table] dialog box.
- 3 Right-click the Ethernet/IP port to be used.
- 4 Select [Unit Setup] and display the [Edit Parameters] dialog box.
- 5 Configure setup items in the [TCP/IP] tab as follows.

Setup Items	Setting Value
IP address	192.168.0.1
Subnet mask	255.255.255.0

- 6 Click [To PLC] and transfer the communication settings to the External Device.

◆ Notes

- Check with a network administrator about IP address and subnet mask you want to use. Do not set the duplicate IP address.
- Make sure to use the same port number with Display and the External Device.

3.2 Setting Example 2

■ GP-Pro EX Settings

◆ Communication Settings

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

The screenshot shows the 'Device/PLC 1' configuration window. It has three main sections:

- Summary:** Includes fields for Manufacturer (OMRON Corporation), Series (CS/CJ Series EtherNet/IP), Port (Ethernet (TCP)), and Text Data Mode (1). A 'Change Device/PLC' link is in the top right.
- Communication Settings:** Includes Port No. (1024), Timeout (3 sec), Retry (0), and Wait To Send (0 ms). There is an 'Auto' checkbox and a 'Default' button.
- Device-Specific Settings:** Includes 'Allowable Number of Devices/PLCs' (16) and a table for device settings.

Number	Device Name	Settings
1	PLC1	Series=CJ2 Series, IP Address=192.168.0.001, EIP Unit Version=2.0, Tag Data=

◆ Device Settings

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

The 'Individual Device Settings' dialog box for 'PLC1' contains the following fields and buttons:

- Series:** A dropdown menu showing 'CJ2 Series'.
- Warning:** A message stating 'If you change the series, please reconfirm all address settings.'
- IP Address:** A text field with the value '192.168.0.1'.
- EIP Unit Version:** A dropdown menu showing '2.0'.
- Tag Data:** A dropdown menu showing 'Unused Tag Data'.
- Buttons:** 'Import New', 'New', 'Edit', 'Default', 'OK (0)', and 'Cancel'.

◆ Notes

- Check with a network administrator about IP address. Do not duplicate the IP address on the same network.
- Set IP address on the External Device for IP address in Individual Device Settings.
- You need to set IP address on the Display in the off-line mode of the Display.
- Refer to the following when using tag data.

☞ "5.3 CJ2 Series (Tag Specification)" (page 17)

■ External Device Settings

Use the ladder software (CX-Programmer) to configure communication settings for the External Device.
Refer to your External Device manual for details.

- 1 Start up the ladder software.
- 2 From [PLC] menu, select [Edit] - [I/O Table and Unit Setup] to display [PLC I/O Table] dialog box.
- 3 Right-click the Ethernet/IP port to be used.
- 4 Select [Unit Setup] and display the [Edit Parameters] dialog box.
- 5 Configure setup items in the [TCP/IP] tab as follow.

Setup Items	Setting Value
IP address	192.168.0.1
Subnet mask	255.255.255.0

- 6 Click [To PLC] and transfer the communication settings to the External Device.

◆ Notes

- Check with a network administrator about IP address and subnet mask you want to use. Do not set the duplicate IP address.
- Make sure to use the same port number with Display and the External Device.

4 Setup Items

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

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

☞ "3 Communication Settings" (page 6)

NOTE

- You need to set IP address on the Display in the off-line mode of the Display.
Cf. Maintenance/Troubleshooting Manual "2.5 Ethernet Settings"

4.1 Setup Items in GP Pro-EX

■ Communication Settings


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


The screenshot shows the 'Device/PLC 1' setup window. It has a 'Summary' section with fields for Manufacturer (OMRON Corporation), Series (CS/CJ Series EtherNet/IP), Port (Ethernet (TCP)), and Text Data Mode (1). There is a 'Change Device/PLC' link. Below is the 'Communication Settings' section with fields for Port No. (1024), Timeout (3 sec), Retry (0), and Wait To Send (0 ms), along with an 'Auto' checkbox and a 'Default' button. The 'Device-Specific Settings' section shows 'Allowable Number of Devices/PLCs' as 16. A table lists the device settings:

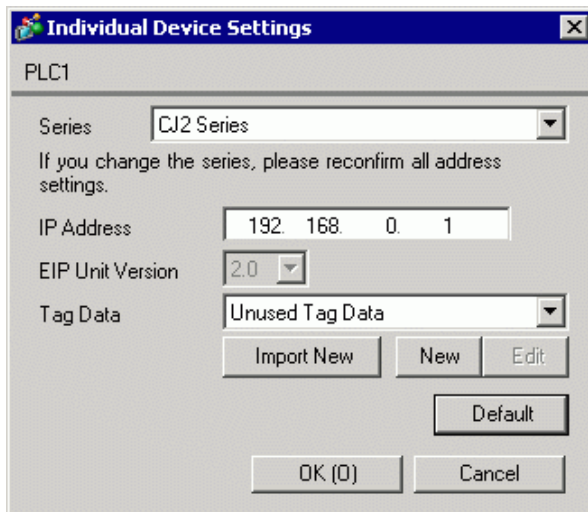
Number	Device Name	Settings
1	PLC1	Series=CJ2 Series, IP Address=192.168.000.001, EIP Unit Version=2.0, Tag Data=


Setup Items	Setup Description
Port No.	Use an integer from "1024 to 65535" to enter the port number of the Display. If you check [Auto], the port number will be automatically set.
Timeout	Enter the time (seconds) for which the Display waits for the response from the External Device, from "1 to 127".
Retry	In case of no response from the External Device, enter how many times the Display retransmits the command, from "0 to 255".
Wait To Send	Enter the standby time (milliseconds) from when the Display receives packets until it transmits the next command, from "0 to 255".

■ Device Settings

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

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



Setup Items	Setup Description
Series	Select the model of the External Device.
IP address	Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block;">NOTE</div> <ul style="list-style-type: none"> Check with a network administrator about IP address. Do not set the duplicate IP address.
EIP Unit Version	Display supported EIP unit versions.
Tag Data	When "CJ2 Series" is selected in [Series], select the tag data to define tags to the External Device. Select "Unused Tag Data" if you do not use tag data. Click [New] to create new tag data. When "CS1 Series" is selected, "Unused Tag Data" is set.  " ■ Tag List Dialog Settings" (page 18)

4.2 Off-Line Mode Settings

NOTE • Refer to the Maintenance/Troubleshooting manual for information on how to enter off-line mode or about the operation.

Cf. Maintenance/Troubleshooting Manual "2.2 Off-line Mode"

■ Communication Settings

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

Comm.	Device			
CS/CJ Series EtherNet/IP		[TCP]		Page 1/1
<div> <div>Port No.</div> <div> <input type="radio"/> Fixed <input checked="" type="radio"/> Auto <div>1024 ▼ ▲</div> </div> </div> <div> <div>Timeout(s)</div> <div>3 ▼ ▲</div> </div> <div> <div>Retry</div> <div>0 ▼ ▲</div> </div> <div> <div>Wait To Send(ms)</div> <div>0 ▼ ▲</div> </div>				
Exit		Back		2009/04/16 16:37:53

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

■ Device Settings

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

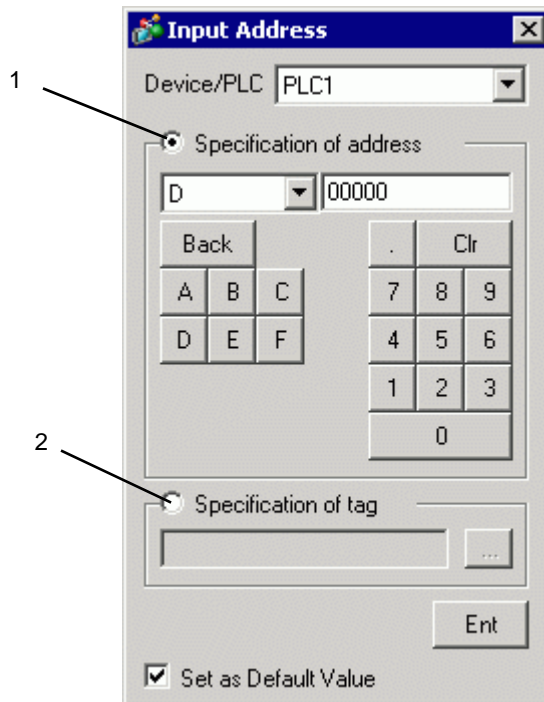
Comm.	Device			
CS/CJ Series EtherNet/IP [TCP] Page 1/1				
Device/PLC Name		PLC1 ▼		
Series	CJ2 Series			
IP Address	192 168 0 1			
EIP Unit Version	2.0			
Exit		Back		2009/04/16 16:37:58

Setup Items	Setup Description
Device/PLC Name	Select the External Device to set as a device. Device/PLC name is the title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Series	Displays the series of the External Device.
IP address	Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block;">NOTE</div> Check with a network administrator about IP address. Do not set the duplicate IP address.
EIP Unit Version	Displays supported EIP unit versions.

5 Supported Device Addresses

The following table shows the range of supported device addresses. Please note that the actual supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

Enter the External Device address in the dialog box below.




Select either [Specification of address] or [Specification of tag] to set addresses.






- | | |
|-----------------------------|---|
| 1. Specification of address | Enabled when the series of External Device is set to "CS1 Series" or "CJ2 Series". Enter addresses. |
| 2. Specification of tag | Enabled when the series of External Device is set to "CJ2 Series". Enter a tag name in the input tag control. |

NOTE

- When [Set as Default Value] is selected, the value displays as the default when entering a new address.

5.1 CS1 Series

 This address can be specified as system data area.

Device	Bit Address	Word Address	32 bit	Remarks
Channel IO Area	0000.00-6143.15	0000-6143		*1
Internal Auxiliary Relay	W000.00-W511.15	W000-W511		
Special Auxiliary Relay	A00000.00-A00959.15	A00000-A00959		*2
Hold Relay	H0000.00-H0511.15	H0000-H0511		
Timer (Completion Flag)	T0000-T4095	-		*3
Counter (Completion Flag)	C0000-C4095	-		*3
Timer (Preset Value)	-	T0000-T4095		
Counter (Preset Value)	-	C0000-C4095		
Data Memory	D00000.00-D32767.15	 D00000-D32767		*1
EM Area (E0-EC)	E000000.00-EC32767.15	E000000-EC32767		*4
EM Area (Current bank)	EM00000.00-EM32767.15	EM00000-EM32767		
Task Flag Area (Bit)	TKB000-TKB031	-		*3
Task Flag Area (Status)	TK000.00-TK031.07	TK000-TK030		 2 ^{*3}
Index Registers	-	IR00-IR15		 31 ^{*5}
Data Registers	-	DR00-DR15		 15 ^{*5}

*1 Data memory addresses D30000-D31599 and Channel IO Area addresses 1500-1899 are used as the area for system settings on the External Device side; do not write data from the Display. Refer to your External Device manual for details.

*2 Cannot write to A000-A447.

*3 Write disabled

*4 Up to 13 banks (E0-EC) can be used. One bank is 32768 words. The number of banks differs depending on the CPU unit.

*5 Cannot write while in RUN mode.


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






Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"

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

 "Manual Symbols and Terminology"

5.2 CJ2 Series (Device Address Specification)

 This address can be specified as system data area.

Device	Bit Address	Word Address	32 bit	Remarks
Channel IO AreaO	0000.00-6143.15	0000-6143		*1
Internal Auxiliary Relay	W000.00-W511.15	W000-W511		
Special Auxiliary Relay	A00000.00-A01471.15 A10000.00-A11535.15	A00000-A01471 A10000-A11535		*2
Hold Relay	H0000.00-H0511.15	H0000-H0511		
Timer (Completion Flag)	T0000-T4095	-		*3
Counter (Completion Flag)	C0000-C4095	-		*3
Timer (Preset Value)	-	T0000-T4095		
Counter (Preset Value)	-	C0000-C4095		
Data Memory	D00000.00-D32767.15	 D00000-D32767		*1
EM Area (E0-E18)	E000000.00-E1832767.15	E000000-E1832767		*4
EM Area (Current bank)	EM00000.00-EM32767.15	EM00000-EM32767		
Task Flag Area (Bit)	TKB000-TKB127	-		*3
Task Flag Area (Status)	TK000.00-TK127.07	TK000-TK126		 2 *3
Index Registers	-	IR00-IR15		 31 *5
Data Registers	-	DR00-DR15		 15 *5

*1 Data memory addresses D30000-D31599 and Channel IO Area addresses 1500-1899 are used as the area for system settings in the External Device side, do not write data from the Display. Refer to your External Device manual for details.

*2 Cannot write to A000-A447 and A960-A11535.

*3 Write disabled

*4 Up to 25 banks (E0-E18) can be used. One bank is 32768 words. The number of banks differs depending on the CPU unit.

*5 Cannot write while in RUN mode.

NOTE

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

Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"

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

 "Manual Symbols and Terminology"

5.3 CJ2 Series (Tag Specification)

Data Type		Bit Address	Word Address	32 bit	Remarks
BOOL	Single Tag	<TAGNAME>	-	-	*1 *2
	Array	<TAGNAME>[0]- <TAGNAME>[x-1]			
UINT UINT BCD INT CHANNEL WORD	Single Tag	<TAGNAME>.00- <TAGNAME>.15	<TAGNAME>	[L / H]	*1 *2
	Array	<TAGNAME>[0].00- <TAGNAME>[x-1].15	<TAGNAME>[0]- <TAGNAME>[x-1]		
UDINT DINT UDINT BCD REAL DWORD	Single Tag	<TAGNAME>.00- <TAGNAME>.31	<TAGNAME>		*1 *2
	Array	<TAGNAME>[0].00- <TAGNAME>[x-1].31	<TAGNAME>[0]- <TAGNAME>[x-1]		
STRING	Single Tag	-	<TAGNAME>	[L / H]	*1
ULINT LINT ULINT BCD LWORD LREAL NUMBER	Single Tag Array	-	-	-	Tag specification disabled *3

*1 <TAGNAME>: The Tag Name includes the structure name if structure is required. The maximum number of characters for a 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[5]"
 INT type single tag: "INTTAG"
 WORD type bit address: "WORDTAG.15"
 DINT type bit address: "DINTTAG.31"
 STRING type word address "STRINGTAG"

*2 The notation of array size is indicated as follows.

When the array size is represented as [x], the notational range is <TAGNAME>[0]-<TAGNAME>[x-1].

*3 ULINT, LINT, ULINT BCD, LWORD, and LREAL are 4 word data types, so that tags cannot be set up at address input. To display the device allocated to the 4 word data type tag, first register two tags of 2 word data type and divide the address mapped to the 4 word data type tag to map to them.
 NUMBER is a data type to indicate constant so that tags cannot be set at address input.

NOTE

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

Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"

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

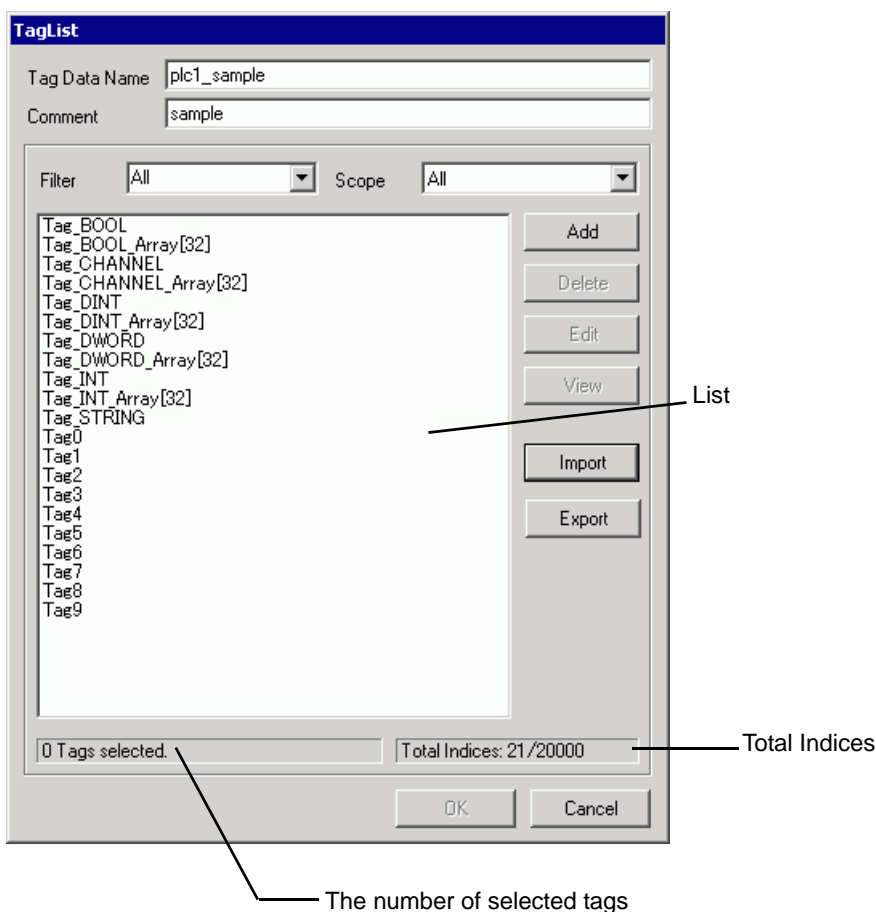


"Manual Symbols and Terminology"

■ Tag List Dialog Settings

- Tag list

To display the tag list, from GP-Pro EX go to [Individual Device Settings] and click [New] or [Edit].



Setup Items	Setup Description
Tag Data Name	Enter the Tag Data name.
Comment	Enter comments.
Filter	Filters tags displayed in the list. Filters tags 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. <ul style="list-style-type: none"> • All Displays all tags.
Scope	Filters tags displayed in the list. To filter by scope, select a scope from the pull down menu. <ul style="list-style-type: none"> • All Displays all filtered tags. <ul style="list-style-type: none"> • Network Variable Displays tags specified as Network Variables.
List	Displays tags registered in the Tag Data. Displays a data type and comment when a cursor is moved over a tag.

Continued on next page

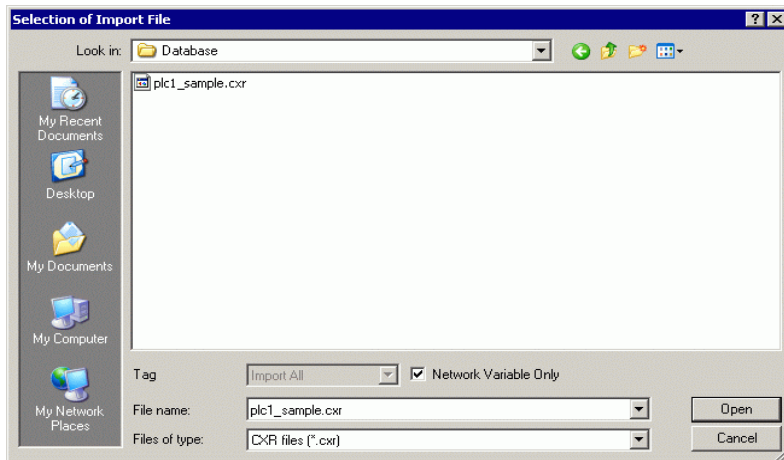
Setup Items	Setup Description
Add	Create a new tag. ☞ " ■ Creating a new tag" (page 23)
Delete	Deletes a selected tag.
Edit	Edits a selected tag.
View	Displays the configuration of the selected tag.
Import	Imports (add) tags from a CXR file. ☞ " ◆ Importing from the Tag List dialog box" (page 22)
Export	Exports registered tags to a CXR file. ☞ " ◆ Exporting from the Tag List box" (page 23)
The number of selected tags	Displays the number of selected tags.
Total Indices	Displays the total number of tag indices registered in the Tag Data. (Maximum 65279)

■ Importing Tag Data

- 1 Set a tag name and data type using CX-Programmer.
- 2 Save the configurations in the CXR file.
- 3 From GP-Pro EX, go to the [Individual Device Settings] dialog box and from [Series], select [CJ2 Series].



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



NOTE

- When the [Network Variable Only] check box is selected, only Network Variable tags saved in the CXR file are imported.

5 Import is executed and Tag Data is generated.



NOTE

- If tags which cannot be imported are stored in the CXR file, the tag data import dialog box to prompt the log output will be displayed.
 ☞ "◆ Log File Format" (page 21)
- For the tag information imported from the CXR file, the total number of tags must stay within 65279 (maximum).
- If the comments in the tag data stored in the CXR file have more than 32 characters, any character after the 32nd will be deleted when the data is saved.

◆ Log File Format

If tags which cannot be imported are stored in the CXR file, the log file of the following format can be output.

```

Source File Name:
    [CXR file full path]

Storage Information:
    Size: [CXR file size] Bytes
    Last Update Date: [Last update date]
    Comment: [Comment]
    PLC Type: [PLC type name]
    Tag Count: [The number of registered tags in the CXR file]

Tags imported:
    [The number of imported tags]Tags

Tags changed:
    [The number of changed tags]Tags

Tags not imported:
    [The number of tags failed to import]Tags

Tags changed:
    [Names of changed tags]
    :
    :

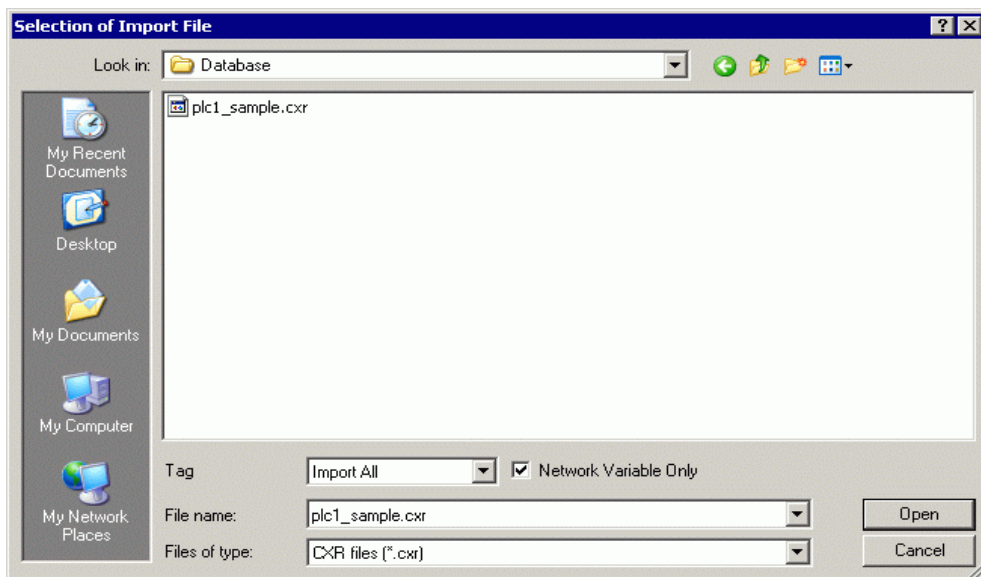
Tags not imported:
    [Names of tags failed to be imported]
    :
  
```

Order	Item	Description
1	Source File Name	Stores CXR file's full path.
2	Size	CXR file size (Byte)
3	Last Update Date	The most recent update data of the CXR file YYYY-MM-DD◆HH:MM(◆ represents a space character)
4	Comment	Comments registered in the CXR file (output 32 characters maximum)
5	PLC Type	Type the name of the External Device registered in the CXR file.
6	Tag Count	The number of tags registered in the CXR file.
7	Tags imported	The number of tags imported from the CXR file.
8	Tags changed ^{*1}	Registered tags changed to the CXR file information
9	Tags not imported	The number of tags which failed to import from the CXR file.
10	Tag names changed ^{*1}	The list of registered tags that are changed to the CXR file information
11	Tags not imported	The list of tags which failed to import from the CXR file.

^{*1} Only outputs when import (add) is selected in the tag list dialog box.


◆ Importing from the Tag List dialog box

When importing tags using the Import Button in the Tag List dialog box, the [Tag] pull down menu of the displayed dialog box can be used to narrow the tag data to import.



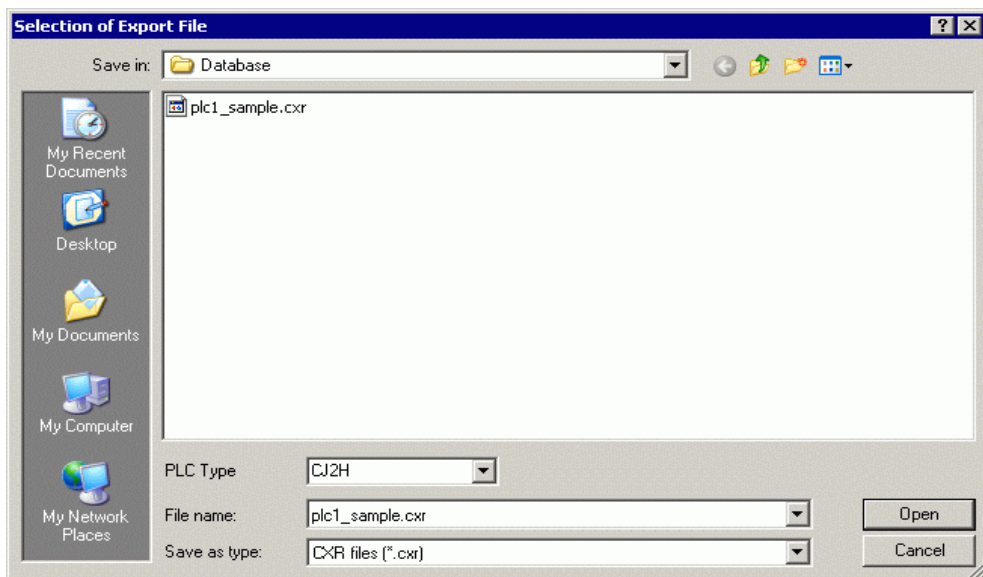
Setup Items	Setup Description
Tag	<p>Select the tag data to import.</p> <ul style="list-style-type: none"> • Import All Imports all tags stored in the CXR file. Existing tags will be overwritten. New tags will be added. • Import New Only Only new tags stored in the CXR file will be added. • Import Matching Only Changes only the tag data stored in the CXR file which already exists in the current tags.
Network Variable Only	<p>Select this check box only when importing tags specified as Network Variables. Clear the check box when importing tags specified as Global Variables.</p>

NOTE

- If tags which cannot be imported are stored in the CXR file, the tag data import dialog box to prompt the log output will be displayed.
 "◆ Log File Format" (page 21)
- For the tag information imported from the CXR file, the total number of tags must stay within 65279 (maximum).
- If the comments in the tag data stored in the CXR file have more than 32 characters, any character after the 32nd will be deleted when the data is saved.

◆ Exporting from the Tag List box

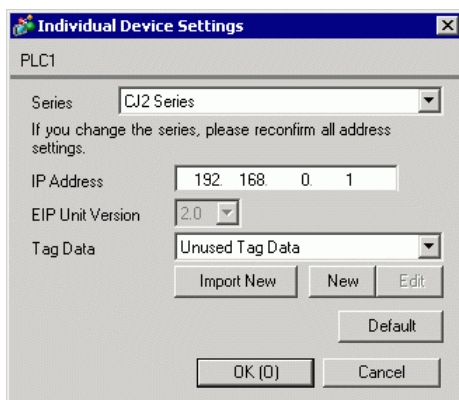
Click [Export] in the Tag List dialog box to display the export dialog box.



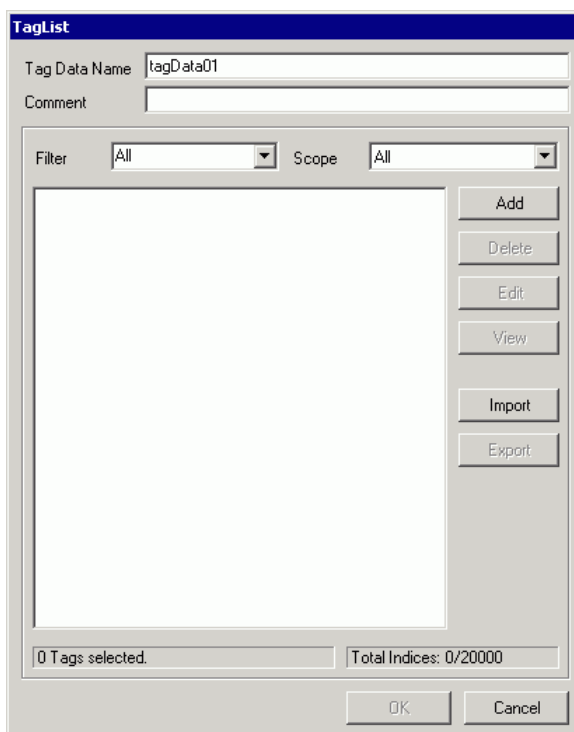
Setup Items	Setup Description
PLC Type	Select the type of External Device.

■ Creating a new tag

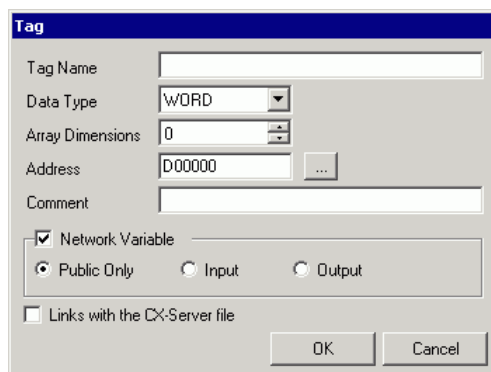
- 1 Go to the [Individual Device Settings] dialog box from GP-Pro EX and select "CJ2 Series" from [Series].



- 2 Click [New]. Type the name of the new tag data in [Tag Data Name] and enter any comment in [Comment].



- 3 Click [Add] to display the [Tag] dialog box.




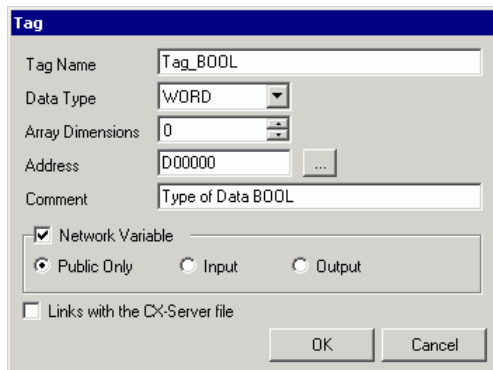
4 Enter the Tag Name, Array Dimensions, Address, and Comment and select the Data Type to be used.

When the [Network Variable] check box is cleared, the tag will be treated as a Global Variable.

When the [Network Variable] check box is selected, select from Public Only, Input, or Output.

To link the tag to the CX-Server file, select the [Links with the CX-Server file] check box.

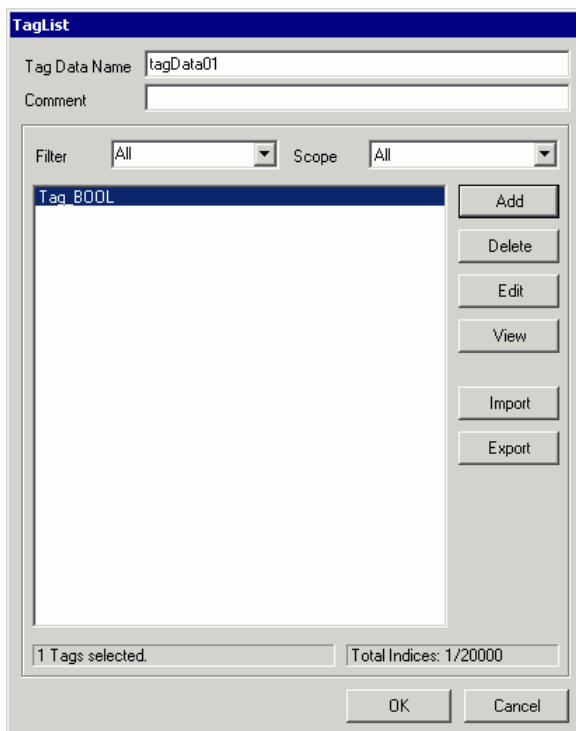
 "◆ Set Tag Value Limits" (page 26)



The 'Tag' dialog box contains the following fields and options:

- Tag Name:** Tag_BOOL
- Data Type:** WORD (dropdown menu)
- Array Dimensions:** 0 (dropdown menu)
- Address:** D00000 (text field with a browse button)
- Comment:** Type of Data BOOL
- Network Variable:** ☒ (checked)
- Public Only:** ☒ (selected)
- Input:** ☐ (unselected)
- Output:** ☐ (unselected)
- Links with the CX-Server file:** ☐ (unselected)
- Buttons:** OK, Cancel

Generated controller tags are displayed in the list.



The 'TagList' dialog box displays a list of tags and includes the following elements:

- Tag Data Name:** tagData01
- Comment:** (empty text field)
- Filter:** All (dropdown menu)
- Scope:** All (dropdown menu)
- Tag List:** A list box containing 'Tag_BOOL'.
- Buttons:** Add, Delete, Edit, View, Import, Export.
- Status:** 1 Tags selected. Total Indices: 1/20000.
- Buttons:** OK, Cancel.

◆ Set Tag Value Limits

1 Tag name input rule

The following input rules apply to tag names.

- A number cannot be used for a first letter.
- A device and address cannot be entered. (Example: D0000)
- !"#\$\$%&'()*=~-^\\`@{[+;*:}]<>.,?/ and a space cannot be entered.
- For Network Variable, upper case and lower case characters are not distinguished.
- For Global Variable, upper case and lower case characters are distinguished.
- For Network Variable, "S/ED/EE/EF/E1A/E1B/E1C/E1D/E1E/E1F" cannot be registered.

2 Tag name length limitation

There is a limitation to the length of tag names depending on whether the [Links with the CX-Server file] check box has been checked or cleared.

Variable Type	CX-Server Link	Limitations of Tag name length
Network Variable	ON	Shift-JIS: 32 Byte or less; UTF-8: 48 Byte or less
	OFF	UTF-8: 48 Byte or less
Global Variable	ON	Shift-JIS: 32 Byte or less
	OFF	Shift-JIS: 48 Byte or less

3 STRING Type Limitations

When a user selects the STRING data type, a CX-Server file cannot be linked. In addition, the array dimensions label will be changed to a size. The size can be specified by a value from 1 to 255.

4 Number Type Limitations

When a user selects the NUMBER data type, a Network Variable and array cannot be specified. In addition, the address label will be changed to a value. For values, up to 17 digit integers or decimals can be specified (including minus symbol and decimal points).

5 BOOL Type Limitations

When a user selects the BOOL data type and specifies a Network Variable and array, the starting address has to be set to 0. (Example: A0.0)

6 Address and Array Limitations

Any tag, except the NUMBER type, can specify any address. In addition, when the CX-Server file is not linked, address input is not necessary. In this case, auto address mapping will be used, however this tag cannot be mapped to a part. Also, data type tags in which the device size is 4 words (ULINT/LINT/ULINT BCD/LREAL/LWORD) cannot be mapped to a part.

Any tag, except the STRING and NUMBER type, can specify any array. The maximum array element of the device for tag specification is 32000. Set the number of elements so that the total of specified addresses and element number do not to exceed the maximum value of the specified device.

7 Comment Limitation

If the comments have more than 32 characters, any character after the 32nd will be deleted when the data is saved.

6 Device Code and Address Code

Use device codes and address codes when you set "Device Type & Address" for the address type of the data display or other devices.

NOTE

- When using the Tag Data in CJ2 Series, device code and address code cannot be used.

Device	Device Name	Device Code (HEX)	Address Code
Channel IO Area	-	0080	Word Address
Internal Auxiliary Relay	W	0082	Word Address
Special Auxiliary Relay	A	0085	Word Address
Hold Relay	H	0084	Word Address
Timer (Preset Value)	T	0060	Word Address
Counter (Preset Value)	C	0061	Word Address
Data Memory	D	0000	Word Address
EM Area (E0-E18)	E0	0010	Word Address
	E1	0011	Word Address
	E2	0012	Word Address
	E3	0013	Word Address
	E4	0014	Word Address
	E5	0015	Word Address
	E6	0016	Word Address
	E7	0017	Word Address
	E8	0018	Word Address
	E9	0019	Word Address
	EA	001A	Word Address
	EB	001B	Word Address
	EC	001C	Word Address
	ED	001D	Word Address
	EE	001E	Word Address
	EF	001F	Word Address
	E10	0020	Word Address
	E11	0021	Word Address
	E12	0022	Word Address

Continued on next page

Device	Device Name	Device Code (HEX)	Address Code
EM Area (E0-E18)	E13	0023	Word Address
	E14	0024	Word Address
	E15	0025	Word Address
	E16	0026	Word Address
	E17	0027	Word Address
	E18	0028	Word Address
EM Area (Current bank)	EM	0001	Word Address
Task Flag Area (Status)	TK	0002	Value of Word Address / 2
Index Registers	IR	0003	Word Address
Data Registers	DR	0004	Word Address

7 Error Messages

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

Item	Description
No.	Error number
Device Name	Name of the External Device where an error has occurred. Device/PLC name is the title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to an error that has occurred.
Error Occurrence Area	<p>Displays the IP address or device address of the External Device where an error has occurred, or error codes received from the External Device.</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">NOTE</div> <ul style="list-style-type: none"> Received error codes are displayed as "Decimal [Hex]". Device address is displayed as "Address: Device address". IP address is displayed as "IP address (Decimal): MAC address (Hex)".

Example of an Error Message

"RHAA035:PLC1: Error has been responded for device write command (Error Code: 1[01H])"

- NOTE**
- Refer to your External Device manual for details on received error codes.
 - Refer to "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting Manual" for details on the error messages common to the driver.

■ Error Messages Unique to External Device

Error number	Error Message	Description
RHxx128	(Node Name): Error has been responded for initial communication command (Encapsulation Error Code: [(Hex)])	Error has been responded for initial communication command.
RHxx129	(Node Name): Error has been responded for device read command (Encapsulation Error Code: [(Hex)])	Error has been responded for device read command.
RHxx130	(Node Name): Error has been responded for device write command (Encapsulation Error Code: [(Hex)])	Error has been responded for device write command
RHxx131	(Node Name): Error has been responded for initial communication command (CIP Error Code: [(Hex)])	Error has been responded for initial communication command.
RHxx132	(Node Name): Error has been responded for device read command (CIP Error Code: [(Hex)])	Error has been responded for device read command.
RHxx133	(Node Name): Error has been responded for device write command (CIP Error Code: [(Hex)])	Error has been responded for device write command
RHxx134	(Node Name): Error has been responded for initial communication command (General STS Code: [(Hex)], Additional STS Code: [(Hex)])	Error has been responded for initial communication command.

Continued on next page

Error number	Error Message	Description
RHxx135	(Node Name) Error has been responded for device read command (General STS Code: [(Hex)], Additional STS Code: [(Hex)])	Error has been responded for device read command.
RHxx136	(Node Name): Error has been responded for device write command (General STS Code: [(Hex)], Additional STS Code: [(Hex)])	Error has been responded for device write command
RHxx137	(Node Name): To get the tag information failed (The tag counts which failed to get: (Decimal))	Error has been responded for device address acquisition packet.
RHxx144	(Node Name): Matching of the tag failed (The tag counts which failed in matching: (Decimal))	The matching result of tags failed.