CC-Link

Open Field Network

Control & Communication System Profile (CSP+)

Creation Guidelines

CC-Link CLPA PARTNER ASSOCIATION

Table of Contents

1. Introduction 1

1.1 Purpose of This Document 1
1.2 Overview 1
1.3 Related Tools and Documents 4
1.4 Concept of Guarantee 4
1.5 Used Terminology 4
1.6 Security Precautions 5

2. What Is CSP+? 6

2.1 CSP+ and Profile Creation Support Tool Relationship 6
2.2 Creation Unit of CSP+ File 7
2.3 Configuration of CSP+ File 7
2.4 Constructs 13

3. Preparing for CSP+ Creation 14

3.1 Operating Environment of Profile Creation Support Tool 14
3.2 Installing the Profile Creation Support Tool 14

4. Starting and Exiting the Profile Creation Support Tool 15

4.1 Starting the Profile Creation Support Tool 15
4.1.1 Starting the Profile Creation Support Tool 15
4.1.2 Screen Display at Profile Creation Support Tool Startup 16
4.2 Exiting the Profile Creation Support Tool 17

5. Procedure for Creating CSP+ 18

5.1 Flow of CSP+ Creation 18
5.2 Creating CSP+ 19
5.2.1 Creating a New Project 28
5.2.2 How to Write to a Part 30
5.2.3 Writing to the File Information (FILE) Section 33
5.2.4 Writing to the Device Information (DEVICE) Section 34
5.2.5 Writing to the Communication Interface Information (COMM_IF) Section 38
5.2.6 Writing to the Block Information (BLOCK) Section 77
5.2.7 Relationship Between Communication Interface Information Section and Block Information Section 91
5.2.8 Writing Common Information Part 96
5.2.9 Checking the Project 109
5.2.10 Checking the Descriptions of Required Project Elements 111
5.2.11 Exporting the CSP+ File 117
5.2.12 Converting the CSP+ File to CSP+ 118
5.2.13 Validating CSP+ 120

6. Preparing for Release 131

6.1 Release Flow 131
6.1.1 For Newly Developed Products 131
6.1.2 For Existing Products 133

Appendix 1.Characters Prohibited in Label Name 135

Appendix 2.CSP+ Check Sheet 136

Appendix 3.Using Profile (Device Description) Data of Other Networks 137

Appendix 4.Data Input Using Excel 141

Appendix 5.Comparison of Profile.....142

Revisions

Date	Sub No.	Description
August 2012	-	First edition
September 2015	A	The descriptions on the CC-link IE Field Network compatible module are added. The descriptions on the SLMP (TCP/IP) compatible module are added. Appendix 3 "Using Profile (Device Description) Data of Other Networks" is added.
March 2017	B	The descriptions on the CC-link IE Field Network Basic compatible module are added. Appendix 4 "Data Input Using Excel" is added. Appendix 5 "Comparison of Profile" is added.
October 2017	C	How to display performance values (reference request/response time) on the engineering tool is added.
April 2019	D	The descriptions on the CC-Link IE TSN compatible module are added.
July 2020	E	Section 1.6 "Security Precautions" is added.
April 2021	F	The descriptions related to the CC-Link IE TSN extension modules are added to Section 2.2. The descriptions of Windows XP, Windows Vista, and Windows 7 are deleted from Table 4 No.1 in Section 3.1. The descriptions of MSXML 6.0 are added to Table 4 No.4 in Section 3.1. The descriptions are added to Table 9 No.7 to No.10 in Section 5.2.4 (e). Table 10 is newly added to 5.2.4 (e). The descriptions are added to Table 19 No.15 and No.16 in Section 5.2.5 (e). Table 21, Table 23, Table 24, and Table 26 are added to Section 5.2.5 (e). Table 53 and Table 54 in Appendix 1 are modified. The file name format described in No.5 of Appendix 2 is modified. The descriptions of Windows XP, Windows Vista, Windows 7, and Windows 10 are deleted from Trademarks. The description of Ethernet is deleted from Trademarks.

1. Introduction

1.1 Purpose of This Document

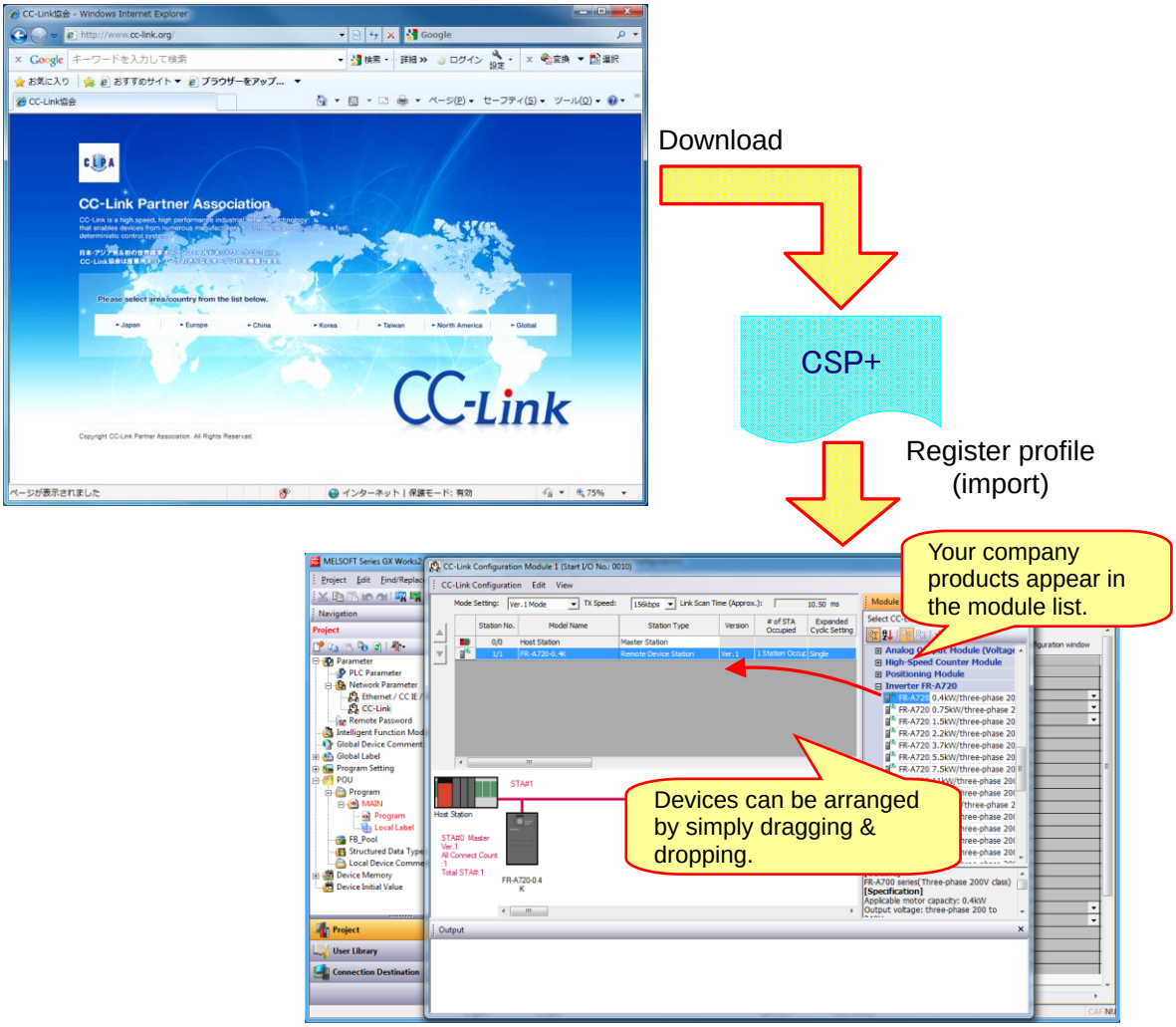
This document contains guidelines for creating a Control & Communication system profile (hereinafter "CSP+"). By following these guidelines in this document, you will be able to create a CSP+ that can be used as application software (hereinafter "utility software") that starts, operates and maintains CC-Link family connected modules.
For details of CSP+, refer to the Control & Communication System Profile (CSP+) Specification (BAP-C2008ENG-001-E).

1.2 Overview

CSP+ can be simply created by using the "Profile creation support tool" provided by the CC-Link Partner Association. Once you provide your created CSP+ to customers, you will be able to manage your company's products as well as all other modules connected to the CC-Link family from a single utility software.

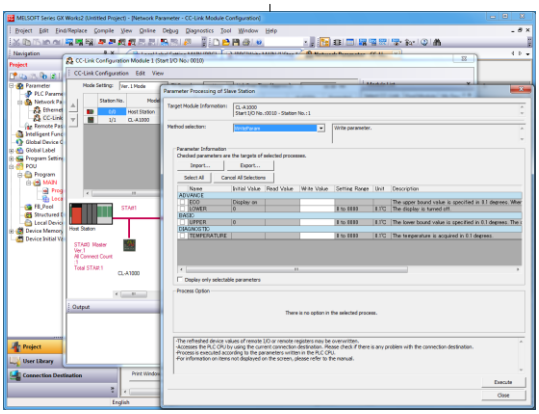
The following shows an example that uses GX Works2 manufactured by Mitsubishi Electric Corporation as the specific contents achievable through CSP+ utilization.

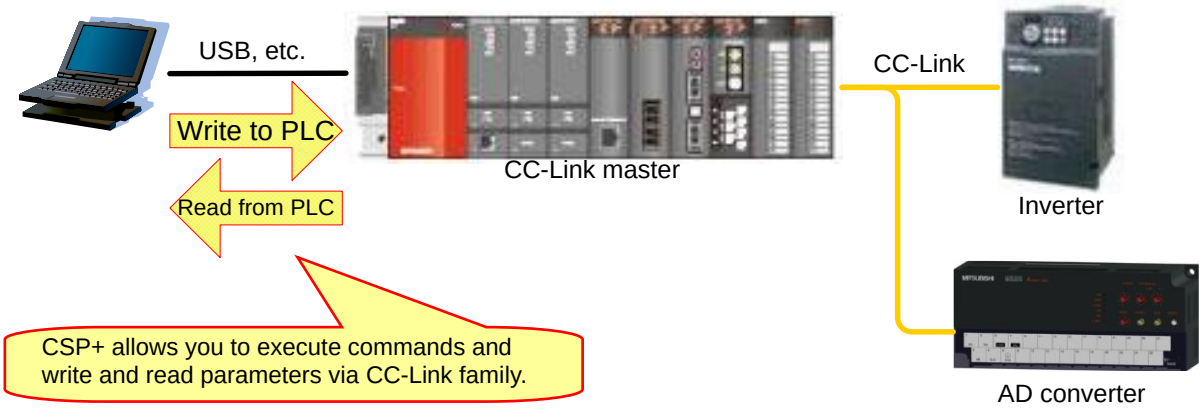
(1) CSP+ allows you to simply create network configurations.



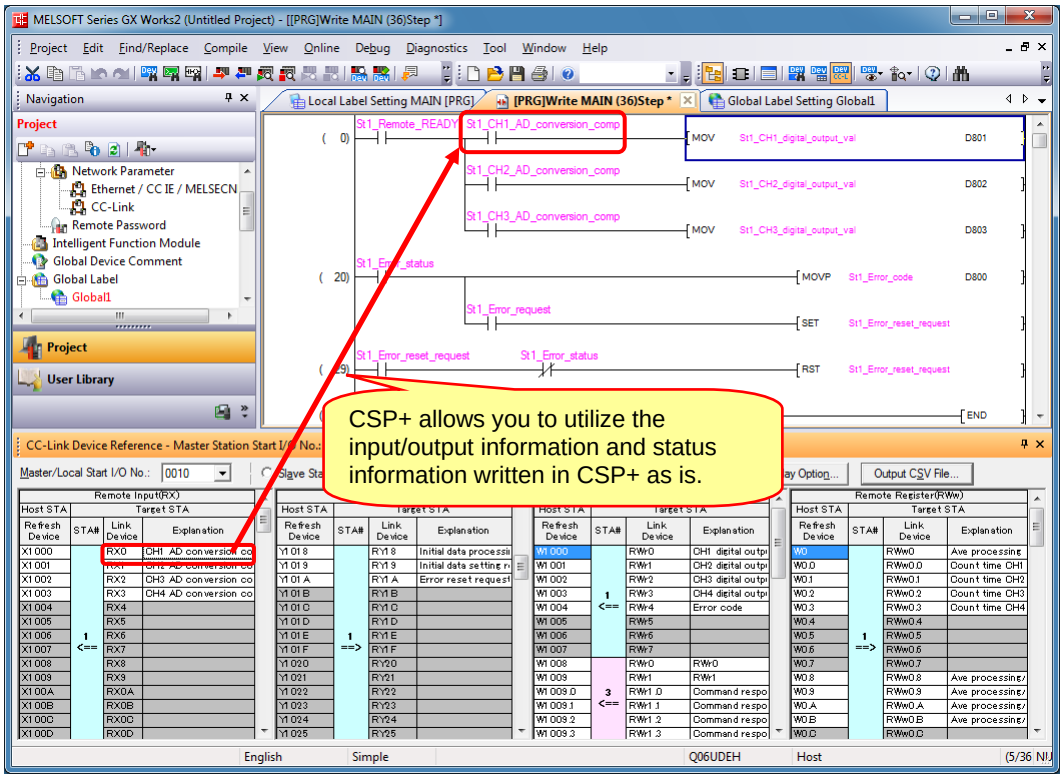
(2) CSP+ allows you to simply set up CC-Link family compatible devices.

Utility software





(3) CSP+ allows you to utilize labels for input/output information and status information in ladders.



1.3 Related Tools and Documents

The following tools and documents can be downloaded from the CC-Link Partner Association Web page:

(1) CSP+ creation support tool

(2) Control & Communication System Profile (CSP+) Specification BAP-C2008ENG-001

(3) Control & Communication System Profile (CSP+) Creation Guidelines (this document)

1.4 Concept of Guarantee

We ask that you please contact our partners regarding the guarantee of the operation of your created CSP+, customer technical support and troubleshooting.

1.5 Used Terminology

The following terminology is used in this document.

Table 1 Terminology Used in this Document

No	Terms	Description
1	CSP+ file	A file with the extension "cspp" that was created using [Export] of the Profile Creation Support Tool. Written using XML (Extensible Markup Language).
2	Graphics file	A file used when displaying a target module on utility software. The extension is "bmp", "png", "jpg", or "gif". Be sure to create images within the range of 32x32 to 256x256 pixels.
3	Icon file	A file used when displaying an icon of a target module on utility software. The extension is "ico". Be sure to create an icon using 16x16 pixels.
4	Object dictionary file	A file used for CAN compatible device in the CC-Link IE TSN compatible module. The extension is "csv".
5	CSP+	A file that compresses CSP+ files, graphics files, icon files, and object dictionary files. Created using the [Generate Archive File] function of the Profile Creation Support Tool.
6	Control & Communication system profile	A file that is the same as CSP+.
7	Compressed file	A file that is the same as CSP+.
8	Archive file	A file that is the same as CSP+.
9	Project file	A file for saving a CSP+ file during creation using the Profile Creation Support Tool. A file with the extension "cspproj".
10	Export	An operation that outputs a file after completion of a syntax check during CSP+ file creation.
11	Section	A "file information section", "device information section", "communication interface information section" or "block information section" of a CSP+ file.
12	Part	A unit of description that makes up a session. A "table" that appears in a work window with the Profile Creation Support Tool.
13	Table type	A type of part.
14	Item	A "table" or "column" displayed in the work window.
15	Element	A "table" or "row" displayed in the work window.
16	File information section	A section that describes information (date created, date last modified, etc.) of the CSP+ file. Sometimes abbreviated file section or FILE section.
17	Device information section	A section that describes the product information (manufacturer name, model, etc.) of the target module. Sometimes abbreviated device section or DEVICE section.
18	Communication interface information section	A section that describes information related to the communication module of the target module. Sometimes abbreviated communication interface section or COMMIF section.
19	Block information section	A section that describes the function of the target module. Sometimes abbreviated block section or BLOCK section.
20	Common information part	A "structure part", "option list part" and "command argument list part" described in the "communication interface information section" and "block information section".

1.6 Security Precautions

To maintain the security (confidentiality, integrity, and availability) of the system and CSP+ profile creation support tool against unauthorized access, denial-of-service (DoS) attacks, computer viruses, and other cyberattacks from external devices via the network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.
The CC-Link Partner Association shall have no responsibility or liability for any problems involving trouble of the system and CSP+ profile creation support tool caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

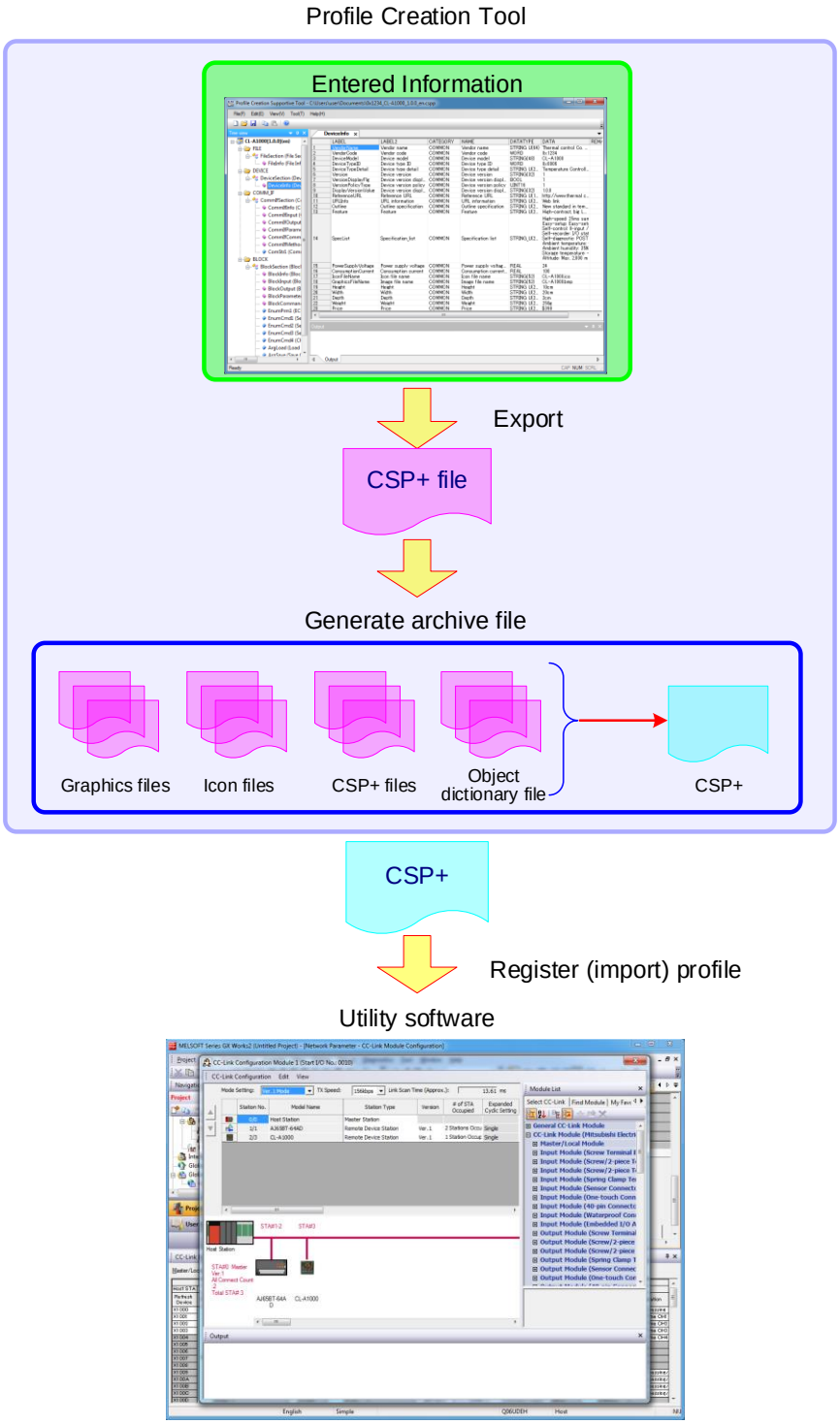
*DoS attack: To disrupt a service by flooding a network server with traffic or taking advantage of security vulnerabilities

2. What Is CSP+?

2.1 CSP+ and Profile Creation Support Tool Relationship

The Profile Creation Support Tool generates CSP+ files from information entered on screens.
Further, the tool compiles generated CSP+ files, graphics files, icon files, and object dictionary files to generate CSP+.

Once you register (import) the generated CSP+ into CSP+ compatible utility software, you can utilize the target module from utility software.



2.2 Creation Unit of CSP+ File

Create a single CSP+ file for each of the module types.
For details of the models of each module type, refer to the Control & Communication System Profile Specification (Section 3.3).

This document describes how to create a CSP+ file for a module connected to a single network described in the Control & Communication System Profile Specification (Section 3.3 (1)).
Other than the above, in the following cases be careful not to create CSP+ as a single file:

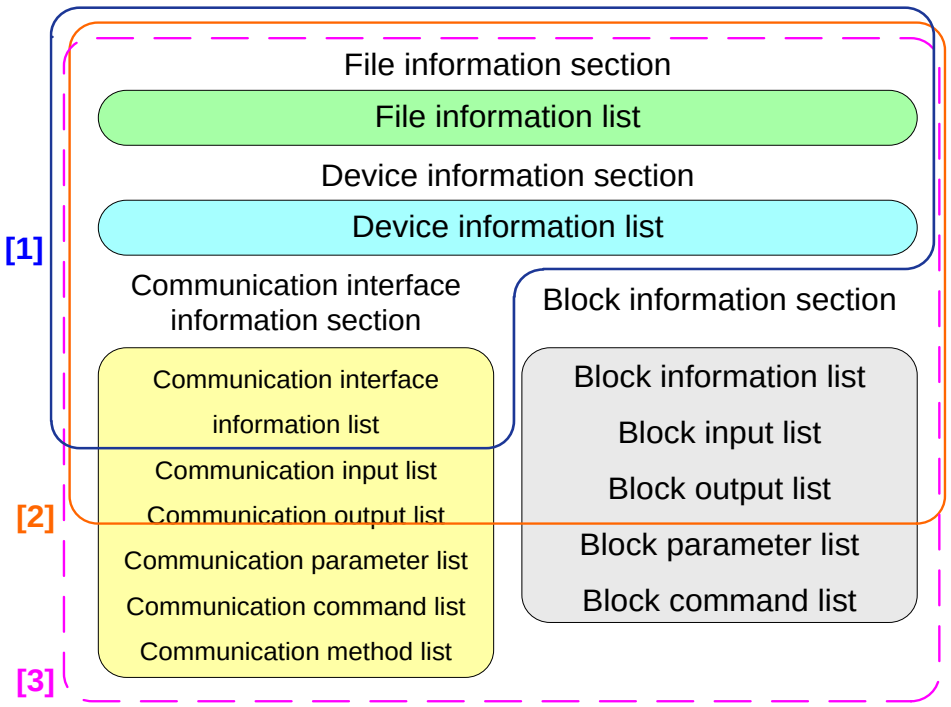
(1) When there are multiple models or series affiliated with the module subject to creation
(2) When CSP+ is to be created in multiple languages for a single module

This document also describes how to create CSP+ files for the main module and each extension module described in the Control & Communication System Profile Specification (Section 3.3 (3) 3)). The following are the definitions of each module.
Main module: A module that can be connected to a network and controls extension modules
Extension module: A module that can be connected to a main module
A CSP+ file needs to be created for each main module and extension module.

2.3 Configuration of CSP+ File

The CSP+ file comprises the information below.

(1) For CC-Link Compatible Module

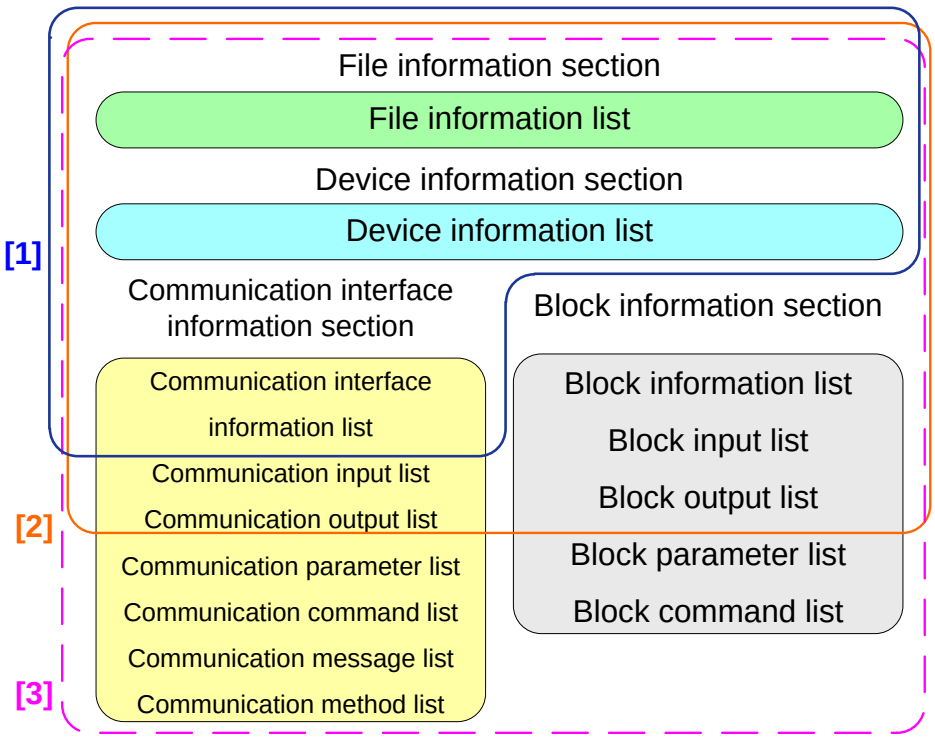


[1] CSP+ file necessary for passing the conformance test
Up to Section 5.2.13 “CSP+ evaluation” (2) can be achieved.

[2] CSP+ file necessary for displaying utility software
Up to Section 5.2.13 “CSP+ evaluation” (3) can be achieved.

[3] CSP+ file necessary for using the functions of the target module from utility software
All of Section 5.2.13 “CSP+ evaluation” can be achieved.

(2) For CC-Link IE Field Network Compatible module

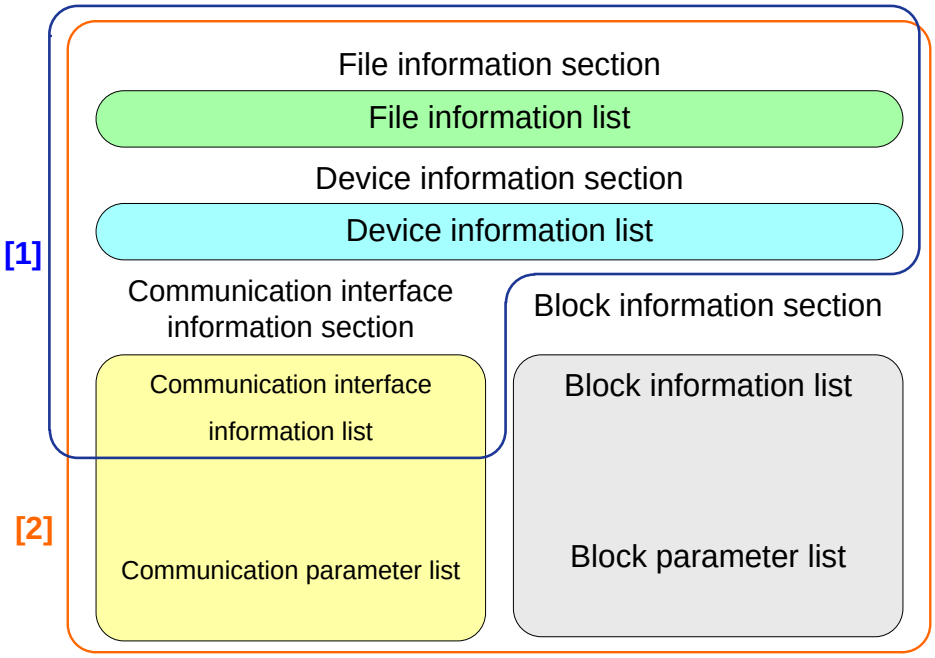


[1] CSP+ file necessary for passing the conformance test
Up to Section 5.2.13 “CSP+ evaluation” (2) can be achieved.

[2] CSP+ file necessary for displaying utility software
Up to Section 5.2.13 “CSP+ evaluation” (3) can be achieved.

[3] CSP+ file necessary for using the functions of the target module from utility software
All of Section 5.2.13 “CSP+ evaluation” can be achieved.

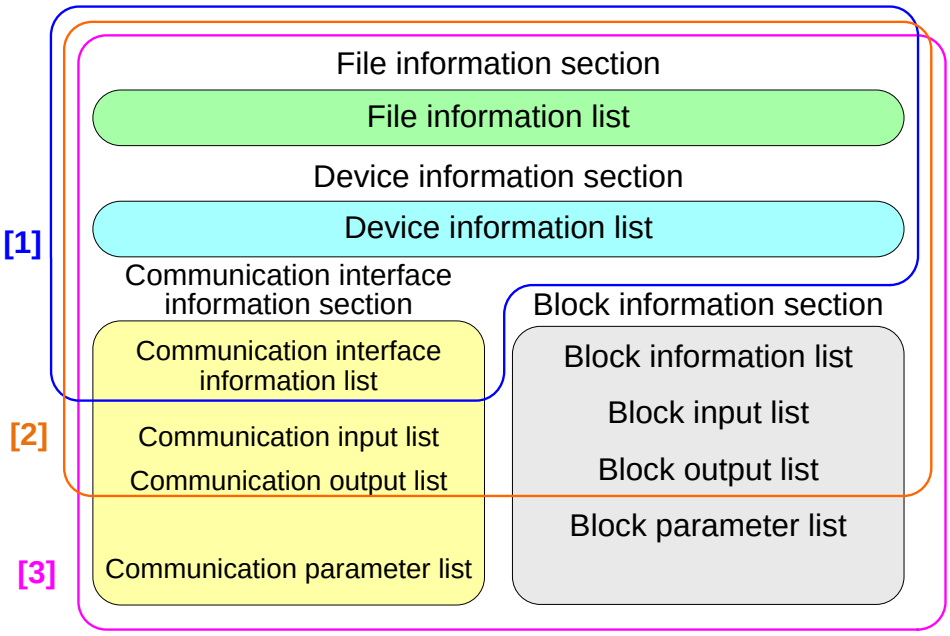
(3) For SLMP (TCP/IP) Compatible Module



[1] CSP+ file necessary for passing the conformance test
Up to Section 5.2.13 “CSP+ evaluation” (2) can be achieved.

[2] CSP+ file necessary for using the functions of the target module from utility software
All of Section 5.2.13 “CSP+ evaluation” can be achieved.

(4) For CC-Link IE Field Network Basic Compatible Module

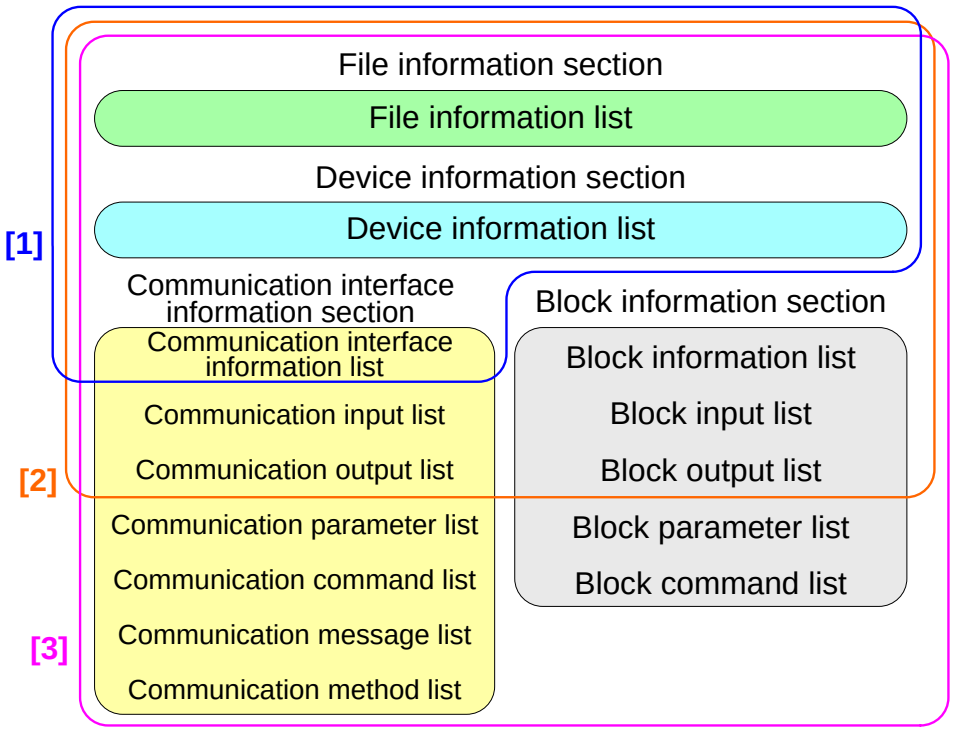


[1] CSP+ file necessary for passing the conformance test
Up to Section 5.2.13 “CSP+ evaluation” (2) can be achieved.

[2] CSP+ file necessary for displaying utility software
Up to Section 5.2.13 “CSP+ evaluation” (3) can be achieved.

[3] CSP+ file necessary for using the functions of the target module from utility software
All of Section 5.2.13 “CSP+ evaluation” can be achieved.

(5) For CC-Link IE TSN Compatible Module



[1] CSP+ file necessary for passing the conformance test
Up to Section 5.2.13 "CSP+ evaluation" (2) can be achieved.

[2] CSP+ file necessary for displaying utility software
Up to Section 5.2.13 "CSP+ evaluation" (3) can be achieved.

[3] CSP+ file necessary for using the functions of the target module from utility software
All of Section 5.2.13 "CSP+ evaluation" can be achieved.

2.4 Constructs

Each partner is asked to save the data files and manage the versions of files created using the Profile Creation Support Tool (see Table 2 below) and files separately prepared (see Table 3 below).

Table 2 Files To Be Created

No.	File	Description	Reference
1	CSP+ file	A file with the extension "cspp" that was created using [Export] of the Profile Creation Support Tool. Written using XML (Extensible Markup Language).	5.2.11
2	CSP+	A file that compresses CSP+ files, graphics files, icon files, and object dictionary files. Created using the [Generate Archive File] function of the Profile Creation Support Tool.	5.2.12

Table 3 Files Separately Prepared by Partners

No.	File	Description	Reference
1	Graphics file	A file used when displaying a target module on utility software. The extension is "bmp", "png", "jpg", or "gif". Be sure to create images within the range of 32x32 to 256x256 pixels.	5.2.12
2	Icon file	A file used when displaying an icon of a target module on utility software. The extension is "ico". Be sure to create an icon using 16x16 pixels.	5.2.12
3	Object dictionary file	A file used for CAN compatible device in the CC-Link IE TSN compatible module. The extension is "csv".	5.2.12

3. Preparing for CSP+ Creation

3.1 Operating Environment of Profile Creation Support Tool

To operate the Profile Creation Support Tool, prepare the following.

Table 4 Preparations

No	Preparations	Description
1	Windows personal computer	A personal computer on which Windows 10 is installed
2	ProfileCreationTool.zip	The Profile Creation Support Tool itself. Download the tool from the CC-Link Partner Association Web site.
3	Microsoft Visual C++ 2008 Redistributable Package	Download and install the application from the Microsoft Web page. *1
4	Microsoft XML parser	Use MSXML 6.0 installed in Windows 10 as standard. When MSXML 6.0 is not used, download and install MSXML 6.0 from the Microsoft Web page. *1

*1: Log in as a user with the authority for application installation.

Note

The Profile Creation Support Tool does not support surrogate pair characters and environment-dependent characters.

3.2 Installing the Profile Creation Support Tool

The following describes the module configuration within ProfileCreationTool.zip.

There is no installer for the Profile Creation Support Tool. Decompress the ProfileCreationTool.zip*2 file into any directory.

Note that if you store the Profile Creation Support Tool in the Program Files directory, the tool will need to be executed by a user that has write access authority to program files.

*2: File name of "ProfileCreationTool.zip" differs depending on the version.

Table 5 ProfileCreationTool.zip Module Configuration

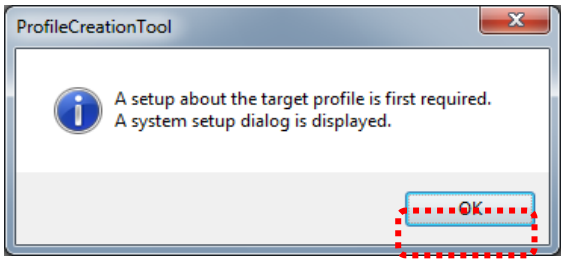
No	File	Description
1	\ProfileCreationTool\Config\	This file is not created when the ZIP file is expanded. It is created right after the initial start-up.
2	\ProfileCreationTool\Schema\	A folder that contains the CSP+ XML schema.
3	\ProfileCreationTool\PublicPlugin\CSP+_2.0.dll	A plug-in file that absorbs CSP+ specifications.
4	\ProfileCreationTool\PublicPlugin\CSP+_3.0.dll	A plug-in file that absorbs CSP+ specifications.
5	\ProfileCreationTool\PublicPlugin\CCLink.dll	A plug-in file that absorbs CC-Link specifications.
6	\ProfileCreationTool\PublicPlugin\CCLinkIEField.dll	A plug-in file that absorbs CC-Link IE Field specifications.
7	\ProfileCreationTool\PublicPlugin\Ethernet.dll	A plug-in file that absorbs SLMP (TCP/IP) specifications.
8	\ProfileCreationTool\PublicPlugin\CCIENEXUS.dll	A plug-in file that absorbs CC-Link IE TSN specifications.
9	\ProfileCreationTool\ProfileCreationTool.exe	An application of the Profile Creation Support Tool.
10	\ProfileCreationTool\ProfileCreationTool_RC.dll	A resource file of the Profile Creation Support Tool.
11	\ProfileCreationTool\VSFlex8N.ocx	A component file of Flex Grid.
12	\ProfileCreationTool\zlib1.dll	A file for compressing and decompressing files

4. Starting and Exiting the Profile Creation Support Tool

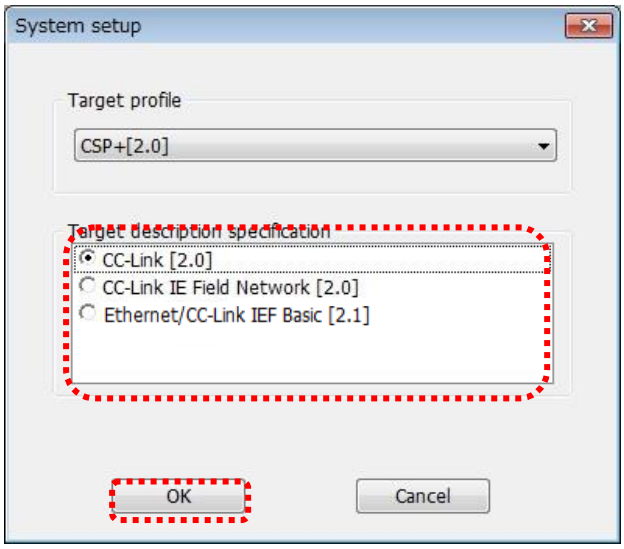
4.1 Starting the Profile Creation Support Tool

4.1.1 Starting the Profile Creation Support Tool

Execute ProfileCreationTool.exe. At initial startup, the following dialog box appears.
Click the [OK] button. The System setting dialog box appears.

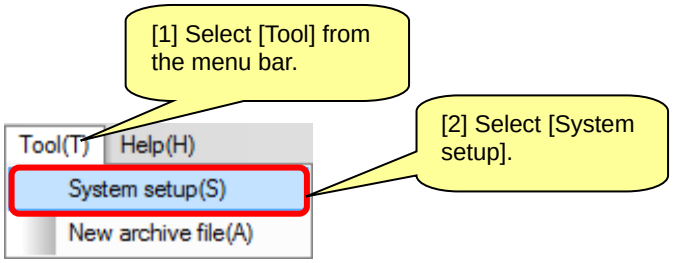


In the System setting dialog box, select the applicable items under the Target description specification and click the [OK] button.
The system setting contents can also be changed at a later time. The item that can be selected under Target description specification differs depending on the selected creation target profile.



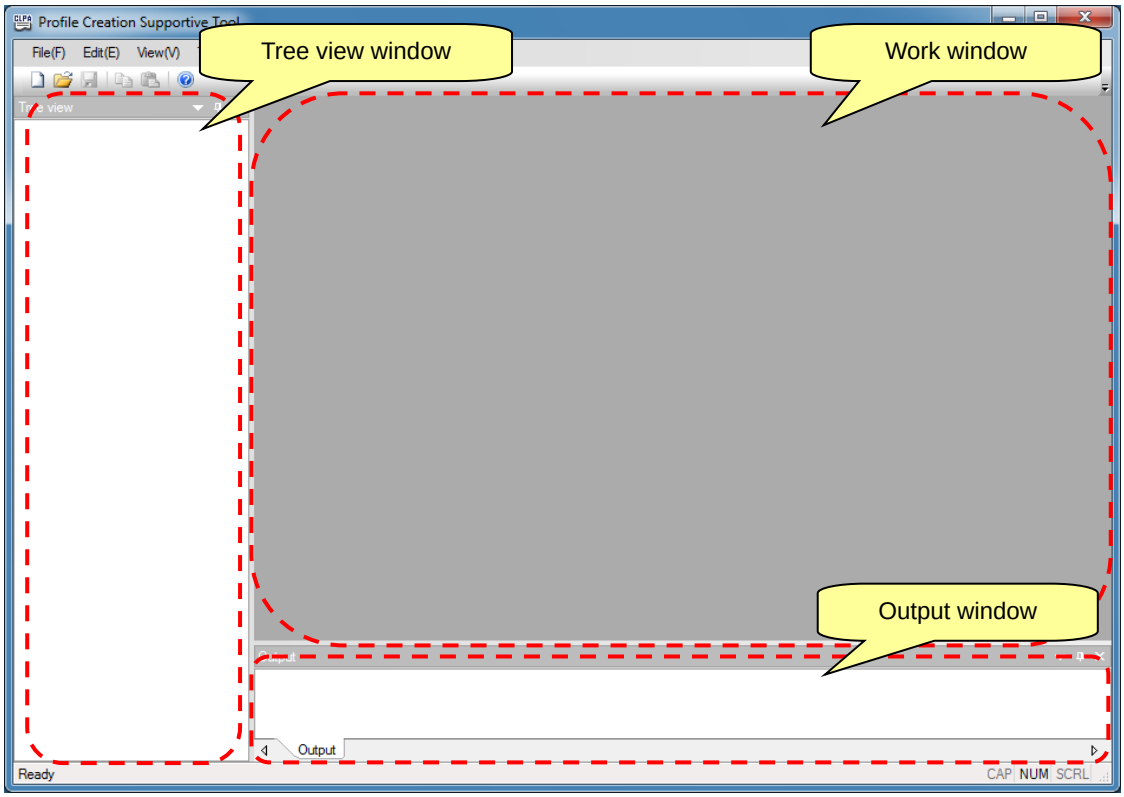
The work window of the Profile Creation Support Tool is now operable.

If you want to display the System setup dialog box after the initial startup, follow the procedures below. If you want to change the system settings, display the System setting dialog box without any project opened.
[1] Select [Tool] from the menu bar.
[2] Select [System setup] under [Tool].

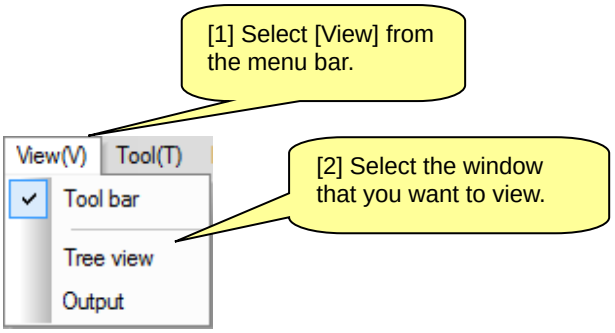


4.1.2 Screen Display at Profile Creation Support Tool Startup

The Profile Creation Support Tool screen appears based on the configuration below.



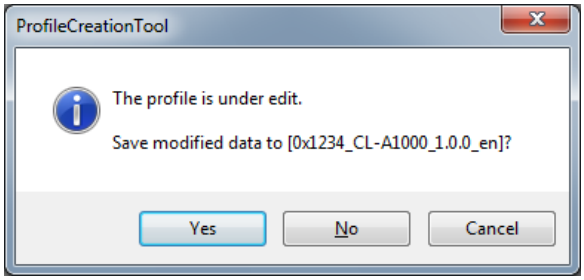
If the tree view window and output window are hidden, display the windows following the procedure below.



4.2 Exiting the Profile Creation Support Tool

When you want to exit the Profile Creation Support Tool while the tool is running, click the exit (x) button in the top right area of the screen or select [File] – [Exit] from the menu bar.

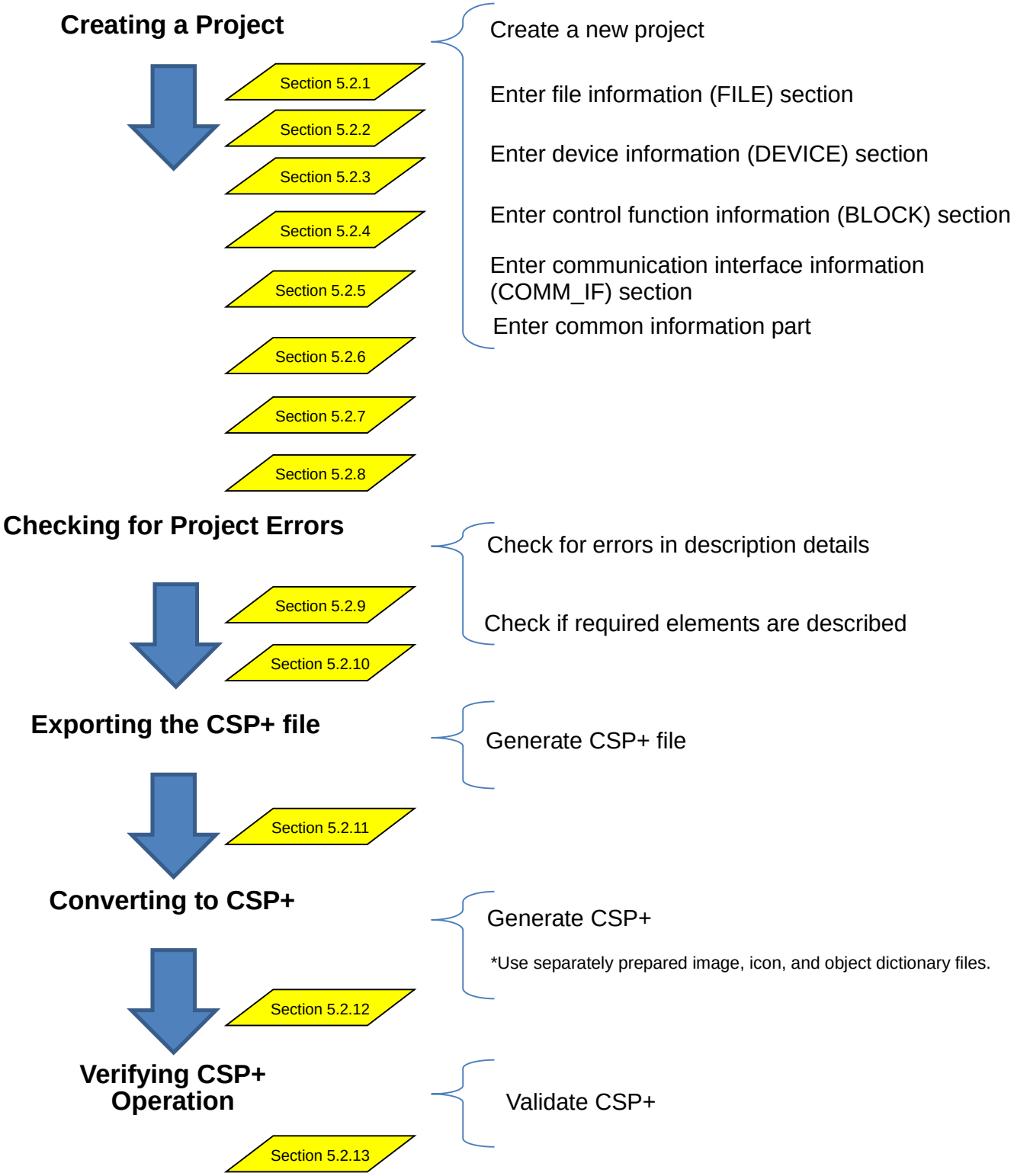
If a dialog box appears when you exit the tool inquiring if you want to save the file, select [Yes] if you want to save changes or [No] if you do not.



5. Procedure for Creating CSP+

5.1 Flow of CSP+ Creation

The following shows the flow of CSP+ creation.



5.2 Creating CSP+

The following indicates how to create CSP+ using the Profile Creation Support Tool.
Write the specification information for the target module when creating CSP+ using the profile creation support tool. This document uses the following product specifications to describe specific examples.

(1) For CC-Link Compatible Module

The examples of the CC-Link compatible module are described according to the following product specifications.

●Specifications

Item	Specification
Model	CL-A1000
Product name	Temperature Controllers
Power supply voltage	24 VDC (±10%)
Current consumption	100 mA or less
Dimensions	10cm(H)×20cm(W)×2cm(D)
Weight	Approx. 150 g
Standard price	¥15,000
Remote station classification	Remote device station
Communication specifications	CC-Link Ver. 1.10
No. of occupied stations	1

Described in the device information list

Described in the communication interface list

●Device Assignments

Device input (CL-A1000 → Master)		
Device No.	**Description**	
RX0	Control output	
RX1 ~ RXF	Not used	
RX10	Handshake flag	Send complete
RX11 ~ RX17	Not used (Used by system)	
RX18	Initialize request	
RX19	Initialize complete	
RX1A	Error	
RX1B	Remote READY	
RX1C	Reserved	
RX1D		
RX1E	OS definition	
RX1F		

Device Output (Master → CL-A1000)		
Device No.	**Description**	
RY0 ~ RYF	Not used	
RY10	Handshake flag	Send request
RY11 ~ RY17	Not used (Used by system)	
RY18	Initialize complete	
RY19	Initialize request	
RY1A	Error reset	
RY1B	Reserved	
RY1C		
RY1D		
RY1E	OS definition	
RY1F		

Remote Register (CL-A1000 → Master)	
Device No.	**Description**
RW r 0	Unused
RW r 1	Command response
RW r 2	Unused
RW r 3	Sensor data

Remote Register (Master → CL-A1000)	
Device No.	**Description**
RW w 0	Unused
RW w 1	Send command
RW w 2	Unused
RW w 3	Send data

Described in the communication input list and block output list

Described in the communication output list and block input list

●Communication Commands

Command		Item	Description	Setting
Write	Read			
01	81	Hysteresis upper	Allows you to set and check the threshold value (high limit).	H'0000 - H'0320: 0˚C - 800˚C
02	82	Hysteresis lower	Allows you to set and check the threshold value (low limit).	H'0000 - H'0320: 0˚C - 800˚C
03	83	Eco mode setting	Allows you to set and check Eco.	H'0000 : Keep ON when display is displayed H'0001 : Keep OFF when display is displayed H'0002 : Turn display OFF 10 seconds after operation
04	84	Get temperature	Acquires the temperature.	-
05	-	Reset	Allows you to reset the sensor.	-
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000 : Read from data channel 1 H'0001 : Read from data channel 2 H'0002 : Read from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000 : Write to data channel 1 H'0001 : Write to data channel 2 H'0002 : Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000 : Check data channel 1 H'0001 : Check data channel 2 H'0002 : Check data channel 3

Described in the communication parameter list and block parameter list

Described in the communication command list and block command list

Only the minimum required fields are described in the following section. Fill in the blank fields as necessary.

(2) For CC-Link IE Field Network Compatible Module

The examples of the CC-link IE field network compatible module are described according to the following product specifications.

●Specification

Item		Specification
Model		CL-A1000-EFI
Product name		Temperature Controllers
Power supply voltage		DC 24V(±10%)
Current consumption		200mA or less
Dimensions		48mm(H)×48mm(W)×70mm(D)
Weight		Approx. 150g
Standard price		¥34,800
Communication specifications		CC-Link IE field network
Remote station classification		Remote device station
Cyclic communication	RX/RY points	32
	RWr/RWw points	16

Described in the device information list

Described in the communication interface list

●Device allocation

Device input (CL-A1000-EFI→Master)	
Device No.	Description
RX0	Control output
RX1 ~ RXF	Unused
RX10 ~ RX16	Unused(Used in the system)
RX17	Warning state flag
RX18	Initialize request
RX19	Initialize complete
RX1A	Error
RX1B	Remote READY
RX1C	Reserved
RX1D	
RX1E	OS definition
RX1F	

Device input (Master→CL-A1000-EFI)	
Device No.	Description
RY0 ~ RYF	Unused
RY10 ~ RY17	Unused(Used in the system)
RY18	Initialize complete
RY19	Initialize request
RY1A	Error reset
RY1B	Reserved
RY1C	
RY1D	
RY1E	OS definition
RY1F	

Remote register (CL-A1000-EFI→Master)	
Device No.	Description
RWr0	Unused
RWr1	Command response
RWr2	Unused
RWr3	Sensor data

(Remote register (Master→CL-A1000-EFI)	
Device No.	Description
RWw0	Unused
RWw1	Send command
RWw2	Unused
RWw3	Send data

Described in the communication input list and block output list

Described in the communication output list and block input list

● Parameter

Word Address	Item	R/W	Description	Setting
0x1000	Threshold 1	R/W	Upper limit can be set and confirmed.	H'0000 to H'0320：0℃ to 800℃
0x1001	Threshold 2	R/W	Lower limit can be set and confirmed.	H'0000 to H'0320：0℃ to 800℃
0x1002	Eco mode	R/W	Eco can be set and confirmed.	H'0000: Display always-on H'0001: Display always-off H'0002: Display turns off 10 seconds after the operation
0x1003	Temperature acquired	R	Temperature is acquired.	-

Note 1: The access to the area where parameters can be referenced or updated will be showed by the SLMP dual port memory batch reading or dual port memory batch writing.

Note 2: Specify the beginning of address to be read/written using the word address in order to perform the SLMP dual port memory batch reading/writing.

SLMP command	Command	Subcommand
Dual port memory batch reading	0x0613	0x0000
Dual port memory batch writing	0x1613	0x0000

● Command

Item	Description
Reset	Turn off the error state by resetting.

Note1: Write a remote reset as a command example. Use an SLMP RemoteReset(0x1006).

SLMP command	Command	Subcommand
Remote reset	0x1006	0x0000

(3) For SLMP (TCP/IP) Compatible Module

The examples of the SLMP (TCP/IP) compatible module are described according to the following product specifications.

●Specification

Item	Specification
Model	CL-A1000-Ethernet
Product name	Temperature Controllers
Power supply voltage	DC 24V(±10%)
Current consumption	100mA or less
Dimensions	48mm(H)×48mm(W)×70mm(D)
Weight	150g
Standard price	¥15,000
Communication specifications	Ethernet(TCP/IP)

Described in the device information list

Described in the communication interface list

●SLMP command support information

SLMP command	Supported/ Not supported
SearchNode	Supported
SetIPAddress	Not supported
CompareDeviceInformation	Not supported
GetParameter	Supported
SetParameter	Supported
StartSetParameter	Supported
EndSetParameter	Supported
CancelSetParameter	Not supported
ReadStatus	Not supported
GetCommunicationSetting	Not supported
ReadStatus2	Not supported

Described in the communication interface list

●Parameter

Parameter ID	Item	Description	Setting
01	Threshold 1	Upper limit can be set and confirmed.	H'0000 to H'0320:0℃ to 800℃
02	Threshold 2	Lower limit can be set and confirmed.	H'0000 to H'0320:0℃ to 800℃
03	Eco mode	Eco can be set and confirmed.	H'0000: Display always-on H'0001: Display always-off H'0002: Display turns off 10 seconds after the operation
04	Temperature acquired	Temperature is acquired.	-

Described in the communication parameter list, Block parameter list

Only the minimum required fields are described in the following section. Fill in the blank fields as necessary.

(4) For CC-Link IE Field Network Basic Compatible Module

The examples of the CC-Link IE Field Network Basic compatible module are described according to the following product specifications.

●Specification

Item	Specification
Model	CL-A1000-B
Product name	Temperature Controllers
Power supply voltage	24 VDC (±10%)
Current consumption	100mA or less
Reference response time	3 ms
Dimensions	48mm(H)×48mm(W)×70mm(D)
Weight	150g
Standard price	¥15,000
Communication specifications	Ethernet(TCP/IP)

Described in the device information list

Described in the communication interface list

●Device allocation

Device input (CL-A1000-B→Master)	
Device No.	Description
RX0	Control output
RX1 ~ RXF	Unused
RX10 ~ RX16	Unused(Used in the system)
RX17	Warning state flag
RX18	Initialize request
RX19	Initialize complete
RX1A	Error
RX1B	Remote READY
RX1C	Reserved
RX1D	
RX1E	OS definition
RX1F	

Device input (Master→CL-A1000-B)	
Device No.	Description
RY0 ~ RYF	Unused
RY10 ~ RY17	Unused(Used in the system)
RY18	Initialize complete
RY19	Initialize request
RY1A	Error reset
RY1B	Reserved
RY1C	
RY1D	
RY1E	OS definition
RY1F	

Remote register (CL-A1000-B→Master)	
Device No.	Description
RWr0	Unused
RWr1	Command response
RWr2	Unused
RWr3	Sensor data

(Remote register (Master→CL-A1000-B)	
Device No.	Description
RWw0	Unused
RWw1	Send command
RWw2	Unused
RWw3	Send data

Described in the communication input list and block output list

Described in the communication output list and block input list

●SLMP command support informatior

SLMP command	Supported/ Not supported
SearchNode	Supported
SetIPAddress	Not supported
CompareDeviceInformation	Not supported
GetParameter	Supported
SetParameter	Supported
StartSetParameter	Supported
EndSetParameter	Supported
CancelSetParameter	Not supported
ReadStatus	Not supported
GetCommunicationSetting	Not supported
ReadStatus2	Not supported

(5) For CC-Link IE TSN Compatible Module

The examples of the CC-Link IE TSN compatible module are described according to the following product specifications.

●Specification

Item		Specification
Model		CL-A1000-TSN
Product name		Temperature Controllers
Power supply voltage		24 VDC (±10%)
Current consumption		100 mA or less
Dimensions		48mm(H)×48mm(W)×
Weight		Approx. 150 g
Standard price		¥34,800
Dedicated tool		Provided
Dedicated tool name		Dedicated tool
Installation registry key name		SOFTWARE\AAA
Installation registry value name		AppMain
exe pass registry key name		SOFTWARE\AAA
exe pass registry value name		AppMain
Communication specification		CC-Link IE TSN
Standard number of compatible CiA		Compatible with CiA 401
Object dictionary file name		A1234.csv
IEEE 802.1AS function		Provided
100Mbps reception function		Provided
100Mbps relay function		Provided
1Gbps full rate reception function		None
1Gbps full rate relay function		Provided
Broadcast/multicast function		Provided
Certification class		A
Cyclic communication	Send bit data default size	32 points
	Send word data default size	16 points
	Receive bit data default size	32 points
	Receive word data default size	16 points
	Send bit data maximum size	1024 points
	Send word data maximum size	512 points
	Receive bit data maximum size	1024 points
	Receive word data maximum	512 points
	Send bit data address	0x00000123
	Send word data address	0x00000456
	Receive bit data address	0x00000789
	Receive word data address	0x00000159
Status notification device address		0x00000753

Described in the device information list

Described in the communication interface information list

● **Device allocation**

Device input (CL-A1000-TSN→Master)	
Device No.	**Description**
RX0	Control output
RX1 ~ RXF	Unused
RX10 ~ RX16	Unused (Used in the system)
RX17	Warning state flag
RX18	Unused (Used in the system)
RX19	
RX1A	Error
RX1B	Remote READY
RX1C	Reserve
RX1D	
RX1E	OS definition
RX1F	

Device output (Master→CL-A1000-TSN)	
Device No.	**Description**
RY0 ~ RYF	Unused
RY10 ~ RY19	Unused (Used in the system)
RY1A	Error reset
RY1B	Reserve
RY1C	
RY1D	
RY1E	OS definition
RY1F	

Remote register (CL-A1000-TSN→Master)	
Device No.	**Description**
RWr0	Unused
RWr1	Command response
RWr2	Unused
RWr3	Sensor data

Described in the communication input list and block output list

Remote register (Master→CL-A1000-TSN)	
Device No.	**Description**
RWw0	Unused
RWw1	Send command
RWw2	Unused
RWw3	Send data

Described in the communication output list and block input list

● Parameter

Word address	Item	R/W	Description	Setting
0x1000	Threshold 1	R/W	The upper limit can be set and confirmed.	H'0000 to H'0320: 0°C to 800°C
0x1001	Threshold 2	R/W	The lower limit can be set and confirmed.	H'0000 to H'0320: 0°C to 800°C
0x1002	Eco mode	R/W	Eco can be set and confirmed.	H'0000: Display always-on H'0001: Display always-off H'0002: Display turns off 10 seconds after the operation
0x1003	Temperature acquired	R	Temperature can be acquired.	-

Note 1: The access to the area where parameters can be referred or updated will be shown by the SLMP dual port memory batch reading/writing.

Note 2: Specify the initial address to be read/written using the word address in order to perform the SLMP dual port memory batch reading/writing.

SLMP command	Command	Sub command
Dual port memory batch reading	0x0613	0x0000
Dual port memory batch writing	0x1613	0x0000

● Command

Item	Description
Reset	Turn off the error state by resetting.

Note1: Write a remote reset as a command example. Use RemoteReset (0x1006) of SLMP.

SLMP command	Command	Sub command
Remote reset	0x1006	0x0000

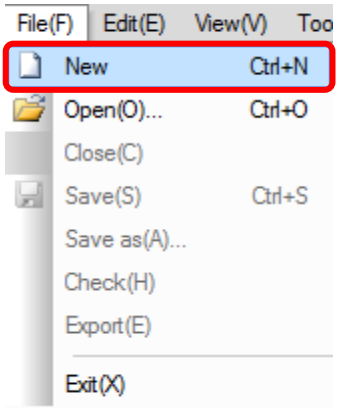
● Information related to errors

Error code name (overview)	Error code	Error detailed information	Error cause	Action
Hardware code	0x10	None	A hardware error occurs in the module.	Turn off and on the module.
Input value out of range error	0x105	Provided	A value larger than the maximum value set by the parameter was input.	Review the input value or parameter setting.
Remote buffer memory access error	0x150	None	The area out of the remote buffer memory was accessed by the REMFR/REMTO command.	Correct the setting data of the REMFR/REMTO command so that the area within the remote buffer memory is accessed.

5.2.1 Creating a New Project

Create a project for entering the specification information of the target module using the Profile Creation Support Tool as described below.

From the menu bar, select [File(F)] - [New]. The New profile dialog box appears.



Enter items [1] through [8] while referring to "Table 6 Entered Information When Creating a Project" below and click the [Create] button.

For details of labels and comments, refer to the Control & Communication System Profile Specification (Section 4.3.1).

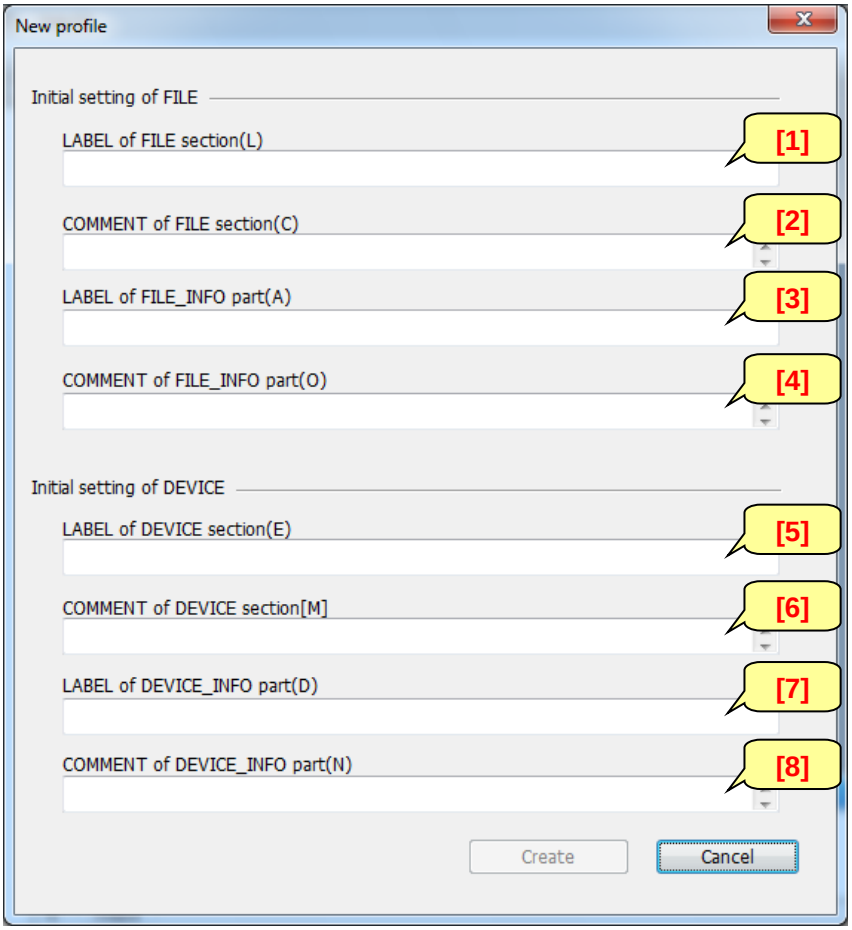
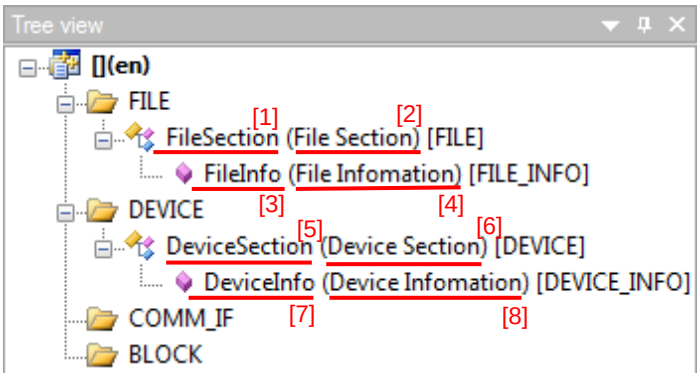


Table 6 Entered Information When Creating a Project

No.	Entered Information	Example	Remarks
[1]	A label that identifies the file information section	FileSection	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[2]	A comment for the file information section	File Section	Enter an explanation of the file information section, etc., as desired.
[3]	A label that identifies the file information list part	FileInfo	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[4]	A comment for the file information list part	File Information	Enter an explanation of the file information list part, etc., as desired.
[5]	A label that identifies the device information section	DeviceSection	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[6]	A comment for the device information section	Device Section	Enter an explanation of the device information section, etc., as desired.
[7]	A label that identifies the device information list part	DeviceInfo	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[8]	A comment for the device information list part	Device Information	Enter an explanation of the device information list part, etc., as desired.

The new project is now created.

The information entered in the New profile dialog box appears as shown below.



Enter the information of the target module in the project that you created.

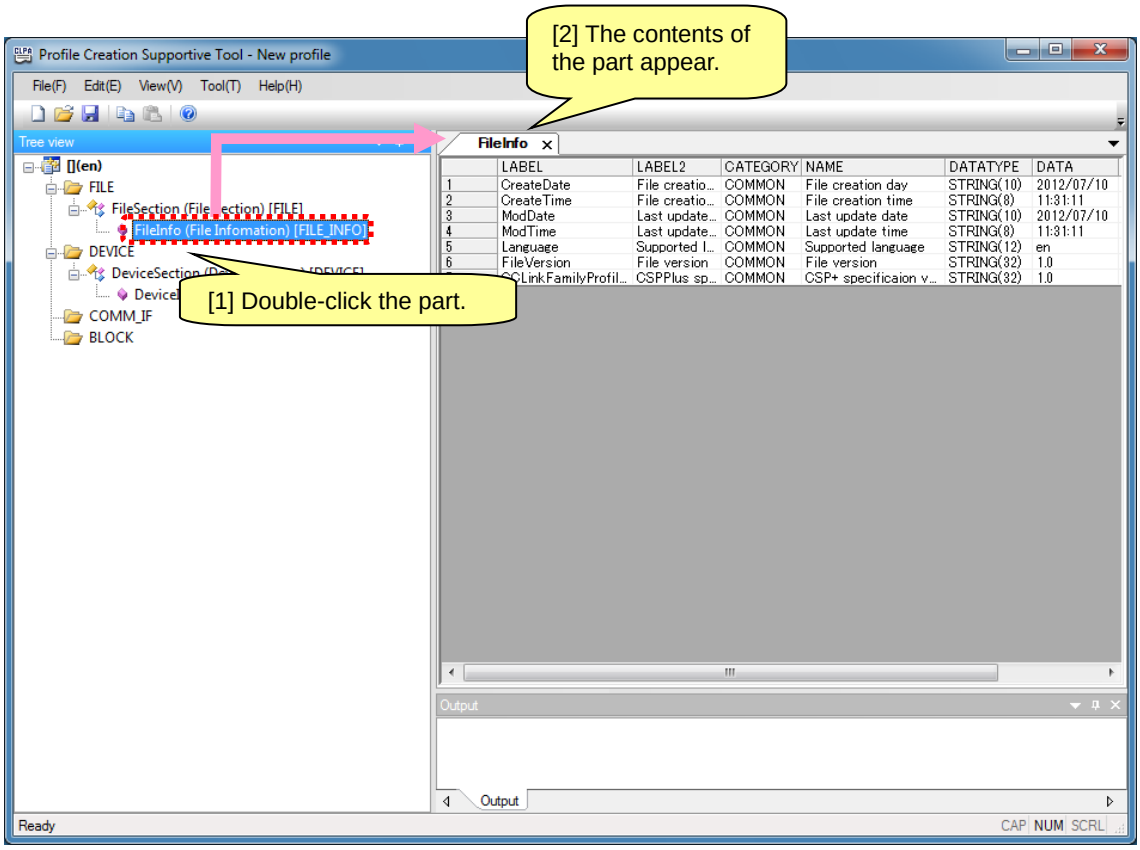
5.2.2 How to Write to a Part

(1) Direct Entry

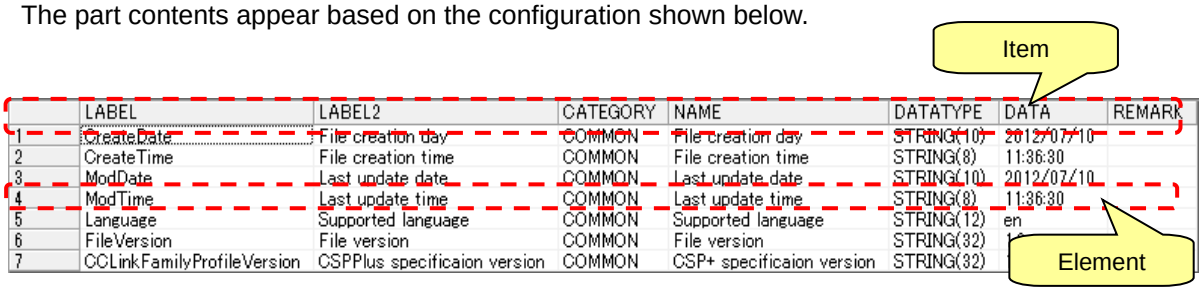
Write the target module information to the parts of each section within the project.

[1] Double-click the part in the tree view window.

[2] The contents of the part are displayed in the work window.



The part contents appear based on the configuration shown below.



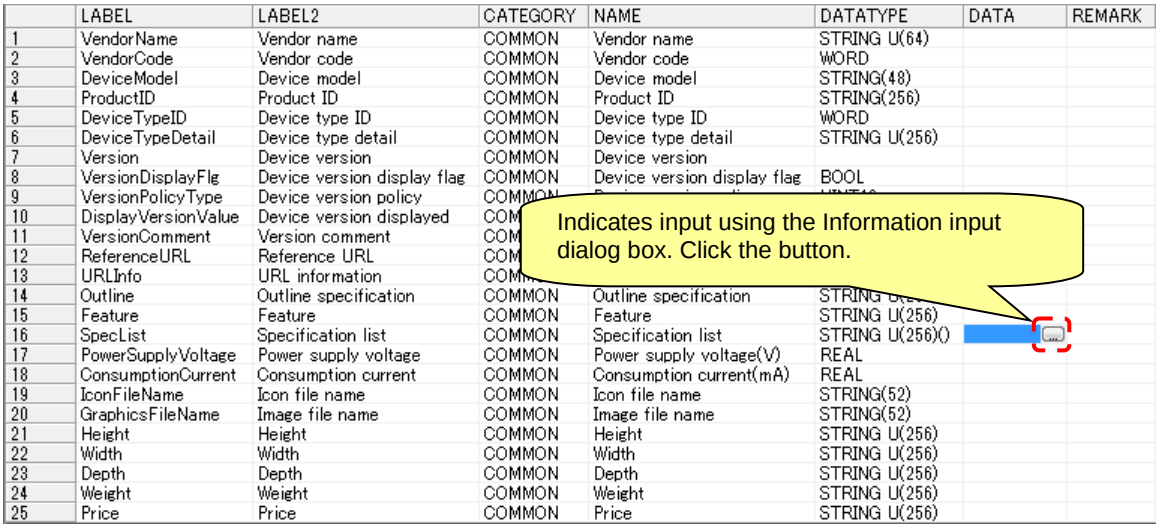
The part description can be written using the same operations as those used for Excel.

(2) Entry Using the Information Input Dialog Box

Depending on the element within the part, some locations permit entry using multiple lines. Enter the information in such locations using the Information input dialog box. The following indicates how to enter information using the Information input dialog box.

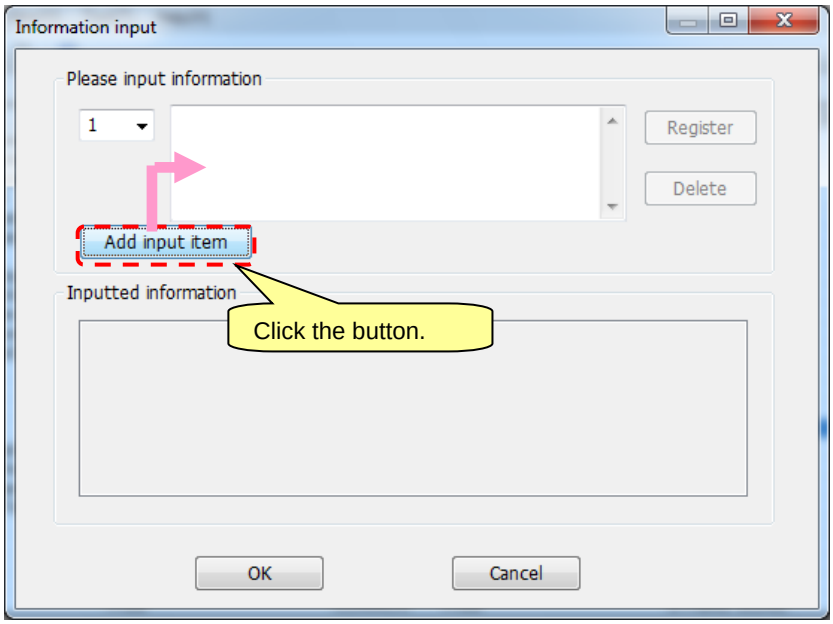
Display the contents of the part in the work window using the same procedure as (1) above.

A button appears in the input area for descriptions that are to be entered in the Information input dialog box, as shown below. Click the button using a mouse. The Information input dialog box appears.

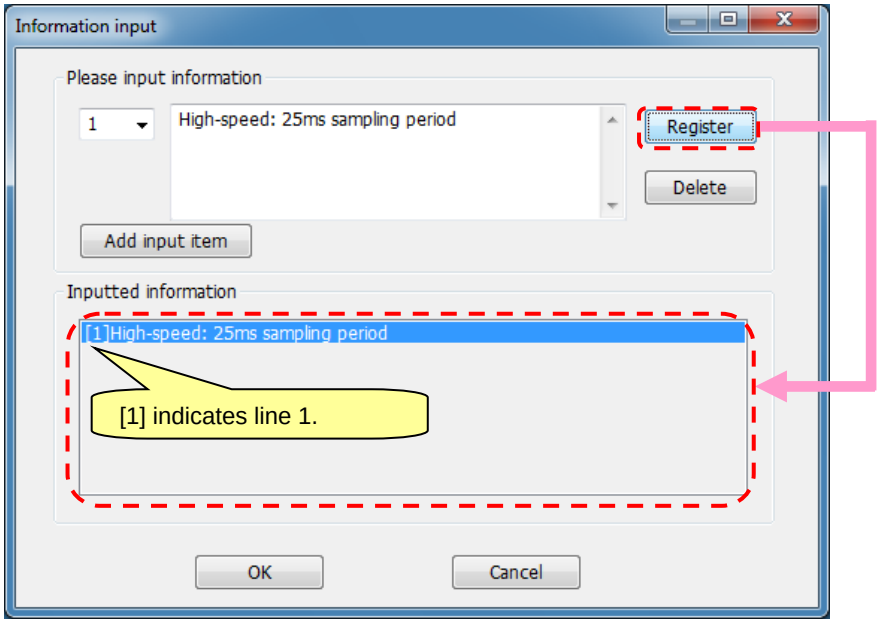


	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor name	COMMON	Vendor name	STRING U(64)		
2	VendorCode	Vendor code	COMMON	Vendor code	WORD		
3	DeviceModel	Device model	COMMON	Device model	STRING(48)		
4	ProductID	Product ID	COMMON	Product ID	STRING(256)		
5	DeviceTypeID	Device type ID	COMMON	Device type ID	WORD		
6	DeviceTypeDetail	Device type detail	COMMON	Device type detail	STRING U(256)		
7	Version	Device version	COMMON	Device version			
8	VersionDisplayFlg	Device version display flag	COMMON	Device version display flag	BOOL		
9	VersionPolicyType	Device version policy	COMMON				
10	DisplayVersionValue	Device version displayed	COM				
11	VersionComment	Version comment	COM				
12	ReferenceURL	Reference URL	COM				
13	URLInfo	URL information	COM				
14	Outline	Outline specification	COMMON	Outline specification	STRING		
15	Feature	Feature	COMMON	Feature	STRING U(256)		
16	SpecList	Specification list	COMMON	Specification list	STRING U(256)()		
17	PowerSupplyVoltage	Power supply voltage	COMMON	Power supply voltage(V)	REAL		
18	ConsumptionCurrent	Consumption current	COMMON	Consumption current(mA)	REAL		
19	IconFileName	Icon file name	COMMON	Icon file name	STRING(52)		
20	GraphicsFileName	Image file name	COMMON	Image file name	STRING(52)		
21	Height	Height	COMMON	Height	STRING U(256)		
22	Width	Width	COMMON	Width	STRING U(256)		
23	Depth	Depth	COMMON	Depth	STRING U(256)		
24	Weight	Weight	COMMON	Weight	STRING U(256)		
25	Price	Price	COMMON	Price	STRING U(256)		

After the Information input dialog box appears, click the [Add input item] button to enable entry in the input area.

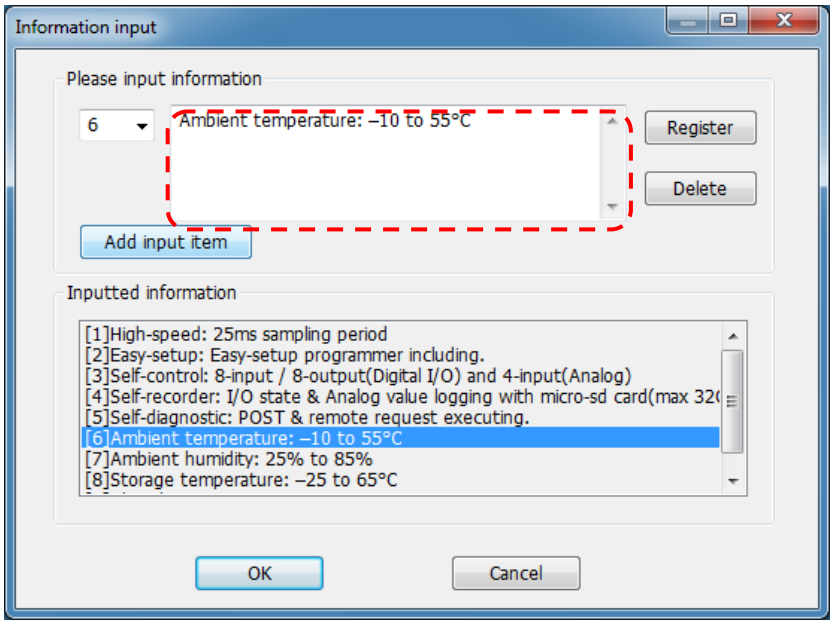


After entering the information, click the [Register] button and verify the preview display of the area where the information was entered.



If you want to increase the number of lines to line 2 and line 3, repeat the above procedure.

If you want to edit the registered information, select the line that you want to edit from the pull-down menu or from the area where the information was entered.
The entered information appears in the input area.



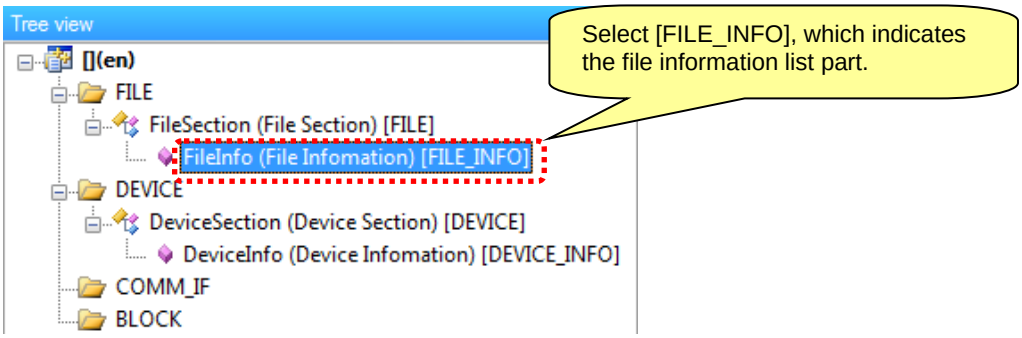
Once you change the value, click the [Register] button and verify the preview display of the area where the information was entered.
Click the [OK] button to apply the entry and close the Information input dialog box.

5.2.3 Writing to the File Information (FILE) Section

The file information section describes information (date created, date last modified, etc.) of the CSP+ file. The following indicates the information to be written to the file information section.

(1) Writing to the File Information List Part (FILE_INFO)

Display the file information list part.



Write the file information while referring to "Table 7 Information Written to File Information List Part".
For file information list part details, see the Control & Communication System Profile Specification (Section 5.1.1).

File Information List Part [FILE_INFO]

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	CreateDate	File creation day	COMMON	File creation day	STRING(10)	2012/07/10	
2	CreateTime	File creation time	COMMON	File creation time	STRING(8)	11:36:30	
3	ModDate	Last update date	COMMON	Last update date	STRING(10)	2012/07/10	
4	ModTime	Last update time	COMMON	Last update time	STRING(8)	11:36:30	
5	Language	Supported language	COMMON	Supported language	STRING(12)	en	
6	FileVersion	File version	COMMON	File version	STRING(32)	1.0	
7	CCLinkFamilyProfileVersion	CSPPlus specificaion version	COMMON	CSP+ specificaion version	STRING(32)	1.0	*1

*1. Do not write anything under the REMARK item.

Enter information into the DATA items of the applicable elements.

Table 7 Information Written to File Information List Part

No.	LABEL	Entered Information	Required/ Optional
1	CreateDate	Describes the date the CSP+ file was created. The project creation date is automatically entered as the initial value.	Required
2	CreateTime	Describes the time the CSP+ file was created. The project creation time is automatically entered as the initial value.	Required
3	ModDate	Describes the date last modified. The project creation date is automatically entered as the initial value. The value is automatically updated each time the project is saved.	Required
4	ModTime	Describes the time last modified. The project creation time is automatically entered as the initial value. The value is automatically updated each time the project is saved.	Required
5	Language	Describes the language in which the CSP+ file is written. Japanese (ja) is automatically entered as the initial value.	Required
6	CCLinkFamilyProfileVersion	Describes the version of the description specifications in which the CSP+ file is written. x.x of CSP+[x.x] selected under Target profile in the System setup dialog box is automatically entered as the initial value.	Required
7	FileVersion	Describes the version of the profile information for the target module. 1.0 is automatically entered as the initial value.	Required

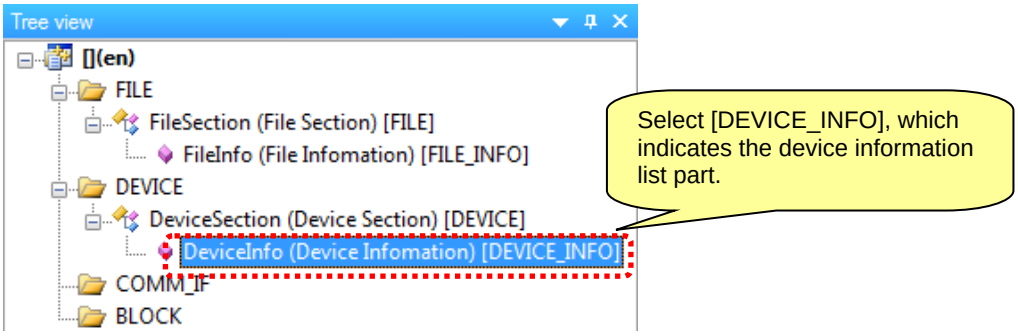
5.2.4 Writing to the Device Information (DEVICE) Section

The device information section describes the product information (manufacturer name, model, etc.) of the target module.

The following indicates the information to be written to the device information section.

(1) Writing to the Device Information List Part (DEVICE_INFO)

Display the device information list part.



The elements comprising the device information list part vary depending on the communication interface. Descriptions for each communication interface are shown below.

For device information list part details, see the Control & Communication System Profile Specification (Section 5.2.1).

(a) For CC-Link Compatible Module

Write the target module information while referring to "Table 8 Information Written to Device Information List Part".

Target Module Information

Item	Specifications
Model	CL-A1000-B
Product name	Temperature Controllers
Power supply voltage	24 VDC (±10%)
Current consumption	100 mA or less
Reference response time	3 ms *1
Dimensions	48mm(H)×48mm(W)×70mm(D)
Weight	Approx. 150 g
Standard price	$398
Remote station classification	Remote device station
Communication specifications	CC-Link Ver1.10
Number of occupied stations	1

*1 This item is provided only for modules supporting CC-Link IE Field Network Basic.

Device Information List Part [DEVICE_INFO]

	LABEL	L...	NAME	DATATYPE	DATA	REMARK
1	VendorName	V...	Vendor name	STRING U(64)	Thermal control Co. Ltd.	
2	VendorCode	V...	Vendor code	WORD	0x1234	
3	DeviceModel	D...	Device model	STRING(48)	CL-A1000-B	
4	ProductID	P...	Product ID	STRING(256)	0x5678	
5	DeviceTypeID	D...	Device type ID	WORD	0x0006	
6	DeviceTypeDetail	D...	Device type detail	STRING U(256)	Temperature Controllers	
7	Version	D...	Device version	WORD *2	0x0001	
8	VersionDisplayFlg	D...	Device version displ...	BOOL	1	
9	VersionPolicyType	D...	Device version polic...	UINT16	1	
10	DisplayVersionValue	D...	Device version displ...	STRING(32)	1.0.0	
11	ReferenceURL	R...	Reference URL	STRING U(1024)	http://www.thermal control.com/	
12	URLInfo	U...	URL information	STRING U(256)	Web link	
13	Outline	O...	Outline specification	STRING U(256)	SLMP correspondence of temperature controller	
14	Feature	F...	Feature	STRING U(256)	High-contrast, big LCD display	
15	SpecList	S...	Specification list	STRING_U(256)()	High-speed: 25ms sampling period, Easy-setup: Easy-setup programmer including, Self-control: 8-input / 8-output(Digital I/O) and 4-input(Analog), Self-recorder: I/O state & Analog value logging with micro-sd card(max 32GB), Self-diagnostic: POST & remote request executing, Ambient temperature: -10 to 55° C, Ambient humidity: 25% to 85%, Storage temperature: -25 to 65° C, Altitude: Max. 2,000 m, Standard response time 3ms	
16	PowerSupplyVoltage	P...	Power supply voltage	REAL	24	
17	ConsumptionCurrent	C...	Consumption current	REAL	100	
18	IconFileName	I...	Icon file name	STRING(52)	thermo.ico	
19	GraphicsFileName	G...	Image file name	STRING(52)	thermo.bmp	
20	Height	H...	Hight	STRING U(256)	48mm	
21	Width	W...	Width	STRING U(256)	48mm	
22	Depth	D...	Depth	STRING U(256)	70mm	
23	Weight	W...	Weight	STRING U(256)	150g	
24	Price	P...	Price	STRING U(256)	$398	*3

*2 Enter the data type corresponding to the value of the device version.
*3 Do not write anything under the REMARK item.

Enter information into the DATA items of the applicable elements.

If an element does not exist, add the element and then enter the information.

(b) For CC-Link IE Field Network Compatible Module

Describe the information on the target module according to "(a) For CC-Link Compatible Module".

(c) For SLMP (TCP/IP) Compatible Module

Describe the information on the target module according to "(a) For CC-Link Compatible Module".

(d) For CC-Link IE Field Network Basic Compatible Module

Describe the information on the target module according to "(a) For CC-Link Compatible Module".

(e) For CC-Link IE TSN Compatible Module

Describe the target module information according to "Table 8 Information Written to Device Information List Part" and "Table 9 Information Written to Device Information List Part (CC-Link IE TSN)".

For extension modules, describe the target module information according to "Table 8 Information Written to Device Information List Part" and "Table 10 Information Written to Device Information List Part (CC-Link IE TSN Extension Module)".

Target Module Information

Item		Specification
Model		CL-A1000-TSN
Product name		Temperature Controllers
Power supply voltage		24 VDC (±10%)
Current consumption		100 mA or lower
Dimensions		48mm(H)×48mm(W)×70mm(D)
Weight		Approx. 150g
Standard price		¥34,800
Dedicated tool		Provided
Dedicated tool name		Dedicated tool
Installation registry key name		SOFTWARE\AAA
Installation registry value name		AppMain
exe pass registry key name		SOFTWARE\AAA
exe pass registry value name		AppMain
Communication specification		CC-Link IE TSN
Standard number of compatible CiA		Compatible with CiA 401
Object dictionary file name		A1234.csv
Minimum synchronization time		20ns
Minimum communication time		10ns
IEEE 802.1AS function		Provided
100Mbps reception function		Provided
100Mbps relay function		Provided
1Gbps full rate reception function		None
1Gbps full rate relay function		Provided
Broadcast/multicast function		Provided
Certification class		A
Cyclic communication	Send bit data default size	32 points
	Send word data default size	16 points
	Receive bit data default size	32 points
	Receive word data default size	16 points
	Send bit data maximum size	1024 points
	Send word data maximum size	512 points
	Receive bit data maximum size	1024 points
	Receive word data maximum size	512 points
	Send bit data address	0x00000123
	Send word data address	0x00000456
	Receive bit data address	0x00000789
	Receive word data address	0x00000159
Status notification device address		0x00000753

Device Information List Part [DEVICE_INFO]

	LABEL	L/	C	NAME	DATATYPE	DATA	REMARK
1	VendorName	V	C	Vendor name	STRING U(64)	Thermal control company	
2	VendorCode		C	Vendor code	WORD	0x1234	
3	DeviceModel		C	Model	STRING(48)	CL-A1000-TSN	
4	ProductID		C	Product ID	STRING(256)	0x0100	
5	DeviceTypeID		C	Device type ID	WORD	0x0006	
6	DeviceTypeDetail		C	Device type (details)	STRING U(256)	Temperature Controllers	
7	Version	D	C	Device version	UINT16	1	
8	VersionDisplayFlg	D	C	Device version display flag	BOOL	1	
9	VersionPolicyType	D.		Device version policy	UINT16	1	
10	DisplayVersionValue	D.		Device version (display value)	STRING(32)	1.0.0	
11	VersionComment	V.		Version comment	STRING U(256)	1.00a	
12	DeviceConfigurationID	D.		Device configuration ID	STRING(32)	ACustomize	
13	DeviceConfigurationComment	D.		Device configuration comment	STRING U(64)	Customizable by company A	
14	ReferenceURL	R.		Reference URL	STRING U(1024)	http://www.thermal control.com/	
15	URLInfo	U.	C	URL information	STRING U(256)	Check the specification on the website	
16	Outline	O	C	Overview specification	STRING U(256)	CC-Link IE TSN-compatible temperature controller	
17	Feature	F	C	Features	STRING U(256)	A large LC panel mounted	
18	SpecList	S		Specification list	STRING_U(256)()	Power supply voltage 24 VDC, Power consumption 2.3W or lower, Platinum resistance thermometer sensor (command value ± 0.5°C) ± 1 digit or lower, Analog input ± 0.25%FS ± 1 digit or lower, Control output 1 (for SSR drive) 12 VDC ± 20%, 40 mA, Ambient temperature -10 to 55°C (no freezing and condensation), Ambient humidity 25 to 85%RH, Storage temperature -25 to 65°C (no freezing and condensation), Altitude 2,000m or lower, Weight approx. 200g, Memory protection non-volatile memory (number of writes: 100,000)	
19	PowerSupplyVoltage		C	Power supply voltage (V)	REAL	24	
20	ConsumptionCurrent		C	Current consumption (mA)	REAL	100	
21	IconFileName		C	Icon file name	STRING(52)	thermo.ico	
22	GraphicsFileName		C	Screen file name	STRING(52)	thermo.bmp	
23	Height	H	C	Height	STRING U(256)	48mm	
24	Width	W	C	Width	STRING U(256)	48mm	
25	Depth	D	C	Depth	STRING U(256)	70mm	
26	Weight	Wt	C	Weight	STRING U(256)	150g	
27	Price	P.		Price	STRING U(256)	¥34,800	
28	DedicatedToolFlg	D.		Dedicated tool flag	BOOL	1	
29	DedicatedToolName	D.		Dedicated tool name	STRING U(256)	Dedicated tool	
30	InstallRegistryKeyName	In.		Installation registry key name	STRING(255)	SOFTWARE¥AAA	
31	InstallRegistryValueName	In.		Installation registry value name	STRING(255)	AppMain	
32	ExePathRegistryKeyName	e.		exe pass registry key name	STRING(255)	SOFTWARE¥AAA	
33	ExePathRegistryValueName	e.	C	exe pass registry value name	STRING(255)	AppMain	*1

*1 Do not write anything under the REMARK item.

Enter information into the DATA items of the applicable elements.

If an element does not exist, add the element and then enter the information.

Table 8 Information Written to Device Information List Part

No.	Label	Entered Information	Required/ Optional
1	VendorName	Enter the name of the vendor that created the module.	Required
2	VendorCode	Enter the code of the vendor that created the module. Add [0x] before the 5 to 8 digit CC-Link Partner Association member number.	Required
3	DeviceModel*1	Enter the model of the module. Example: CL-A1000	Required
4	ProductID	Enter the product ID of the module managed by each vendor.	*3
5	DeviceTypeID	Enter the code of the remote device type list determined by the CC-Link Partner Association. Example: 0x0006 (temperature control)	*2
6	DeviceTypeDetail	Enter the specific device type if desired, in any format. Example: Temperature controller	*2
7	Version*1	Enter the device version of the module managed by each vendor. For the DATATYPE item, select from the following: bit string, signed integer, unsigned integer, string (the expression "STRING(x)" only). Write "WORD" for SLMP (TCP/IP) compatible module. Write "UINT16" for CC-Link IE TSN compatible module.	Required
8	VersionDisplayFlg	Enter whether you want to show or hide the device version to or from the user. 0: Hide 1: Show	Required
9	VersionPolicyType	Enter the policy of the relationship between the actual device version and the device version written in the CSP+ file when accessing the device using the CSP+ file. 0: Indicates no specific problems occur if the module device version and CSP+ file device version differ. 1: Indicates problems may occur if the module device version and CSP+ file device version differ. 2: Indicates that all functions of the old device version are available in the new device version.	Required
10	DisplayVersion Value	Enter the value of the device version to be displayed when the value of the device version acquired from the module differs from the value of the version displayed to the user on utility software.	Optional
11	VersionComment	Enter a comment related to the device version.	Optional
12	ReferenceURL	Enter a URL if the module information is disclosed on the Web. The Web page of the vendor is also possible if the module information is not disclosed.	Optional
13	URLInfo	Enter a description of the information indicated by the reference URL.	Optional
14	Outline	Enter the general specifications of the device.	Optional
15	Feature	Enter the features of the device.	Optional
16	SpecList	Enter the specification information of the device using a set of strings.	Optional
17	PowerSupply Voltage	Enter the power supply voltage (V). Example: 24	Optional
18	Consumption Current	Enter the current consumption (mA). Example: 100	Optional
19	IconFileName	Enter the icon file name with the extension (.ico) when displaying the module as an icon on the utility software. * The characters that can be used in the file name are alphanumeric characters and symbols. Example: CL-A1000.ico	Optional
20	GraphicsFileName	Enter the graphic file name with the extension (.png, .bmp, .jpg, or .gif) when displaying the module on the utility software. * The characters that can be used in the file name are alphanumeric characters and symbols. Example: CL-A1000.bmp	Optional
21	Height	Enter the height of the external dimensions, including the unit. Example: 10cm	Optional
22	Width	Enter the width of the external dimensions, including the unit. Example: 20cm	Optional
23	Depth	Enter the depth of the external dimensions, including the unit. Example: 2cm	Optional

No.	Label	Entered Information	Required/ Optional
24	Weight	Enter the weight, including the unit. Example: 250g	Optional
25	Price	Enter the price, including the unit. Example: $398	Optional

*1: For use in a CSP+ file name (see the Control & Communication System Profile Specification, Section 4.1.1), the following characters are prohibited in the file:[\/: ? "<>|] When model assessment processing is performed using utility software, there is no distinction made between upper and lower case letters.
*2: Be sure to enter at least one of the DeviceTypeID element or DeviceTypeDetail element. Omission of both elements is prohibited. There is no problem if both elements are described. The value of the DeviceTypeDetail element is prioritized in that case.
*3: Required for CC-Link IE TSN. Optional for other networks.

Table 9 Information Written to Device Information List Part (CC-Link IE TSN)

No.	LABEL	Entered Information	Required/ Optional
1	DedicatedToolFlg	Write whether a supported dedicated tool is provided. 0: None 1: Provided	Optional
2	DedicatedToolName	Write the name of a supported dedicated tool.	*1
3	InstallRegistryKeyName	Write the key name of registry that exists only when a supported dedicated tool is installed.	*1
4	InstallRegistryValueName	Write the value name of registry that exists only when a supported dedicated tool is installed.	*2
5	ExePathRegistryKeyName	Write the key name of registry that has the pass information of the execution file (.exe) of a supported dedicated tool.	*1
6	ExePathRegistryValueName	Write the value name of registry on which the pass to the execution file (.exe) of a supported dedicated tool is written.	*1
7	EXTExtensionIFTypeID	Write the type of extension modules to be connected.	*3
8	EXTExtensionMax	Write the maximum number of extension modules to be connected.	*3
9	EXTExtensionModuleType	Write the type of extension modules to be connected.	*4
10	EXTCyclicPDUExtensionFlg	Write if extension modules supporting cyclic transmission PDU can be connected.	*3

*1: Required when DedicatedToolFlg is written and the DATA is 1. In other cases, writing is prohibited.
*2: Optional when DedicatedToolFlg is written and the DATA is 1. In other cases, writing is prohibited.
*3: Required for the CC-Link IE TSN main module. In other cases, writing is prohibited.
*4: Write the information for the CC-Link IE TSN main module as necessary. In other cases, writing is prohibited.

Table 10 Information Written to Device Information List Part (CC-Link IE TSN Extension Module)

No.	LABEL	Entered Information	Required/ Optional
1	CyclicPDUFlg	Write the cyclic transmission PDU availability.	Required

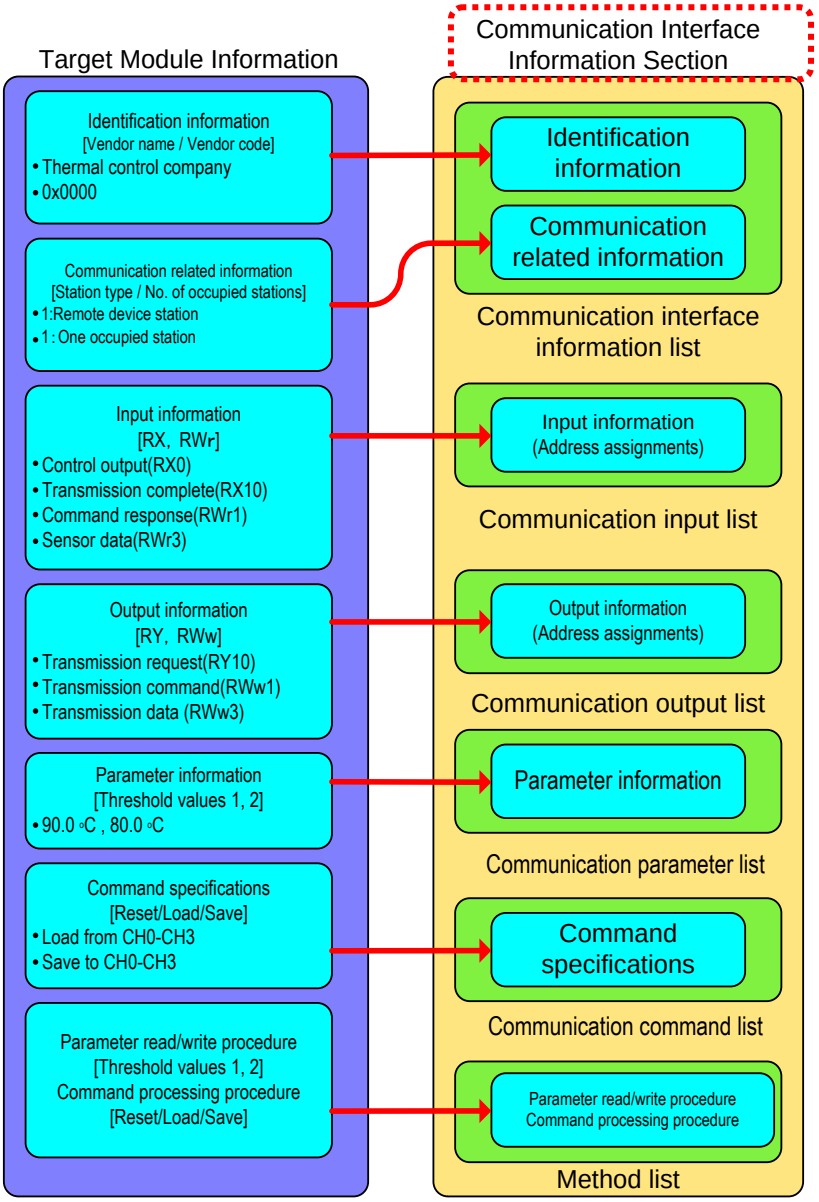
5.2.5 Writing to the Communication Interface Information (COMM_IF) Section

The communication interface information section describes information related to the communication module of the target module.

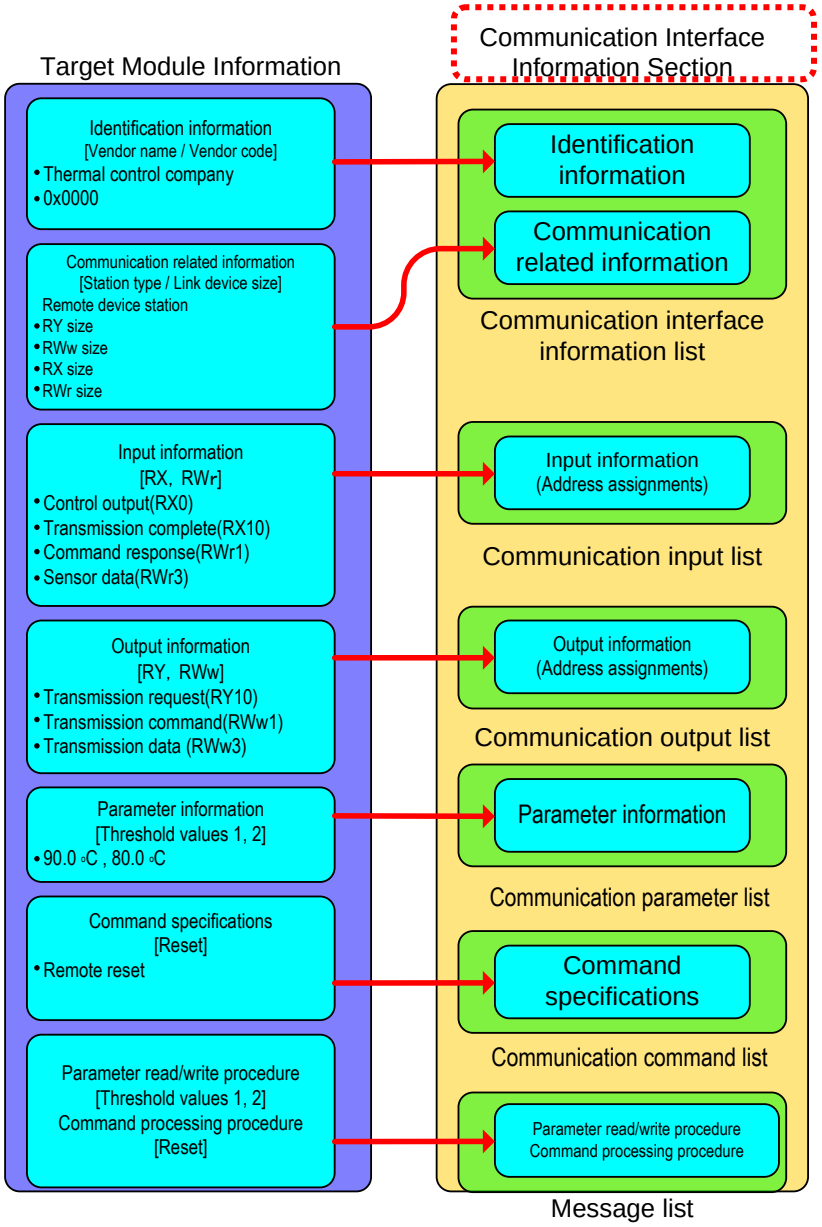
The following indicates the information to be written to the communication interface information section.

First, the following shows the correspondence between the target module information and communication interface information section.

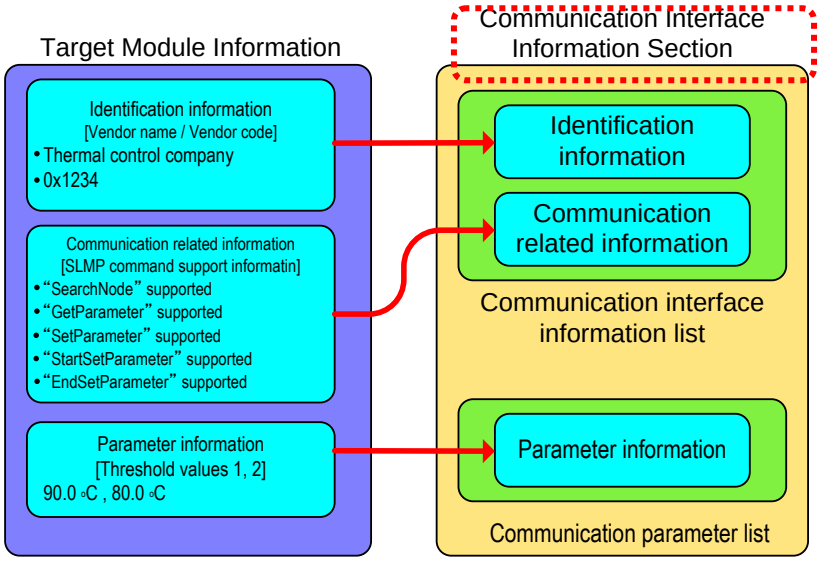
(a) For CC-Link Compatible Module



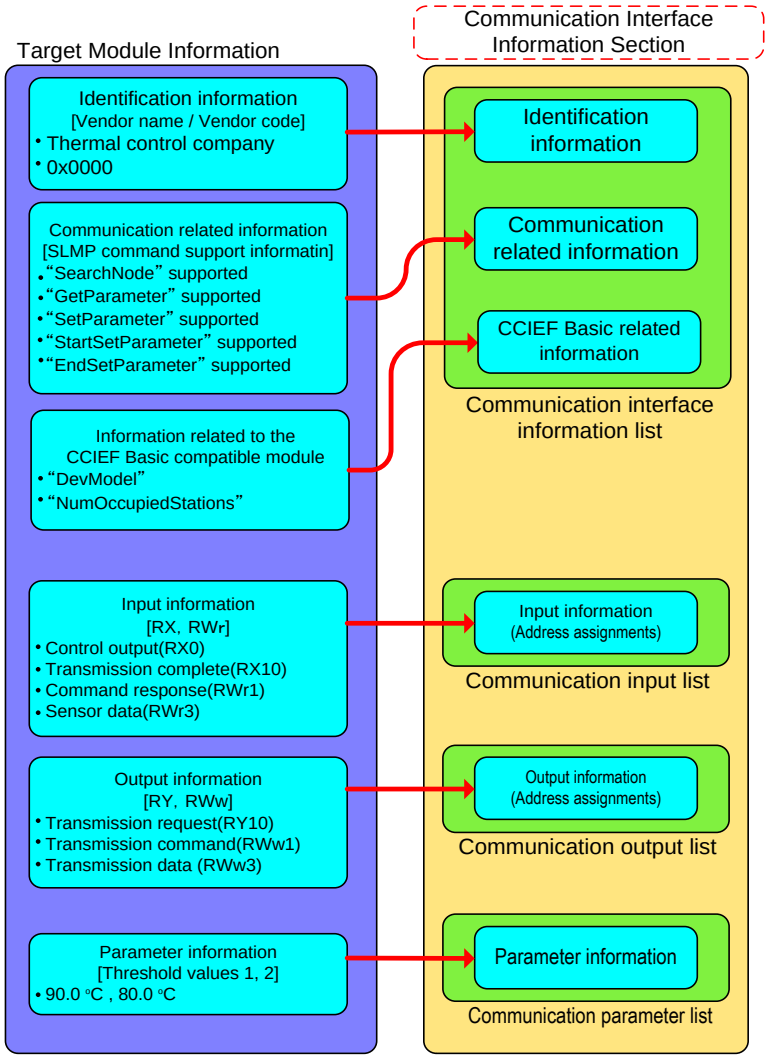
(b) For CC-Link IE Field Network Compatible Module



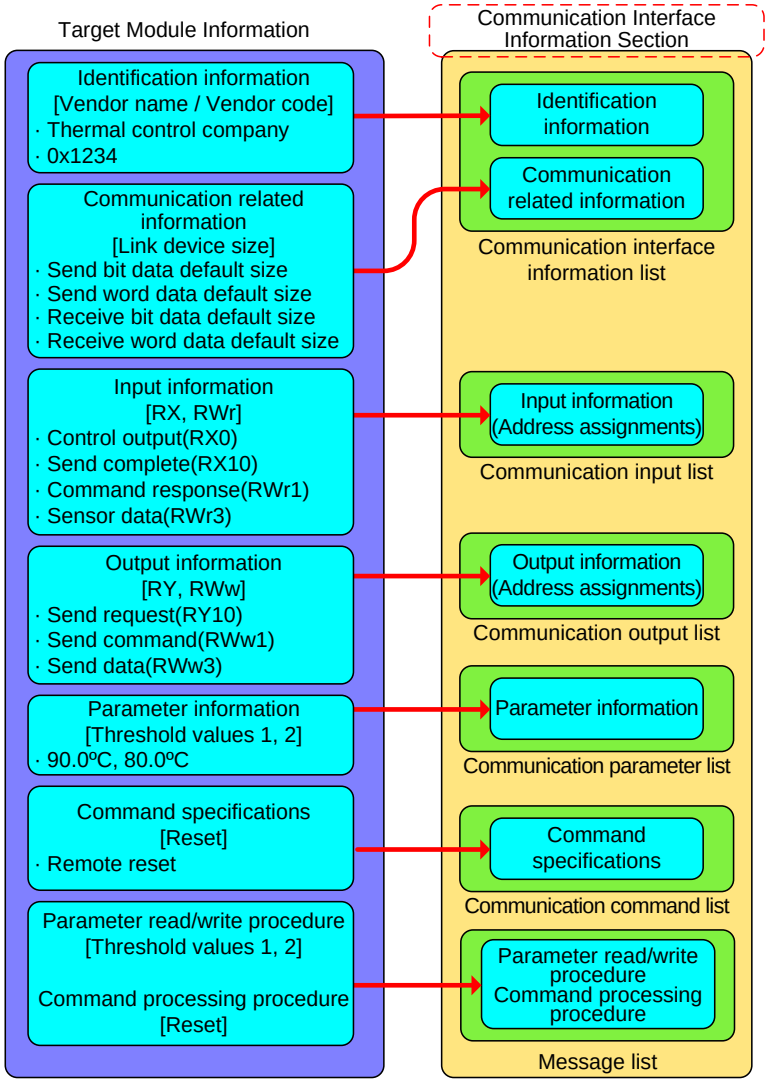
(c) For SLMP (TCP/IP) Compatible Module



(d) For CC-Link IE Field Network Basic Compatible Module



(e) For CC-Link IE TSN Compatible Module



The communication interface information section comprises the parts below.

Since the elements comprising parts vary depending on the communication interface, enter the appropriate communication interface information into the corresponding parts.

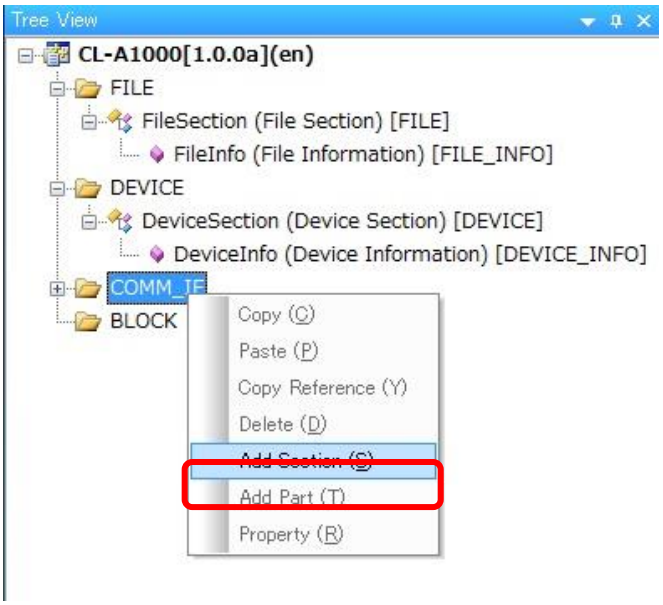
Table 11 Parts of the Communication Interface Information Section

No.	Part	Description	Communication interface
1	Communication interface list (COMM_IF_INFO)	Describes the identification information of the communication interface and information related to communication specifications.	Common
2	Communication input list (COMM_IF_INPUT)	Describes the input information assigned to RX and RWr.	CC-Link CC-Link IE Field Network CC-Link IE Field Network Basic CC-Link IE TSN
3	Communication output list (COMM_IF_OUTPUT)	Describes the output information assigned to RY and RWw.	CC-Link CC-Link IE Field Network CC-Link IE Field Network Basic CC-Link IE TSN
4	Communication parameter list (COMM_IF_PARAMETER)	Describes information related to setting and reading the operation settings of the target module.	Common
5	Communication command list (COMM_IF_COMMAND)	Describes information related to the commands issued to the target module.	CC-Link CC-Link IE Field Network CC-Link IE TSN
6	Communication method list (METHOD)	Describes parameters and the procedure for the command execution service.	CC-Link CC-Link IE Field Network CC-Link IE TSN
7	Communication message list (MESSAGE)	Describes parameters and the procedure for the SLMP command execution service.	CC-Link IE Field Network CC-Link IE TSN

In the stage when a project was newly created, the communication interface information section has not yet created.
To enter the communication interface information, you need to create the communication interface information section and each part.
The following indicates the procedure for creating the communication interface information section and each part.

(1) Creating the Communication Interface Information Section

Click the right mouse button on the COMM_IF folder and select [Add section(S)].



Enter items [1] through [5] while referring to "Table 12 Creating the Communication Interface Information Section" below and click the [Create] button.

For details of labels and comments, refer to the Control & Communication System Profile Specification (Section 4.3.1).

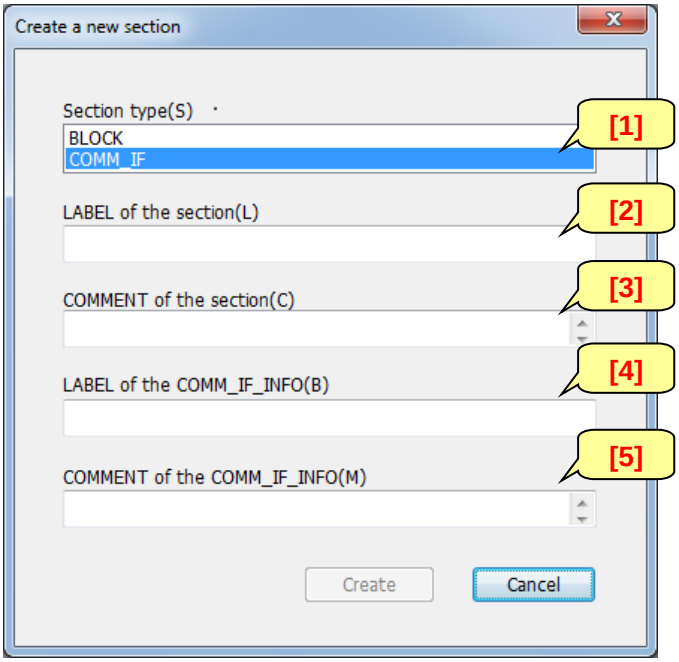
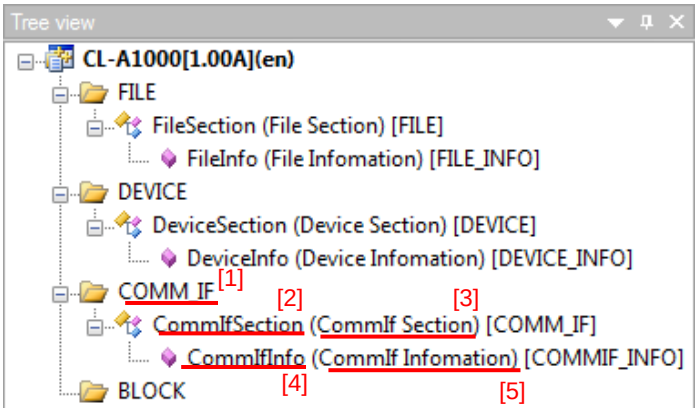


Table 12 Creating the Communication Interface Information Section

No.	Entered Information	Example	Remarks
[1]	New section to be created	Select [COMM_IF].	[BLOCK] Block information section [COMM_IF] Communication interface information section
[2]	A label that identifies the communication interface information section	CommIfSection	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[3]	A comment for the communication interface information section	Communication interface information	Enter an explanation of the communication interface information section, etc., as desired.
[4]	A label that identifies the communication interface information list part	CommIfInfo	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[5]	A comment for the communication interface information list part	Communication interface list	Enter an explanation of the communication interface information list part, etc., as desired.

The communication interface information section is now created.

The information entered in the New Section dialog box appears as shown below.



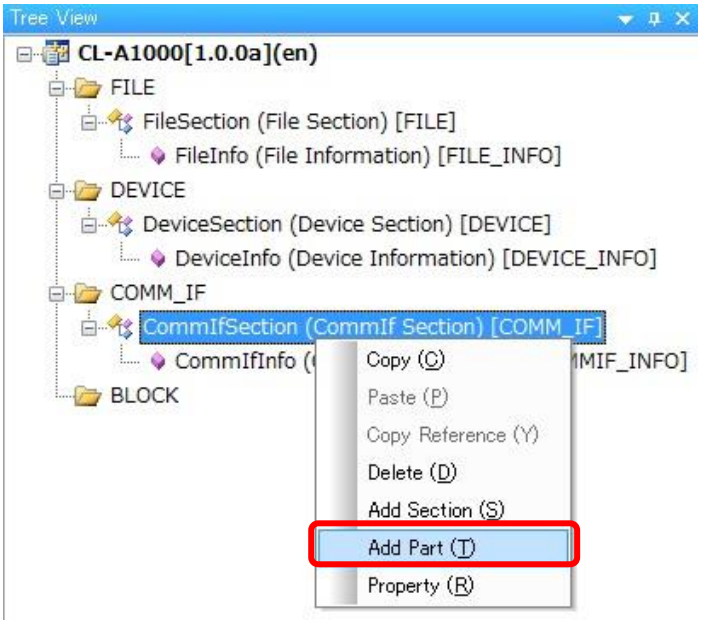
Create the parts (see Table 11) for the created section as described below.

(2) Creating Parts

The communication interface information list part is automatically generated. Create the remaining parts.

Create the communication input list part according to the example shown below.

Click the right mouse button on the communication interface information section and select [Add part(T)].



Enter items [1] through [3] while referring to "Table 13 Creating Communication Interface Information Section Parts" below and click the [Create] button.

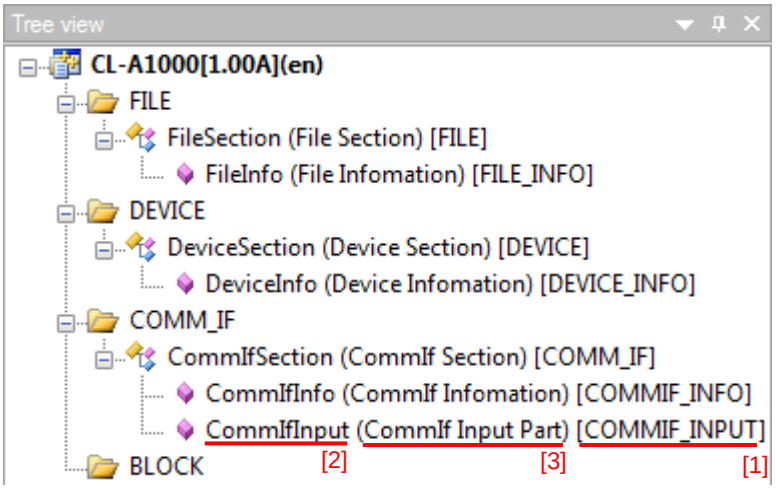
For details of labels and comments, refer to the Control & Communication System Profile Specification (Section 4.3.1).

Table 13 Creating Communication Interface Information Section Parts

No.	Described Information	Example	Remarks
[1]	Part to be created	Select [COMM_IF_INPUT], which indicates the communication input list part.	[COMM_IF_INPUT] Communication input list part [COMM_IF_OUTPUT] Communication output list part [COMM_IF_PARAMETER] Communication parameter list part [COMM_IF_COMMAND] Communication command list part [METHOD] Communication method list part [MESSAGE] Communication message list part For [STRUCT], [ENUM], and [COMMAND_ARGUMENT], refer to Section 5.2.8 Common information part.
[2]	A label for identifying the part	CommIfInput	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[3]	A comment for the part to be created	Communication input list	Enter an explanation of the part to be created, etc., as desired.
[4]	No. of elements to be created	20	Specifies the number of elements to be created in the parts. Initial value is 20. This is the number to be generated when creating a part. The element in the part can be added or deleted after creating the part.

The communication input list part is now created.

The information entered in the New profile dialog box appears as shown below.

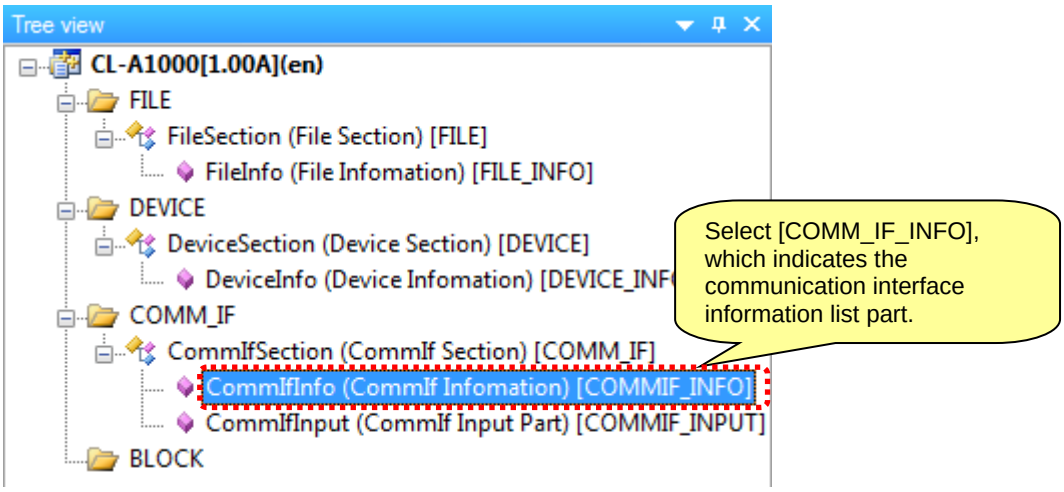


Create other parts using this same procedure.

The following section indicates the information written to each part created.

(3) Writing to the Communication Interface Information List Part (COMM_IF_INFO)

Display the communication interface information list part.



In the communication interface information list part, the elements comprising parts vary depending on the communication interface. Descriptions for each communication interface are shown below.

For communication interface information list part details, see the Control & Communication System Profile Specification (Section 5.3.1).

(a) For CC-Link Compatible Module

Describe the target module information according to the "Table 14 Information Written to Communication Interface Information List Part (CC-Link)."

Target Module Information

Item	Specifications
Model	CL-A1000
Product name	Temperature Controllers
Power supply voltage	24 VDC (±10%)
Current consumption	100 mA or less
Dimensions	10cm(H)×20cm(W)×2cm(D)
Weight	Approx. 250 g
Standard price	$398
Remote station classification	Remote device station
Communication specifications	CC-Link Ver. 1.10
No. of occupied stations	1

Communication Interface Information List Part [COMM_IF_INFO]

	LABEL	LAB...	NAME	DATATYPE	DATA	REMARK
1	VendorName		Vendor name	STRING U(64)	Thermal control Co. Ltd.	
2	VendorCode		Vendor code	WORD	0x1234	
3	CommIFTypeID		Communication interface type ID	STRING(32)	CCLink	
4	Version		Version	STRING(16)	1.00A	
5	ReadVersionType		Read device version type	STRING(128)	1	
6	StationType		Station type	UINT16	1	
7	IOType		I/O type	UINT16	0	
8	DevModel		Model name (Type name)	STRING(48)	CL-A1000	
9	CcLinkVer		CC-Link version	STRING(7)	1.10	
10	NumOccupiedStations		Number of occupied stations	UINT16	1	

*1. Do not write anything under the REMARK

*1

Enter information into the DATA items of the applicable elements.

If an element does not exist, add the element and then enter the information.

Table 14 Information Written to Communication Interface Information List Part (CC-Link)

No.	Item Name	Entered Information	Description Requirement
1	VendorName	Describes the name of the vendor that created the communication interface information.	Required
2	VendorCode	Enter the code of the vendor that created the communication interface information. Add [0x] before the 5 to 8 digit CC-Link Partner Association member number.	Required
3	CommIFTypeID	Describes the ID that indicates the type of the communication interface information determined for each network protocol. Since the communication interface is the CC-Link, write "CCLINK".	Required
4	Version	Describes the version of the communication interface information in a string.	Required
5	ReadVersionType	Describes the means for acquiring the version of the communication interface information via CC-Link. NA: Not acquirable SoftwareVersion: Software version NetworkFWVersion: Network firmware version ControllerFWVersion: Controller firmware version	Required
6	StationType	Describes the station type. 0: Remote I/O station 1: Remote device station 2: Intelligent device station / Local station	Required
7	StationTypeDetail	Describes the detail of station type. 0: Intelligent device station 1: Local station	Conditionally required1
8	TotalNumOfIO	Describes the total I/O points. 0：Depending on the number of occupied stations 1: 8 points 2: 32 points 3: 16 points	Optional
9	IOType	Describes the I/O type. 0: Back/Front mixed 1: Input 2: Output 3: Mixed	Required
10	DevModel	Describes the model in a string.	Required
11	CcLinkVer	Describes the CC-Link version (1.00, 1.10, 1.11, 2.00). Example: 1.10	Required
12	ExtCycle	Describes the expansion cyclic setting. x1 setting/x2 setting/x4 setting/x8 setting	Conditionally required2
13	NumOccupiedStations	Describes the number of occupied stations. Example: 1	Required
14	ErrReg	Describes the name of address where the error code is saved. Example: RWr1	Optional
15	MasterFlg	Describes a waiting master flag. Considered as "0" when omitted. 0：Cannot be a waiting master. 1：Can be a waiting master.	Optional

Conditionally required1: Required when 2 is specified in Station Type.

Conditionally required2: Required when 2.00 or greater is specified in CcLinkVer.

(b) For CC-Link IE Field Network Compatible Module

Describe the information on the target module according to the "Information Written to Communication Interface Information List Part (CC-Link IE Field Network)".

For modules supporting the safety communication function, refer to “Table 16 Information Written to Communication Interface Information List Part (CC-Link IE Safety Communication Function)" as well as "Table 15 Information Written to Communication Interface Information List Part (CC-Link IE Field Network)" to describe the information on the target module.

Target Module Information

Item		Specification
Model		CL-A1000-IEF
Product name		Temperature Controllers
Power supply voltage		DC 24V(±10%)
Current consumption		200mA or less
Dimensions		48mm(H)×48mm(W)×70mm(D)
Weight		Approx. 150g
Standard price		¥34,800
Communication specification		CC-Link IE Field Network
Remote station classification		Remote device station
Cyclic Communication	RX/RY points	32
	RWr/RWw points	16

Communication Interface Information List Part [COMM_IF_INFO]

	LABEL	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor name	STRING_U(64)	Thermal control Co.	
2	VendorCode	Vendor code	WORD	0x1234	
3	CommIFTypeID	Communication interface type ID	STRING(32)	CCLinkIEField	
4	Version	Version	STRING(4)	A	
5	ReadVersionType	Read device version type	STRING(128)	1	
6	nodeType	Station type	BYTE	0x34	
7	IOType	I/O type	UINT16	0	
8	ModelCode	Model code	UINT32	1234	
9	DevModel	Model name (Type name)	STRING(48)	CL-A1000-IEF	
10	RYSize	RY size	UINT16	32	
11	RWwSize	RWw size	UINT16	16	
12	RXSize	RX size	UINT16	32	
13	RWrSize	RWr size	UINT16	16	
14	Ports	Number of ports	UINT8	2	
15	protocolVersion	Protocol version	STRING(32)	1	
16	NodeNumberSettingFlg	Whether node No. setting function exists	BOOL	0	*1
17	TransientReceptionFlg	Whether transient reception function exists	BOOL	1	
18	SLMPReceptionFlg	Whether SLMP reception function exists	BOOL	1	

*1 Do not write anything under the REMARK item.

Table 15 Information Written to Communication Interface Information List Part (CC-Link IE Field Network)

No	Item Name	Entered Information	Description Requirement
1	VendorName	Describes the name of the vendor that created the communication interface information.	Required
2	VendorCode	Enter the code of the vendor that created the communication interface information. Add [0x] before the 5 to 8 digit CC-Link Partner Association member number.	Required
3	CommIFTypeID	Describes the ID that indicates the type of the communication interface information determined for each network protocol. Write "CCLinkIEField".	Required
4	Version	Describes the version of the communication interface information in a string.	Required
5	ReadVersionType	Describes the means for acquiring the version of the communication interface information via CC-Link IE Field Network. NA: Not acquirable NetworkFWVersion: Network firmware version ControllerFWVersion: Controller firmware version	Required
6	VendorName2	Describes the name of vendor that created the communication function. Can be omitted if it is the same as VendorName.	Optional
7	nodeType	Describes the station type. 0x32: Local station 0x33: Intelligent device station 0x34: Remote device station 0x35: Remote I/O station	Required
8	IOType	Describes the I/O type. 0: Back/Front mixed 1: Input 2: Output 3: Mixed	Required
9	ModelCode	Describes the model code.	Required
10	DevModel	Describes the model name.	Required
11	ModelName	Describes the name of model that can be acquired from the module. Can be omitted if it is the same as DevModel.	Optional
12	RYSize	Describes the RY size of the module.	Required
13	RWwSize	Describes the RWw size of the module.	Required
14	RXSize	Describes the RW size of the module.	Required
15	RWrSize	Describes the RWr size of the module.	Required
16	Ports	Describes the number of module ports.	Required
17	protocolVersion	Describes the protocol version.	Required
18	NodeNumberSettingFlg	Describes if the node number setting function exists. 0: No. 1: Yes.	Required
19	TransientReceptionFlg	Describes if the transient reception function exists. 0: No. 1: Yes.	Required
20	SLMPReceptionFlg	Describes if the SLMP reception function exists. 0: No. 1: Yes.	Required

Table 16 Information Written to Communication Interface Information List Part (CC-Link IE Safety Communication Function)

No	Item Name	Entered Information	Description Requirement
1	SafetyProtocolVersion	Describes the protocol version of CC-Link IE safety communication function.	Required
2	SafetyNodeType	Describes the safety node type.	Required
3	SafetyIn_XSize	Describes the size of safety input data.	Required
4	SafetyOut_YSize	Describes the size of safety output data.	Required
5	SupportSafetyCommService	Describes the safety communication service to be supported. Each bit of DWORD value indicates the supported service. Turn on the bits that indicate the service to be supported by the device. The relation between bits and service is as follows: Bit 0: IESS-Start Bit 1: IESS-InvokeFunc	Optional

(c) For SLMP (TCP/IP) Compatible Module

Write the target module information while referring to "Table 17 Information Written to Communication Interface Information List Part (SLMP(TCP/IP))".

Target Module Information

Item	Specification
Model	CL-A1000-Ethernet
Product name	Temperature Controllers
Power supply voltage	DC 24V(±10%)
Current consumption	200mA or less
Dimensions	48mm(H)×48mm(W)×70mm(D)
Weight	Approx. 150g
Standard price	¥34,800
Communication specification	Ethernet(SLMP)

SLMP command support information

Item	Specification
SearchNode	Supported
SetIPAddress	Not supported
CompareDeviceInformation	Not supported
GetParameter	Supported
SetParameter	Supported
StartSetParameter	Supported
EndSetParameter	Supported
CancelSetParameter	Not supported
ReadStatus	Not supported
GetCommunicationSetting	Not supported
ReadStatus2	Not supported

Communication Interface Information List Part [COMM_IF_INFO]

1	LABEL	NAME	DATATYPE	DATA	REMARK
2	VendorName	Vendor name	STRING_U(64)	Thermal control Co.Ltd.	
3	VendorCode	Vendor code	WORD	0x1234	
4	CommIFTypeID	Communication interface type ID	STRING(32)	Ethernet	
5	Version	Version	WORD	0x0001	
6	ReadVersionType	Method to obtain machine version	STRING(128)	MachineVersion	
7	SupportIPAddressSize	Support IP address size	UINT16()	4	
8	TimeOutValue	Time out value	UINT16	30000	
9	SupportFlg_SearchNode	Support Flag_SearchNode	BOOL	1	
10	SupportFlg_SetIPAddress	Support Flag_SetIPAddress	BOOL	0	
11	SupportFlg_CompareDeviceInfo	Support Flag_CompareDeviceInfo	BOOL	0	
12	SupportFlg_GetParam	Support Flag_GetParam	BOOL	1	
13	SupportFlg_SetParam	Support Flag_SetParam	BOOL	1	
14	SupportFlg_StartSetParam	Support Flag_StartSetParam	BOOL	1	
15	SupportFlg_EndSetParam	Support Flag_EndSetParam	BOOL	1	
16	SupportFlg_CancelSetParam	Support Flag_CancelSetParam	BOOL	0	
17	SupportFlg_ReadStatus	Support Flag_ReadStatus	BOOL	0	
18	SupportFlg_GetCommSetting	Support Flag_GetCommSetting	BOOL	0	
19	SupportFlg_ReadStatus2	Support Flag_ReadStatus2	BOOL	0	*1

*1 Do not write anything under the REMARK item.

Table 17 Information Written to Communication Interface Information List Part (SLMP(TCP/IP))

No	Item Name	Entered Information	Description Requirement
1	VendorName	Describes the name of vendor that created the module.	Required
2	VendorCode	Describes the code of vendor that created the module. Add [0x] before the 5 to 8 digit CC-Link Partner Association member number.	Required
3	CommIFTypeID	Describes the ID that indicates the type of communication interface in a string. Write "Ethernet".	Required
4	Version	Describe the version of module device.	Required
5	ReadVersionType	Describe how to obtain the version of module device. Write "MachineVersion".	Required
6	SupportIPAddressSize	Describes the byte size of IP address.	Optional
7	TimeOutValue	Describes the timeout value.	Optional
8	SupportFlg_SearchNode	Describes if SLMP command "SearchNode" is supported.	Optional
9	SupportFlg_SetIPAddress	Describes if SLMP command "SetIPAddress" is supported. 0: No 1: Yes	Optional
10	SupportFlg_CompareDeviceInfo	Describes if SLMP command "CompareDeviceInformation" is supported. 0: No 1: Yes	Optional
11	SupportFlg_GetParam	Describes if SLMP command "GetGetParameter" is supported. 0: No 1: Yes	Optional
12	SupportFlg_SetParam	Describes if SLMP command "SetParameter" is supported. 0: No 1: Yes	Optional
13	SupportFlg_StartSetParam	Describes if SLMP command "StartSetParameter" is supported. 0: No 1: Yes	Optional
14	SupportFlg_EndSetParam	Describes if SLMP command "EndSetParameter" is supported. 0: No 1: Yes	Optional
15	SupportFlg_CancelSetParam	Describes if SLMP command "CancelSetParameter" is supported. 0: No 1: Yes	Optional
16	SupportFlg_ReadStatus	Describes if SLMP command "ReadStatus" is supported. 0: No 1: Yes	Optional
17	SupportFlg_GetCommSetting	Describes if SLMP command "GetCommunicationSetting" is supported. 0: No 1: Yes	Optional
18	SupportFlg_ReadStatus2	Describes if SLMP command "ReadStatus2" is supported. 0: No 1: Yes	Optional

(d) For CC-Link IE Field Network Basic Compatible Module

Write the target module information while referring to "Table 18 Information Written to Communication Interface Information List Part (CC-Link IE Field Network Basic)".

Target Module Information

Item	Specification
Model	CL-A1000-B
Product name	Temperature Controllers
Power supply voltage	DC 24V(±10%)
Current consumption	200mA or less
Dimensions	48mm(H)×48mm(W)×70mm(D)
Weight	150g
Standard price	¥34,800
Communication specifications	Ethernet(TCP/IP)

SLMP command support information

Item	Specification
SearchNode	Supported
SetIPAddress	Not supported
CompareDeviceInformation	Not supported
GetParameter	Supported
SetParameter	Supported
StartSetParameter	Supported
EndSetParameter	Supported
CancelSetParameter	Not supported
ReadStatus	Not supported
GetCommunicationSetting	Not supported
ReadStatus2	Not supported

Communication Interface Information List Part [COMM_IF_INFO]

	LABEL
1	VendorName
2	VendorCode
3	CommIFTypeID
4	Version
5	ReadVersionType
6	SupportIPAddressSize
7	TimeOutValue
8	SupportFlg_SearchNode
9	SupportFlg_SetIPAddress
10	SupportFlg_CompareDeviceInfo
11	SupportFlg_GetParam
12	SupportFlg_SetParam
13	SupportFlg_StartSetParam
14	SupportFlg_EndSetParam
15	SupportFlg_CancelSetParam
16	SupportFlg_ReadStatus
17	SupportFlg_GetCommSetting
18	SupportFlg_ReadStatus2
19	DevModel
20	NumOccupiedStations
21	CCIEFBasicProtocolVersion
22	EthernetCommFunction

NAME	DATATYPE	DATA	REMARK
Vendor name	STRING_U(64)	Thermal control Co. Ltd.	
Vendor code	WORD	0x1234	
Communication Interface Type ID	STRING(32)	Ethernet	
Version	WORD	0x0001	
Read device version type	STRING(128)	MachineVersion	
Support IP Address Size	UINT16()	4	
TimeOutValue	UINT16	30000	
Support Flag SearchNode	BOOL	1	
Support Flag SetIPAddress	BOOL	0	
Support Flag CompareDeviceInfo	BOOL	0	
Support Flag GetParam	BOOL	1	
Support Flag SetParam	BOOL	1	
Support Flag StartSetParam	BOOL	1	
Support Flag EndSetParam	BOOL	1	
Support Flag CancelSetParam	BOOL	0	
Support Flag ReadStatus	BOOL	0	
Support Flag GetCommSetting	BOOL	0	
Support Flag ReadStatus2	BOOL	0	
ModelName (TypeName)	STRING(48)	CL-A1000-B	
Number of occupied station	UINT16	1	
CCIE FBasic Protocol Version	UINT16	1	
Ethernet Communication Function	DWORD	0x00000002	*1

*1. Do not write anything under the REMARK item.

Table 18 Information Written to Communication Interface Information List Part (CC-Link IE Field Network Basic)

No	Item Name	Entered Information	Description Requirement
1	VendorName	Describes the name of vendor that created the module.	Required
2	VendorCode	Describes the code of vendor that created the module. Add [0x] before the 5 to 8 digit CC-Link Partner Association member number.	Required
3	CommIFTypeID	Describes the ID that indicates the type of communication interface in a string. Write "Ethernet".	Required
4	Version	Describe the version of module device.	Required
5	ReadVersionType	Describe how to obtain the version of module device. Write "MachineVersion".	Required
6	SupportIPAddressSize	Describes the byte size of IP address.	Optional
7	TimeOutValue	Describes the timeout value.	Optional
8	SupportFlg_SearchNode	Describes if SLMP command "SearchNode" is supported.	Optional
9	SupportFlg_SetIPAddress	Describes if SLMP command "SetIPAddress" is supported. 0: No 1: Yes	Optional
10	SupportFlg_CompareDeviceInfo	Describes if SLMP command "CompareDeviceInformation" is supported. 0: No 1: Yes	Optional
11	SupportFlg_GetParam	Describes if SLMP command "GetGetParameter" is supported. 0: No 1: Yes	Optional
12	SupportFlg_SetParam	Describes if SLMP command "SetParameter" is supported. 0: No 1: Yes	Optional
13	SupportFlg_StartSetParam	Describes if SLMP command "StartSetParameter" is supported. 0: No 1: Yes	Optional
14	SupportFlg_EndSetParam	Describes if SLMP command "EndSetParameter" is supported. 0: No 1: Yes	Optional
15	SupportFlg_CancelSetParam	Describes if SLMP command "CancelSetParameter" is supported. 0: No 1: Yes	Optional
16	SupportFlg_ReadStatus	Describes if SLMP command "ReadStatus" is supported. 0: No 1: Yes	Optional
17	SupportFlg_GetCommSetting	Describes if SLMP command "GetCommunicationSetting" is supported. 0: No 1: Yes	Optional
18	SupportFlg_ReadStatus2	Describes if SLMP command "ReadStatus2" is supported. 0: No 1: Yes	Optional
19	DevModel	Describes the model name.	Required
20	NumOccupiedStations	Describes the number of occupied stations. Write an integer value between 1 to 16.	Required
21	CCIEFBasicProtocolVersion	Describes the protocol version of CC-Link IE Field Network Basic.	Optional
22	EthernetCommFunction	Describes if the communication function which is supported by Ethernet devices exists. bit1: Turn on the CC-Link IE Field Network Basic communication function. To support multiple services, describe the value to turn on multiple bits.	Optional

(e) For CC-Link IE TSN Compatible Module

Describe the target module information according to "Information Written to Communication Interface Information List Part (CC-Link IE TSN)" shown below.

For the module that supports the safety communication function, refer to "Table 19 Information Written to Communication Interface Information List Part (CC-Link IE TSN)" as well as "Table 20 Information Written to Communication Interface Information List Part (CC-Link IE TSN Safety Communication Function)" to describe the target module information.

For extension modules, refer to "Table 21 Information Written to Communication Interface Information List Part (CC-Link IE TSN Extension Module)" to describe the target module information.

Target Module Information

Item		Specification
Model		CL-A1000-TSN
Product name		Temperature Controllers
Power supply voltage		24 VDC (±10%)
Current consumption		100 mA or lower
Dimensions		48mm(H)×48mm(W)×70mm(D)
Weight		Approx. 150g
Standard price		¥34,800
Dedicated tool		Provided
Dedicated tool name		Dedicated tool
Installation registry key name		SOFTWARE\AAA
Installation registry value name		AppMain
exe pass registry key name		SOFTWARE\AAA
exe pass registry value name		AppMain
Communication specification		CC-Link IE TSN
Standard number of compatible CiA		Compatible with CiA 401
Object dictionary file name		A1234.csv
IEEE 802.1AS function		Provided
100Mbps reception function		Provided
100Mbps relay function		Provided
1Gbps full rate reception function		None
1Gbps full rate relay function		Provided
Broadcast/multicast function		Provided
Certification class		A
Cyclic communication	Send bit data default size	32 points
	Send word data default size	16 points
	Receive bit data default size	32 points
	Receive word data default size	16 points
	Send bit data maximum size	1024 points
	Send word data maximum size	512 points
	Receive bit data maximum size	1024 points
	Receive word data maximum size	512 points
	Send bit data address	0x00000123
	Send word data address	0x00000456
	Receive bit data address	0x00000789
	Receive word data address	0x00000159
Status notification device address		0x00000753

Communication Interface Information List Part [COMM_IF_INFO]

	LABEL	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor name	STRING_U(64)	Thermal control company	
2	VendorCode	Vendor code	WORD	0x1234	
3	CommIFTypeID	Communication interface type ID	STRING(32)	CCLinkIETSN	
4	Version	Version	UINT16	1	
5	StationMode	Station mode setting value	WORD	0x0001	
6	StationModeName	Station mode name	STRING_U(32)	Motion mode	
7	LocalFunction	Local function	BOOL	1	
8	AutoSettingHeaderType	Automatic setting header type	BYTE	0x00	
9	AutoSettingType	Automatic setting type	WORD	0x0000	
10	ModelCode	Model code	UINT32	1234	
11	ModelCodeEx	Expansion model code	UINT16	9876	
12	DevModel	Model name	STRING(48)	CL-A1000-TSN	
13	CanProfileNum	Standard number of compatible CiA	STRING(32)	401	
14	ObjectDictionaryFileName	Object dictionary file name	STRING(52)	A1234.csv	
15	IEEE802_1ASFunction	IEEE 802_1AS function	BOOL	1	
16	ReceiveFunction100M	Reception function_100Mbps	BOOL	1	
17	RelayFunction100M	Relay function_100Mbps	BOOL	1	
18	ReceiveFunction1G	Reception function_1Gbps	BOOL	0	
19	RelayFunction1G	Relay function_1Gbps	BOOL	1	
20	MultiCastFunction	Broadcast_multicast function	BOOL	1	
21	CertificationClass	Certification class	STRING_U(2)	A	
22	S_B_DefaultSize	Send bit data default size	UINT32	32	
23	S_W_DefaultSize	Send word data default size	UINT16	16	
24	R_B_DefaultSize	Receive bit data default size	UINT32	32	
25	R_W_DefaultSize	Receive word data default size	UINT16	16	
26	L_B_DefaultSize	Link relay default size	UINT32	30	
27	L_W_DefaultSize	Link register default size	UINT16	50	
28	S_B_MaxSize	Send bit data maximum size	UINT32	1024	
29	S_W_MaxSize	Send word data maximum size	UINT16	512	
30	R_B_MaxSize	Receive bit data maximum size	UINT32	1024	
31	R_W_MaxSize	Receive word data maximum size	UINT16	512	
32	L_B_MaxSize	Maximum size of LB	UINT32	1024	
33	L_W_MaxSize	Maximum size of LW	UINT16	512	
34	S_B_MinSize	Send bit data minimum size	UINT32	1	
35	S_W_MinSize	Send word data minimum size	UINT16	0	
36	R_B_MinSize	Receive bit data minimum size	UINT32	2	
37	R_W_MinSize	Receive word data minimum size	UINT16	1	
38	L_B_MinSize	Minimum size of LB	UINT32	1	
39	L_W_MinSize	Minimum size of LW	UINT16	1	
40	S_B_Address	Send bit data address	DWORD	0x00000123	
41	S_W_Address	Send word data address	DWORD	0x00000456	
42	R_B_Address	Receive bit data address	DWORD	0x00000789	
43	R_W_Address	Receive word data address	DWORD	0x00000159	
44	StsW_Address	Status notification device address	DWORD	0x00000753	
45	PDOConfigIndex1	PDOConfig index 1	WORD	0x1C00	
46	PDOConfigPDOType1	PDOConfigPDO type 1	BYTE	0x01	
47	PDOConfigMemoryAddress1	PDOConfig memory address 1	DWORD	0x00000001	
48	PDOConfigPossibleMapping1	PDOConfig mapping candidate 1	WORD[2]	<0x1600><0x1601>	
49	S_General_Address	General send memory address	DWORD	0x00000741	
50	R_General_Address	General receive memory address	DWORD	0x00000369	*1

*1 Do not write anything under the REMARK item.

Table 19 Information Written to Communication Interface Information List Part (CC-Link IE TSN)

No	Item Name	Entered Information	Description Requirement
1	VendorName	Describes the name of the vendor that created the communication interface information.	Required
2	VendorCode	Enter the code of the vendor that created the communication interface information. Add [0x] before the 5th to 8th digits of the CC-Link Partner Association member number.	Required
3	CommIFTypeID	Describes the ID that indicates the type of the communication interface information determined for each network protocol. Describes "CCLinkIETSN".	Required
4	Version	Describes the version of the communication interface information in a string.	Required
5	StationMode	Describes the setting value of the station mode.	Optional
6	StationModeName	Describes the name of the station mode.	*1
7	LocalFunction	Describes the local function. 0: Disabled 1: Enabled	Optional
8	AutoSettingHeaderType	Describes the header type number (0x00 to 0xFF).	Optional
9	AutoSettingType	Describes the automatic setting type. 0x0000: Function not provided (default) 0x0001: Only an individual parameter can be set 0x0002: Only a batch parameter can be set	Optional
10	ModelCode	Describes the model code.	Required
11	ModelCodeEx	Describes the expansion model code.	Optional
12	DevModel	Describes the model name.	Required
13	CanProfileNum	Describes the standard number of compatible CiA. 401: Compatible with CiA 401 standard 402: Compatible with CiA 402 standard	Optional
14	ObjectDictionaryFileName	Describes the object dictionary file name with the extension (.csv). * The characters that can be used in the file name are alphanumeric characters and symbols (single-byte).	*2
15	CommunicationCycleMinTime_ns	Describes the minimum communication cycle that can be supported by the device in units of ns when the device is used in the supported station mode. (0 to 999999999)	*7
16	CommunicationCycleMinTime_s	Describes the minimum communication cycle that can be supported by the device in units of s when the device is used in the supported station mode. (0 to 65535)	*7
17	IEEE802_1ASFunction	Describes if the IEEE 802.1AS function exists. 0: No 1: Yes	Required
18	ReceiveFunction100M	Describes if the 100Mbps full rate reception function exists. 0: No 1: Yes	Required
19	RelayFunction100M	Describes if the 100Mbps full rate relay function exists. 0: No 1: Yes	Required
20	ReceiveFunction1G	Describes if the 1Gbps full rate reception function exists. 0: No 1: Yes	Required
21	RelayFunction1G	Describes if the 1Gbps full rate relay function exists. 0: No 1: Yes	Required
22	MultiCastFunction	Describes if the broadcast/multicast function exists. 0: No 1: Yes	Required
23	CertificationClass	Describes the character that indicates the certification class.	Required
24	S_B_DefaultSize	Describes the default size of the send bit data (RX) with the number of bits.	Required
25	S_W_DefaultSize	Describes the default size of the send word data (RWr, TPDO, general send access) with the number of words.	Required
26	R_B_DefaultSize	Describes the default size of the receive bit data (RY) with the number of bits.	Required
27	R_W_DefaultSize	Describes the default size of the receive word data (RWw, RPDO, general receive access) with the number of words.	Required
28	L_B_DefaultSize	Describes the default size of the link relay data (LB) with the number of bits.	Optional
29	L_W_DefaultSize	Describes the default size of the link register data (LW) with the number of words.	Optional
30	S_B_MaxSize	Describes the maximum size of the send bit data (RX) with the number of bits.	Required

No	Item Name	Entered Information	Description Requirement
31	S_W_MaxSize	Describes the maximum size of the send word data (RWr, TPDO, general send access) with the number of words.	Required
32	R_B_MaxSize	Describes the maximum size of the receive bit data (RY) with the number of bits.	Required
33	R_W_MaxSize	Describes the maximum size of the receive word data (RWw, RPDO, general receive access) with the number of words.	Required
34	L_B_MaxSize	Describes the maximum size of the link relay data (LB) with the number of bits.	Optional
35	L_W_MaxSize	Describes the maximum size of the link register data (LW) with the number of words.	Optional
36	S_B_MinSize	Describes the minimum size of the send bit data (RX) with the number of bits.	Optional
37	S_W_MinSize	Describes the minimum size of the send word data (RWr, TPDO, general send access) with the number of words.	Optional
38	R_B_MinSize	Describes the minimum size of the receive bit data (RY) with the number of bits.	Optional
39	R_W_MinSize	Describes the minimum size of the receive word data (RWw, RPDO, general receive access) with the number of words.	Optional
40	L_B_MinSize	Describes the minimum size of the link relay data (LB) with the number of bits.	Optional
41	L_W_MinSize	Describes the minimum size of the link register data (LW) with the number of words.	Optional
42	S_B_Address	Describes the initial address used for the send bit data (RX) communication.	*3
43	S_W_Address	Describes the initial address used for the send word data (RWr) communication.	*3
44	R_B_Address	Describes the memory address used for the receive bit data (RY) communication.	*3
45	R_W_Address	Describes the memory address used for the receive word data (RWw) communication.	*3
46	StsW_Address	Describes the memory address for the status notification device (StsW).	Required
47	PDOConfigIndex+X*6	Describes the index of the PDO configuration.	*4
48	PDOConfigPDOType+X*6	Describes the PDO type of the PDO configuration. 0x00:RPDO 0x01:TPDO	*5
49	PDOConfigMemoryAddress+X*6	Describes the memory address of the PDO configuration.	*5
50	PDOConfigPossibleMapping+X*6	Describes the PDO mapping object that can be set with PDO Assignment of the PDO configuration arraying in preference order.	*5
51	S_General_Address	Describes the memory address for general send access.	*3
52	R_General_Address	Describes the memory address for general receive access.	*3

*1: Do not describe this item when StationMode is not described. When StationMode is described, "StationModeName" is required to be described.
*2: This item is required for CAN compatible devices (devices on which CanProfileNum is written). Do not describe this item when the device is not compatible with CAN.
*3: The memory address information for each available communication type is required. Do not describe the memory address of an unavailable communication type.
*4: This item is required for devices that perform the PDO communication. Describe this item for the number of required devices. Do not describe this item when the device is not compatible with CAN.
*5: When PDOConfigIndex is described, be sure to describe a corresponding element. Do not describe this item when PDOConfigIndex is not described.
*6: For an element whose X in the item name indicates an arbitrary number, follow the conditions below.
• Elements that have the same number should be described in the order listed on the table successively.
• Elements should be described in a sequential order and the numbers cannot be missed.
• Elements should be described in ascending order.
*7: For the devices whose minimum communication cycle cannot be defined or the devices that do not require checking the minimum communication cycle, this may be omitted.
"CommunicationCycleMinTime_s" may be omitted for the devices whose minimum communication cycle is less than 1 second.
"CommunicationCycleMinTime_ns" may be omitted for the devices whose minimum communication cycle is represented in seconds ("CommunicationCycleMinTime_ns" is 0).

Table 20 Information Written to Communication Interface Information List Part (CC-Link IE TSN Safety Communication Function)

No	Item Name	Entered Information	Description Requirement
1	SafetyProtocolVersion	Describes the protocol version of CC-Link IE TSN safety communication function.	Optional
2	SafetyNodeType	Describes the safety node type. 0x02: Safety local 0x06: Safety remote	*2
3	SupportSafetyCommService	Describes the service of the safety communication layer to be supported. Each bit of the DWORD value indicates the supported service. Turn on the bit that indicates the service to be supported by the device. The relations between bits and services are as follows: Bit 0: IESS-Start Bit 1: IESS-InvokeFunc	*1
4	SupportSafetyInvokeFunc	Describes the safety function to be supported. Each bit of the DWORD value indicates the supported service. Turn on the bit that indicates the service to be supported by the device. The relations between bits and services are as follows: Bit 0: Station-specific ID information verification Bit 1: Station-specific setting information check code verification Bit 2: Station-specific setting information write	*1
5	S_Safe_DefaultSize	Describes the default size of the safety send bit data with the number of bits.	*2
6	S_Safe_MaxSize	Describes the maximum size of the safety send bit data with the number of bits.	*2
7	S_Safe_MinSize	Describes the minimum size of the safety send bit data with the number of bits.	*2
8	S_Safe_Address	Describes the initial address of the data to be stored in the sub payload for the safety send data communication.	*3
9	R_Safe_DefaultSize	Describes the default size of the safety receive bit data with the number of bits.	*2
10	R_Safe_MaxSize	Describes the maximum size of the safety receive bit data with the number of bits.	*2
11	R_Safe_MinSize	Describes the minimum size of the safety receive bit data with the number of bits.	*2
12	R_Safe_Address	Describes the initial address of the sub payload for the safety receive data communication.	*4

*1: Do not describe this item for devices other than safety-supporting devices (devices on which SefetyProtocolVersion is not described).
*2: This item is required for safety-supporting devices (devices on which SefetyProtocolVersion is described). Do not describe this item for other devices.
*3: This item is required for the devices that have the safety send function (device whose maximum size of the safety send data is 1 or larger). Do not describe this item for other devices.
*4: This item is required for the devices that have the safety receive function (device whose maximum size of the safety receive data is 1 or larger). Do not describe this item for other devices.

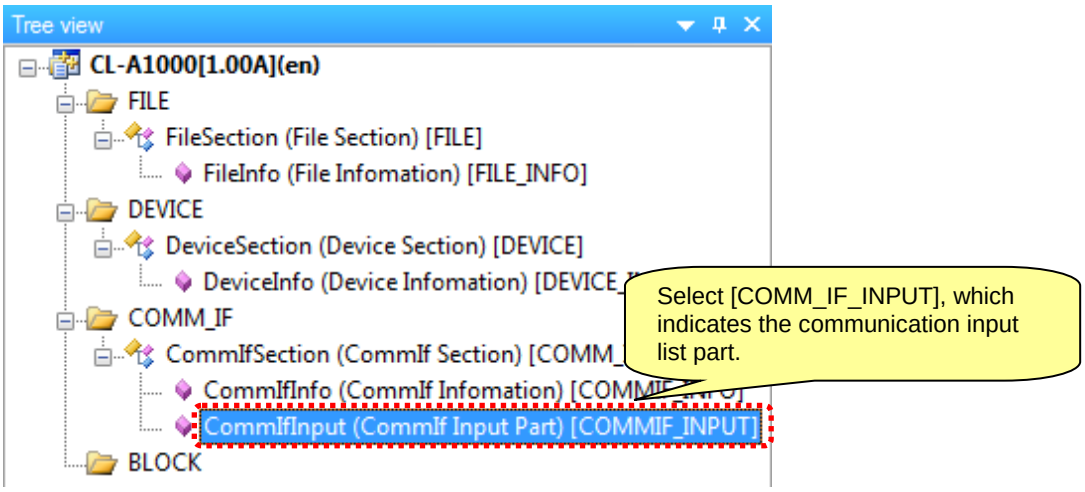
Table 21 Information Written to Communication Interface Information List Part (CC-Link IE TSN Extension Module)

No.	Item Name	Entered Information	Description Requirement
1	VendorName	Describes the name of the vendor that manufactured the module.	Required
2	VenderCode	Describes the code of the vendor that manufactured the module. Describes the membership number (fifth to eighth digits) of the CC-Link Partner Association.	Required
3	Version	Describes the firmware version in a string.	Required
4	CommIFTypeID	Describes the ID of the extension module type in a string. Extension modules can be connected when EXTExtensionIFTypeID of the main module matches with CommIFTypeID of the extension module.	Required
5	EXTExtensionModulePriority	Describes the priority of the extension module. Lower-priority extension modules can only be connected to higher-priority extension modules.	Optional
6	EXTExtensionModuleType	Describes the extension module type. The descriptions of EXTExtensionModuleType of the main module and the descriptions of EXTExtensionModuleType of the extension module determine if the extension module can be connected. For details, refer to the Control & Communication System Profile Specification.	Optional
7	EXTBasicModuleCommIFTypeID	Describes the communication interface ID of the main module. The same information as that described in CommIFTypeID of the main module connected is described.	Required

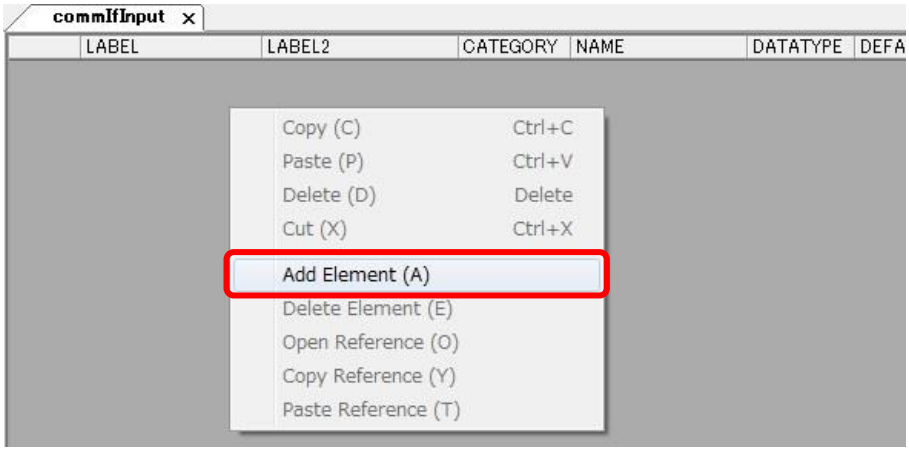
8	ModelCode	Describes the model code.	Optional
9	AutoSettingHeaderType	Describes the header type number of the slave station parameter automatic setting.	Optional
10	AutoSettingType	Describes the type of the slave station parameter automatic setting.	Optional

(4) Describing the Communication Input List Part (COMM_IF_INPUT)

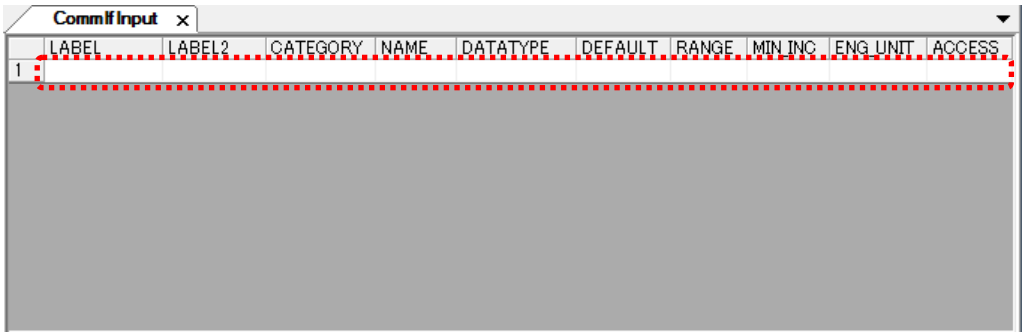
Display the communication input list part.



The communication input list part does not contain any elements. To describe the target module information for the part, first add the elements. The following describes how to add elements to the part. Click the right mouse button in the work window and select [Add element(A)].



A new line is added to the selected row.



Write the target module information while referring to "Table 22 Information Written to Communication Input List Part".

Describe the communication input list part when the target module implements input contacts, input information, settings, flags, etc. For communication input list part details, see the Control & Communication System Profile Specification (Section 5.3.2).

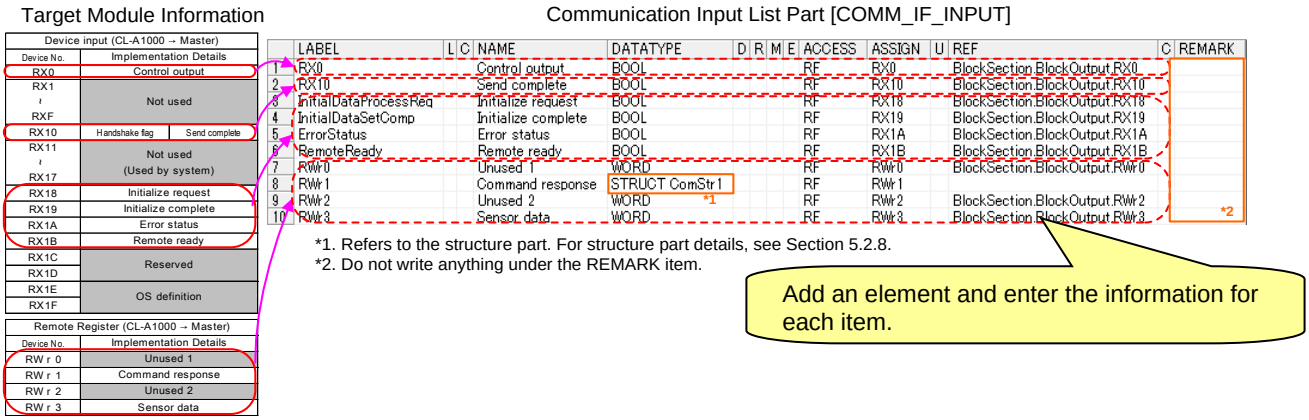


Table 22 Information Written to Communication Input List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: RX0	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Control output	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	ASSIGN	Describes the remote input/output and remote register that assign the element value. Example: RX0	Optional
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
13	REF	Describes the element of the block output list part (BLOCK_OUTPUT) used as reference. Example: BlockSection.BlockOutput.Rx0	Optional
14	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

For the CC-Link IE TSN main module, write input information used for extension modules while referring to "Table 23 Information Written to Communication Input List Part (Main Module)".
For details, refer to the Control & Communication System Profile Specification (Section 5.5.10.5).

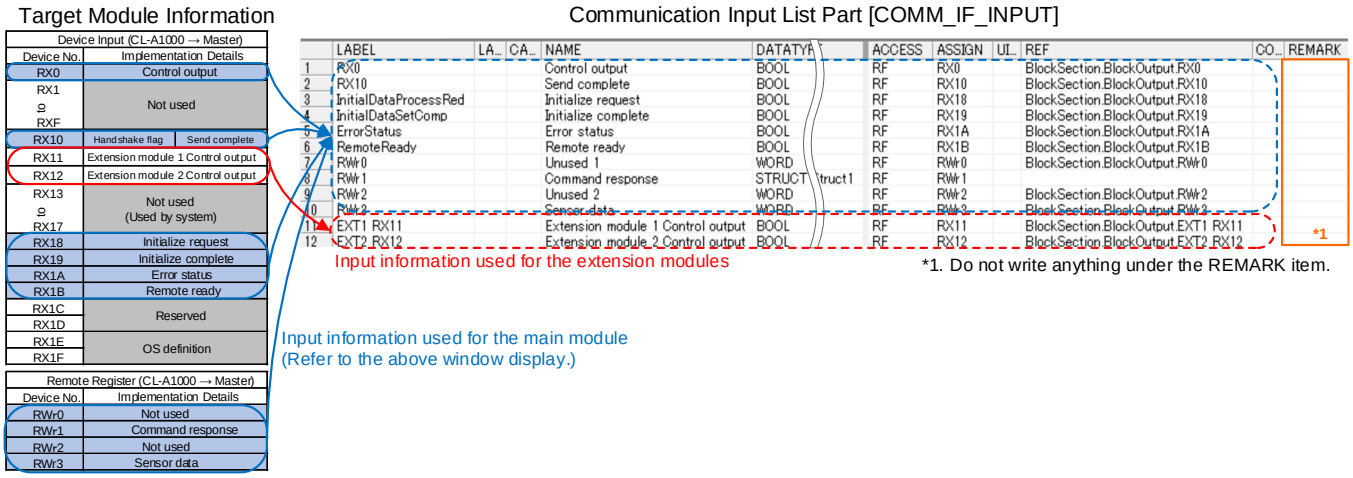


Table 23 Information Written to Communication Input List Part (Main Module)

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes prefix "EXTx_" + "Any String". For x of the prefix, describe the value that indicates which extension module is used. (Example: For the input area of the 1st extension module, describe "EXT1_RX0".)	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Control output	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes "RF".	Required
11	ASSIGN	Describes the remote input/output and remote register that assign the element value to an extension module.	Required
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
13	REF	Describes a reference to the element of the BLOCK_OUTPUT part having the same prefix "EXTx_".	Required
14	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

For CC-Link IE TSN extension modules, write the target module information while referring to "Table 24 Information Written to Communication Input List Part (Extension Module)".

For details, refer to the Control & Communication System Profile Specification (Section 5.5.10.5).

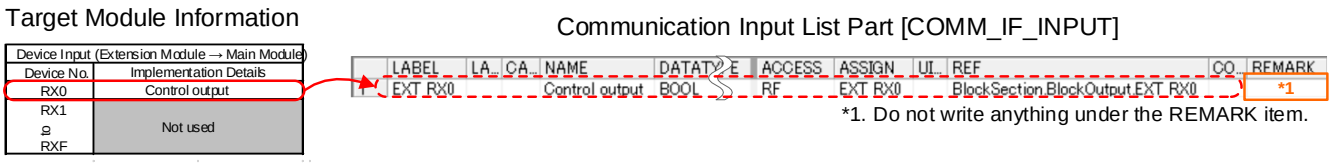


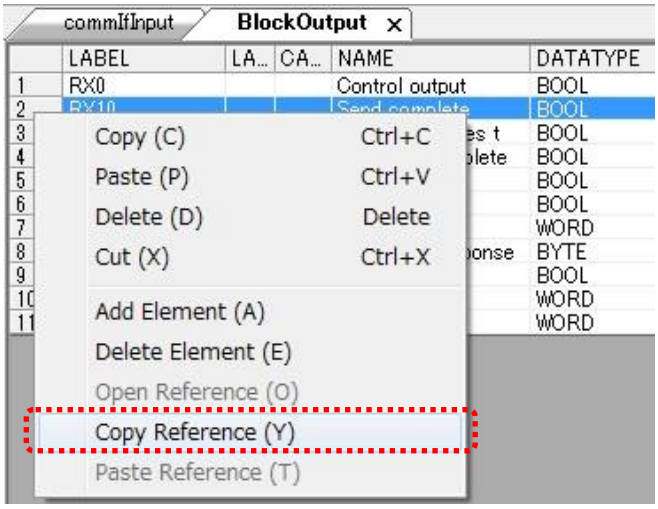
Table 24 Information Written to Communication Input List Part (Extension Module)

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: EXT_RX0	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Control output	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Required
11	ASSIGN	Describes "EXT_" + "Address Type of Main Module to be Refreshed" + "Address Number of Extension Module". Example: EXT_RX0	Required
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
13	REF	Describes the element of the block output list part (BLOCK_OUTPUT) used as reference. Example: BlockSection.BlockOutput.EXT_RX0	Required
14	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

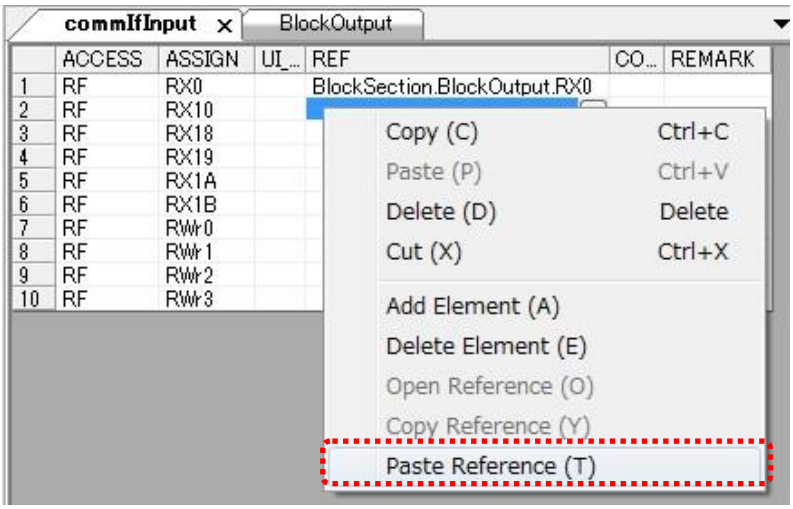
The REF item describes the element of the block output list part used as reference.

The following describes the procedure for describing a specific element that refers to the item.

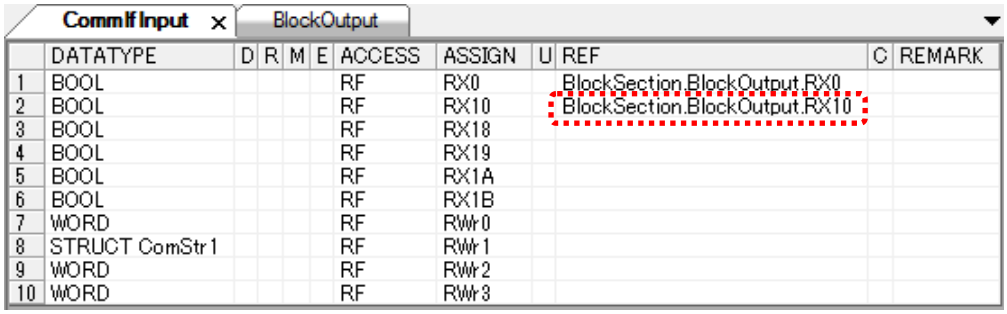
Click the right mouse button on the number of the reference element and select [Copy reference(Y)].



Click the right mouse button on the REF item where the reference is to be written and select [Paste reference(T)].

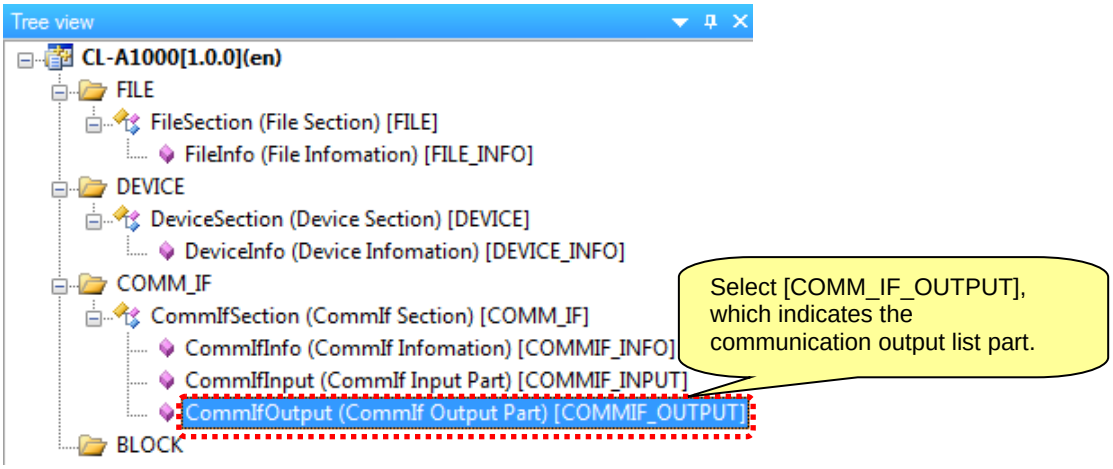


The reference is now written.



(5) Describing the Communication Output List Part (COMM_IF_OUTPUT)

Display the communication output list part.



Write the target module information while referring to "Table 25 Information Written to Communication Output List Part".

Describe the communication output list part when the target module implements output contacts, output information, settings, flags, etc. For communication output list part details, see the Control & Communication System Profile Specification (Section 5.3.3).

Target Module Information

Device Output (Master → CL-A1000)		
Device No.	Implementation Details	
RY0 ~ RYF	Not used	
RY10	Handshake flag	Send request
RY11 ~ RY17	Not used (Used by system)	
RY18	Initialize complete	
RY19	Initialize request	
RY1A	Error reset	
RY1B	Reserved	
RY1C		
RY1D		
RY1E	OS definition	
RY1F		

Remote Register (Master → CL-A1000)	
Device No.	Implementation Details
RWw0	Unused 1
RWw1	Send command
RWw2	Unused 2
RWw3	Send data

Communication Output List Part [COMM_IF_OUTPUT]

	LABEL	L	C	NAME	DATATYPE	D	R	M	E	ACCESS	ASSIGN	U	REF	C	REMARK
1	RY10			Send request	BOOL					RF	RY10		BlockSection.BlockInput.RY10		
2	InitialDataProcessComp			initialize complete	BOOL					RF	RY18		BlockSection.BlockInput.RY18		
3	InitialDataSetReq			Initialize request	BOOL					RF	RY19		BlockSection.BlockInput.RY19		
4	ErrorResetReq			Error reset	BOOL					RF	RY1A		BlockSection.BlockInput.RY1A		
5	RWw0				WORD					RF	RWw0		BlockSection.BlockInput.RWw0		
6	RWw1			Send command	WORD					RF	RWw1		BlockSection.BlockInput.RWw1		
7	RWw2				WORD					RF	RWw2		BlockSection.BlockInput.RWw2		
8	RWw3			Send data	WORD					RF	RWw3		BlockSection.BlockInput.RWw3		*1

*1. Do not write anything under the REMARK item.

Add an element and then enter information for each item.

Table 25 Information Written to Communication Output List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: RY10	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Transmission request	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	ASSIGN	Describes the remote input/output and remote register that assign the element value. Example: RY10	Optional
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
13	REF	Describes the element of the block input list part (BLOCK_INPUT) used as reference. Example: BlockSection.BlockInput.RY10	Optional
14	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

For the CC-Link IE TSN main module, write the target module information while referring to "Table 26 Information Written to Communication Output List Part (Main Module)".

For details, refer to the Control & Communication System Profile Specification (Section 5.5.10.5).

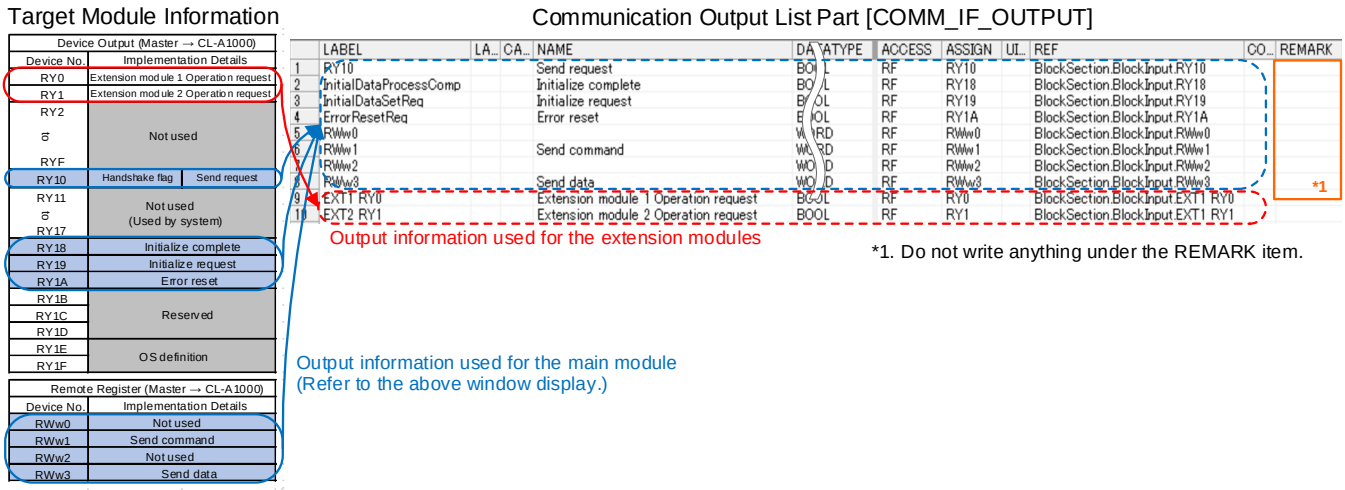


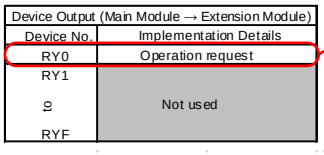
Table 26 Information Written to Communication Output List Part (Main Module)

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes prefix "EXTx_" + "Any String". For x of the prefix, describe the value that indicates which extension module is used. (Example: For the output area of the 1st extension module, describe "EXT1_RY0".)	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Transmission request	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes "RF".	Required
11	ASSIGN	Describes the remote input/output and remote register that assign the element value to an extension module.	Required
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
13	REF	Describes a reference to the element of the BLOCK_INPUT part having the same prefix "EXTx_".	Required
14	COMMENT	Describes prefix "EXTx_" + "Any String". For x of the prefix, describe the value that indicates which extension module is used. (Example: For the output area of the 1st extension module, describe "EXT1_RY0".)	Optional

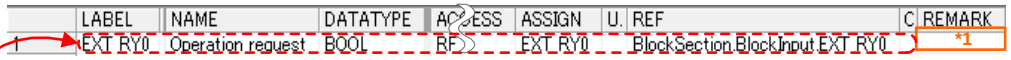
For CC-Link IE TSN extension modules, write the target module information while referring to "Table 27 Information Written to Communication Output List Part (Extension Module)".

For details, refer to the Control & Communication System Profile Specification (Section 5.5.10.5).

Target Module Information



Communication Output List Part [COMM_IF_OUTPUT]



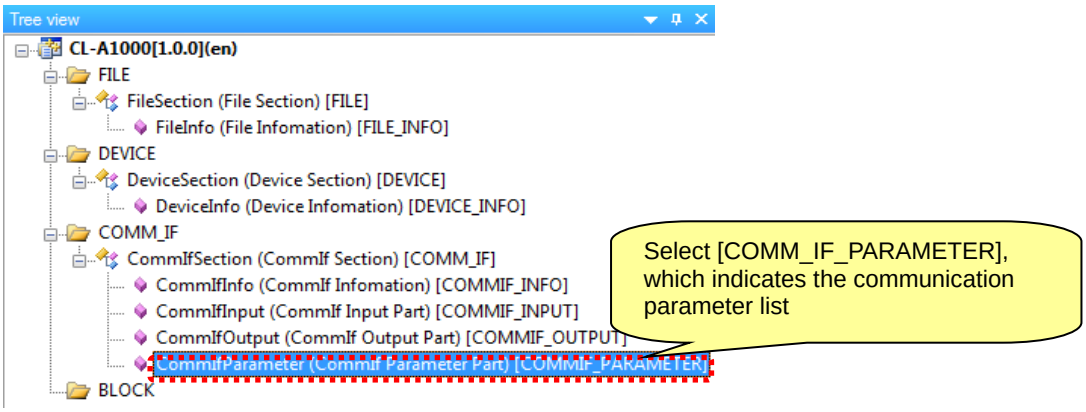
*1. Do not write anything under the REMARK item.

Table 27 Information Written to Communication Output List Part (Extension Module)

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: EXT_RY0	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Operation request	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Required
11	ASSIGN	Describes "EXT_" + "Address Type of Main Module to be Refreshed" + "Address Number of Extension Module". Example: EXT_RY0	Required
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
13	REF	Describes the element of the block input list part (BLOCK_INPUT) used as reference. Example: BlockSection.BlockInput.EXT_RY0	Required
14	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(6) Writing to the Communication Parameter List Part (COMM_IF_PARAMETER)

Display the communication parameter list part.



Write the target module information while referring to "Table 28 Information Written to Communication Parameter List Part".

Describe the communication parameter list part when using a communication command capable of both setting settings and making references via network. For communication parameter list part details, see the Control & Communication System Profile Specification (Section 5.3.4).

Target Module Information

Command Write	Command Read	Item	Description	Setting
01	81	Hysteresis upper	Allows you to set and check the threshold value (high limit).	H'0000-H'0320: 0°C-800°C
02	82	Hysteresis lower	Allows you to set and check the threshold value (low limit).	H'0000-H'0320: 0°C-800°C
03	83	ECO mode setting	Allows you to set and check Eco.	H'0000:Keep ON when display is displayed H'0001:Keep OFF when display is displayed H'0002:Turn display OFF 10 seconds after operation
04	84	Get temperature	Acquires the temperature.	-
05	-	Reset	Allows you to reset the sensor.	-
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000:Write from data channel 1 H'0001:Write from data channel 2 H'0002:Write from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000:Write to data channel 1 H'0001:Write to data channel 2 H'0002:Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000:Check data channel 1 H'0001:Check data channel 2 H'0002:Check data channel 3

Communication Parameter List Part [COMM_IF_PARAMETER]

	LABEL	L	CATEGORY	NAME	D	D	R	M	E	A	ASSIGN	U	W	REF	C	REMARK
1	UPPER		BASIC	hysteresis upper							<0x01><0x81>			BlockSection.BlockParameter.UPPER		
2	LOWER		ADVANCE	hysteresis lower							<0x02><0x82>			BlockSection.BlockParameter.LOWER		
3	ECO		ADVANCE	ECO mode setting							<0x07><0x87>			BlockSection.BlockParameter.ECO		
4	TEMPERATURE		DIAGNOSTIC	Get temperature							<0x08><0x88>			BlockSection.BlockParameter.TEMPERATURE		*1

*1. Do not write anything under the REMARK item.

Add an element and enter the information for each item.

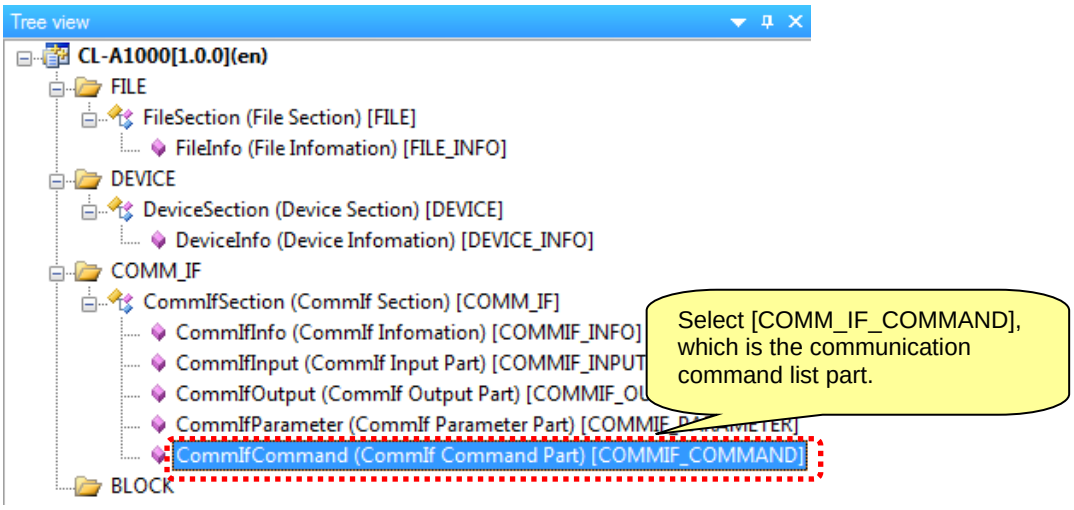
Table 28 Information Written to Communication Parameter List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: Prm01	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Threshold value 1	Optional
5	DATATYPE	Describes the data type of the element. The structure part (STRUCT) of the common information part can be referred to.	Optional
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	WRITE_ORDER	Describes the order in which the element is to be written to the module.	Optional
12	ASSIGN	Describes the address and code to be assigned to the element. Example: <0x01><0x81>	*1
13	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
14	REF	Describes the element of the block parameter list part (BLOCK_PARAMETER) used as reference. Example: BlockSection.BlockParameter.Prm01	Optional
15	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

*1: Required for CC-Link IE TSN. Optional for other networks.

(7) Writing to the Communication Command List Part (COMM_IF_COMMAND)

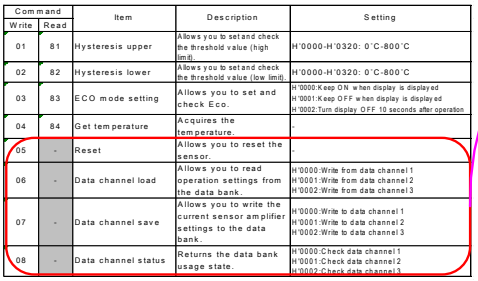
Display the communication command list part.



Write the target module information while referring to "Table 29 Information Written to Communication Command List Part".

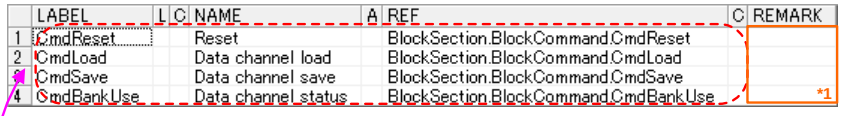
Describe the communication command list part when using a communication command that sets settings via CC-Link or CC-Link IE Field Network. For communication command list part details, see the Control & Communication System Profile Specification (Section 5.3.5).

Target Module Information



Command Write	Command Read	Item	Description	Setting
01	81	Hysteresis upper	Allows you to set and check the threshold value (high limit).	H'0000-H'0320: 0°C-800°C
02	82	Hysteresis lower	Allows you to set and check the threshold value (low limit).	H'0000-H'0320: 0°C-800°C
03	83	ECO mode setting	Allows you to set and check Eco.	H'0000:Keep ON when display is displayed H'0001:Keep OFF when display is displayed H'0002:Turn display OFF 10 seconds after operation
04	84	Get temperature	Acquires the temperature.	-
05	-	Reset	Allows you to reset the sensor.	-
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000:Write from data channel 1 H'0001:Write from data channel 2 H'0002:Write from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000:Write to data channel 1 H'0001:Write to data channel 2 H'0002:Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000:Check data channel 1 H'0001:Check data channel 2 H'0002:Check data channel 3

Communication Parameter List Part [COMM_IF_PARAMETER]



	LABEL	L	C	NAME	A	REF	C	REMARK
1	CmdReset			Reset		BlockSection.BlockCommand.CmdReset		
2	CmdLoad			Data channel load		BlockSection.BlockCommand.CmdLoad		
3	CmdSave			Data channel save		BlockSection.BlockCommand.CmdSave		
4	CmdBankUse			Data channel status		BlockSection.BlockCommand.CmdBankUse		*1

*1. Do not write anything under the REMARK item.

Add an element and then enter information for each item.

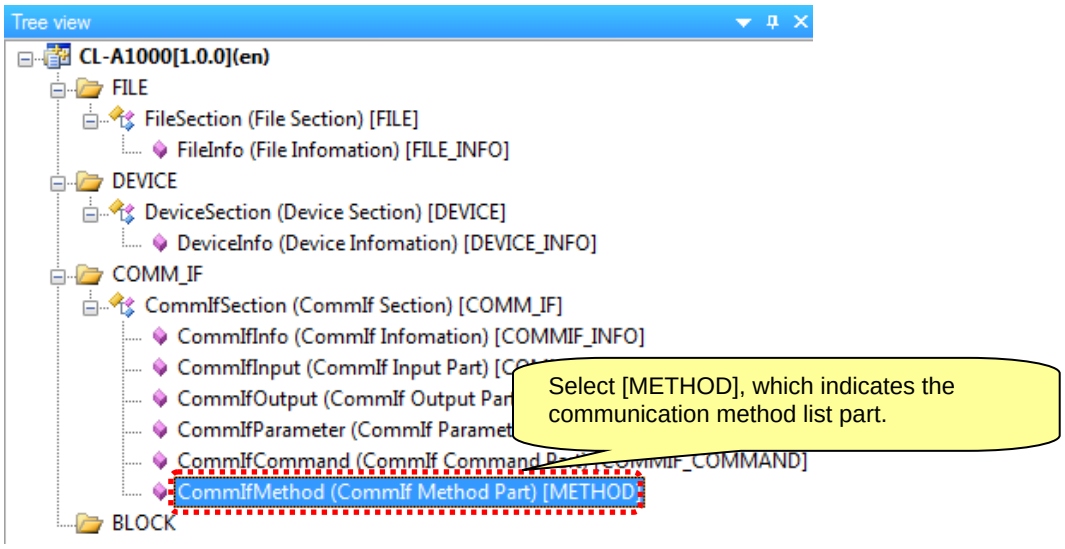
Table 29 Information Written to Communication Command List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: Cmd05	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Data channel load	Optional
5	ARGUMENT	Describes the label corresponding to the command argument list part (COMMAND_ARGUMENT) for indicating the argument to be used.	Optional
6	REF	Describes the element of the block command list part (BLOCK_COMMAND) used as reference. Example: BlockSection.BlockCommand.Cmd05	Optional
7	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(8) Written to the Communication Method List Part (METHOD)

The communication method list part is described when you use the CC-Link to set a parameter for the communication interface and execute a command.

Display the communication method list part.



Describe the information related to communication command execution while referring to "Table 30 Information Written to Communication Method List Part".

The communication method list part describes the procedure of the communication command execution service during display on the Parameter Processing of Slave Station / Command Execution of Slave Station screen. For communication method list part details, see the Control & Communication System Profile Specification (Section 5.3.6).

Communication Method List Part [COMM_IF_METHOD]

	LABEL	L	C	NAME	TARGET	METHOD_TYPE	WRITE_REGISTER	WRITE_DATA	WRITE_DATATYPE
1	WriteParam			Write parameter	CommIfParameter.*	PARAMETER	<RWw1.0><$(DUMMY)><RWw3>	$(ASSIGN)<$(VALUE)>	<BYTE><BYTE><WORD>
2	ReadParam			Read parameter	CommIfParameter.*	PARAMETER	<$(DUMMY)><RWw1.0>	$(ASSIGN)	<BYTE><BYTE>
3	MtReset			Reset	CommIfCommand.CmdReset	COMMAND	RWw1.0	0x08	BYTE
4	MethLoad			Load data channel	CommIfCommand.CmdLoad	COMMAND	<RWw1.0><RWw3>	<0x05><$(ARGUMENT.Arg RWw3.VALUE)>	<BYTE><$(ARGUMENT.Arg RWw3.DATATYPE)>
5	MethSave			Save data channel	CommIfCommand.CmdSave	COMMAND	<RWw1.0><RWw3>	<0x06><$(ARGUMENT.Arg RWw3.VALUE)>	<BYTE><$(ARGUMENT.Arg RWw3.DATATYPE)>
6	MethBankUse			Used data channel status	CommIfCommand.CmdBankUse	COMMAND	<RWw1.0><RWw3>	<0x07><$(ARGUMENT.Arg RWw3.VALUE)>	<BYTE><$(ARGUMENT.Arg RWw3.DATATYPE)>

READ_REGISTER	READ_DATA	READ_DATATYPE	INTERLOCK	REQ_FLAG	END_CONDITION	ERR_CONDITION	ERR_REGISTER	E	R	COMMENT	REMARK
			RX10==OFF	RY10=ON	RX10==ON&&RWr1==0x0000	RWr1!=0x0000	RWr1			Write parameter.	
RWr3	$(VALUE)	WORD	RX10==OFF	RY10=ON	RX10==ON&&RWr1==0x0000	RWr1!=0x0000	RWr1			Read parameter.	
			RX10==OFF	RY10=ON	RX10==ON&&RWr1==0x0000	RWr1!=0x0000	RWr1			Error status clear.	
			RX10==OFF	RY10=ON	RX10==ON&&RWr1==0x0000	RWr1!=0x0000	RWr1			Read threshold.	
			RX10==OFF	RY10=ON	RX10==ON&&RWr1==0x0000	RWr1!=0x0000	RWr1			Write threshold.	
RWr3	$(ARGUMENT.Arg RWr3.VALUE)	$(ARGUMENT.Arg RWr3.DATATYPE)	RX10==OFF	RY10=ON	RX10==ON&&RWr1==0x0000	RWr1!=0x0000	RWr1			Read data channel status	*1

*1. Do not write anything under the REMARK item.

Add an element and enter the information for each item.

Table 30 Information Written to Communication Method List Part

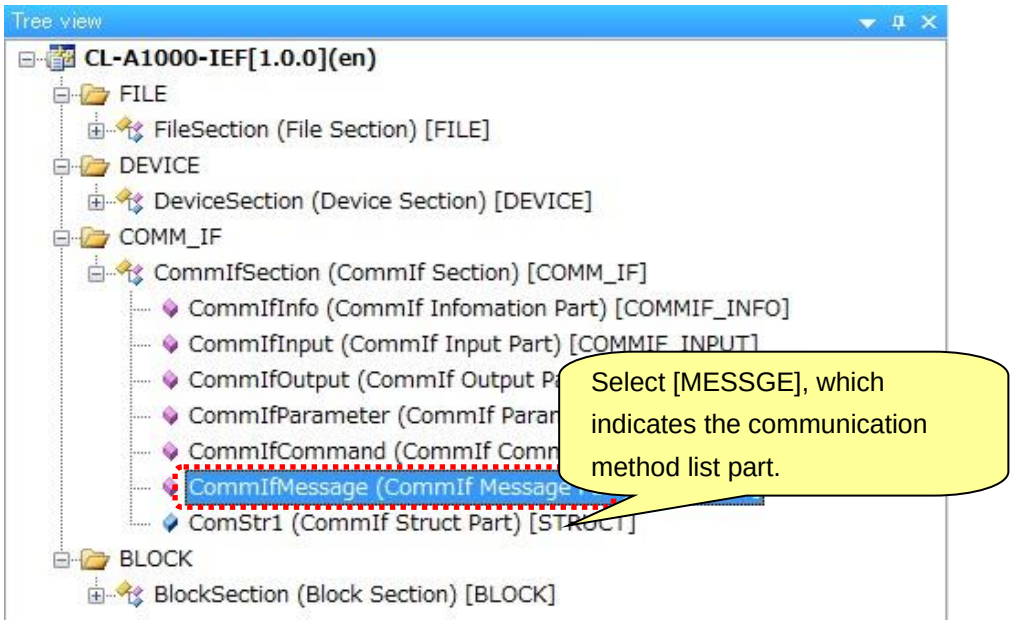
No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: WritePram	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software.	Required
5	TARGET	Describes the communication parameter list part (COMM_IF_PARAMETER) and communication command list part (COMM_IF_COMMAND) processed by the method. Example: CommIfParameter.* (All elements described in the communication parameter list part)	Required
6	METHOD_TYPE	Describes the method type. PARAMETER: Displayed on the Parameter Processing of Slave Station screen. COMMAND: Displayed on the Command Execution of Slave Station screen.	Required
7	WRITE_REGISTER	Describes the remote output and remote register for writing. Example: <RWw1.0>$(DUMMY)><RWw3>	Optional
8	WRITE_DATA	Describes the value to be written. Describes the write value in the same quantity as the number of registers specified by WRITE_REGISTER. Example: $(ASSIGN)<$(VALUE)>	Optional
9	WRITE_DATATYPE	Describes the remote output and remote register data type for writing. Describes the data type in the same quantity as the number of registers specified by WRITE_REGISTER. Example: <BYTE><BYTE><$(DATATYPE)>	Optional
10	READ_REGISTER	Describes the remote input and remote register for reading.	Optional
11	READ_DATA	Describes the reference for the storage location of the read value. Describes the storage location of the read value in the same quantity as the number of registers specified by READ_REGISTER.	Optional
12	READ_DATATYPE	Describes the remote input and remote register data type for reading. Describes the data type in the same quantity as the number of registers specified by READ_REGISTER.	Optional
13	INTERLOCK	Describes the interlock remote input/output, remote register and on/off status or value. Example: RX10==OFF	Optional
14	REQ_FLAG	Describes the request flag to implement a handshake using an assignment expression. Example: RY10=ON	Optional
15	END_CONDITION	Describes the normal end condition when implementing a handshake. Example: RX10==ON&&RWr1==0x0000	Optional
16	ERR_CONDITION	Describes the error end condition when implementing a handshake. Example: RWr1!=0x0000	Optional
17	ERR_REGISTER	Describes the remote register for storing a value when an error occurs. Example: RWr1	Optional
18	ERR_CODE_RANGE	Indicates the error code range.	Optional
19	RELATED_METHOD	Describes the reference to the METHOD part that indicates the pre-processing of the METHOD part.	Optional
20	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

Caution: Optional items may be conditionally required in relation to other items.

(9) Information Written to Communication Message List Part (MESSAGE)

The communication message list part is described when you use the CC-Link IE Field Network to set a parameter or to execute a command by SLMP.

The communication message list part is shown below.



Describe the information related to communication command execution while referring to "Table 31 Information Written to Communication Message List Part".

Just as in the communication method list part, the communication message list part describes the procedure of the communication command execution service and performs the communication service that specifies the transient order or data format. For communication message list part details, see the Control & Communication System Profile Specification (Section 5.3.7).

	LABEL	LABEL2	CATEGORY	NAME-J	NAME-E	TARGET
1	SLMPWriteParam			パラメータ書込	Write parameter	CommIfParameter.*
2	SLMPReadParam			パラメータ読出	Read parameter	CommIfParameter.*
3	SLMPReset			リセット	Reset	CommIfCommand.CmdReset

ERR_CODE_RANGE	MESSAGE_TYPE	REQUEST_TYPE	REQUEST_DATA
	PARAMETER	wrReqMT_Binary	<0x1613><0x0000>$(ASSIGN)<0x0001>$(VALUE)
	PARAMETER	rdReqMT_Binary	<0x0613><0x0000>$(ASSIGN)<0x0001>
	COMMAND	wrReqMT_Binary	<0x1006><0x0000><0x0001>

REQUEST_DATA_TYPE	RESPONSE_TYPE	RESPONSE_DATA	RESPONSE_DATA_TYPE
<WORD><WORD><DWORD><WORD><WORD>	wrResMT_Binary	(Omitted)	(Omitted)
<WORD><WORD><DWORD><WORD>	rdResMT_Binary	$(VALUE)	$(DATATYPE)
<WORD><WORD><WORD>	wrResMT_Binary		(Omitted)

ERR_TYPE	RELATED_MESSAGE	COMMENT	REMARK
wrErrMT_Binary		Write parameters.	*1
rdErrMT_Binary		Read parameters.	*1
wrErrMT_Binary		Turn off the error state by resetting.	*1

*1 Leave the REMARK field blank.

Add an element and then enter information for each item.

Table 31 Information Written to Communication Message List Part

No	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: SLMPClearWarningLog	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software.	Required
5	TARGET	Describes the element processed by the corresponding message. Example: CommIfCommand.ClrWarningLogCommand (Elements of communication command list part)	Required
6	MESSAGE_TYPE	Describes the MESSAGE part type. PARAMETER: Displayed on the Parameter Processing screen. COMMAND: Displayed on the Command Execution screen. OTHER: Not displayed on the utility software, and called from another method by the RELATED_MESSAGE. AUTO_PARAMETER: Indicates that the message is for setting the parameters of the slave station automatically for CC-Link IE TSN. This is available only for CC-Link IE TSN.	Required
7	REQUEST_TYPE	Describes the type of data format to process requests. For details, see below. ・CC-Link IE Field Network Specification (SLMP Specification: Overview) 5.2, 5.3 Example: wrReqMT_Binary	Required*1
8	REQUEST_DATA	Describes the value to be sent using the data format specified in the REQUEST_TYPE field. For details, see the corresponding requested data structure described in CC-Link IE Field Network Specification (SLMP Specification: Overview) 5.6 and 5.7 to 5.16. Example: <0x1613><0x0000><0x0000018E><0x0001><0xFFFF>	Optional
9	REQUEST_DATATYPE	Describes the data type of REQUEST_DATA. Example: <WORD><WORD><DWORD><WORD><WORD>	Optional
10	RESPONSE_TYPE	Describes the data format type to process response. For details, see below. ・CC-Link IE Field Network Specification (SLMP Specification: Overview) 5.2 and 5.3	Optional
11	RESPONSE_DATA	Describes variables to store the value returned by the response process in the data format specified in RESPONSE_ TYPE on the utility software. For details of the values returned by the response process, see the corresponding response data structure described in CC-Link IE Field Network Specification (SLMP Specification: Overview) 5.6 and 5.7 to 5.16.	Optional
12	RESPONSE_DATA_TYPE	Describes the data type of RESPONSE_DATA.	Optional
13	ERR_TYPE	Describes the type of data format to be used by the response process when an error occurs.	Optional
14	ERR_CODE_RANGE	Indicates the error code range.	Optional
15	RELATED_MESSAGE	Describes the reference to the MESSAGE part that indicates the pre-processing of the MESSAGE part.	Optional
16	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

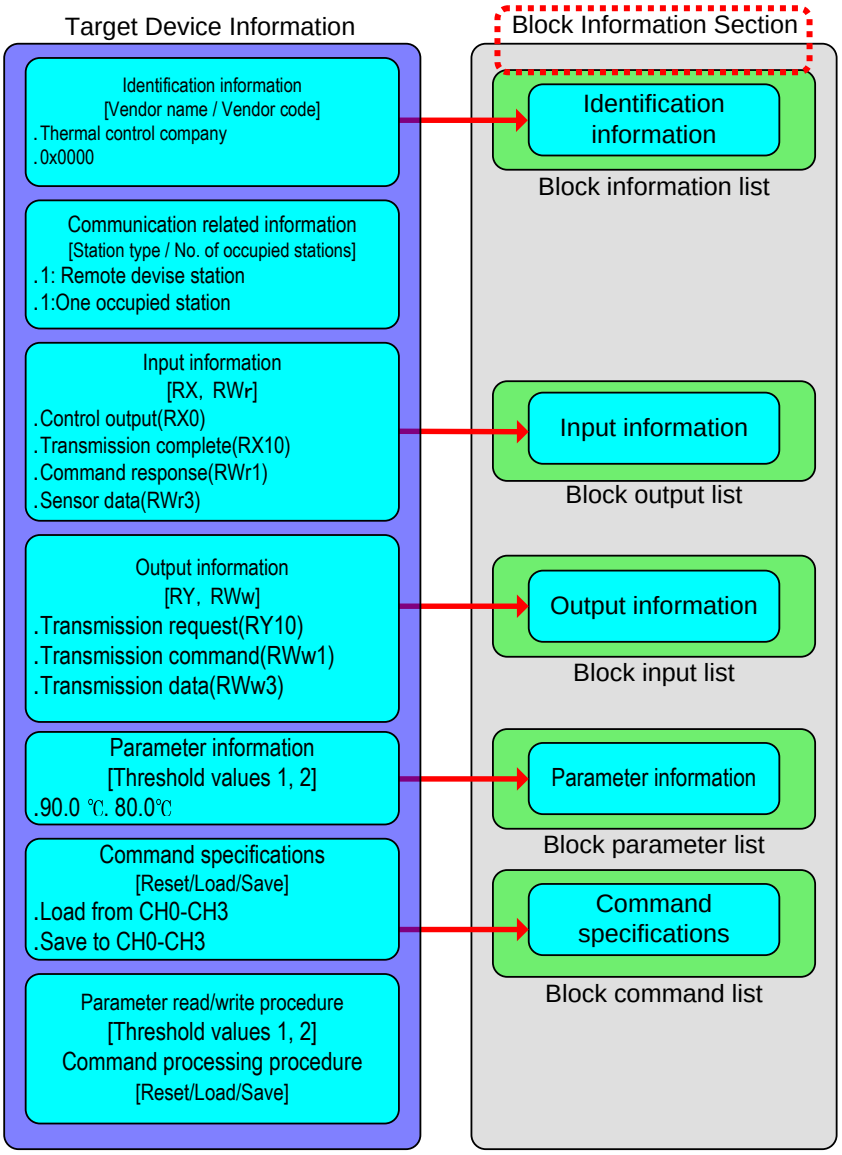
*1: It may not be required for CC-Link IE TSN. For details, refer to the Control & Communication System Profile Specification (Section 4.3.1).

Caution: Optional items may be conditionally required in relation to other items.
For details of each item, refer to the Control & Communication System Profile Specification (Section 4.3.1).

5.2.6 Writing to the Block Information (BLOCK) Section

The block information section describes the target module functions.
The following indicates the information to be written to the block information section.

First, the following shows the correspondence between the target module information and the block information section for the CC-Link compatible module.



Be careful of the information that you set in the block output list and block input list of the block information section.
Input information needs to be set in the block output list and output information needs to be set in the block input list.
For details, see the Control & Communication System Profile Specification (Section 4.2.4).

The block information section comprises the parts below.

Enter the device information in the applicable parts, following the procedure described in the next section.

Table 32 Parts of the Block Information Section

No.	Table	Description
1	Block information list (BLOCK_INFO)	Describes the manufacturer name, manufacturer code and version of the target module.
2	Block input list (BLOCK_INPUT)	Describes the input information of the function block.
3	Block output list (BLOCK_OUTPUT)	Describes the output information of the function block.
4	Block parameter list (BLOCK_PARAMETER)	Describes the data type, initial value and setting range of the control function.
5	Block command list (BLOCK_COMMAND)	Describes the information related to commands to be executed by the control function.

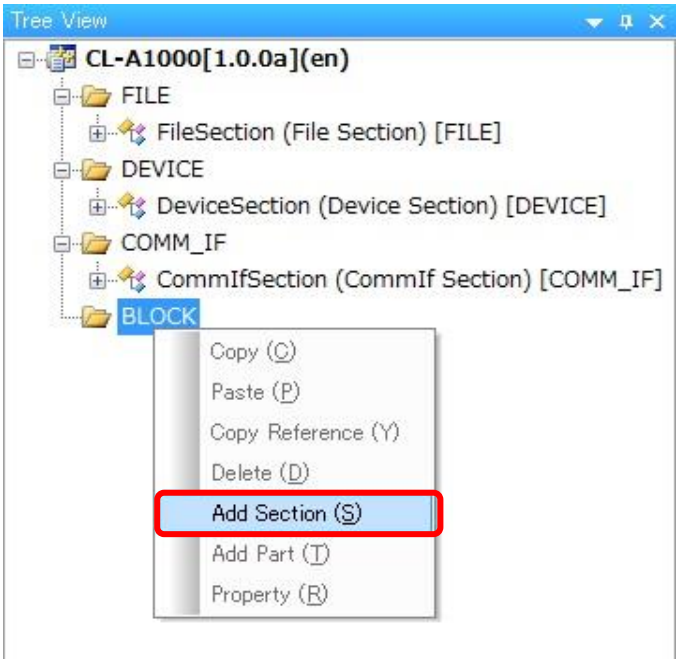
In the stage when a project was newly created, the block information section is not yet created.

To enter the block information, you need to create the block information section and each part.

The following indicates the procedure for creating the block information section and each part.

(1) Creating the Block Information Section

Click the right mouse button on the BLOCK folder and select [Add section(S)].



Enter items [1] through [5] while referring to "Table 33 Creating the Block Information Section" below and click the [Create] button.

For details of labels and comments, refer to the Control & Communication System Profile Specification (Section 4.3.1).

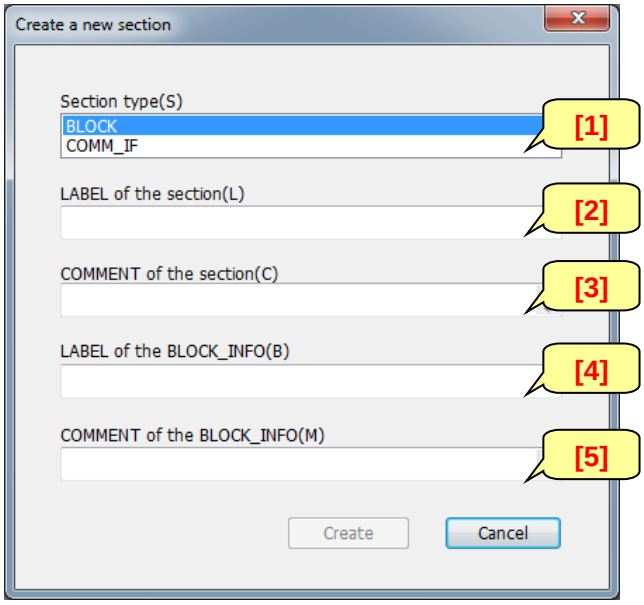
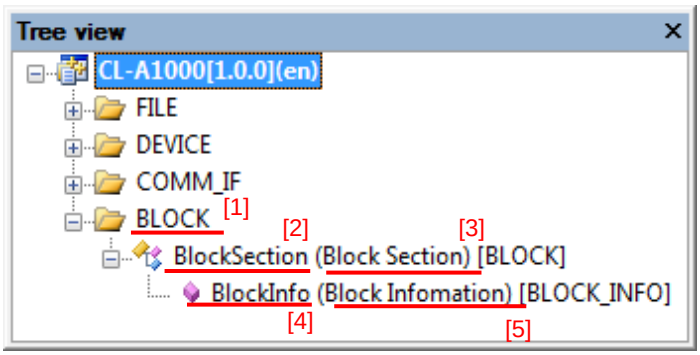


Table 33 Creating the Block Information Section

No.	Entered Information	Example	Remarks
[1]	New section to be created	Select [BLOCK].	[BLOCK] Block information section [COMM_IF] Communication interface information section
[2]	A label that identifies the block information section	BlockSection	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[3]	A comment for the block information section	Block information	Enter an explanation of the block information section, etc., as desired
[4]	A label that identifies the block information list part	BlockInfo	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[5]	A comment for the block information list part	Block information list	Enter an explanation of the block information list part, etc., as desired.

The block information section is now created.

The information entered in the New Section dialog box appears as shown below.



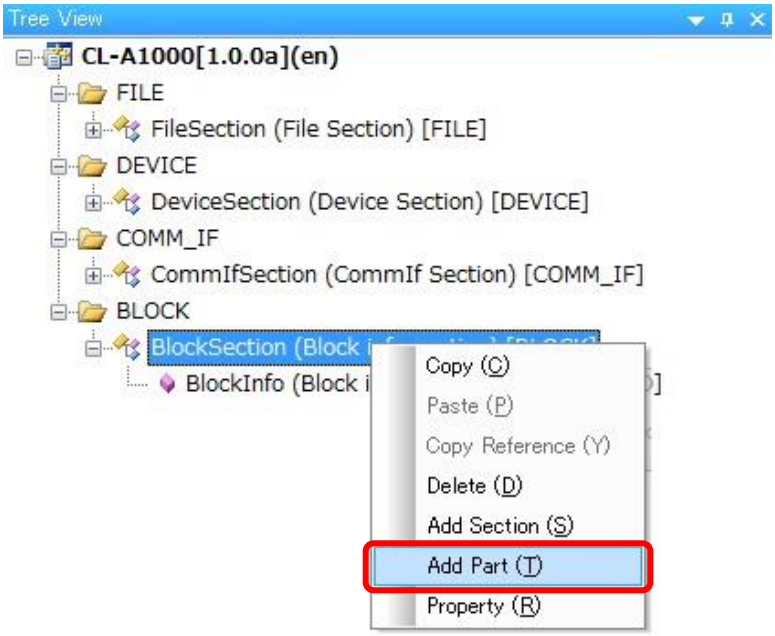
Create the parts (see Table 32) for the created section as described below.

(2) Creating Parts

The block information list part is automatically generated. Create the remaining parts.

Create the block input list part according to the example shown below.

Click the right mouse button on the block information section and select [Add part(T)].



Enter items [1] through [3] while referring to "Table 34 Creating Parts for the Block Information Section" below and click the [Create] button.

Enter any information desired in the comment section.

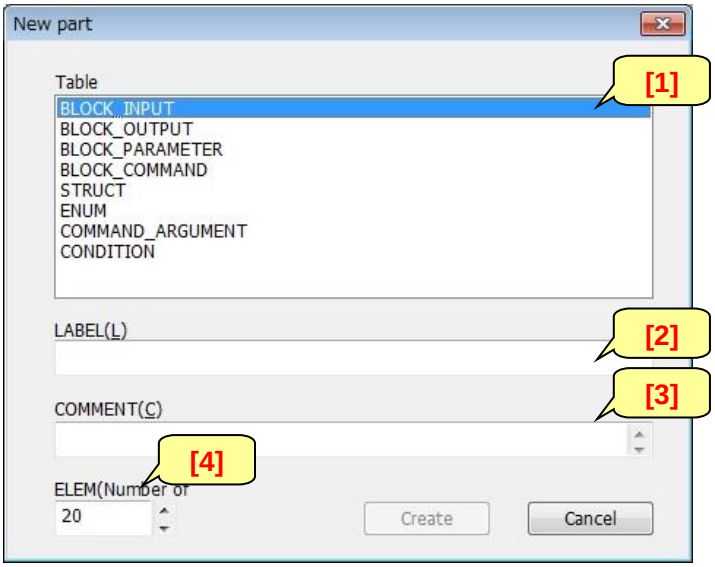
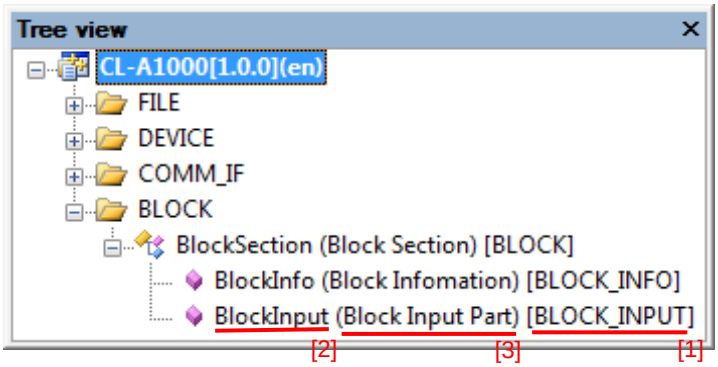


Table 34 Creating Parts for the Block Information Section

No.	Described Information	Example	Remarks
[1]	Part to be created	Select [BLOCK_INPUT], which indicates the block input list.	[BLOCK_INPUT] Block input list part [BLOCK_OUTPUT] Block output list part [BLOCK_PARAMETER] Block parameter list part [BLOCK_COMMAND] Block command list part For [STRUCT], [ENUM], [COMMAND_ARGUMENT], and [CONDITION], refer to Section 5.2.8 Common information part.
[2]	A label for identifying the part	BlockInput	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[3]	A comment for the part to be created	Block input list	Enter an explanation of the part to be created, etc., as desired.
[4]	No. of elements to be created	20	Specifies the number of elements to be created in the parts. Initial value is 20. This is the number to be generated when creating a part. The element in the part can be added or deleted after creating the part.

The block input list part is now created.

The information entered in the New profile dialog box appears as shown below.

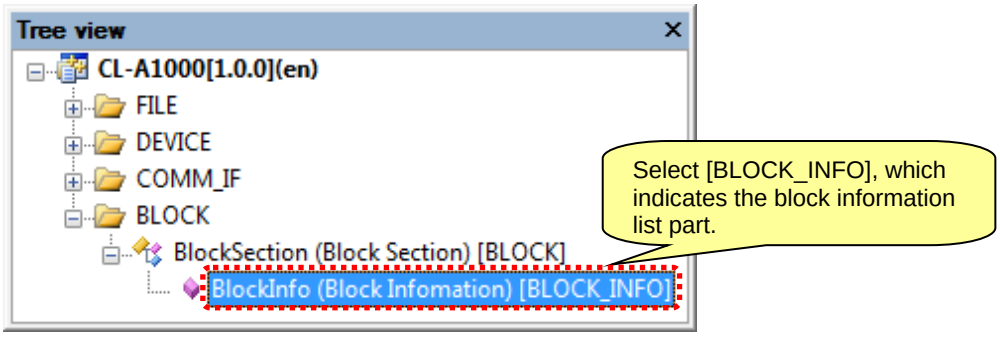


Create other parts using this same procedure.

The following section indicates the information written to each part created.

(3) Writing to the Block Information List Part (BLOCK_INFO)

Display the block information list part.



Write the target module information while referring to "Table 35 Information Written to Block Information List Part".

For block information list part details, see the Control & Communication System Profile Specification (Section 5.4.1)

Block Information List Part [BLOCK_INFO]

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor name	COMMON	Vendor name	STRING U(64)	Thermal control Co. Ltd.	
2	VendorCode	Vendor code	COMMON	Vendor code	WORD	0x1234	
3	Version	Version	COMMON	Version	STRING(32)	1.2.3	*1

*1. Do not write anything under the REMARK item.

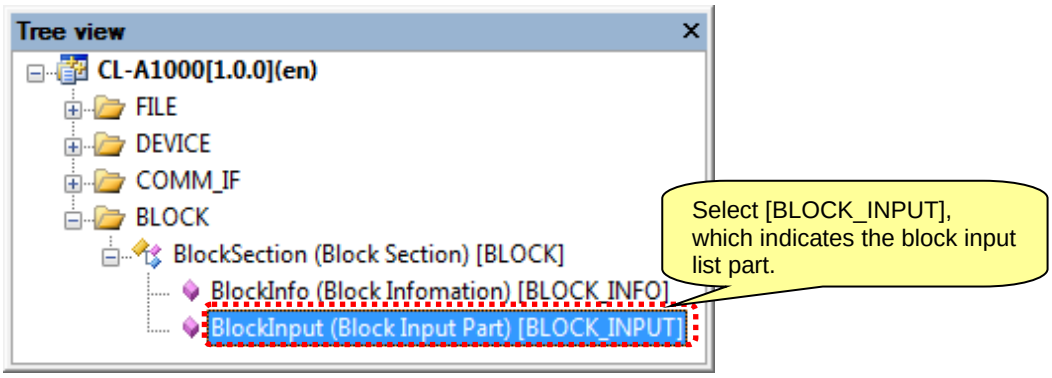
Enter information in the data items of the applicable elements.

Table 35 Information Written to Block Information List Part

No.	LABEL	Entered Information	Description Requirement
1	VendorName	Describes the name of the vendor that created the block information.	Required
2	VendorCode	Enter the code of the vendor that created the module. Add [0x] before the 5 to 8 digit CC-Link Partner Association member number.	Required
3	Version	Describes the version of the block information. Describe the version in a string.	Required

(4) Writing to the Block Input List Part (BLOCK_INPUT)

Display the block input list part.



Write the target module information while referring to "Table 36 Information Written to Block Input List Part".

"Describe the block input list part when the target module uses mounted output contacts, output information, settings, flags, etc. For block input list part details, see the Control & Communication System Profile Specification (Section 5.4.2).

Target Module Information

Device Output (Master → CL-A1000)		
Device No.	Implementation Details	
RY0 ~ RYF	Not used	
RY10	Handshake flag	Send request
RY11 ~ RY17	Not used (Used by system)	
RY18	Initialize complete	
RY19	Initialize request	
RY1A	Error reset	
RY1B	Reserved	
RY1C		
RY1D		
RY1E	OS definition	
RY1F		

Remote Register (Master → CL-A1000)	
Device No.	Implementation Details
RWw0	Unused 1
RWw1	Send command
RWw2	Unused 2
RWw3	Send data

Block Input List Part [BLOCK_INPUT]

	LABEL	L.	C.	NAME	DATATYPE	D	R	M	E	A	U	C	REMARK
1	RY10			Send request	BOOL								
2	RY18			initialize complete	BOOL								
3	RY19			Initialize request	BOOL								
4	RY1A			Error reset	BOOL								
5	RWw0			Unused 1	WORD								
6	RWw1			Send command	WORD								
7	RWw2			Unused 2	WORD								
8	RWw3			Send data	WORD								*1

*Do not write anything under the REMA[illegible]em.

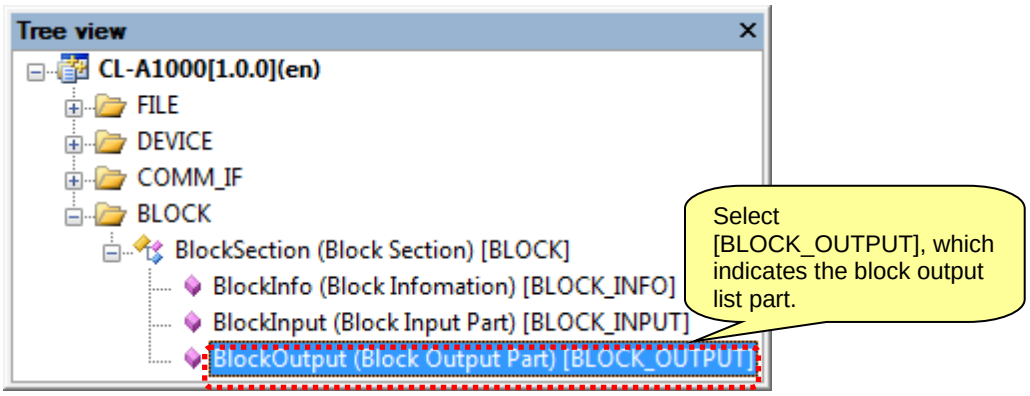
Add the element and then enter information for each item.

Table 36 Information Written to Block Input List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: RY10	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Transmission request	Required
5	DATATYPE	Describes the data type of the element.	Required
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
12	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(5) Writing to the Block Output List Part (BLOCK_OUTPUT)

Display the block output list part.



Write the target module information while referring to "Table 37 Information Written to Block Output List Part".

Describe the block output list part when the target module uses mounted input contacts, input information, settings, flags, etc. For block output list part details, see the Control & Communication System Profile Specification (Section 5.4.3).

Target Module Information

Device input (CL-A1000 → Master)		
Device No.	Implementation Details	
RX0	Control output	
RX1 ~ RXF	Not used	
RX10	Handshake flag	Send complete
RX11 ~ RX17	Not used (Used by system)	
RX18	Initialize request	
RX19	Initialize complete	
RX1A	Error status	
RX1B	Remote ready	
RX1C	Reserved	
RX1D		
RX1E	OS definition	
RX1F		

Remote Register (CL-A1000 → Master)	
Device No.	Implementation Details
RW r 0	Unused 1
RW r 1	Command response
RW r 2	Unused 2
RW r 3	Sensor data

Block Output List Part [BLOCK_OUTPUT]

	LABEL	L	C	NAME	DATATYPE	D	R	M	E	A	U	C	REMARK
1	RX0			Control output	BOOL								
2	RX10			Send complete	BOOL								
3	RX18			Initialize request	BOOL								
4	RX19			Initialize complete	BOOL								
5	RX1A			Error status	BOOL								
6	RX1B			Remote ready	BOOL								
7	RWr0			Unused 1	WORD								
8	RWr1			Command response	WORD								
9	RWr2			Unused 2	WORD								
10	RWr3			Sensor data	WORD								
11	Response			Response	BYTE								
12	ErrFlg			Error flag	BOOL								

*1

*Do not write anything under the REMARK item.

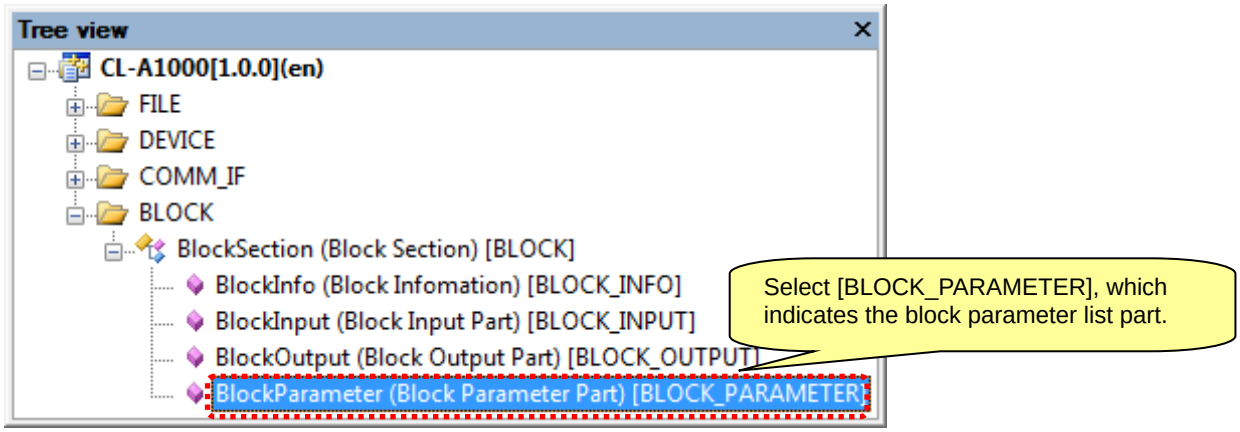
Add an element and then enter the information for each item.

Table 37 Information Written to Block Output List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: RX0	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Control output	Required
5	DATATYPE	Describes the data type of the element.	Required
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
12	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(6) Writing to the Block Parameter List Part (BLOCK_PARAMETER)

Display the block parameter list part.



Write the target module information while referring to "Table 38 Information Written to Block Parameter List Part".

Describe the block parameter list part when using a command capable of both setting parameters and making references via CC-Link. For block parameter list part details, see the Control & Communication System Profile Specification (Section 5.4.4).

Target Module Information

Command Write	Command Read	Item	Description	Setting
01	81	Hysteresis upper	Allows you to set and check the threshold value (high limit).	H'0000-H'0320: 0°C-800°C
02	82	Hysteresis lower	Allows you to set and check the threshold value (low limit).	H'0000-H'0320: 0°C-800°C
03	83	ECO mode setting	Allows you to set and check Eco.	H'0000:Keep ON when display is displayed H'0001:Keep OFF when display is displayed H'0002:Turn display OFF 15 seconds after operation
04	84	Get temperature	Acquires the temperature.	
05	-	Reset	Allows you to reset the sensor.	
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000:Write from data channel 1 H'0001:Write from data channel 2 H'0002:Write from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000:Write to data channel 1 H'0001:Write to data channel 2 H'0002:Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000:Check data channel 1 H'0001:Check data channel 2 H'0002:Check data channel 3

Block Parameter List Part [BLOCK_PARAMETER]

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	M...	E...	A...	U	W	COMMENT	REMARK
1	UPPER		BASIC	hysteresis upper	INT16	0	[0,8000]	0.1	°C	RW			The upper	
2	LOWER		ADVANCE	hysteresis lower	INT16	0	[0,8000]	0.1	°C	RW			The lower	
3	ECO		ADVANCE	ECO mode setting	WORD	0x0000	ENUM EnumPrm1			RW			The displa	
4	TEMPERATURE		DIAGNOSTIC	Get temperature	INT16		[0,8000] *1	0.1	°C	R			The tempe	*2

*1. Refers to the option list part. For option list part details, see Section 5.2.8.
*2. Do not write anything under the REMARK item.

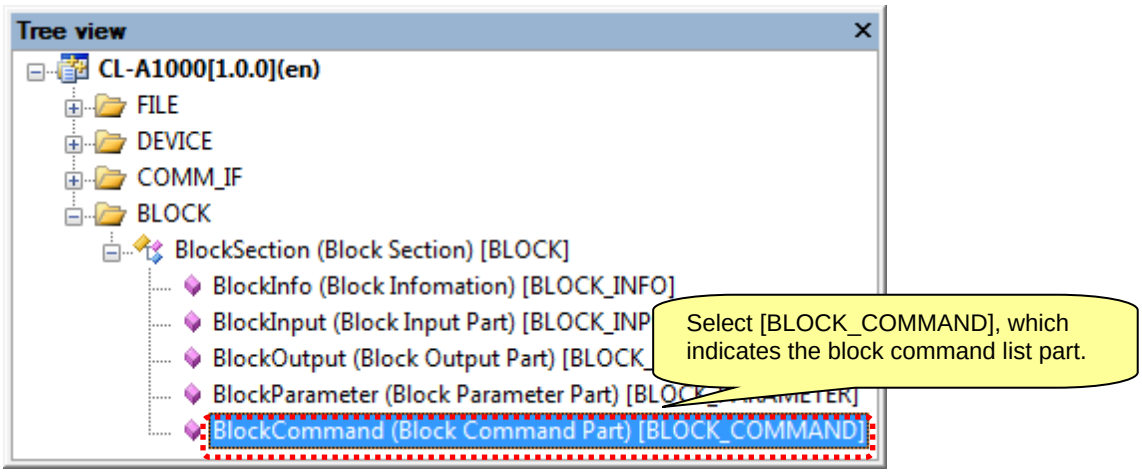
Add an element and then enter the information for each item.

Table 38 Information Written to Block Parameter List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example:Prm01	Required
2	LABEL2	Describes the label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element. This item is used when displaying the category on the Parameter Processing of Slave Station screen of utility software.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Threshold value 1	Required
5	DATATYPE	Describes the data type of the element.	Required
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element. Example: [0,800]	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Required
11	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on utility software.	Optional
12	WRITE_ORDER	Describes the order in which the element is to be written to the module.	Optional
13	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(7) Writing to the Block Command List Part (BLOCK_COMMAND)

Display the block command list part.



Write the target module information while referring to "Table 39 Information Written to Block Command List Part".

Describe the block command list part when using a command capable of setting settings via CC-Link. For block command list part details, see the Control & Communication System Profile Specification (Section 5.4.5).

Target Module Information

Command		Item	Description	Setting
Write	Read			
01	81	Hysteresis upper	Allows you to setand check the threshold value (high limit).	H'0000-H'0320: 0°C-800°C
02	82	Hysteresis lower	Allows you to setand check the threshold value (low limit).	H'0000-H'0320: 0°C-800°C
03	83	ECO mode setting	Allows you to set and check Eco.	H'0000:Keep ON when display is displayed H'0001:Keep OFF when display is displayed H'0002:Turn display OFF 10 seconds after operation
04	84	Get temperature	Acquires the temperature.	-
05	-	Reset	Allows you to reset the sensor.	-
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000:Write from data channel 1 H'0001:Write from data channel 2 H'0002:Write from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000:Write to data channel 1 H'0001:Write to data channel 2 H'0002:Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000:Check data channel 1 H'0001:Check data channel 2 H'0002:Check data channel 3

Block Parameter List Part[BLOCK_COMMAND]

	LABEL	L	C	NAME	ARGUMENT	C	REMARK
1	CmdReset			Reset			
2	CmdLoad			Data channel load	ArgLoad *1		
3	CmdSave			Data channel save	ArgSave		
4	CmdBankUse			Data channel status	ArgBankUse		*2

*1. Refers to the command argument list part. For command argument list part details, see Section 5.2.8.
*2. Do not write anything under the REMARK item.

Add an element and then enter the information for each item.

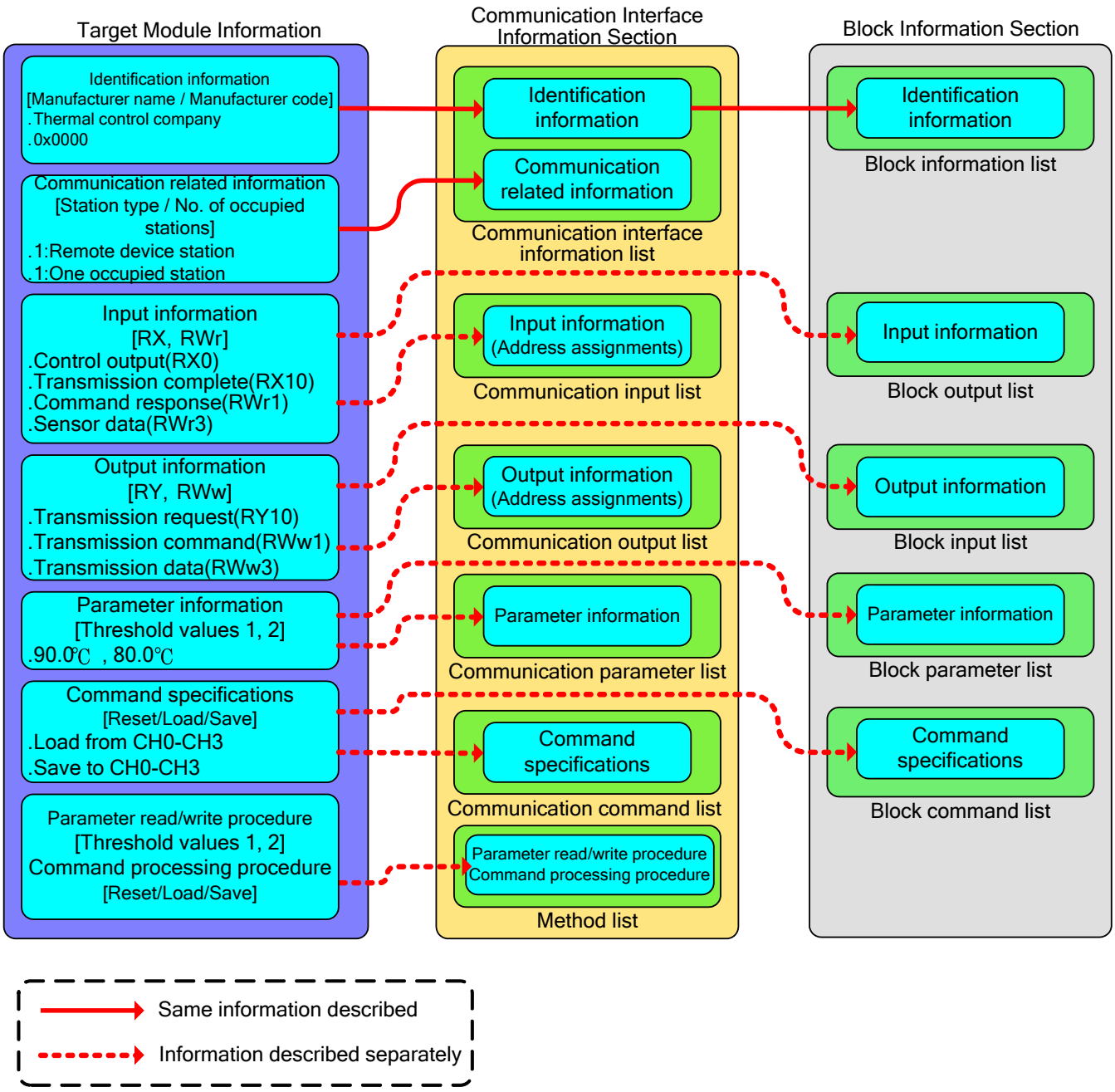
Table 39 Information Written to Block Command List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: Cmd05	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Data channel load	Required
5	ARGUMENT	Describes the label corresponding to the command argument list part (COMMAND_ARGUMENT) for indicating the argument to be used by the element. Example: ArgumentCmd05	Required
6	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

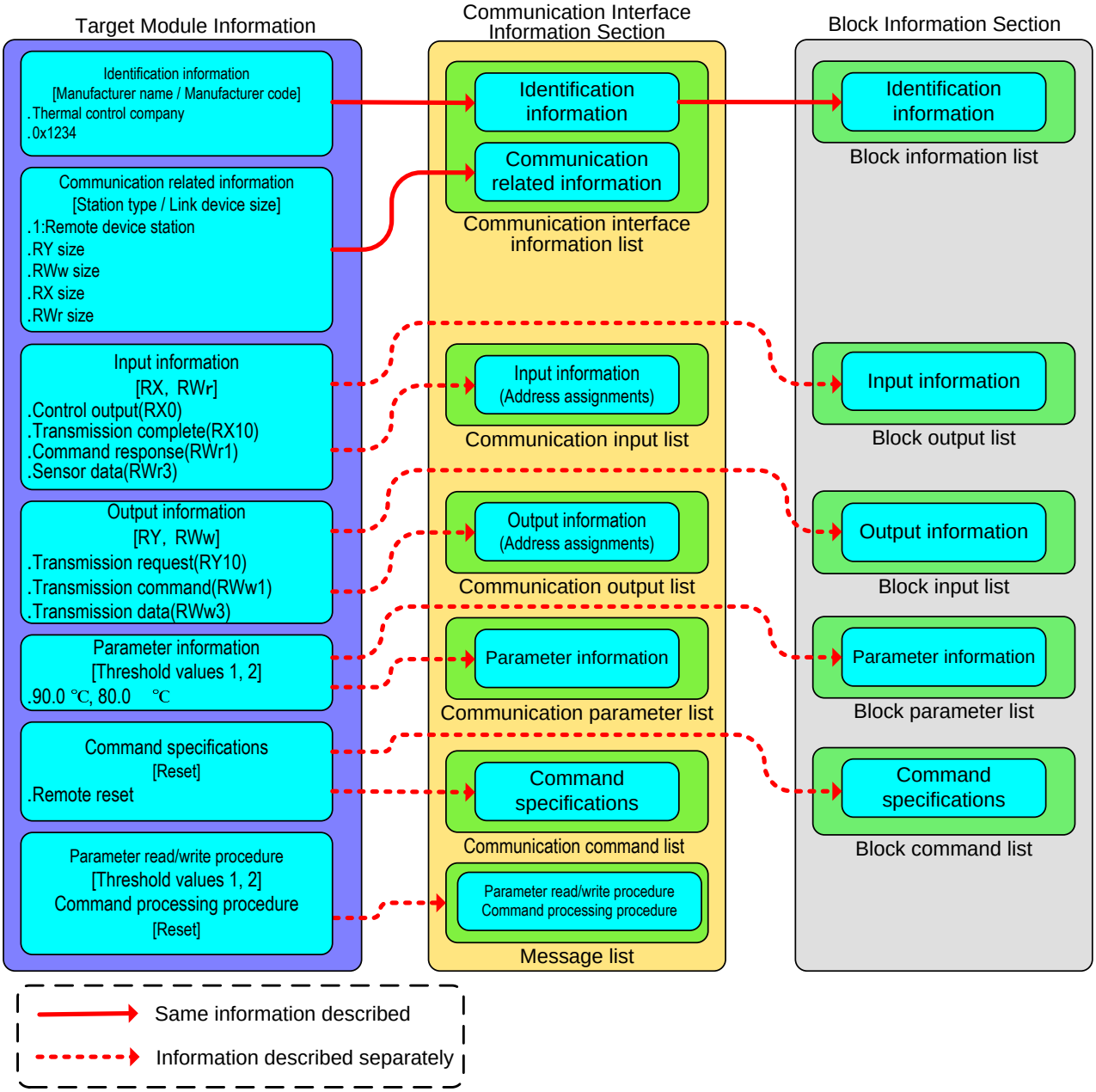
5.2.7 Relationship Between Communication Interface Information Section and Block Information Section

The following shows the relationship between the communication interface information section and the block information section with respect to target module information.

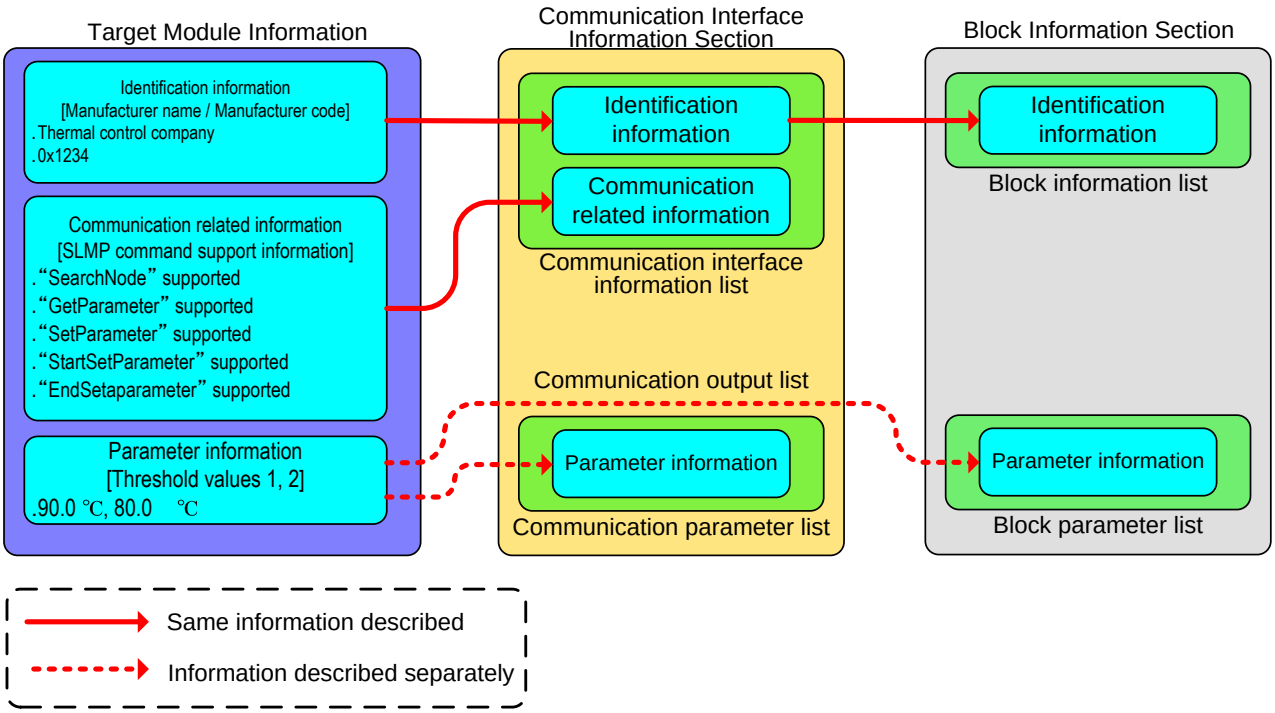
(a) For CC-Link Compatible Module



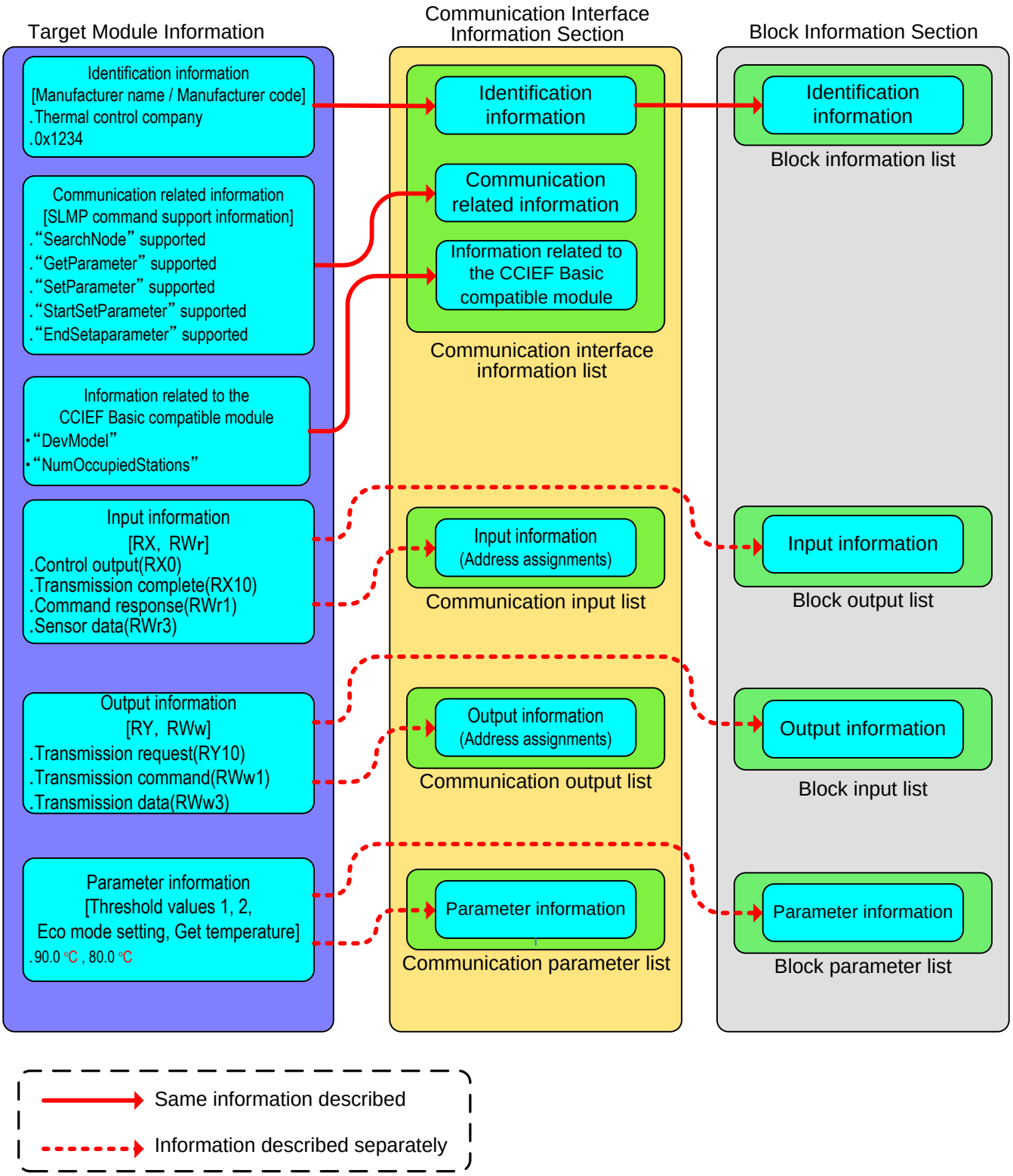
(b) For CC-Link IE Field Network Compatible Module



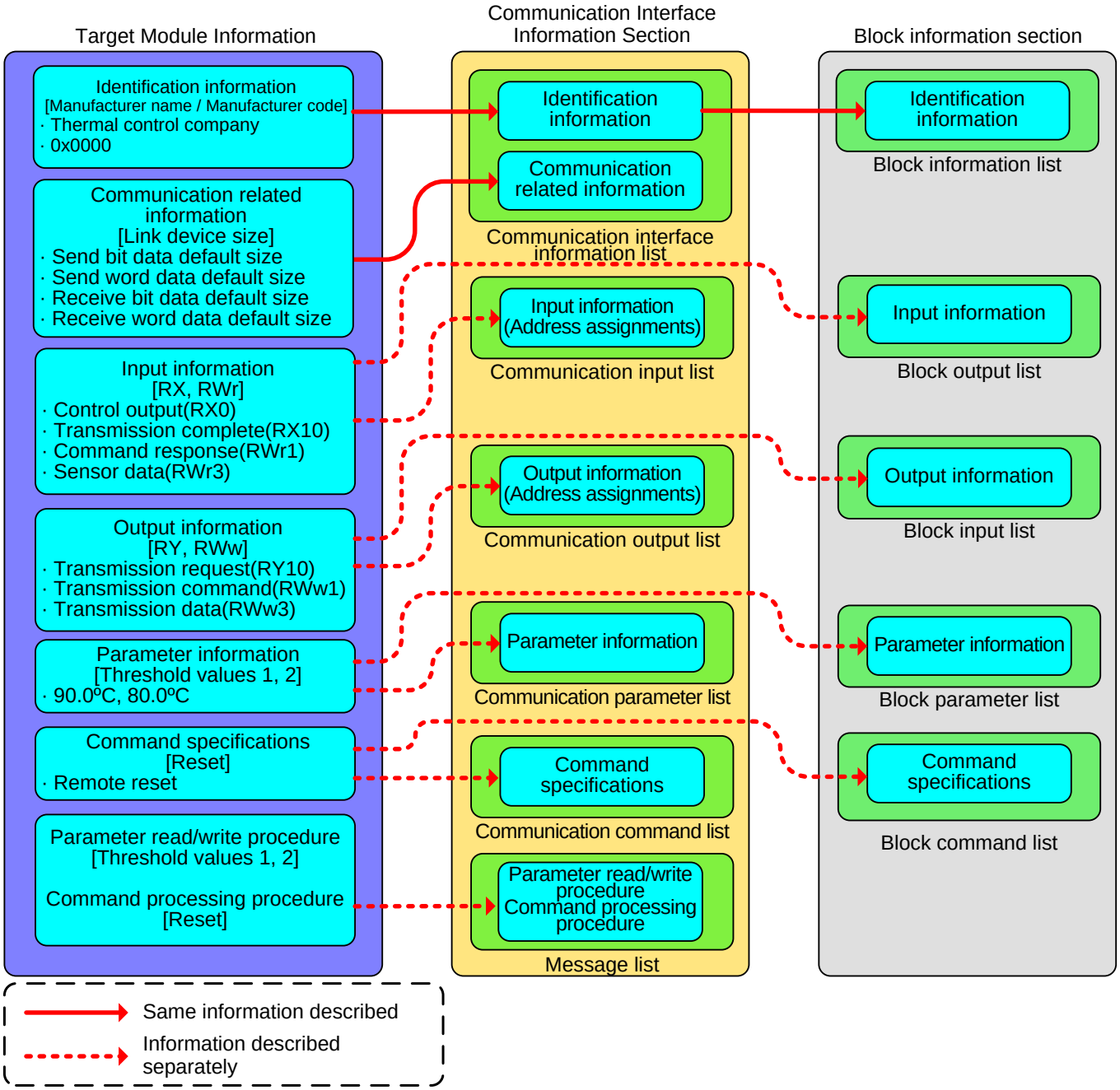
(c) For SLMP (TCP/IP) Compatible Module



(d) For CC-Link IE Field Network Basic Compatible Module



(e) For CC-Link IE TSN Compatible Module



5.2.8 Writing Common Information Part

The common information part includes the structure part, option list part, and command argument list part.

Table 40 Parts of Common Information Part

No.	Part	Description
1	Structure (STRUCT)	Used when a one-word (16-bit) area is divided into multiple elements for I/O structure related information. Example: [0..7] Monitor code 1 [8..F] Monitor code 2 Each element of the structure needs to be assigned to a consecutive address. Be sure to write a structure in a section that will use the structure. Described structures are written and used in DATATYPE items within the same section.
2	Option list (ENUM)	Used when you want to display the meaning of a value displayed on the Parameter Processing of Slave Station screen or Command Execution of Slave Station screen of utility software. Be sure to write an option list in a section that will use the option list. Described option lists are written and used in RANGE items within the same section.
3	Command argument list (COMMAND_ARGUMENT)	Used for processing options on the Parameter Processing of Slave Station screen and for command setup and execution results on the Command Execution of Slave Station screen of utility software. Described command argument lists are written and used in WRITE_DATA, WRITE_DATATYPE, READ_DATA and READ_DATATYPE items of the communication method list part (METHOD) and in ARGUMENT items of the block command list part (BLOCK_COMMAND).
4	Condition list (CONDITION)	Describes the conditional expression when the value in the element item changes depending on the present value of another element. The condition list part can be used in the block information section. The element value in the block parameter list changes depending on the result described in the condition list part. The element value in the block parameter list is also used to determine the condition that changes the item value. The items that can change depending on the description in the condition list part among the element items in the block parameter list are as follows: 1) access attribute (ACCESS), 2) engineering unit (ENG_UNIT), 3) resolution (MIN_INC), and 4) range (RANGE).

Common information part can be used in communication interface information sections and block information sections. However, the condition list part can be used only in the block information section.

To use common information part, you need to create each part.

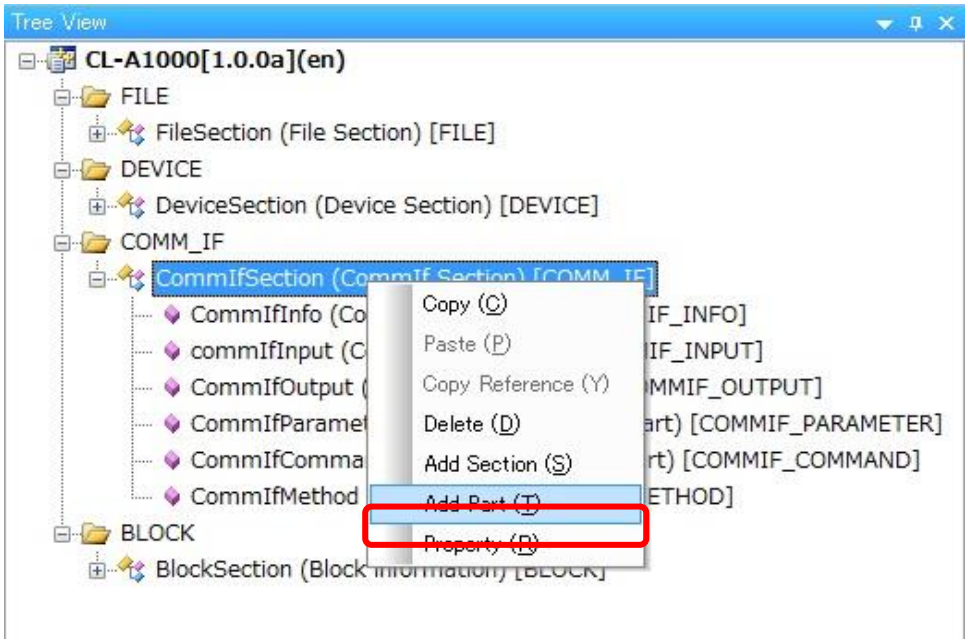
The following indicates how to create each part.

(1) Creating Parts

Common information part can be created in communication interface information sections and block information sections. However, do note that a structure part and an option list part must be created within a section that uses that part.

In the example shown below, a structure part to be used in the communication interface information section is created.

Click the right mouse button on the communication interface information section and select [Add part].



Enter items [1] through [3] while referring to "Table 41 Creating Common Information Parts" below and click the [Create] button.

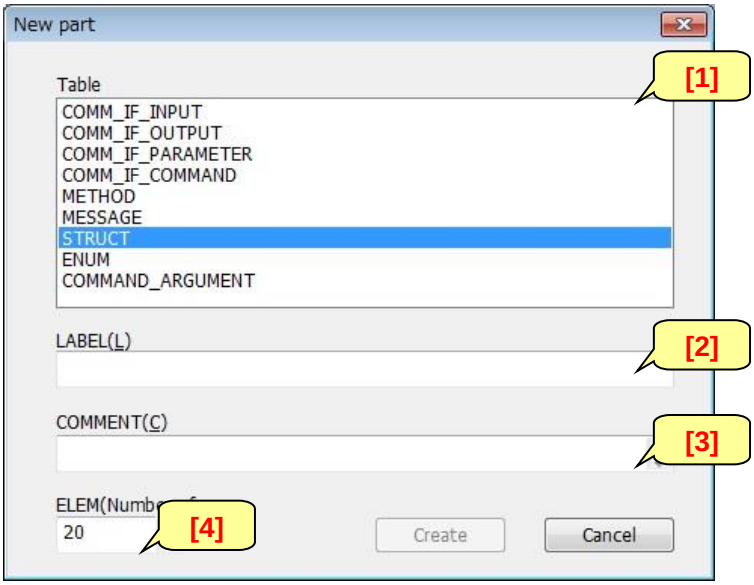
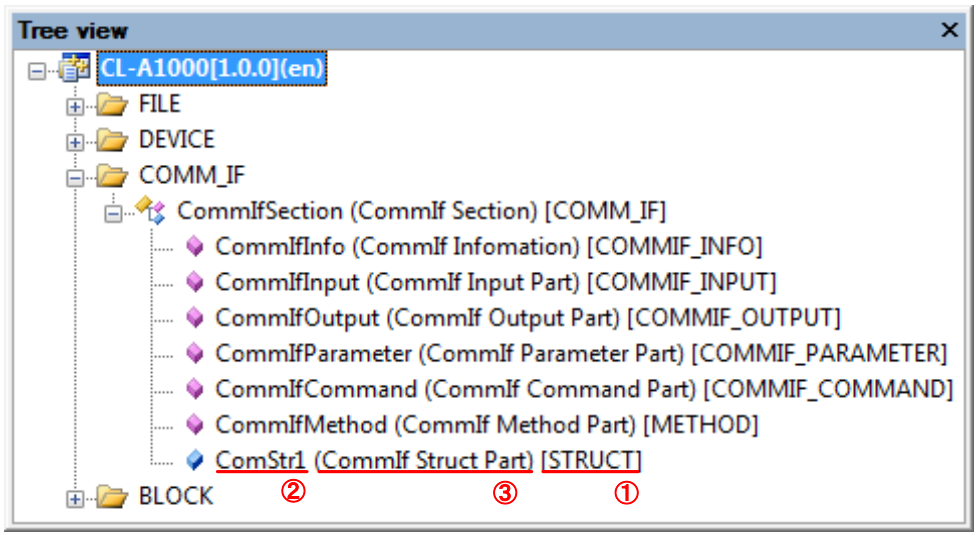


Table 41 Creating Common Information Parts

No.	Described Information	Example	Remarks
[1]	Part to be created	Select [STRUCT], which indicates a structure part.	[STRUCT] Structure part [ENUM] Option list part [COMMAND_ARGUMENT] Command argument list part
[2]	A label for identifying the part	Struct1	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters Prohibited in Label Name".
[3]	A comment for the part created	Structure1	Enter an explanation of the part created, etc., as desired.
[4]	No. of elements to be created	20	Specifies the number of elements to be created in the parts. Initial value is 20. This is the number to be generated when creating a part. The element in the part can be added or deleted after creating the part.

The structure part is now created.

The information entered in the New profile dialog box appears as shown below.



Create other parts using this same procedure.

When creating the condition list part (CONDITION), enter the numbers of conditions and results, in addition to the information in another common information part. The numbers of conditions and results you entered can be changed by the part property after the part is created.

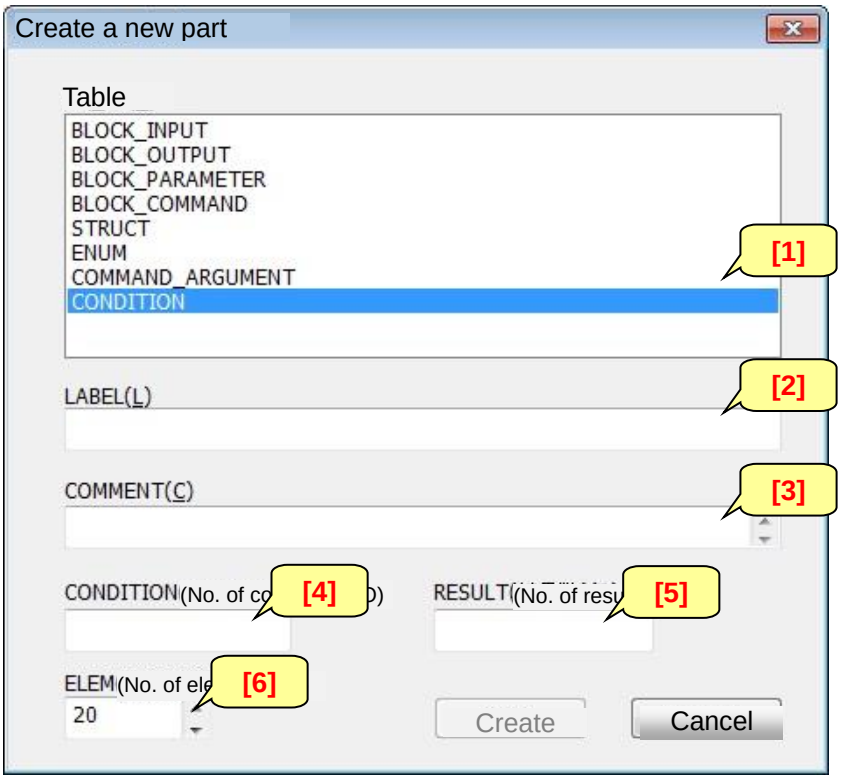


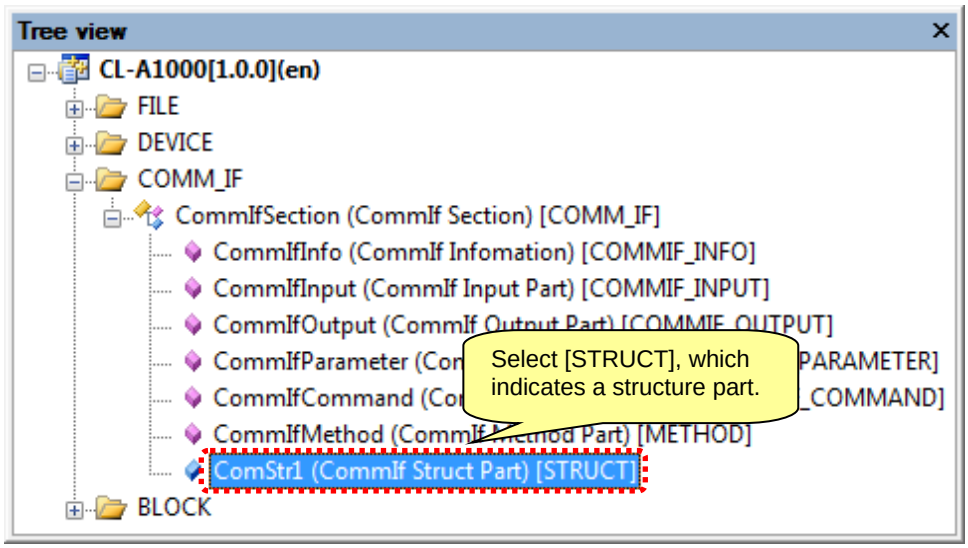
Table 42 Creating Condition List (CONDITION) Part

No.	Described Information	Example	Remarks
[1]	Part to be created	Select [CONDITION] that indicates the condition list	[STRUCT] Structure part [ENUM] Option list part [COMMAND_ARGUMENT] Command argument list part [CONDITION] Condition list part
[2]	A label for identifying the part	RangeCondition1	Enter the label name using 32 alphanumeric characters or less, noting Appendix 1, "Characters and Reserved Words Prohibited in Label Name". * Note that Condition, Condition1, etc. are reserved words (used for item names).
[3]	A comment for the part created	Range Condition 1	Enter an explanation of the part created, etc., as desired.
[4]	No. of conditions	2	Enter the number of conditions (CONDITIONx) to be created in the parts. The number of conditions can be changed by the part property after the part is created.
[5]	No. of results	1	Enter the number of results (RESULTx) to be created in the part. The number of results can be changed by the part property after the part is created.
[6]	No. of elements to be created	20	Specifies the number of elements to be created in the parts. Initial value is 20. This is the number to be generated when creating a part. The element in the part can be added or deleted after creating the part.

The following sections indicate the information to be described in each part created.

(2) Writing to the Structure Part (STRUCT)

Display the structure part.



Describe the I/O structure while referring to "Table 43 Information Written to Structure Part".

Describe the structure part when using a bit field in remote registers (RWr and RWw). Write each element of the part, assigning the elements to consecutive addresses and codes. For structure part details, see the Control & Communication System Profile Specification (Section 5.3.8).

Structure Part[STRUCT]

	LABEL	L	C	NAME	DATATYPE	D	R	M	E	OFFSET	REF	C	REMARK
1	Response			Command response	BYTE					0.0	BlockSection.BlockOutput.Response		
2	Unuse8			Unused 8	BOOL					0.8			
3	Unuse9			Unused 9	BOOL					0.9			
4	UnuseA			Unused A	BOOL					0.A			
5	UnuseB			Unused B	BOOL					0.B			
6	UnuseC			Unused C	BOOL					0.C			
7	UnuseD			Unused D	BOOL					0.D			
8	UnuseE			Unused E	BOOL					0.E			
9	ErrFlg			Error flag	BOOL					0.F	BlockSection.BlockOutput.ErrFlg		*1

*1. Do not write anything under the REMARK item.

Add the element and then enter information for each item.

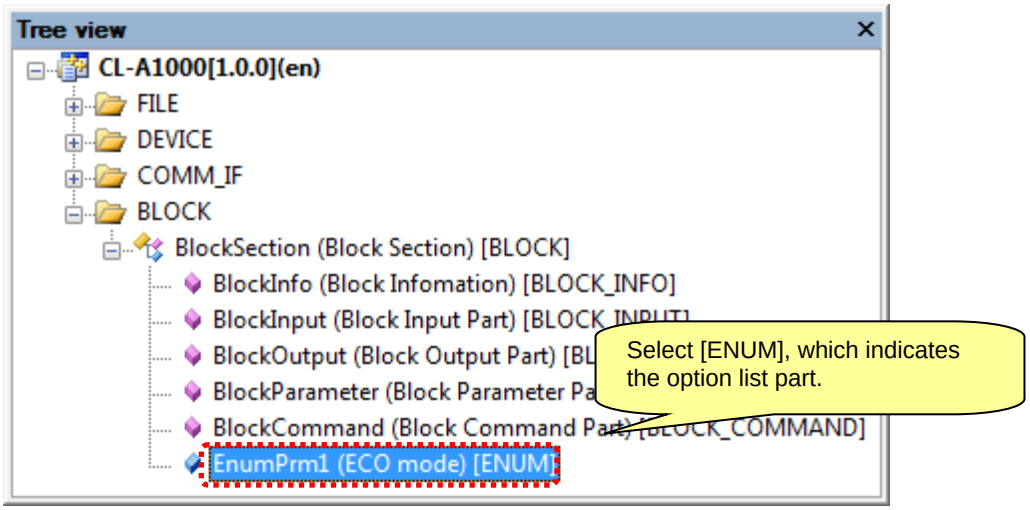
Table 43 Information Written to Structure Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes the label for identifying the element. Example: Response	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Command response	Optional*1
5	DATATYPE	Describes the data type of the element.	Optional*1
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element.	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	OFFSET	Describes the offset of the element. Example: 0.0	Required
11	REF	Describes the element used as reference. This item is used for referring to the input/output of a block information section from each element of the structure part when the structure part is used in the input/output of the communication interface information section. Example: BlockSection.BlockOutput.RWr1Response	Optional*2
12	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

*1: Required when describing in the block information sections.
*2: Description is prohibited when describing in the block information sections.

(3) Writing to the Option List Part (ENUM)

Display the option list part.



The items comprising the option list part vary depending on the communication interface. Descriptions for each communication interface are shown below.

Describe the option list part when you want to display the meaning of each value included in an option list or the elements that you want to set by a list box using utility software. For option list part details, see the Control & Communication System Profile Specification (Section 5.3.9).

(a) For CC-Link Compatible Module

Write the target module information while referring to "Table 44 Information Written to Option List Part".

Target Module Information

Command		Item	Description	Setting
Write	Read			
01	81	Hysteresis upper	Allows you to set and check the threshold value (high limit).	H'0000-H'0320: 0°C-800°C
02	82	Hysteresis lower	Allows you to set and check the threshold value (low limit).	H'0000-H'0320: 0°C-800°C
03	83	ECO mode setting	Allows you to set and check Eco.	H'0000:Keep ON when display is displayed H'0001:Keep OFF when display is displayed H'0002:Turn display OFF 10 seconds after operation
04	84	Get temperature	Acquires the temperature.	-
05	-	Reset	Allows you to reset the sensor.	-
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000:Write from data channel 1 H'0001:Write from data channel 2 H'0002:Write from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000:Write to data channel 1 H'0001:Write to data channel 2 H'0002:Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000:Check data channel 1 H'0001:Check data channel 2 H'0002:Check data channel 3

Option List Part [ENUM]

	LABEL	L	C	NAME	CODE	COMMENT	REMARK
1	DspOn			Display on	0x0000	Display turning on ...	
2	DspOff			Display off	0x0001	Display turning off ...	
3	DspTimer			Display off timer	0x0002	It turns it off at te...	*1

*1. Do not write anything under the REMARK item.

Add the element and then enter information for each item.

Table 44 Information Written to Option List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: DspOn	Required
2	LABEL2	Describes the label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Always on	Required
5	CODE	Describes the value for identifying the element. Cross-checked with the value indicated by the element of the reference source in order to select matching elements. Example: 0x0000	Required
6	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(b) For CC-Link IE Field Network Compatible Module

Describe the information on the target module according to "(a) For CC-Link Compatible Module".

(c) For SLMP (TCP/IP) Compatible Module

Describe the information on the target module according to "(a) For CC-Link Compatible Module".

(d) For CC-Link IE Field Network Basic Compatible Module

Describe the information on the target module according to "(a) For CC-Link Compatible Module".

(e) For CC-Link IE TSN Compatible Module

Describe the information on the target module according to "Table 45 Information Written to Option List Part (CC-Link IE TSN)".

Target Module Information

Error code name	Error code	Error detailed	Error cause	Countermeasure
Hardware code	0x10	None	A hardware error occurs in the module.	Turn off and on the module.
Input value out of range error	0x105	Provided	A value larger than the maximum value set by the parameter was input.	Review the input value or parameter setting.
Remote buffer memory access error	0x150	None	The area out of the remote buffer memory was accessed by the REMFR/REMTO command.	Correct the setting data of the REMFR/REMTO command so that the area within the remote buffer memory is accessed.

Option List Part [ENUM]

	LABEL	LA...	CA...	NAME	CODE	RELATED_ELE	COMMENT1
1	enum1			Hardware code	0x10		A hardware error occurs in the module.
2	enum2			Input value out of range error	0x105	InputError	A value larger than the maximum value set by the parameter was input.
	enum3			Remote buffer memory access error	0x150		The area out of the remote buffer memory was accessed by the REMFR/REMTO command.

COMMENT2	REMARK
Turn off and on the module. Review the input value or parameter setting. Correct the setting data of the REMFR/REMTO command so that the area within the remote buffer memory is accessed.	*1

*1 Do not write anything under the REMARK item.

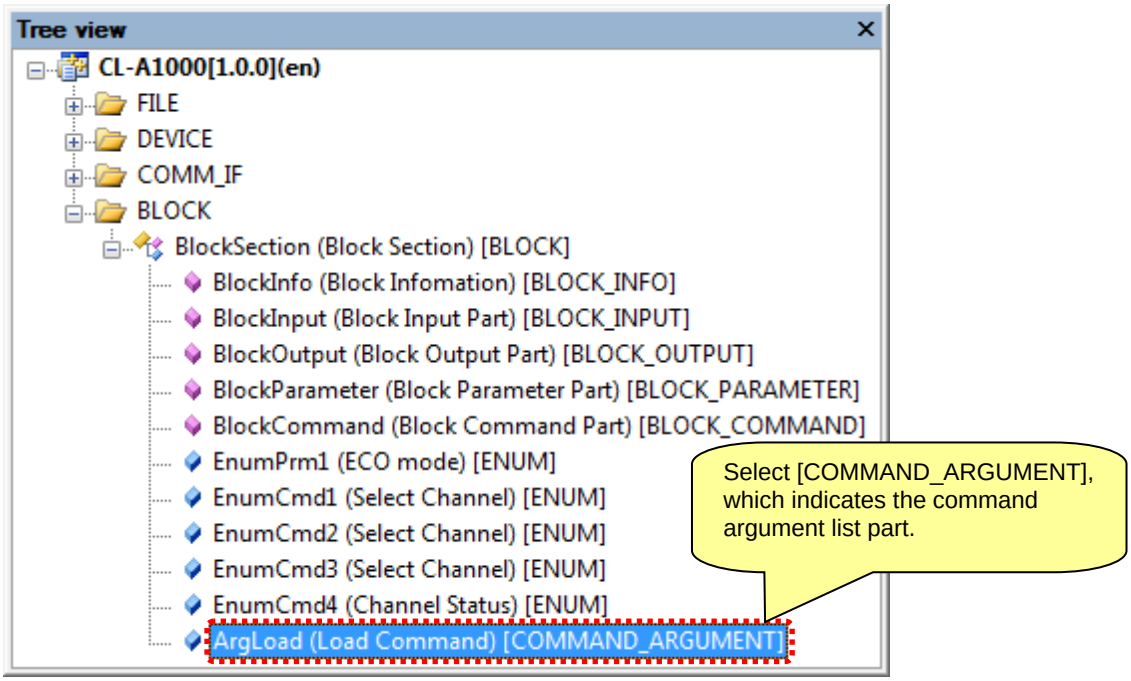
Add the element and then enter information for each item.

Table 45 Information Written to Option List Part (CC-Link IE TSN)

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: enum1	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used for displaying the element name or contents on utility software. Example: Hardware code	Required
5	CODE	Describes the value for identifying the element. Cross-check with the value indicated by the element of the reference source in order to select matching elements. Example: 0x10	Required
6	RELATED_ELE	Describes the information related to the element by referring to the command argument list part.	Optional
7	COMMENT1	Describes the element explanation, meaning of each value, and usage precautionary points.	Optional
8	COMMENT2	Describes the element explanation, meaning of each value, and usage precautionary points.	Optional

(4) Writing to the Command List Part (COMMAND_ARGUMENT)

Display the command argument list part.



Write the target module information while referring to "Table 46 Information Written to Command Argument List Part".

Describe the command argument list part when using communication command arguments. For command argument list part details, see the Control & Communication System Profile Specification (Section 5.3.10).

Target Module Information

Command		Item	Description	Setting
Write	Read			
01	81	Hysteresis upper	Allows you to set and check the threshold value (high limit).	H'0000-H'0320: 0°C-800°C
02	82	Hysteresis lower	Allows you to set and check the threshold value (low limit).	H'0000-H'0320: 0°C-800°C
03	83	ECO mode setting	Allows you to set and check Eco.	H'0000:Keep ON when display is displayed H'0001:Keep OFF when display is displayed H'0002:Turn display OFF 10 seconds after operation
04	84	Get temperature	Acquires the temperature.	-
05	-	Reset	Allows you to reset the sensor.	-
06	-	Data channel load	Allows you to read operation settings from the data bank.	H'0000:Write from data channel 1 H'0001:Write from data channel 2 H'0002:Write from data channel 3
07	-	Data channel save	Allows you to write the current sensor amplifier settings to the data bank.	H'0000:Write to data channel 1 H'0001:Write to data channel 2 H'0002:Write to data channel 3
08	-	Data channel status	Returns the data bank usage state.	H'0000:Check data channel 1 H'0001:Check data channel 2 H'0002:Check data channel 3

Command Argument List Part [COMMAND_ARGUMENT]

	LABEL	L	C	NAME	DATATYPE	DEFAULT	RANGE	M	E	ACCESS	A	R	C	REMARK
1	Arg_RWw3			Data channel select	WORD	0x0000	ENUM EnumCmd1			W				*2

*1

*1. Refers to the option list part. For option list part details, see Section (3).
*2. Do not write anything under the REMARK item.

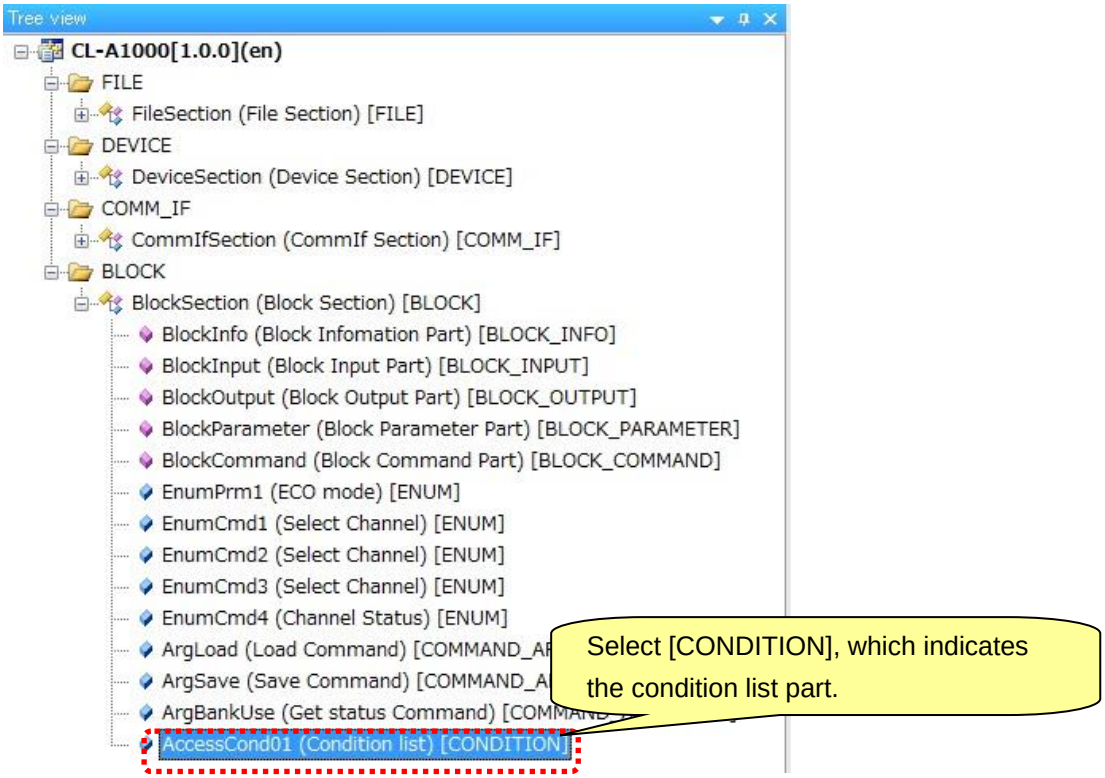
Add the element and then enter information for each item.

Table 46 Information Written to Command Argument List Part

No.	Item Name	Entered Information	Description Requirement
1	LABEL	Describes a label for identifying the element. Example: ArgumentCmd05	Required
2	LABEL2	Describes a label for identifying the element. This item is used when the utility software that uses CSP+ supports another language.	Optional
3	CATEGORY	Describes the category for grouping the element.	Optional
4	NAME	Describes the name of the element. This item is used when displaying the element name or contents on utility software. Example: Data channel load	Required
5	DATATYPE	Describes the data type of the element.	Required
6	DEFAULT	Describes the default to be set for the element.	Optional
7	RANGE	Describes the setting range of the element. Example: ENUM EnumCmd1	Optional
8	MIN_INC	Describes the minimum increment applied to the value of the element along with ENG_UNIT.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element along with MIN_INC.	Optional
10	ACCESS	Describes the access attribute of the element.	Required
11	ASSIGN	Describes the address and code to be assigned to the element.	Optional
12	REF	Describes the reference to be referred to by the element. (For future expansion; not available at present.)	Optional
13	COMMENT	Describes the element explanation, meaning of each value and usage precautionary points.	Optional

(5) Writing to the Condition List Part (CONDITION)

Display the condition list part.



Write the target module information while referring to "Table 47 Information Written to Condition List Part". The condition list part is described when a parameter value is changed by another parameter. For details of the condition list part, see Control & Communication system profile specification (5.4.9).

For example, describe as follows in the following conditions.

- If AvgOrSample is 0,
  ⇒ AvgTime ACCESS field is NA, and AvgCount ACCESS field is NA.
- If AvgOrSample is 1 and TimeOrCount is 0,
  ⇒ AvgTime ACCESS field is NA, and AvgCount ACCESS field is RW.
- If AvgOrSample is 1 and TimeOrCount is 1,
  ⇒ AvgTime ACCESS field is RW, and AvgCount ACCESS field is NA.
- Other than those above:
  ⇒ AvgTime ACCESS field is NA, and AvgCount ACCESS field is NA.

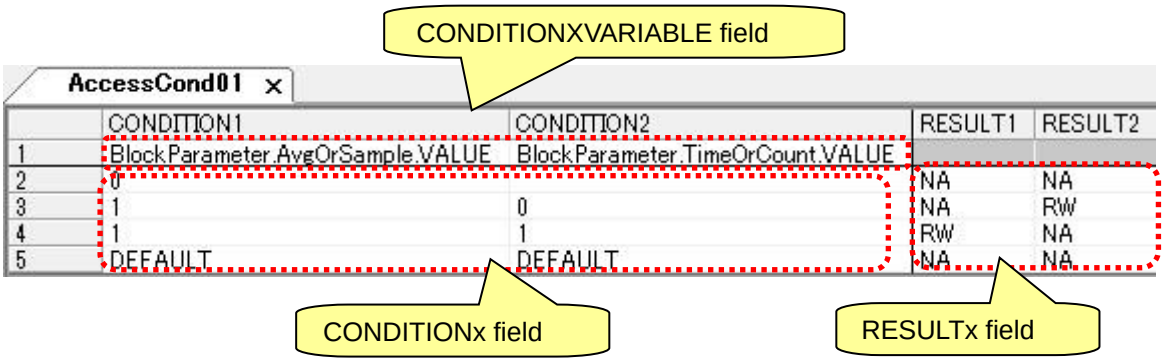


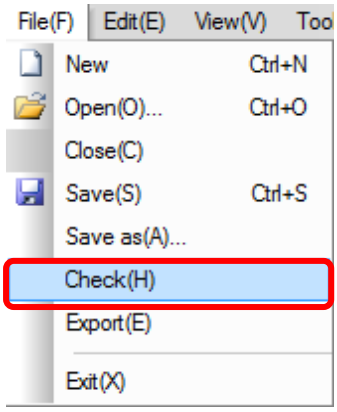
Table 47 Information Written to Condition List Part

No	Item Name	Entered Information	Description Requirement
1	CONDITIONXVARIABLE	Describes the reference to the element used to determine the condition.	Required
2	CONDITIONx	Describes the condition range when determining the condition.	Required
3	RESULTx	Describes the value (result) to be used when the condition is met.	Required

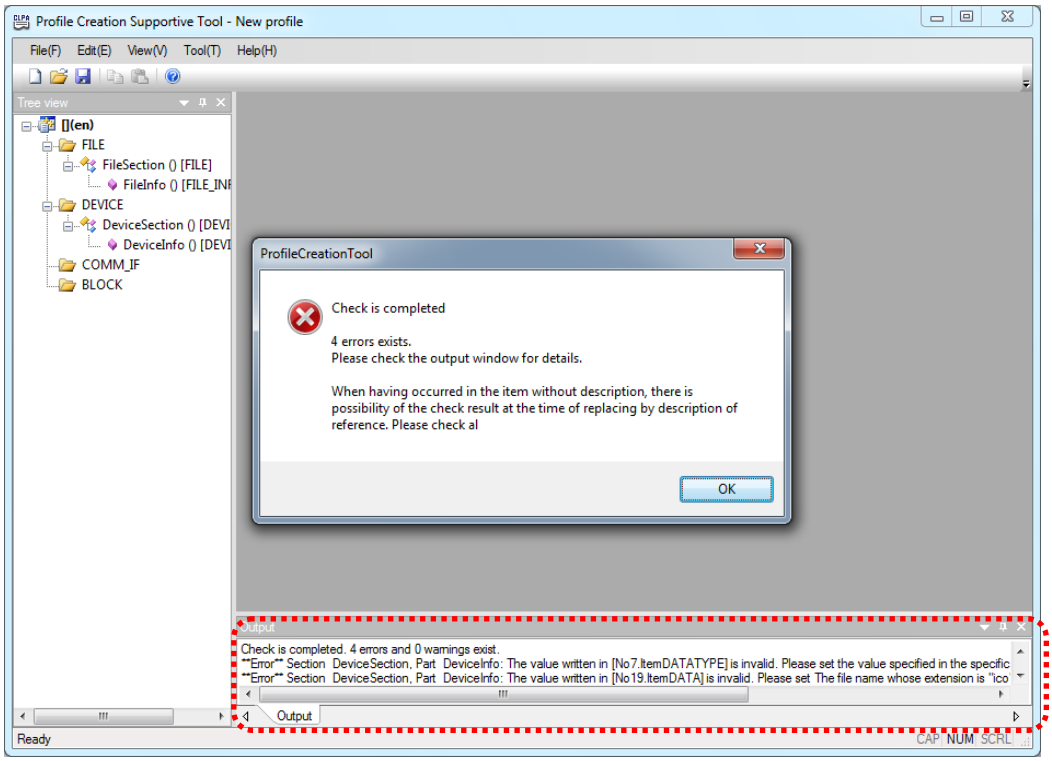
5.2.9 Checking the Project

Check the project for input errors following the procedure below.

From the menu bar, select [File] – [Check].



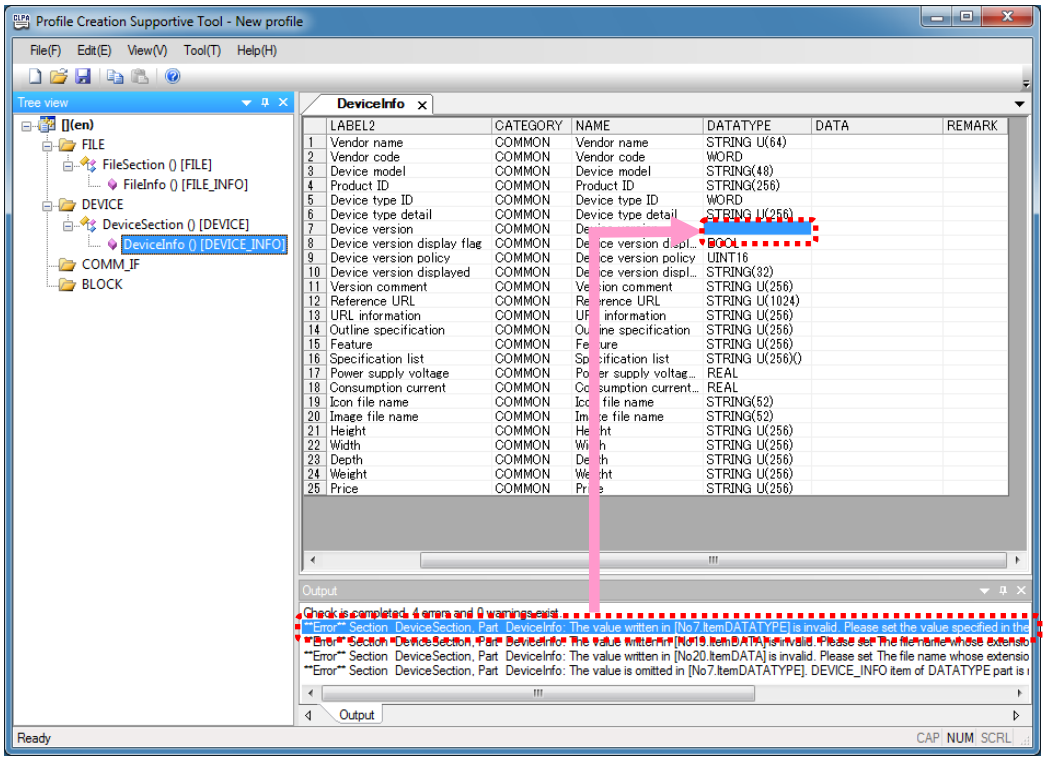
If an error exists, the details of the error appear in the Check Result dialog box and Output window.



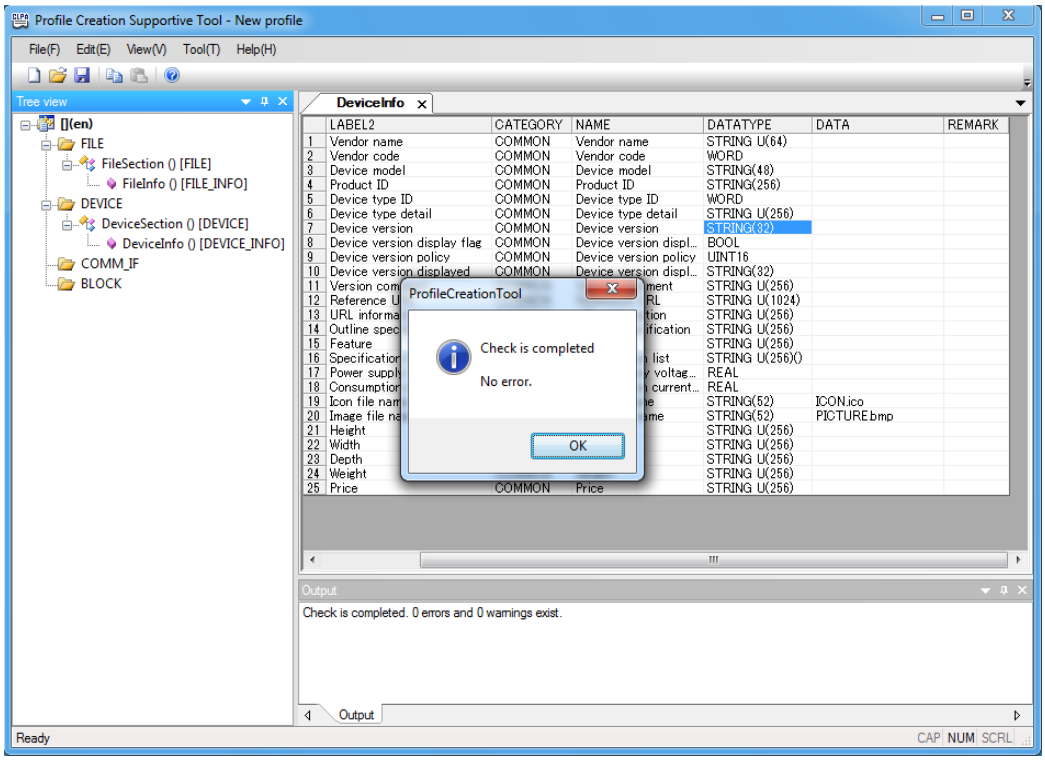
In the Check Result dialog box, select [OK] to close the dialog box.

Correct the detected errors.

Double-click the mouse on the error details displayed in the Output window to move to the location where the error was detected.



Correct the error and conduct the check once again. Continue to make corrections and conduct checks until no more errors exist.



5.2.10 Checking the Descriptions of Required Project Elements

Check if all information required to create a CSP+ file has been written.

To avoid registration of an incomplete CSP+ file, verify that the required elements described in the table below are written in the tables of the applicable sections.

(a) For CC-Link Compatible Module

Table 48 Required Elements (CC-Link)

Section	Part	NAME	LABEL	Description Requirement	Comment
File information	File information list	File creation date	CreateDate	Required	Be sure to write information related to the files of the CSP+ file.
		File creation time	CreateTime	Required	
		Last modified date	ModDate	Required	
		Last modified time	ModTime	Required	
		Supported language information	Language	Required	
		CSP+ specification version	CCLinkFamilyProfileVersion	Required	
		File version	FileVersion	Required	
Device information	Device information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Model	DeviceModel	Required	
		Device version	Version	Required	
		Device version display flag	VersionDisplayFlag	Required	
		Device version display policy	VersionPolicyType	Required	
Communication interface information	Communication interface list	Vendor name	VendorName	Required	Be sure to write information representing the target module and information related to the communication method.
		Vendor code	VendorCode	Required	
		Communication interface type ID	CommIFTypeID	Required	
		Version	Version	Required	
		Device version acquisition type	ReadVersionType	Required	
		Station type	StationType	Required	
		Station type details	StationTypeDetail	Conditionally required	
		I/O type	IOType	Required	
		Model name	DevModel	Required	
		CC-Link version	CcLinkVer	Required	
		Extended cyclic setting	ExtCycle	Conditionally required	
		No. of occupied stations	NumOccupiedStations	Required	
	Communication input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Communication output list				
	Communication parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
	Communication command list	-	-	Conditionally required	Be sure to write this information when command processing is performed.
	Communication method list	-	-	Conditionally required	Be sure to write this information when execution is performed from the Parameter Processing of Slave Station or Command Execution of Slave Station screen.
Block information	Block information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Version	Version	Required	
	Block input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Block output list				
	Block parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
	Block command list	-	-	Conditionally required	Be sure to write this information when command processing is performed.
Common information	Structure	-	-	Conditionally required	Be sure to write this information when structures are used in the communication input list and communication output list.
	Option list	-	-	Conditionally required	Be sure to write this information when an option list is used on the Parameter Processing of Slave Station screen or Command Execution of Slave Station screen.
	Command argument list	-	-	Conditionally required	Be sure to write this information when arguments are used in command settings or execution results.

(b) For CC-Link IE Field Network Compatible Module

Table 49 Mandatory Elements (CC-Link IE Field Network)

Section	Part	NAME	LABEL	Description Requirement	Comment
File information	File information list	File creation date	CreateDate	Required	Be sure to write information related to the files of the CSP+ file.
		File creation time	CreateTime	Required	
		Last modified date	ModDate	Required	
		Last modified time	ModTime	Required	
		Supported language information	Language	Required	
		CSP+ specification version	CCLinkFamilyProfileVersion	Required	
		File version	FileVersion	Required	
Device information	Device information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Model	DeviceModel	Required	
		Device version	Version	Required	
		Device version display flag	VersionDisplayFlag	Required	
		Device version display policy	VersionPolicyType	Required	
Communication interface information	Communication interface list	Vendor name	VendorName	Required	Be sure to write information representing the target module and information related to the communication method.
		Vendor code	VendorCode	Required	
		Communication interface type ID	CommIFTypeID	Required	
		Version	Version	Required	
		Device version acquisition type	ReadVersionType	Required	
		Node type	nodeType	Required	
		I/O Type	IOType	Required	
		Model code	ModelCode	Required	
		Model name	DevModel	Required	
		RY size	RYSize	Required	
		RWw size	RWwSize	Required	
		RX size	RXSize	Required	
		RWr size	RWrSize	Required	
		No. of ports	Ports	Required	
		Protocol version	protocolVersion	Required	
		Whether node No. setting function exists	NodeNumberSettingFlg	Required	
		Whether transient reception function exists	TransientReceptionFlg	Required	
		Whether SLMP reception function exists	SLMPReceptionFlg	Required	
	Communication input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Communication output list				
	Communication parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
	Communication command list	-	-	Conditionally required	Be sure to write this information when command processing is performed.
	Communication method list	-	-	Conditionally required	Be sure to write this information when execution is performed from the Parameter Processing of Slave Station or Command Execution of Slave Station screen.
	Communication message list	-	-	Conditionally required	Be sure to write this information when execution is performed from the Parameter Processing of Slave Station or Command Execution of Slave Station screen.
Block information	Block information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Version	Version	Required	
	Block input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Block output list				
	Block parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
	Block command list	-	-	Conditionally required	Be sure to write this information when command processing is performed.
Common information	Structure	-	-	Conditionally required	Be sure to write this information when structures are used in the communication input list and communication output list.
	Option list	-	-	Conditionally required	Be sure to write this information when an option list is used on the Parameter Processing of Slave Station screen or Command Execution of Slave Station screen.
	Command argument list	-	-	Conditionally required	Be sure to write this information when arguments are used in command settings or execution results.

(c) For SLMP (TCP/IP) Compatible Module

Table 50 Mandatory elements (SLMP(TCP/IP))

Section	Part	NAME	LABEL	Description Requirement	Comment
File information	File information list	File creation date	CreateDate	Required	Be sure to write information related to the files of the CSP+ file.
		File creation time	CreateTime	Required	
		Last modified date	ModDate	Required	
		Last modified time	ModTime	Required	
		Supported language information	Language	Required	
		CSP+ specification version	CCLinkFamilyProfileVersion	Required	
		File version	FileVersion	Required	
Device information	Device information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Model	DeviceModel	Required	
		Device version	Version	Required	
		Device version display flag	VersionDisplayFlag	Required	
		Device version display policy	VersionPolicyType	Required	
Communication interface information	Communication interface list	Vendor name	VendorName	Required	Be sure to write information representing the target module and information related to the communication method.
		Vendor code	VendorCode	Required	
		Communication interface type ID	CommIFTypeID	Required	
		Version	Version	Required	
		Device version acquisition type	ReadVersionType	Required	
	Communication parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
Block information	Block information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Version	Version	Required	
	Block parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
Common information	Structure	-	-	Conditionally required	Be sure to write this information when structures are used in the communication input list and communication output list.
	Option list	-	-	Conditionally required	Be sure to write this information when an option list is used on the Parameter Processing of Slave Station screen or Command Execution of Slave Station screen.

(d) For CC-Link IE Field Network Basic Compatible Module

Table 51 Mandatory Elements (CC-Link IE Field Network Basic)

Section	Part	NAME	LABEL	Description Requirement	Comment
File information	File information list	File creation date	CreateDate	Required	Be sure to write information related to the files of the CSP+ file.
		File creation time	CreateTime	Required	
		Last modified date	ModDate	Required	
		Last modified time	ModTime	Required	
		Supported language information	Language	Required	
		CSP+ specification version	CCLinkFamilyProfileVersion	Required	
		File version	FileVersion	Required	
Device information	Device information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Model	DeviceModel	Required	
		Device version	Version	Required	
		Device version display flag	VersionDisplayFlag	Required	
		Device version display policy	VersionPolicyType	Required	
Communication interface information	Communication interface list	Vendor name	VendorName	Required	Be sure to write information representing the target module and information related to the communication method.
		Vendor code	VendorCode	Required	
		Communication interface type ID	CommIFTypeID	Required	
		Version	Version	Required	
		Device version acquisition type	ReadVersionType	Required	
		Model name	DevModel	Required	
		No. of occupied stations	NumOccupiedStations	Required	
		Ethernet communication function	EthernetCommFunction	Required	
	Communication input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Communication output list				
	Communication parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
Block information	Block information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Version	Version	Required	
	Block input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Block output list			Conditionally required	
	Block parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
Common information	Structure	-	-	Conditionally required	Be sure to write this information when structures are used in the communication input list and communication output list.
	Option list	-	-	Conditionally required	Be sure to write this information when an option list is used on the Parameter Processing of Slave Station screen or Command Execution of Slave Station screen.

(e) For CC-Link IE TSN Compatible Module

Table 52 Required Elements (CC-Link IE TSN)

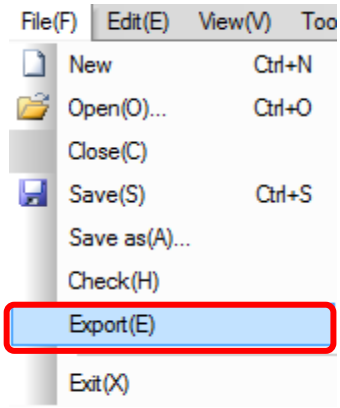
Section	Part	NAME	LABEL	Description Requirement	Comment
File information	File information list	File creation date	CreateDate	Required	Be sure to write information related to the files of the CSP+ file.
		File creation time	CreateTime	Required	
		Last modified date	ModDate	Required	
		Last modified time	ModTime	Required	
		Supported language information	Language	Required	
		CSP+ specification version	CCLinkFamilyProfileVersion	Required	
		File version	FileVersion	Required	
Device information	Device information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Model	DeviceModel	Required	
		Product ID	ProductID	Required	
		Device version	Version	Required	
		Device version display flag	VersionDisplayFlag	Required	
		Device version display policy	VersionPolicyType	Required	
Communication interface information	Communication interface information list	Vendor name	VendorName	Required	Be sure to write information representing the target module and information related to the communication method.
		Vendor code	VendorCode	Required	
		Communication interface type ID	CommIFTypeID	Required	
		Version	Version	Required	
		Model code	ModelCode	Required	
		Model name	DevModel	Required	
		Object dictionary file name	ObjectDictionaryFileName	Conditionally required	
		IEEE 802_1AS function	IEEE802_1ASFunction	Required	
		Reception function_100Mbps	ReceiveFunction100M	Required	
		Relay function_100Mbps	RelayFunction100M	Required	
		Reception function_1Gbps	ReceiveFunction1G	Required	
		Relay function_1Gbps	RelayFunction1G	Required	
		Broad_multicast function	MultiCastFunction	Required	
		Certification class	CertificationClass	Required	
		Send bit data default size	S_B_DefaultSize	Required	
		Send word data default size	S_W_DefaultSize	Required	
		Receive bit data default size	R_B_DefaultSize	Required	
		Receive word data default size	R_W_DefaultSize	Required	
		Send bit data maximum size	S_B_MaxSize	Required	
		Send word data maximum size	S_W_MaxSize	Required	
		Receive bit data maximum size	R_B_MaxSize	Required	
		Receive word data maximum size	R_W_MaxSize	Required	
		Send bit data address	S_B_Address	Conditionally required	
		Send word data address	S_W_Address	Conditionally required	
		Receive bit data address	R_B_Address	Conditionally required	
		Receive word data address	R_W_Address	Conditionally required	
		Status notification device address	StsW_Address	Required	
		PDOConfig index+X	PDOConfigIndex+X	Conditionally required	
		PDOConfigPDO type+X	PDOConfigPDOType+X	Conditionally required	
		PDOConfig memory address+X	PDOConfigMemoryAddress+X	Conditionally required	
		PDOConfig mapping candidate+X	PDOConfigPossibleMapping+X	Conditionally required	
		General send memory address	S_General_Address	Conditionally required	
		General receive memory address	R_General_Address	Conditionally required	
	Communication input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Communication output list				
	Communication parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
	Communication command list	-	-	Conditionally required	Be sure to write this information when command processing is performed.
	Communication method list	-	-	Conditionally required	Be sure to write this information when execution is performed from the Parameter Processing of Slave Station or Command Execution of Slave Station screen.

Section	Part	NAME	LABEL	Description Requirement	Comment
Communication interface information	Communication message list	-	-	Conditionally required	Be sure to write this information when execution is performed from the Parameter Processing of Slave Station or Command Execution of Slave Station screen.
Block information	Block information list	Vendor name	VendorName	Required	Be sure to write information representing the target module.
		Vendor code	VendorCode	Required	
		Version	Version	Required	
	Block input list	-	-	Conditionally required	Be sure to write this information when input/output exists for the device.
	Block output list				
	Block parameter list	-	-	Conditionally required	Be sure to write this information when parameter reading/writing is performed.
	Block command list	-	-	Conditionally required	Be sure to write this information when command processing is performed.
Common information	Structure	-	-	Conditionally required	Be sure to write this information when structures are used in the communication input list and communication output list.
	Option list	-	-	Conditionally required	Be sure to write this information when an option list is used on the Parameter Processing of Slave Station screen or Command Execution of Slave Station screen.
	Command argument list	-	-	Conditionally required	Be sure to write this information when arguments are used in command settings or execution results.

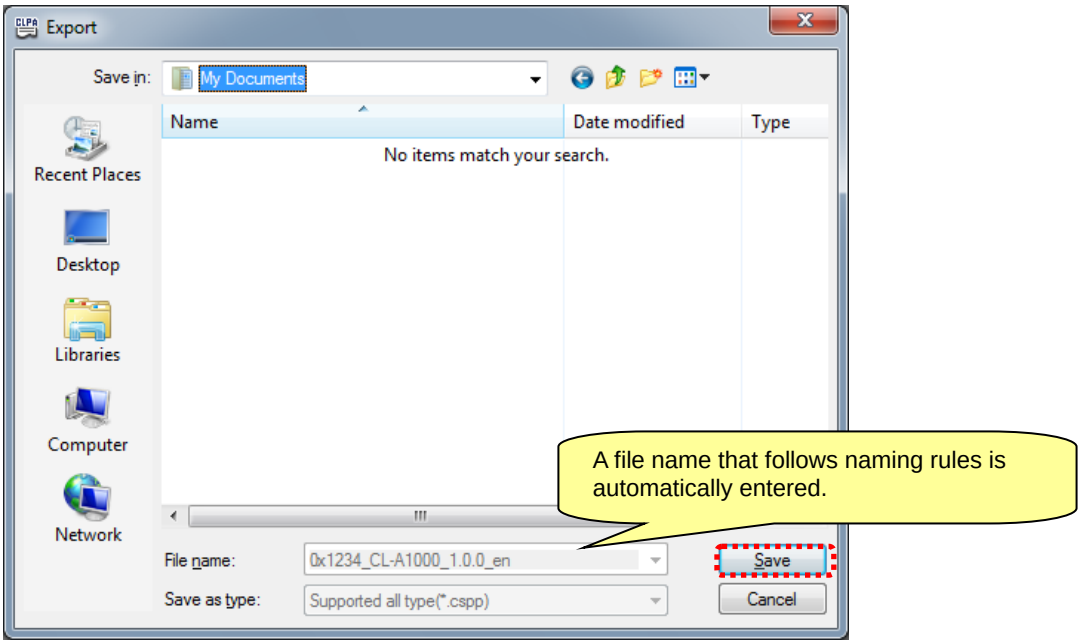
5.2.11 Exporting the CSP+ File

Generate the CSP+ file as described below. To generate the file, use the Export function of the Profile Creation Support Tool.

From the menu bar, select [File] – [Export].



Select the location where you want to save the file and click the [Save] button.



For CSP+ file naming rules, see the Control & Communication System Profile Specification (Section 4.1.1).

5.2.12 Converting the CSP+ File to CSP+

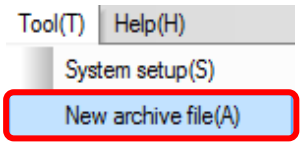
Convert the CSP+ file to CSP+ as described below.

Be sure to note the following precautions when creating CSP+:

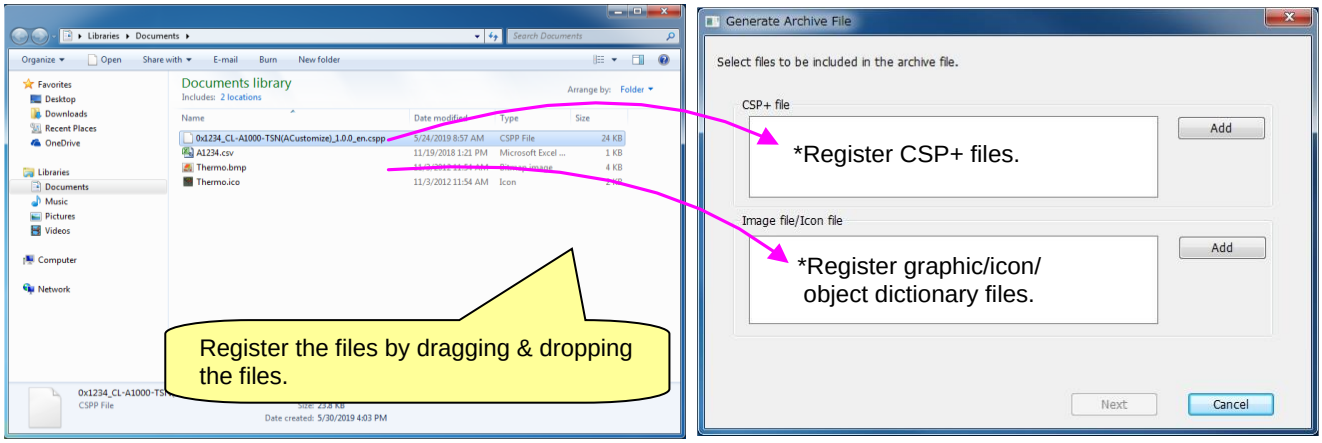
(1) The name of a graphic or icon file must correspond to the file name described in the element "IconFileName" or "GraphicFileName" of DEVICE_INFO.

(2) Write the name of all files stored using single-byte alphanumeric characters and symbols.

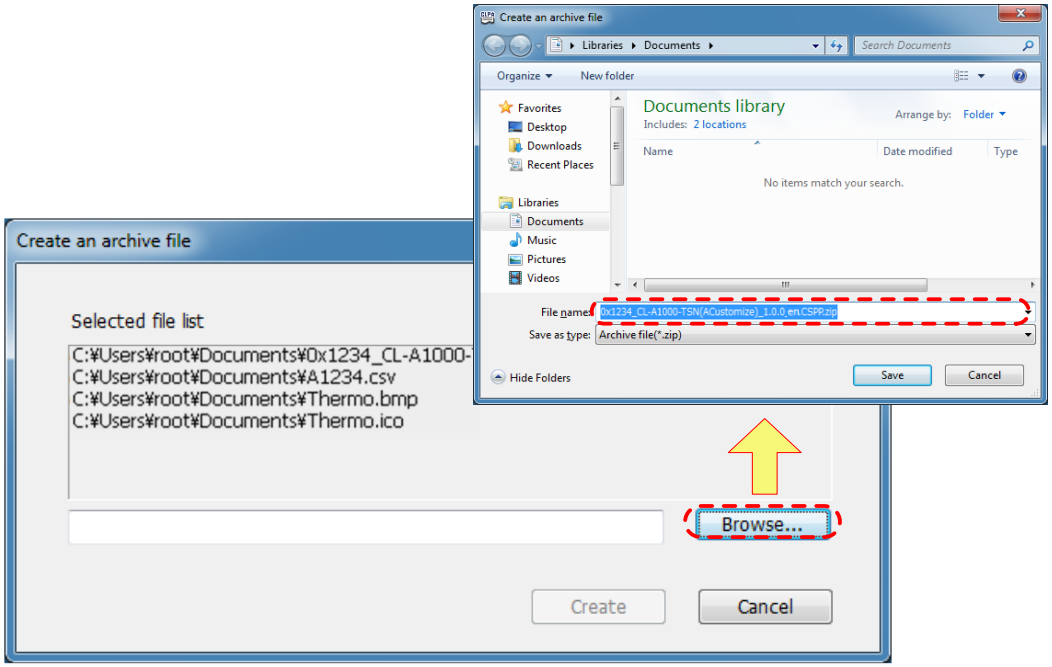
From the menu bar, select [Tool(T)] – [New archive file(A)].



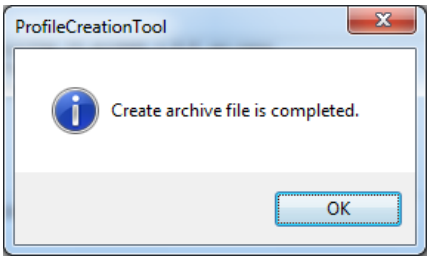
Register the CSP+, graphic, icon, and object dictionary files in the Create an archive file dialog box and click the [Next] button. Only for CC-Link IE TSN compatible module, object dictionary files can be registered.



Click the [Save] button, specify the CSP+ save location, enter the file name as desired and click the [Save] button.



Click the [Create] button. CSP+ is created in the specified save location.



5.2.13 Validating CSP+

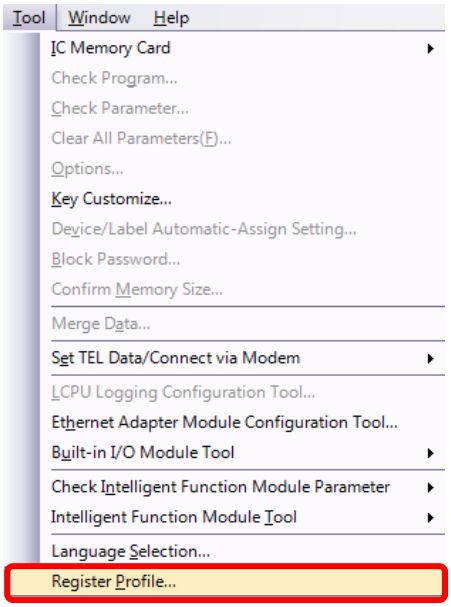
Assess whether or not the created CSP+ has any errors as described below.

For validation, import CSP+ into utility software and perform the inputs/outputs described in CSP+, read and write parameters and execute commands.

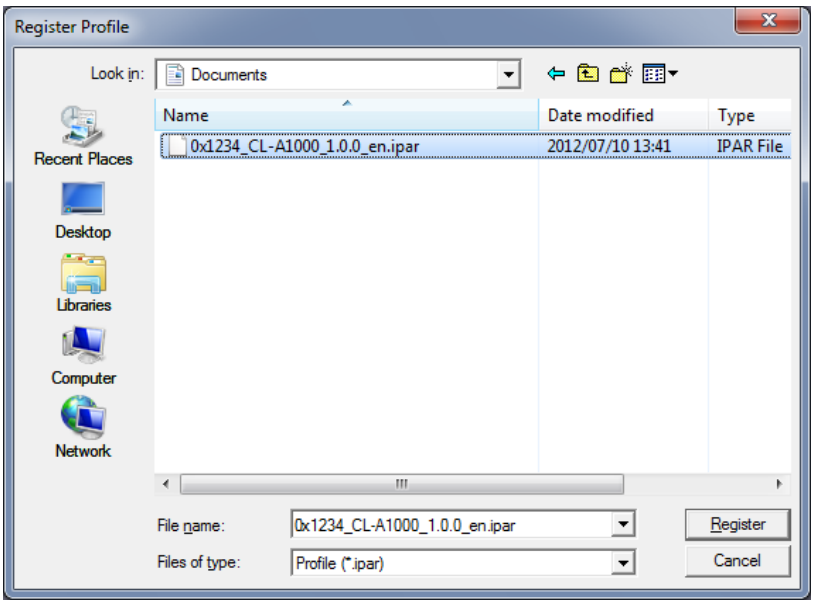
As a validation example, the following shows the validation procedure using GX Works2/GX Works3 of Mitsubishi Electric Corporation.

(1) Importing CSP+ into Utility Software

Start GX Works2. From the menu bar, select [Tool] – [Register Profile].



Select CSP+ and click the [Register] button.



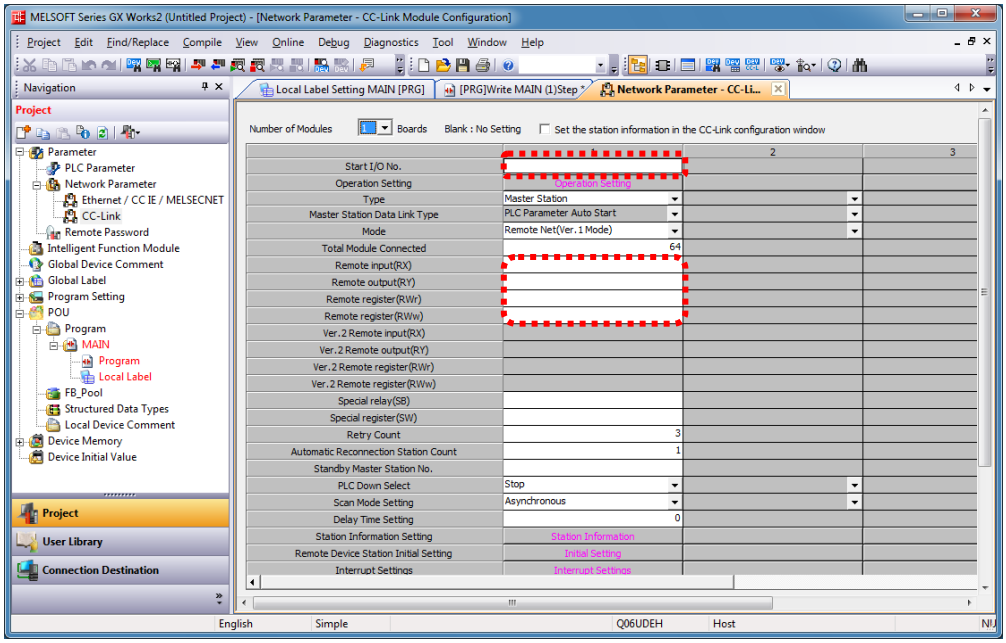
To update the imported CSP+, changes need to be made to the file version (the element "FileVersion" of the part FILE_INFO). Changes to the file version can be updated by version downgrades as well.

(2) Verifying Device Information

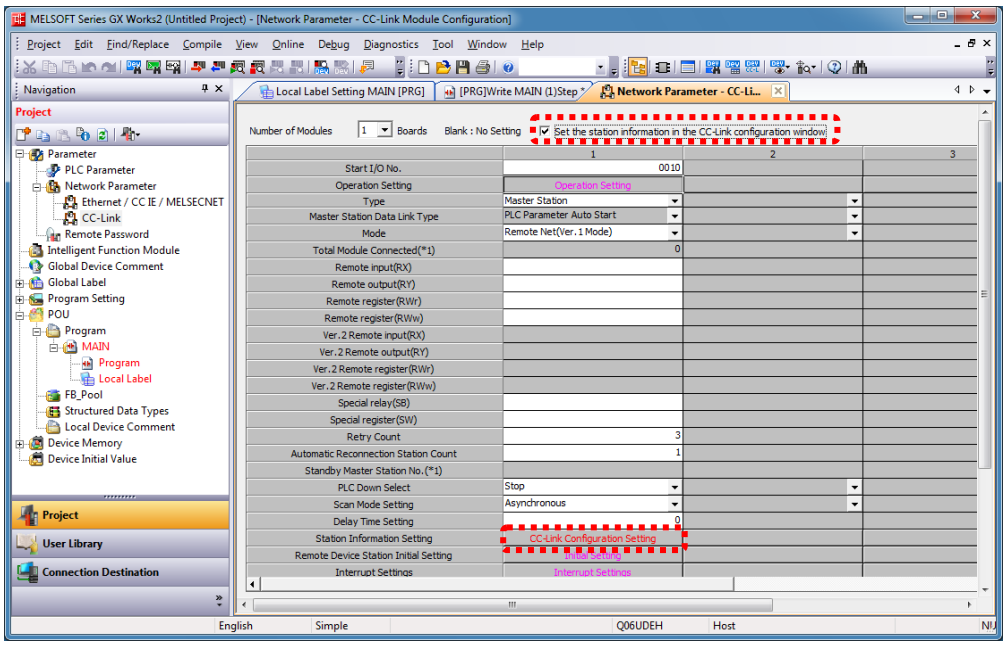
Verify that the target module information written in the device information section appears on GX Works2 or GX Works3.

(a) For CC-Link Compatible Module

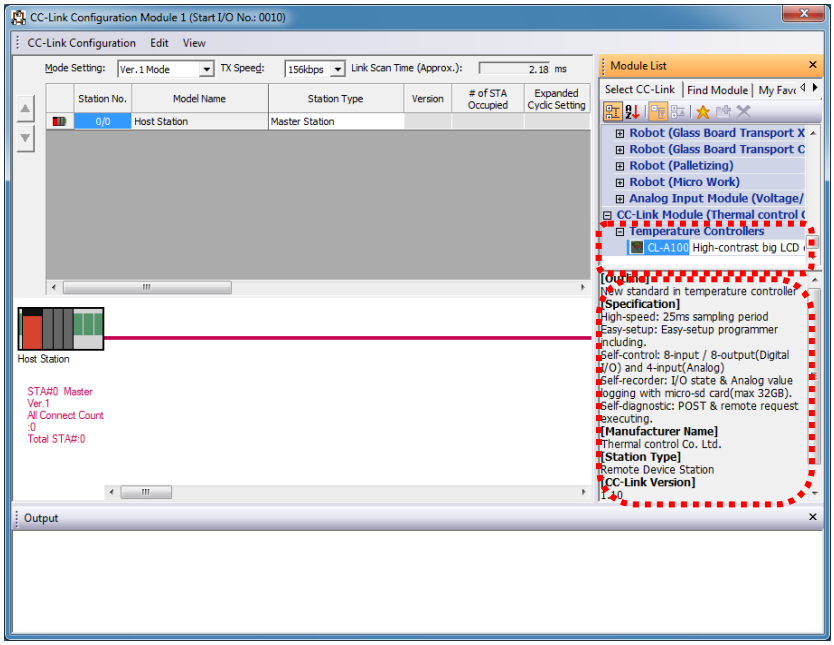
Using GX Works2, create a new project and set CC-Link network parameters.



Enter a checkmark next to "Set station information using the CC-Link Configuration window" and click the [CC-Link Configuration Settings] button.

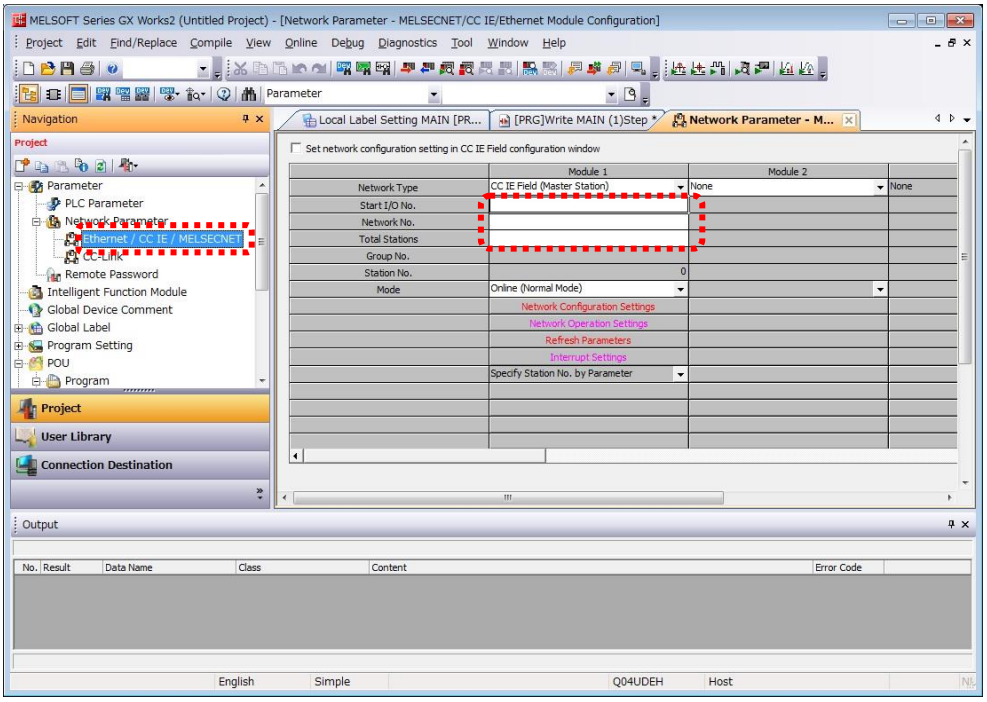


Verify that the target module information appears under [Module List] in the CC-Link Configuration dialog box.

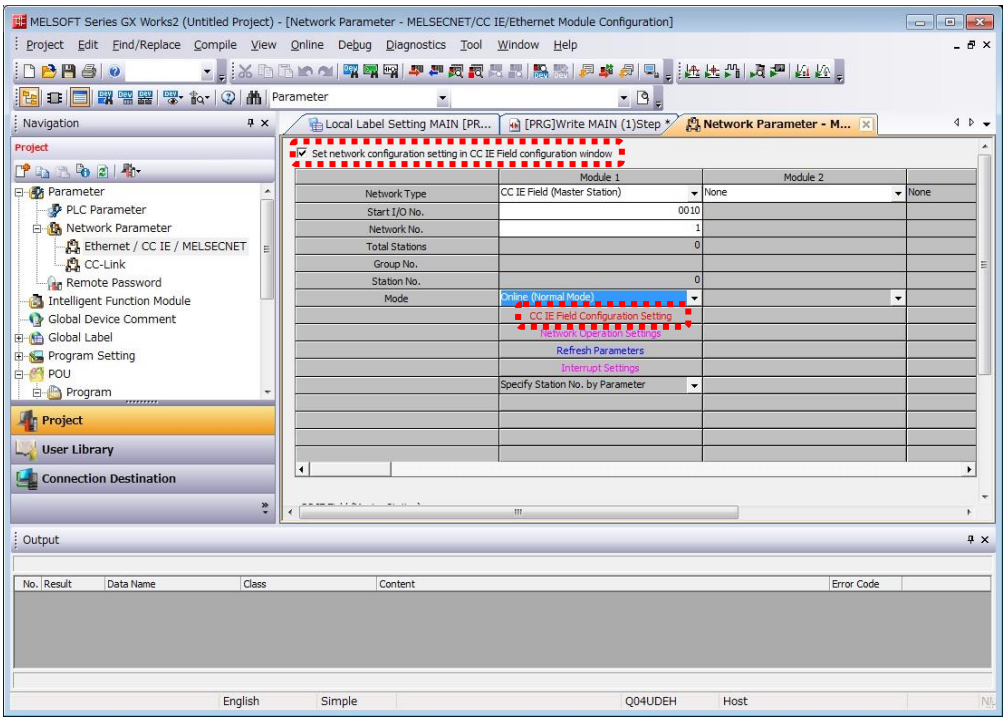


(b) For CC-Link IE Field Network Compatible Module

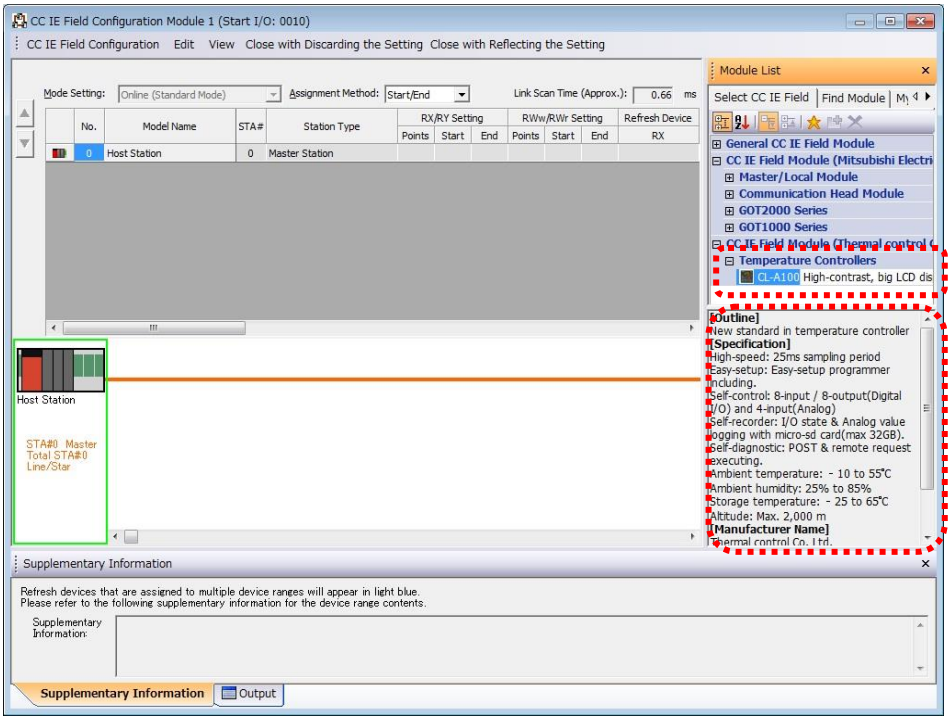
In GX Works2, create a new project and set a network parameter for the CC-Link IE Field Network.



Check [Set the network configuration settings on the CC IE field configuration window], and click the [CC IE field configuration settings] button.



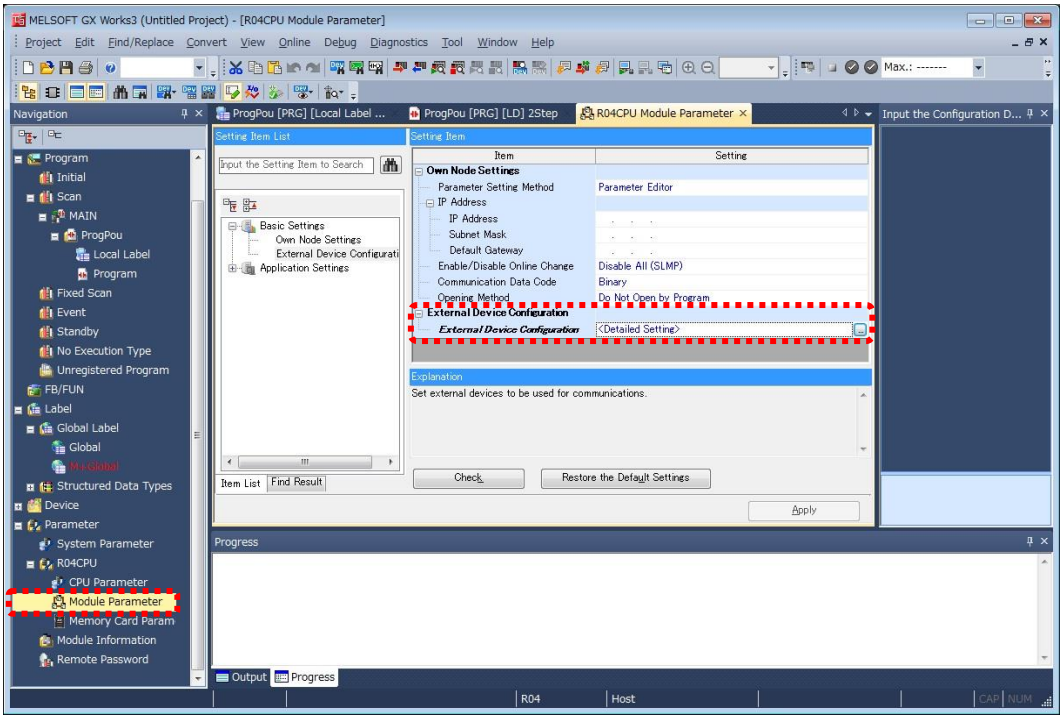
Verify that the target module information appears under [Module list] in the CC IE Field Configuration dialog box.



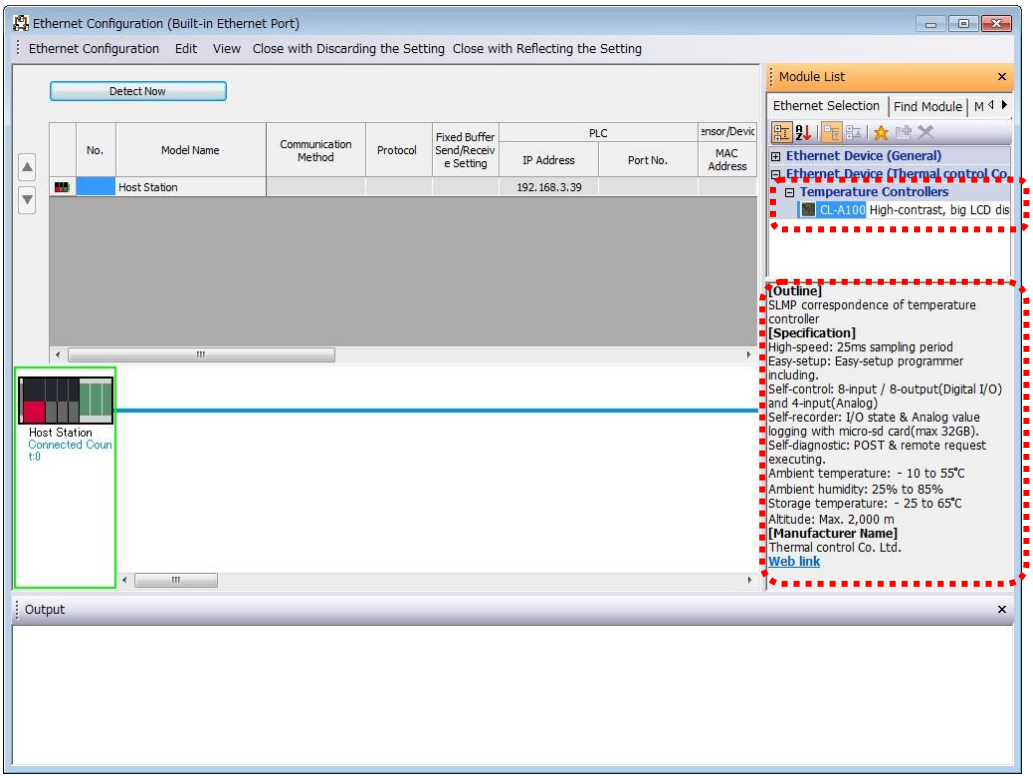
(c) For SLMP (TCP/IP) Compatible Module

Illustrate the case where the CPU module with built-in Ethernet is used.

In GX Works3, create a new project and click <Detaild Settings> in [External Device Configuration] under [Module Parameter] of the CPU module with built-in Ethernet.



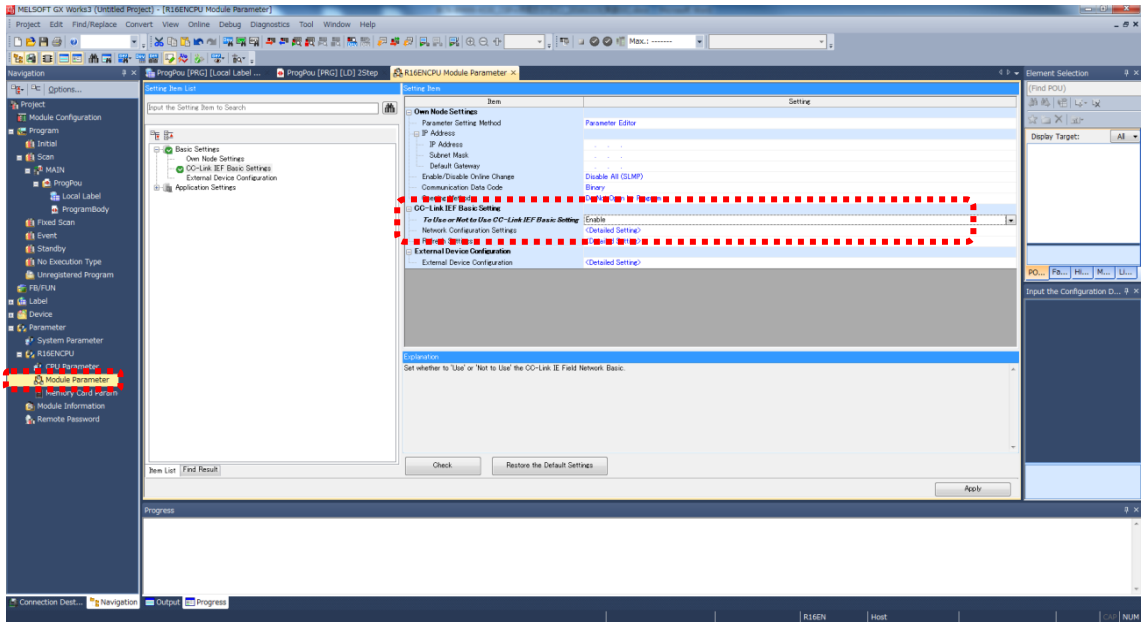
Confirm that the target module information is displayed in [Module List] in the Ethernet configuration settings dialog.



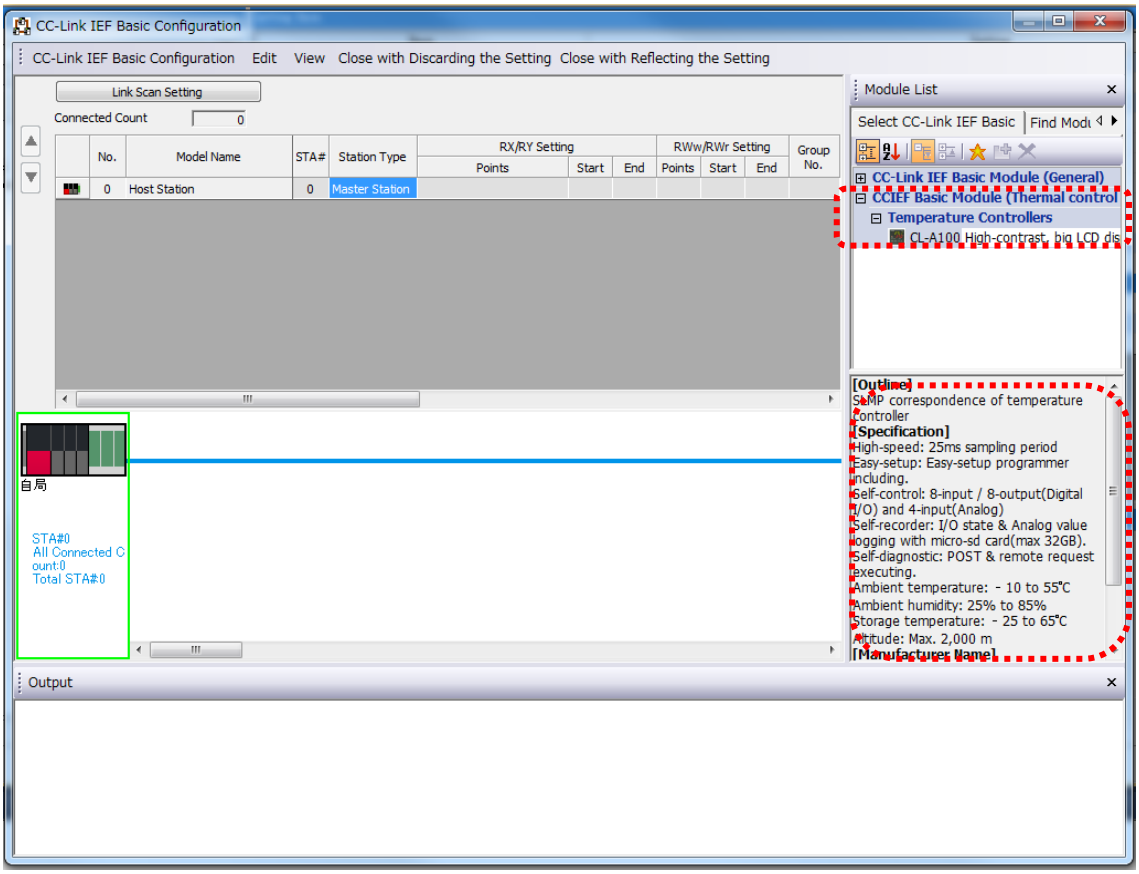
(d) For CC-Link IE Field Network Basic Compatible Module

Illustrate the case where the CPU module with built-in Ethernet is used.

In GX Works3, create a new project, click [CC-Link IEF Basic Settings] in [Module Parameter] of the CPU module with built-in Ethernet, change [To Use or Not to Use CC-Link IEF Basic Setting] to <Enable>, and then click <Detaild Setting> in [Network Configuration Settings].



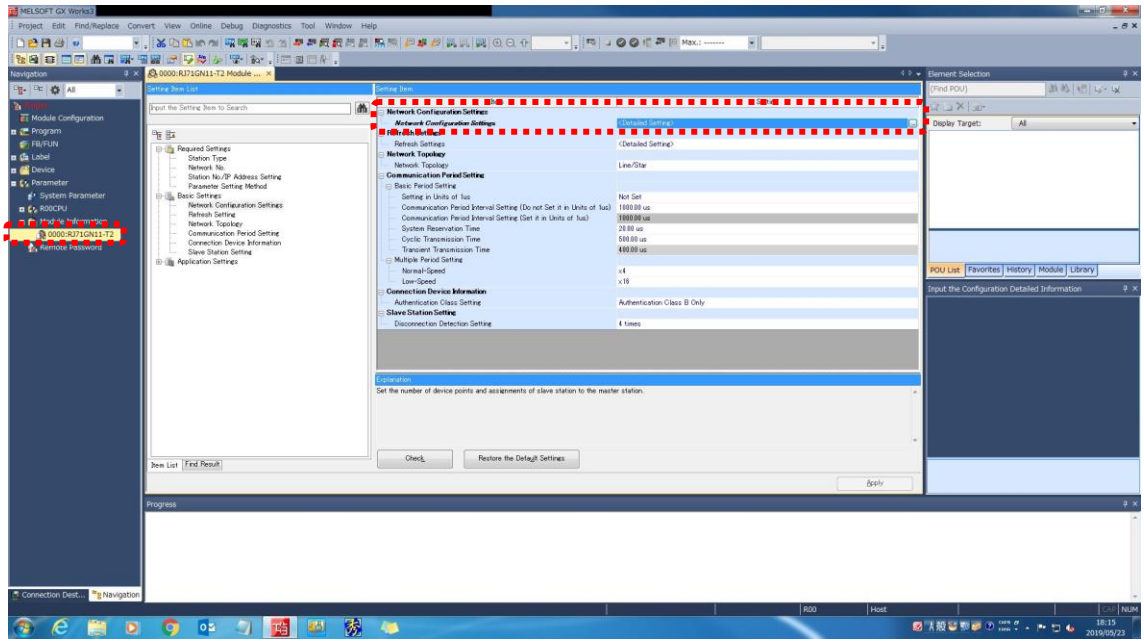
Verify that the target module information appears under [Module List] in the CC-Link IEF Basic Configuration dialog box.



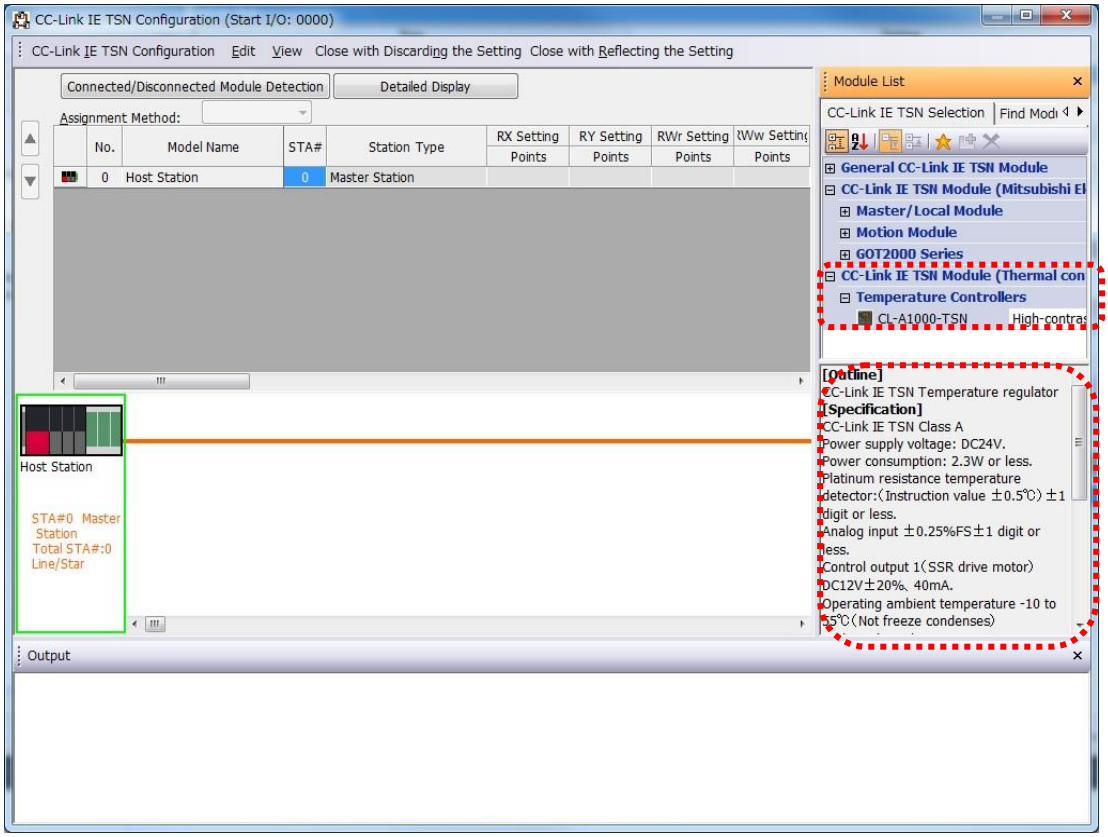
(e) For CC-Link IE TSN Compatible Module

Illustrate the case where the CC-Link IE TSN master/local module is used.

In GX Works3, create a new project and add the CC-Link IE TSN master/local module to the module configuration. Select [Basic Settings] under the added CC-Link IE TSN master/local module, then click <Detailed Setting> in [Network Configuration Settings].



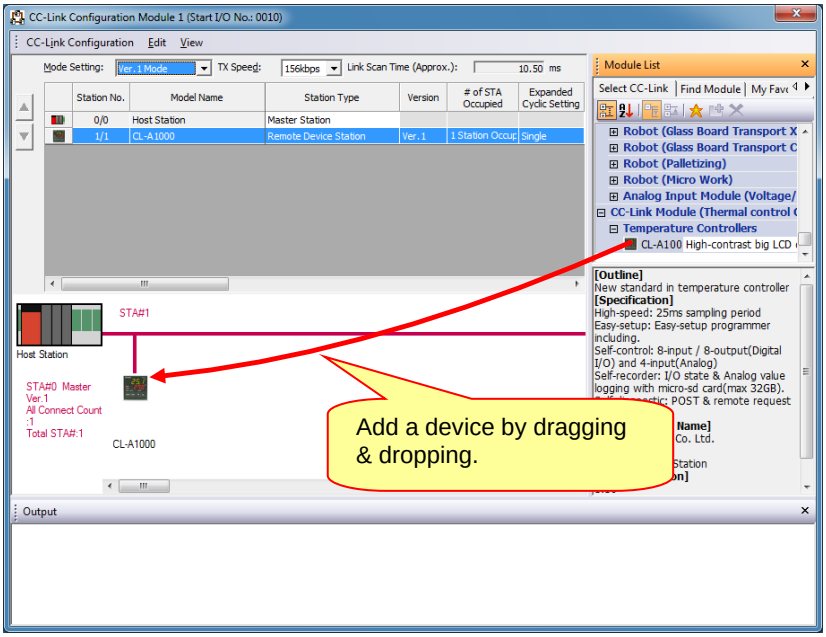
Verify that the target module information appears under [Module List] in the CC-Link IE TSN Configuration dialog box.



(3) Verifying Input/Output Information

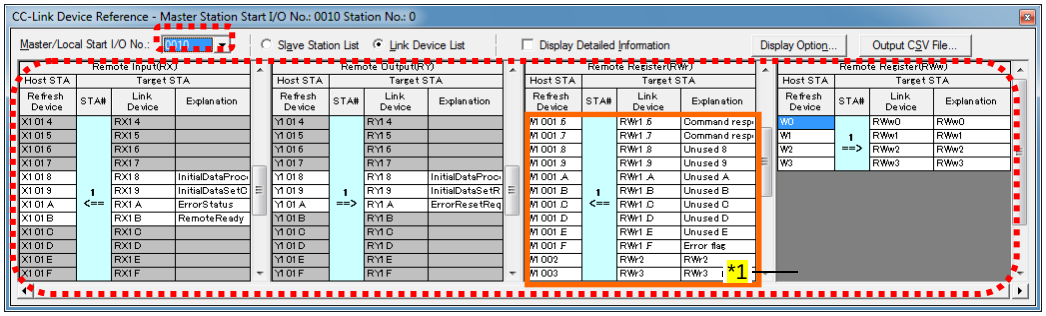
Verify that the input/output information of the target module written in the block information section and communication interface information section appears in GX Works2.

Add the target module in the CC-Link configuration using the CC-Link Configuration dialog box.



In the menu bar, select [Reflect settings and close] from [CC-Link Configuration] to close the CC-Link Configuration dialog box. Network parameters are now set.

Open the Verify CC-Link Device Reference window and specify the Master/Local Start I/O No. set in network parameter settings. Verify that the device assignment information of the target module appears.

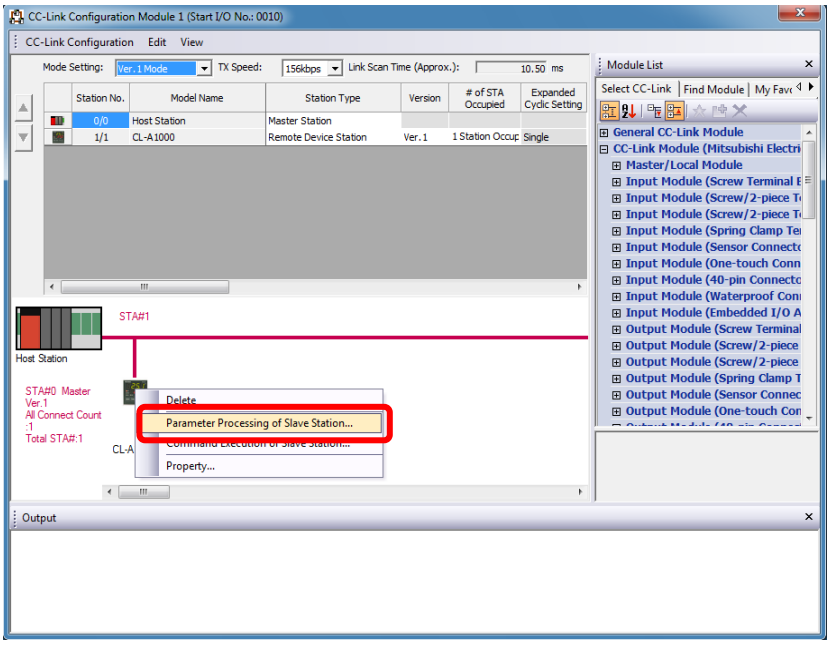


*1: When a structure part is used in input/output information descriptions, also verify that the information described in the structure part appears.

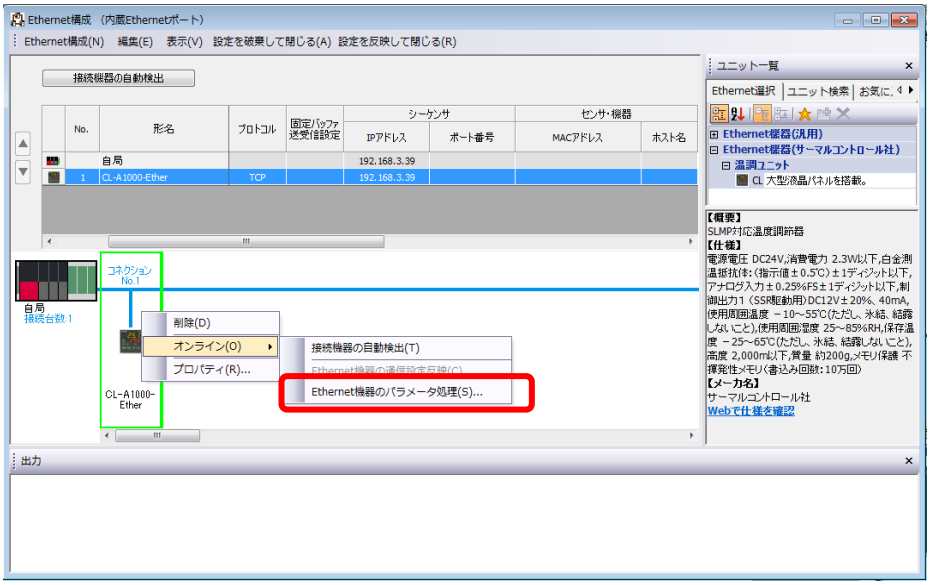
(4) Verifying Parameter Information

Verify that the parameter processing for the target module that describes "PARAMETER" in the setting item "METHOD_TYPE" of the communication method list part and "MESSAGE_TYPE" of the communication message list part of the communication interface information section appears in GX Works2.

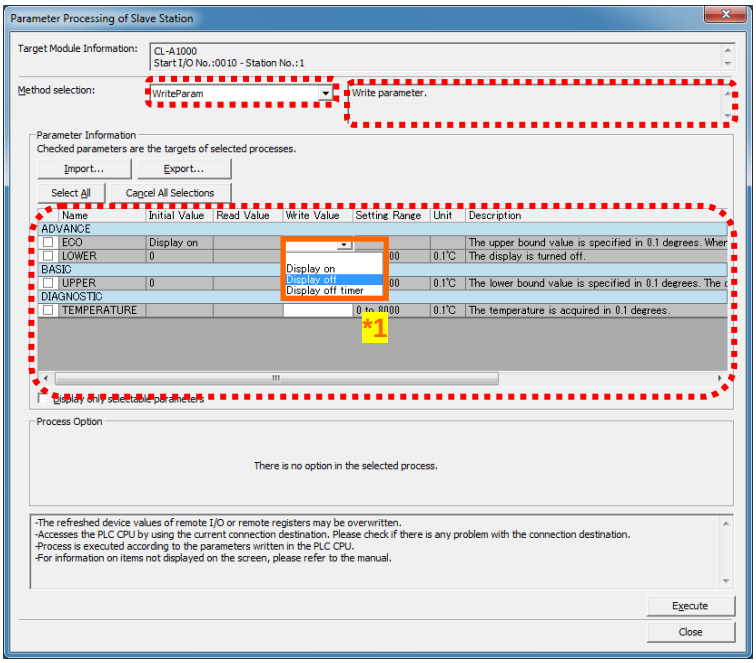
If the communication interface is CC-Link, open the CC-Link Configuration dialog box. If the communication interface is CC-IE field network, open the CC-IE Field Configuration dialog box. If the communication interface is CC-Link IE TSN, open the CC-Link IE TSN Configuration dialog box. Click the right mouse button on the icon of the target module and select [Parameter Processing of Slave Station].



If the communication interface is SLMP (TCP/IP), display the Ethernet configuration settings dialog. Right-click on the target module and select the [Ethernet device parameter process].



Verify that the communication command information of the target module appears.



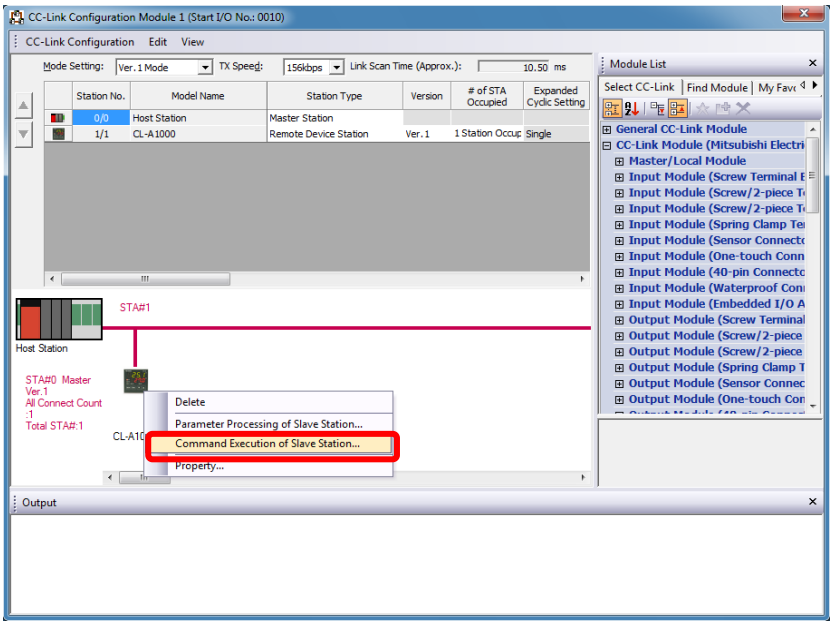
*1: When an option list part is used in communication command information descriptions, also verify that the information described in the option list part appears.

Further, set the values to be written, click the [Execute] button and verify that the set parameters are written.

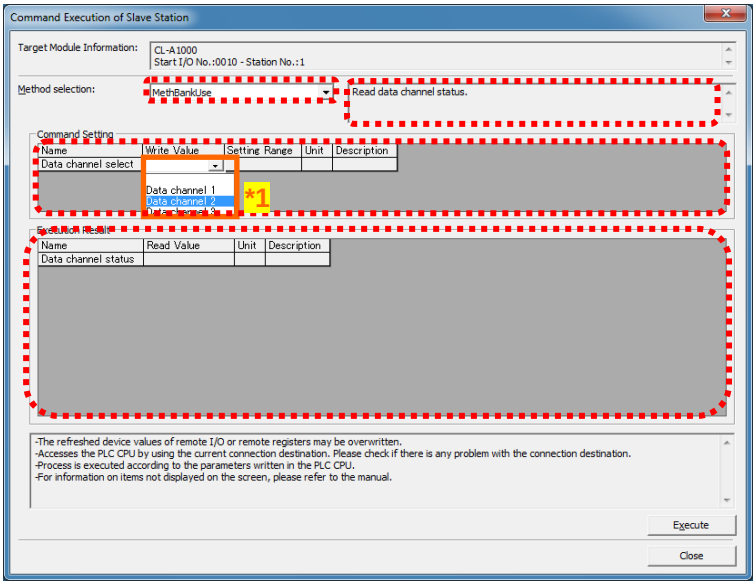
(5) Verifying Command Information

Verify that the communication command information for the target module that describes "COMMAND" in the setting item "METHOD_TYPE" of the communication method list part and "MESSAGE_TYPE" of the communication message list part of the communication interface information section appears in GX Works2.

If the communication interface is CC-Link, open the CC-Link Configuration dialog box. If the communication interface is CC-IE field network, open the CC-IE Field Configuration dialog box. If the communication interface is CC-Link IE TSN, open the CC-Link IE TSN Configuration dialog box. Click the right mouse button on the icon of the target module and select [Command Execution of Slave Station].



Verify that the communication command information of the target module appears.



*1: When a command argument list part and option list part are used in communication command information descriptions, also verify that the described information appears.

Further, set the values to be written, click the [Execute] button and verify that the command is executed.

6. Preparing for Release

6.1 Release Flow

6.1.1 For Newly Developed Products

For a newly developed product, submit CSP+ along with the device to be tested and your test results to the CC-Link Partner Association when entering your target device for a conformance test.

Verify conformance test standards

▼

Request a Conformance Test Specification from the CC-Link Partner Association

▼

Implement the test at your site based on the Conformance Test Specification

▼

Submit a test application using the Conformance Test Request form (fax the application to the CC-Link Partner Association)

▼

Submit equipment/materials and your test result report to the CC-Link Partner Association by the scheduled test date

▼

Test implementation by the CC-Link Partner Association

▼

Receive test results from the CC-Link Partner Association

▼

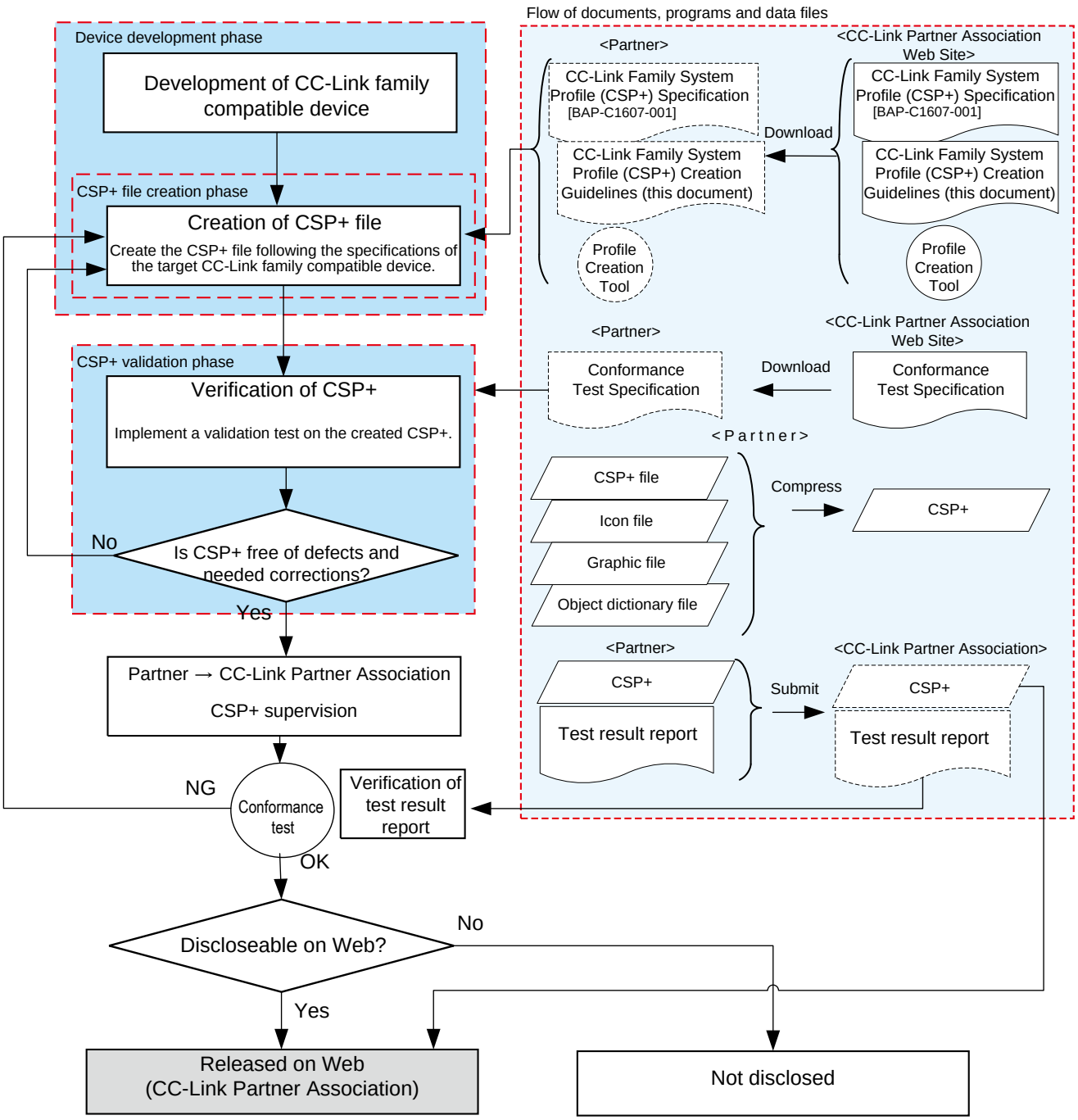
Receive an authorized certificate and report from the CC-Link Partner Association

▼

Verify discloseability of CSP+

▼

Disclose CSP+ on the CC-Link Partner Association Web site


Flow of documents, programs and data files
Device development phase
Development of CC-Link family compatible device
CSP+ file creation phase
Creation of CSP+ file
Create the CSP+ file following the specifications of the target CC-Link family compatible device.
CSP+ validation phase
Verification of CSP+
Implement a validation test on the created CSP+.
Is CSP+ free of defects and needed corrections?
No
Yes
Partner → CC-Link Partner Association
CSP+ supervision
Conformance test
NG
OK
Verification of test result report
Discloseable on Web?
No
Yes
Released on Web (CC-Link Partner Association)
Not disclosed
<Partner>
CC-Link Family System Profile (CSP+) Specification [BAP-C1607-001]
CC-Link Family System Profile (CSP+) Creation Guidelines (this document)
Profile Creation Tool
Download
<CC-Link Partner Association Web Site>
CC-Link Family System Profile (CSP+) Specification [BAP-C1607-001]
CC-Link Family System Profile (CSP+) Creation Guidelines (this document)
Profile Creation Tool
<Partner>
Conformance Test Specification
Download
<CC-Link Partner Association Web Site>
Conformance Test Specification
<Partner>
CSP+ file
Icon file
Graphic file
Object dictionary file
Compress
CSP+
<Partner>
CSP+
Test result report
Submit
<CC-Link Partner Association>
CSP+
Test result report

6.1.2 For Existing Products

When you want to disclose CSP+ from the CC-Link Partner Association for an existing product that has already passed the conformance test, submit your test results and CSP+ to the CC-Link Partner Association.

Request a CSP+ Conformance Test Specification from the CC-Link Partner Association

▼

Implement the test at your site based on the Conformance Test Specification

▼

Submit your test result report to the CC-Link Partner Association

▼

Submit equipment/materials and your test result report to the CC-Link Partner Association by the scheduled test date

▼

Receive results from the CC-Link Partner Association

▼

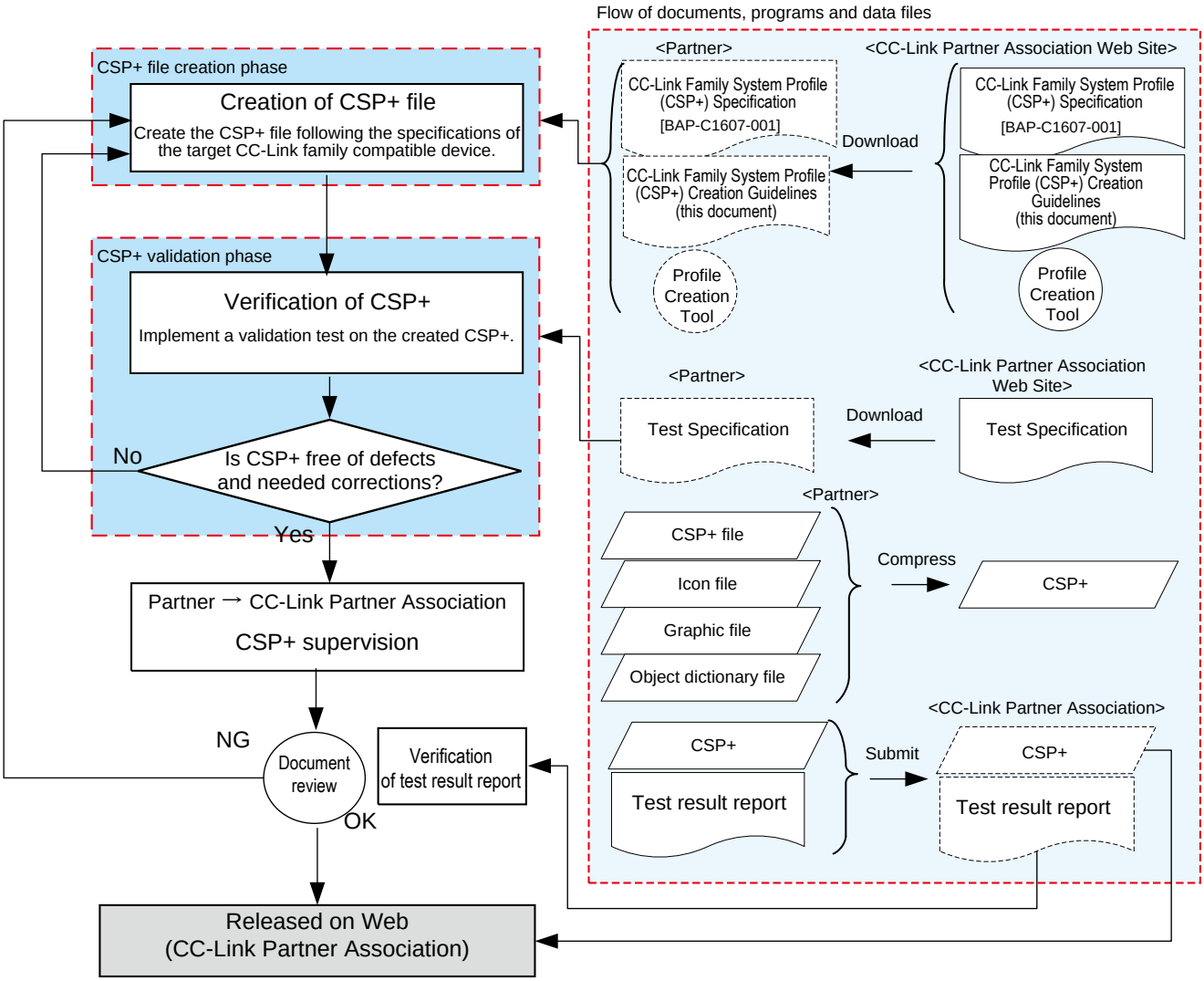
Receive a report from the CC-Link Partner Association

▼

Verify the discloseability of CSP+

▼

Disclose CSP+ on the CC-Link Partner Association Web site


Flow of documents, programs and data files
CSP+ file creation phase
Creation of CSP+ file
Create the CSP+ file following the specifications of the target CC-Link family compatible device.
CSP+ validation phase
Verification of CSP+
Implement a validation test on the created CSP+.
No
Is CSP+ free of defects and needed corrections?
Yes
Partner → CC-Link Partner Association
CSP+ supervision
NG
Document review
Verification of test result report
OK
Released on Web (CC-Link Partner Association)
<Partner>
CC-Link Family System Profile (CSP+) Specification [BAP-C1607-001]
CC-Link Family System Profile (CSP+) Creation Guidelines (this document)
Profile Creation Tool
Download
<CC-Link Partner Association Web Site>
CC-Link Family System Profile (CSP+) Specification [BAP-C1607-001]
CC-Link Family System Profile (CSP+) Creation Guidelines (this document)
Profile Creation Tool
<Partner>
Test Specification
Download
<CC-Link Partner Association Web Site>
Test Specification
<Partner>
CSP+ file
Icon file
Graphic file
Object dictionary file
Compress
CSP+
CSP+
Test result report
Submit
<CC-Link Partner Association>
CSP+
Test result report

Appendix 1. Characters Prohibited in Label Name

Table 53 List of Characters Prohibited in Label Name

Category	Prohibited Characters
Characters prohibited in label	!, ", #, $, %, &, ’, (,), *, +, ,, -, ., /, :, ;, <, =, >, ?, @, [, \,], ^, `, {, |, }, ~
Characters prohibited only at the start of the label	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, _
Reserved words	Refer to "Table 54 List of Reserved Words". ・ Prohibited regardless of lower or upper case use (Example: LABEL, laBel and label are all reserved.) ・ Prohibited when a complete match (Example: A_LABEL and LABELA are permitted.)
Space	Both single- and double-byte spaces are prohibited.

Table 54 List of Reserved Words

Meaning	Reserved Words
Keywords indicating a section	FILE, DEVICE, BLOCK, COMM_IF
Keywords indicating a part	FILE_INFO, DEVICE_INFO, BLOCK_INFO, BLOCK_INPUT, BLOCK_OUTPUT, BLOCK_PARAMETER, BLOCK_COMMAND, COMM_IF_INFO, COMM_IF_INPUT, COMM_IF_OUTPUT, COMM_IF_PARAMETER, COMM_IF_COMMAND, METHOD, MESSAGE
Keywords indicating common information	STRUCT, ENUM, COMMAND_ARGUMENT, CONDITION
Keywords indicating an item	ACCESS, ARGUMENT, ASSIGN, CATEGORY, CODE, COMMENT, COMMENTx (where x is an integer of 1 or higher), CONDITIONx (where x is an integer of 1 or higher), DATA, DATATYPE, DEFAULT, END_CONDITION, ERR_CODE_RANGE, ERR_CONDITION, ERR_REGISTER, ERR_TYPE, ENG_UNIT, INTERLOCK, LABEL, LABEL2, MESSAGE_TYPE, METHOD_TYPE, MIN_INC, NAME, OFFSET, RANGE, READ_DATA, READ_DATATYPE, READ_REGISTER, REF, REQ_FLAG, REQUEST_DATA, REQUEST_DATATYPE, REQUEST_TYPE, RELATED_ELE, RELATED_MESSAGE, RELATED_METHOD, RESPONSE_DATA, RESPONSE_DATATYPE, RESPONSE_TYPE, RESULTx (where x is an integer of 1 or higher), TARGET, UI_ATTRIBUTE, WRITE_DATA, WRITE_DATATYPE, WRITE_ORDER, WRITE_REGISTER
Other keywords	NA (Indicates not available (Non-Available)) DEFAULT (Used with CONDITION) VALUE (Indicates a value corresponding to an element) DUMMY (Used with the arguments of METHOD and MESSAGE) PARAMETER (Used with METHOD_TYPE) COMMAND (Used with METHOD_TYPE) MONITOR (Used with METHOD_TYPE) MAINTENANCE (Used with METHOD_TYPE) OTHER (Used with METHOD_TYPE) AUTO_PARAMETER (Used with MESSAGE_TYPE) PARENT_TARGET (Used with TARGET) SEQ_TARGET (Used with TARGET) COMMON (Used with CATEGORY of **INFO) String starting with P_ (For labels for parts and elements intended for specific use) String starting with SLMP_P_ (For SLMP messages)

Appendix 2. CSP+ Check Sheet

Tear out this page and use it as a check sheet.

Implement the check before the system validation test in Design section to verify that the project is free of omissions.

Note that those numbers indicated in white and highlighted with a black background impact utility software or normal operations. Be sure to thoroughly check these items.

Project Name	

Date	Checked by	Inspected by
Name		

	No.	CSP+ Check Sheet Item	Check
1. Creation unit of CSP+ (Section 2.2)	1	Did you create a CSP+ file for each model of the target module?	
	2	Did you create a CSP+ file for each language used in the descriptions of the CSP+ file?	
2. Creating CSP+ (Section 5.2)	1	Are the label names free of the characters prohibited in label names defined in Appendix 1?	
3. Checking the project (Section 5.2.9)	1	Are no errors detected?	
4. Verifying the descriptions of required project elements (Section 5.2.10)	1	Are all required elements written?	
5. Exporting the CSP+ file (Section 5.2.11)	1	Is the name of the CSP+ file in the format below? VendorCode_ModelName(DeviceConfigurationID)_DeviceVersion_LanguageInformation[_ArbitraryString].cssp ・ Descriptions in parentheses "( )" and brackets "[ ]" may be omitted. ・ A device configuration ID needs to be written with parentheses "( )". ・ An arbitrary string can be written without brackets "[ ]". * Describe a string to prevent duplication of file names when creating CSP+ files for each network for a device that can be connected to different networks.	
6. Validating CSP+ (Section 5.2.13)	1	Does the information described in the CSP+ file appear in utility software?	

Appendix 3. Using Profile (Device Description) Data of Other Networks

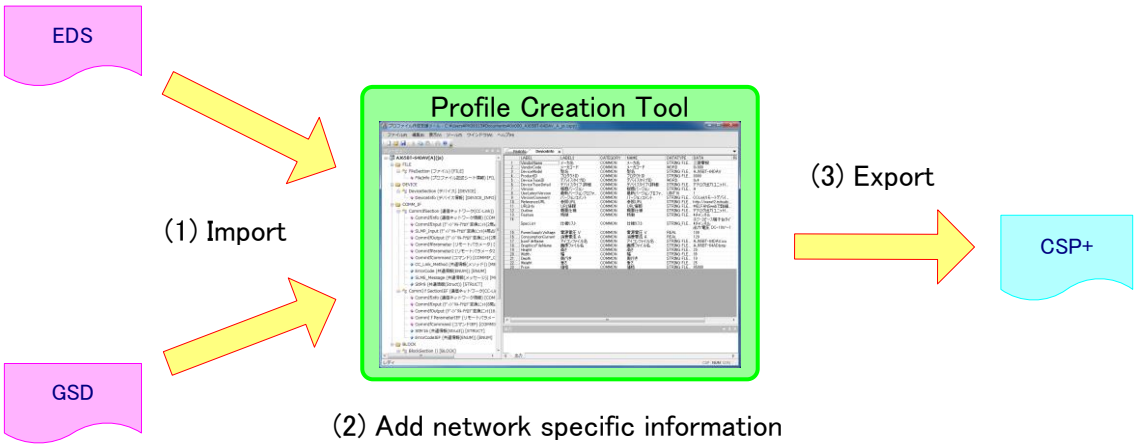
The profile creation support tool has a function to import data in EDS files or GSD files. EDS files are used in EitherNet/IP or DeviceNet while GSD files are used in PROFINET or PROFIBUS. This function allows you to use profile data of other networks as CSP+ data for CC-Link, CC-Link IE, or SLMP.

The following briefly describes how to create CSP+ by using profile information of other networks.

(1) Import GSD files or EDS files into the tool.

(2) Add network specific information such as station type or the number of occupied stations. Also, based on product specifications, delete unnecessary information or modify device assignment.

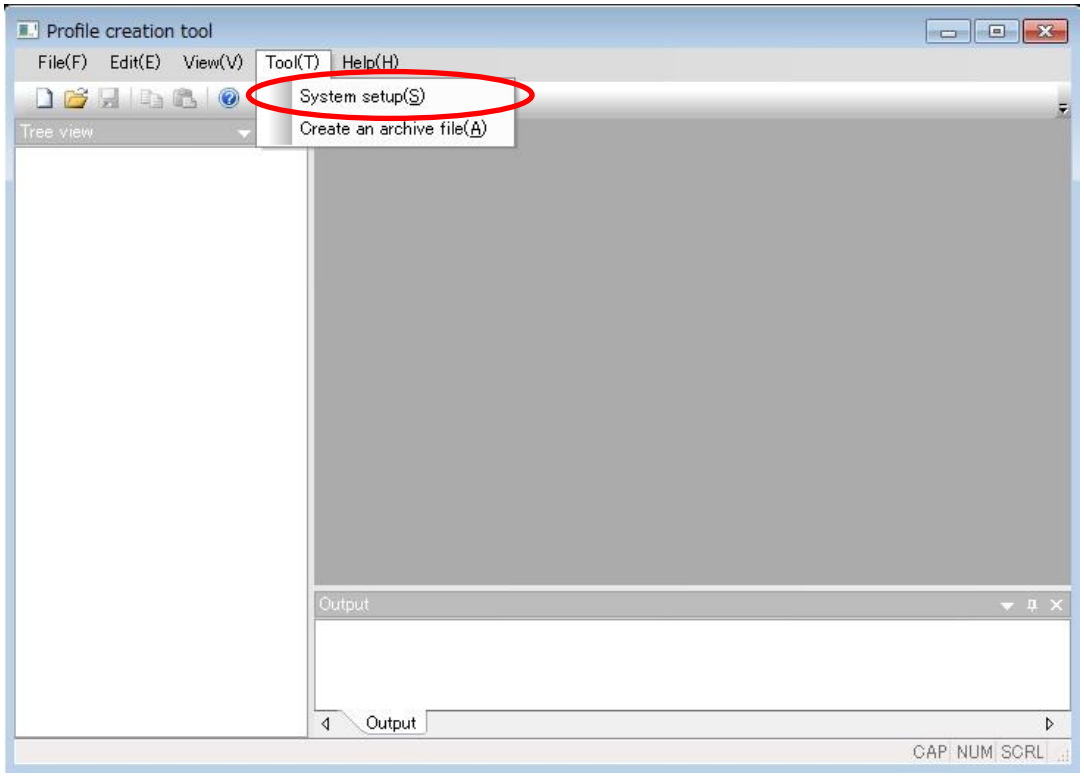
(3) Export the data and create CSP+.

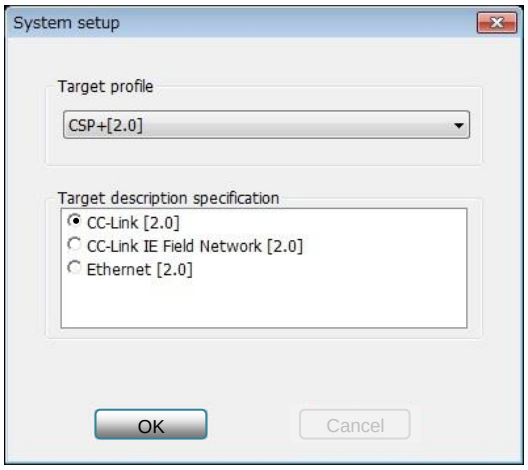


[To create CSP+]

(1) Launch the profile creation support tool.

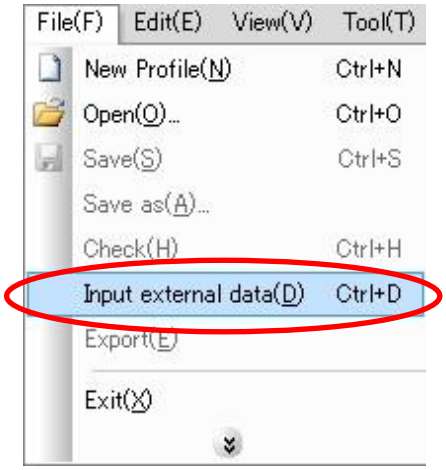
(2) Choose [Tool] on the menu bar followed by [System setup]. A system dialog will be displayed.



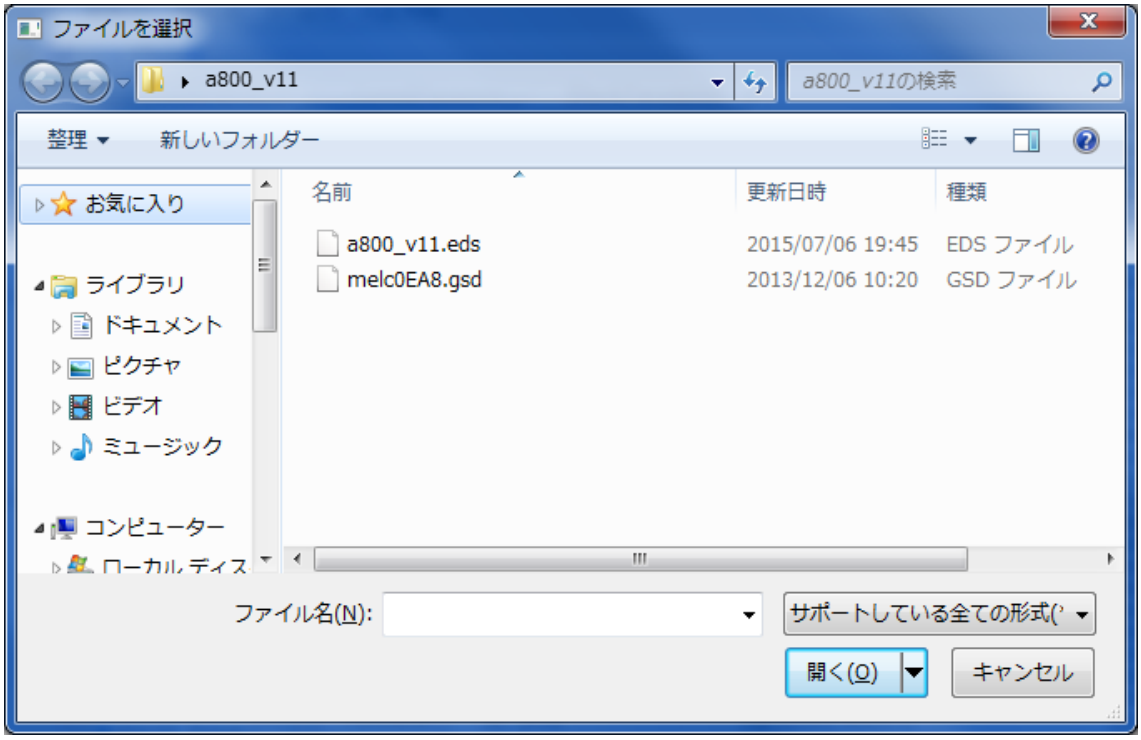


(3) From the description names shown in [Target description specification], choose a description name of the profile which you want to create.

(4) Choose [File] on the menu bar followed by [Import external data]. A file selection dialog will be displayed.



(5) Choose a GSD file or EDS file to import.



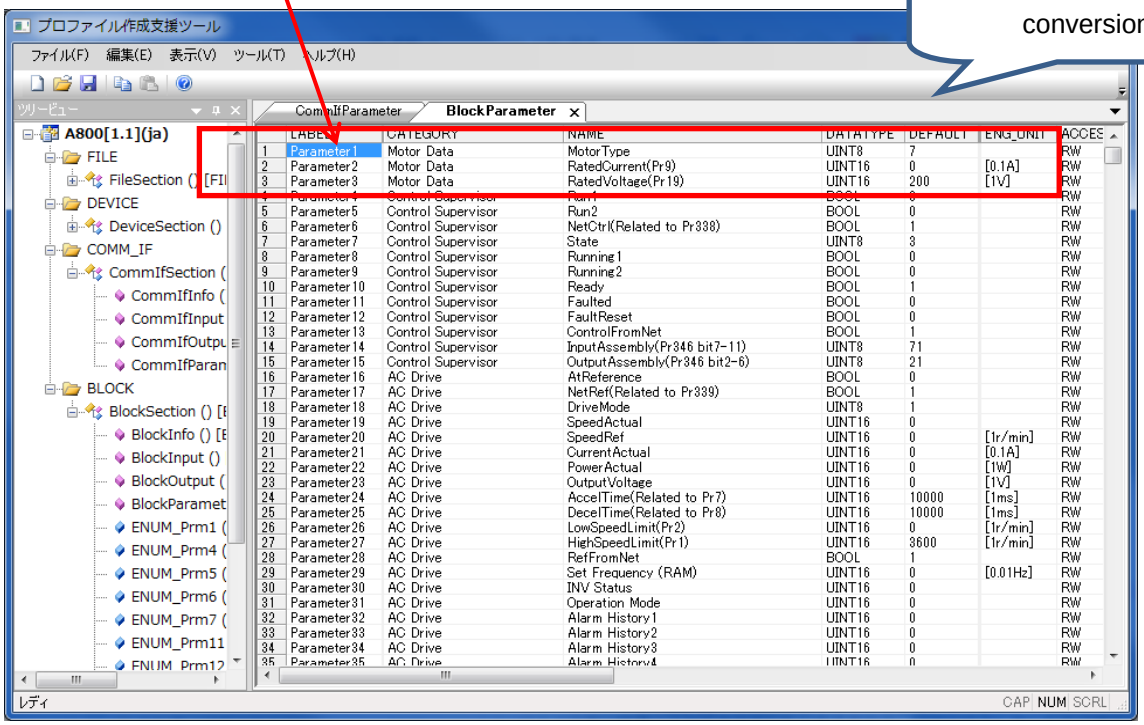
(6) The imported profile data will be converted into CSP+ data, written in a section or part corresponding to the type of each data.

The following is an example of converting an EDS file into a CSP+ file.

```
[Params]
Param1=
        0,6,"20 28 24 01 30 03",
        0x0016,
        0xC6,1,
        "MotorType","",
        "",
        0,7,7,1,1,1,0,,,,,0;

Param2=
        0,6,"20 28 24 01 30 06",
        0x0054,
        0xC7,2,
        "RatedCurrent(Pr9)","[0.1A]",
        "",
        0,65535,0,1,1,1,0,,,,,0;

Param3=
        0,6,"20 28 24 01 30 07",
        0x0014,
        0xC7,2,
        "RatedVoltage(Pr19)","[1V]",
        "",
        0,65535,200,1,1,1,0,,,,,0;

Param4=
        0,6,"20 29 24 01 30 03",
        0x0006,
        0xC1,1,
        "Run1","",
        "",
        0,1,0,1,1,1,0,,,,,0;
```

EDS file before conversion

CSP+ file after conversion



[Relation between EDS/GSD data and CSP+ data]

The Table 55 shows the relation between EDS data and CSP+ data while the Table 56 shows the relation between GSD data and CSP+ data.

Table 55 The relation between information written in EDS and CSP+ information

No.	Type of information which can be written in EDS	Description	Convertibility	Corresponding part in CSP+
1	Basic information (DEVICE section)	Vendor ID, vendor name, device ID, icon files, etc.	Yes	DEVICE_INFO
2	Input/output information (IO_Info section)	Information which can be classified based on a role of each I/O. Name, I/O type and text representing meaning of each value	Yes	COMM_IF_INPUT COMM_IF_OUTPUT BLOCK_INPUT BLOCK_OUTPUT
3	Parameter information (Groups section, Params section, EnumPar section)	Name, data type, default value, maximum value, minimum value, configuration range, and text representing meaning of parameters	Yes	COMM_IF_PARAMETER BLOCK_PARAMETER ENUM
4	Event, error code information (EventEnum section)	-	Yes	ENUM
5	Link information between modules	Combination information between EDS files	No	-
6	CIP specific information	Information on communication performance of ports or devices	No	-

Table 56 The relation between information written in GSD and CSP+ information

No.	Type of information which can be written in GSD	Description	Convertibility	Corresponding part in CSP+
1	Basic information (Vendor_Name, Model_Name, Bitmap_Device)	Vendor name, model name, bitmap files, etc.	Yes	DEVICE_INFO
2	Input/output information	-	No	COMM_IF_INPUT COMM_IF_OUTPUT BLOCK_INPUT BLOCK_OUTPUT
3	Parameter information (EXT_User_Prm_Data_Ref, ExtUserPrmData)	Name, data type, default value, etc. Also, configuration range and text representing meaning of each value	Yes	COMM_IF_PARAMETER BLOCK_PARAMETER STRUCT ENUM
4	Error code information ((X_)Unit_Diag(_Not)_Bit, (X_)Unit_Diag_Area, Channel_Diag)	Text representing error information	Yes	ENUM

Appendix 4. Data Input Using Excel

Data can be input to the profile creation support tool also by copying and pasting from Excel. Utilize the convenient features of Excel when setting the ASSIGN values by incrementing the number (Figure 4-1) or setting the LABEL name by replacing a part of ASSIGN value (Figure 4-2).

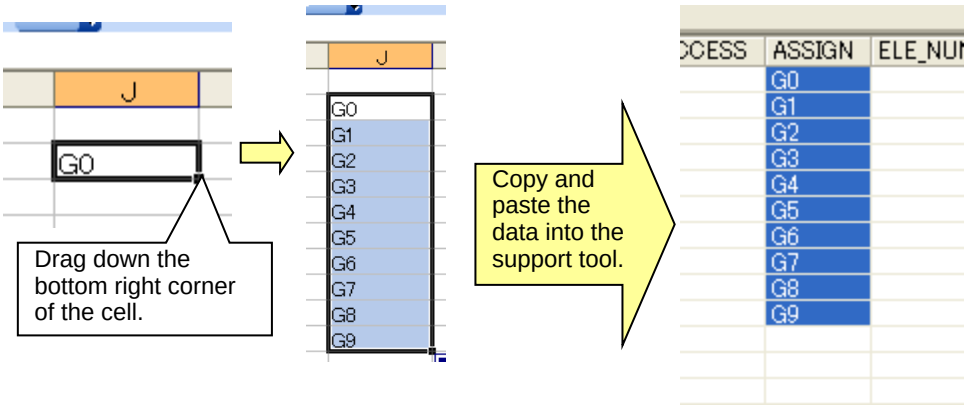


Figure 4-1 Example 1: Acquiring Strings with Incremental Numerical Values

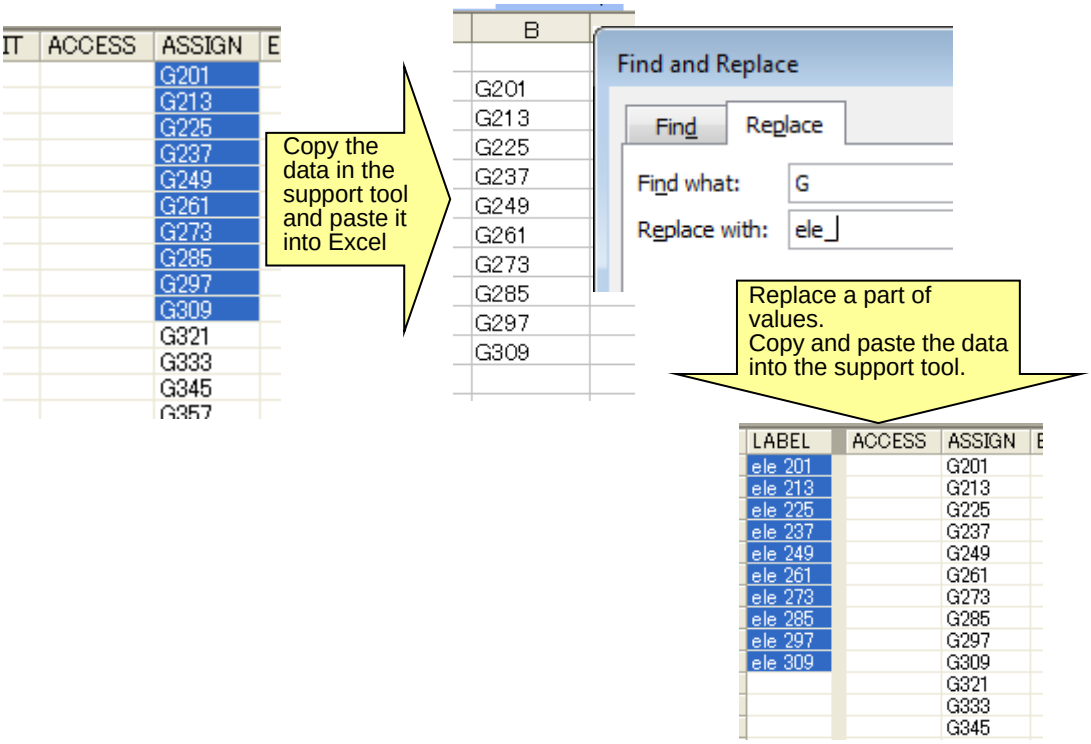
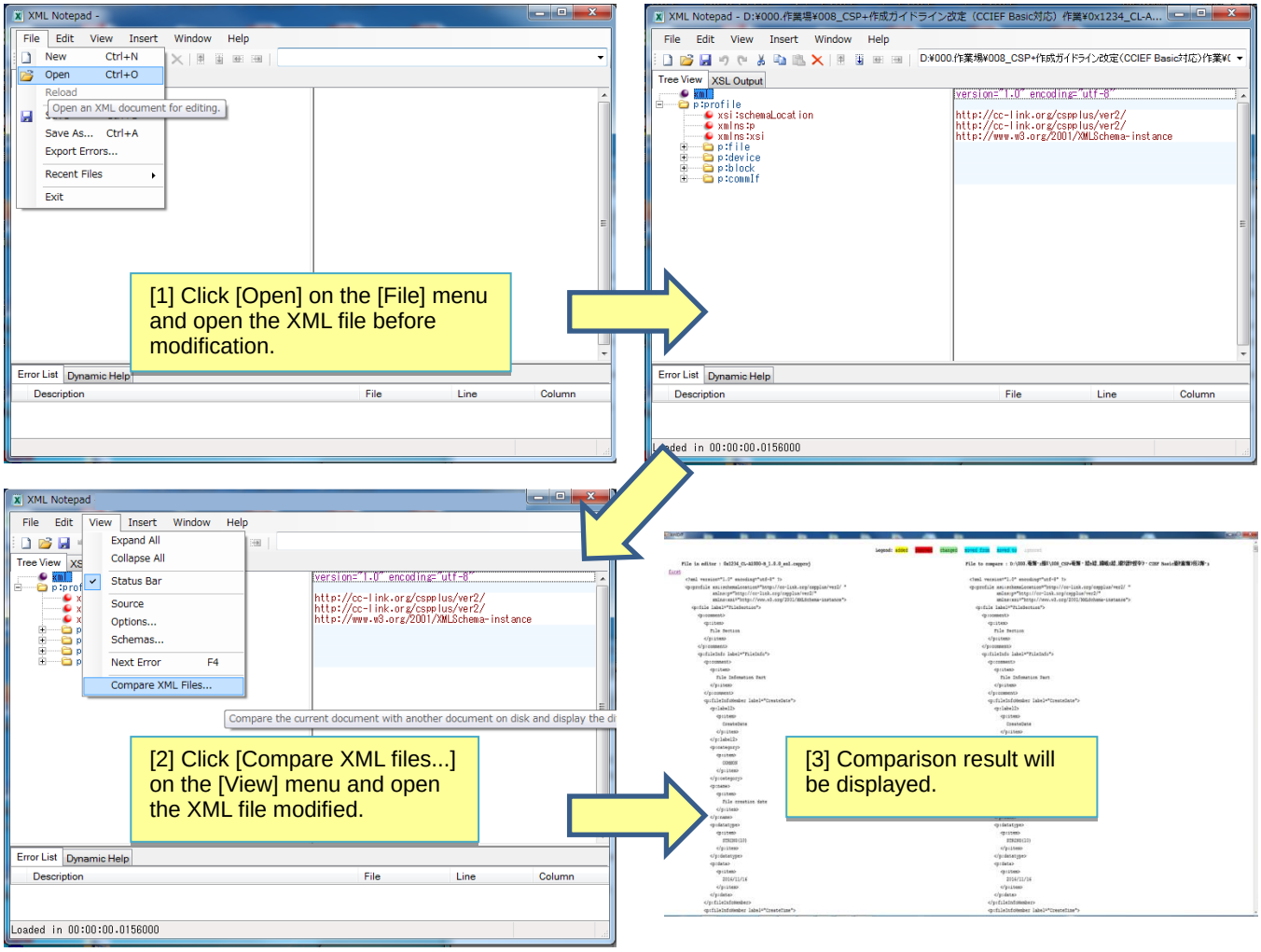


Figure 4-2 Example 2: Replacing a Part of Values

Appendix 5. Comparison of Profile

Profiles before and after modification can be easily compared using the commercially available tools (such as XMLNotepad).

Example: When XMLNotepad is used



TRADEMARKS

Microsoft, Windows, Excel, and Visual Studio are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

The company names, system names and product names mentioned in this document are either registered trademarks or trademarks of their respective companies.

In some cases, trademark symbols such as '™' or '®' are not specified in this document.

BAP-C3001ENG-001-F

Prepared in Apr. 2021