CC-Link IE Field

Open Field Network

CC-Link Family System Profile (CSP+)

Creation Guidelines

CC-Link IE Field Network (Application)

CC-Link協会

Table of Contents

Revisions

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1. Introduction

This document describes, for designers who create CSP+, the relationship between the actual CSP+ descriptions and their display on the utility software based on the Control & Communication System Profile Specification BAP-C2008-001 (hereinafter, "CSP+ Specification").
For each part described in CSP+ (such as the DEVICE_INFO part and COMM_IF_INFO part), where element items of each part are displayed on the utility software or how they are used if not displayed are described.
When creating CSP+, designers can understand which part of CSP+ should be described to use the functions of the utility software by referring to the document. In addition, when testing, designers can check if the created CSP+ is reflected on the screen of the utility software as intended by referring to the document and checking the CSP+ descriptions and the actual display on the utility software.

[Remarks]
CSP+ described in this document is an example for an analog input module manufactured by Mitsubishi (model name: NZ2GF2B-60AD4).
The implementation of the utility software described in the document is just an example. The application of information described in CSP+ is not limited to that described in the document.
The utility software screens used in the document are those of GX Works2/GX Works3 manufactured by Mitsubishi.

1.1 Descriptions

This document includes chapters corresponding to each section of CSP+ and sections corresponding to each part thereof. Each chapter and section include the following (1) to (4).

(1) Explanation of the Specifications of Each Part

(Refer to Table 5-22 Element List for DEVICE_INFO Part in Section 5.2.1. DEVICE_INFO part in the Control & Communication System Profile Specification BAP-C2008-001.)

No.	Element	Description	Required/ Optional
1	VendorName	Describes the name of the vendor that manufactured the module.	Required
2	VendorCode	Describes the code of the vendor that manufactured the module. The 5 to 8 digits of the membership number of the CC-Link Partner Association are described.	Required
3	DeviceModel	Describes the model of the module.	Required
4	ProductID	Describes the product ID of the module. The ID managed by the vendor that manufactured the module is described.	Optional
26	Weight	...ght, including the unit.	
27	Price	Describes the price, including the unit.	Optional
28	UI_ATTRIB... ...low**	Describes the name of the Window specified in UI_ATTRIBUTE. ...".	Optional

Items in the CSP+ Specification are numbered.
The numbers correspond to those in the red square boxes in the figures of (2), (3), (4).

(2) Example of CSP+ Descriptions

Examples of the creation support tool when CSP+ for a basic analog input module (NZ2GF2B-60AD4) is used are shown.

DeviceInformation

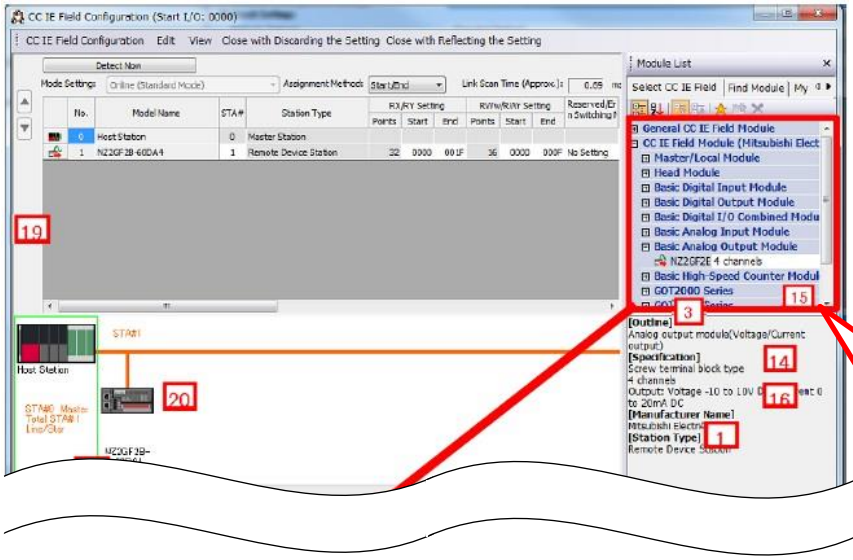
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor_name	COMMON	Vendor name	STRING_U(64)	Mitsubishi Electric	
2	VendorCode	Vendor_code	COMMON	Vendor code	WORD	0x0000	
3	DeviceModel	Device_model	COMMON	Device model	STRING(48)	NZ2GF2B-60AD4	
4	DeviceTypeID	Device_type_ID	COMMON	Device type ID	WORD	0x0004	
5		Device_type_detail	COM...				

1 2 3 4

Locations of the items in the CSP+ Specification can be checked with these numbers.

(3) Display Example on the Utility Software

A display example on MELSOFT Navigator or GX Works2/3 when CSP+ for a basic analog input module (NZ2GF2B-60AD4) is used is provided.



Locations of the items in the CSP+ Specification on the utility software are shown.

(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

4	ProductID	Used to check whether or not the ProductID matches the model code acquired from the actual device during automatic detection and scanning. Examples: L26CPU-BT 0x40000548 LJ61BT11 0x00000001 RJ71EN71 0x00000029 - Error cases If the number is incorrect, the utility software recognizes it as a different module.
5	DeviceTypeID	Describes the code of the remote device type list determined by the CC-Link Partner Association. (Example: 0x20 for an inverter) For the assignment of codes, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 5.2.1. DEVICE_INFO part (1) DeviceT... Remote Device Type List
9	VersionPolicyType	Describes the price, including the unit.

Items which are not displayed on the utility software are described in a separate table.

Definitions of terminology and figures

A black word balloon describes an explanation of the item.

A blue word balloon describes a point of display and processing of CSP+ and utility software.

2. FILE Section

The FILE section comprises one FILE_INFO part only.
The FILE_INFO part describes the information related to the CSP+ file such as file updated date.

2.1 FILE_INFO Part

(1) CC-Link Family System Profile Specification BAP-C2008-001 - 5.1.1 FILE_INFO part

Table 2.1-1 lists the elements configuring the FILE_INFO part.

Table 2.1-1 List of Elements Configuring the FILE_INFO Part

No.	Element	Description	Required/ Optional
1	CreateDate	Describes the date the CSP+ file was created.	Required
2	CreateTime	Describes the time the CSP+ file was created.	Required
3	ModDate	Describes the date last modified.	Required
4	ModTime	Describes the time last modified.	Required
5	Language	Describes the language in which the CSP+ file is written.	Required
6	CCLinkFamilyProfileVersion	Describes the version of the CSP+ Specification.	Required
7	FileVersion	Describes the version of the CSP+ information for the target module.	Required

(2) CSP+ Descriptions

Figure 2.1-1 shows the display example of the FILE_INFO part of CSP+ for a basic analog input module (NZ2GF2B-60AD4) on the CSP+ creation support tool.

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	CreateDate	File_creation_day	COMMON	File creation day	STRING(10)	2016/05/07	
2	CreateTime	File_creation_time	COMMON	File creation time	STRING(8)	14:14:20	
3	ModDate	Last_update_date	COMMON	Last update date	STRING(10)	2016/05/07	
4	ModTime	Last_update_time	COMMON	Last update time	STRING(8)	14:14:20	
5	Language	Supported_language	COMMON	Supported language	STRING(12)	en	
6	CCLinkFamilyProfileVersion	CSP_PLUS_specification_version	COMMON	CSP+ specification version	STRING(32)	1.0	
7	FileVersion	File_version	COMMON	File version	STRING(32)	1.6	

Figure 2.1-1 Display Example on the CSP+ Creation Support Tool (FILE_INFO)

(3) Utility Software

Elements configuring the FILE_INFO part are not displayed on the utility software.

(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

Table 2.1-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 2.1-2 Elements Not Being Used on the Utility Software Screen (FILE_INFO)

No.	Element	Application	Required/ Optional
1	CreateDate	An item not used in the utility software	Required
2	CreateTime	An item not used in the utility software	Required
3	ModDate	An item not used in the utility software	Required
4	ModTime	An item not used in the utility software	Required
5	Language	Displays the corresponding language of CSP+ by comparing the language of the utility software and the string described in this item.	Required
6	CCLinkFamilyProfileVersion	Utility software that does not support the description specification version of CSP+ cannot use the CSP+.	Required
1	FileVersion	Utility software uses CSP+ with the latest file version.	Required

3. DEVICE Section

The DEVICE section comprises one DEVICE_INFO part only.
The DEVICE_INFO part describes the product identification information and the information related to the product specifications.

3.1 DEVICE_INFO Part

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.2.1 DEVICE_INFO part

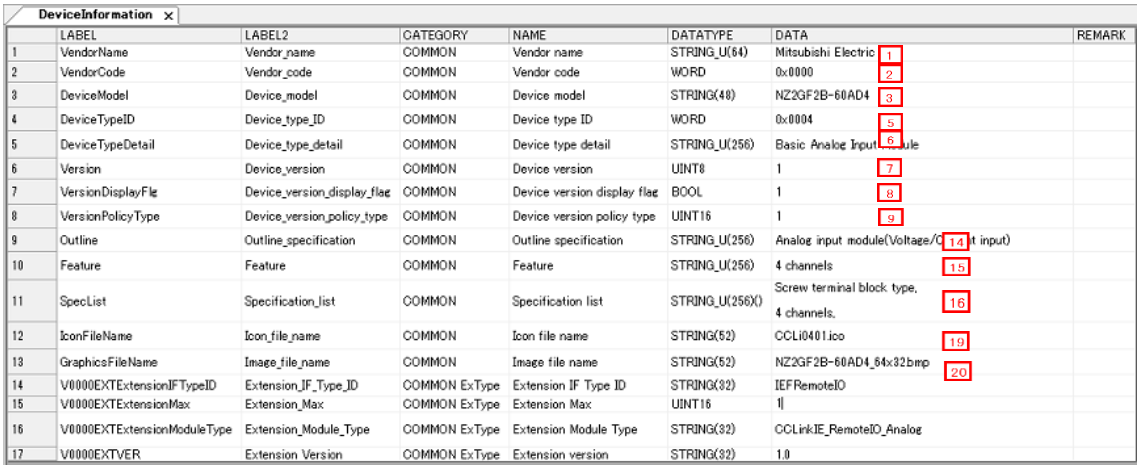
Table 3.1-1 lists the elements configuring the DEVICE_INFO part.

Table 3.1-1 List of Elements Configuring the DEVICE_INFO Part

No.	Element	Description	Required/ Optional
1	VendorName	Describes the name of the vendor that manufactured the module.	Required
2	VendorCode	Describes the code of the vendor that manufactured the module. The 5 to 8 digits of the membership number of the CC-Link Partner Association are described.	Required
3	DeviceModel	Describes the model of the module.	Required
4	ProductID	Describes the product ID of the module. The ID managed by the vendor that manufactured the module is described.	Optional
5	DeviceTypeID	Describes the ID showing the type of module.	Optional
6	DeviceTypeDetail	Describes the specific device type.	Optional
7	Version	Describes the device version of the module.	Required
8	VersionDisplayFlg	Describes whether to display the device version on the utility software or not.	Required
9	VersionPolicyType	Describes 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.	Required
10	DisplayVersionValue	Describes the device version to be displayed when the device version acquired from the actual device (Version) differs from the one displayed to the user on the utility software.	Optional
11	VersionComment	Describes a comment related to the device version.	Optional
12	ReferenceURL	Describes an URL if the module information is disclosed on the Web.	Optional
13	URLInfo	Describes a description of the information indicated by the reference URL.	Optional
14	Outline	Describes the general specifications of the module.	Optional
15	Feature	Describes the features of the module.	Optional
16	SpecList	Describes the specifications of the module using a set of strings.	Optional
17	PowerSupplyVoltage	Describes the power supply voltage in units of V (volts).	Optional
18	ConsumptionCurrent	Describes the current consumption in units of mA (milliamperes).	Optional
19	IconFileName	Describes the icon file name to be used when displaying the module as an icon on the utility software, including the extension (.ico).	Required
20	GraphicsFileName	Describes the image file name to be used when displaying the module on the utility software, including the extension (.bmp, .png, .jpg, .gif).	Required
21	Height	Describes the height of the external dimensions, including the unit.	Optional
22	Width	Describes the width of the external dimensions, including the unit.	Optional
23	Depth	Describes the depth of the external dimensions, including the unit.	Optional
24	Weight	Describes the weight, including the unit.	Optional
25	Price	Describes the price, including the unit.	Optional
26	UI_ATTRIBUTE_Window**	Describes the name of the Window specified in UI_ATTRIBUTE. The Window number is described in "**".	Optional

(2) CSP+ Descriptions

Figure 3.1-1 shows the display example of the DEVICE_INFO part of CSP+ for a basic analog input module (NZ2GF2B-60AD4) on the CSP+ creation support tool.



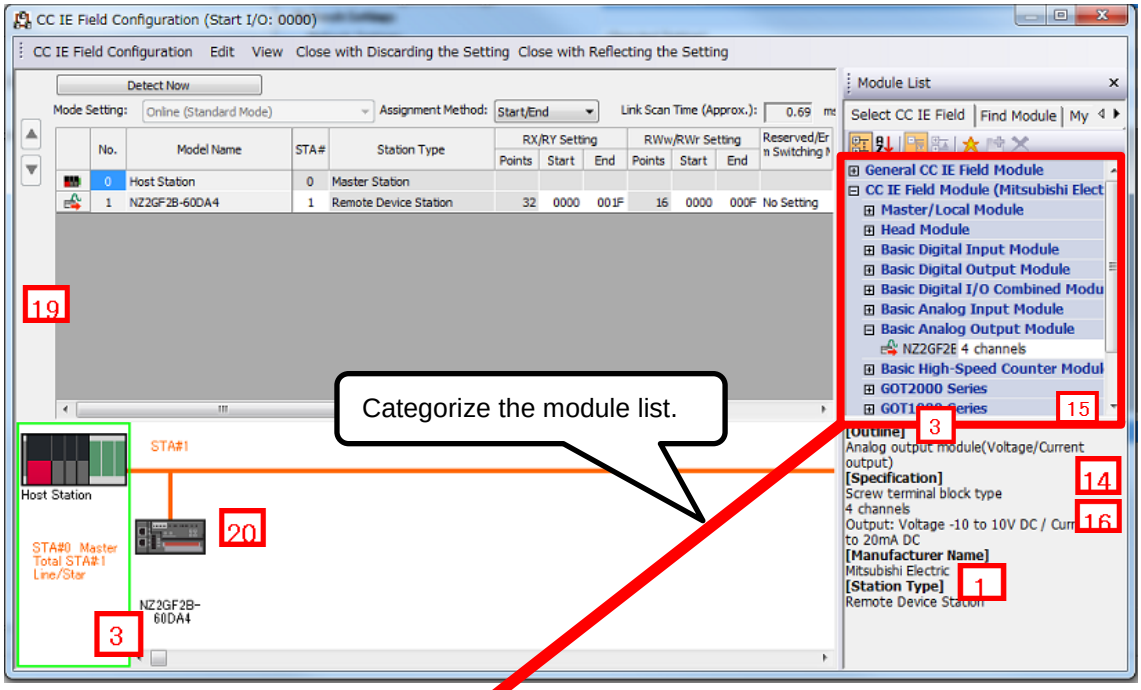
DeviceInformation

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor_name	COMMON	Vendor name	STRING_U(64)	Mitsubishi Electric 1	
2	VendorCode	Vendor_code	COMMON	Vendor code	WORD	0x0000 2	
3	DeviceModel	Device_model	COMMON	Device model	STRING(48)	NZ2GF2B-60AD4 3	
4	DeviceTypeID	Device_type_ID	COMMON	Device type ID	WORD	0x0004 5	
5	DeviceTypeDetail	Device_type_detail	COMMON	Device type detail	STRING_U(256)	Basic Analog Input 6 dule	
6	Version	Device_version	COMMON	Device version	UINT8	1 7	
7	VersionDisplayFlg	Device_version_display_flag	COMMON	Device version display flag	BOOL	1 8	
8	VersionPolicyType	Device_version_policy_type	COMMON	Device version policy type	UINT16	1 9	
9	Outline	Outline_specification	COMMON	Outline specification	STRING_U(256)	Analog input module(Voltage/C 14 t input)	
10	Feature	Feature	COMMON	Feature	STRING_U(256)	4 channels 15	
11	SpecList	Specification_list	COMMON	Specification list	STRING_U(256X)	Screw terminal block type, 4 channels, 16	
12	IconFileName	Icon_file_name	COMMON	Icon file name	STRING(52)	CCLi0401.ico 19	
13	GraphicsFileName	Image_file_name	COMMON	Image file name	STRING(52)	NZ2GF2B-60AD4_64x32.bmp 20	
14	V0000EXTExtensionIFTypeID	Extension_IF_Type_ID	COMMON ExType	Extension IF Type ID	STRING(32)	IEFRemoteIO	
15	V0000EXTExtensionMax	Extension_Max	COMMON ExType	Extension Max	UINT16	1	
16	V0000EXTExtensionModuleType	Extension_Module_Type	COMMON ExType	Extension Module Type	STRING(32)	CCLinkIE_RemoteIO_Analog	
17	V0000EXTVER	Extension Version	COMMON ExType	Extension version	STRING(32)	1.0	

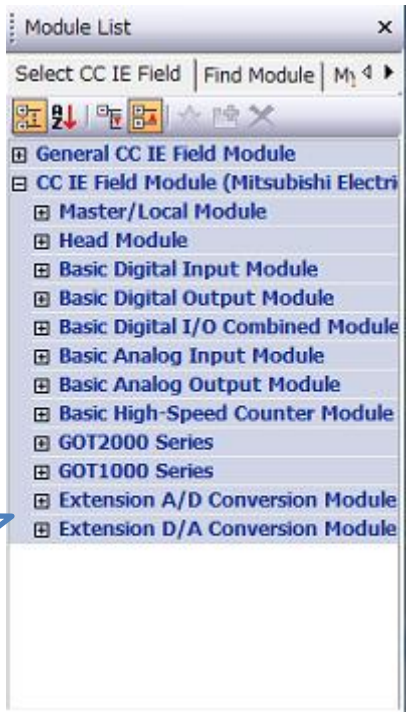
Figure 3.1-1 Display Example on the CSP+ Creation Support Tool (DEVICE_INFO)

(3) Utility Software - (CC IE Field Configuration Diagram)

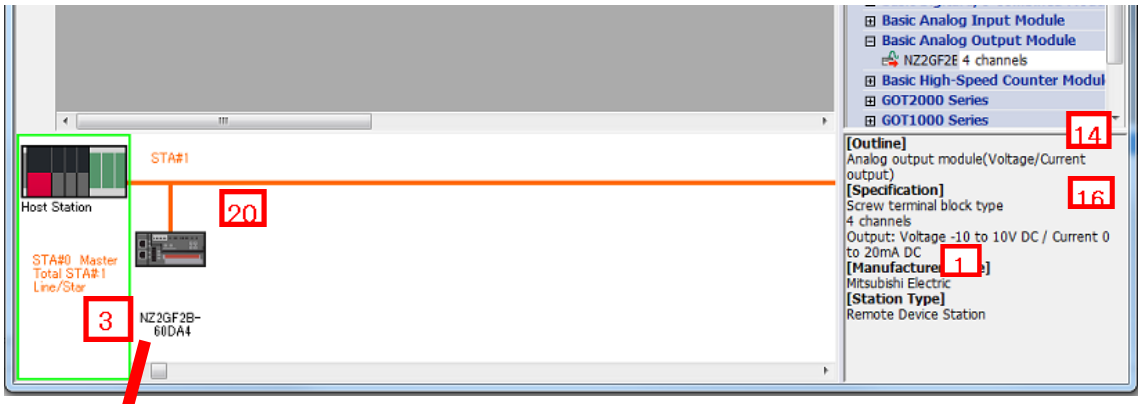
The descriptions in CSP+ for the NZ2GF2B-60AD4 are displayed on the utility software as shown below. This is a display example of the utility software (CC IE Field configuration diagram).

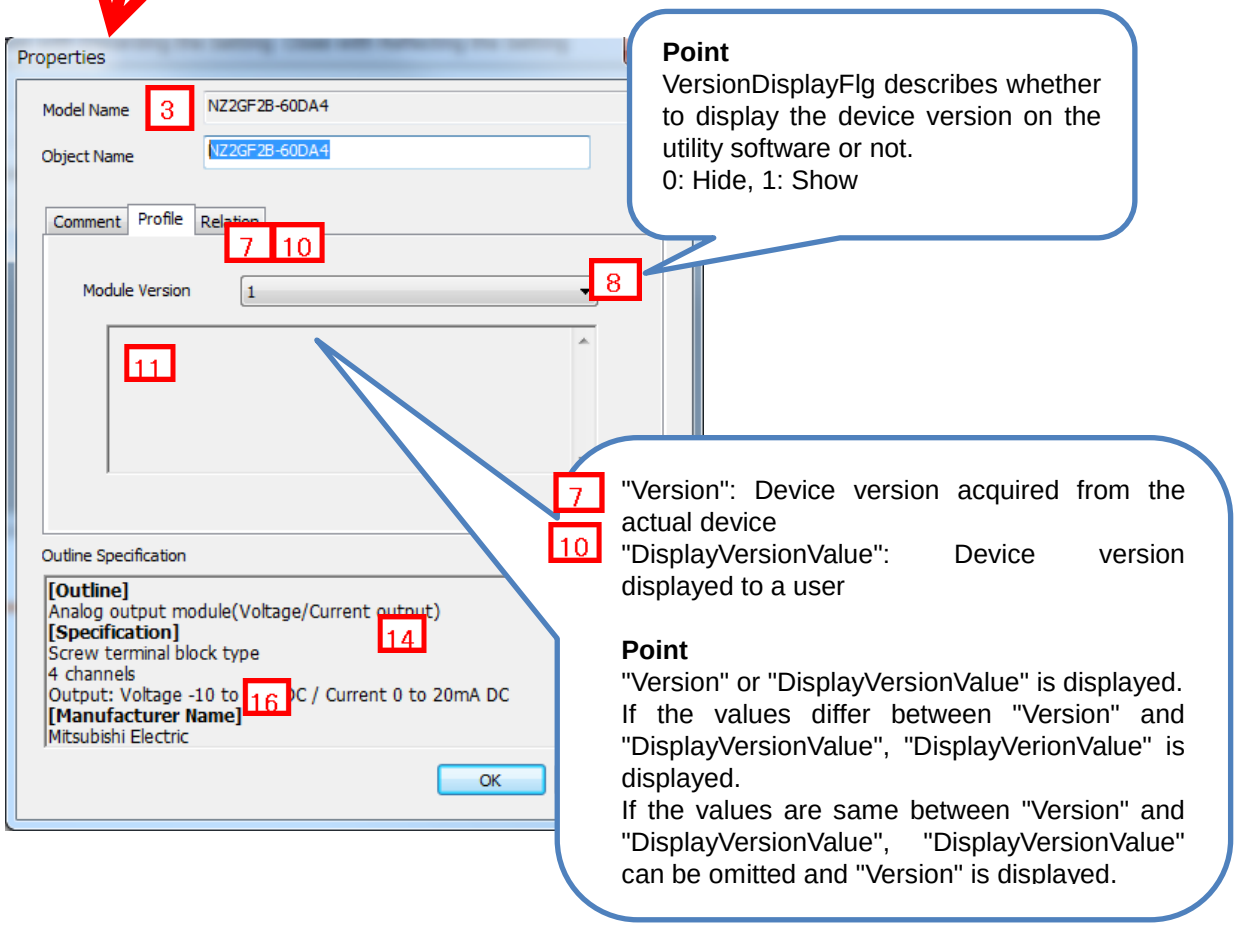


Point
The categories are listed from the top in ascending order of numerical value of VenderCode.



Point
DeviceTypeDetail corresponds to the categories of the module list. If the description of the DeviceTypeDetail in the analog input profile is changed from "Basic analog input module" to "Add new category", it is displayed as a new category at the bottom of the tree.
Categories are listed in the order of registration.





Point
VersionDisplayFlg describes whether to display the device version on the utility software or not.
0: Hide, 1: Show

7
10
"Version": Device version acquired from the actual device
"DisplayVersionValue": Device version displayed to a user

Point
"Version" or "DisplayVersionValue" is displayed.
If the values differ between "Version" and "DisplayVersionValue", "DisplayVerionValue" is displayed.
If the values are same between "Version" and "DisplayVersionValue", "DisplayVersionValue" can be omitted and "Version" is displayed.

(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

Table 3.1-3 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 3.1-3 Elements Not Being Used on the Utility Software Screen (DEVICE_INFO)

No.	Element	Application	Required/ Optional
4	ProductID	Used to check whether or not the ProductID matches the model code acquired from the actual device during automatic detection and scanning. Examples: L26CPU-BT 0x40000548 LJ61BT11 0x00000001 RJ71EN71 0x00000029	Optional
5	DeviceTypeID	Describes the code of the remote device type list determined by the CC-Link Partner Association. (Example: 0x20 for an inverter) For the assignment of codes, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 5.2.1. DEVICE_INFO part - (1) DeviceTypeID element - Table 5-24 Remote Device Type List A string corresponding to the code described in DeviceTypeID is displayed when DeviceTypeDetail is not described.	Optional
9	VersionPolicyType	Describes the policy of the device version between the module and the CSP+ file. The device version to be used is determined based on this value. For the meaning of each value and modules to be used, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 5.2.1. DEVICE_INFO part - (2) Device version (Version element) - (f) Device version comparison policy for module and CSP+ file (VersionPolicyType element)	Required
17	PowerSupplyVoltage	Not used in CC IE Field profiles.	Optional
18	ConsumptionCurrent	Not used in CC IE Field profiles.	Optional
21	Height	Reference information. Displayed in the creation support tool.	Optional
22	Width	Reference information. Displayed in the creation support tool.	Optional
23	Depth	Reference information. Displayed in the creation support tool.	Optional
24	Weight	Reference information. Displayed in the creation support tool.	Optional
25	Price	Reference information. Displayed in the creation support tool.	Optional
26	UI_ATTRIBUTE_Window**	For future support	Optional

4. COMM_IF Section

The COMM_IF section defines the information of the communication functions, and comprises multiple parts as shown in Figure 4-1.

COMM_IF section

COMM_IF_INFO part	Describes the identification information of the communication interface and communication specifications.
COMM_IF_INPUT part	Describes the input information of the communication interface.
COMM_IF_OUTPUT part	Describes the output information of the communication interface.
COMM_IF_PARAMETER part	Describes the parameter information of the communication interface.
COMM_IF_COMMAND part	Describes the commands to be executed by the communication interface.
METHOD part	Describes the information related to the commands issued from the communication interface and parameter settings.
MESSAGE part	Describes the information required for executing communication processing that specifies the data format.
STRUCT part	Describes the structure of the inputs and outputs of multiple elements.
ENUM part	Describes the options for values and return values to be set for the element.
COMMAND_ARGUMENT part	Describes the argument information of COMM_IF_COMMAND.

Figure 4-1 Structure of COMM_IF Section

4.1 COMM_IF_INFO Part

The COMM_IF_INFO part describes the identification information of the communication interface and the information related to communication specifications.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.3.1 COMM_IF_INFO part

Table 4.1-1 lists the elements configuring the COMM_IF_INFO part when the communication interface is CC-Link.

Table 4.1-1 List of Elements Configuring the COMM_IF_INFO Part

	No.	Element	Description	Required/ Optional
Common Part	1	VendorName	Describes the name of the vendor that manufactured the module.	Required
	2	VendorCode	Describes the code of the vendor that manufactured the module.	Required
	3	CommIFTypeID	Describes the ID that indicates the type of communication interface in a string.	Required
	4	Version	Describes the version of the firmware in a string.	Required
	5	ReadVersionType	Describes how to obtain the device version of the module.	Required
Network-Dependent Part	6	VendorName2	Describes the name of the vendor.	Optional
	7	nodeType	Describes the node type.	Required
	8	IOType	Describes the I/O type.	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 unit.	Optional
	12	RYSize	Describes the RY size.	Required
	13	RWwSize	Describes the RWw size.	Required
	14	RXSize	Describes the RX size.	Required
	15	RWrSize	Describes the RWr size.	Required
	16	Ports	Describes the number of ports.	Required
	17	protcolVersion	Describes the protocol version.	Required
	18	NodeNumberSetting	Describes if the node number setting function exists.	Required
	19	TransientReception	Describes if the transient reception function exists.	Required
	20	SLMPReception	Describes if the SLMP reception function exists.	Required

(2) CSP+ Descriptions

Point

1) When the Specifications of the Device Itself Do Not Change From the Network Settings, Create One Common BLOCK and Refer to That BLOCK from Multiple COMM_IF Sections. Figures 4.1 show the description example.

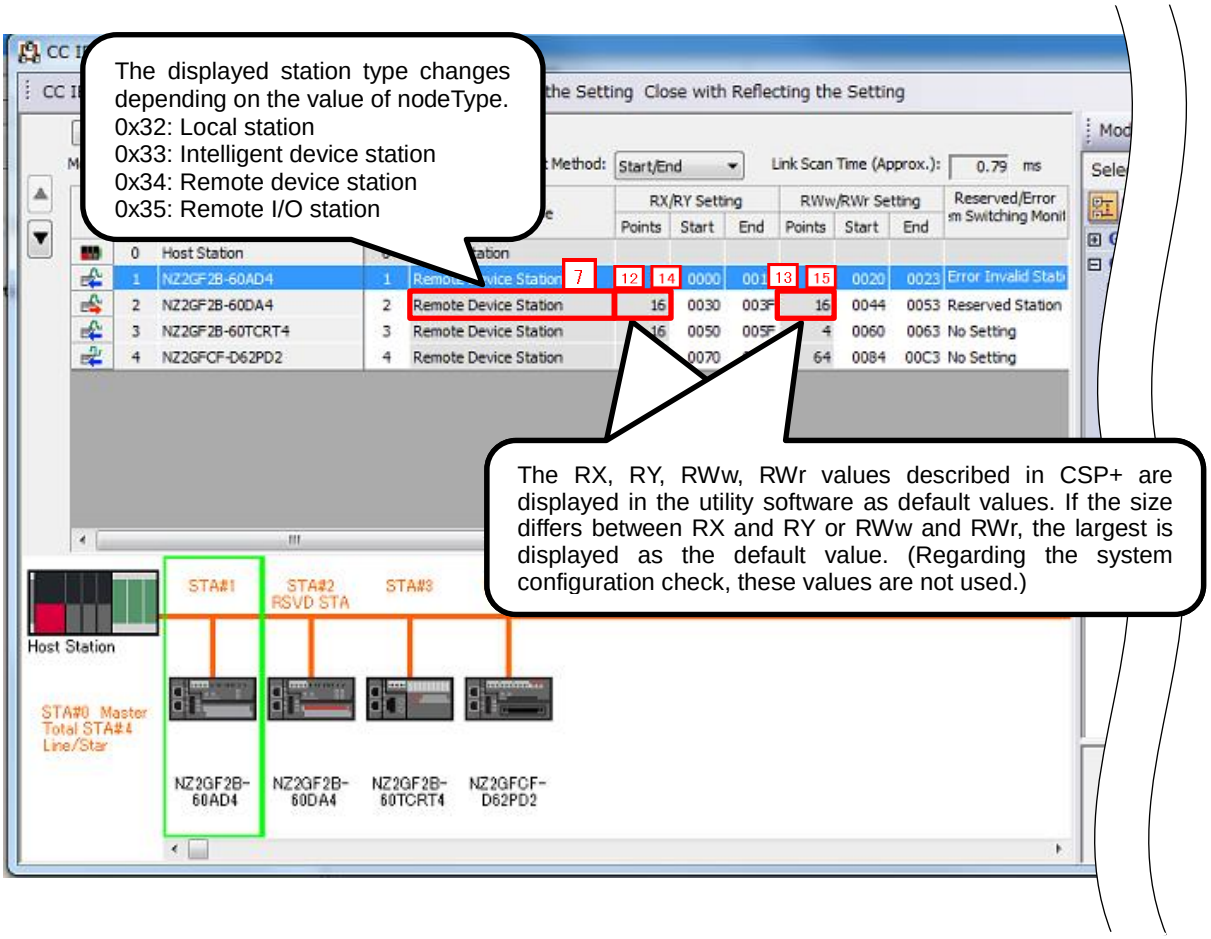
commIfInfo

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	VendorName	Vendor_name	COMMON	Vendor name	STRING_U(64)	Mitsubishi Electric	1
2	VendorCode	Vendor_code	COMMON	Vendor code	WORD	0x0000	2
3	CommIFTypeID	Communication_interface_type_ID	COMMON	Communication interface type ID	STRING(32)	CCLinkIEField	3
4	Version	Version	COMMON	Version	UINT8	1	4
5	ReadVersionType	Read_device_version_type	COMMON	Read device version type	STRING(128)	NetworkFWVersion	5
6	VendorName2	Vendor_name_2	COMMON CC-Link IE Field	Vendor name 2	STRING(32)	Mitsubishi	6
7	nodeType	Node_type	COMMON CC-Link IE Field	Node type	BYTE	0x34	7
8	IOType	IO_type	COMMON CC-Link IE Field	I/O type	UINT16	0	8
9	ModelCode	Device_code	COMMON CC-Link IE Field	Device code	UINT32	15	9
10	DevModel	Model_name_Type_name	COMMON CC-Link IE Field	Model name(Type name)	STRING(48)	NZ2GF2B-60AD4	10
11	RYSize	RY_size	COMMON CC-Link IE Field	RY size	UINT16	48	12
12	RWwSize	RWw_size	COMMON CC-Link IE Field	RWw size	UINT16	32	13
13	RXSize	RX_size	COMMON CC-Link IE Field	RX size	UINT16	48	14
14	RWrSize	RWr_size	COMMON CC-Link IE Field	RWr size	UINT16	32	15
15	Ports	Number_of_ports	COMMON CC-Link IE Field	Number of ports	UINT8	1	16
16	protocolVersion	Protocol_version	COMMON CC-Link IE Field	Protocol version	STRING(32)	0	17
17	NodeNumberSettingFlg	Node_number_setting_function	COMMON CC-Link IE Field	Support of a node number setting function	BOOL	0	18
18	TransientReceptionFlg	Transient_reception_function	COMMON CC-Link IE Field	Support of a transient reception function	BOOL	1	19
19	SLMPReceptionFlg	SLMP_reception_function	COMMON CC-Link IE Field	Support of a SLMP reception function	BOOL	1	20
20	V0000EXTBasicModuleRYSize	Basic_Module_RY_Size	COMMON Extension	Basic Module RY Size	UINT16	32	
21	V0000EXTBasicModuleRWwSize	Basic_Module_RWw_Size	COMMON Extension	Basic Module RWw Size	UINT16	16	
22	V0000EXTBasicModuleRXSize	Basic_Module_RX_Size	COMMON Extension	Basic Module RX Size	UINT16	32	
23	V0000EXTBasicModuleRWrSize	Basic_Module_RWr_Size	COMMON Extension	Basic Module RWr Size	UINT16	16	

Figure 4.1 Definition When CC-Link Version Is Less Than 2.00 along with FR-A5NC Compatible Mode

(3) Utility Software - (CC IE Field Configuration Diagram)

The descriptions in CSP+ for the NZ2GF2B-60AD4 are displayed on the utility software as shown below. This is a display example of the utility software (CC IE Field configuration diagram).



(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

Table 4.1-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.1-2 Elements Not Being Used on the Utility Software Screen (COMM_IF_INFO)

No.	Element	Application	Required/ Optional
1	VendorName	Reference information. Displayed in the creation support tool.	Required
2	VendorCode	Information to specify the device. If this value is changed at the time of the CSP+ update, the utility software handles it as a CSP+ of a different device.	Required
3	CommIFTypeID	Used to specify in which configuration diagram this device is used based on the description. Example: Described information: "CCLink" → Used in the CC-Link configuration diagram. Described information: "CCIEField" → Used in the CC-Link IE Field configuration diagram.	Required
4	Version	Reference information. For example, assuming that the software version is "A", the software is updated as "B", "C" ... as revised.	Required
5	ReadVersionType	When checking the versions of the device and CSP+, determine how to obtain the device version based on the described information. For details on the description of the element, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 5.3.1.3. Description of COMM_IF_INFO part - (5) Item description of ReadVersionType element	Required
6	VendorName2	Reference information. Displayed in the creation support tool.	Optional
8	IOType	Reference information. For details on the description of the element, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 5.3.1.3. Description of COMM_IF_INFO part - (9) Item description of IOType element	Required
9	ModelCode	Used to check whether or not the ModelCode matches the model code acquired from the actual device during automatic detection of connected devices. If the network module (example: inverter and GOT) is separate from the main body, the model name is described by separately numbering each network.	Required
10	DevModel	Reference information. Displayed in the creation support tool.	Required
11	ModelName	Reference information. Displayed in the creation support tool.	Optional
12	RYSize	Reference information. Describes the maximum value of the remote output. Displayed in the creation support tool.	Required
13	RWwSize	Reference information. Describes the maximum value of the remote register. Displayed in the creation support tool.	Required
14	RXSize	Reference information. Describes the maximum value of the remote input. Displayed in the creation support tool.	Required
15	RWrSize	Reference information. Describes the maximum value of the remote register. Displayed in the creation support tool.	Required
16	Ports	Reference information. Displayed in the creation support tool.	Required
17	protocolVersion	Reference information. Displayed in the creation support tool.	Required
18	NodeNumberSetting	Reference information. Displayed in the creation support tool.	Required
19	TransientReception	Reference information. Displayed in the creation support tool.	Required
20	SLMPReception	Reference information. Displayed in the creation support tool.	Required

4.2 COMM_IF_INPUT Part

The COMM_IF_INPUT part describes the information related to the input information of the communication interface. (This part needs to be described when there is information to be output from the control side of the target module.)
The information includes such as the remote input RX area of the remote I/O module, the AD conversion completion flag of the digital-analog converter module, and the digital output of the analog-digital converter module.
The elements configuring the COMM_IF_INPUT part are defined based on the functions of the target module.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.3.2 COMM_IF_INPUT part

1) Table 4.2-1 lists the elements configuring the COMM_IF_INPUT part.

Table 4.2-1 List of Elements Configuring the COMM_IF_INPUT Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Optional
5	DATATYPE *3	Describes the data type of the element.	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.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	ASSIGN	Describes the remote input/output and remote register where the value of the element is assigned to.	Optional
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on the utility software.	Optional
13	REF	COMM_IF_INPUT part: Describes a reference to the element of the BLOCK_OUTPUT part. COMM_IF_OUTPUT part: Describes a reference to the element of the BLOCK_INPUT part.	Optional
14	COMMENT	Describes the meaning of the element and usage precautions.	Optional

*3 When STRUCT is specified, refer to "STRUCT part" in Section 4.3. COMM_IF_OUTPUT Part.

2) Parts and elements with defined applications
In CSP+ specifications, parts other than the FILE_INFO, DEVICE_INFO, COMM_IF_INFO, and BLOCK_INFO parts do not specify elements that should be commonly included for all modules. In other words, the Label name can be freely determined by the creator of CSP+.
However, when the module has a certain function or information, there are rules related to the elements used to express such function or information.

(2) CSP+ Descriptions

Parameters are referred to in the following order.
COMMIF_INPUT part (CommIfInput)
→ BLOCK_OUTPUT part (BlockOutput)
* Because there is no description example for the items of CSP+ and utility software, a detailed explanation is omitted.

4.3 COMM_IF_OUTPUT Part

The COMM_IF_OUTPUT part describes the information related to the output information of the communication interface. (This part needs to be described when there is information to be input from the control side of the target module.)
The information includes such as the remote output RY area of the remote I/O module, the AD conversion completion flag of the digital-analog converter module, and the digital input of the analog-digital converter module. The elements configuring the COMM_IF_OUTPUT part are defined based on the functions of the target module. The structure of each element of the COMM_IF_OUTPUT part, in other words, the items to be described in the element, is the same as that of the COMM_IF_INPUT part.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.3.3 COMM_IF_OUTPUT part

1) Table 4.3-1 lists the elements configuring the COMM_IF_OUTPUT part.

Table 4.3-1 List of Elements Configuring the COMM_IF_OUTPUT Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Optional
5	DATATYPE *3	Describes the data type of the element.	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.	Optional
9	ENG_UNIT	Describes the engineering unit applied to the value of the element.	Optional
10	ACCESS	Describes the access attribute of the element.	Optional
11	ASSIGN	Describes the remote input/output and remote register where the value of the element is assigned to.	Optional
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on the utility software.	Optional
13	REF	COMM_IF_INPUT part: Describes a reference to the element of the BLOCK_OUTPUT part. COMM_IF_OUTPUT part: Describes a reference to the element of the BLOCK_INPUT part.	Optional
14	COMMENT	Describes the meaning of the element and usage precautions.	Optional

*3

STRUCT part

The STRUCT part (structure) describes the information related to the structure of the inputs and outputs of multiple elements. A structure is used when an area is divided. Each of the elements in the structure needs to be assigned to a consecutive address.

When describing the reference to the STRUCT part, describe it in the DATATYPE of the reference source. When referring to a description of the STRUCT part from an element within the COMM_IF section, describe the STRUCT part within the same COMM_IF section.

Table 4.3-2 List of Elements Defined in the STRUCT Part

No.	Element	Description	Required/ Optional
1'	LABEL	Describes the label for identifying the element.	Required
2'	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Optional
5'	DATATYPE	Describes the data type of the element.	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.	Optional
9'	ENG_UNIT	Describes the engineering unit applied to the value of the element.	Optional
10'	OFFSET	Describes the offset position of the element.	Optional
11'	REF	Describes the reference to be referred to by the element. When defining a structure in the COMM_IF section, this item is used to refer to the input/output of the BLOCK section from each element of the structure. * For references which can be described, refer to Section 4.3.1.28.	Optional
12'	COMMENT	Describes the meaning of the element and usage precautions.	Optional

2) Parts and elements with defined applications

In CSP+ specifications, parts other than the FILE_INFO, DEVICE_INFO, COMM_IF_INFO, and BLOCK_INFO parts do not specify elements that should be commonly included for all modules. In other words, the Label name can be freely determined by the creator of CSP+. However, when the module has a certain function or information, there are rules related to the elements used to express such function or information.

(2) CSP+ Descriptions

Parameters are referred to in the following order.

COMMIF_OUT_PUT part (CommIfOutput)

→ BLOCK_INPUT part (BlockInput)

* Because there is no description example for the items of CSP+ and utility software, a detailed explanation is omitted.

4.4 COMM_IF_PARAMETER Part

The COMM_IF_PARAMETER part describes the information related to the parameters of the target module.
The information includes such as the voltage/current specification and CH1 averaging process setting of the analog-digital converter module.
However, information which cannot be set or referred to via the communication interface, such as the values set by using the DIP switch, is not described. The elements configuring the COMM_IF_PARAMETER part are defined based on the communication functions of the target module.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.3.4 COMM_IF_PARAMETER part

1) Table 4.4-1 lists the elements configuring the COMM_IF_PARAMETER part.

Table 4.4-1 List of Elements Configuring the COMM_IF_PARAMETER Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Optional
5	DATATYPE	Describes the data type of the element.	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 into the module.	Optional
12	ASSIGN	Describes the address and code where the value of the element is assigned to.	Optional
13	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on the utility software.	Optional
14	REF	Describes a reference to an element of the BLOCK_PARAMETER referred to by an element of the communication parameter list.	Optional
15	COMMENT	Describes the meaning of the element and usage precautions.	Optional

2) Reference specifications of the COMM_IF_PARAMETER part

The reference specifications of the parts related to the COMM_IF_PARAMETER part and between the communication services are described here.

The reference to the elements of the MESSAGE part and the elements of the COMM_IF_PARAMETER part which carries out the settings and execution using the elements referred to is described. The reference to the BLOCK_PARAMETER part cannot be described directly from the MESSAGE part.

In the example of Figure 4.4-1, "Parameter Write" and "Parameter Read" are described as a MESSAGE to write and read parameters 1, 2, ..., of the control function.

Then, the reference from each MESSAGE part to the BLOCK_PARAMETER part is described via the COMM_IF_PARAMETER part.

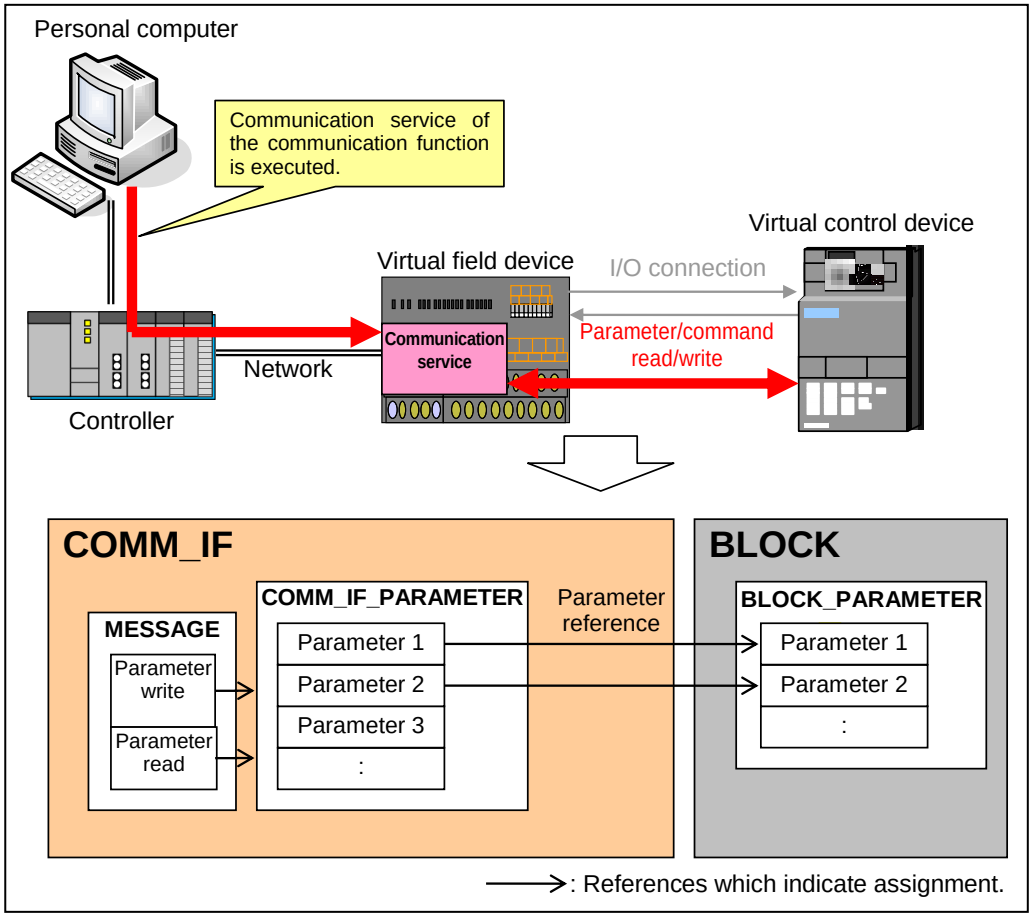
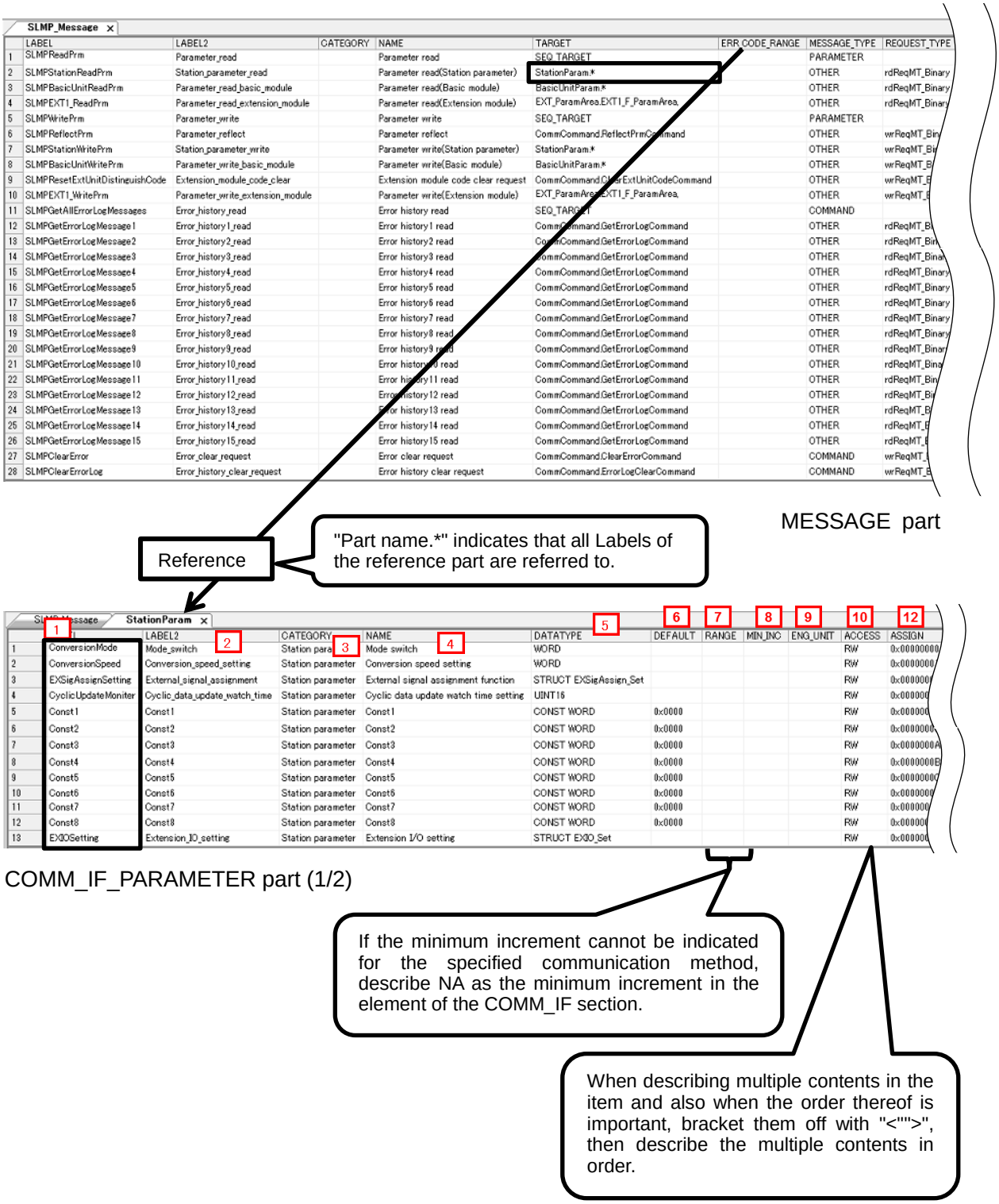


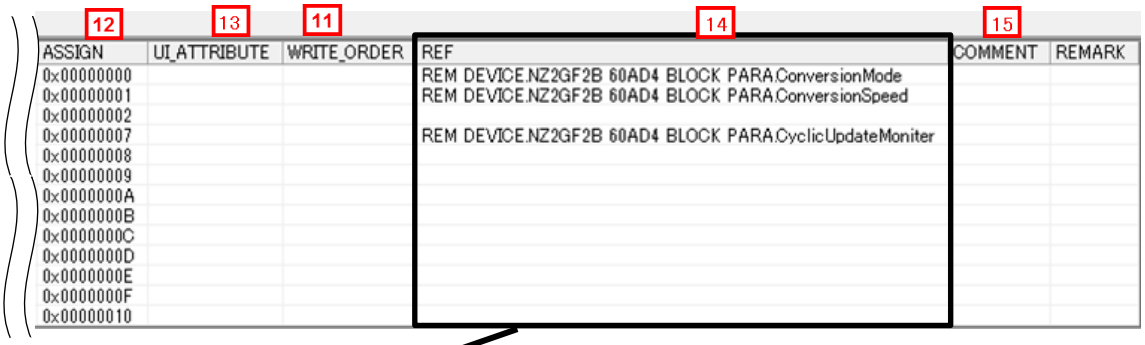
Figure 4.4-1 Reference Specifications Example of the COMM_IF_PARAMETER Part

(2) CSP+ Descriptions

Parameters are referred to in the following order.
MESSAGE part (SLMP_Message)
→ COMMIF_PARAMETER part (StationParam)
→ BLOCK_PARAMETER part (NZ2GF2B_60AD4_BLOCK_PARA)

The following figure shows the display example of the COMM_IF_PARAMETER part of CSP+ for an analog input module (NZ2GF2B1-16D) on the CSP+ creation support tool.





12 ASSIGN	13 UI_ATTRIBUTE	11 WRITE_ORDER	14 REF	15 COMMENT	REMARK
0x00000000			REM DEVICE.NZ2GF2B 60AD4 BLOCK PARA.ConversionMode REM DEVICE.NZ2GF2B 60AD4 BLOCK PARA.ConversionSpeed REM DEVICE.NZ2GF2B 60AD4 BLOCK PARA.CyclicUpdateMoniter		
0x00000001					
0x00000002					
0x00000007					
0x00000008					
0x00000009					
0x0000000A					
0x0000000B					
0x0000000C					
0x0000000D					
0x0000000E					
0x0000000F					
0x00000010					

COMM_IF_PARAMETER part (2/2)

Reference

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE
1	ConversionSpeed	Conversion_speed_setting		Conversion speed setting	WORD	0x0000	ENUM ConvSpeed_Set
2	ConversionMode	Mode_switch		Mode switch	WORD	0x0009	ENUM Mode_Set
3	TriggerInputSignalAllocation	Trigger_conv_sig_assignment	External signal assignment setting	Trigger conversion signal assignment	WORD	0xFFFF	[0x0000,0xFFFF]
4	InSigErrorSignalAllocation	In_sig_err_detect_sig_assignment	External signal assignment setting	Input signal error detection signal assignment	WORD	0xFFFF	[0x0000,0xFFFF]
5	WarningOutputSignalAllocation	Alert_output_sig_assignment	External signal assignment setting	Alert output signal assignment	WORD	0xFFFF	[0x0000,0xFFFF]
6	ErrorStatusSignalAllocation	Error_flag_assignment	External signal assignment setting	Error flag assignment	WORD	0xFFFF	[0x0000,0xFFFF]
7	WarningStatusSignalAllocation	Warning_flag_assignment	External signal assignment setting	Warning flag assignment	WORD	0xFFFF	[0x0000,0xFFFF]
8	InResponseTimeValue	Input_response_setting	Extension I/O setting	Input response setting	WORD	0x0005	ENUM enumInResponseTimeValue
9	OutputKeepOrClear	Digital_output_HOLD_CLEAR	Extension I/O setting	Digital output HOLD/CLEAR setting	WORD	0x0000	ENUM DO_HoldClearSet
10	CyclicUpdateMoniter	Cyclic_data_update_watch_time	Cyclic data update watch time setting	Cyclic data update watch time setting	UINT16	0	[0,20]
11	CH1_ADConversinSetting	CH1_AD_conv_enable_disable	A/D conversion enable/disable setting	CH1 A/D conversion enable/disable setting	BOOL	0	ENUM EnableOFF_DisableON
12	CH2_ADConversinSetting	CH2_AD_conv_enable_disable	A/D conversion enable/disable setting	CH2 A/D conversion enable/disable setting	BOOL	0	ENUM EnableOFF_DisableON
13	CH3_ADConversinSetting	CH3_AD_conv_enable_disable	A/D conversion enable/disable setting	CH3 A/D conversion enable/disable setting	BOOL	0	ENUM EnableOFF_DisableON
14	CH4_ADConversinSetting	CH4_AD_conv_enable_disable	A/D conversion enable/disable setting	CH4 A/D conversion enable/disable setting	BOOL	0	ENUM EnableOFF_DisableON
15	CH1_RangeSetting	CH1_Range_setting	Range setting	CH1 Range setting	BIT_STRING4	0x0	ENUM RangeSet
16	CH2_RangeSetting	CH2_Range_setting	Range setting	CH2 Range setting	BIT_STRING4	0x0	ENUM RangeSet
17	CH3_RangeSetting	CH3_Range_setting	Range setting	CH3 Range setting	BIT_STRING4	0x0	ENUM RangeSet
18	CH4_RangeSetting	CH4_Range_setting	Range setting	CH4 Range setting	BIT_STRING4	0x0	ENUM RangeSet
19	CH1_AveragingProcessSetting	CH1_Averaging_process_setting	Averaging process setting	CH1 Averaging process setting	BIT_STRING4	0x0	ENUM AveProcess_Set
20	CH2_AveragingProcessSetting	CH2_Averaging_process_setting	Averaging process setting	CH2 Averaging process setting	BIT_STRING4	0x0	ENUM AveProcess_Set
21	CH3_AveragingProcessSetting	CH3_Averaging_process_setting	Averaging process setting	CH3 Averaging process setting	BIT_STRING4	0x0	ENUM AveProcess_Set
22	CH4_AveragingProcessSetting	CH4_Averaging_process_setting	Averaging process setting	CH4 Averaging process setting	BIT_STRING4	0x0	ENUM AveProcess_Set
23	CH1_AveragingProcessSettingValue	CH1_TimeAve_CountAve_MovingAve	Time average/Count average/Moving average	CH1 Time average/Count average/Moving average	UINT16	0	[0,65000]
24	CH2_AveragingProcessSettingValue	CH2_TimeAve_CountAve_MovingAve	Time average/Count average/Moving average	CH2 Time average/Count average/Moving average	UINT16	0	[0,65000]
25	CH3_AveragingProcessSettingValue	CH3_TimeAve_CountAve_MovingAve	Time average/Count average/Moving average	CH3 Time average/Count average/Moving average	UINT16	0	[0,65000]
26	CH4_AveragingProcessSettingValue	CH4_TimeAve_CountAve_MovingAve	Time average/Count average/Moving average	CH4 Time average/Count average/Moving average	UINT16	0	[0,65000]
27	CH1_InputSigErrorSignalSetting	CH1_Input_signal_error_detection	Input signal error detection setting	CH1 Input signal error detection setting	BIT_STRING4	0x0	ENUM InputSigErr_Set
28	CH2_InputSigErrorSignalSetting	CH2_Input_signal_error_detection	Input signal error detection setting	CH2 Input signal error detection setting	BIT_STRING4	0x0	ENUM InputSigErr_Set
29	CH3_InputSigErrorSignalSetting	CH3_Input_signal_error_detection	Input signal error detection setting	CH3 Input signal error detection setting	BIT_STRING4	0x0	ENUM InputSigErr_Set
30	CH4_InputSigErrorSignalSetting	CH4_Input_signal_error_detection	Input signal error detection setting	CH4 Input signal error detection setting	BIT_STRING4	0x0	ENUM InputSigErr_Set
31	CH1_WarningOutputSetting	CH1_Alert_output_setting	Alert output setting	CH1 Alert output setting	BOOL	1	ENUM EnableOFF_DisableON
32	CH2_WarningOutputSetting	CH2_Alert_output_setting	Alert output setting	CH2 Alert output setting	BOOL	1	ENUM EnableOFF_DisableON
33	CH3_WarningOutputSetting	CH3_Alert_output_setting	Alert output setting	CH3 Alert output setting	BOOL	1	ENUM EnableOFF_DisableON

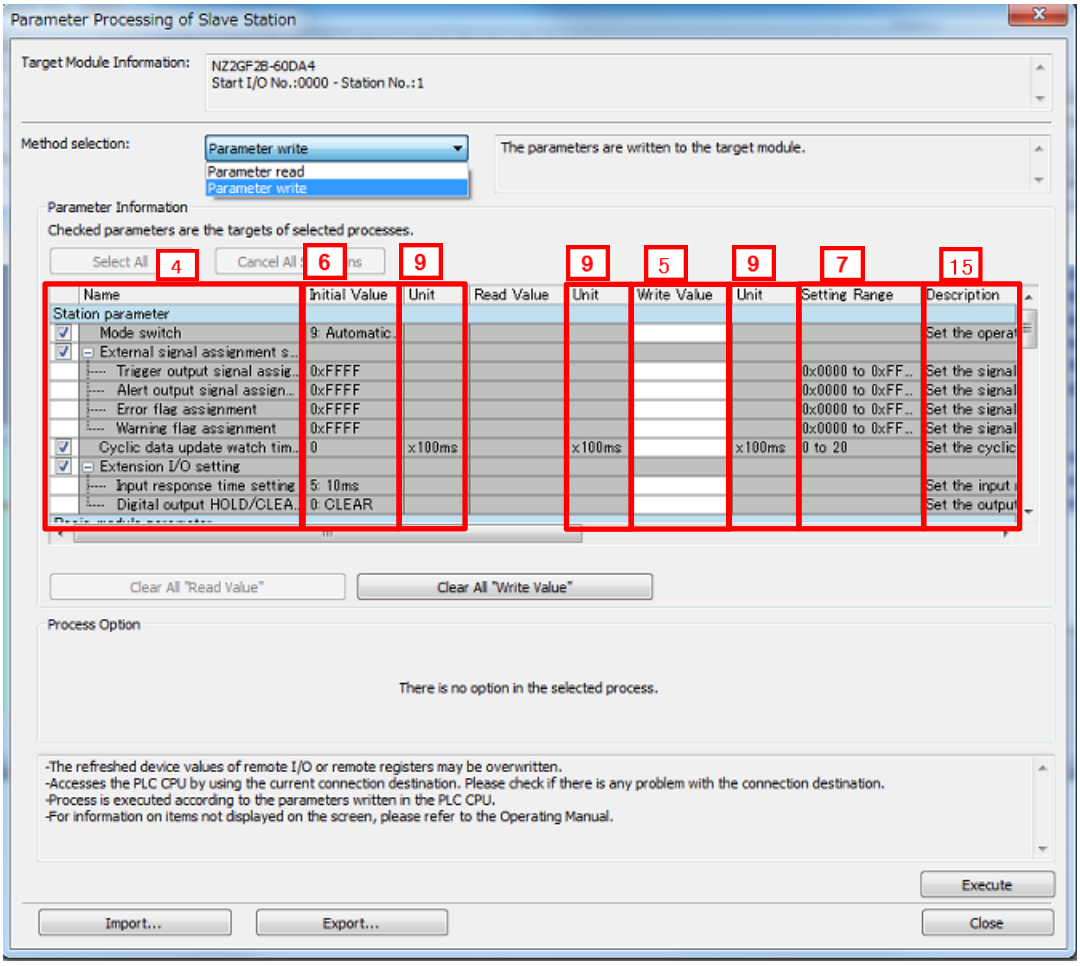
BLOCK_PARAMETER part (1/2)

RANGE	MIN_INC	ENG_UNIT	ACCESS	UI_ATTRIBUTE	WRITE_ORDER	COMMENT	REMARK
ENUM ConvSpeed_Set			RW			Set the conversion speed.	
ENUM Mode_Set			RW			Set the operation mode.	
[0x0000,0xFFFF]			RW			Set the signal to be assigned to the trigger conversion signal of the external signal assignment function.	
[0x0000,0xFFFF]			RW			Set the signal to be assigned to the input signal error detection signal of the external signal assignment function.	
[0x0000,0xFFFF]			RW			Set the signal to be assigned to the alert output signal of the external signal assignment function.	
[0x0000,0xFFFF]			RW			Set the signal to be assigned to the error flag of the external signal assignment function.	
[0x0000,0xFFFF]			RW			Set the signal to be assigned to the warning flag of the external signal assignment function.	
ENUM enumInResponseTimeValue			RW			Set the input response time of the extension digital input module.	
ENUM DO_HoldClearSet			RW			Set the output HOLD/CLEAR of the extension digital output module.	
[0,20]		x100ms	RW			Set the cyclic data update watch time so that the cyclic data update watch time becomes equal to "the setting value x 100ms".	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the A/D conversion of CH1.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the A/D conversion of CH2.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the A/D conversion of CH3.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the A/D conversion of CH4.	
ENUM RangeSet			RW			Set the range of CH1.	
ENUM RangeSet			RW			Set the range of CH2.	
ENUM RangeSet			RW			Set the range of CH3.	
ENUM RangeSet			RW			Set the range of CH4.	
ENUM AveProcess_Set			RW			Set whether to perform the sampling processing or averaging processing.	
ENUM AveProcess_Set			RW			Set whether to perform the sampling processing or averaging processing.	
ENUM AveProcess_Set			RW			Set whether to perform the sampling processing or averaging processing.	
ENUM AveProcess_Set			RW			Set whether to perform the sampling processing or averaging processing.	
[0,65000]			RW			Set the averaging time, averaging count, and moving average.	
[0,65000]			RW			Set the averaging time, averaging count, and moving average.	
[0,65000]			RW			Set the averaging time, averaging count, and moving average.	
[0,65000]			RW			Set the averaging time, averaging count, and moving average.	
ENUM InputSigErr_Set			RW			Set the conditions where an error is detected in CH1.	
ENUM InputSigErr_Set			RW			Set the conditions where an error is detected in CH2.	
ENUM InputSigErr_Set			RW			Set the conditions where an error is detected in CH3.	
ENUM InputSigErr_Set			RW			Set the conditions where an error is detected in CH4.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the alert output of CH1.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the alert output of CH2.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the alert output of CH3.	
ENUM EnableOFF_DisableON			RW			Set whether to enable or disable the alert output of CH4.	

LOCK_PARAMETER part (2/2)

(3) Utility Software - (Parameter Processing Screen of the Slave Station)

The descriptions in CSP+ for the NZ2GF2B-60AD4 are displayed on the utility software as shown below.



(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

Table 4.4-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.4-2 Elements Not Being Used on the Utility Software Screen (COMM_IF_PARAMETER)

No.	Element	Application	Required/ Optional
1	LABEL	Used as an identifier.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	Optional
3	CATEGORY	Reference information. Displayed in the creation support tool.	Optional
8	MIN_INC	Numerical values in which the user input value is multiplied by the value described here are used during internal processing.	Optional
10	ACCESS	Used to identify the access information of the target item: "Readable", "Writable", "Readable and Writable", "Auto refreshable", or "Inaccessible". For details on the description of the element, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Optional
11	WRITE_ORDER	Used as sequence information when writing parameters to the actual device. (Values are written in ascending order.)	Optional
12	ASSIGN	Used to analyze the address and code assigned to the element.	Optional
13	UI_ATTRIBUTE	For future support	Optional
14	REF	Used to identify the reference relationship.	Optional

Point
When both the COMM_IF_PARAMETER part and the BLOCK_PARAMETER part have same items (such as NAME and ENG_UNIT), the items in the COMM_IF_PARAMETER part is displayed on the MELSOFT Navigator.

SLMP_Message | StationParam

	NAME	DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT	ACCESS	ASSIGN
1	Mode switch	WORD					RW	0x00000000
2	Conversion speed setting	WORD				Cs	RW	0x00000001
3	External signal assignment function	STRUCT EXSigAssign_Set					RW	0x00000002
4	Cyclic data update watch time setting	UINT16						0x00000007

Describe the unit on the COMMIF_PARAMETER side.

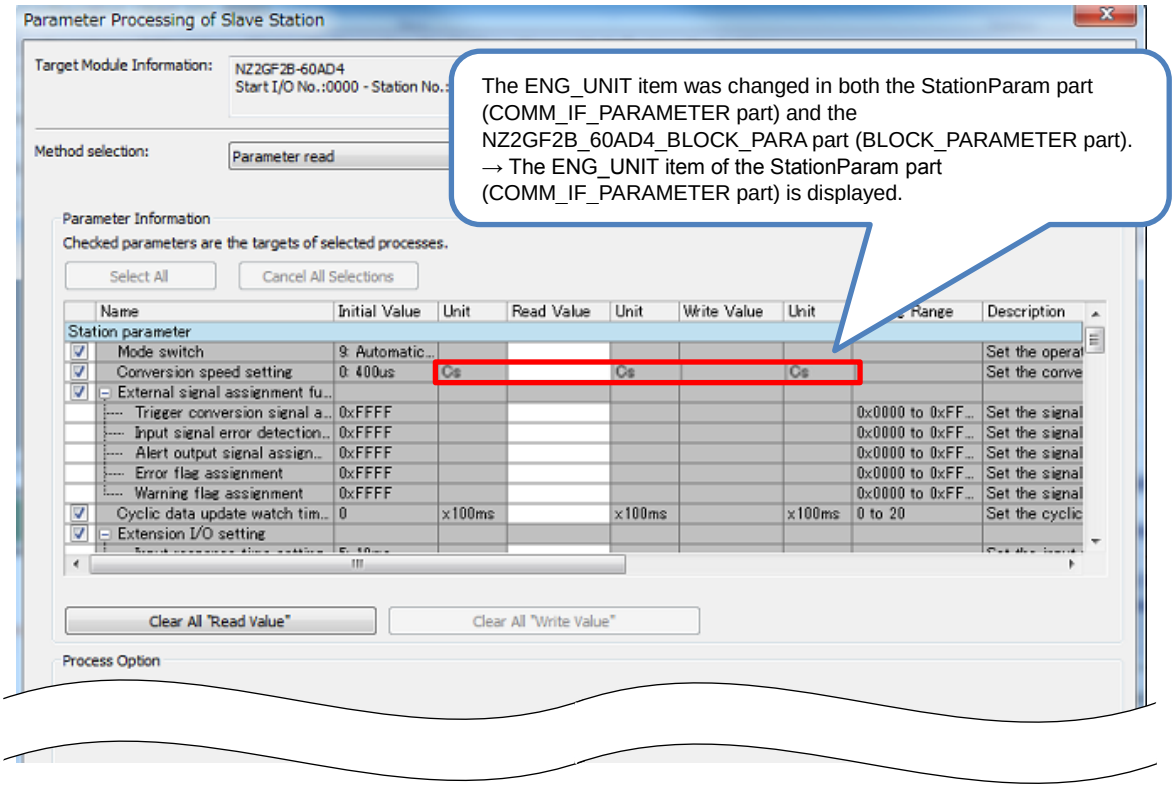
ASSIGN	UI_ATTRIBUTE	WRITE_ORDER	REF
0x00000000			REM DEVICE.NZ2GF2B 60AD4 BLOCK PARA.ConversionMode
0x00000001			REM DEVICE.NZ2GF2B 60AD4 BLOCK PARA.ConversionSpeed
0x00000002			
0x00000007			REM DEVICE.NZ2GF2B 60AD4 BLOCK PARA.CyclicUpdateMoniter

The StationParam part (COMM_IF_PARAMETER part) and the NZ2GF2B_60AD4_BLOCK_PARA part (BLOCK_PARAMETER part) have a reference relationship.

Reference

SLMP_Message | StationParam | NZ2GF2B_60AD4_BLOCK_PARA

	NAME	DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT
1	Conversion speed setting	WORD	0x0000	ENUM ConvSpeed_Set		Bs
2	Mode switch	WORD	0x0009	ENUM Mode_Set		
3	Trigger conversion signal assignment	WORD	0xFFFF	[0x0000,0xFFFF]		



The ENG_UNIT item was changed in both the StationParam part (COMM_IF_PARAMETER part) and the NZ2GF2B_60AD4_BLOCK_PARA part (BLOCK_PARAMETER part).
→ The ENG_UNIT item of the StationParam part (COMM_IF_PARAMETER part) is displayed.

4.5 COMM_IF_COMMAND Part

The COMM_IF_COMMAND part describes the information related to the commands issued in the communication interface.
The information includes such as the CH1 conversion enable/disable setting of the analog-digital converter module.
The elements configuring the COMM_IF_COMMAND part are defined based on the communication functions of the target module.
The structure of each element of the COMM_IF_COMMAND part, in other words, the items to be described in the element, is the same.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.3.5 COMM_IF_COMMAND part

1) Table 4.5-1 lists the elements configuring the COMM_IF_COMMAND part.

Table 4.5-1 List of Elements Configuring the COMM_IF_COMMAND Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Optional
5	ARGUMENT	Describes the label of the COMMAND_ARGUMENT part for indicating the argument to be used by the element.	Optional
6	REF	Describes the reference to the BLOCK_COMMAND part from the element. *6	Optional
7	COMMENT	Describes the meaning of the element and usage precautions.	Optional

*6

COMMAND_ARGUMENT part

The COMMAND_ARGUMENT part (command argument list) describes the information related to command arguments.

Table 4.5-2 List of Element Defined in the COMMAND_ARGUMENT Part

No.	Element	Description	Required/ Optional
1'	LABEL	Describes the label for identifying the element.	Required
2'	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	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 in the command argument list along with ENG_UNIT.	Optional
9'	ENG_UNIT	Describes the engineering unit applied to the value of the element in the command argument list 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. Use of this element is prohibited under the current specifications.	Optional
13'	COMMENT	Describes the meaning of the element and usage precautions.	Optional

2) Reference specifications of the COMM_IF_COMMAND part

The reference specifications of the parts related to the COMM_IF_COMMAND part and between the communication services are described here.

The reference to the elements of the MESSAGE part and the elements of the COMM_IF_COMMAND part which carries out the settings and execution using the elements referred to is described. The reference to the BLOCK_COMMAND part cannot be described directly from the MESSAGE part.

In the example of Figure 4.5-1, "Parameter Write" and "Parameter Read" are described as a MESSAGE to write and read parameters 1, 2, ..., of the control function.

Then, the reference from each MESSAGE part to the BLOCK_COMMAND part is described via the COMM_IF_COMMAND part.

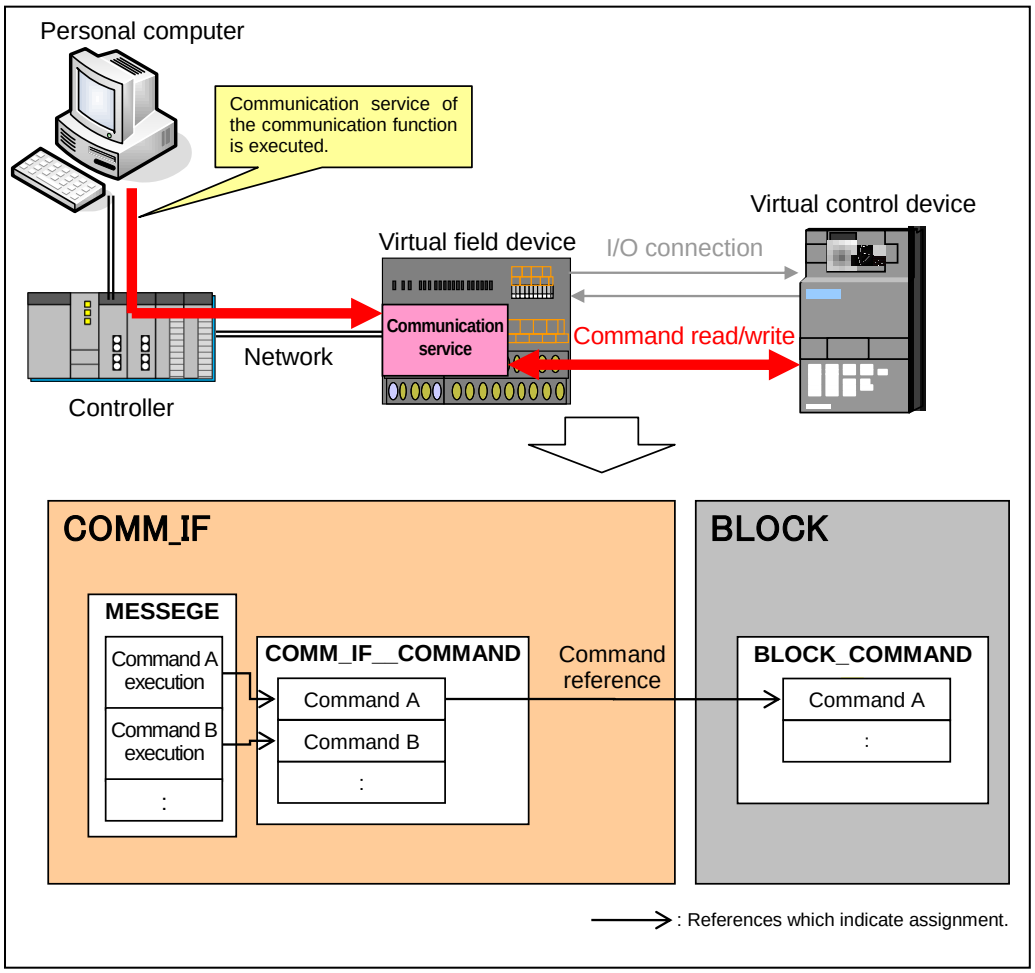


Figure 4.5-1 Reference Specifications Example of the COMM_IF_COMMAND Part

(2) CSP+ Descriptions

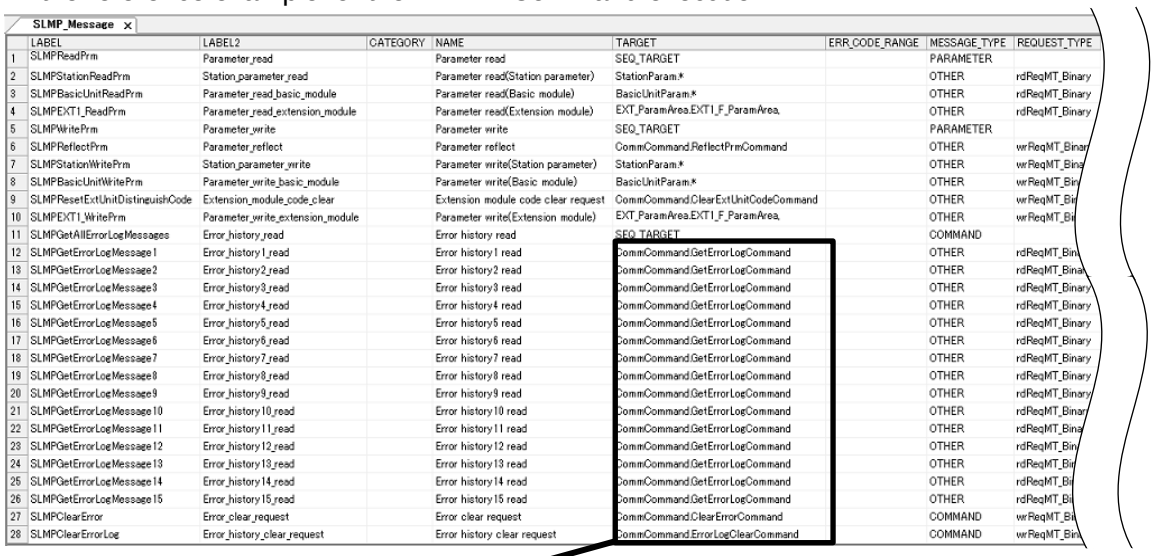
Parameters are referred to in the following order.

MESSAGE part (SLMP_Message)

→ COMMIF_PARAMETER part (StationParam)

→ BLOCK_PARAMETER part (NZ2GF2B_60AD4_BLOCK_PARA)

The following figure shows the display example of the COMM_IF_COMMAND part of CSP+ for an analog input module (NZ2GF2B1-16D) on the CSP+ creation support tool. The following is the reference example for the NAME: Command execution.



SLMP_Message

	LABEL	LABEL2	CATEGORY	NAME	TARGET	ERR_CODE_RANGE	MESSAGE_TYPE	REQUEST_TYPE
1	SLMPReadPrm	Parameter_read		Parameter read	SEQ_TARGET		PARAMETER	
2	SLMPStationReadPrm	Station_parameter_read		Parameter read(Station parameter)	StationParam.*		OTHER	rdReqMT_Binary
3	SLMPBasicUnitReadPrm	Parameter_read_basic_module		Parameter read(Basic module)	BasicUnitParam.*		OTHER	rdReqMT_Binary
4	SLMPEXT1_ReadPrm	Parameter_read_extension_module		Parameter read(Extension module)	EXT_ParamArea.EXT1_F_ParamArea,		OTHER	rdReqMT_Binary
5	SLMPWritePrm	Parameter_write		Parameter write	SEQ_TARGET		PARAMETER	
6	SLMPReflectPrm	Parameter_reflect		Parameter reflect	CommCommand.ReflectPrmCommand		OTHER	wrReqMT_Binary
7	SLMPStationWritePrm	Station_parameter_write		Parameter write(Station parameter)	StationParam.*		OTHER	wrReqMT_Binary
8	SLMPBasicUnitWritePrm	Parameter_write_basic_module		Parameter write(Basic module)	BasicUnitParam.*		OTHER	wrReqMT_Binary
9	SLMPResetExtUnitDistinguishCode	Extension_module_code_clear		Extension module code clear request	CommCommand.ClearExtUnitCodeCommand		OTHER	wrReqMT_Binary
10	SLMPEXT1_WritePrm	Parameter_write_extension_module		Parameter write(Extension module)	EXT_ParamArea.EXT1_F_ParamArea,		OTHER	wrReqMT_Binary
11	SLMPGetAllErrorLogMessages	Error_history_read		Error history read	SEQ_TARGET		COMMAND	
12	SLMPGetErrorLogMessage1	Error_history1_read		Error history1 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
13	SLMPGetErrorLogMessage2	Error_history2_read		Error history2 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
14	SLMPGetErrorLogMessage3	Error_history3_read		Error history3 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
15	SLMPGetErrorLogMessage4	Error_history4_read		Error history4 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
16	SLMPGetErrorLogMessage5	Error_history5_read		Error history5 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
17	SLMPGetErrorLogMessage6	Error_history6_read		Error history6 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
18	SLMPGetErrorLogMessage7	Error_history7_read		Error history7 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
19	SLMPGetErrorLogMessage8	Error_history8_read		Error history8 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
20	SLMPGetErrorLogMessage9	Error_history9_read		Error history9 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
21	SLMPGetErrorLogMessage10	Error_history10_read		Error history10 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
22	SLMPGetErrorLogMessage11	Error_history11_read		Error history11 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
23	SLMPGetErrorLogMessage12	Error_history12_read		Error history12 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
24	SLMPGetErrorLogMessage13	Error_history13_read		Error history13 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
25	SLMPGetErrorLogMessage14	Error_history14_read		Error history14 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
26	SLMPGetErrorLogMessage15	Error_history15_read		Error history15 read	CommCommand.GetErrorLogCommand		OTHER	rdReqMT_Binary
27	SLMPClearError	Error_clear_request		Error clear request	CommCommand.ClearErrorCommand		COMMAND	wrReqMT_Binary
28	SLMPClearErrorLog	Error_history_clear_request		Error history clear request	CommCommand.ErrorLogClearCommand		COMMAND	wrReqMT_Binary

MESSAGE part

Reference

SLMP_Mes 1 CommCommand

	LABEL	LABEL2 (2)	CATEGORY (3)	NAME (4)	ARGUMENT (5)	REF (6)	COMMENT (7)	REMARK
1	GetErrorLogCommand	Error history read		Error history read		REM DEVICE.BlockCommand.GetErrorLogCommand		
2	ErrorLogClearCommand	Error history clear		Error history clear		REM DEVICE.BlockCommand.ErrorLogClearCommand		
3	ClearErrorCommand	Error clear		Error clear		REM DEVICE.BlockCommand.ErrorClearCommand		
4	ReflectPrmCommand	Parameter reflect		Parameter reflect		REM DEVICE.BlockCommand.ReflectPrmCommand		
5	ClearExtUnitCodeCommand	Extension module code clear		Extension module code clear		REM DEVICE.BlockCommand.ClearExtUnitCodeCommand		

COMM_IF_COMMAND part

Reference

SLMP_Message | CommCommand | BlockCommand

	LABEL	LABEL2	CATEGORY	NAME	ARGUMENT	COMMENT	REMARK
1	GetErrorLogCommand	Error history read command		Error history read command	ErrorLogArgument		
2	ReflectPrmCommand	Parameter reflect command		Parameter reflect command			
3	ErrorLogClearCommand	Error history clear command		Error history clear request command			
4	ErrorClearCommand	Error clear request command		Error clear request command			
5	ClearExtUnitCodeCommand	Extension module code clear		Extension module code clear request command			

BLOCK_COMMAND part

*7

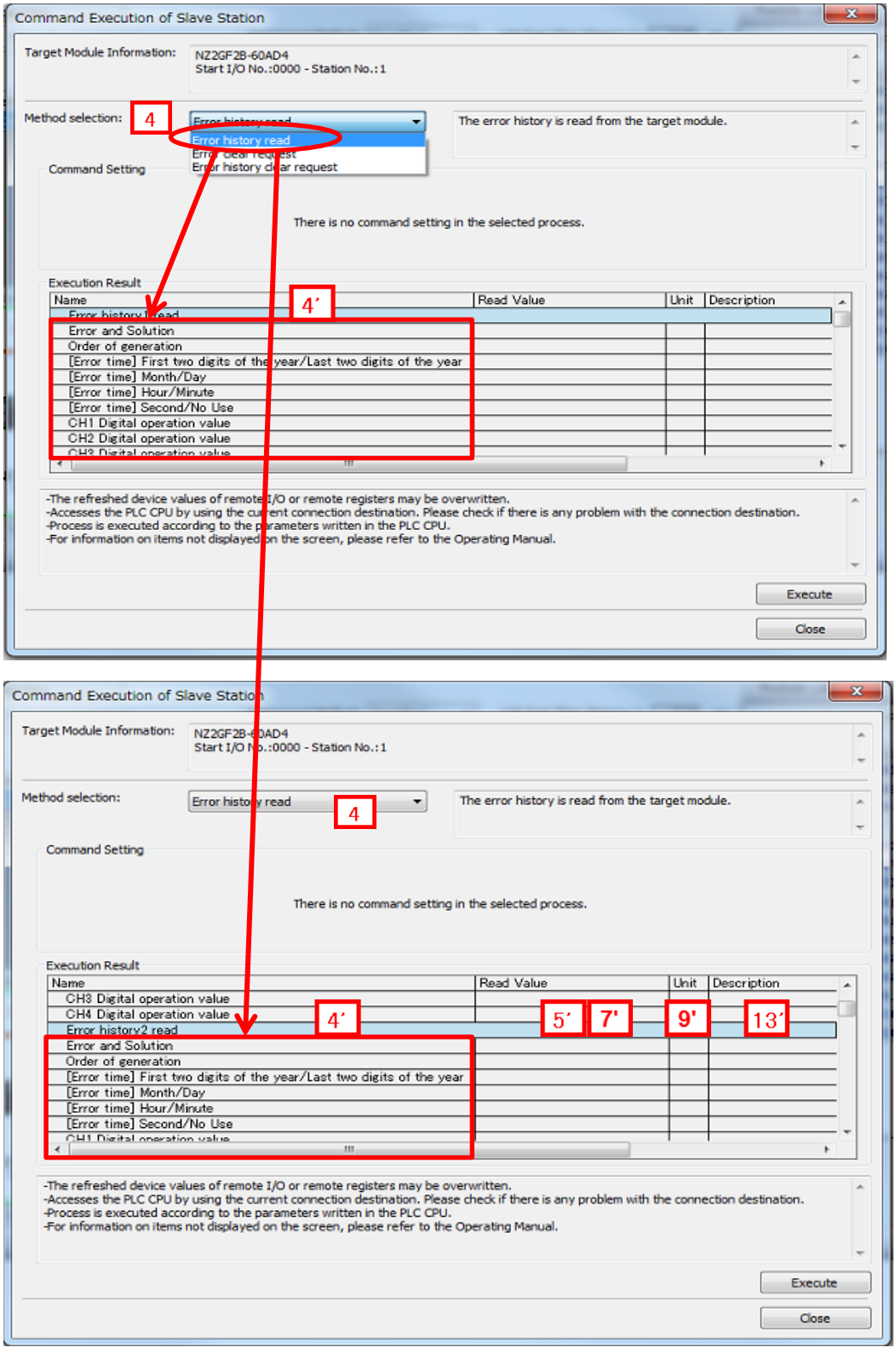
Reference

	LABEL (1′)	LABEL2 (2′)	CATEGORY (3′)	NAME (4′)	DATATYPE (5′)	DEFAULT (6′)	RANGE (7′)	MIN_INC (8′)	ENG_UNIT (9′)	ACCESS (10′)	ASSIGN (11′)	REF (12′)	COMMENT (13′)	REMARK
1	ErrorCode	Error and Solution		Error and Solution	WORD	0x0000	ENUM enumErrorCode			R				
2	ErrorNumber	Order of generation		Order of generation	UINT16	0				R				
3	ErrorYear	Error time Year		[Error time] First two digits of the year/Last two digits of the year	BCD16	0				R				
4	ErrorMD	Error time Month Day		[Error time] Month/Day	BCD16	0				R				
5	ErrorHM	Error time Hour Minute		[Error time] Hour/Minute	BCD16	0				R				
6	ErrorS	Error time Second No Use		[Error time] Second/No Use	BCD16	0				R				
7	ErrorDetail1	Error code details 1		Error code details 1	WORD	0x0000				R				
8	ErrorDetail2	Error code details 2		Error code details 2	WORD	0x0000				R				
9	ErrorDetail3	Error code details 3		Error code details 3	WORD	0x0000				R				
10	ErrorDetail4	Error code details 4		Error code details 4	WORD	0x0000				R				
11	ErrorDetail5	Error code details 5		Error code details 5	WORD	0x0000				R				
12	ErrorDetail6	Error code details 6		Error code details 6	WORD	0x0000				R				
13	ErrorDetail7	Error code details 7		Error code details 7	WORD	0x0000				R				
14	ErrorDetail8	Error code details 8		Error code details 8	WORD	0x0000				R				
15	ErrorDetail9	Error code details 9		Error code details 9	WORD	0x0000				R				
16		Error code details 10		Error code details 10	WORD	0x0000				R				

COMMAND_ARGUMENT part

(3) Utility Software - (Parameter Processing Screen of the Slave Station)

The descriptions in CSP+ for the NZ2GF2B_60AD4 are displayed on the utility software as shown below.



(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

Table 4.5-3 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.5-3 Elements Not Being Used on the Utility Software Screen
(COMM_IF_COMMAND, COMMAND_ARGUMENT)

No.	Element	Application	Required/ Optional
1 1'	LABEL	Used as an identifier.	Required
2 2'	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	Optional
3 3'	CATEGORY	Reference information. Displayed in the creation support tool.	Optional
5	ARGUMENT	Used to identify the reference relationship to the COMMAND_ARGUMENT part.	Optional
6 12'	REF	Used to identify the reference relationship.	Optional
7	COMMENT	Reference information. Displayed in the creation support tool.	Optional
8'	MIN_INC	Numerical values in which the user input value is multiplied by the value described here are used during internal processing.	Optional
10'	ACCESS	Used to identify the access information of the target item: "Readable", "Writable", "Readable and Writable", "Auto refreshable", or "Inaccessible". For details on the description of the element, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Required
11'	ASSING	Used to analyze the address and code assigned to the element.	Optional

4.6 MESSAGE Part

As with the METHOD part, describes the information related to the commands issued from the communication interface and procedures for the parameter settings.
The MESSAGE part describes the commands using the transient order and data format for the parameter settings.

(1) CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.7 MESSAGE part

1) Table 4.6-1 lists the elements configuring the MESSAGE part.

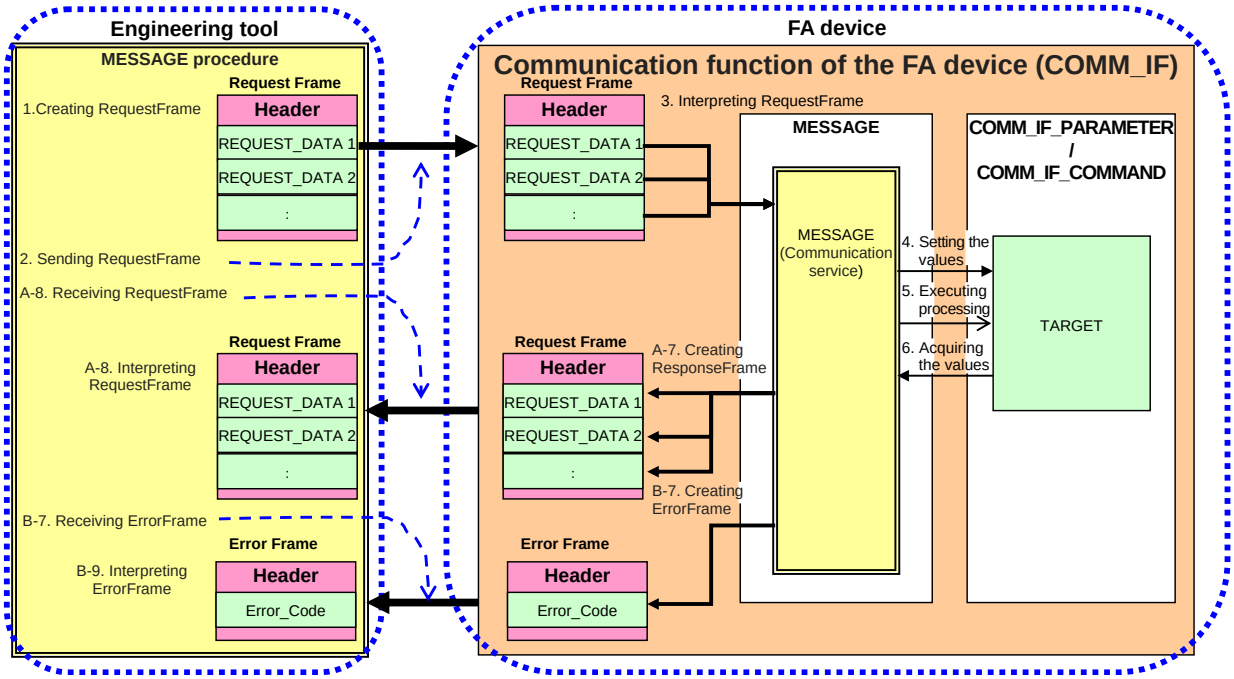
Table 4.6-1 List of Elements Configuring the MESSAGE Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element. If the part is SLMP-based MESSAGE, describe "SLMP" as a prefix. Example: SLMPGetParam, SLMPInvReset	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Required
5	TARGET	Describes the element processed by the corresponding METHOD part.	Required
6	MESSAGE_TYPE	Describes the MESSAGE type.	Required
7	REQUEST_TYPE	Describes the type of data format to process requests.	Required
8	REQUEST_DATA	Describes the values to process requests.	Optional
9	REQUEST_DATA_TYPE	Describes the data type of REQUEST_DATA.	Optional
10	RESPONSE_TYPE	Describes the data format type to process response.	Optional
11	RESPONSE _DATA	Describes the values to process responses.	Optional
12	RESPONSE_DATA_TYPE	Describes the data type of REQUEST_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	Describes the error code range.	Optional
15	RELATED_METHOD	Describes the reference to the METHOD element that indicates pre-processing of the METHOD part.	Optional
16	COMMENT	Describes the meaning of the element and usage precautions.	Optional

2) MESSAGE operation

When performing the communication service that specifies the data format, define and use the data format for the service request to FA devices (RequestFrame), data format for the service response from FA devices at the normal end (ResponseFrame), and data format for the error response from FA devices when an error occurs (ErrorFrame).

The following figure shows the procedure for the communication service and data area information using the abovementioned items.



3) MESSAGE call and operation sequence

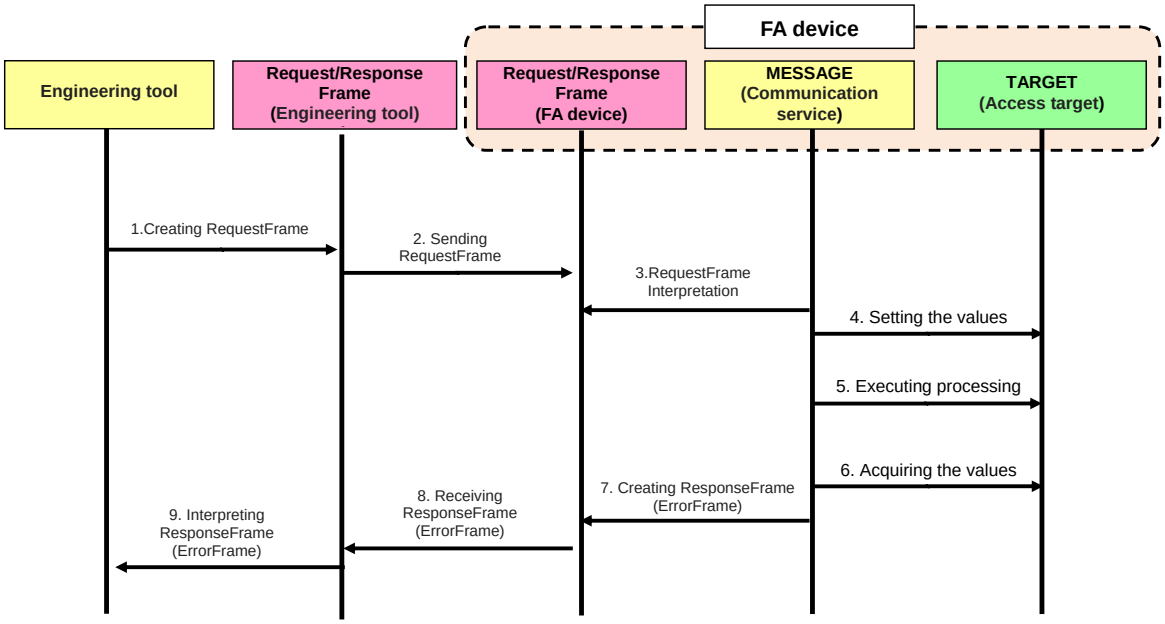
1. Create a RequestFrame in the data format determined in REQUEST_TYPE and set REQUEST _DATA in the format.
2. Send the RequestFrame to the communication function in the FA device.
3. Upon receiving the RequestFrame, the communication function in the FA device parses the RequestFrame and reads the instruction code and setting values.
4. Set the setting values to TARGET according to the communication service and command code.
5. Execute processing of TARGET in accordance with the communication service and command code.
6. Acquire the acquisition values of TARGET in accordance with the communication service and command code.

[When processing completes successfully]

7-1. Set the acquired values in the ResponseFrame in accordance with the communication service and command code, and the data format corresponding to RESPONSE_TYPE.
7-2. Receive the ResponseFrame from the communication function in the FA device.
7-3. Interpret the ResponseFrame in the data format determined by RESPONSE_TYPE and read RESPONSE_DATA.

[When processing completes with an error]

7-1. Set the acquired values in the ErrorFrame in accordance with the communication service and command code, and the data format corresponding to ERR_TYPE.
7-2. Receive the ErrorFrame from the communication function in the FA device.
7-3. Interpret the ErrorFrame in the data format determined by RESPONSE_TYPE and read the ErrorCode.



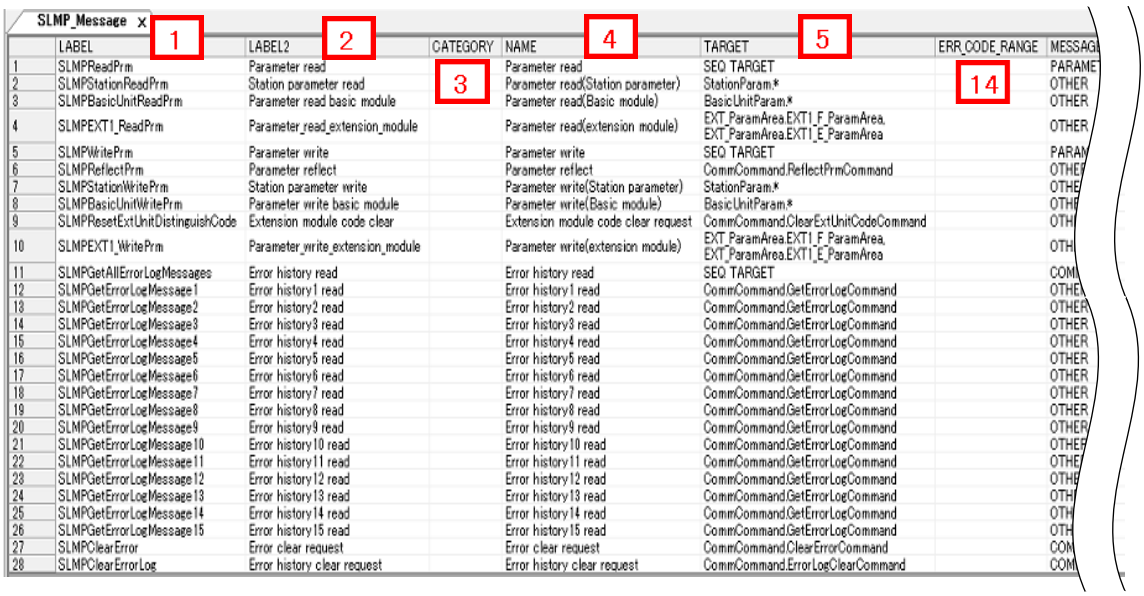
(2) CSP+ Descriptions

Parameters are referred to in the following order.
MESSAGE part (SLMP_Message)

→ COMMIF_PARAMETER part (StationParam)

→ BLOCK_PARAMETER part (NZ2GF2B_60AD4_BLOCK_PARA)

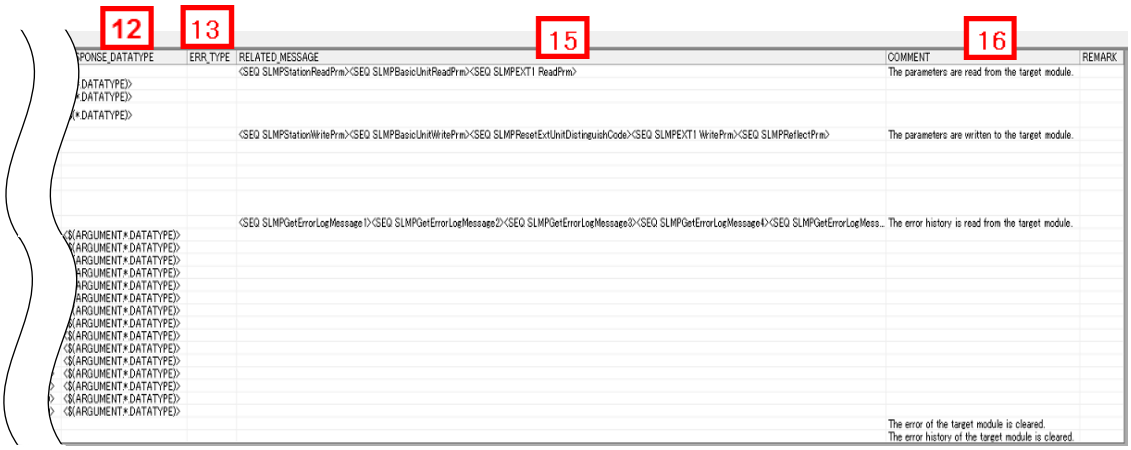
The following figure shows the display example of the MESSAGE part of CSP+ for an analog input module (NZ2GF2B1-16D) on the CSP+ creation support tool.



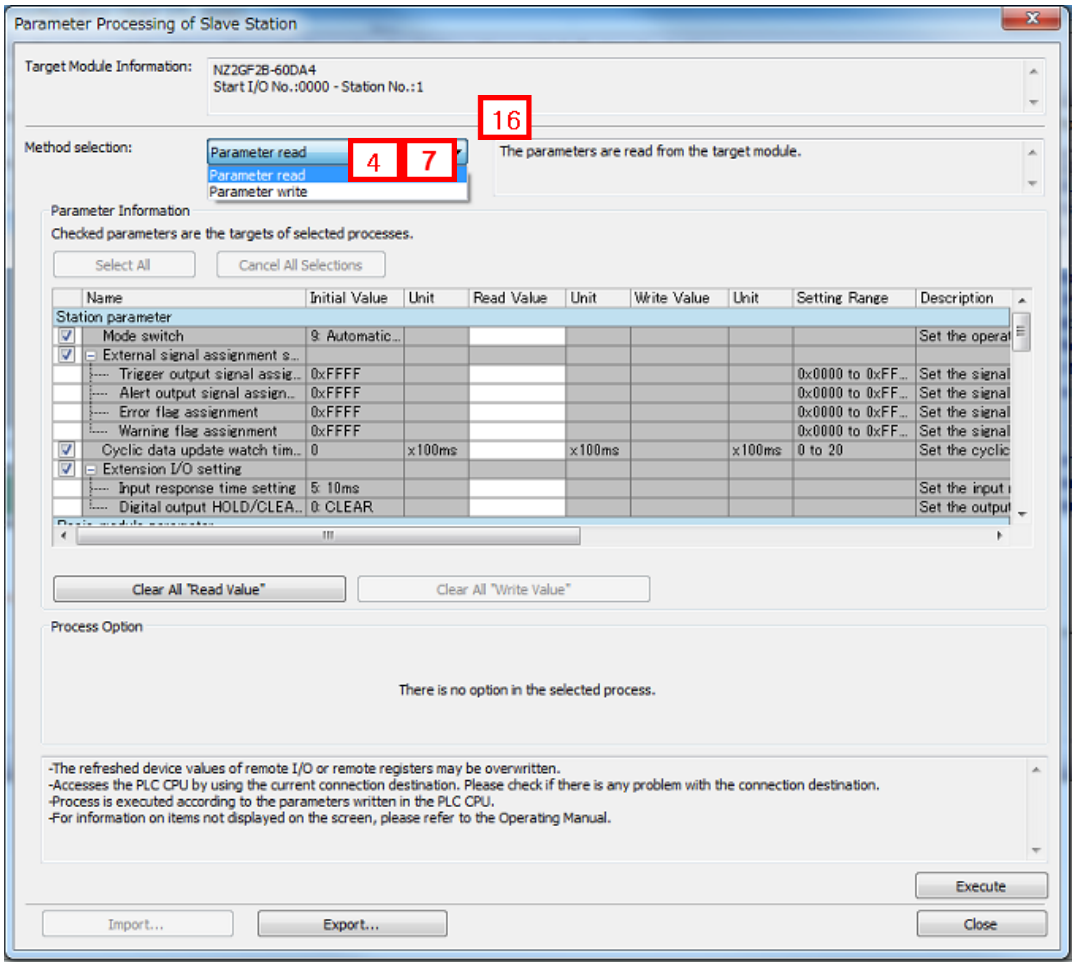
SLMP_Message

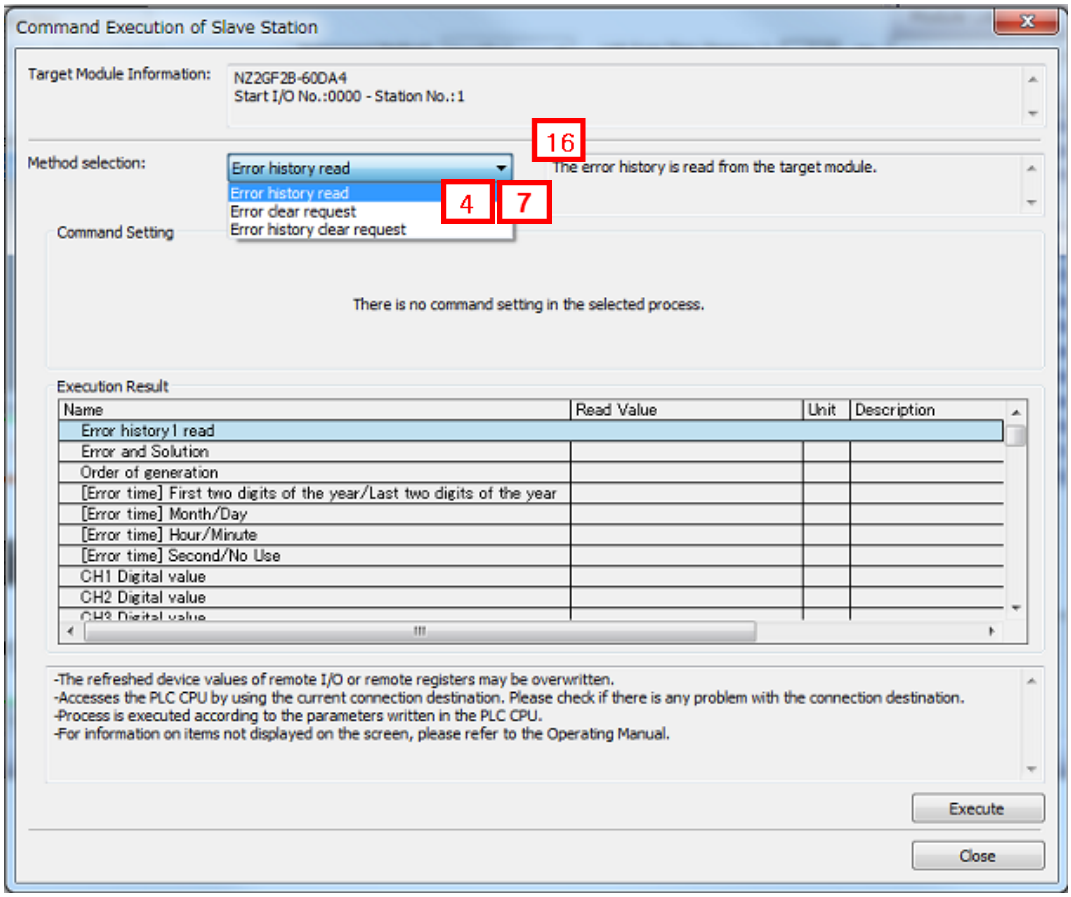
	LABEL (1)	LABEL2 (2)	CATEGORY (3)	NAME (4)	TARGET (5)	ERR_CODE_RANGE (14)	MESSAGE
1	SLMPReadPrm	Parameter read		Parameter read	SEQ TARGET		PARAMET
2	SLMPStationReadPrm	Station parameter read		Parameter read(Station parameter)	StationParam.*		OTHER
3	SLMPBasicUnitReadPrm	Parameter read basic module		Parameter read(Basic module)	BasicUnitParam.*		OTHER
4	SLMPEXT1_ReadPrm	Parameter_read_extension_module		Parameter read(extension module)	EXT_ParamArea.EXT1_F_ParamArea, EXT_ParamArea.EXT1_E_ParamArea		OTHER
5	SLMPWritePrm	Parameter write		Parameter write	SEQ TARGET		PARAM
6	SLMPReflectPrm	Parameter reflect		Parameter reflect	CommCommand.ReflectPrmCommand		OTHE
7	SLMPStationWritePrm	Station parameter write		Parameter write(Station parameter)	StationParam.*		OTHE
8	SLMPBasicUnitWritePrm	Parameter write basic module		Parameter write(Basic module)	BasicUnitParam.*		OTHE
9	SLMPResetExtUnitDistinguishCode	Extension module code clear		Extension module code clear request	CommCommand.ClearExtUnitCodeCommand		OTH
10	SLMPEXT1_WritePrm	Parameter_write_extension_module		Parameter write(extension module)	EXT_ParamArea.EXT1_F_ParamArea, EXT_ParamArea.EXT1_E_ParamArea		OTH
11	SLMPGetAllErrorLogMessages	Error history read		Error history read	SEQ TARGET		COM
12	SLMPGetErrorLogMessage1	Error history1 read		Error history1 read	CommCommand.GetErrorLogCommand		OTHE
13	SLMPGetErrorLogMessage2	Error history2 read		Error history2 read	CommCommand.GetErrorLogCommand		OTHER
14	SLMPGetErrorLogMessage3	Error history3 read		Error history3 read	CommCommand.GetErrorLogCommand		OTHER
15	SLMPGetErrorLogMessage4	Error history4 read		Error history4 read	CommCommand.GetErrorLogCommand		OTHER
16	SLMPGetErrorLogMessage5	Error history5 read		Error history5 read	CommCommand.GetErrorLogCommand		OTHER
17	SLMPGetErrorLogMessage6	Error history6 read		Error history6 read	CommCommand.GetErrorLogCommand		OTHER
18	SLMPGetErrorLogMessage7	Error history7 read		Error history7 read	CommCommand.GetErrorLogCommand		OTHER
19	SLMPGetErrorLogMessage8	Error history8 read		Error history8 read	CommCommand.GetErrorLogCommand		OTHER
20	SLMPGetErrorLogMessage9	Error history9 read		Error history9 read	CommCommand.GetErrorLogCommand		OTHER
21	SLMPGetErrorLogMessage10	Error history10 read		Error history10 read	CommCommand.GetErrorLogCommand		OTHE
22	SLMPGetErrorLogMessage11	Error history11 read		Error history11 read	CommCommand.GetErrorLogCommand		OTHE
23	SLMPGetErrorLogMessage12	Error history12 read		Error history12 read	CommCommand.GetErrorLogCommand		OTHE
24	SLMPGetErrorLogMessage13	Error history13 read		Error history13 read	CommCommand.GetErrorLogCommand		OTH
25	SLMPGetErrorLogMessage14	Error history14 read		Error history14 read	CommCommand.GetErrorLogCommand		OTH
26	SLMPGetErrorLogMessage15	Error history15 read		Error history15 read	CommCommand.GetErrorLogCommand		OTH
27	SLMPClearError	Error clear request		Error clear request	CommCommand.ClearErrorCommand		COM
28	SLMPClearErrorLog	Error history clear request		Error history clear request	CommCommand.ErrorLogClearCommand		COM

ESSAGE_TYPE (6)	REQUEST_TYPE (7)	REQUEST_DATA (8)	REQUEST_DATATYPE (9)	RESPONSE_TYPE (10)	RESPONSE_DATA (11)
ARAMETER					
THER	rdReqMT Binary	<0x0613><0x0000><0x00000000><0x0012>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(*.VALUE)>
THER	rdReqMT Binary	<0x0613><0x0000><0x00000102><0x0027>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(*.VALUE)>
THER	rdReqMT Binary	<0x0613><0x0000><0x00000200><0x0060>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(*.VALUE)>
PARAMETER					
OTHER	wrReqMT Binary	<0x1613><0x0000><0x0000FFFF><0x0001><0xFFFE>	<WORD><WORD><DWORD><WORD><WORD>	wrResMT Binary	
OTHER	wrReqMT Binary	<0x1613><0x0000><0x00000000><0x0012><$(*.VALUE)>	<WORD><WORD><DWORD><WORD><$(*.DATATYPE)>	wrResMT Binary	
OTHER	wrReqMT Binary	<0x1613><0x0000><0x00000102><0x0027><$(*.VALUE)>	<WORD><WORD><DWORD><WORD><$(*.DATATYPE)>	wrResMT Binary	
OTHER	wrReqMT Binary	<0x1613><0x0000><0x00000200><0x0001><0x0000>	<WORD><WORD><DWORD><WORD><WORD>	wrResMT Binary	
OTHER	wrReqMT Binary	<0x1613><0x0000><0x00000200><0x0060><$(*.VALUE)>	<WORD><WORD><DWORD><WORD><$(*.DATATYPE)>	wrResMT Binary	
COMMAND					
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A00><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A10><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A20><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A30><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A40><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A50><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A60><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A70><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A80><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)>
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000A90><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE)
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000AA0><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALUE
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000AB0><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALU
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000AC0><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALU
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000AD0><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALU
OTHER	rdReqMT Binary	<0x0613><0x0000><0x00000AE0><0x000A>	<WORD><WORD><DWORD><WORD>	rdResMT Binary	<$(ARGUMENT*.VALU
COMMAND	wrReqMT Binary	<0x1613><0x0000><0x0000FFFF><0x0001><0xFFFD>	<WORD><WORD><DWORD><WORD><WORD>	wrResMT Binary	
COMMAND	wrReqMT Binary	<0x1613><0x0000><0x0000FFFF><0x0001><0xFFFC>	<WORD><WORD><DWORD><WORD><WORD>	wrResMT Binary	



(3) Utility Software - (Parameter Processing Screen of the Slave Station)





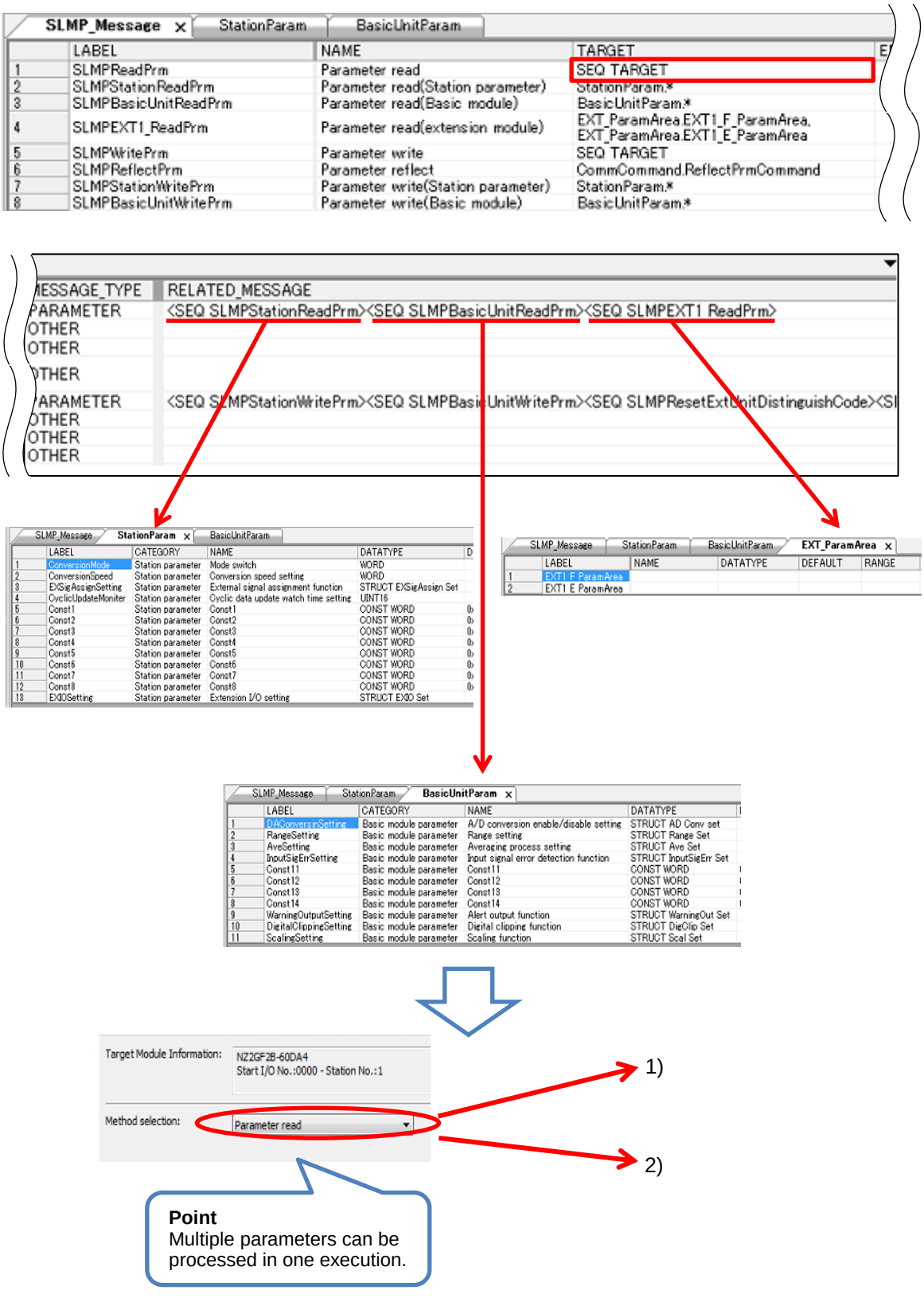
(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

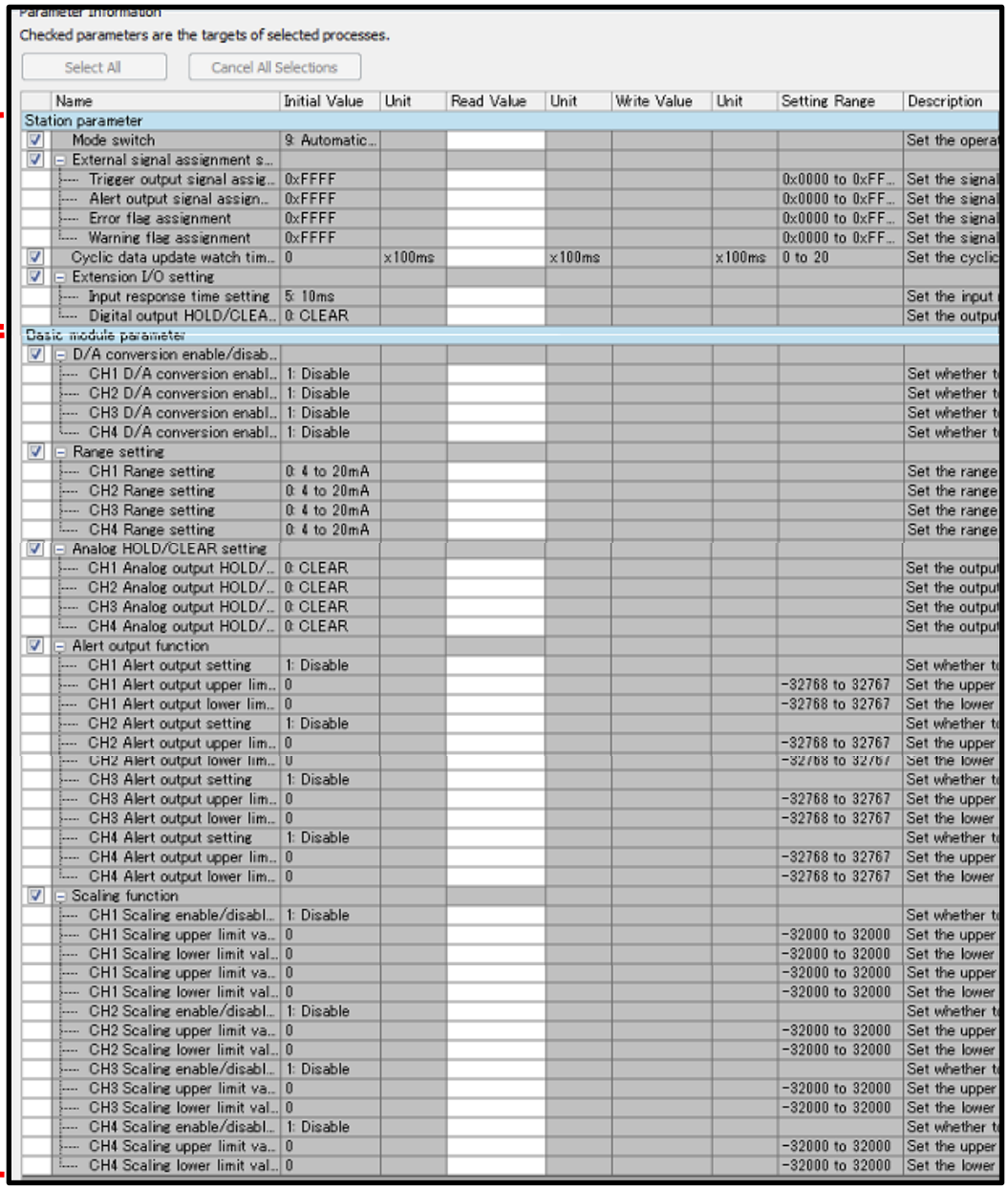
Table 4.6-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.6-2 Elements Not Being Used on the Utility Software Screen (MESSAGE)

No.	Element	Application	Required/ Optional
1	LABEL	Used as an identifier.	Required
2	LABEL2	Used as the second identifier to support multiple languages.	Optional
3	CATEGORY	Reference information. Displayed in the creation support tool.	Optional
5	TARGET	Used as information for identifying the reference information. When SEQ_TARGET is described, refer to the Point described below.	Required
8	REQUEST_DATA	Used as the data value of the request frame.	Optional
9	REQUEST_DATATYPE	Used to identify the data type for all data in REQUEST_DATA.	Optional
10	RESPONSE_TYPE	Used to identify the frame type of the response frame.	Optional
11	RESPONSE_DATA	Used to identify the read data included in the response frame.	Optional
12	RESPONSE_DATA_TYPE	Used to identify the data type of the read data included in the response frame.	Optional
13	ERR_TYPE	Used to identify the format of the data included in the response frame when an error occurs.	Optional
14	ERR_CODE_RANGE	Used to compare an error code with an error code described in profile when an error occurs. When ENUM is used in ERR_CODE_RANGE, an error string corresponding the error code is displayed.	Optional
15	RELATED_MESSAGE	For details, refer to the Point described below.	Optional

Point
When summarizing parameters in increments of processing to be executed (example: parameter read, parameter write), describe SEQ_TARGET in this item.
Describe the part names, in which the listed parameters are defined, by bracketing off with "<", ">" in RELATED_MESSAGE.





Parameter Information

Checked parameters are the targets of selected processes.

Select All | Cancel All Selections

	Name	Initial Value	Unit	Read Value	Unit	Write Value	Unit	Setting Range	Description
Station parameter									
☑	Mode switch	9: Automatic...							Set the operat
☑	⊟ External signal assignment s...								
	┣ Trigger output signal assig...	0xFFFF						0x0000 to 0xFF...	Set the signal
	┣ Alert output signal assign...	0xFFFF						0x0000 to 0xFF...	Set the signal
	┣ Error flag assignment	0xFFFF						0x0000 to 0xFF...	Set the signal
	┗ Warning flag assignment	0xFFFF						0x0000 to 0xFF...	Set the signal
☑	Cyclic data update watch tim...	0	x100ms		x100ms		x100ms	0 to 20	Set the cyclic
☑	⊟ Extension I/O setting								
	┣ Input response time setting	5: 10ms							Set the input
	┗ Digital output HOLD/CLEA...	0: CLEAR							Set the output
Basic module parameter									
☑	⊟ D/A conversion enable/disab...								
	┣ CH1 D/A conversion enabl...	1: Disable							Set whether t
	┣ CH2 D/A conversion enabl...	1: Disable							Set whether t
	┣ CH3 D/A conversion enabl...	1: Disable							Set whether t
	┗ CH4 D/A conversion enabl...	1: Disable							Set whether t
☑	⊟ Range setting								
	┣ CH1 Range setting	0: 4 to 20mA							Set the range
	┣ CH2 Range setting	0: 4 to 20mA							Set the range
	┣ CH3 Range setting	0: 4 to 20mA							Set the range
	┗ CH4 Range setting	0: 4 to 20mA							Set the range
☑	⊟ Analog HOLD/CLEAR setting								
	┣ CH1 Analog output HOLD/...	0: CLEAR							Set the output
	┣ CH2 Analog output HOLD/...	0: CLEAR							Set the output
	┣ CH3 Analog output HOLD/...	0: CLEAR							Set the output
	┗ CH4 Analog output HOLD/...	0: CLEAR							Set the output
☑	⊟ Alert output function								
	┣ CH1 Alert output setting	1: Disable							Set whether t
	┣ CH1 Alert output upper lim...	0						-32768 to 32767	Set the upper
	┣ CH1 Alert output lower lim...	0						-32768 to 32767	Set the lower
	┣ CH2 Alert output setting	1: Disable							Set whether t
	┣ CH2 Alert output upper lim...	0						-32768 to 32767	Set the upper
	┣ CH2 Alert output lower lim...	0						-32768 to 32767	Set the lower
	┣ CH3 Alert output setting	1: Disable							Set whether t
	┣ CH3 Alert output upper lim...	0						-32768 to 32767	Set the upper
	┣ CH3 Alert output lower lim...	0						-32768 to 32767	Set the lower
	┣ CH4 Alert output setting	1: Disable							Set whether t
	┣ CH4 Alert output upper lim...	0						-32768 to 32767	Set the upper
	┗ CH4 Alert output lower lim...	0						-32768 to 32767	Set the lower
☑	⊟ Scaling function								
	┣ CH1 Scaling enable/disabl...	1: Disable							Set whether t
	┣ CH1 Scaling upper limit va...	0						-32000 to 32000	Set the upper
	┣ CH1 Scaling lower limit val...	0						-32000 to 32000	Set the lower
	┣ CH1 Scaling upper limit va...	0						-32000 to 32000	Set the upper
	┣ CH1 Scaling lower limit val...	0						-32000 to 32000	Set the lower
	┣ CH2 Scaling enable/disabl...	1: Disable							Set whether t
	┣ CH2 Scaling upper limit va...	0						-32000 to 32000	Set the upper
	┣ CH2 Scaling lower limit val...	0						-32000 to 32000	Set the lower
	┣ CH3 Scaling enable/disabl...	1: Disable							Set whether t
	┣ CH3 Scaling upper limit va...	0						-32000 to 32000	Set the upper
	┣ CH3 Scaling lower limit val...	0						-32000 to 32000	Set the lower
	┣ CH4 Scaling enable/disabl...	1: Disable							Set whether t
	┣ CH4 Scaling upper limit va...	0						-32000 to 32000	Set the upper
	┗ CH4 Scaling lower limit val...	0						-32000 to 32000	Set the lower

1)

2)

5. BLOCK Section

The BLOCK section comprises multiple parts as shown in Figure 5-1.

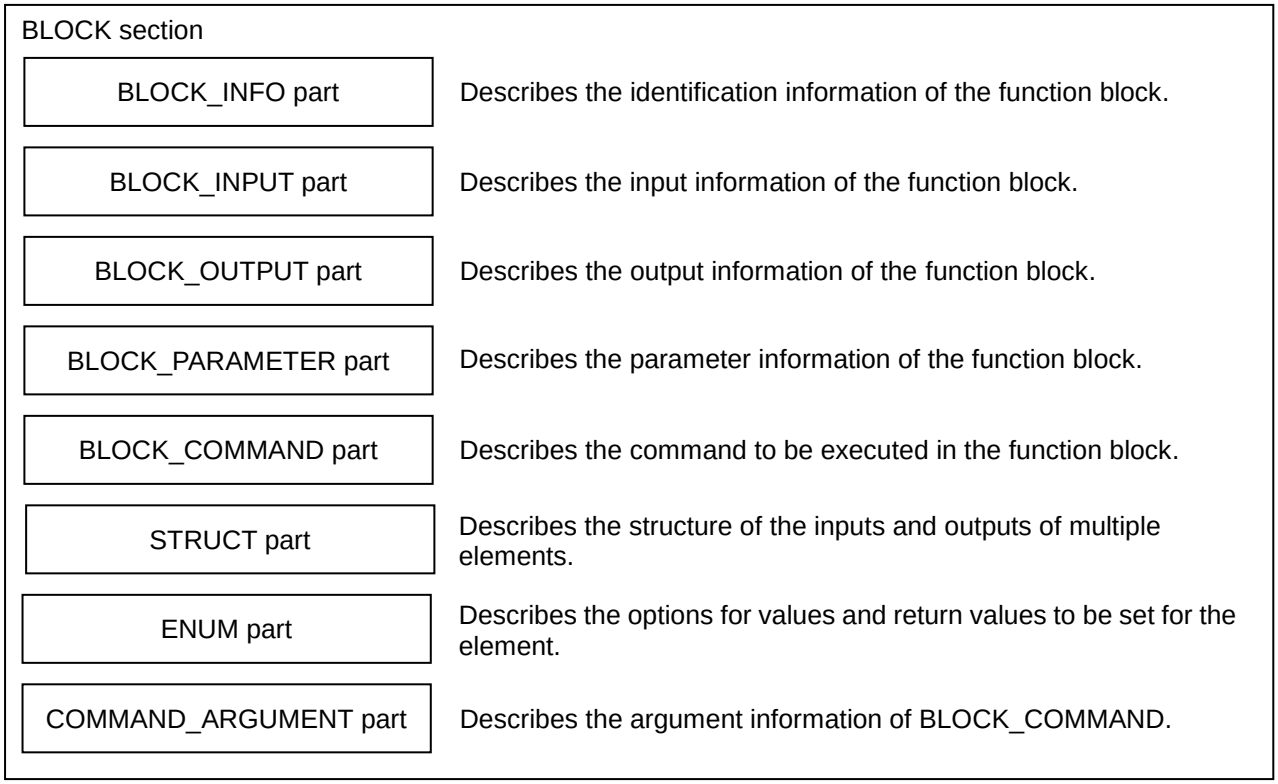


Figure 5-1 Structure of the BLOCK Section

5.1 BLOCK_INFO Part

The BLOCK_INFO part describes the information related to the identification of the function block. Basically, the elements described in the BLOCK_INFO part are not displayed on the utility software. The structure of each element of the BLOCK_INFO part, in other words, the items to be described in the element, is the same.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.4.1 BLOCK_INFO part

Table 5.1-1 lists the elements configuring the BLOCK_INFO part.

Table 5.1-1 List of Elements Configuring the BLOCK_INFO Part

No.	Element	Description	Required/ Optional
1.	VendorName	Describes the name of the vendor that manufactured the module.	Required
2.	VendorCode	Describes the code of the vendor that manufactured the module. The 5 to 8 digits of the membership number of the CC-Link Partner Association are described.	Required
3.	Version	Describes the version of the firmware in a string.	Required

Table 5.1-2 lists the items to be described in the elements in the BLOCK_INFO part.

Table 5.1-2 List of Items in the BLOCK_INFO Part

No.	Element	Description	Required/ Optional
1.	LABEL	Describes the label for identifying the element.	Required
2.	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 the utility software.	Optional
5.	DATATYPE	Describes the data type of the contents described in DATA.	Optional
6.	DATA	Describes the contents of the element.	Required

(2) CSP+ Descriptions

Figure 5.1-1 shows the display example of the BLOCK_INFO part of CSP+ for an analog input module (NZ2GF2B1-16D) on the CSP+ creation support tool.

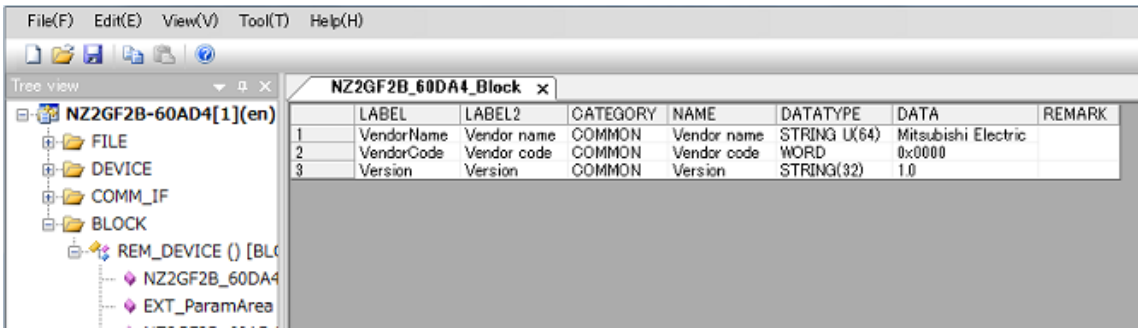


Figure 5.1-1 Display Example of the CSP+ Creation Support Tool (BLOCK_INFO)

(3) Utility Software

The items described in the BLOCK_INFO part are not displayed on the utility software.

5.2 BLOCK_INPUT Part

The BLOCK_INPUT part describes the information related to the input of the function block.
The elements configuring the BLOCK_INPUT part are defined based on the functions of the target module.
The structure of each element of the BLOCK_INPUT part, in other words, the items to be described in the element, is the same.

(1) CC-Link Family System Profile Specification BAP-C2008-001 - 5.4.2 BLOCK_INPUT part

Table 5.2-1 lists the elements configuring the BLOCK_INPUT part.

Table 5.2-1 List of Elements Configuring the BLOCK_INPUT Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	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. When ENG_UNIT is described, this item is required.	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 the utility software.	Optional
12	COMMENT	Describes the meaning of the element and usage precautions.	Optional

(2) CSP+ Descriptions

Parameters are referred to in the following order.
COMMIF_OUTPUT part (CommIfOutput)
→ BLOCK_INPUT part (BlockInput)

* Because there is no description example for the items of CSP+ and utility software, a detailed explanation is omitted.

5.3 BLOCK_OUTPUT Part

The BLOCK_OUTPUT part describes the information related to the input of the function block.
The elements configuring the BLOCK_OUTPUT part are defined based on the functions of the target module.
The structure of each element of the BLOCK_OUTPUT part, in other words, the items to be described in the element, is the same.

(1) Control & Communication System Profile Specification BAP-C2008-001 - 5.4.3 BLOCK_OUTPUT part

Table 5.3-1 lists the elements configuring the BLOCK_OUTPUT part.

Table 5.3-1 List of Elements Configuring the BLOCK_OUTPUT Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	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. When ENG_UNIT is described, this item is required.	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 the utility software.	Optional
12	COMMENT	Describes the meaning of the element and usage precautions.	Optional

(2) CSP+ Descriptions

Parameters are referred to in the following order.
COMMIF_INPUT part (CommIfInput)
→ BLOCK_OUTPUT part (BlockOutput)

* Because there is no description example for the items of CSP+ and utility software, a detailed explanation is omitted.

5.4 BLOCK_PARAMETER Part

The BLOCK_PARAMETER part describes the information related to the parameters used by the control functions of the target module.
The elements configuring the BLOCK_PARAMETER part are defined based on the communication functions of the target module.

(1) CC-Link Family System Profile Specification BAP-C2008-001 - 5.4.4 BLOCK_PARAMETER part

1) Table 5.4-1 lists the elements configuring the BLOCK_PARAMETER part.

Table 5.4-1 List of Elements Configuring the BLOCK_PARAMETER Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	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. Options can be described by using the ENUM part. *8	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	WRITE_ORDER	Describes the order in which the element is to be written into the module.	Optional
12	UI_ATTRIBUTE	Describes the display method when the element is to be displayed on the utility software.	Optional
13	COMMENT	Describes the meaning of the element and usage precautions.	Optional

*8

ENUM part

The ENUM part (option list) describes the information related to options of values and return values to be set to the element. To set options for the element using a list box or to display the meaning of each value of the element when they are read on the utility software, refer to the ENUM part. When referring to the ENUM part from the element in the COMM_IF section, describe the ENUM part in the same COMM_IF section.

The elements configuring the ENUM part are defined based on the functions of the target module. The structure of each element of the ENUM part, in other words, the items to be described in the element, is the same.

Table 5.4-2 List of Elements Defined in the ENUM Part

No.	Element	Description	Required/ Optional
1'	LABEL	Describes the label for identifying the element.	Required
2'	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Required
5'	CODE	Describes the value for identifying the element. Cross-checked with the value indicated by the element of the reference source to select matching elements.	Required
6'	COMMENT	Describes the default to be set for the element.	Optional

2) Reference specifications of the BLOCK_PARAMETER part

The reference specifications of the parts related to the BLOCK_COMMAND part and between the communication services are described here.

The reference to the elements of the MESSAGE part and the elements of the COMM_IF_PARAMETER part which carries out the settings and execution using the elements referred to is described.

The reference to the BLOCK_PARAMETER part cannot be described directly from the MESSAGE part. In the example of Figure 5.4-1, "Parameter Write" and "Parameter Read" are described as a MESSAGE to write and read parameters 1, 2, ..., of the control function.

Then, the reference from each MESSAGE part to the BLOCK_PARAMETER part is described via the COMM_IF_PARAMETER part.

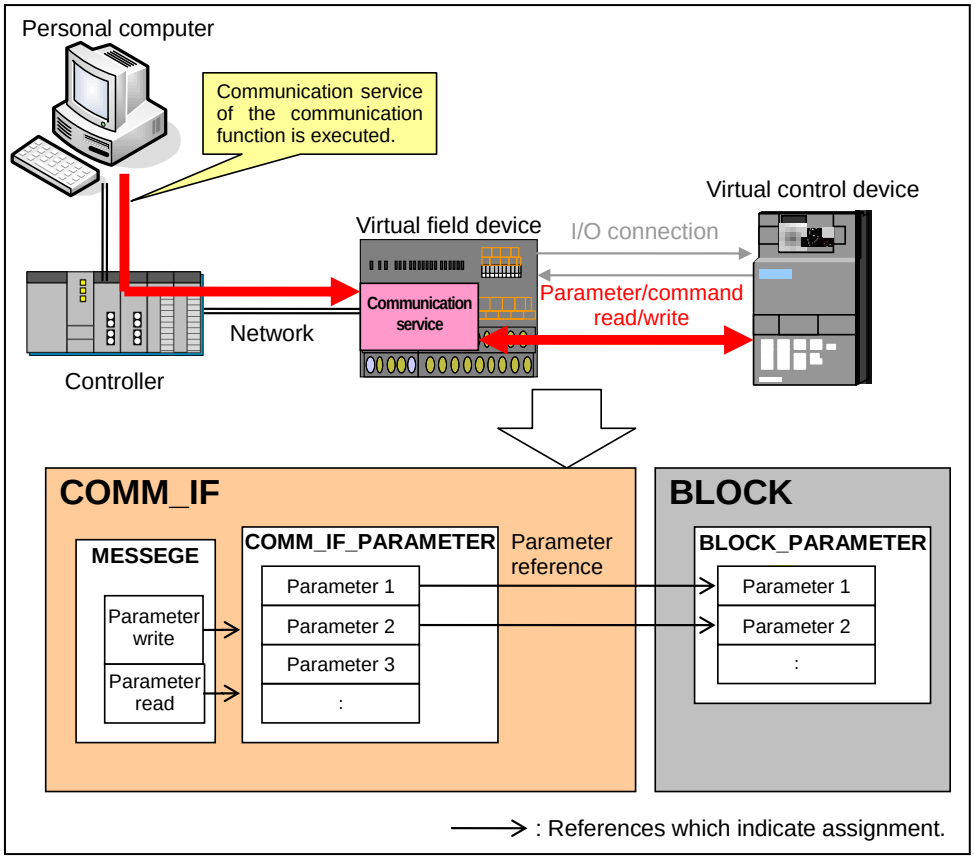
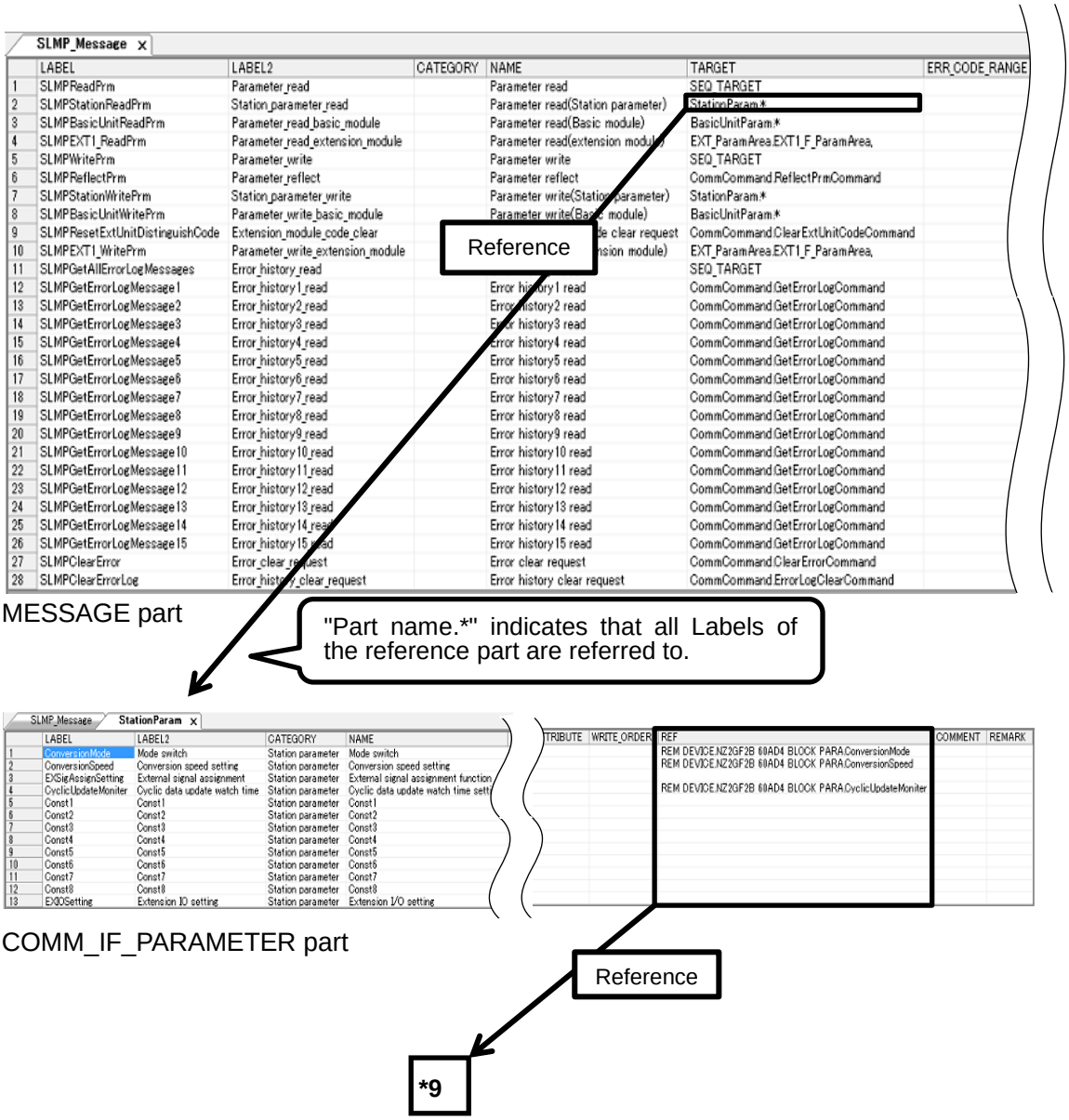


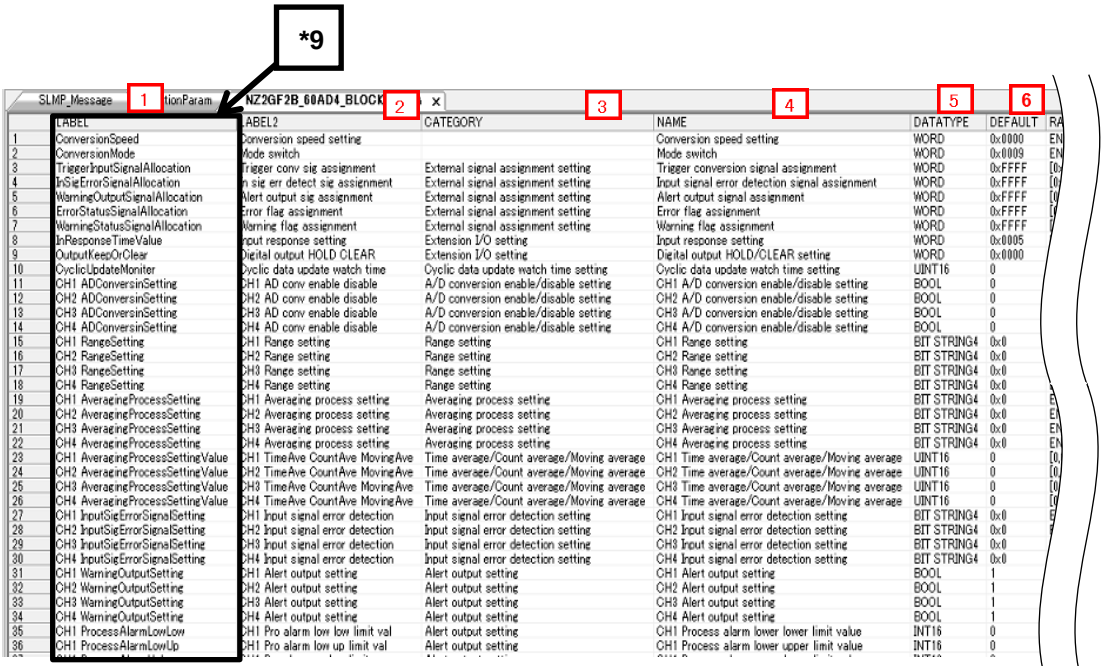
Figure 5.4-1 Reference Specifications Example of the BLOCK_PARAMETER Part

(2) CSP+ Descriptions

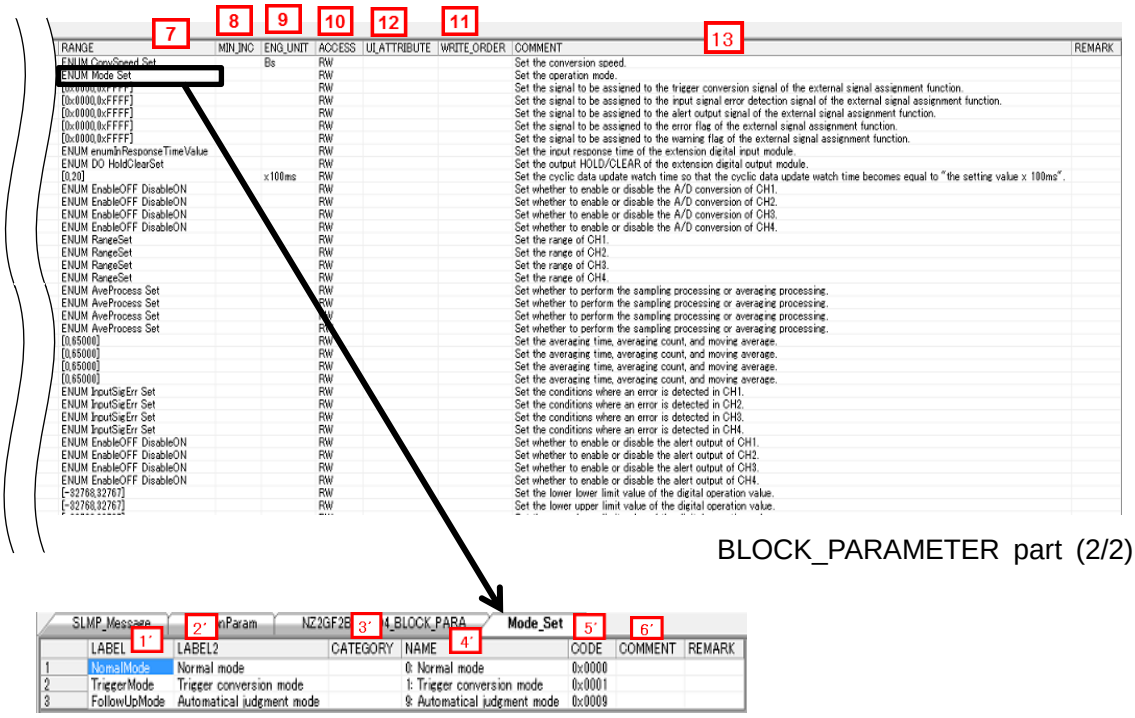
Parameters are referred to in the following order.
MESSAGE part (SLMP_Message)
→ COMMIF_PARAMETER part (StationParam)
→ BLOCK_PARAMETER part (NZ2GF2B_60AD4_BLOCK_PARA)

The following figure shows the display example of the BLOCK_PARAMETER part of CSP+ for an analog input module (NZ2GF2B1-16D) on the CSP+ creation support tool.





BLOCK_PARAMETER part (1/2)

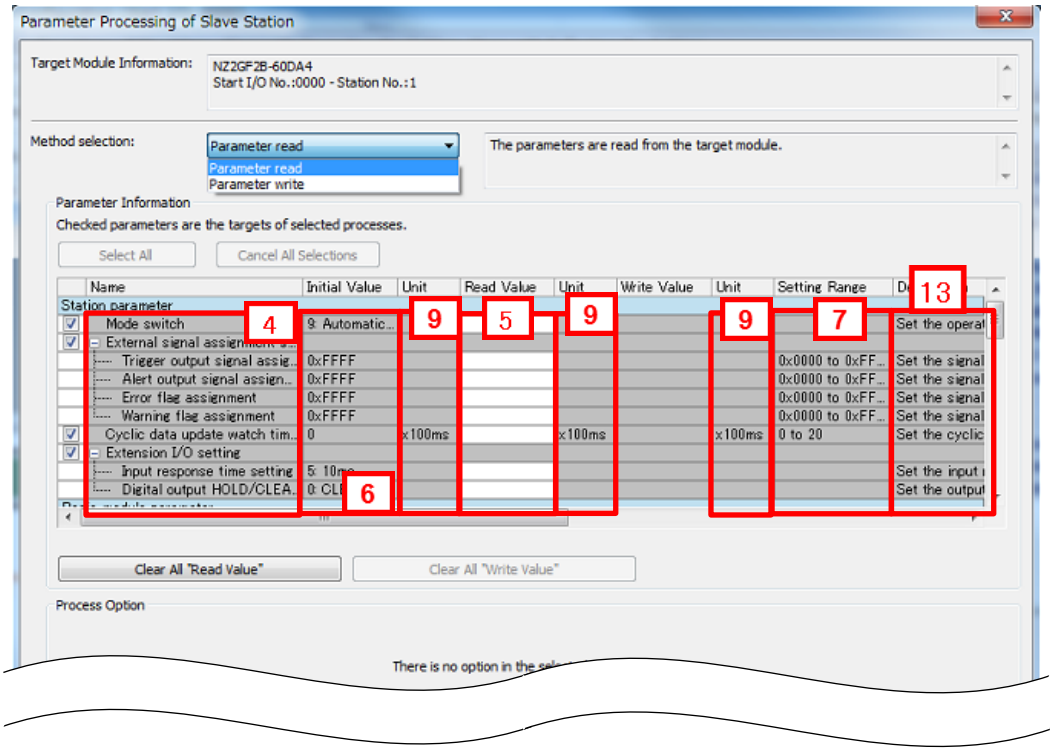


BLOCK_PARAMETER part (2/2)

ENUM part

(3) Utility Software - (Parameter Processing Screen of the Slave Station)

The descriptions in CSP+ for the NZ2GF2B-60AD4 are displayed on the utility software as shown below.



(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification
Table 5.4-3 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 5.4-3 Elements Not Being Used on the Utility Software Screen
(BLOCK_PARAMETER, ENUM)

No.	Element	Application	Required/ Optional
1 1′	LABEL	Used as an identifier.	Required
2 2′	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	Optional
3 3′	CATEGORY	Reference information. Displayed in the creation support tool.	Optional
8	MIN_INC	Numerical values in which the user input value is multiplied by the value described here are used during internal processing.	Optional
10	ACCESS	Used to identify the access information of the target item: "Readable", "Writable", "Readable and Writable", "Auto refreshable", or "Inaccessible". For details on the description of the element, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 4.3.1.1 ACCESS conventions	Required
11	WRITE_ORDER	Used as sequence information when writing parameters to the actual device. (Values are written in ascending order.)	Optional
12	UI_ATTRIBUTE	For future support	Optional
5′	CODE	Used to identify the selected value.	Required
6′	COMMENT	Reference information. Displayed in the creation support tool.	Optional

5.5 BLOCK_COMMAND Part

The BLOCK_COMMAND part describes the information related to the commands executed by the control functions of the target module (example: reset, parameter batch clear, data acquisition when an error occurs).
The elements configuring the BLOCK_COMMAND part are defined based on the functions of the target module.

(1) CC-Link Family System Profile Specification BAP-C2008-001 - 5.4.5 BLOCK_COMMAND part

1) Table 5.5-1 lists the elements configuring the BLOCK_COMMAND part.

Table 5.5-1 List of Elements Configuring the BLOCK_COMMAND Part

No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	Required
5	ARGUMENT	Describes the label of the COMMAND_ARGUMENT part for indicating the argument to be used by the element. *13	Required
6	COMMENT	Describes the meaning of the element and usage precautions.	Optional

*13

COMMAND_ARGUMENT part

The COMMAND_ARGUMENT part (command argument list) describes the information related to command arguments.

Table 5.5-2 List of Elements Defined in the COMMAND_ARGUMENT Part

No.	Element	Description	Required/ Optional
1'	LABEL	Describes the label for identifying the element.	Required
2'	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	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 name or contents on the utility software.	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 in the command argument list along with ENG_UNIT.	Optional
9'	ENG_UNIT	Describes the engineering unit applied to the value of the element in the command argument list 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. Use of this element is prohibited under the current specifications.	Optional
13'	COMMENT	Describes the meaning of the element and usage precautions.	Optional

2) Reference specifications of the BLOCK_COMMAND part

The reference specifications of the parts related to the BLOCK_COMMAND part and between the communication services are described here.

The reference to the elements of the MESSAGE part and the elements of the COMM_IF_COMMAND part which carries out the settings and execution using the elements referred to is described. The reference to the BLOCK_COMMAND part cannot be described directly from the MESSAGE part.

In the example of Figure 5.5-1, "Parameter Write" and "Parameter Read" are described as a MESSAGE to write and read parameters 1, 2, ..., of the control function.

Then, the reference from each MESSAGE part to the BLOCK_COMMAND part is described via the COMM_IF_COMMAND part.

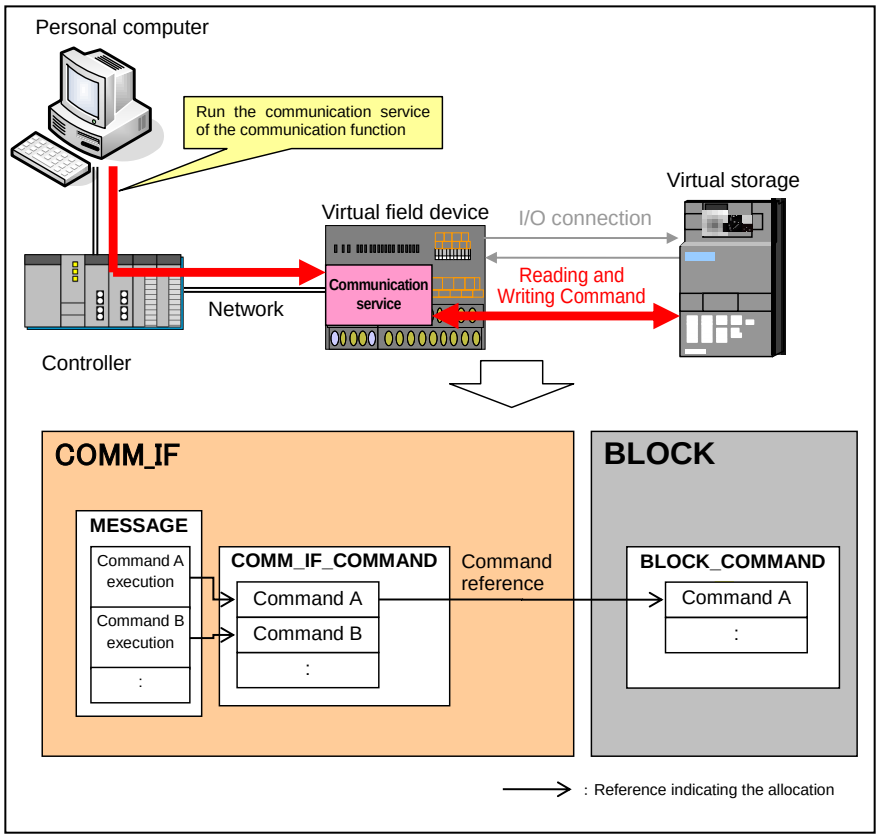
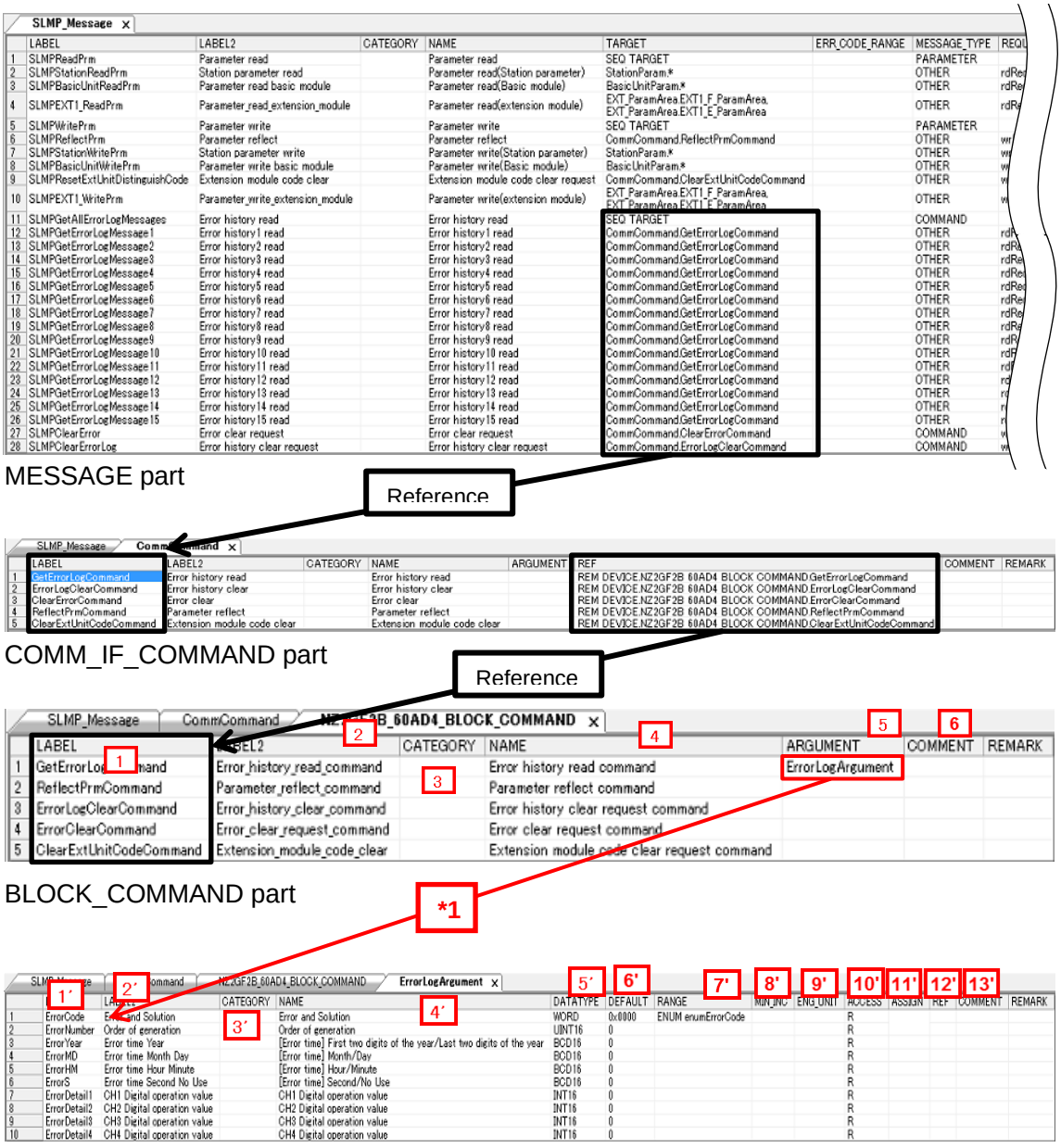


Figure 5.5-1 Reference Specifications Example of the BLOCK_COMMAND Part

(2) CSP+ Descriptions

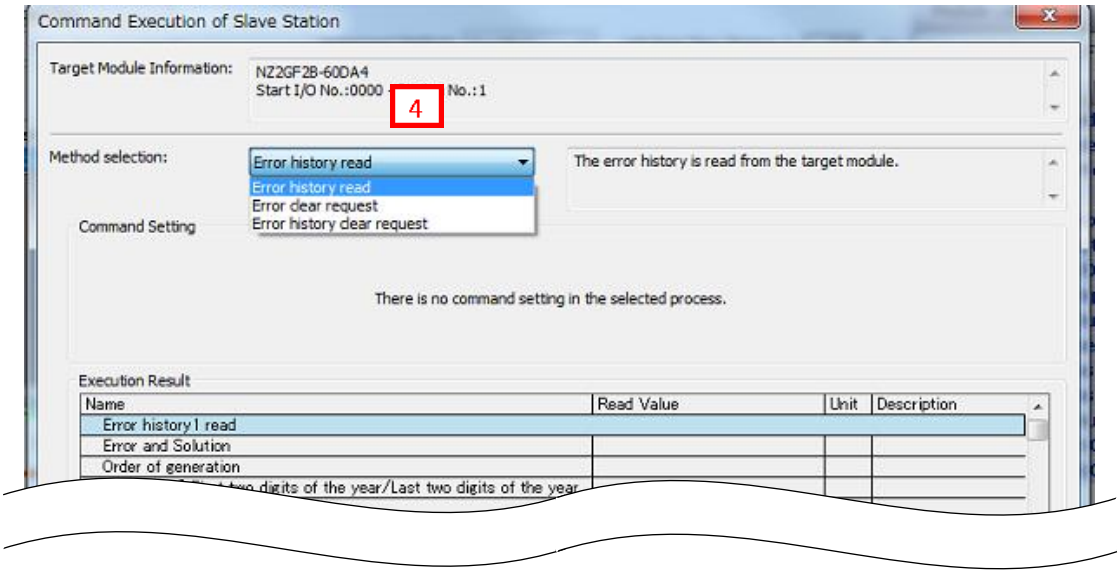
Parameters are referred to in the following order.
MESSAGE part (SLMP_Message)
→ COMMIF_PARAMETER part (StationParam)
→ BLOCK_PARAMETER part (NZ2GF2B_60AD4_BLOCK_PARA)

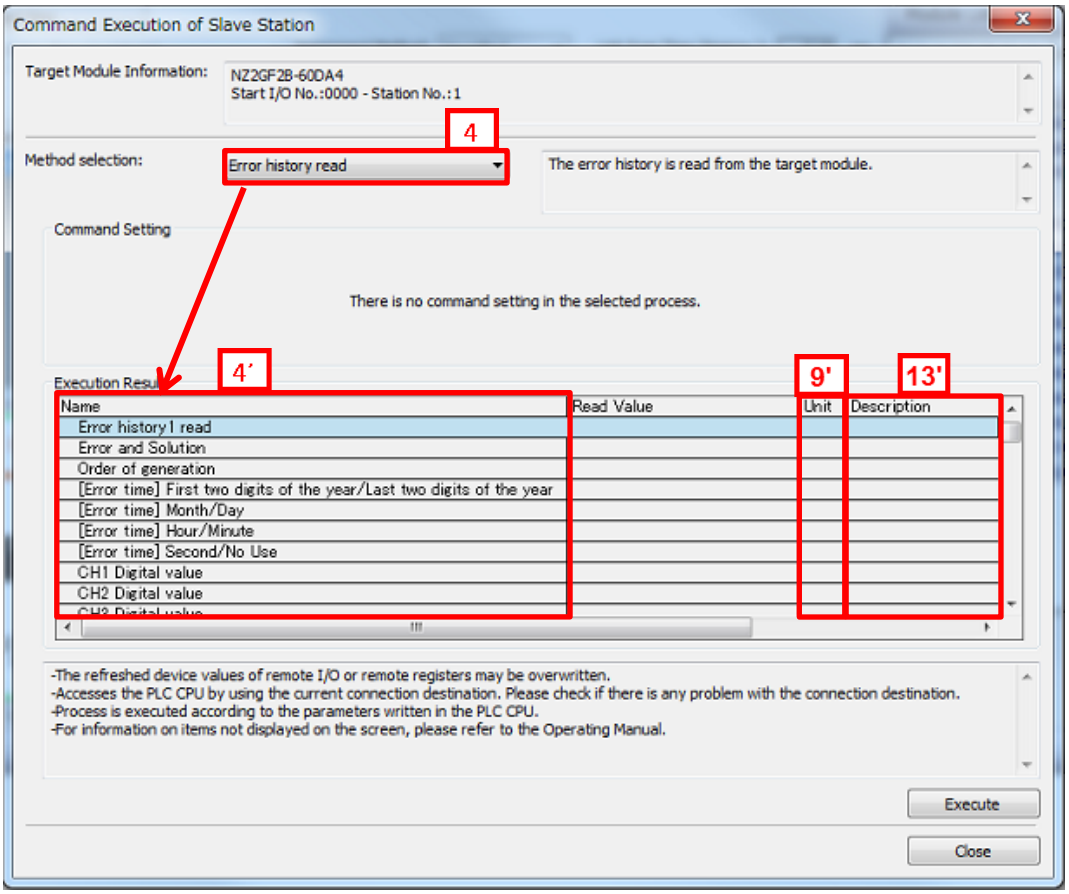
The following figure shows the display example of the BLOCK_COMMAND part of CSP+ for an analog input module (NZ2GF2B1-16D) on the CSP+ creation support tool.



(3) Utility Software - (Parameter Processing Screen of the Slave Station)

The descriptions in CSP+ for the NZ2GF2B-60AD4 are displayed on the utility software as shown below.





(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification

Table 5.5-3 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 5.5-3 Elements Not Being Used on the Utility Software Screen
(BLOCK_COMMAND, COMMAND_ARGUMENT)

No.	Element	Application	Required/ Optional
1 1′	LABEL	Used as an identifier.	Required
2 2′	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	Optional
3 3′	CATEGORY	Reference information. Displayed in the creation support tool.	Optional
6	COMMENT	Reference information. Displayed in the creation support tool.	Optional
8′	MIN_INC	Numerical values in which the user input value is multiplied by the value described here are used during internal processing.	Optional
10′	ACCESS	Used to identify the access information of the target item: "Readable", "Writable", "Readable and Writable", "Auto refreshable", or "Inaccessible". For details on the description of the element, refer to the following. Control & Communication System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Required
11′	ASSING	Used to analyze the address and code assigned to the element.	Optional
12′	REF	Used to identify the reference relationship.	Optional

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