

CC-Link

Open Field Network

**Control & Communication System Profile (CSP+)
Creation Guidelines**



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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 CC-Link Family 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 inverter manufactured by Mitsubishi (model name: FR-A740-90K).

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 Section 5.2.1. DEVICE_INFO part in the CC-Link Family 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	Describes the weight, including the unit.	
27	Price	Describes the price, including the unit.	Optional
28	UI AT		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

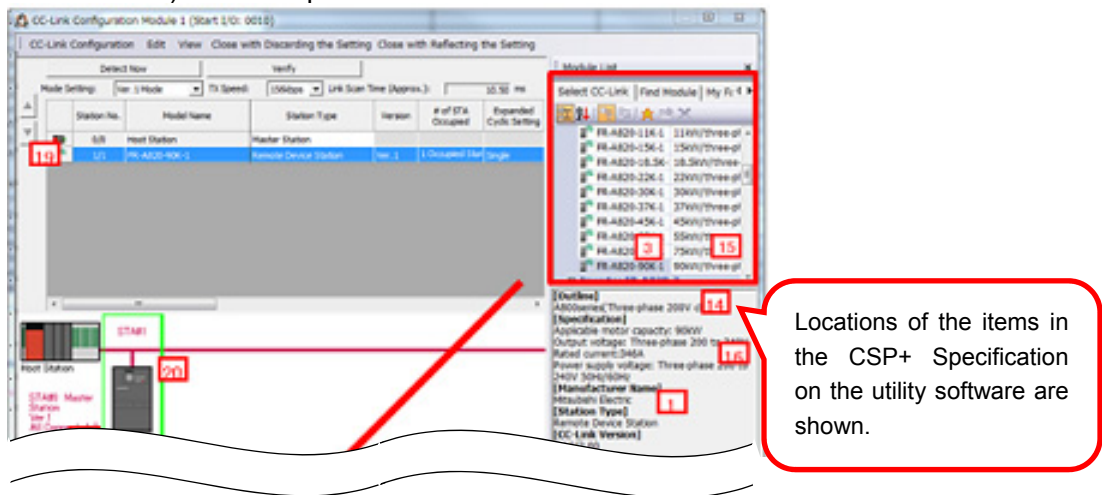
Examples of the creation support tool when CSP+ for an inverter (FR-A740-90K) is used are shown.

FileInformation x						
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA
1	CreateDate		COMMON	File created date	STRING(10)	2014/01/08
2	CreateTime		COMMON	File created time	STRING(8)	08:57:57
3	ModDate		COMMON	Last updated date	STRING(10)	2014/01/08
4	ModTime		COMMON	Last updated time	STRING(8)	08:57:57

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 when CSP+ for an inverter (FR-A740-90K) is used is provided.



(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. CC-Link Family System Profile Specification BAP-C2008-001 -5.2.1.DEVICE INFO
		- Table 5-24 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 an inverter (FR-A740-90K) on the CSP+ creation support tool.

FileInformation x							
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	CreateDate		COMMON	File created date	STRING(10)	2014/01/08	
2	CreateTime		COMMON	File created time	STRING(8)	08:57:57	
3	ModDate		COMMON	Last updated date	STRING(10)	2014/01/08	
4	ModTime		COMMON	Last updated time	STRING(8)	08:57:57	
5	Language		COMMON	Compatible language	STRING(12)	en	
6	CCLinkFamilyProfileVersion		COMMON	CSP+ specifications version	STRING(32)	1.0	
7	FileVersion		COMMON	File version	STRING(32)	1.0	

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
7	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) CC-Link Family 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

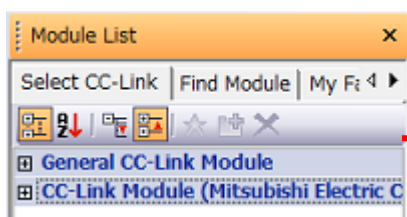
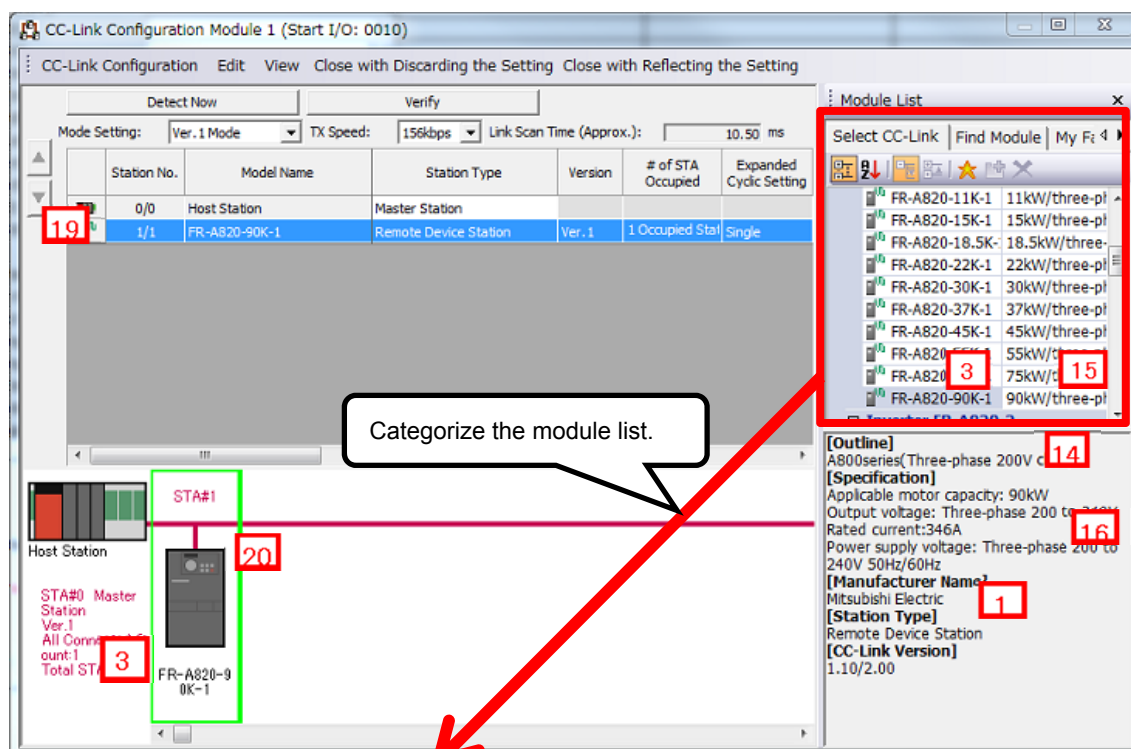
Figure 3.1-1 shows the display example of the DEVICE_INFO part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

DeviceInformation x							
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DATA	REMARK
1	VendorName		COMMON	Vendor name	STRING_U(64)	Mitsubishi Electric	1
2	VendorCode		COMMON	Vendor code	WORD	0x0000	2
3	DeviceModel		COMMON	Model	STRING(48)	FR-A820-90K-1	3
4	DeviceTypeID		COMMON	Device type ID	WORD	0x20	5
5	DeviceTypeDetail		COMMON	Device type detail	STRING_U(256)	Inverter FR-A820-1	6
6	Version		COMMON	Machine version	STRING(16)	1	7
7	VersionDisplayFlag		COMMON	Device version indication flag	BOOL	0	8
8	VersionPolicyType		COMMON	Device version policy	UINT16	0	9
9	Outline		COMMON	General specification	STRING_U(256)	A800series(Three-phase 200V class)	14
10	Feature		COMMON	Feature	STRING_U(256)	90kW/three-phase 200V	15
11	SpecList		COMMON	Specification list	STRING_U(256X)	Applicable motor capacity: 90kW, Output voltage: Three-phase 200 to 240V, Rated current: 346A, Power supply voltage: Three-phase 200 to 240V 50Hz/60Hz	16
12	IconFileName		COMMON	Icon file name	STRING(52)	FR-A800.ico	19
13	GraphicsFileName		COMMON	Graphic file name	STRING(52)	FR-A800.bmp	20

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

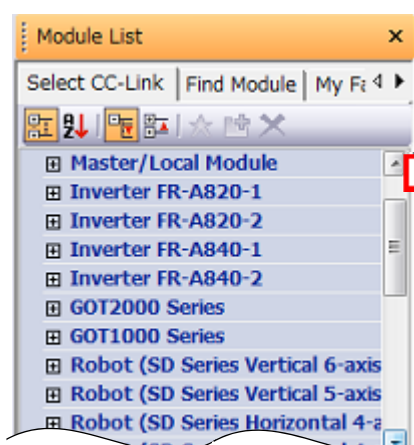
(3) Utility Software - (CC-Link Configuration Diagram)

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below. This is a display example of the utility software (CC-Link configuration diagram).



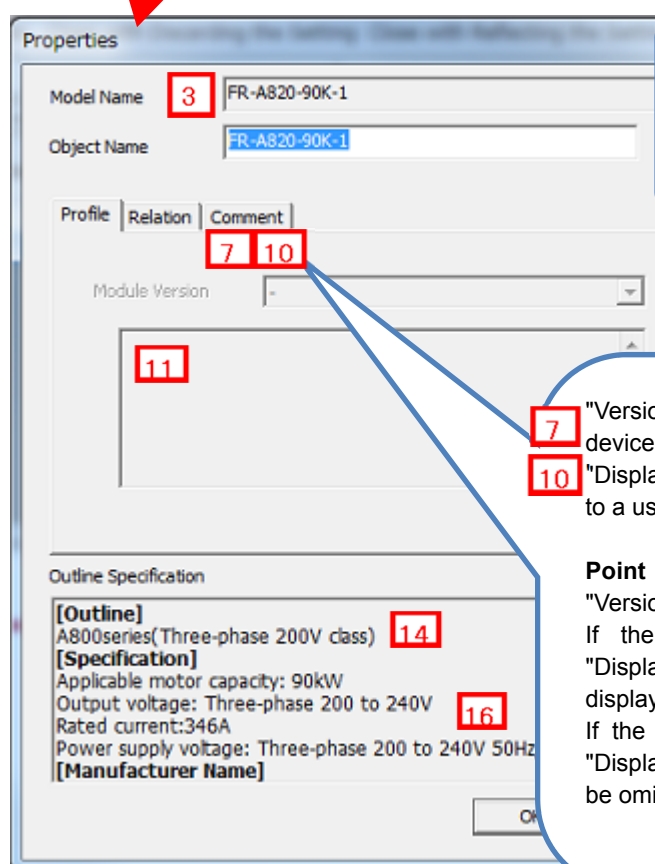
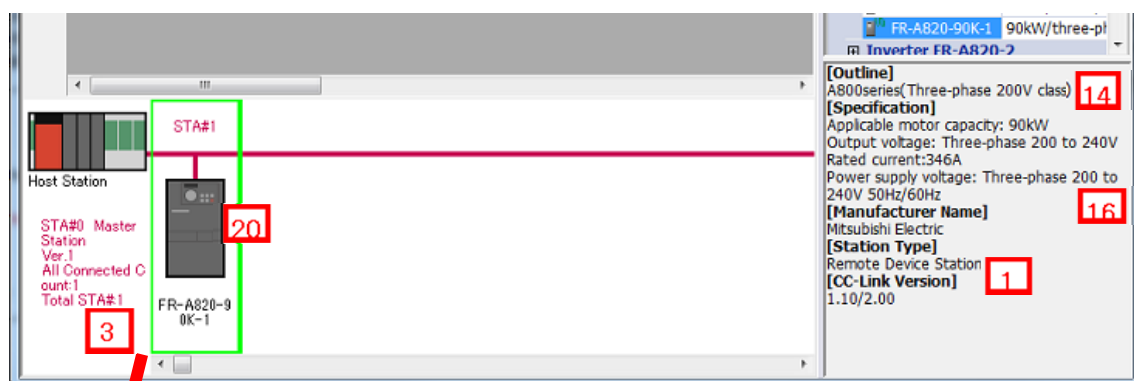
Point

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.
→ 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

"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", "DisplayVersionValue" 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 3.1-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 3.1-2 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. CC-Link Family 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. CC-Link Family 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	PoweSupplyVoltage	Not used for CC-Link connection devices.	Optional
18	ConsumptionCurrent	Not used for CC-Link connection devices.	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.

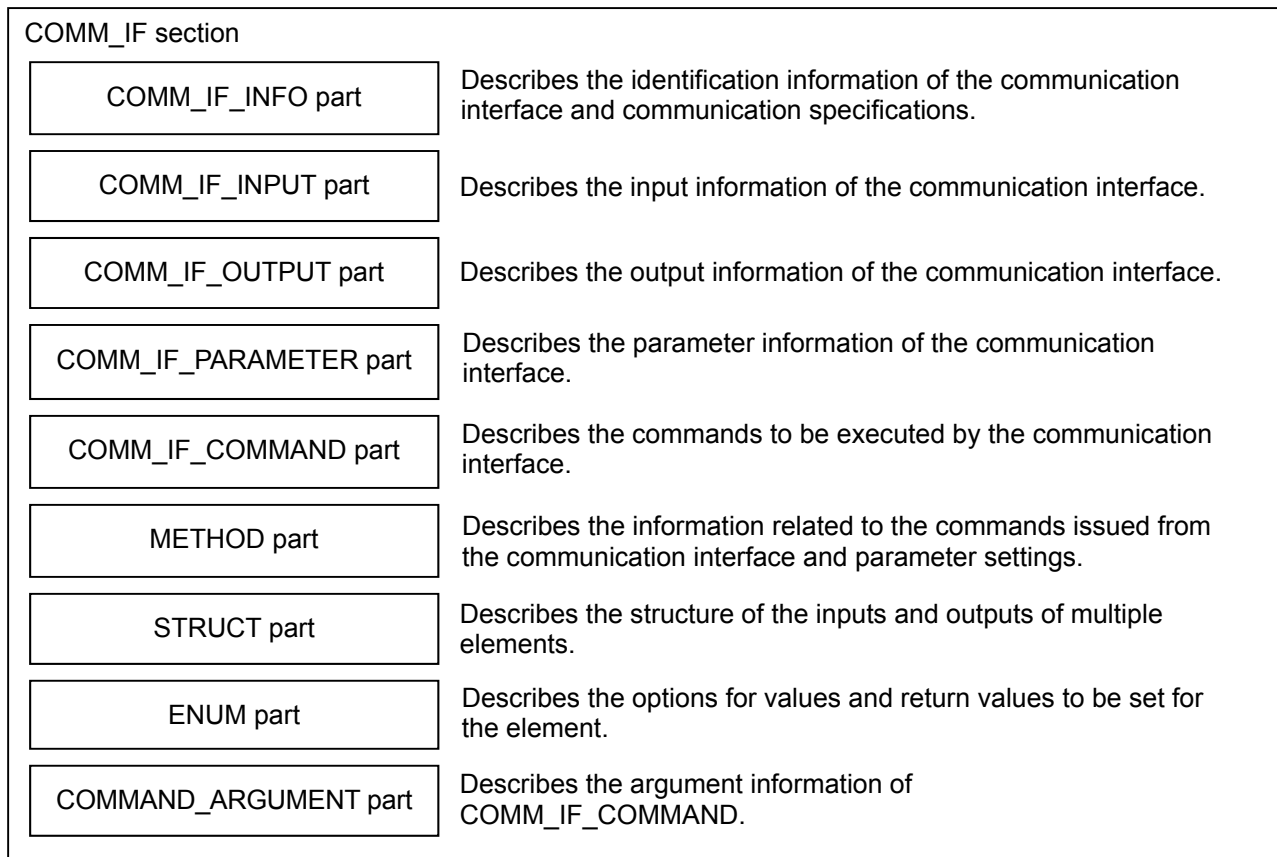
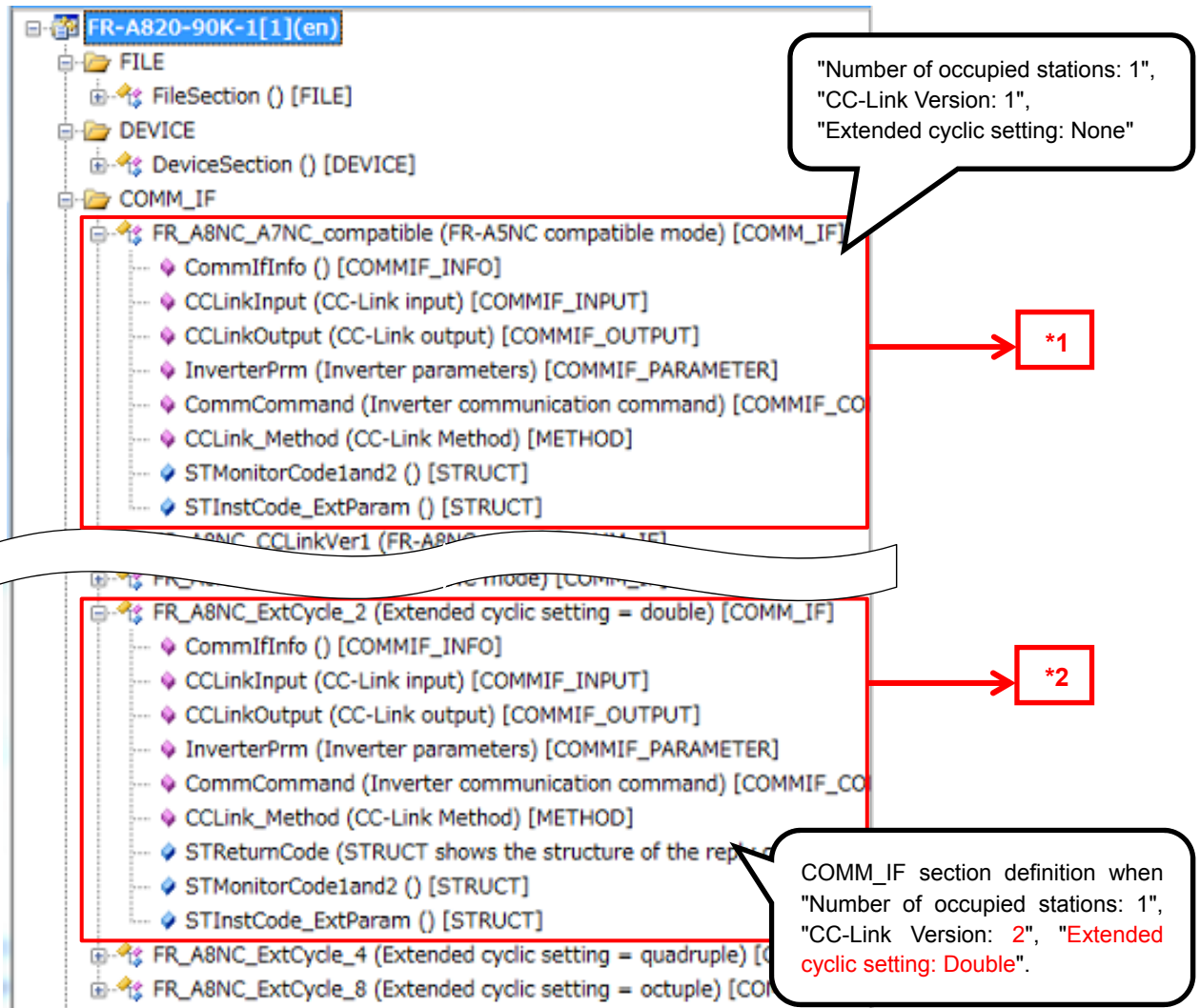


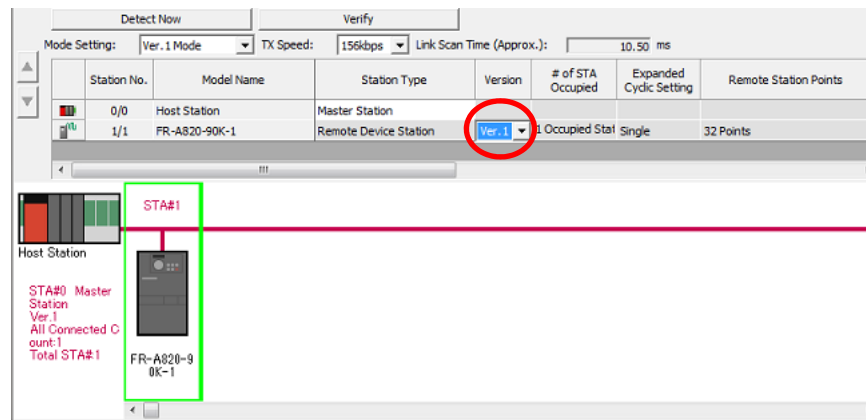
Figure 4-1 Structure of COMM IF Section

4.1 Points of COMM_IF Section Specifications

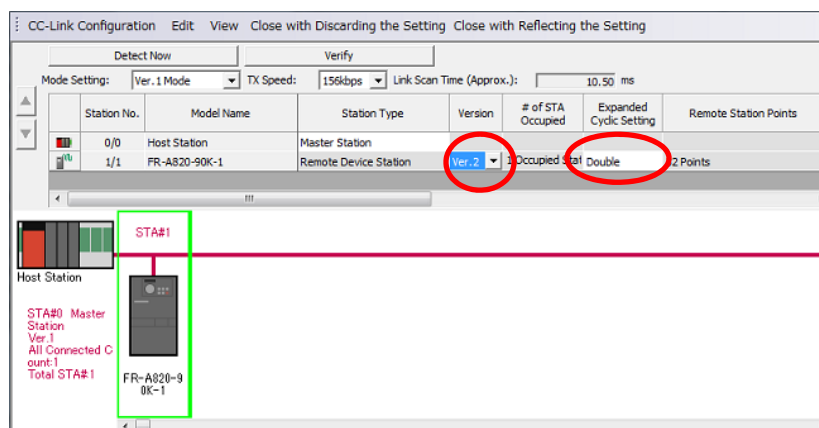
- (1) When Devices Which Can Change the Following Settings Are Used, Define the COMM_IF Section for Each Setting. [Required]
- Number of occupied stations
 - CC-Link Version
 - Extended cyclic setting



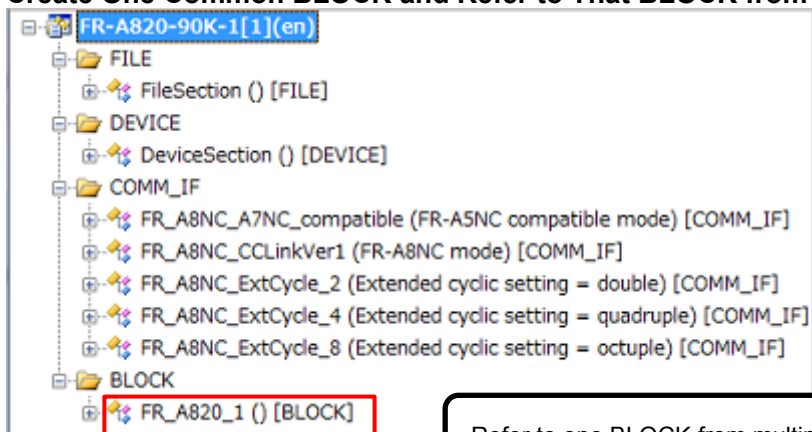
*1



*2



- (2) 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.



Refer to one BLOCK from multiple COMM_IF sections.

- Specifications Image

When using a remote device which can select the number of occupied stations from "1" or "2", create COMM_IF section when the number of occupied stations is "1" and COMM_IF section when the number of occupied stations is "2" as shown in Figure 4.1-1. Then, describe the input, output, parameters, and commands at each setting.

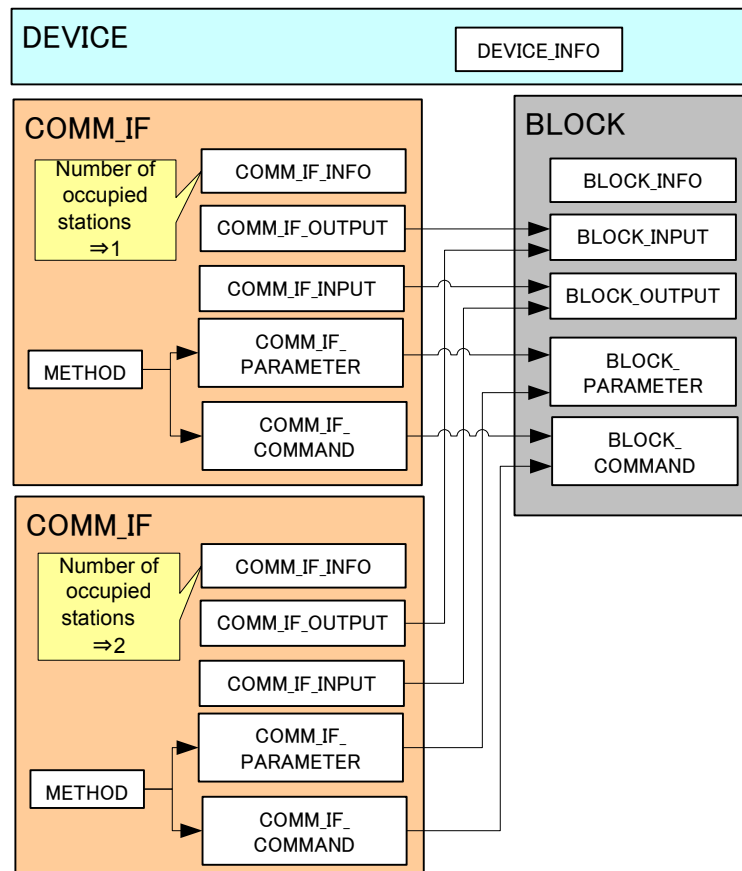


Figure 4.1-1 Example of the Device Model Which Can Change the Number of Occupied Stations

4.2 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) CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.1 COMM_IF_INFO part

Table 4.2-1 lists the elements configuring the COMM_IF_INFO part when the communication interface is CC-Link.

Table 4.2-1 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	StationType	Describes the station type.	Required
	7	StationTypeDetail	Describes the station when the station type is 2: Intelligent device station/Local station.	See the left column.
	8	TotalNumOfIO	Describes the total number of I/O points.	Optional
	9	IOType	Describes the I/O type.	Required
	10	DevModel	Describes the model name.	Required
	11	CcLinkVer	Describes the CC-Link version.	Required
	12	ExtCycle	Describes the extended cyclic setting.	See the left column.
	13	NumOccupiedStations	Describes the number of occupied stations.	Required
	14	ErrReg	Describes the error code storage register.	Optional
	15	MasterFlg	Describes whether the module can be a standby master or not.	Optional

(2) CSP+ Descriptions

Point

- When devices which can change the following settings are used, define the COMM_IF section for each setting.
[Required]
 - Number of occupied stations
 - CC-Link Version
 - Extended cyclic setting
- When the specifications of the device itself do not change from the network settings, create one common BLOCK and refer to that BLOCK from the multiple COMM_IF sections. Figures 4.2-1 to 4.2-4 show the description examples.

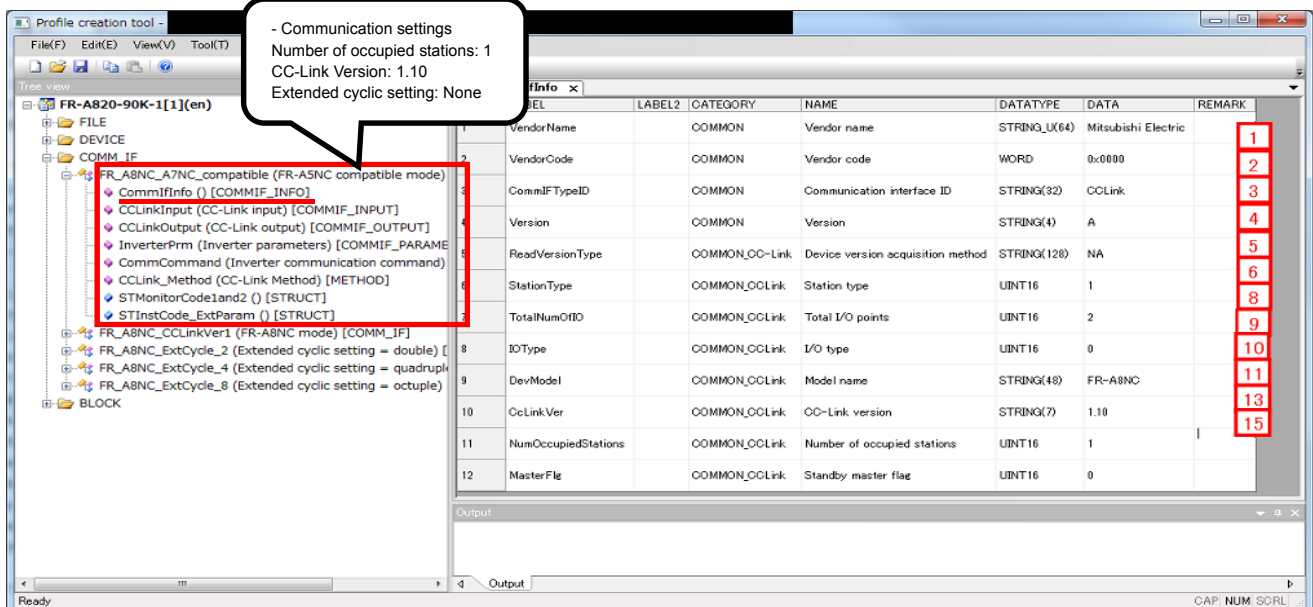


Figure 4.2-1 Definition When CC-Link Version Is Less Than 2.00 along with FR-A5NC Compatible Mode

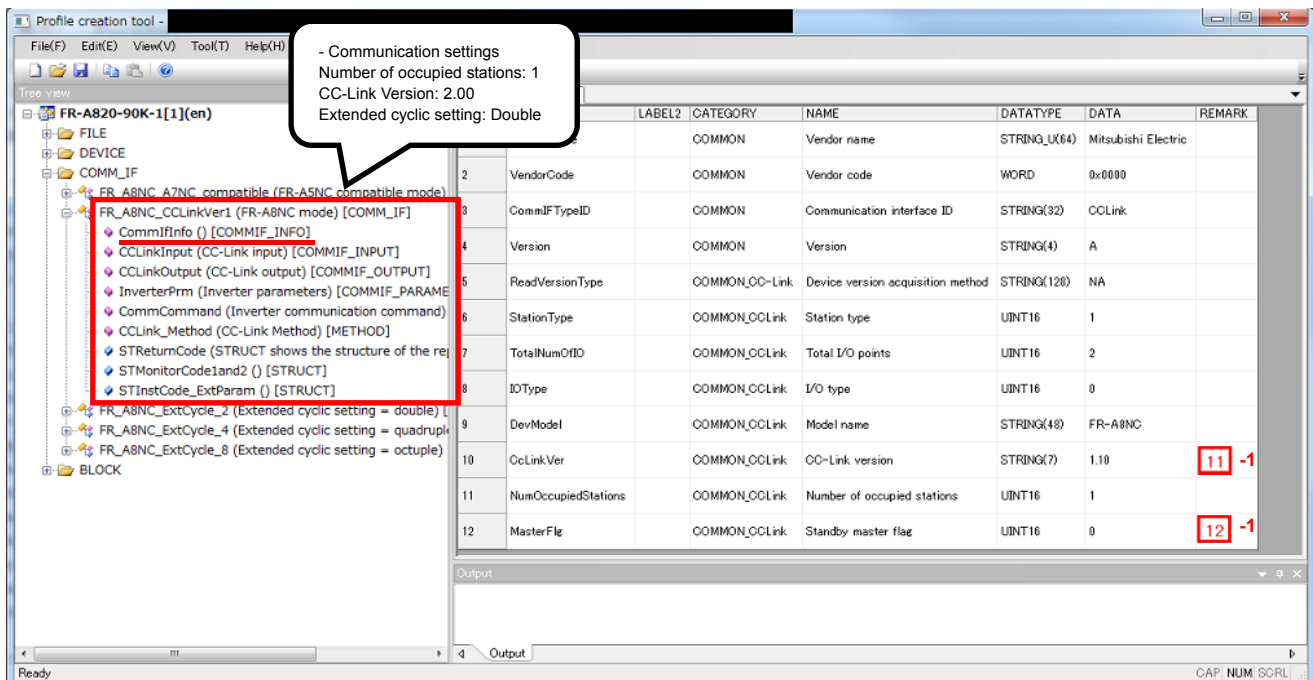


Figure 4.2-2 Definition When CC-Link Version is 2.00 or Greater and the Extended Cyclic Setting is Double

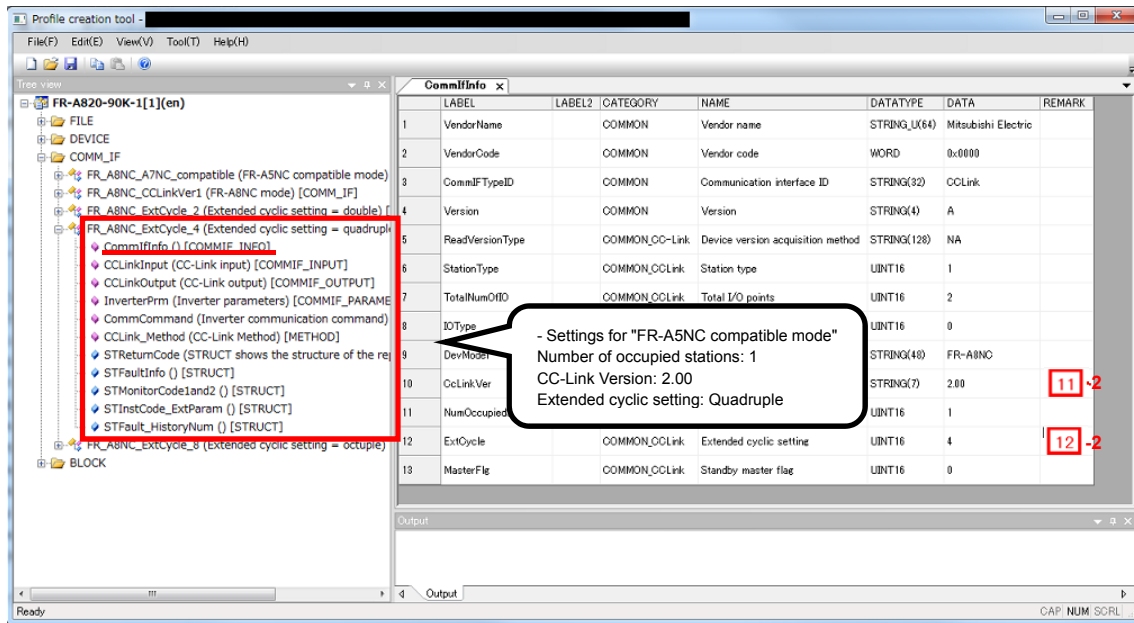


Figure 4.2-3 Definition When CC-Link Version is 2.00 or Greater and the Extended Cyclic Setting is Quadruple

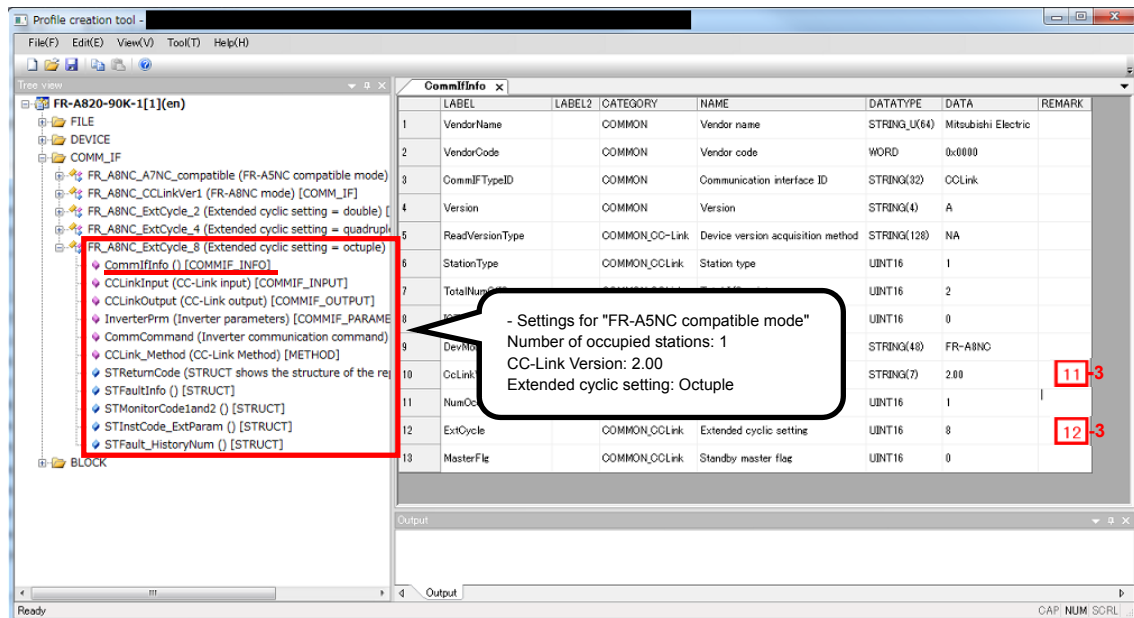


Figure 4.2-4 Definition When CC-Link Version is 2.00 or Greater and the Extended Cyclic Setting is Octuple

(3) Utility Software - (CC-Link Configuration Diagram)

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

This is a display example of the utility software (CC-Link configuration diagram).

Top Screenshot: Main Configuration Window

When CC-Link Version is less than 2.00, the extended cyclic setting is fixed to Single.

Station No.	Model Name	Station Type	Version	# of STA Occupied	Expanded Cyclic Setting	Remote Station Points	Reserved/Invalid S
0/0	Host Station	Master Station					
1/1	FR-A820-90K-1	Remote Device Station	Ver. 1	1 Occupied Sta	Single	32 Points	No Sett
2/2	AJ65S8TB1-8D	Remote I/O Station	Ver. 1	1 Occupied Sta	Single	32 Points	No Sett
3/3	AJ65BT-D75P2-S3	Intelligent Device Station	Ver. 1	4 Occupied Sta	Single	128 Points	No Sett

The displayed station type changes depending on the value of StationType.
 0: Remote I/O station
 1: Remote device station
 2: Intelligent device station or local station

Refer to the StationTypeDetail only if the StationType is "2".
 0: Intelligent device station
 1: Local station

Bottom Screenshot: CC-Link Configuration Module 1 (Start I/O: 0010)

Station No.	Model Name	Station Type	Version	# of STA Occupied	Expanded Cyclic Setting	Remote Station Points	Reserved/Invalid S
0/0	Host Station	Master Station					
1/1	FR-A820-90K-1	Remote Device Station	Ver. 2	1 Occupied Sta	Double	32 Points	No Sett
2/2	AJ65S8TB1-8D	Remote I/O Station	Ver. 1	1 Occupied Sta	Double	32 Points	No Sett
3/3	AJ65BT-D75P2-S3	Intelligent Device Station	Ver. 1	4 Occupied Sta	Quadruple Octuple	128 Points	No Sett

11-1 Ver.2
 11-2
 11-3

12-1 Double
 12-2 Quadruple
 12-3 Octuple

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

Table 4.2-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.2-2 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. Describe a version following the version description method described in the CC-Link Specification - Overview/Protocol (BAP-05026). It shall be described as A to Z, AA to AZ, BA to BK, not 1, 2, 3, ...possessed by the actual device.	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. CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.1.3. Description of COMM_IF_INFO part - (5) Item description of ReadVersionType element	Required
8	TotalNumOfIO	Reference information. Displayed in the creation support tool.	Optional
9	IOType	Reference information. For details on the description of the element, refer to the following. CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.1.3. Description of COMM_IF_INFO part - (9) Item description of IOType element	Required
10	DevModel	Reference information. Displayed in the creation support tool.	Required
14	ErrReg	Reference information. Displayed in the creation support tool.	Optional
15	MasterFlg	Describes whether the module can become a standby master or not when StationType is 2 (intelligent device station/local station) and StationTypeDetail is 1 (local station). When MasterFlg is 0, the module can only be a local station (unchangeable), whereas when it is 1, the module can be a local station or standby master (selectable).	Optional

4.3 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) CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.2 COMM_IF_INPUT part

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

Table 4.3-1 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 4.4. 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.

3) Elements related to the system area

CC-Link defines the specifications related to the system area. When describing a flag of the system area, the following elements (Label name) are used. Table 4.3-2 lists the specifications of the flags of the system area.

Table 4.3-2 Specifications of the Flags of the System Area (COMM_IF INPUT)

No.	Element	Description	Required/ Optional
15	InitialDataProcessReq	Describes the initial data processing request flag.	Optional
16	InitialDataSetComp	Describes the initial data setting completion flag.	Optional
17	ErrorStatus	Describes the error status flag.	Optional
18	RemoteReady	Describes the remote ready flag.	Optional
19	MessageTransReceive	Describes the message transmission receive flag.	Optional
20	MessageHandshakeRX	Describes the input_message handshake flag.	Optional

(2) CSP+ Descriptions

Figures 4.3-1 and 4.3-2 show the display examples of the COMM_IF_INPUT part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

CCLinkInput		1	2	3	4	5	6
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE
1	ForwardRunning		RX	Forward running	BOOL		
2	ReverseRunning		RX	Reverse running	BOOL		
3	Terminal RUN Func		RX	Terminal RUN function	BOOL		
4	Terminal SU Func		RX	Terminal SU function	BOOL		
5	Terminal OL Func		RX	Terminal OL function	BOOL		
6	Terminal IPF Func		RX	Terminal IPF function	BOOL		
7	Terminal FU Func		RX	Terminal FU function	BOOL		
8	Terminal ABC1 Func		RX	Terminal ABC1 function	BOOL		
9	Terminal ABC2 Func		RX	Terminal ABC2 function	BOOL		
10	DO0 Func		RX	DO0 function	BOOL		
11	DO1 Func		RX	DO1 function	BOOL		
12	DO2 Func		RX	DO2 function	BOOL		
13	Monitoring		RX	Monitoring	BOOL		
14	FreqOrTorqCmpRam		RX	Frequency setting command/torque command completion (RAM)	BOOL		
15	FreqOrTorqCmpRamEeprom		RX	Frequency setting command/torque command completion (RAM/EEPROM)	BOOL		
16	InstructExecCmp		RX	Instruction code execution completion	BOOL		
17	ErrorStatus	17	System area	Error status flag	BOOL		
18	RemoteReady	18	System area	Remote station ready	BOOL		
19	FirstMonitorValue				WORD		
20	SecondMonitorValue				WORD		
21	ReturnCode1and2				STRUCT STReturnCode		
22	ReadData				WORD		
23	ThirdMonitorValue				WORD		
24	FourthMonitorValue		RWr	4th monitor value	WORD		
25	FifthMonitorValue		RWr	5th monitor value	WORD		
26	SixthMonitorValue		RWr	6th monitor value	WORD		

Point

When describing the system area, use the predetermined Label name.

Figure 4.3-1 Display Example 1 on the CSP+ Creation Support Tool (COMM_IF_INPUT)

5	6	7	8	9	10	11	12	13	14	
DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT	ACCESS	ASSIGN	UI_ATTRIBUTE	REF	COMMENT	REMARK
BOOL					RF	RX0		FR A720 1.BlockOutput ForwardRunning		
BOOL					RF	RX1		FR A720 1.BlockOutput ReverseRunning		
BYTE					RF	RX2			Pr.190(RU...	
INT4					RF	RXA			Pr.191(SU...	
BOOL					RF	RXE			Pr.193(OL...	
BOOL					RF	RXF			Pr.192(IPF...	
BOOL					RF	RX10			Pr.194(FU...	
BOOL					RF	RX11			Pr.195(AB...	
BOOL					RF	RX12			Pr.196(AB...	
BOOL					RF	RX13				
BOOL					RF	RX14				
BOOL					RF	RX15				
BOOL					RF	RX16				
BOOL					RF	RX17				
BOOL					RF	RX18				
BOOL						RX19				
BOOL						RX1A				
						RX1B				
						RX1C				
						RX1D				
						RX1E				
						RX1F				
						RX1G				
						RX1H				
						RX1I				
						RX1J				
						RX1K				
						RX1L				
						RX1M				
						RX1N				
						RX1O				
						RX1P				
						RX1Q				
						RX1R				
						RX1S				
						RX1T				
						RX1U				
						RX1V				
						RX1W				
						RX1X				
						RX1Y				
						RX1Z				
						RX1AA				
						RX1AB				
						RX1AC				
						RX1AD				
						RX1AE				
						RX1AF				
						RX1AG				
						RX1AH				
						RX1AI				
						RX1AJ				
						RX1AK				
						RX1AL				
						RX1AM				
						RX1AN				
						RX1AO				
						RX1AP				
						RX1AQ				
						RX1AR				
						RX1AS				
						RX1AT				
						RX1AU				
						RX1AV				
						RX1AW				
						RX1AX				
						RX1AY				
						RX1AZ				
						RX1BAA				
						RX1BAB				
						RX1BAC				
						RX1BAD				
						RX1BAE				
						RX1BAF				
						RX1BAG				
						RX1BAH				
						RX1BAI				
						RX1BAJ				
						RX1BAK				
						RX1BAL				
						RX1BAM				
						RX1BAN				
						RX1BAO				
						RX1BAP				
						RX1BAQ				
						RX1BAR				
						RX1BAS				
						RX1BAT				
						RX1BAU				
						RX1BAV				
						RX1BAW				
						RX1BAX				
						RX1BAY				
						RX1BAZ				
						RX1BAAA				
						RX1BABA				
						RX1BABAB				
						RX1BABAC				
						RX1BABAD				
						RX1BABAE				
						RX1BABAF				
						RX1BABAG				
						RX1BABAH				
						RX1BABAI				
						RX1BABAJ				
						RX1BABAK				
						RX1BABAL				
						RX1BABAM				
						RX1BABAN				
						RX1BBAAO				
						RX1BBAAP				
						RX1BBBAQ				
						RX1BBBBAR				
						RX1BBBBAS				
						RX1BBBBAT				
						RX1BBBBAU				
						RX1BBBBAV				
						RX1BBBBAW				
						RX1BBBBAX				
						RX1BBBBAY				
						RX1BBBBAZ				
						RX1BBBAAA				
						RX1BBBABA				
						RX1BBBABAB				
						RX1BBBABAC				
						RX1BBBABAD				
						RX1BBBABAE				
						RX1BBBABAF				
						RX1BBBABAG				
						RX1BBBABAH				
						RX1BBBABAI				
						RX1BBBABAJ				
						RX1BBBABAK				
						RX1BBBABAL				
						RX1BBBABAM				
						RX1BBBABAN				
						RX1BBBBAO				
						RX1BBBBAW				
						RX1BBBBAZ				
						RX1BBBAAA				
						RX1BBBABA				
						RX1BBBABAB				
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						RX1BBBABAD				
						RX1BBBABAE				
						RX1BBBABAF				
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						RX1BBBABAH				
						RX1BBBABAI				
						RX1BBBABAJ				
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						RX1BBBABAM				
						RX1BBBABAN				
						RX1BBBBAO				
						RX1BBBBAW				
						RX1BBBBAZ				
						RX1BBBAAA				
						RX1BBBABA				
						RX1BBBABAB				
						RX1BBBABAC				
						RX1BBBABAD				
						RX1BBBABAE				
						RX1BBBABAF				
						RX1BBBABAG				
						RX1BBBABAH				
						RX1BBBABAI				
						RX1BBBABAJ				
						RX1BBBABAK				
						RX1BBBABAL				
						RX1BBBABAM				
						RX1BBBABAN				
						RX1BBBBAO				
						RX1BBBBAW				
						RX1BBBBAZ				
						RX1BBBAAA				
						RX1BBBABA				
						RX1BBBABAB				
						RX1BBBABAC				
						RX1BBBABAD				
						RX1BBBABAE				
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						RX1BBBABAG				
						RX1BBBABAH				
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						RX1BBBABAK				
						RX1BBBABAL				
						RX1BBBABAM				
						RX1BBBABAN				
						RX1BBBBAO				
						RX1BBBBAW				
						RX1BBBBAZ				
						RX1BBBAAA				
						RX1BBBABA				
						RX1BBBABAB				
						RX1BBBABAC				
						RX1BBBABAD				
						RX1BBBABAE				
						RX1BBBABAF				
						RX1BBBABAG				
						RX1BBBABAH				
						RX1BBBABAI				
						RX1BBBABAJ				
						RX1BBBABAK				
						RX1BBBABAL				
						RX1BBBABAM				
						RX1BBBABAN				
						RX1BBBBAO				
						RX1BBBBAW				
						RX1BBBBAZ				
						RX1BBBAAA				
						RX1BBBABA				
						RX1BBBABAB				
						RX1BBBABAC				
						RX1BBBABAD				
						RX1BBBABAE				
						RX1BBBABAF				
						RX1BBBABAG				
						RX1BBBABAH				
						RX1BBBABAI				
						RX1BBBABAJ				
						RX1BBBABAK				
						RX1BBBABAL				
						RX1BBBABAM				
						RX1BBBABAN				
						RX1BBBBAO				

(3) Utility Software - (Device Assignment Screen)

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

Point
Device assignment information can be output to CSV files and imported as a global label.

Point
It is displayed in the utility software for each group described in the CATEGORY item.

Remote output (RY) information is described in the COMM_IF_OUTPUT part.

Point
Because the DATATYPE of the "terminal RUN function" is BYTE type, an 8-bit address is required.

Remote register (RWw) information is described in the COMM_IF_OUTPUT part.

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

Table 4.3-3 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.3-3 Elements Not Being Used on the Utility Software Screen (COMM_IF INPUT)

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
6	DEFAULT	Used to set the default.	Optional
7	RANGE	Used to check the setting range of the item. An error is output when the value is out of range.	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
9	ENG_UNIT	Displays the engineering value described here as an explanation of the item. (ENG_UNIT is not used for the display in the COMM_IF_INPUT and COMM_IF_OUTPUT parts.)	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. CC-Link Family System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Optional
12	UI_ATTRIBUTE	For future support	Optional
13	REF	Used to identify the reference relationship.	Optional
14	COMMENT	Reference information. Displayed in the creation support tool.	Optional

Point

When the "Label name" is output as a global label, the one described in LABEL2 is output.
 When LABEL2 is omitted, the one described in LABEL is output as the "Label name".

CCLinkInput x				
	LABEL	LABEL2	CATEGORY	NAME
1	ForwardRunning	St1 ForwardRunning	RX	Forward running
2	ReverseRunning	St1 ReverseRunning	RX	Reverse running
3	Terminal RUN Func	St1 Terminal RUN Func	RX	Terminal RUN function
4	Terminal SU Func	St1 Terminal SU Func	RX	Terminal SU function
5	Terminal OL Func	St1 Terminal OL Func	RX	Terminal OL function
6	Terminal IPF Func	St1 Terminal IPF Func	RX	Terminal IPF function
7	Terminal FU Func	St1 Terminal FU Func	RX	Terminal FU function
8	Terminal ABC1 Func	St1 Terminal ABC1 Func	RX	Terminal ABC1 function
9	Terminal ABC2 Func	St1 Terminal ABC2 Func	RX	Terminal ABC2 function
10	DO0 Func	St1 DO0 Func	RX	DO0 function
11	DO1 Func	St1 DO1 Func	RX	DO1 function
12	DO2 Func	St1 DO2 Func	RX	DO2 function
13	Monitoring	St1 Monitoring	RX	Monitoring
14	FreqOrTorqCmpRam	St1 FreqOrTorqCmpRam	RX	Frequency setting command/torque command completion (RAM)

Global_Label.csv - Microsoft Excel						
MS Pゴシック 11						
	A	B	C	D	E	F
1	Project Name Unset					
2	Class	Label Name	Data Type	Constant	Device	Comment
3	VAR_GLOBAL	St1_ForwardRunning	BOOL		X0	Forward running
4	VAR_GLOBAL	St1_ReverseRunning	BOOL		X1	Reverse running
5	VAR_GLOBAL	St1_Terminal_RUN_Func	BOOL		X2	Terminal RUN function
6	VAR_GLOBAL	St1_Terminal_SU_Func	BOOL		X3	Terminal SU function
7	VAR_GLOBAL	St1_Terminal_OL_Func	BOOL		X4	Terminal OL function
8	VAR_GLOBAL	St1_Terminal_IPF_Func	BOOL		X5	Terminal IPF function
9	VAR_GLOBAL	St1_Terminal_FU_Func	BOOL		X6	Terminal FU function
10	VAR_GLOBAL	St1_Terminal_ABC1_Func	BOOL		X7	Terminal ABC1 function
11	VAR_GLOBAL	St1_Terminal_ABC2_Func	BOOL		X8	Terminal ABC2 function
12	VAR_GLOBAL	St1_DO0_Func	BOOL		X9	DO0 function
13	VAR_GLOBAL	St1_DO1_Func	BOOL		X0A	DO1 function
14	VAR_GLOBAL	St1_DO2_Func	BOOL		X0B	DO2 function
15	VAR_GLOBAL	St1_Monitoring	BOOL		X0C	Monitoring
16	VAR_GLOBAL	St1_FreqOrTorqCmpRam	BOOL		X0D	Frequency setting command/torque command completion (RAM)

4.4 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) CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.3 COMM_IF_OUTPUT part

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

Table 4.4-1 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 4.4-2 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.

3) Elements related to the system area

CC-Link defines the specifications related to the system area. When describing a flag of the system area, the following elements (Label name) are used. Table 4.4-3 lists the specifications of the flags of the system area.

Table 4.4-3 Specifications of the Flags of the System Area (COMM_IF OUTPUT)

No.	Element	Description	Required/ Optional
15	InitialDataProcessComp	Describes the initial data processing completion flag.	Optional
16	InitialDataSetReq	Describes the initial data setting request flag.	Optional
17	ErrorResetReq	Describes the error reset request flag.	Optional
18	MessageTransReq	Describes the message transmission request flag.	Optional
19	MessageHandshakeRY	Describes the message handshake flag.	Optional

(2) CSP+ Descriptions

The following figure shows the display example of the COMM_IF_OUTPUT part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

The COMM_IF_OUTPUT part describes the information related to the output information of the communication interface and refers to the structure. The following example includes the STRUCT part.

CCLinkOutput		1	2	3	4	5	
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT		
1	ForwardCmd	RY	Forward rotation command	BOOL			
2	ReverseCmd	RY	Reverse rotation command	BOOL			
3	Terminal RH Func	RY	Terminal RH function	BOOL			
4	Terminal RM Func	RY	Terminal RM function	BOOL			
5	Terminal RL Func	RY	Terminal RL function	BOOL			
6	Terminal JOG Func	RY	Terminal JOG function	BOOL			
7	Terminal RT Func	RY	Terminal RT function	BOOL			
8	Terminal AU Func	RY	Terminal AU function	BOOL			
9	Terminal CS Func	RY	Terminal CS function	BOOL			
10	OutputStop	RY	Output stop	BOOL			
11	Terminal STOP Func	RY	Terminal STOP function	BOOL			
12	Terminal RES Func	RY	Terminal RES function	BOOL			
13	MonitorCmd	RY	Monitor command	BOOL			
14	FreqOrTorqCmdRam	RY	Frequency setting command/torque command (RAM)	BOOL			
15	FreqOrTorqCmdRam	RY	Frequency setting command/torque command (RAM/EEPROM)	BOOL			
16	InstructExecReq	RY	Instruction code execution request	BOOL			
17	ErrorResetReq	System area	Error reset request flag	BOOL			
18	MonitorCode1and2	RWw	Monitor code 1 and monitor code 2	STRUCT STMonitorCode1and2			
19	SetFreqOrTorq	RWw	Set frequency/torque command	UINT16			
20	InstructCode ExtParam	RWw	Instruction code and link parameter extended setting	STRUCT STInstructCode ExtParam			
21	WriteData	RWw	Write data	WORD			

Refer to the structure.

Refer to the structure.

6	7	8	9	10	11	12	13	14
DEFAULT	RANGE	MIN_INC	ENG_UNIT	ACCESS	ASSIGN	UL_ATTRIBUTE	REF	COMMENT
				RF	RY0		FR A820 1BlockInput...	0: Stop command, 1: F...
				RF	RY1		FR A820 1BlockInput...	0: Stop command, 1: R...
				RF	RY2			Input signal can be ch...
				RF	RY3			Input signal can be ch...
				RF	RY4			Input signal can be ch...
				RF	RY5			Input signal can be ch...
				RF	RY6			Input signal can be ch...
				RF	RY7			Input signal can be ch...
				RF	RY8			Input signal can be ch...
				RF	RY9		FR A820 1BlockInput...	1: Output stop
				RF	RYA			Input signal can be ch...
				RF	RYB			Input signal can be ch...
				RF	RYC			When 1 is set, the mo...
				RF	RYD			When "1" is set, the s...
				RF	RYE			When "1" is set in the ...
				RF	RYF			1: Instruction executio...
				RF	RY1A		FR A820 1BlockInput...	When "1" is set only ...
		NA	1	RF	RWw0			[0.7] Monitor code 1 [...]
		NA	1	RF	RWw1			[0.7] Instruction code ...
				RF	RWw2			
				RF	RWw3			

*4

STMonitor													1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT	OFFSET	REF	COMMENT	REMARK												
1	MonitorCode1		Monitor code 1	BYTE					0.0															
2	MonitorCode2		Monitor code 2	BYTE					0.8															

*5

STInstCode_ExtParam x													
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT	OFFSET	REF	COMMENT	REMARK
1	InstructCode			Instruction code	BYTE					0.0			
2	ExtParamSet			Link parameter extended setting	BYTE					0.8			

(3) Utility Software - (Device Assignment Screen)

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

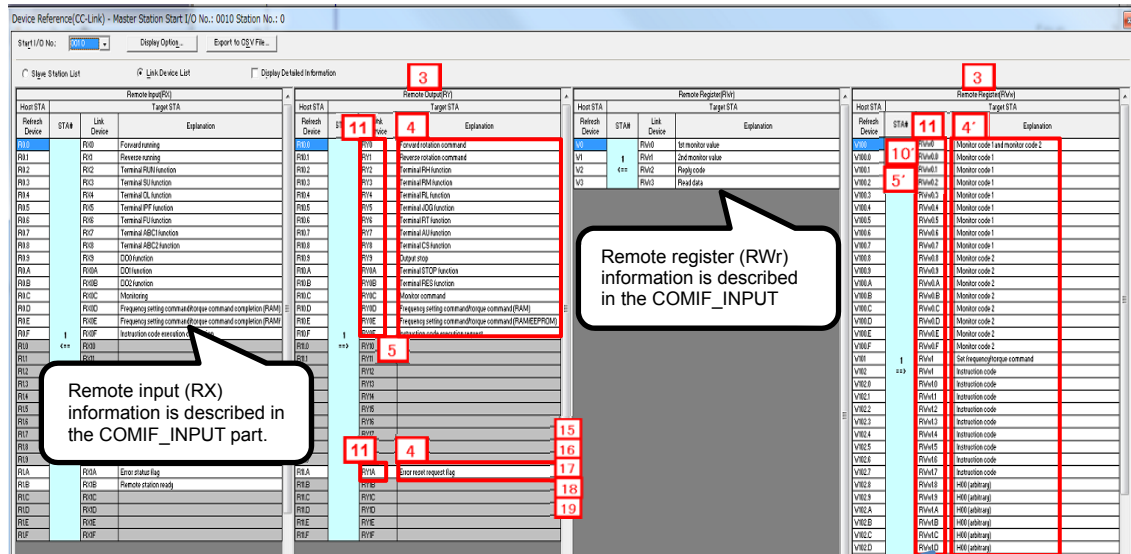
**(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification**

Table 4.4-4 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.4-4 Elements Not Being Used on the Utility Software Screen (COMM_IF_OUTPUT, STRUCT)

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
6 6'	DEFAULT	Used to set the default.	Optional
7 7'	RANGE	Used to check the setting range of the item. An error is output when the value is out of range.	Optional
8 8'	MIN_INC	Numerical values in which the user input value is multiplied by the value described here are used during internal processing.	Optional
9 9'	ENG_UNIT	Displays the engineering value described here as an explanation of the item. (ENG_UNIT is not used for the display in the COMM_IF_INPUT and COMM_IF_OUTPUT parts.)	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. CC-Link Family System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Optional
12	UI_ATTRIBUTE	For future support	Optional
13 11'	REF	Used to identify the reference relationship.	Optional
14 12'	COMMENT	Reference information. Displayed in the creation support tool.	Optional

Point

When the same item is described in the BlockInput part which is the reference of the COMM_IF_Output part, the value of the item from the reference source (item described in the CCLinkOutput part) is displayed. The Name attribute is not an item required to be described. To refer to the value of the Name item in the BlockInput part, delete the value of the Name item in the CCLinkOutput part and check the display on the utility software again.

LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN	MAX	ENG_UNIT	ACCESS	ASSIGN	UQ_ATTRIBUTE	REF	COMMENT	REMARK
1	ForwardRunning	RK		BOOL						RF	RY0		FR A020 1BlockOutputForwardRunning		
2	ReverseRunning	RK		BOOL						RF	RY1		FR A020 1BlockOutputReverseRunning		
3	Terminal RUN Func	RK	Terminal RUN function	BOOL						RF	RY2			Input signal can be changed by Pr.198 (RUN terminal function selection).	
4	Terminal SU Func	RK	Terminal SU function	BOOL						RF	RY3			Input signal can be changed by Pr.191 (SU terminal function selection).	
5	Terminal OL Func	RK	Terminal OL function	BOOL						RF	RY4			Input signal can be changed by Pr.192 (OL terminal function selection).	
6	Terminal PF Func	RK	Terminal PF function	BOOL						RF	RY5			Input signal can be changed by Pr.194 (PF terminal function selection).	
7	Terminal FU Func	RK	Terminal FU function	BOOL						RF	RY6			Input signal can be changed by Pr.195 (FU terminal function selection).	
8	Terminal ABC1 Func	RK	Terminal ABC1 function	BOOL						RF	RY7			Input signal can be changed by Pr.196 (ABC1 terminal function selection).	
9	Terminal ABC2 Func	RK	Terminal ABC2 function	BOOL						RF	RY8			Input signal can be changed by Pr.197 (ABC2 terminal function selection).	
10	DO1 Func	RK	DO1 function	BOOL						RF	RY9				
11	DO2 Func	RK	DO2 function	BOOL						RF	RY10				
12	DO3 Func	RK	DO3 function	BOOL						RF	RY11				
13	Monitoring	RK	Monitoring	BOOL						RF	RY12				
14	Freq0 TorqueRun	RK	Frequency setting command/torque command completion (RAM)	BOOL						RF	RY13				
15	Freq0 TorqueRunExcpn	RK	Frequency setting command/torque command completion (RAM/EEPROM)	BOOL						RF	RY14				
16	InstructionComp	RK	Instruction code execution completion	BOOL						RF	RY15				
17	ErrorStatus	System area	Error status flag	BOOL						RF	RY16				
18	RemoteReady	System area	Remote status ready	BOOL						RF	RY17				
19	FirstMonitorValue	RW	1st monitor value	WORD						RF	RY18				
20	SecondMonitorValue	RW	2nd monitor value	WORD						RF	RY19				
21	ReturnCodeLand1	RW	Reply code 1 and reply code 2	STRUCT	STReturnCode					RF	RY20				
22	ReadData	RW	Read data	WORD						RF	RY21				

1) Delete NAME
(COMM_IF section).

LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN	MAX	ENG_UNIT	ACCESS	UQ_ATTRIBUTE	COMMENT
1	ForwardCmd		Forward rotation command	BOOL		0						0: Stop command, 1: Forward rotation command. Setting
2	ReverseCmd		Reverse rotation command	BOOL								0: Stop command, 1: Reverse rotation command. Setting
3	OutputStop		Output stop	BOOL								1: Output stop
4	ErrReset		Error reset request flag	BOOL								When "1" is set only at an inverter fault, the inverter is
5	PIDSetPoint	PID control	PID set point	UINT16								
6	PIDMeasuredValue	PID control	PID measured value	UINT16		[0,10000]	0.01	%				
7	PIDDeviation	PID control	PID deviation	INT16		[-10000,10000]	0.01	%				

2) Change the value
of the item in the
reference.

Device Reference(CC-Link) - Master Station Start I/O No.: 0010 Station No.: 0

Start I/O No.: 0010				Display Option...		Export to CSV File...	
<input type="radio"/> Slave Station List				<input checked="" type="radio"/> Link Device List			
<input type="checkbox"/> Display Detailed Information							
Remote Input(RX)				Remote Output(RY)			
Host STA	STA#	Link Device	Explanation	Host STA	STA#	Link Device	Explanation
R0.0		RY0	Forward running	RY10		RY10	
R0.1		RY1	Reverse running	RY11		RY11	
R0.2		RY2	Terminal RUN function	RY12		RY12	
R0.3		RY3	Terminal SU function	RY13		RY13	
R0.4		RY4	Terminal OL function	RY14		RY14	
R0.5		RY5	Terminal PF function	RY15		RY15	
R0.6		RY6	Terminal FU function	RY16		RY16	
R0.7		RY7	Terminal ABC1 function	RY17		RY17	
R0.8		RY8	Terminal ABC2 function	RY18		RY18	
R0.9		RY9	DO0 function	RY19		RY19	
R0.A		RY10	DO1 function	RY20		RY20	
				RY21		RY21	
				RY22		RY22	
				RY23		RY23	
				RY24		RY24	
				RY25		RY25	
				RY26		RY26	
				RY27		RY27	

3) The NAME described
in the BlockInput part
is referred to.

4.5 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) CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.4 COMM_IF_PARAMETER part

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

Table 4.5-1 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 METHOD 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 METHOD part.

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

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

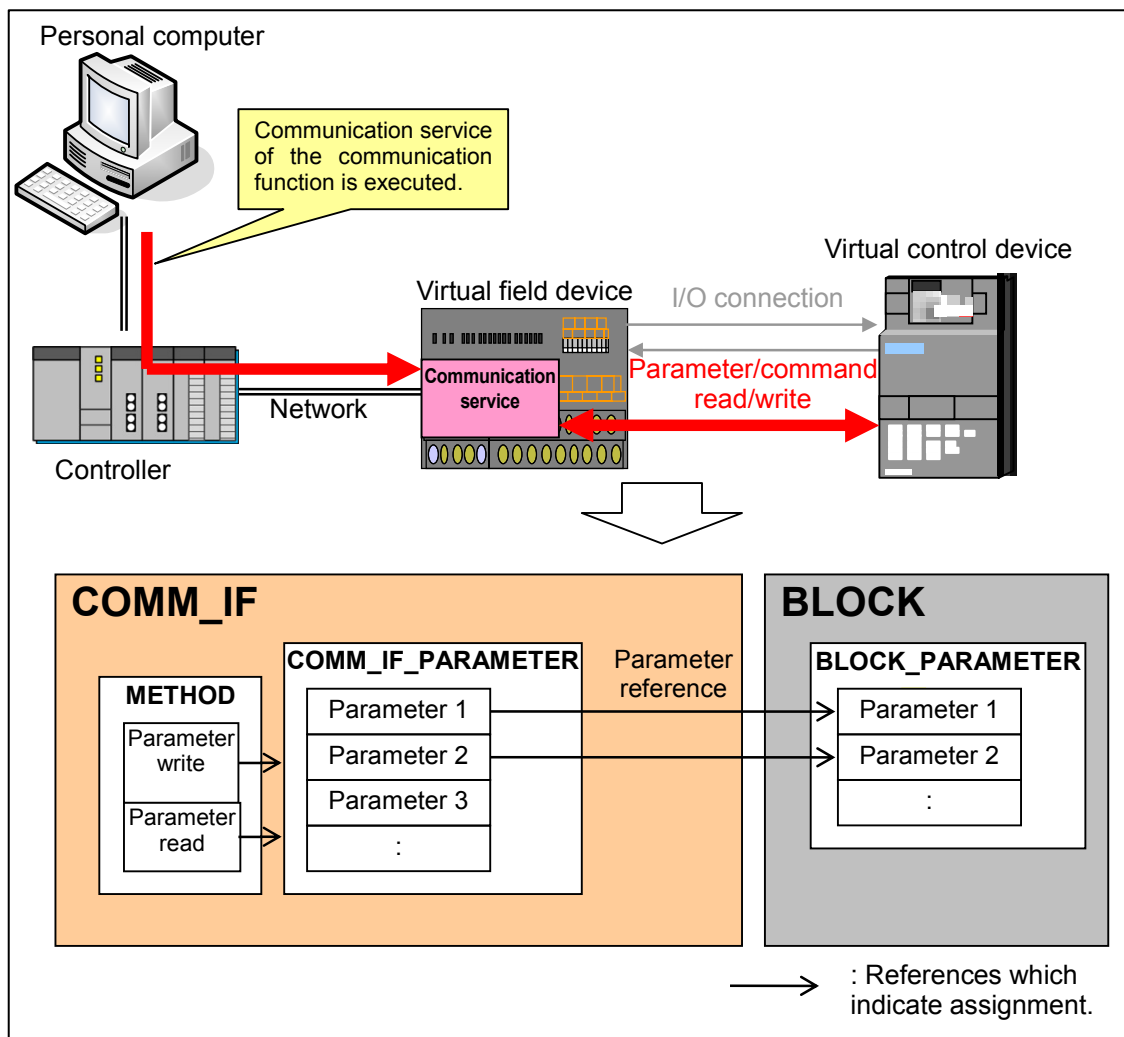


Figure 4.5-1 Reference Specifications Example of the COMM_IF_PARAMETER Part

(2) CSP+ Descriptions

Parameters are referred to in the following order.

METHOD part (CCLinkMethod) → COMM_IF_PARAMETER part (InverterPrm) →
BLOCK_PARAMETER part (BlockParameter)

The following figure shows the display example of the COMM_IF_PARAMETER part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

CCLink_Method x					
	LABEL	LABEL2	CATEGORY	NAME	TARGET
1	MtReadPrm			Parameter read	InverterPrm.*
2	MtWritePrm			Parameter write	InverterPrm.*
3	MtAllPrmClear			Parameter clear	CommCommand.CmdAllPrmClear
4	MtGetFaultsHistory1 2		Fault data obtain method	Obtain the most and the second most recent faults.	CommCommand.CmdGetFaultsHistory1 2
5	MtGetFaultsHistory3 4		Fault data obtain method	Obtain the third and the fourth most recent faults.	CommCommand.CmdGetFaultsHistory3 4
6	MtGetFaultsHistory5 6		Fault data obtain method	Obtain the fifth and the sixth most recent faults.	CommCommand.CmdGetFaultsHistory5 6
7	MtGetFaultsHistory7 8		Fault data obtain method	Obtain the seventh and eighth most recent faults.	CommCommand.CmdGetFaultsHistory7 8
8	MtGetFaultRecord1		Fault record obtain method	Obtain the most recent fault.	CommCommand.CmdGetFaultRecord
9	MtGetFaultRecord2		Fault record obtain method	Obtain the second most recent fault.	CommCommand.CmdGetFaultRecord
10	MtGetFaultRecord3		Fault record obtain method	Obtain the third most recent fault.	CommCommand.CmdGetFaultRecord

	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT	ACCESS	ASSIGN
1	Pr0			[Pr.0] Torque boost				NA	1		<0x00><0x80><0x01>
2	Pr1			[Pr.1] Maximum frequency				NA	1		<0x01><0x81><0x02>
3	Pr2			[Pr.2] Minimum frequency				NA	1		<0x02><0x82><0x03>
4	Pr3			[Pr.3] Base frequency				NA	1		<0x03><0x83><0x04>
5	Pr4			[Pr.4] Multi-speed setting (high speed)				NA	1		<0x04><0x84><0x05>
6	Pr5			[Pr.5] Multi-speed setting (middle speed)				NA	1		<0x05><0x85><0x06>
7	Pr6			[Pr.6] Multi-speed setting (low speed)				NA	1		<0x06><0x86><0x07>
8	Pr7			[Pr.7] Acceleration time				NA	1		<0x07><0x87><0x08>
9	Pr8			[Pr.8] Deceleration time				NA	1		<0x08><0x88><0x09>
10	Pr9			[Pr.9] Electronic thermal O/L relay				NA	1		<0x09><0x89><0x0A>
11	Pr10			[Pr.10] DC injection brake operation frequency				NA	1		<0x0A><0x8A><0x0B>
12	Pr11			[Pr.11] DC injection brake operation time				NA	1		<0x0B><0x8B><0x0C>
13	Pr12			[Pr.12] DC injection brake operation voltage				NA	1		<0x0C><0x8C><0x0D>
14	Pr13			[Pr.13] Starting frequency				NA	1		<0x0D><0x8D><0x0E>
15	Pr14			[Pr.14] Load pattern selection				NA	1		<0x0E><0x8E><0x0F>
16	Pr15			[Pr.15] Jog frequency				NA	1		<0x0F><0x8F><0x10>
17	Pr16			[Pr.16] Jog acceleration/deceleration time				NA	1		<0x10><0x90><0x11>
18	Pr17			[Pr.17] MPS input selection				NA	1		<0x11><0x91><0x12>
19	Pr18			[Pr.18] High speed maximum frequency				NA	1		<0x12><0x92><0x13>
20	Pr19			[Pr.19] Base frequency voltage				NA	1		<0x13><0x93><0x14>
21	Pr20			[Pr.20] Acceleration/deceleration reference frequency				NA	1		<0x14><0x94><0x15>
22	Pr21			[Pr.21] Acceleration/deceleration time increments				NA	1		<0x15><0x95><0x16>
23	Pr22			[Pr.22] Stall prevention operation level (torque limit level)				NA	1		<0x16><0x96><0x17>
24	Pr23			[Pr.23] Stall prevention operation level compensation factor at double speed				NA	1		<0x17><0x97><0x18>
25	Pr24			[Pr.24] Multi-speed setting (4 speed)				NA	1		<0x18><0x98><0x19>
26	Pr25			[Pr.25] Multi-speed setting (5 speed)				NA	1		<0x19><0x99><0x1A>
27	Pr26			[Pr.26] Multi-speed setting (6 speed)				NA	1		<0x1A><0x9A><0x1B>
28	Pr27			[Pr.27] Multi-speed setting (7 speed)				NA	1		<0x1B><0x9B><0x1C>
29	Pr28			[Pr.28] Multi-speed input compensation selection				NA	1		<0x1C><0x9C><0x1D>
30	Pr29			[Pr.29] Acceleration/deceleration pattern selection				NA	1		<0x1D><0x9D><0x1E>

METHOD part

Reference

"Part name.*" indicates that all Labels of the reference part are referred to.

COMM_IF_PARAMETER part (1/2)

If the minimum increment cannot be indicated for the specified communication method, describe NA as the minimum increment in the element of the COMM_IF section.

ACCESS	ASSIGN	UI_ATTRIBUTE	WRITE_ORDER	REF	COMMENT	REMARK
	<0x00><0x80><0x0>			FR A820 1BlockParameter Pr0		
	<0x01><0x81><0x0>			FR A820 1BlockParameter Pr1		
	<0x02><0x82><0x0>			FR A820 1BlockParameter Pr2		
	<0x03><0x83><0x0>			FR A820 1BlockParameter Pr3		
	<0x04><0x84><0x0>			FR A820 1BlockParameter Pr4		
	<0x05><0x85><0x0>			FR A820 1BlockParameter Pr5		
	<0x06><0x86><0x0>			FR A820 1BlockParameter Pr6		
	<0x07><0x87><0x0>			FR A820 1BlockParameter Pr7		
	<0x08><0x88><0x0>			FR A820 1BlockParameter Pr8		
	<0x09><0x89><0x0>			FR A820 1BlockParameter Pr9		
	<0x0A><0x8A><0x0>			FR A820 1BlockParameter Pr10		
	<0x0B><0x8B><0x0>			FR A820 1BlockParameter Pr11		
	<0x0C><0x8C><0x0>			FR A820 1BlockParameter Pr12		
	<0x0D><0x8D><0x0>			FR A820 1BlockParameter Pr13		
	<0x0E><0x8E><0x0>			FR A820 1BlockParameter Pr14		
	<0x0F><0x8F><0x0>			FR A820 1BlockParameter Pr15		
	<0x10><0x90><0x0>			FR A820 1BlockParameter Pr16		
	<0x11><0x91><0x0>			FR A820 1BlockParameter Pr17		
	<0x12><0x92><0x0>			FR A820 1BlockParameter Pr18		
	<0x13><0x93><0x0>			FR A820 1BlockParameter Pr19		
	<0x14><0x94><0x0>			FR A820 1BlockParameter Pr20		
	<0x15><0x95><0x0>			FR A820 1BlockParameter Pr21		
	<0x16><0x96><0x0>			FR A820 1BlockParameter Pr22		
	<0x17><0x97><0x0>			FR A820 1BlockParameter Pr23		
	<0x18><0x98><0x0>			FR A820 1BlockParameter Pr24		
	<0x19><0x99><0x0>			FR A820 1BlockParameter Pr25		
	<0x1A><0x9A><0x0>			FR A820 1BlockParameter Pr26		
	<0x1B><0x9B><0x0>			FR A820 1BlockParameter Pr27		
	<0x1C><0x9C><0x0>			FR A820 1BlockParameter Pr28		
	<0x1D><0x9D><0x0>			FR A820 1BlockParameter Pr29		

When describing multiple contents in the item and also when the order thereof is important, bracket them off with "<">", then describe the multiple contents in order.

Reference

COMM_IF_PARAMETER part (2/2)

InverterP/n	BlockParameter	NAME	DATATYPE	DEFAULT	RANGE	MIN/MAX	ENG_UNIT	ACCESS	UI_ATTRIBUTE	WRITE_ORDER	CO
1	Pr0	[Pr 0] Torque boost	UINT16	10	[0,3000]	0.1	%	RW	10	Set	
2	Pr1	[Pr 1] Maximum frequency	UINT16	6000	[0,65535]	0.01	Hz	RW	10	Set	
3	Pr2	[Pr 2] Minimum frequency	UINT16	0	[0,65535]	0.01	Hz	RW	10	Set	
4	Pr3	[Pr 3] Base frequency	UINT16	6000	[0,65535]	0.01	Hz	RW	10	Set	
5	Pr4	[Pr 4] Multi-speed setting (high speed)	UINT16	6000	[0,65535]	0.01	Hz	RW	10	Set	
6	Pr5	[Pr 5] Multi-speed setting (middle speed)	UINT16	3000	[0,65535]	0.01	Hz	RW	10	Set	
7	Pr6	[Pr 6] Multi-speed setting (low speed)	UINT16	1000	[0,65535]	0.01	Hz	RW	10	Set	
8	Pr7	[Pr 7] Acceleration time	UINT16	150	[0,36000]		s	RW	10	Set	
9	Pr8	[Pr 8] Deceleration time	UINT16	150	[0,36000]		s	RW	10	Set	
10	Pr9	[Pr 9] Electronic thermal O/L relay	UINT16	3450	[0,36000]	0.1	A	RW	10	Set	
11	Pr10	[Pr 10] DC injection brake operation frequency	UINT16	300	[0,65535]	0.01	Hz	RW	10	Set	
12	Pr11	[Pr 11] DC injection brake operation time	UINT16	5	[0,100] 65520	0.1	s	RW	10	Set	
13	Pr12	[Pr 12] DC injection brake operation voltage	UINT16	10	[0,300]	0.1	%	RW	10	Set	
14	Pr13	[Pr 13] Starting frequency	UINT16	50	[0,65535]	0.01	Hz	RW	10	Set	
15	Pr14	[Pr 14] Load pattern selection	UINT16	0	ENUM enumPr14	1	-	RW	10	Set	
16	Pr15	[Pr 15] Jog frequency	UINT16	500	[0,65535]	0.01	Hz	RW	10	Set	
17	Pr16	[Pr 16] Jog acceleration/deceleration time	UINT16	5	[0,36000]		s	RW	10	Set	
18	Pr17	[Pr 17] MRS input selection	UINT16	0	ENUM enumPr17	1	-	RW	10	Set	
19	Pr18	[Pr 18] High speed maximum frequency	UINT16	6000	[0,65535]	0.01	Hz	RW	10	Set	
20	Pr19	[Pr 19] Base frequency voltage	UINT16	65535	[0,10000] 65520 65535	0.1	V	RW	10	Set	
21	Pr20	[Pr 20] Acceleration/deceleration reference frequency	UINT16	6000	[0,65535]	0.01	Hz	RW	10	Set	
22	Pr21	[Pr 21] Acceleration/deceleration time increments	UINT16	0	ENUM enumPr21	1	-	RW	5	Set	
23	Pr22	[Pr 22] Stall prevention operation level (torque limit level)	UINT16	1500	[0,4000]	0.1	%	RW	10	Set	
24	Pr23	[Pr 23] Stall prevention operation level compensation factor at double speed	UINT16	65535	[0,2000] 65535	0.1	%	RW	10	Set	
25	Pr24	[Pr 24] Multi-speed setting (4 speed)	UINT16	65535	[0,65535]	0.01	Hz	RW	10	Set	
26	Pr25	[Pr 25] Multi-speed setting (5 speed)	UINT16	65535	[0,65535]	0.01	Hz	RW	10	Set	
27	Pr26	[Pr 26] Multi-speed setting (6 speed)	UINT16	65535	[0,65535]	0.01	Hz	RW	10	Set	
28	Pr27	[Pr 27] Multi-speed setting (7 speed)	UINT16	65535	[0,65535]	0.01	Hz	RW	10	Set	
29	Pr28	[Pr 28] Multi-speed input compensation selection	UINT16	0	ENUM enumPr28	1	-	RW	10	Set	
30	Pr29	[Pr 29] Acceleration/deceleration pattern selection	UINT16	0	ENUM enumPr29	1	-	RW	10	Set	

BLOCK_PARAMETER part (1/2)

TEXT	REMARK
Output voltage at 60Hz as K.	
Upper limit of the output frequency.	
Lower limit of the output frequency.	
Frequency at rated motor torque (Hz/Hz).	
Frequency which is applied when RH turns ON.	
Frequency which is applied when RL turns ON.	
Acceleration time.	
Deceleration time.	
Relay motor current.	
Operation frequency of the DC injection brake. Set "65535" to enable DC injection brake to be applied at Pr 13 Starting frequency or lower.	
Operation time of the DC injection brake. Set "0" to disable DC injection brake. Set "65535" to enable DC injection brake to be applied while the X13 signal is ON.	
DC injection brake voltage (Vrms). Set "0" to disable DC injection brake.	
Starting frequency.	
Initial output characteristics (V/f characteristics) for application or load characteristics can be selected.	
Voltage frequency for Jog operation.	
Jog acceleration/deceleration time for Jog operation.	
Enter output can be shut off with the MRS signal. The logic of the MRS signal can also be selected.	
Performing the operation at 120Hz or more.	
Base voltage. Set "65520" to select 93% of power supply voltage. Set "65535" to select the same voltage as the power supply voltage.	
Frequency that will be the basis of acceleration/deceleration time. As an acceleration/deceleration time, set the frequency change time from stop to Pr 20.	
Increment for the acceleration/deceleration time setting and the setting range.	
Torque limit level in percentage with regards to the rated torque as 100%.	
Stall operation level can be reduced when operating at a high speed above the rated frequency. Set "65535" to select the level to be always at Pr 22 setting.	
Frequency from speed 4 to speed 15 can be set according to the combination of the RH, RM, RL and REX signals. Set "65535" not to select any multi-speed setting.	
Frequency from speed 4 to speed 15 can be set according to the combination of the RH, RM, RL and REX signals. Set "65535" not to select any multi-speed setting.	
Frequency from speed 4 to speed 15 can be set according to the combination of the RH, RM, RL and REX signals. Set "65535" not to select any multi-speed setting.	
Frequency from speed 4 to speed 15 can be set according to the combination of the RH, RM, RL and REX signals. Set "65535" not to select any multi-speed setting.	
Speed (frequency) compensation can be applied for the multi-speed setting and the remote setting by inputting the frequency setting compensation signal (terminals 1, 2).	
The acceleration/deceleration pattern can be set according to the application.	

BLOCK_PARAMETER part (2/2)

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

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

Parameter Processing of Slave Station

Target Module Information: FR-A820-90K-1
Start I/O No.:0010 - Station No.:1

Method selection: **Parameter write**

Writes parameters to the inverter. Set the parameter set value of "8888" as 65520, and "9999" as 65535. The unit and setting range may change depending on the setting values of Pr.37 and others. For the conditions for such changes and

Parameter Information

Checked parameters are the targets of selected processes.

4 Select All **6** Cancel All **5** **7** **9** **15**

Name	Initial Value	Read Value	Write Value	Setting Range	Unit	Description
[Pr.0] Torque boost	10			0 to 300		Set the output voltage a
[Pr.1] Maximum frequency	6000			0 to 65535		Set the upper limit of the
[Pr.2] Minimum frequency	0			0 to 65535		Set the lower limit of the
[Pr.3] Base frequency	6000			0 to 65535		Set the frequency at rat
[Pr.4] Multi-speed setting (hig...	6000			0 to 65535		Set the frequency which
[Pr.5] Multi-speed setting (mid...	3000			0 to 65535		Set the frequency which
[Pr.6] Multi-speed setting (low...	1000			0 to 65535		Set the frequency which
[Pr.7] Acceleration time	150			0 to 36000		Set the motor accelerati
[Pr.8] Deceleration time	150			0 to 36000		Set the motor decelerati
[Pr.9] Electronic thermal O/L r...	3460			0 to 36000		Set the rated motor curr
[Pr.10] DC Injection brake time	300			0 to 65535		Set the operation frequ

☐ Display only selectable parameters

Clear All "Read Value" Clear All "Write Value"

Process Option

There is no option in the selected process.

-The refreshed device values of remote I/O or remote registers may be overwritten.
-Accesses the PLC CPU by using the current connection destination. Please check if there is any problem with the connection destination.
-Process is executed according to the parameters written in the PLC CPU.
-For information on items not displayed on the screen, please refer to the Operating Manual.

Execute

Import... Export... Close

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

Table 4.5-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.5-2 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. CC-Link Family 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 a NAME item, the NAME in the COMM_IF_PARAMETER part is displayed on the utility software.

InverterPrm x		BlockParameter	
	LABEL	LABEL2	NAME
1	Pr0		[Pr.0] Torque commif
2	Pr1		[Pr.1] Maximum commif
3	Pr2		[Pr.2] Minimum frequency
4	Pr3		[Pr.3] Base frequency
5	Pr4		[Pr.4] Multi-speed setting (high speed)
6	Pr5		[Pr.5] Multi-speed setting (middle speed)
7	Pr6		[Pr.6] Multi-speed setting (low speed)
8	Pr7		[Pr.7] Acceleration time
9	Pr8		[Pr.8] Deceleration time
10	Pr9		[Pr.9] Electronic thermal O/L relay

1) The NAME is changed.



The InverterPrm part (COMM_IF_PARAMETER part) and the BlockParameter part (BLOCK_PARAMETER part) have a reference relationship.

InverterPrm		BlockParameter x	
	LABEL	LABEL2	NAME
1	Pr0		[Pr.0] Torque boost
2	Pr1		[Pr.1] Maximum frequency
3	Pr2		[Pr.2] Minimum frequency
4	Pr3		[Pr.3] Base frequency
5	Pr4		[Pr.4] Multi-speed setting (high speed)
6	Pr5		[Pr.5] Multi-speed setting (middle speed)
7	Pr6		[Pr.6] Multi-speed setting (low speed)
8	Pr7		[Pr.7] Acceleration time
9	Pr8		[Pr.8] Deceleration time
10	Pr9		[Pr.9] Electronic thermal O/L relay

2) The NAME is changed.



Parameter Processing of Slave Station

Target Module Information: FR-A820-90K-1
Start I/O No.:0010 - Station No.:1

Method selection: **Parameter read** Reads parameters from the inverter. The parameter set value of "8888" is indicated as 65520, and "9999" is indicated as 65535.

Parameter Information
Checked parameters are the targets of selected processes.

Select All Cancel All Selections

Name	Initial Value	Read Value
<input checked="" type="checkbox"/> [Pr.0] Torque boost	10	
<input checked="" type="checkbox"/> [Pr.1] Maximum frequency	6000	
<input type="checkbox"/> [Pr.2] Minimum frequency	0	
<input type="checkbox"/> [Pr.3] Base frequency	6000	
<input type="checkbox"/> [Pr.4] Multi-speed setting (high speed)	6000	
<input type="checkbox"/> [Pr.5] Multi-speed setting (middle speed)	3000	
<input type="checkbox"/> [Pr.6] Multi-speed setting (low speed)	1000	
<input type="checkbox"/> [Pr.7] Acceleration time	150	
<input type="checkbox"/> [Pr.8] Deceleration time	150	
<input type="checkbox"/> [Pr.9] Electronic thermal O/L relay	3460	
<input type="checkbox"/> [Pr.10] Inverter brake one	300	

☐ Display only selectable parameters

Clear All "Read Value" Clear All "Write Value"

Process Option

The NAME item was changed in both the InverterPrm part (COMM_IF_PARAMETER part) and the BlockParameter part (BLOCK_PARAMETER part).
→ The NAME item of the InverterPrm part (COMM_IF_PARAMETER part) is displayed.

4.6 METHOD Part

The METHOD part provides the information related to the communication services.

The procedures of the following services are described: the I/O read service for the remote input RX and remote register RWr areas, the I/O write service for the remote output RY and remote register RWw areas, the parameter write/read service for the parameter area, and the command execution service.

The structure of each element of the METHOD 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 - 5.3.6 METHOD part

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

Table 4.6-1 List of Elements Configuring the METHOD Part

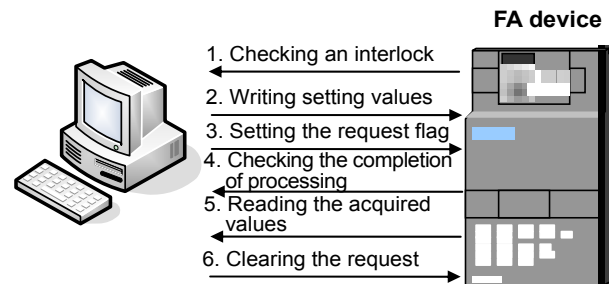
No.	Element	Description	Required/ Optional
1	LABEL	Describes the label for identifying the element.	Required
2	LABEL2	Describes the label for identifying the element. (This item is used when the utility software supports other languages.)	Optional
3	CATEGORY	Describes the category for grouping the element.	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	TARGET	Describes the element processed by the corresponding METHOD part.	Required
6	METHOD_TYPE	Describes the METHOD type.	Required
7	WRITE_REGISTER	Describes the remote output and remote register for writing.	Optional
8	WRITE_DATA	Describes the value to be written. If several of the above WRITE_REGISTER items are specified, the same number of write values needs to be described.	Optional
9	WRITE_DATATYPE	Describes the remote output and remote register data type for writing. If several of the above WRITE_REGISTER items are specified, the same number of data types needs to be described.	Optional
10	READ_REGISTER	Describes the remote input and remote register for reading.	Optional
11	READ_DATA	Describes the reference for the storage location of the read value. If several of the READ_REGISTER items are specified, the same number of storage locations needs to be described.	Optional
12	READ_DATATYPE	Describes the remote input and remote register data type for reading. If several of the READ_REGISTER items are specified, the same number of data types needs to be described.	Optional
13	INTERLOCK	Describes the interlock remote input/output, remote register and on/off status or value.	Optional
14	REQ_FLAG	Describes the request flag to implement a handshake using an assignment expression.	Optional
15	END_CONDITION	Describes the normal end condition when implementing a handshake.	Optional
16	ERR_CONDITION	Describes the error end condition when implementing a handshake.	Optional
17	ERR_REGISTER	Describes the remote register for storing a value when an error occurs.	Optional
18	ERR_CODE_RANGE	Describes the error code range.	Optional
19	RELATED_METHOD	Describes the reference to the METHOD element that indicates pre-processing of the METHOD part.	Optional
20	COMMENT	Describes the meaning of the element and usage precautions.	Optional

2) Communication service (METHOD) specifications

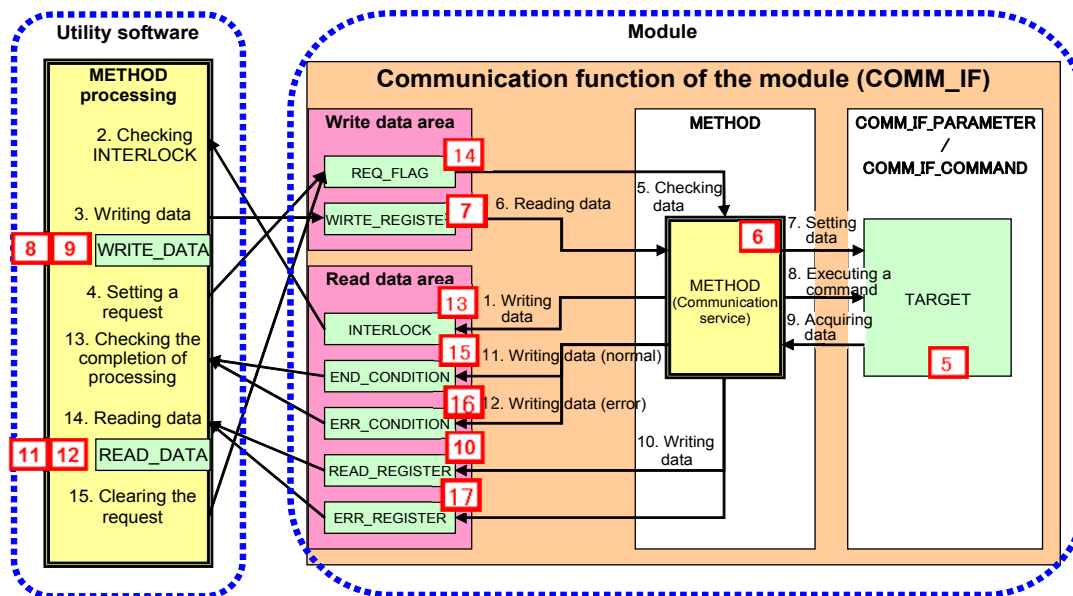
The communication service information is described in the communication service specifying the procedure and data area, and METHOD.

- METHOD operation

When a procedure-based communication service is executed by the utility software on an FA device, the following steps are taken.



This procedure is developed into a model as METHOD, describing remote register and shared memory based procedures as well as data area information.



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

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

Parameter Processing of Slave Station

Target Module Information: FR-A820-90K-1
Start I/O No.: 0010 - Station No.: 1

Method selection: **4** **6** **20**
 Parameter read
 Parameter read
 Parameter write
 Parameter clear

Reads parameters from the inverter. The parameter set value of "8888" is indicated as 65520, and "9999" is indicated as 65535.

Parameter Info

Checked parameters are the targets of selected processes.

Select All Cancel All Selections

Name	Initial Value	Read Value	Write Value	Setting Range	Unit	Description
[Pr.0] Torque boost	10			0 to 300		Set the output voltage a
[Pr.1] Maximum frequency	6000			0 to 65535		Set the upper limit of the
[Pr.2] Minimum frequency	0			0 to 65535		Set the lower limit of the
[Pr.3] Base frequency	6000			0 to 65535		Set the frequency at rat
[Pr.4] Multi-speed setting (hig...	6000			0 to 65535		Set the frequency which
[Pr.5] Multi-speed setting (mid...	3000			0 to 65535		Set the frequency which
[Pr.6] Multi-speed setting (low...	1000			0 to 65535		Set the frequency which
[Pr.7] Acceleration time	150			0 to 36000		Set the motor accelerati
[Pr.8] Deceleration time	150			0 to 36000		Set the motor decelerati
[Pr.9] Electronic thermal O/L r...	3450			0 to 36000		Set the rated motor curr
[Pr.10] DC injection brake one...	300			0 to 65535		Set the operation frans

☐ Display only selectable parameters

Clear All "Read Value" Clear All "Write Value"

Process Option

There is no option in the selected process.

-The refreshed device values of remote I/O or remote registers may be overwritten.
 -Accesses the PLC CPU by using the current connection destination. Please check if there is any problem with the connection destination.
 -Process is executed according to the parameters written in the PLC CPU.
 -For information on items not displayed on the screen, please refer to the Operating Manual.

Execute

Import... Export... Close

Command Execution of Slave Station

Target Module Information: FR-A820-90K-1
Start I/O No.: 0010 - Station No.: 1

Method selection: **4** **6** **20**
 Obtain the most and the second mos
 Obtain the most and the second mos
 Obtain the third and the fourth mos
 Obtain the fifth and the sixth mos
 Obtain the seventh and eighth mos

Obtains the most and the second recent faults among faults occurred in the past.

Command Set

There is no command setting in the selected process.

Execution Result

Name	Read Value	Unit	Description
Most recent fault data			
Second most recent fault data			

-The refreshed device values of remote I/O or remote registers may be overwritten.
 -Accesses the PLC CPU by using the current connection destination. Please check if there is any problem with the connection destination.
 -Process is executed according to the parameters written in the PLC CPU.
 -For information on items not displayed on the screen, please refer to the Operating Manual.

Execute

Close

(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 (METHOD)

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
5	TARGET	Used as information for identifying the reference information.	Required
7	WRITE_REGISTER	Used to identify the register for writing.	Optional
8	WRITE_DATA	Acquires the value to be written and writes it to the actual device.	Optional
9	WRITE_DATATYPE	Used to identify the data type of the register for writing.	Optional
10	READ_REGISTER	Used to identify the register for reading.	Optional
11	READ_DATA	Acquires the value to be read and displays it on the utility software.	Optional
12	READ_DATATYPE	Used to identify the data type of the register for reading.	Optional
13	INTERLOCK	Determines the start conditions for reading and writing data.	Optional
14	REQ_FLAG	Determines the conditions of the read (write) request flag.	Optional
15	END_CONDITION	Determines the end conditions of read and write processing.	Optional
16	ERR_CONDITION	Determines the error end flag of read and write processing.	Optional
17	ERR_REGISTER	Used to identify the data type of the error code register when an error occurs.	Optional
18	ERR_CODE_RANGE	Used to compare an error code with an error code described in CSP+ when an error occurs. When ENUM is used in ERR_CODE_RANGE, an error string corresponding the error code is displayed.	Optional
19	RELATED_METHOD	Executes multiple METHODS based on the execution order indicated by the keywords ("PRE", "SEQ").	Optional

Point

When all the METHOD part, COMM_IF_COMMAND, and BLOCK_COMMAND part have a NAME item, the NAME in the METHOD part (reference source) is displayed on the utility software.

4.7 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) CC-Link Family System Profile Specification BAP-C2008-001 - 5.3.5 COMM_IF_COMMAND part

1) Table 4.7-1 lists the elements configuring the COMM_IF_COMMAND part.

Table 4.7-1 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. *6	Optional
6	REF	Describes the reference to the BLOCK_COMMAND part from the element.	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 4.7-2 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 METHOD 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 METHOD part.

In the example of Figure 4.7-1, "Parameter Write" and "Parameter Read" are described as a METHOD to write and read parameters 1, 2, ..., of the control function.

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

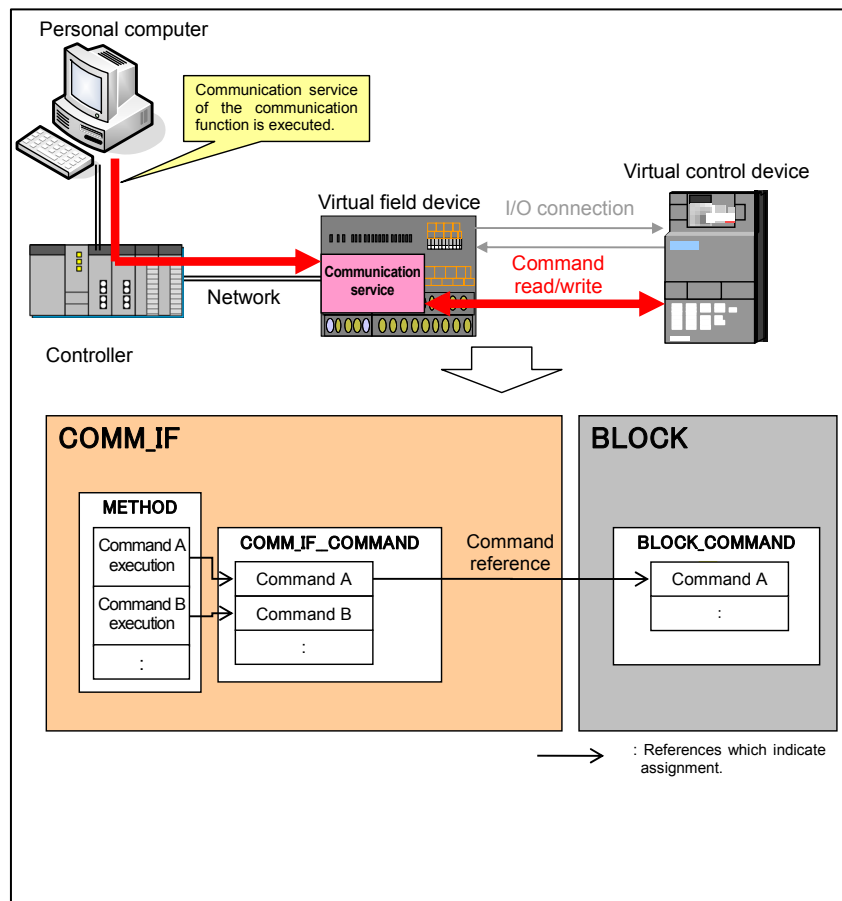


Figure 4.7-1 Reference Specifications Example of the COMM IF COMMAND Part

(2) CSP+ Descriptions

Parameters are referred to in the following order.

METHOD part (CCLinkMethod) → COMM_IF_COMMAND part (CommCommand) →
BLOCK_COMMAND part (BlockCommand) → COMMAND_ARGUMENT part

The following figure shows the display example of the COMM_IF_COMMAND part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool. The following is the reference example for the NAME: Command execution.

CCLink_Method x						
LABEL	LABEL2	CATEGORY	NAME	TARGET	METHOD_TYPE	WRITE_REGISTER
1	MtReadPm		Parameter read	InverterPm.*	PARAMETER	<RwW2.0><(DUMMY)><RwW2.8><RwW3>
2	MtWritePm		Parameter write	InverterPm.*	PARAMETER	<(DUMMY)><RwW2.0><RwW2.8><RwW3>
3	MtAllPmClear		Parameter clear	CommCommand.CmdAllPmClear	PARAMETER	<RwW2><RwW3>
4	MtGetFaultsHistory1,2	Fault data obtain method	Obtain the most and the second most recent faults.	CommCommand.CmdGetFaultsHistory1,2	COMMAND	<RwW2><RwW3>
5	MtGetFaultsHistory3,4	Fault data obtain method	Obtain the third and the fourth most recent faults.	CommCommand.CmdGetFaultsHistory3,4	COMMAND	<RwW2><RwW3>
6	MtGetFaultsHistory5,6	Fault data obtain method	Obtain the fifth and the sixth most recent faults.	CommCommand.CmdGetFaultsHistory5,6	COMMAND	<RwW2><RwW3>
7	MtGetFaultsHistory7,8	Fault data obtain method	Obtain the seventh and eighth most recent faults.	CommCommand.CmdGetFaultsHistory7,8	COMMAND	<RwW2><RwW3>
8	MtInverterReset		Error reset at inverter fault	CommCommand.CmdInverterReset	COMMAND	
9	MtFaultsHistoryClear		Faults history batch clear	CommCommand.CmdFaultsHistoryClear	COMMAND	<RwW2><RwW3>
10	MtSetFrequency		Frequency command	CommCommand.CmdSetFrequency	COMMAND	<RwW1>
11	MtSTF		Forward	CommCommand.CmdSTF	COMMAND	<RY1><RY0>
12	MtSTR		Reverse	CommCommand.CmdSTR	COMMAND	<RY0><RY1>
13	MtSTOP		Stop	CommCommand.CmdSTOP	COMMAND	<RY0><RY1>
14	MtArbitraryCommand		Command execution	CommCommand.CmdArbitraryCommand	COMMAND	<RwW2><RwW3>

METHOD part

CCLink_Method CommCommand x									
LABEL	LABEL2	CATEGORY	NAME	ARGUMENT	REF	COMMENT	REMARK		
1	CmdAllPmClear		Parameter clear		FR_A820_1.BlockCommand.CmdAllPmClear				
2	CmdInverterReset		Inverter reset		FR_A820_1.BlockCommand.CmdInverterReset				
3	CmdGetFaultsHistory1,2	Fault data obtain command	Obtain the most and the second most recent faults.		FR_A820_1.BlockCommand.CmdGetFaultsHistory1,2				
4	CmdGetFaultsHistory3,4	Fault data obtain command	Obtain the third and the fourth most recent faults.		FR_A820_1.BlockCommand.CmdGetFaultsHistory3,4				
5	CmdGetFaultsHistory5,6	Fault data obtain command	Obtain the fifth and the sixth most recent faults.		FR_A820_1.BlockCommand.CmdGetFaultsHistory5,6				
6	CmdGetFaultsHistory7,8	Fault data obtain command	Obtain the seventh and eighth most recent faults.		FR_A820_1.BlockCommand.CmdGetFaultsHistory7,8				
7	CmdFaultsHistoryClear		Faults history batch clear		FR_A820_1.BlockCommand.CmdFaultsHistoryClear				
8	CmdSetFrequency		Frequency command		FR_A820_1.BlockCommand.CmdSetFrequency				
9	CmdSTF		Forward rotation command		FR_A820_1.BlockCommand.CmdSTF				
10	CmdSTR		Reverse rotation command		FR_A820_1.BlockCommand.CmdSTR				
11	CmdSTOP		Stop command		FR_A820_1.BlockCommand.CmdSTOP				
12	CmdArbitraryCommand		Execution of arbitrary command.		FR_A820_1.BlockCommand.CmdArbitraryCommand				

COMM_IF_COMMAND part

CCLink_Method CommCommand BlockCommand x						
LABEL	LABEL2	CATEGORY	NAME	ARGUMENT	COMMENT	REMARK
1	CmdAllPmClear		Parameter clear	ArgAllPmClear		
2	CmdInverterReset		Inverter reset			
3	CmdGetFaultsHistory1,2	Fault data obtain command	Obtain the most and the second most recent faults.	ArgGetFaultsHistory1,2		
4	CmdGetFaultsHistory3,4	Fault data obtain command	Obtain the third and the fourth most recent faults.	ArgGetFaultsHistory3,4		
5	CmdGetFaultsHistory5,6	Fault data obtain command	Obtain the fifth and the sixth most recent faults.	ArgGetFaultsHistory5,6		
6	CmdGetFaultsHistory7,8	Fault data obtain command	Obtain the seventh and eighth most recent faults.	ArgGetFaultsHistory7,8		
7	CmdGetFaultRecord		Obtain faults history.	ArgGetFaultRecord		
8	CmdFaultsHistoryClear		Faults history batch clear			
9	CmdSetFrequency		Frequency command	ArgSetFrequency		
10	CmdSTF		Forward rotation command			
11	CmdSTR		Reverse rotation command			
12	CmdSTOP		Stop command			
13	CmdArbitraryCommand		Execution of arbitrary command.	ArgArbitraryCommand		

BLOCK_COMMAND part

CCLink_Method CommCommand ArgArbitraryCommand x						
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE
1	Argument RwW2		Link parameter extended setting/Instruction code(RwW2)	WORD		[0x0000,0xFFFF]
2	Argument RwW3		Write data (RwW3)	WORD		[0x0000,0xFFFF]
3	Argument RWr3		Read data (RWr3)	WORD		[0x0000,0xFFFF]

MIN INC	ENG UNIT	ACCESS	ASSIGN	REF	COMMENT	REMARK
FF)		W			Input a value for writing RwW2. Add "0x" in front of the input value (hexadecimal).	
FF)		W			Input a value for writing RwW3. Add "0x" in front of the input value (hexadecimal).	
FF)		R			Displays the reading data of RWr3.	

COMMAND_ARGUMENT part

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

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

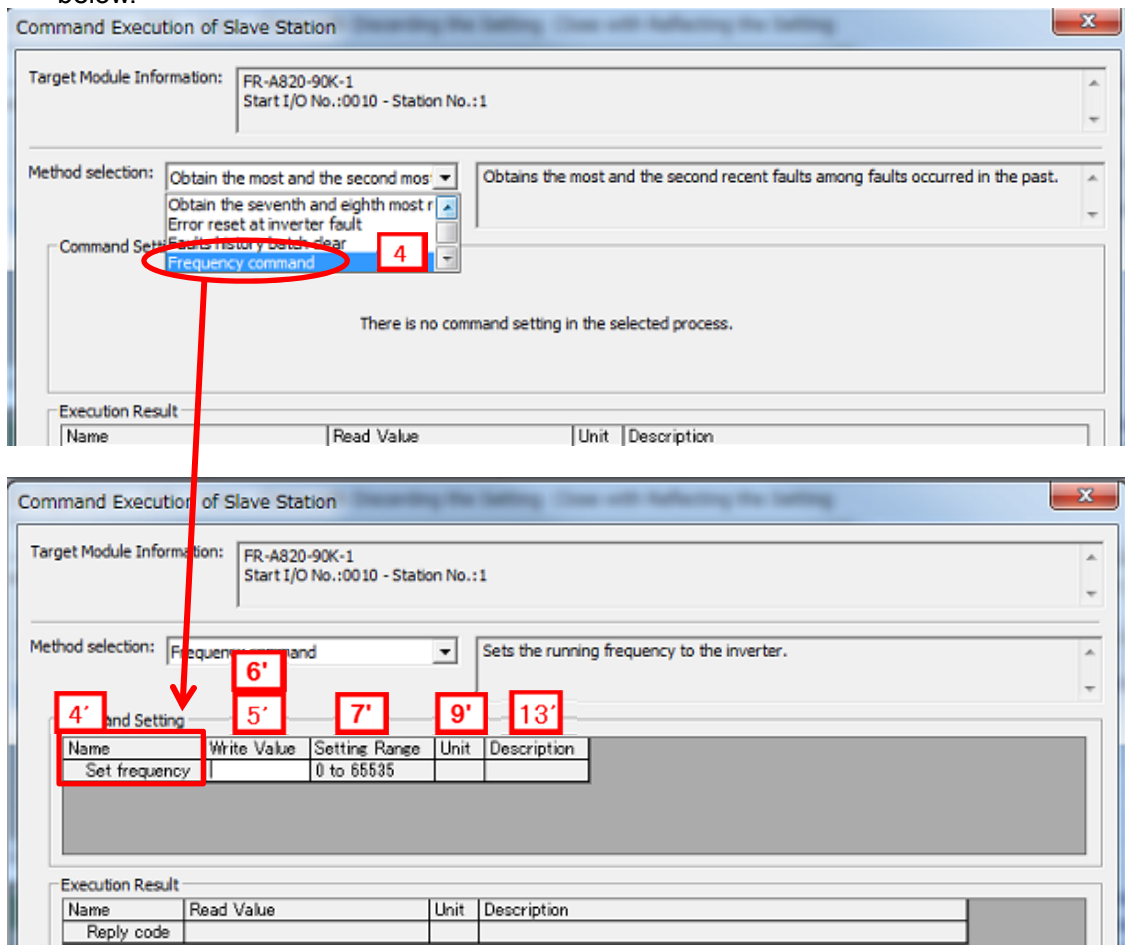
**(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification**

Table 4.7-3 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 4.7-3 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. CC-Link Family 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

5. BLOCK Section

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

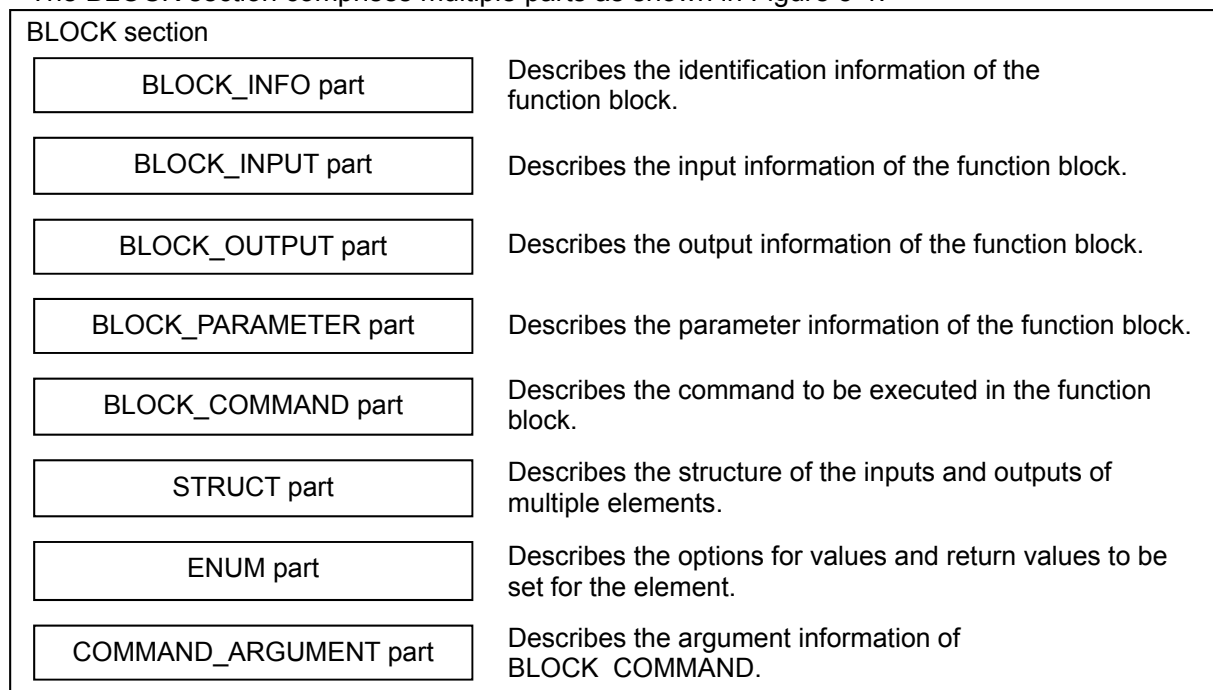


Figure 5-1 Structure of the BLOCK Section

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) CC-Link Family 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 inverter (FR-A740-90K) on the CSP+ creation support tool.

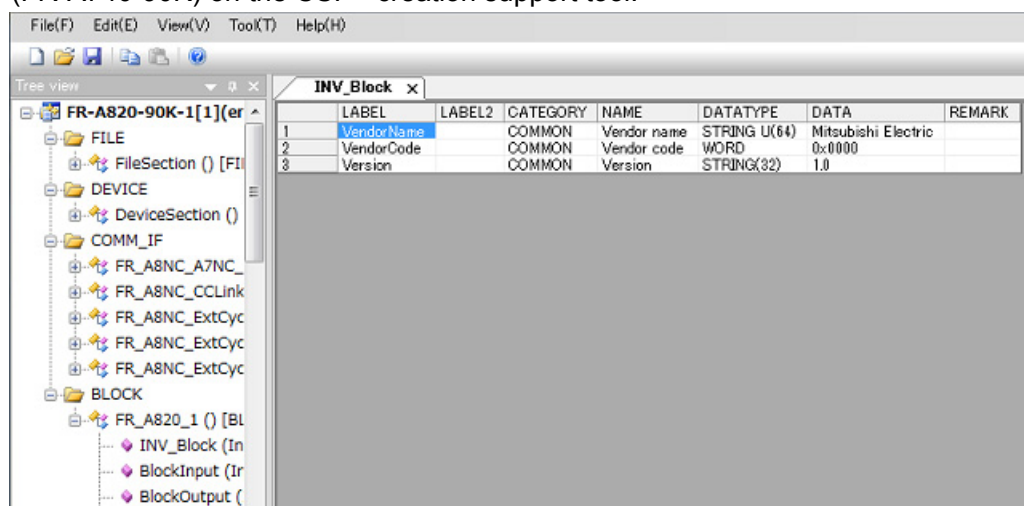


Figure 5.1-1 Display Example of the CSP+ Creation Support Tool (BLOCK INFO)

(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.

COMM_IF_OUTPUT (CCLinkOutput) → BLOCK_INPUT (BlockInput)

(For details on COMM_IF_OUTPUT, refer to Section 4.4 COMM_IF_OUTPUT Part.)

The following figure shows the display example of the BLOCK_INPUT part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

COMM_IF_OUTPUT part

LABEL	LABEL2	CATEGORY	NAME	ASSIGN	UI_ATTRIBUTE	REF	COMMENT	REMARK
1	ForwardRunning	RX	Forward running			FR A620 1 BlockOutput ForwardRunning		
2	ReverseRunning	RX	Reverse running			FR A620 1 BlockOutput ReverseRunning		
3	Terminal RUN Func	RX	Terminal RUN function	R02			Input signal can be changed by Pr.190 (RUN terminal function selection).	
4	Terminal SU Func	RX	Terminal SU function	R03			Input signal can be changed by Pr.191 (SU terminal function selection).	
5	Terminal OL Func	RX	Terminal OL function	R04			Input signal can be changed by Pr.192 (OL terminal function selection).	
6	Terminal IPF Func	RX	Terminal IPF function	R05			Input signal can be changed by Pr.192 (IPF terminal function selection).	
7	Terminal FU Func	RX	Terminal FU function	R06			Input signal can be changed by Pr.194 (FU terminal function selection).	
8	Terminal ABC1 Func	RX	Terminal ABC1 function	R07			Input signal can be changed by Pr.195 (ABC1 terminal function selection).	
9	Terminal ABC2 Func	RX	Terminal ABC2 function	R08			Input signal can be changed by Pr.196 (ABC2 terminal function selection).	
10	DO0 Func	RX	DO0 function	R09				
11	DO1 Func	RX	DO1 function	R10				
12	DO2 Func	RX	DO2 function	R11				
13	Monitoring	RX	Monitoring	R12				
14	FreqQrTorqCompRam	RX	Frequency setting command/torque command completion (RAM)	R13				
15	FreqQrTorqCompRamEeprom	RX	Frequency setting command/torque command completion (RAM/EEPROM)	R14				
16	InstructionExecComp	RX	Instruction code execution completion	R15				
17	ErrorStatus	System area	Error status flag	R16				
18	RemoteReady	System area	Remote station ready	R17				
19	FirstMonitorValue	RW	1st monitor value	RW1				
20	SecondMonitorValue	RW	2nd monitor value	RW2				
21	ReturnCode1and2	RW	Reply code 1 and reply code 2	RW3				
22	ReadData	RW	Read data	RW4				
23	ThirdMonitorValue	RW	3rd monitor value	RW5				
24	FourthMonitorValue	RW	4th monitor value	RW6				
25	FifthMonitorValue	RW	5th monitor value	RW7				
26	SixthMonitorValue	RW	6th monitor value	RW8				

BLOCK_INPUT part

LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN_INC	ENG_UNIT	ACCESS	UI_ATTRIBUTE	COMMENT	REMARK
1	ForwardRunning		Forward running	BOOL		0, 1						
2	ReverseRunning		Reverse running	BOOL		0, 1						

Reference

The reference to BLOCK cannot be described in the STRUCT type element.

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

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

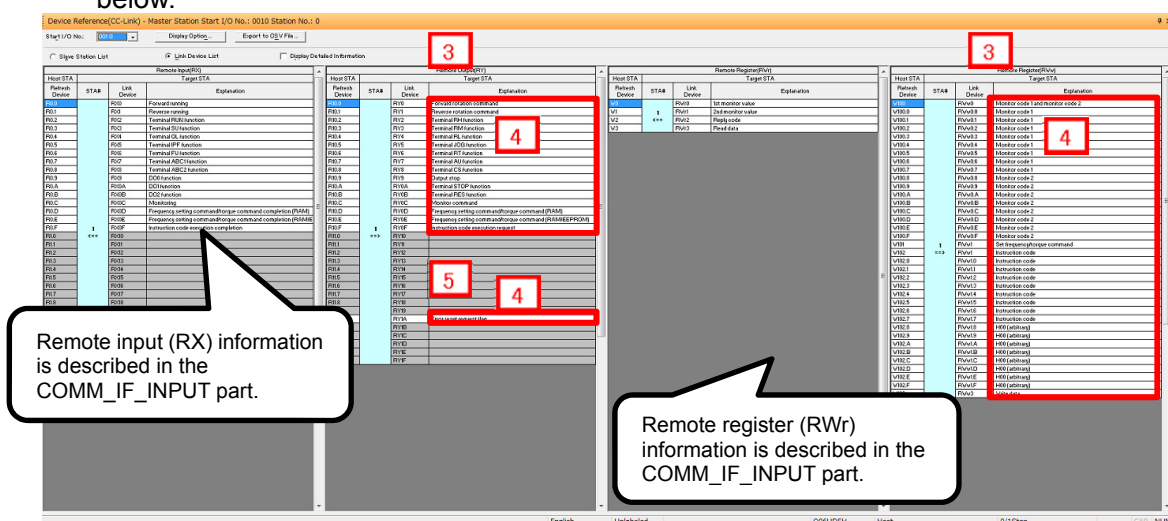
**(4) Elements Not Being Used on the Screen Despite Being Described in the CSP+ Specification**

Table 5.2-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 5.2-2 Elements Not Being Used on the Utility Software Screen (BLOCK INPUT)

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
6	DEFAULT	Used to set the default.	Optional
7	RANGE	Used to check the setting range of the item. An error is output when the value is out of range.	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
9	ENG_UNIT	Displays the engineering value described here as an explanation of the item.	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. CC-Link Family System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Optional
11	UI_ATTRIBUTE	For future support	Optional
12	COMMENT	Reference information. Displayed in the creation support tool.	Optional

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) CC-Link Family 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.

COMM_IF_INPUT (CCLinkOutput) → BLOCK_OUTPUT (BlockInput)

The following figure shows the display example of the BLOCK_OUTPUT part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

CCLinkInput x							
LABEL	LABEL2	CATEGORY	NAME	DAT	UIATTRIBUTE	REF	COMMENT
1	ForwardRunning	RX	Forward running	BOOL		FR A100 1 BlockOutput ForwardRunning	input signal can be changed by Pr.180 (RUN terminal function selection). input signal can be changed by Pr.181 (SU terminal function selection). input signal can be changed by Pr.182 (OL terminal function selection). input signal can be changed by Pr.182 (PF terminal function selection). input signal can be changed by Pr.184 (FU terminal function selection). input signal can be changed by Pr.185 (ABC1 terminal function selection). input signal can be changed by Pr.186 (ABC2 terminal function selection).
2	ReverseRunning	RX	Reverse running	BOOL		FR A100 1 BlockOutput ReverseRunning	
3	Terminal RUN Func	RX	Terminal RUN function	BOOL			
4	Terminal SU Func	RX	Terminal SU function	BOOL			
5	Terminal OL Func	RX	Terminal OL function	BOOL			
6	Terminal JPF Func	RX	Terminal JPF function	BOOL			
7	Terminal FU Func	RX	Terminal FU function	BOOL			
8	Terminal ABC1 Func	RX	Terminal ABC1 function	BOOL			
9	Terminal ABC2 Func	RX	Terminal ABC2 function	BOOL			
10	DO0 Func	RX	DO0 function	BOOL			
11	DO1 Func	RX	DO1 function	BOOL			
12	DO2 Func	RX	DO2 function	BOOL			
13	Monitoring	RX	Monitoring	BOOL			
14	Freq0/TorqCmpRam	RX	Frequency setting command/torque command completion (RAM)	BOOL			
15	Freq0/TorqCmpRamEeprom	RX	Frequency setting command/torque command completion (RAM/EEPROM)	BOOL			
16	InstuctExecComp	RX	Instruction code execution completion	BOOL			
17	ErrorStatus	System area	Error status flag	BOOL			
18	RemoteReady	System area	Remote station ready	BOOL			
19	FirstMonitorValue	RW	1st monitor value	BOOL			
20	SecondMonitorValue	RW	2nd monitor value	BOOL			
21	ReturnCode1and2	RW	Reply code 1 and reply code 2	BOOL			
22	ReadData	RW	Read data	BOOL			
23	ThirdMonitorValue	RW	3rd monitor value	BOOL			
24	FourthMonitorValue	RW	4th monitor value	BOOL			
25	FifthMonitorValue	RW	5th monitor value	BOOL			
26	SixthMonitorValue	RW	6th monitor value	BOOL			

COMM_IF_INPUT part

CCLinkInput x					BlockOutput x							
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE	MIN	INC	ENG UNIT	ACCESS	UIATTRIBUTE	COMMENT
1	ForwardRunning	2	3	Forward running	5	6	0, 1	7	8	9	10	11
2	ReverseRunning			Reverse running	BOOL		0, 1					12

BLOCK_OUTPUT part

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

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

Point
It is displayed in the utility software for each group described in the CATEGORY item.

Remote output (RY) information is described in the COMM_IF_OUTPUT part.

Remote register (RWw) information is described in the COMM_IF_OUTPUT part.

Point
Because the DATATYPE of the "terminal RUN function" is BYTE type, an 8-bit address is required.

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

Table 5.3-2 lists the elements not being used on the screen despite being described in the CSP+ Specification.

Table 5.3-2 Elements Not Being Used on the Utility Software Screen (BLOCK OUTPUT)

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
6	DEFAULT	Used to set the default.	Optional
7	RANGE	Used to check the setting range of the item. An error is output when the value is out of range.	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
9	ENG_UNIT	Displays the engineering value described here as an explanation of the item.	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. CC-Link Family System Profile Specification BAP-C2008-001 - 4.3.1.1. ACCESS conventions	Optional
11	UI_ATTRIBUTE	For future support	Optional
12	COMMENT	Reference information. Displayed in the creation support tool.	Optional

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 METHOD 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 METHOD part. In the example of Figure 5.4-1, "Parameter Write" and "Parameter Read" are described as a METHOD to write and read parameters 1, 2, ..., of the control function.

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

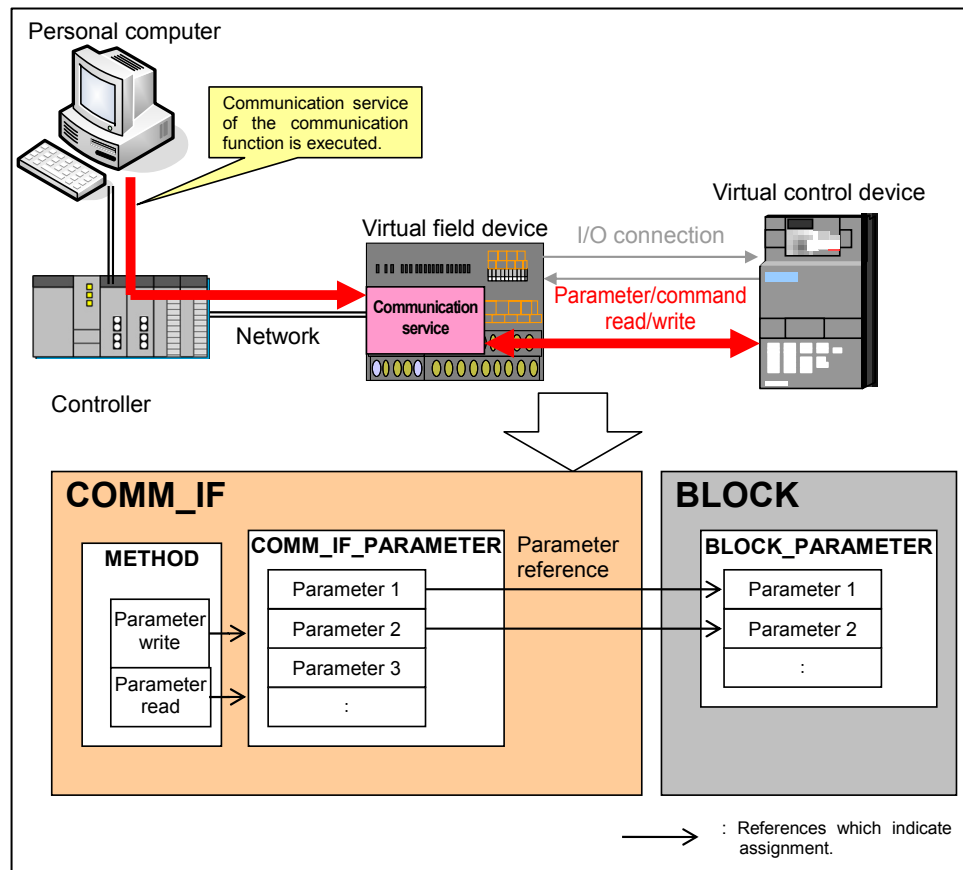


Figure 5.4-1 Reference Specifications Example of the BLOCK_PARAMETER Part

(2) CSP+ Descriptions

Parameters are referred to in the following order.

METHOD part (CCLinkMethod) → COMM_IF_PARAMETER part (InverterPrm) → BLOCK_PARAMETER part (BlockParameter)

The following figure shows the display example of the BLOCK_PARAMETER part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

CCLink_Method x						
	LABEL	LABEL2	CATEGORY	NAME	TARGET	METHOD_TYP
1	MtExPrmSet			Link parameter extended setting	PARENT TARGET	OTHER
2	MtReadPrm			Parameter read	InverterPrm.*	PARAMETER
3	MtWritePrm			Parameter write	InverterPrm.*	PARAMETER
4	MtAllPrmClear			Parameter clear	CommCommand.CmdAllPrmClear	PARAMETER
5	MtGetFaultsHistory1_2		Fault data obtain method	Obtain the most and the second most recent faults.	CommCommand.CmdGetFaultsHistory1_2	COMMAND
6	MtGetFaultsHistory3_4		Fault data obtain method	Obtain the third and the fourth most recent faults.	CommCommand.CmdGetFaultsHistory3_4	COMMAND
7	MtGetFaultsHistory5_6		Fault data obtain method	Obtain the fifth and the sixth most recent faults.	CommCommand.CmdGetFaultsHistory5_6	COMMAND
8	MtGetFaultsHistory7_8		Fault data obtain method	Obtain the seventh and eighth most recent faults.	CommCommand.CmdGetFaultsHistory7_8	COMMAND
9	MtInverterReset			Error reset at inverter fault	CommCommand.CmdInverterReset	COMMAND
10	MtFaultsHistoryClear			Faults history batch clear	CommCommand.CmdFaultsHistoryClear	COMMAND
11	MtSetFrequency			Frequency command	CommCommand.CmdSetFrequency	COMMAND
12	MtSTF			Forward	CommCommand.CmdSTF	COMMAND
13	MtSTR			Reverse	CommCommand.CmdSTR	COMMAND
14	MtSTOP			Stop	CommCommand.CmdSTOP	COMMAND
15	MtArbitraryCommand			Command execution	CommCommand.CmdArbitraryCommand	COMMAND

METHOD part

Reference

"Part name.*" indicates that all Labels of the reference part are referred to.

CCLink_Method x InverterPrm x						
	LABEL	LABEL2	CATEGORY	NAME	DATATYPE	WRITE_ORDER
1	P0			(P0) Torque boost		FR A820 1.BlockParameter Pr0
2	P1			(P1) Maximum frequency		FR A820 1.BlockParameter Pr1
3	P2			(P2) Minimum frequency		FR A820 1.BlockParameter Pr2
4	P3			(P3) Base frequency		FR A820 1.BlockParameter Pr3
5	P4			(P4) Multi-speed setting (high speed)		FR A820 1.BlockParameter Pr4
6	P5			(P5) Multi-speed setting (middle speed)		FR A820 1.BlockParameter Pr5
7	P6			(P6) Multi-speed setting (low speed)		FR A820 1.BlockParameter Pr6
8	P7			(P7) Acceleration time		FR A820 1.BlockParameter Pr7
9	P8			(P8) Deceleration time		FR A820 1.BlockParameter Pr8
10	P9			(P9) Electronic thermal O/L relay		FR A820 1.BlockParameter Pr9
11	P10			(P10) DC injection brake operation frequency		FR A820 1.BlockParameter Pr10
12	P11			(P11) DC injection brake operation time		FR A820 1.BlockParameter Pr11
13	P12			(P12) DC injection brake operation voltage		FR A820 1.BlockParameter Pr12
14	P13			(P13) Starting frequency		FR A820 1.BlockParameter Pr13
15	P14			(P14) Load pattern selection		FR A820 1.BlockParameter Pr14
16	P15			(P15) Jog frequency		FR A820 1.BlockParameter Pr15
17	P16			(P16) Jog acceleration/deceleration time		FR A820 1.BlockParameter Pr16
18	P17			(P17) MFS input selection		FR A820 1.BlockParameter Pr17
19	P18			(P18) High speed maximum frequency		FR A820 1.BlockParameter Pr18
20	P19			(P19) Base frequency voltage		FR A820 1.BlockParameter Pr19
21	P20			(P20) Acceleration/deceleration reference frequency		FR A820 1.BlockParameter Pr20
22	P21			(P21) Acceleration/deceleration time increments		FR A820 1.BlockParameter Pr21
23	P22			(P22) Stall prevention operation level (torque limit level)		FR A820 1.BlockParameter Pr22
24	P23			(P23) Stall prevention operation level compensation factor at double speed		FR A820 1.BlockParameter Pr23
25	P24			(P24) Multi-speed setting (4 speed)		FR A820 1.BlockParameter Pr24
26	P25			(P25) Multi-speed setting (5 speed)		FR A820 1.BlockParameter Pr25
27	P26			(P26) Multi-speed setting (6 speed)		FR A820 1.BlockParameter Pr26
28	P27			(P27) Multi-speed setting (7 speed)		FR A820 1.BlockParameter Pr27
29	P28			(P28) Multi-speed input compensation selection		FR A820 1.BlockParameter Pr28
30	P29			(P29) Acceleration/deceleration pattern selection		FR A820 1.BlockParameter Pr29
31	P30			(P30) Regenerative function selection		FR A820 1.BlockParameter Pr30
32	P31			(P31) Frequency jump 1A		FR A820 1.BlockParameter Pr31
33	P32			(P32) Frequency jump 1B		FR A820 1.BlockParameter Pr32
34	P33			(P33) Frequency jump 2A		FR A820 1.BlockParameter Pr33
35	P34			(P34) Frequency jump 2B		FR A820 1.BlockParameter Pr34
36	P35			(P35) Frequency jump 3A		FR A820 1.BlockParameter Pr35

COMM_IF_PARAMETER part

Reference

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CCLink_Method		BlockParameter				
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT	RANGE
1	Pr0		[Pr.0] Torque boost	UINT16	10	[0,300]
2	Pr1		[Pr.1] Maximum frequency	UINT16	6000	[0,65535]
3	Pr2		[Pr.2] Minimum frequency	UINT16	0	[0,65535]
4	Pr3		[Pr.3] Base frequency	UINT16	6000	[0,65535]
5	Pr4		[Pr.4] Multi-speed setting (high speed)	UINT16	6000	[0,65535]
6	Pr5		[Pr.5] Multi-speed setting (middle speed)	UINT16	3000	[0,65535]
7	Pr6		[Pr.6] Multi-speed setting (low speed)	UINT16	1000	[0,65535]
8	Pr7		[Pr.7] Acceleration time	UINT16	150	[0,36000]
9	Pr8		[Pr.8] Deceleration time	UINT16	150	[0,36000]
10	Pr9		[Pr.9] Electronic thermal O/L relay	UINT16	3460	[0,36000]
11	Pr10		[Pr.10] DC injection brake operation frequency	UINT16	300	[0,65535]
12	Pr11		[Pr.11] DC injection brake operation time	UINT16	5	[0,100]
13	Pr12		[Pr.12] DC injection brake operation voltage	UINT16	10	[0,300]
14	Pr13		[Pr.13] Starting frequency	UINT16	50	[0,65535]
15	Pr14		[Pr.14] Load pattern selection	UINT16	0	ENUM enumPr14
16	Pr15		[Pr.15] Jog frequency	UINT16	500	[0,65535]
17	Pr16		[Pr.16] Jog acceleration/deceleration time	UINT16	5	[0,36000]
18	Pr17		[Pr.17] MRS input selection	UINT16	0	ENUM enumPr17
19	Pr18		[Pr.18] High speed maximum frequency	UINT16	6000	[0,65535]
20	Pr19		[Pr.19] Base frequency voltage	UINT16	65535	[0,10000]
21	Pr20		[Pr.20] Acceleration/deceleration reference frequency	UINT16	6000	[0,65535]
22	Pr21		[Pr.21] Acceleration/deceleration time increments	UINT16	0	ENUM enumPr21
23	Pr22		[Pr.22] Stall prevention operation level (torque limit level)	UINT16	1500	[0,4000]

BLOCK_PARAMETER part (1/2)

T	RANGE	MIN	INC	ENG_UNIT	ACCESS	UA_ATTRIBUTE	WRITE_ORDER	COMMENT	REMARK
1	[0,300]	0.1	%	Hz	RW		10	Set the output voltage at 0Hz as %.	
2	[0,65535]	0.01	Hz	RW			10	Set the upper limit of the output frequency.	
3	[0,65535]	0.01	Hz	RW			10	Set the lower limit of the output frequency.	
4	[0,65535]	0.01	Hz	RW			10	Set the frequency at rated motor torque (50Hz/60Hz).	
5	[0,65535]	0.01	Hz	RW			10	Set the frequency which is applied when RH turns ON.	
6	[0,65535]	0.01	Hz	RW			10	Set the frequency which is applied when RL turns ON.	
7	[0,36000]	0.01	s	RW			10	Set the motor acceleration time.	
8	[0,36000]	0.01	s	RW			10	Set the motor deceleration time.	
9	[0,65535]	0.1	A	RW			10	Set the rated motor current.	
10	[0,65535]	0.01	Hz	RW			10	Set the operation frequency of the DC injection brake. Set "65535" to enable DC injection brake to be applied at Pr. 13 Starting frequency or lower.	
11	[0,100]	0.1	s	RW			10	Set the operation time of the DC injection brake. Set "0" to disable DC injection brake. Set "65520" to enable DC injection brake to be applied while the X13 signal is ON.	
12	[0,300]	0.1	%	RW			10	Set the DC injection brake voltage (torque). Set "0" to disable DC injection brake.	
13	[0,65535]	0.01	Hz	RW			10	Set the starting frequency.	
14	ENUM enumPr14	1	-	RW			10	Optimal output characteristics (V/F characteristics) for application or load characteristics can be selected.	
15	[0,65535]	0.01	Hz	RW			10	Set the frequency for Jog operation.	
16	[0,36000]	0.01	s	RW			10	Set the acceleration/deceleration time for Jog operation.	
17	[0,65535]	0.01	Hz	RW			10	The inverter output can be shut off with the MRS signal. The logic of the MRS signal can also be selected.	
18	[0,10000]	0.1	V	RW			10	Set when performing the operation at 120Hz or more.	
19	65520, 65535	0.1	V	RW			10	Set the base voltage. Set "65520" to select 90% of power supply voltage. Set "65535" to select the same voltage as the power supply voltage.	
20	[0,65535]	0.01	Hz	RW			10	Set the frequency that will be the basis of acceleration/deceleration time. As an acceleration/deceleration time, set the frequency change time from stop to Pr. 20.	
21	ENUM enumPr21	1	-	RW			5	Select the increment for the acceleration/deceleration time setting and the setting range.	
22	[0,4000]	0.1	%	RW			10	Set the torque limit level in percentage with regards to the rated torque as 100%.	

BLOCK_PARAMETER part (2/2)

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CCLink_Method		BlockParameter				
LABEL	LABEL2	CATEGORY	NAME	CODE	COMMENT	REMARK
1	Pr14_0		0: For constant-torque load	0		
2	Pr14_1		1: For variable-torque load	1		
3	Pr14_2		2: For constant-torque lift application (0% boost during reverse rotation)	2		
4	Pr14_3		3: For constant-torque lift application (0% boost during forward rotation)	3		
5	Pr14_4		4: RT signal ON for constant-torque load, RT signal OFF for constant-torque lift application with 0% boost during reverse rotation	4		
6	Pr14_5		5: RT signal ON for constant-torque load, RT signal OFF for constant-torque lift application with 0% boost during forward rotation	5		

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enumPr17						
LABEL	LABEL2	CATEGORY	NAME	CODE	COMMENT	REMARK
1	Pr17_0		0: Normally open input	0		
2	Pr17_2		2: Normally closed input (NC input specification)	2		
3	Pr17_4		4: External terminal with normally closed input (NC input specification), communication with normally open input	4		

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enumPr21						
LABEL	LABEL2	CATEGORY	NAME	CODE	COMMENT	REMARK
1	Pr21_0		0: 0.1s increments, 0 to 3600s setting range	0		
2	Pr21_1		1: 0.01s increments, 0 to 360s setting range	1		

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

The descriptions in CSP+ for the FR-A740-90K are displayed on the utility software as shown below.

Parameter Processing of Slave Station

Target Module Information: FR-A820-90K-1
Start I/O No.:0010 - Station No.:1

Method selection: **Parameter write**

Writes parameters to the inverter. Set the parameter set value of "8888" as 65520, and "9999" as 65535. The unit and setting range may change depending on the setting values of Pr.37 and others. For the conditions for such changes and

Parameter Information

Checked parameters are the targets of selected processes.

Select All Cancel All Selections

Name	Initial Value	Read Value	Write Value	Setting Range	Description
[Pr.0] Torque boost	10			0 to 300	Set the output voltage
[Pr.1] Maximum frequency	6000			0 to 65535	Set the upper limit of the
[Pr.2] Minimum frequency	0			0 to 65535	Set the lower limit of the
[Pr.3] Base frequency	6000			0 to 65535	Set the frequency at rat
[Pr.4] Multi-speed setting (hig...	6000			0 to 65535	Set the frequency which
[Pr.5] Multi-speed setting (mid...	3000			0 to 65535	Set the frequency which
[Pr.6] Multi-speed setting (low...	1000			0 to 65535	Set the frequency which
[Pr.7] Acceleration time	150			0 to 36000	Set the motor accelerati
[Pr.8] Deceleration time	150			0 to 36000	Set the motor decelerati
[Pr.9] Electronic thermal O/L r...	3460			0 to 36000	Set the rated motor curr
[Pr.10] DC injection brake opa...	300			0 to 65535	Set the operation frequ

☐ Display only selectable parameters

Clear All "Read Value" Clear All "Write Value"

Process Option

Parameter Processing of Slave Station

Target Module Information: FR-A820-90K-1
Start I/O No.:0010 - Station No.:2

Method selection: **Parameter write**

Writes parameters to the inverter. Set the parameter set value of "8888" as 65520, and "9999" as 65535. The unit and setting range may change depending on the setting values of Pr.37 and others. For the conditions for such changes and

Parameter Information

Checked parameters are the targets of selected processes.

Select All Cancel All Selections

Name	Initial Value	Read Value	Write Value	Setting Range	Unit	Description
[Pr.13] Starting frequency	50			0 to 65535		Set the starting frequen
[Pr.14] Load pattern selection	0: For const...					Optimal output characte
[Pr.15] Jog frequency	500			0 to 65535		Set the frequency for Jo
[Pr.16] Jog acceleration/decel...	5			0 to 36000		Set the acceleration/dec
[Pr.17] MRS input selection	0: Normally ...					The inverter output can
[Pr.18] High speed maximum f...	6000			0 to 65535		Set when performing the
[Pr.19] Base frequency voltage	65535			0 to 10000,655...		Set the base voltage. Si
[Pr.20] Acceleration/decelerat...	6000			0 to 65535		Set the frequency that v
[Pr.21] Acceleration/decelerat...	0: 0.1s incr...					Select the increment for
[Pr.22] Stall prevention opera...	1500			0 to 4000		Set the torque limit lev
[Pr.23] Stall prevention opera...	65535			0 to 2000, 65535		The stall operation level

☐ Display only selectable parameters

Clear All "Read Value" Clear All "Write Value"

Process Option

There is no option in "

(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. CC-Link Family 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.	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 METHOD 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 METHOD part.

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

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

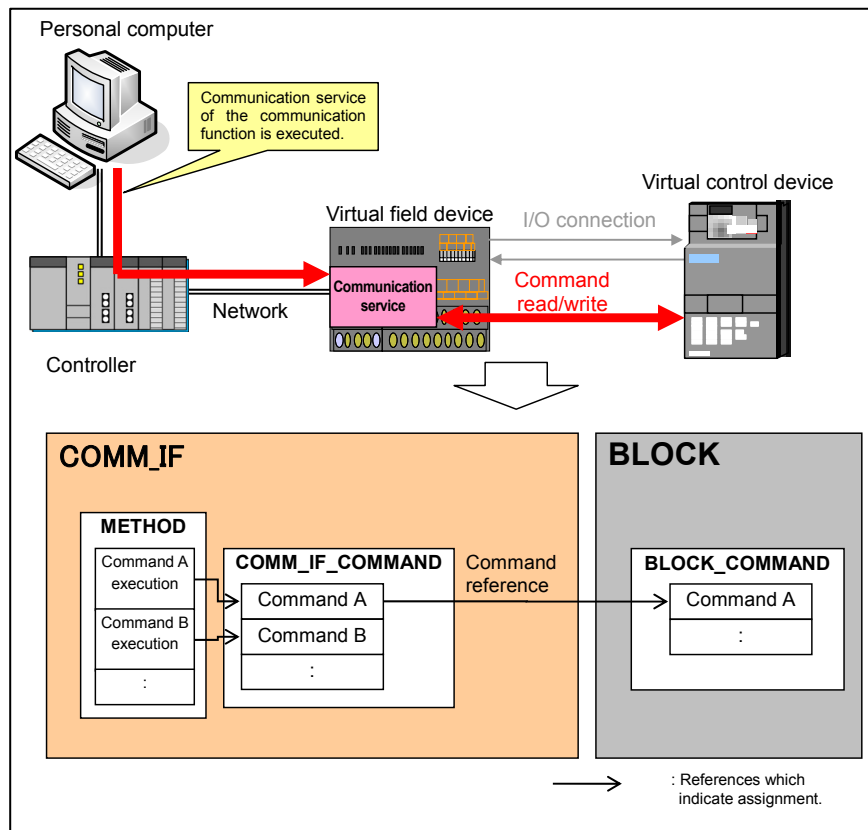


Figure 5.5-1 Reference Specifications Example of the BLOCK_COMMAND Part

(2) CSP+ Descriptions

Parameters are referred to in the following order.

METHOD part (CCLinkMethod) → COMM_IF_COMMAND part (CommCommand) → BLOCK_COMMAND part (BlockCommand)

The following figure shows the display example of the BLOCK_COMMAND part of CSP+ for an inverter (FR-A740-90K) on the CSP+ creation support tool.

CCLink_Method x					
LABEL	LABEL2	CATEGORY	NAME	TARGET	METHOD_TYPE
1	MiSubmSet		Link parameter extended setting	PARENT TARGET	WRITE REGISTER
2	MiReadPrm		Parameter read	InverterPrm.*	OTHER
3	MiWritePrm		Parameter write	InverterPrm.*	PARAMETER
4	MiAllPrmClear		Parameter clear	CommCommand.CmdAllPrmClear	PARAMETER
5	MiGetFaultsHistory1_2	Fault data obtain method	Obtain the most and the second most recent faults	CommCommand.CmdGetFaultsHistory1_2	COMMAND
6	MiGetFaultsHistory3_4	Fault data obtain method	Obtain the third and the fourth most recent faults	CommCommand.CmdGetFaultsHistory3_4	COMMAND
7	MiGetFaultsHistory5_6	Fault data obtain method	Obtain the fifth and the sixth most recent faults	CommCommand.CmdGetFaultsHistory5_6	COMMAND
8	MiGetFaultsHistory7_8	Fault data obtain method	Obtain the seventh and eighth most recent faults	CommCommand.CmdGetFaultsHistory7_8	COMMAND
9	MiInverterReset		Error reset at inverter fault	CommCommand.CmdInverterReset	COMMAND
10	MiFaultsHistoryClear		Faults history batch clear	CommCommand.CmdFaultsHistoryClear	COMMAND

METHOD part

Reference

CCLink_Method CommCommand x					
LABEL	LABEL2	CATEGORY	NAME	ARGUMENT	REF
1	CmdAllPrmClear		Parameter clear		FR_A820_1 BlockCommand.CmdAllPrmClear
2	CmdInverterReset		Inverter reset		FR_A820_1 BlockCommand.CmdInverterReset
3	CmdGetFaultsHistory1_2	Fault data obtain command	Obtain the most and the second most recent faults.		FR_A820_1 BlockCommand.CmdGetFaultsHistory1_2
4	CmdGetFaultsHistory3_4	Fault data obtain command	Obtain the third and the fourth most recent faults.		FR_A820_1 BlockCommand.CmdGetFaultsHistory3_4
5	CmdGetFaultsHistory5_6	Fault data obtain command	Obtain the fifth and the sixth most recent faults.		FR_A820_1 BlockCommand.CmdGetFaultsHistory5_6
6	CmdGetFaultsHistory7_8	Fault data obtain command	Obtain the seventh and eighth most recent faults.		FR_A820_1 BlockCommand.CmdGetFaultsHistory7_8
7	CmdFaultsHistoryClear		Faults history batch clear		FR_A820_1 BlockCommand.CmdFaultsHistoryClear
8	CmdSetFrequency		Frequency command		FR_A820_1 BlockCommand.CmdSetFrequency

COMM_IF_COMMAND part

Reference

CCLink_Method CommCommand BlockCommand x					
LABEL	LABEL2	CATEGORY	NAME	ARGUMENT	COMMENT
1	CmdAllPrmClear		Parameter clear	ArgAllPrmClear	
2	CmdInverterReset		Inverter reset		
3	CmdGetFaultsHistory1_2	Fault data obtain command	Obtain the most and the second most recent faults.	ArgGetFaultsHistory1_2	
4	CmdGetFaultsHistory3_4	Fault data obtain command	Obtain the third and the fourth most recent faults.	ArgGetFaultsHistory3_4	
5	CmdGetFaultsHistory5_6	Fault data obtain command	Obtain the fifth and the sixth most recent faults.	ArgGetFaultsHistory5_6	
6	CmdGetFaultsHistory7_8	Fault data obtain command	Obtain the seventh and eighth most recent faults.	ArgGetFaultsHistory7_8	
7	CmdGetFaultRecord		Obtain faults history.	ArgGetFaultRecord	
8	CmdFaultsHistoryClear		Faults history batch clear		
9	CmdSetFrequency		Frequency command	ArgSetFrequency	

BLOCK_COMMAND part

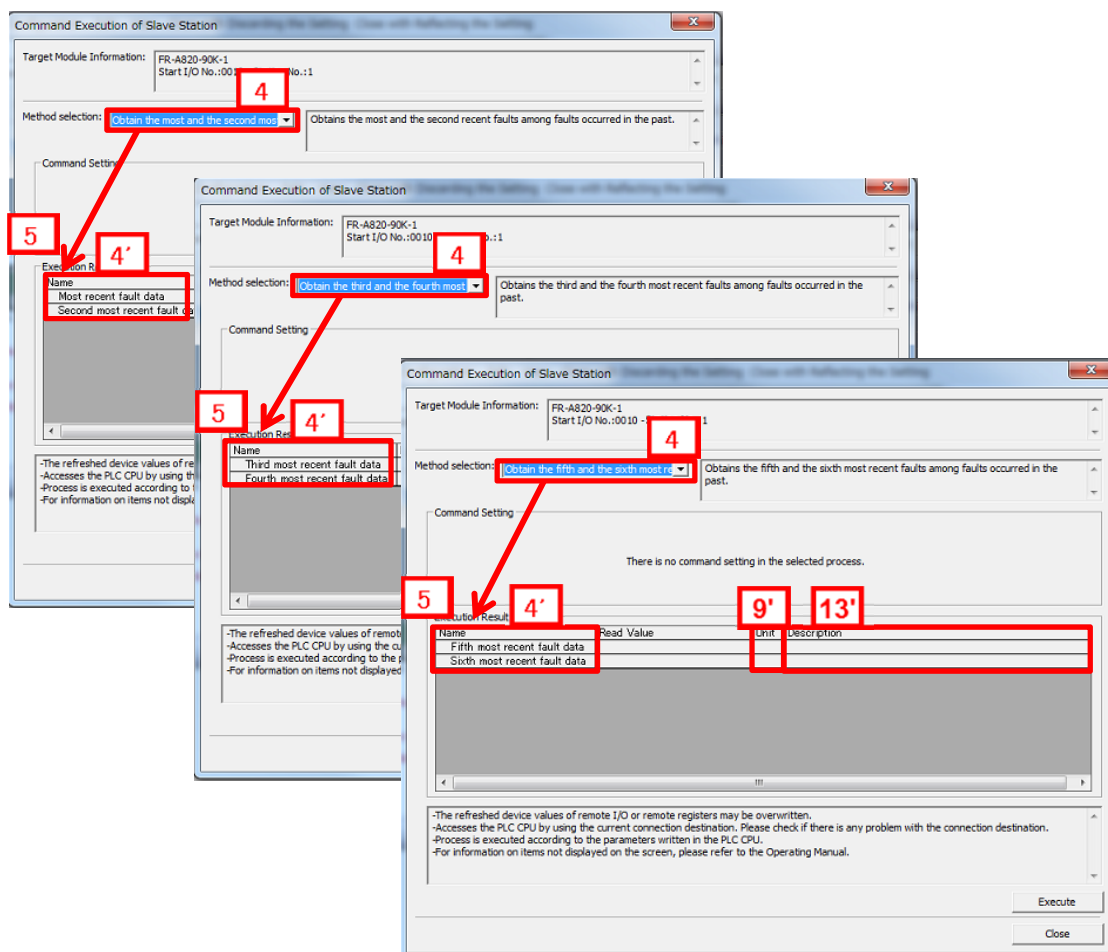
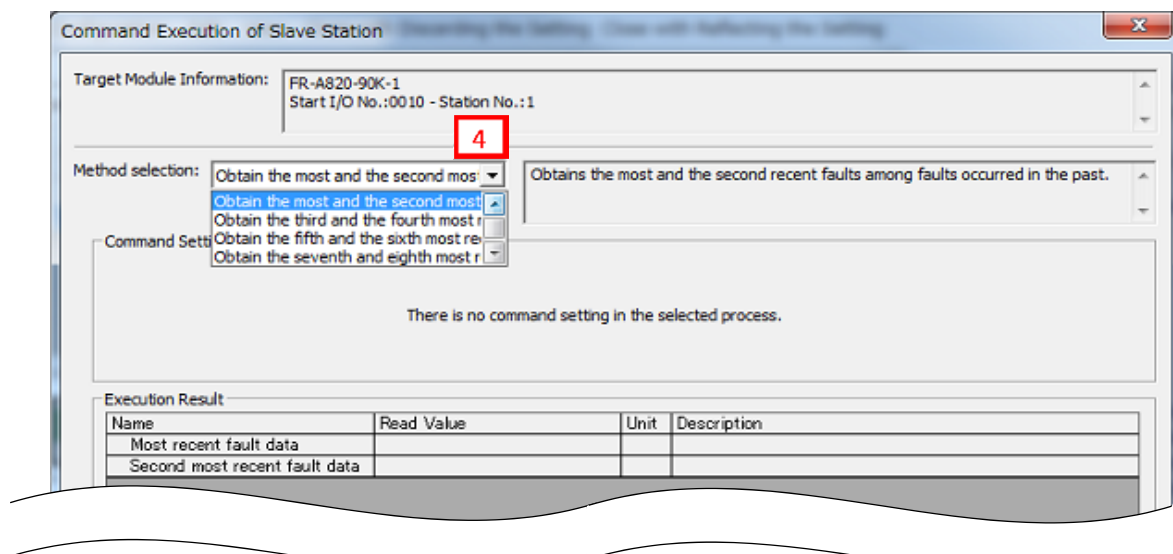
CCLink_Method CommCommand BlockCommand ArgGetFaultsHistory1_2 x					
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT
1	FaultData1		Most recent fault data	UINT8	
2	FaultData2		Second most recent fault data	UINT8	

CCLink_Method CommCommand BlockCommand ArgGetFaultsHistory3_4 x					
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT
1	FaultData3		Third most recent fault data	UINT8	
2	FaultData4		Fourth most recent fault data	UINT8	

CCLink_Method CommCommand BlockCommand ArgGetFaultsHistory5_6 x					
LABEL	LABEL2	CATEGORY	NAME	DATATYPE	DEFAULT
1	FaultData5		Fifth most recent fault data	UINT8	
2	FaultData6		Sixth most recent fault data	UINT8	

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

The descriptions in CSP+ for the FR-A740-90K 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. CC-Link Family 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

