

SC-GU3-01 Series

FB Library Reference Manual for Mitsubishi MELSEC iQ-R series Sequencer



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How to import the FBs described in this manual to GX Works3

From the GX Works3 menu, choose [Project] - [Library Operation] - [Register to Library List] to select and import your desired FB from the list of programs (with a file extension of mslm). (If the menu is disabled, open an existing project or create a new project.)

The FB is added to the "library" on the [Library] tab displayed when you choose [View] - [Docking Window] - [Element Selection] - [Library] from the menu.

[Customer Precautions]

- * Sample programs are not guaranteed to work correctly.
- * Use them at your own risk.



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Reference Manual Revision History

Reference manual number	Revision date	Record of changes
WUME-SCGU301IQRFB-1	2019/06/03	Newly created

1. Overview

1.1. Functional overview

This FB library is intended for use in accessing the output information of connectable sensor amplifiers and the configuration and management of optically communicatable sensor amplifiers via a Panasonic Industrial Devices SUNX Co., Ltd. "CC-Link Communication Unit SC-GU3-01" connected to a MELSEC CC-Link Master Unit.

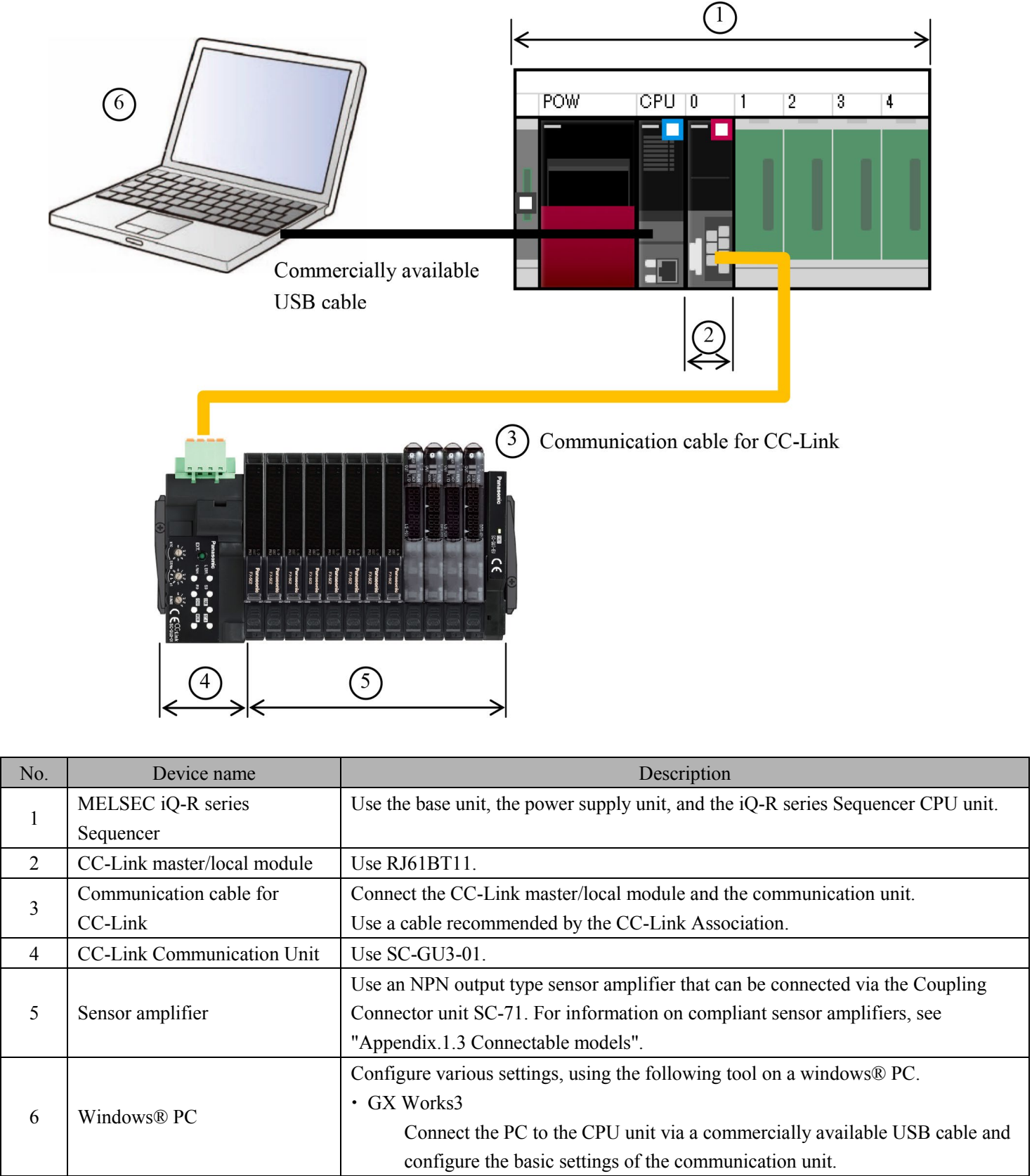
1.2. Functional contents of the FB library

No.	FB name (*1)	Description
1	P+SUNX-SC-GU3-01-CC_InitializeUnit_R	Initialize settings request without reboot.
2	P+SUNX-SC-GU3-01-CC_ClearError_R	Error clear is executed.
3	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	Set blank unit and output set controller to reflect blank unit.
4	P+SUNX-SC-GU3-01-CC_CheckOutData_R	Read connecting amplifier output and detected value.
5	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	Set command execution.
6	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	Output operation setting.
7	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	Perform teaching for set amplifier on own timing.
8	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	Execute to read or write speed mode.
9	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	Normally open or normally closed setting for amplifier.
10	P+SUNX-SC-GU3-01-CC_SetThreshold_R	Threshold setting.
11	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	Shift DPS series displayed value to "0".
12	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	Check number of connected units.
13	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	Check model information of connected amplifiers.
14	P+SUNX-SC-GU3-01-CC_SetDataBank_R	Data bank load or save.
15	P+SUNX-SC-GU3-01-CC_SetGain_R	Received light sensitivity setting for LS series.
16	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	Emission adjustment setting for FX series.
17	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	Execute or perform reset to keylock and Eco setting.

*1 This reference manual omits the FB version information such as "_00A" that is normally indicated behind a FB name.



1.3. System configuration example



1.4. Global labels

1.4.1 Global label configuration

Use GX Works3 to configure the global labels.

(1) G_bRX The global label for remote input (RX) access is described below:

Item	Description
Label name	Enter "G_bRX".
Data type	Select "bit".
Class	Select "VAR_GLOBAL".
Assign (device/label)	Add an index register "Z9" to the starting device configured for the unit parameter link refresh setting. In the following example, X1000Z9 is configured.

(2) G_bRY The global label for remote output (RY) access is described below:

Item	Description
Label name	Enter "G_bRY".
Data type	Select "bit".
Class	Select "VAR_GLOBAL".
Assign (device/label)	Add an index register "Z9" to the starting device configured for the unit parameter link refresh setting. In the following example, Y1000Z9 is configured.

(3) G_wRWr The global label for remote register (RWr) access is described below:

Item	Description
Label name	Enter "G_wRWr".
Data type	Select "word [signed]".
Class	Select "VAR_GLOBAL".
Assign (device/label)	Add an index register "Z8" to the starting device configured for the unit parameter link refresh setting. In the following example, W0Z8 is configured.

(4) G_wRWw The global label for remote register (RWw) access is described below:

Item	Description
Label name	Enter "G_wRWw".
Data type	Select "word [signed]".
Class	Select "VAR_GLOBAL".
Assign (device/label)	Add an index register "Z8" to the starting device configured for the unit parameter link refresh setting. In the following example, W1000Z8 is configured.



	Label Name	Data Type		Class	Assign (Device/Label)
1	G_bRX	Bit	...	VAR_GLOBAL	X1 000Z9
2	G_bRY	Bit	...	VAR_GLOBAL	Y1 000Z9
3	G_wRWw	Word [Signed]	...	VAR_GLOBAL	W0Z8
4	G_wRWw	Word [Signed]	...	VAR_GLOBAL	W1 000Z8
5					

Navigation window → Label → Global label

Figure 1-4-1: Examples of configuring global labels

1.4.2 Checking the number of index register points

Two index registers, "Z9" and "Z8", are used.

Ensure that the number of index register points are higher than or equal to 10.

Setting Item List

Input the Setting Item to Search

- Name Setting
- Operation Related Setting
- Interrupt Settings
- Service Processing Setting
- File Setting
- Memory/Device Setting
 - Device/Label Memory Area
 - Index Register Setting**
 - Refresh Memory Setting
 - Device Latch Interval Setting
 - Pointer Setting
 - Internal Buffer Capacity Setting
- RAS Setting
- Program Setting
- SFC Setting
- Refresh Setting between Multiple

Setting Item

Item	Setting
Index Register Setting	
Points Setting	
Total Points	14 Word
Index Register (Z)	10 Points
Long Index Register (LZ)	2 Points
Local Setting	
Points Setting	
Local Index Register (Z)	0 Points
Local Long Index Register (LZ)	0 Points
Start	
Index Register (Z)	0
Long Index Register (LZ)	0

Explanation

Set the points of index register (Z).

[Setting range]
0 to 24 [Points](2 Points Unit)

Setting is in the following range.

Check Restore the Default Settings

Apply

Navigation window → Parameter → (CPU module) → CPU parameter

Memory/device setting → Index register setting

Figure 1-4-2: Link refresh setting examples

1.4.3 Identifying the starting device

A starting device is configured for each CC-Link master/local module. Check the link refresh setting configured for the CC-Link master/local module connected to the communication unit where you want to run the FB.

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB									
-	SW									
1	RX	352	00000	0015F		Specify Device	X	352	01000	0115F
2	RY	352	00000	0015F		Specify Device	Y	352	01000	0115F
3	RWr	44	00000	0002B		Specify Device	W	44	00000	0002B
4	RWw	44	00000	0002B		Specify Device	W	44	01000	0102B

Navigation window → Parameter → Module information → (Destination CC-Link master) → Unit parameter

Basic setting → Link refresh setting

Figure 1-4-3: Link refresh setting examples

1.5. Related Manuals

MELSEC iQ-R CPU Module User's Manual (Startup)

MELSEC iQ-R CPU Module User's Manual (Application)

MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)

MELSEC iQ-R Programming Manual (CPU Module Instructions, Standard Functions/Function Blocks)

GX Works3 Operating Manual

CC-Link Communication Unit SC-GU3-01 User's Manual

1.6. Precaution

Before use, be sure to read the User's Manuals of the products you are going to use.

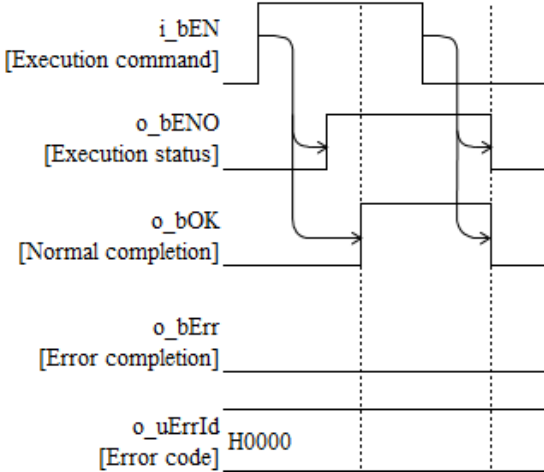
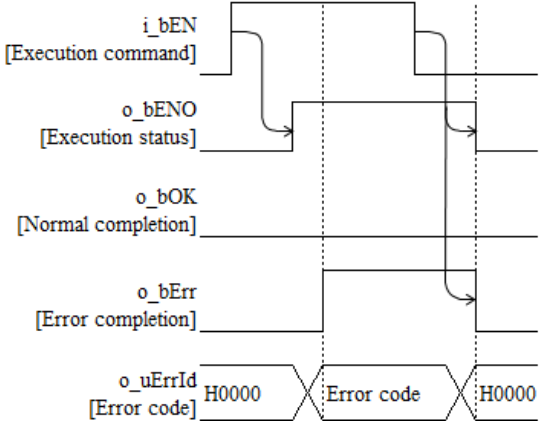
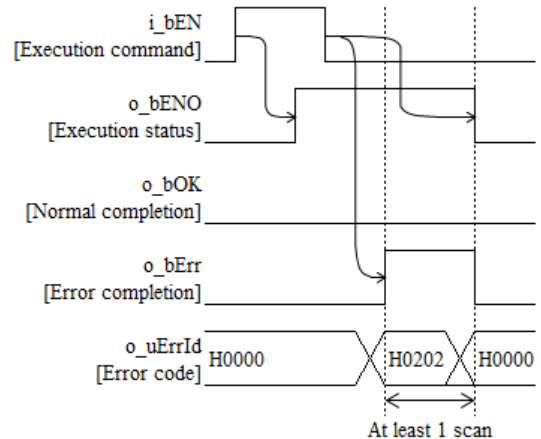


2. Details of the FB library

2.1. P+SUNX-SC-GU3-01-CC_InitializeUnit_R (initialization)

Name
P+SUNX-SC-GU3-01-CC_InitializeUnit_R
Functional Contents

Item	Description																
Functional overview	Initialize settings request without reboot.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_InitializeUnit_R</div><div><div><div>Execution command</div><div>B : i_bEN</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div></div></div><div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div></div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU	R32ENCPU																
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	251 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description	
Description of functions	When Execution Command (i_bEN) is turned ON, this FB requests initialization.	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	<p>[Normal completion]</p> 	<p>[Error completion]</p> <p>If an FB error occurs:</p>  <p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p> 

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) This FB does not check the module error. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index register Z9. Do not use Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in " Appendix.5 How to Use FBs across two or more master/local modules ".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).



Labels To Be Used

■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU module. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.

■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



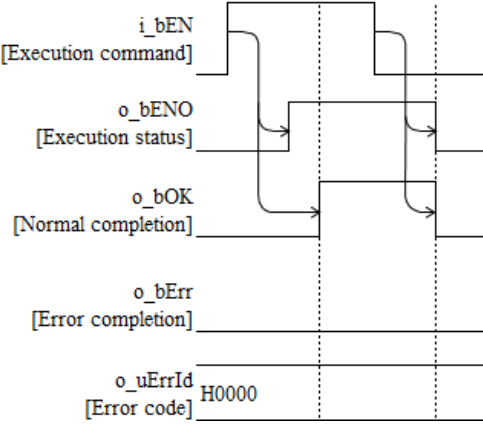
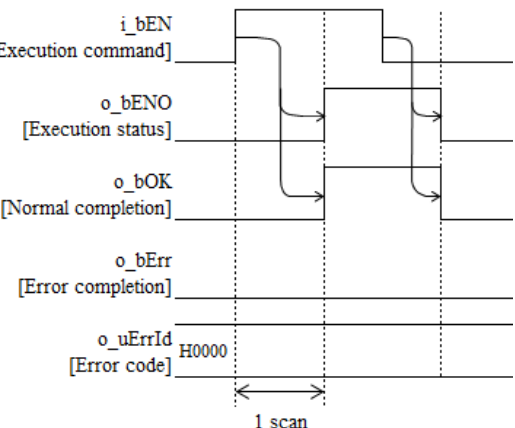
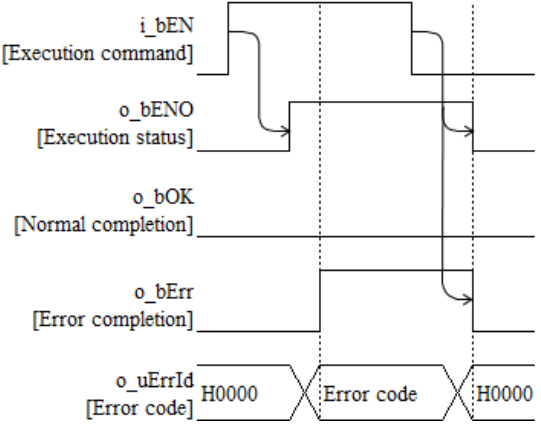
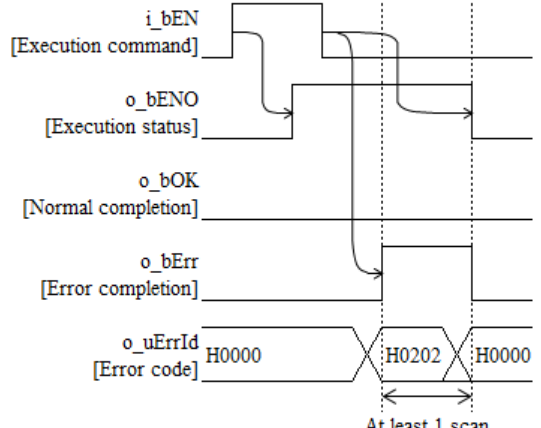
2.2. P+SUNX-SC-GU3-01-CC_ClearError_R (error clear)

Name

P+SUNX-SC-GU3-01-CC_ClearError_R

Functional Contents

Item	Description																
Functional overview	Error clear is executed.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_ClearError_R</div><div><div><div>Execution command</div><div>B : i_bEN</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div></div></div><div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div></div></div></div></div>																
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Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	221 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description	
Description of functions	When Execution Command (i_bEN) is turned ON, this FB resets the communication unit error. If no error has occurred, Normal Completion (o_bOK) turns ON in one scan.	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	<p>[Normal completion]</p> <p>If executed with a communication unit error:</p>  <p>If executed without a communication unit error:</p> 	<p>[Error completion]</p> <p>If an FB error occurs:</p>  <p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p> 



Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (2) Use this FB as a macro type FB. (3) You cannot use this FB in an interrupt program. (4) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (5) Configure the global label as instructed in "1.4 Global labels". (6) This FB uses the index register Z9. Do not use Z9 in an interrupt program. (7) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (8) Do not run this FB on any device other than SC-GU3-01. (9) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each local module, create the FBs for use with the second and subsequent local modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).



Labels To Be Used

Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU module. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.

Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.3. P+SUNX-SC-GU3-01-CC_SetBlankUnit_R (set blank unit controller)

Name

P+SUNX-SC-GU3-01-CC_SetBlankUnit_R

Functional Contents

Item	Description																
Functional overview	Set blank unit and output set controller to reflect blank unit.																
Symbol	<div><div><div><div>P+SUNX-SC-GU3-01-CC_SetBlankUnit_R</div><div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Set controller</div><div>UW : i_uSetController</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>Set blank unit controller</div><div>UW : i_uBlankUnit</div><div>o_uBlankUnitSet : UW</div><div>Set controller reflected blank unit</div></div></div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU	R32ENCPU																
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	230 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB acquires the 16-bit information specified in Set Blank Unit Controller (i_uBlankUnit) and configures the blank unit accordingly.</p> <p>To clear the blank unit information, execute this FB with Set Blank Unit Controller (i_uBlankUnit) set to 0.</p> <p>If the value input to Set Controller (i_uSetController) is non-zero, the set sensor amplifier information updated to reflect Set Blank Unit Controller (i_uBlankUnit) is output to Set Controller Reflected Blank Unit (o_uBlankUnitSet).</p> <p>If the sensor amplifier cannot be set based on Set Blank Unit Controller (i_uBlankUnit), Normal Completion (o_bOK) turns ON but Set Controller Reflected Blank Unit (o_uBlankUnitSet) is set to 0.</p>
FB compilation method	Macro type
FB behavior	Pulse execution type (single-scan execution type)
i_bEN input condition	None
I/O signal flow movement	<div> <div> <p>[Normal completion]</p> <p>If Set Controller (i_uSetController) is 0 or the sensor amplifier cannot be set:</p> </div> <div> <p>[Error completion]</p> </div> </div>



Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) Use this FB as a macro type FB. (3) You cannot use this FB in an interrupt program. (4) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (5) This FB does not check the module error. (6) Configure the global label as instructed in "1.4 Global labels". (7) This FB uses the index register Z9. Do not use Z9 in an interrupt program. (8) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (9) Do not run this FB on any device other than SC-GU3-01. (10) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each local module, create the FBs for use with the second and subsequent local modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU module. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier when not updated to reflect the blank unit setting. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Set Blank Unit Controller	i_uBlankUnit	Word [Unsigned]	16-bit data	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier updated to reflect the blank unit setting. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Set Controller Reflected Blank Unit	o_uBlankUnitSet	Word [Unsigned]	0	Stores the word information (consisting of 16 pieces of bit information) that represents the status after updated to reflect the blank unit setting. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.4. P+SUNX-SC-GU3-01-CC_CheckOutData_R (sensor output read)

Name

P+SUNX-SC-GU3-01-CC_CheckOutData_R

Functional Contents

Item	Description			
Functional overview	Read connecting amplifier output and detected value.			
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_CheckOutData_R</div><div><div><div>Execution command</div><div>B : i_bEN</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div></div></div><div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_uModuleErrId : UW</div><div>o_uSensorOutput : UW</div><div>o_w16DetectedValue : W</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Module error code</div><div>Sensor output</div><div>Detected value</div></div></div></div></div>			
Target devices	Target module	RJ61BT11		
	Target CPU			
		Series	Model	
		MELSEC iQ-R series	R04CPU	R04ENCPU
R08CPU			R08ENCPU	
R16CPU			R16ENCPU	
R32CPU	R32ENCPU			
R120CPU	R120ENCPU			
Target engineering tool	GX Works3 Version 1.035M or later			
Program language	Ladder			
Number of basic steps	659 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.			
FB dependencies	None			
Description of functions	When Execution Command (i_bEN) is turned ON, this FB outputs the connected sensor amplifier output to the Sensor Output (o_uSensorOutput) as 16-bit word data and outputs the detected value of the sensor amplifier with a detected value to the Detected Value (o_w16DetectedValue).			

Item	Description	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	[Normal completion]	[Error completion] If an FB error occurs:
	If a module error occurs:	If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) The Sensor Output (o_uSensorOutput) and Detected Value (o_w16DetectedValue) used by this FB are cleared when Execution Command (i_bEN) is turned OFF. The Sensor Output (o_uSensorOutput) and Detected Value (o_w16DetectedValue) are all zero while Execution Status (o_bENO) is OFF. Carefully note this when you turn ON and OFF Execution Command (i_bEN) and then update the data. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.

■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Sensor Output	o_uSensorOutput	Word [Unsigned]	0	Stores the word information (consisting of 16 pieces of bit information) that represents the connected sensor amplifier output status. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Detected Value	o_w16DetectedValue[n]	Word [Signed]	0	Stores the sensor amplifier detected value. 16 arrays exist and each array stores (n+1)th sensor amplifier detected value.



FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.5. P+SUNX-SC-GU3-01-CC_ExecuteCommand_R (execute specified command)

Name

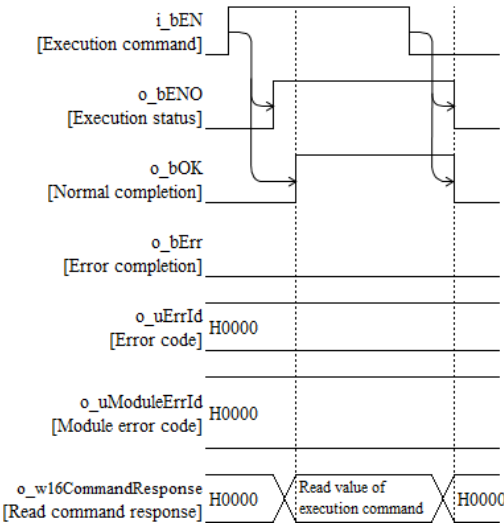
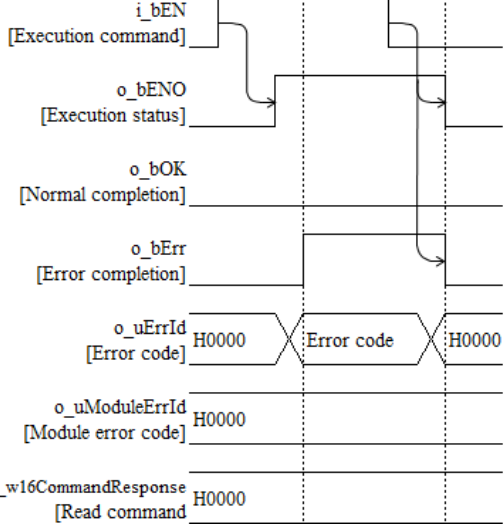
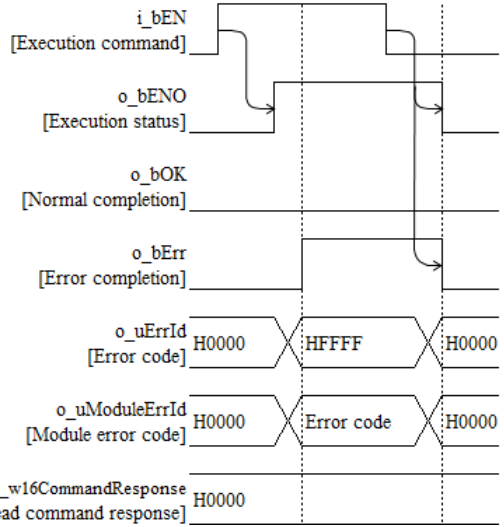
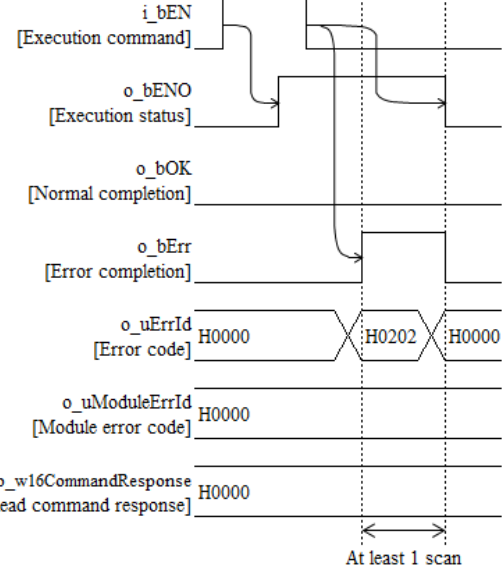
P+SUNX-SC-GU3-01-CC_ExecuteCommand_R

Functional Contents

Item	Description																
Functional overview	Set command execution.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_ExecuteCommand_R</div><div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Set controller</div><div>UW : i_uSetController</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>All controller set request</div><div>B : i_bAllSettingFlag</div><div>o_uModuleErrId : UW</div><div>Module error code</div></div><div><div>Input Command</div><div>UW : i_uCommand</div><div>o_w16CommandResponse : W</div><div>Read command response</div></div><div><div>Command data</div><div>W : i_wCommandData</div><div></div></div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU	R32ENCPU																
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	717 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB executes the command input to Input Command (i_uCommand) on the sensor amplifier specified by Set Controller (i_uSetController).</p> <p>If All Controller Set Request (i_bAllSettingFlag) is ON, the command is executed on all the sensor amplifiers with the value input to Set Controller (i_uSetController) being ignored.</p> <p>If the command to execute is a write command, input data to Command Data (i_wCommandData). The input data will be written as values to the set sensor amplifier.</p> <p>If the command to execute is a read command, the command response values for all the sensor amplifiers will be output to the Read Command Response (o_w16CommandResponse) with the values input to Set Controller (i_uSetController) and Command Data (i_wCommandData) being ignored.</p>
FB compilation method	Macro type
FB behavior	Pulse execution type (multi-scan execution type)
i_bEN input condition	None



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p> <p>When executing a read command: (When executing a write command, only the sensor amplifier settings are changed.)</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
		
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>
		

Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) Configure the global label as instructed in "1.4 Global labels". (7) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (8) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (9) Do not run this FB on any device other than SC-GU3-01. (10) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0 or turn ON All Controller Set Request (i_bAllSettingFlag).
103	Input Command (i_uCommand) is outside the valid range	Enter the correct command.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to execute the command. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
All Controller Set Request	i_bAllSettingFlag	Bit	ON, OFF	Starting the FB with this label ON sends the command to all the sensor amplifiers. Starting the FB with this label OFF sends the command to the sensor amplifier specified by Set Controller (i_uSetController).
Input Command	i_uCommand	Word [Unsigned]	H0 to HFF (hexadecimal)	For information on available commands and the command data, refer to the SC-GU3-01 User's Manual.
Command Data	i_wCommandData	Word [Signed]	-32768 to 32767 (decimal) The valid range differs from command to command.	



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Command Response	o_w16CommandResponse[n]	Word [Signed]	0	Stores the response data after the execution of the read command. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



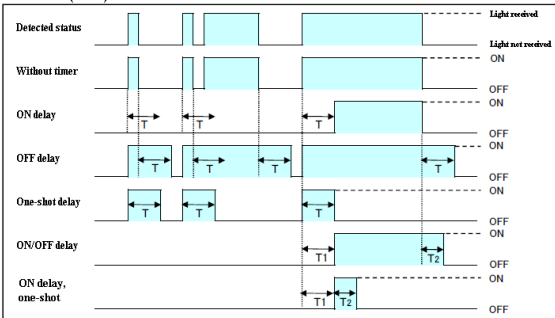
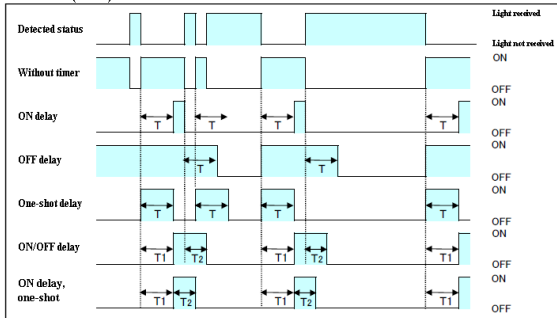
2.6. P+SUNX-SC-GU3-01-CC_SetOutTimer_R (output operation setting)

Name

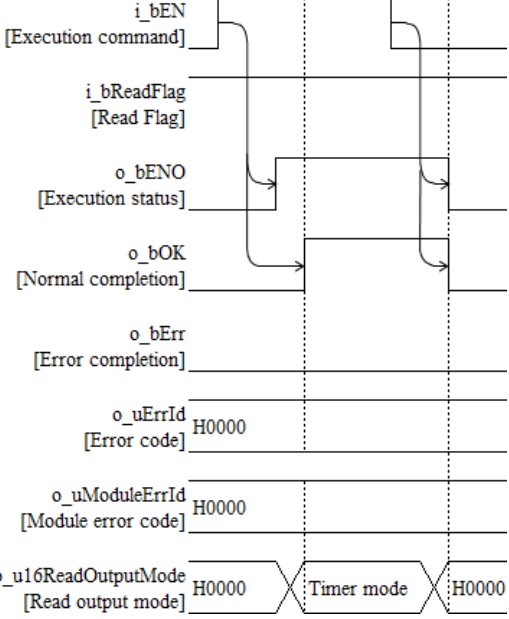
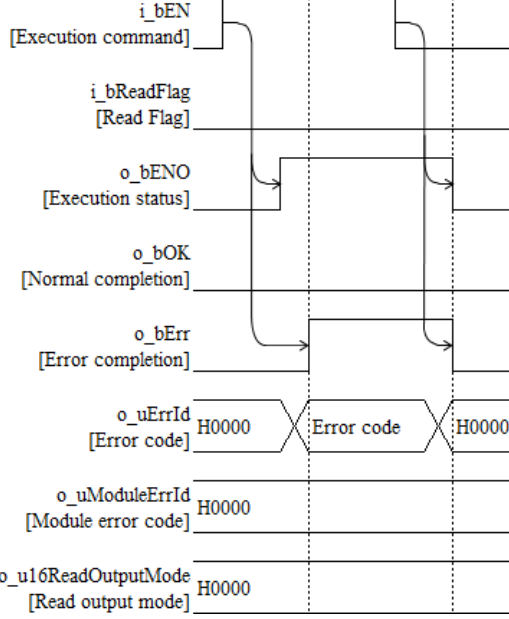
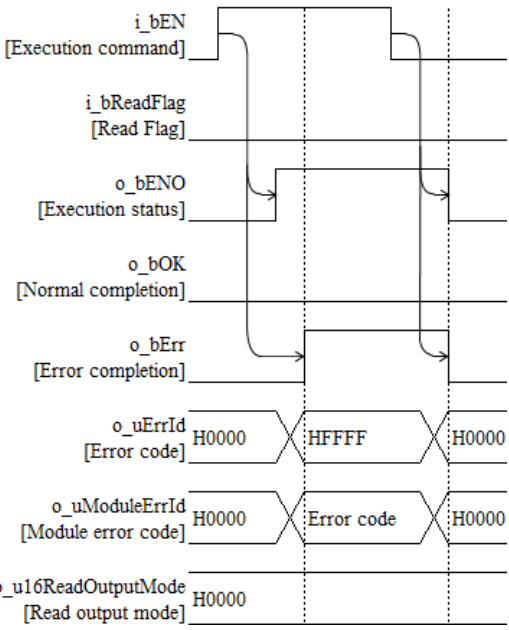
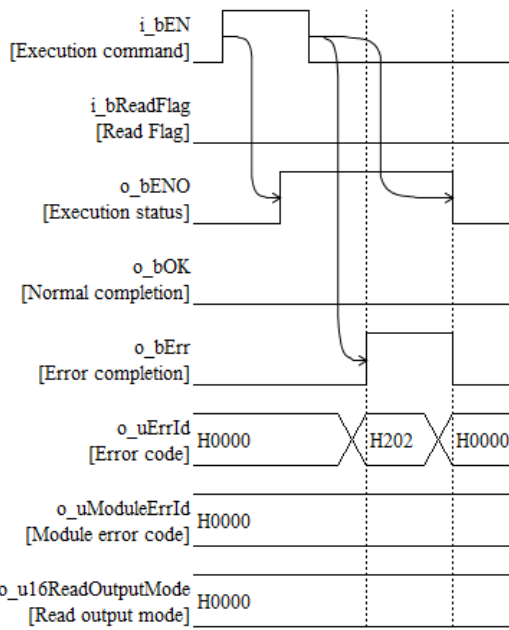
P+SUNX-SC-GU3-01-CC_SetOutTimer_R

Functional Contents

Item	Description																
Functional overview	Output operation setting.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_SetOutTimer_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Read Flag</div><div>B : i_bReadFlag</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>Set controller</div><div>UW : i_uSetController</div><div>o_uModuleErrId : UW</div><div>Module error code</div></div><div><div>Timer mode</div><div>UW : i_uTimerMode</div><div>o_u16ReadTimerMode : UW</div><div>Read timer mode</div></div><div><div>Timer Range</div><div>UW : i_uTimerRange</div><div></div><div></div></div><div><div>Timer span1</div><div>UW : i_uTimerSpan1</div><div></div><div></div></div><div><div>Timer span2</div><div>UW : i_uTimerSpan2</div><div></div><div></div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
MELSEC iQ-R series		R04CPU	R04ENCPU														
		R08CPU	R08ENCPU														
		R16CPU	R16ENCPU														
		R32CPU	R32ENCPU														
	R120CPU	R120ENCPU															
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	917 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description																					
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB executes the settings on the sensor amplifier specified by Set Controller (i_uSetController) in accordance with the various input values. If Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) ON, however, all the timer settings for the sensor amplifiers connected to Read Timer Mode (o_u16ReadTimerMode) are output in accordance with the data values shown in the table below. In this case, the subsequent setting values are ignored, and no setting takes place.</p> <p>If Read Flag (i_bReadFlag) is OFF, you can execute various settings by entering the data values corresponding to the timer settings in Timer Mode (i_uTimerMode).</p> <table><tr><th>Timer setting</th><th>Data value</th><th>Unconfigurable sensor amplifier</th></tr><tr><td>Without timer</td><td>H0000</td><td>-</td></tr><tr><td>OFF delay</td><td>H0001</td><td>-</td></tr><tr><td>ON delay</td><td>H0002</td><td>-</td></tr><tr><td>ON/OFF delay</td><td>H0003</td><td>FX-301, LS-403</td></tr><tr><td>One-shot delay</td><td>H0004</td><td>-</td></tr><tr><td>ON delay, one-shot</td><td>H0005</td><td>FX-301, LS-403</td></tr></table>	Timer setting	Data value	Unconfigurable sensor amplifier	Without timer	H0000	-	OFF delay	H0001	-	ON delay	H0002	-	ON/OFF delay	H0003	FX-301, LS-403	One-shot delay	H0004	-	ON delay, one-shot	H0005	FX-301, LS-403
	Timer setting	Data value	Unconfigurable sensor amplifier																			
	Without timer	H0000	-																			
	OFF delay	H0001	-																			
	ON delay	H0002	-																			
	ON/OFF delay	H0003	FX-301, LS-403																			
	One-shot delay	H0004	-																			
	ON delay, one-shot	H0005	FX-301, LS-403																			
		<p>Timer Range (i_uTimerRange) is determined in accordance with the following table.</p> <p>FX-301, FX-305, and LS-403 are fixed timers [ms] and return an error if a different range is selected.</p> <table><tr><th>Setting values</th><th>Range</th><th>Display value</th></tr><tr><td>H0000</td><td>[dms]</td><td>Display value x 10us</td></tr><tr><td>H0001</td><td>[ms]</td><td>Display value x 1ms</td></tr><tr><td>H0002</td><td>[s]</td><td>Display value x 1s</td></tr></table>	Setting values	Range	Display value	H0000	[dms]	Display value x 10us	H0001	[ms]	Display value x 1ms	H0002	[s]	Display value x 1s								
	Setting values	Range	Display value																			
H0000	[dms]	Display value x 10us																				
H0001	[ms]	Display value x 1ms																				
H0002	[s]	Display value x 1s																				
	<p>For Timer Span 1 (i_uTimerSpan1), enter the control time. Set the time from 0 to 9999 in accordance with the timer range. If you set the timer span to 0, '0.5' is assumed. For example, if you select the [ms] timer range and set the timer span to 0, '0.5'[ms] is assumed.</p> <p>Also, selecting "ON/OFF delay" or "ON delay, one-shot" requires you to set the Timer Span 2 (i_uTimerSpan2). The respective time charts are shown below.</p>																					
	<div><div><p>Time chart (L-ON)</p></div><div><p>Time chart (D-ON)</p></div></div>																					



Item	Description	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	<p>[Normal completion] If Read Flag (i_bReadFlag) is ON: (When it is OFF, only the sensor amplifier settings are changed.)</p> 	<p>[Error completion] If an FB error occurs:</p> 
	<p>If a module error occurs:</p> 	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>  <p style="text-align: right;">At least 1 scan</p>

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) This FB executes multiple commands. You can stop this FB by turning OFF Execution Command (i_bEN). You cannot, however, cancel the commands that have been executed before you stop the FB. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
104	Timer Mode (i_uTimerMode) is outside the valid range	Set Timer Mode (i_uTimerMode) to a value not greater than 5.
105	Timer Range (i_uTimerRange) is outside the valid range	Set Timer Range (i_uTimerRange) to a value not greater than 2.
106	Timer Span (i_uTimerSpan1/i_uTimerSpan2) is outside the valid range	Set Timer Span (i_uTimerSpan1/i_uTimerSpan2) to a value not greater than 9999.
107	Set to unconfigurable sensor amplifier	Setting Timer Mode (i_uTimerMode) to 3 or 5 requires you to select sensor amplifier other than FX-301 and LS-403.
108	Set to unconfigurable range	Setting Timer Range (i_uTimerRange) to other than 1 requires you to select sensor amplifier other than FX-301, FX-305, and LS-403.



Error code (hexadecimal)	Description	Meaning
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Read Flag	i_bReadFlag	Bit	ON, OFF	Start the FB with label ON to execute it in data read mode. Start the FB with label OFF to execute it in data write mode.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to set the timer spans. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Timer Mode	i_uTimerMode	Word [Unsigned]	0 to 5	Specify one of the following timer modes. 0: Without timer 1: OFF delay 2: ON delay 3: ON/OFF delay 4: One-shot delay 5: ON delay, one-shot
Timer Range	i_uTimerRange	Word [Unsigned]	0 to 2	Set the timer span unit. 0: [dms] 1: [ms] 2: [s]
Timer Span	i_uTimerSpan1 i_uTimerSpan2	Word [Unsigned]	0 to 9999 (decimal)	Set the delay time. If you specify 0, 0.5 is assumed.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Timer Mode	o_u16ReadTimerMode[n]	Word [Unsigned]	0	Stores the timer mode. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.7. P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R (execute teaching)

Name

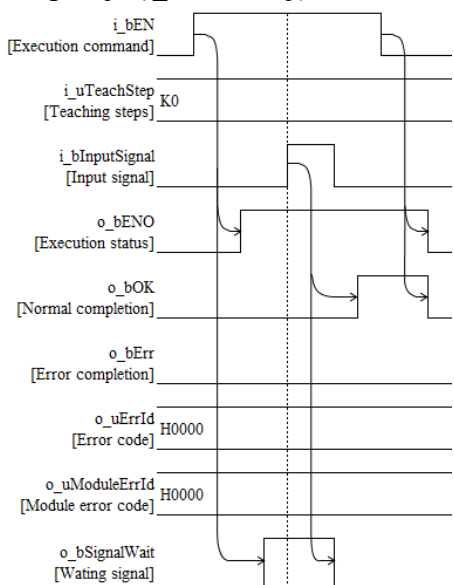
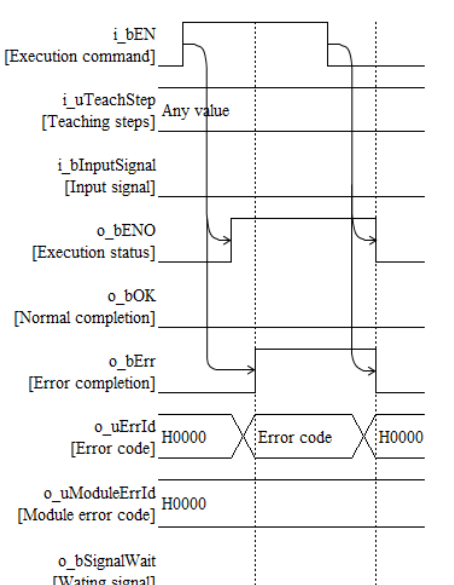
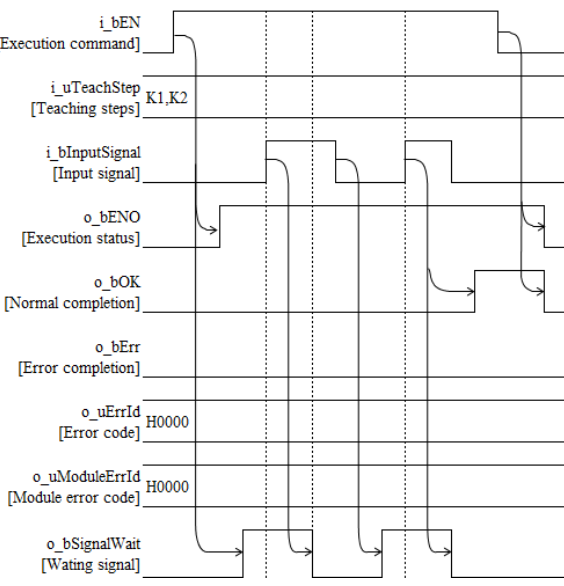
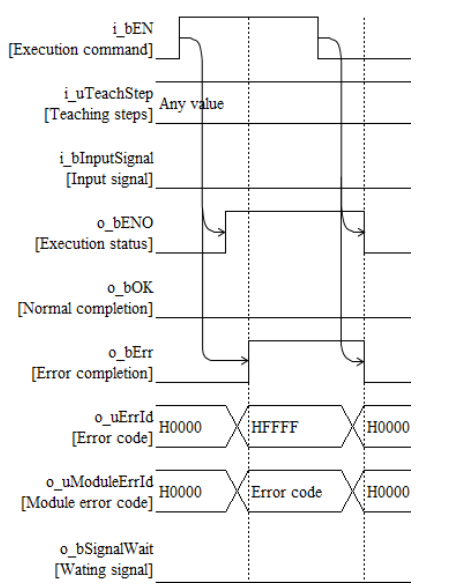
P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R

Functional Contents

Item	Description																
Functional overview	Perform teaching for set amplifier on own timing.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R</div><div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Set controller</div><div>UW : i_uSetController</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>Teaching steps</div><div>UW : i_uTeachStep</div><div>o_uModuleErrId : UW</div><div>Module error code</div></div><div><div>Shift amount</div><div>W : i_wShiftAmount</div><div>o_bSignalWait : B</div><div>Wating signal</div></div><div><div>Input signal</div><div>B : i_bInputSignal</div><div></div><div></div></div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
	Series	Model															
	MELSEC iQ-R series	R04CPU	R04ENCPU														
R08CPU		R08ENCPU															
R16CPU		R16ENCPU															
R32CPU		R32ENCPU															
R120CPU		R120ENCPU															
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	901 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description														
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB reads various input values and executes the specified operations.</p> <p>The various settings are executed on the sensor amplifier specified by Set Controller (i_uSetController).</p> <p>The teaching mode is fixed to "Normal Operation". Even if set to "Window Comparator Operation" or "Hysteresis Operation", the teaching mode is changed to "Normal Operation".</p> <p>Teaching Steps (i_uTeachStep) allows you to select one of the following three teaching types: "1-point teaching (limit teaching)", "2-point teaching", and "full-auto teaching".</p> <table border="1"> <thead> <tr> <th>Setting values</th><th>Operation</th></tr> </thead> <tbody> <tr> <td>H0000</td><td>Limit teaching</td></tr> <tr> <td>H0001</td><td>2-point teaching</td></tr> <tr> <td>H0002</td><td>Full-auto teaching</td></tr> </tbody> </table> <p>Selecting "limit teaching" requires you to set Shift Amount (i_wShiftAmount).</p> <p>The behavior differs depending on the sign of Shift Amount (i_wShiftAmount).</p> <p>The input value is ignored if you specify a type other than "limit teaching".</p> <table border="1"> <thead> <tr> <th>Input value</th><th>Operation</th></tr> </thead> <tbody> <tr> <td>Positive</td><td>+ Limit teaching (Percentage)*</td></tr> <tr> <td>Negative</td><td>- Limit teaching (Percentage)*</td></tr> </tbody> </table> <p>* For FX-501, FX-502, and LS-501, this FB operates the sensor amplifiers and, if the Shift amount setting is "Display value: digit", it operates them in the unit of "digit". In this case, you cannot make changes from the communication unit side; to make changes, operate the sensor amplifiers as appropriate. If you opt to continue the teaching, "Display value: digit" is applied.</p> <p>Upon completion of the various settings, Waiting Signal (o_bSignalWait) turns ON to indicate the readiness for teaching.</p> <p>Check that Teaching Wait Flag (o_bSignalWait) is ON and then turn Input Signal (i_bInputSignal) from OFF to ON when you want to execute teaching to ensure that the incident light amount required for teaching reaches the sensor amplifiers. If you need to configure the settings twice or more times, temporarily turn Input Signal (i_bInputSignal) from ON to OFF and wait for Waiting Signal (o_bSignalWait) to turn ON, then turn Input Signal (i_bInputSignal) from OFF to ON.</p> <p>Normal Completion (o_bOK) turns ON when the teaching is complete.</p>	Setting values	Operation	H0000	Limit teaching	H0001	2-point teaching	H0002	Full-auto teaching	Input value	Operation	Positive	+ Limit teaching (Percentage)*	Negative	- Limit teaching (Percentage)*
Setting values	Operation														
H0000	Limit teaching														
H0001	2-point teaching														
H0002	Full-auto teaching														
Input value	Operation														
Positive	+ Limit teaching (Percentage)*														
Negative	- Limit teaching (Percentage)*														
FB compilation method	Macro type														
FB behavior	Pulse execution type (multi-scan execution type)														
i_bEN input condition	None														



Item	Description	
I/O signal flow movement	[Normal completion] If Teaching Steps (i_uTeachStep) is zero:	[Error completion] If an FB error occurs:
		
	If Teaching Steps (i_uTeachStep) is 1 or 2:	If a module error occurs:
		

Item	Description	
I/O signal flow movement	<div><p>[Error completion]</p><p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p><p>If Execution Command (i_bEN) is turned from ON to OFF before the start of the teaching for the 2nd point:</p></div> <div><p>At least 1 scan</p></div> <div><p>Input Signal (i_bInputSignal) is turned from OFF to ON with Waiting Signal (o_bSignalWait) OFF</p></div>	

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) This FB executes multiple commands. You can stop this FB by turning OFF Execution Command (i_bEN). You cannot, however, cancel the commands that have been executed before you stop the FB. (7) Teaching Steps (i_uTeachStep) set to 1 or 2 requires you to turn Input Signal (i_bInputSignal) from OFF to ON twice. When Execution Command (i_bEN) turns OFF after Input Signal (i_bInputSignal) is accepted, the teaching is then executed and the processing is completed. Until the completion of this processing, Execution Status (o_bENO) stays ON. Therefore, ensure that the communication unit knows the turning OFF of Execution Status (o_bENO) so that the next command is executed. Carefully note that in this case, the threshold is set to an unintended value (as the result of teaching). This results in the output of H206 to Error Code (o_uErrId). (8) Configure the global label as instructed in "1.4 Global labels". (9) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (10) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (11) Do not run this FB on any device other than SC-GU3-01. (12) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
109	Teaching Steps (i_uTeachStep) is outside the valid range	Set Teaching Steps (i_uTeachStep) to a value not greater than 2.
10A	"1-point teaching (limit teaching)" is selected and Shift Amount (i_wShiftAmount) is set to 0	Selecting "1-point teaching (limit teaching)" requires you to set Shift Amount (i_wShiftAmount) to a non-zero value within the valid range.
10B	Input Signal (i_bInputSignal) is ON and Execution Command (i_bEN) is ON	Turn OFF Input Signal (i_bInputSignal) and then turn ON Execution Command (i_bEN)



Error code (hexadecimal)	Description	Meaning
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
204	Input Signal (i_bInputSignal) is turned from OFF to ON with Waiting Signal (o_bSignalWait) OFF	Check that Waiting Signal (o_bSignalWait) is ON and then turn ON Input Signal (i_bInputSignal).
205	After the teaching for the 1st point, Input Signal (i_bInputSignal) is turned from OFF to ON with Waiting Signal (o_bSignalWait) OFF	Input Signal (i_bInputSignal) was turned ON before the teaching for the 2nd point became acceptable. This FB will forcibly terminate the teaching. Check the threshold.
206	Execution Command (i_bEN) turns OFF after the teaching for the 1st point	Execution Command (i_bEN) was turned OFF before the teaching for the 2nd point was successfully executed. This FB will forcibly terminate the teaching. Check the threshold.
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to execute the teaching. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Teaching Steps	i_uTeachStep	Word [Unsigned]	0 to 2	Set the teaching type. 0: Limit teaching 1: 2-point teaching 2: Full-auto teaching
Shift Amount	i_wShiftAmount	Word [Signed]	FX-301, FX-305 -150 to 150(*) (Decimal) FX-501, FX-502, LS-403, LS-501 -999 to 999(*) (Decimal) (*) Except 0	Selecting "limit teaching" from Teaching Steps (i_uTeachStep) requires you to set this value. A module error occurs if the setting is outside the valid range or a FB error occurs if the setting is 0.
Input Signal	i_bInputSignal	Bit	ON, OFF	Turn ON this label when you want to execute teaching. An FB error occurs if you turn it ON with Waiting Signal (o_bSignalWait) OFF.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Waiting Signal	o_bSignalWait	Bit	OFF	ON: Waiting for teaching input OFF: No teaching accepted

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.

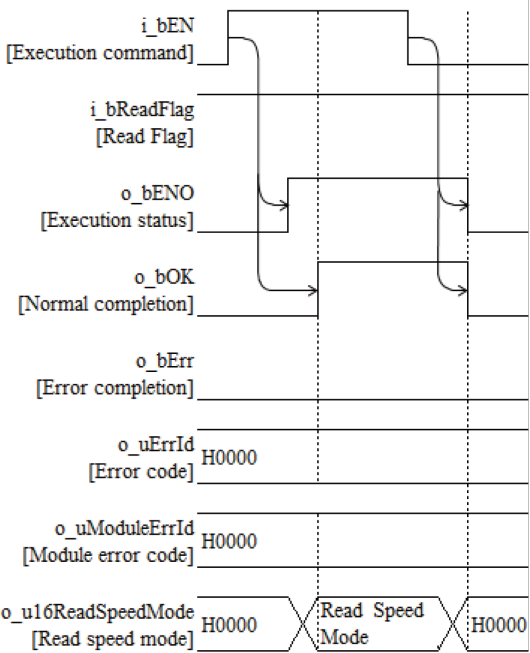
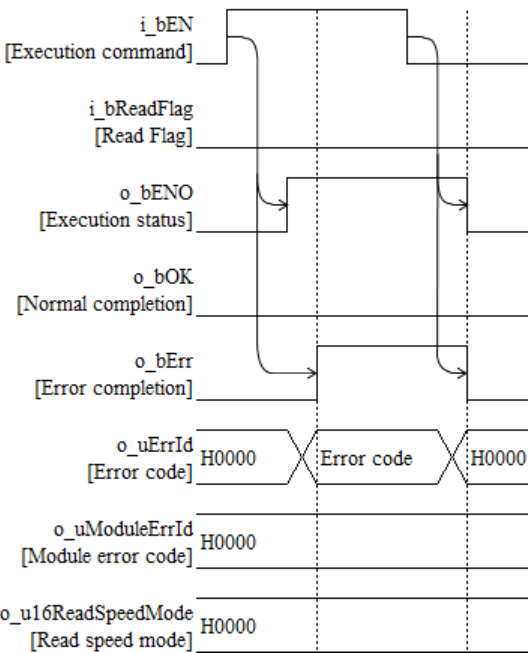
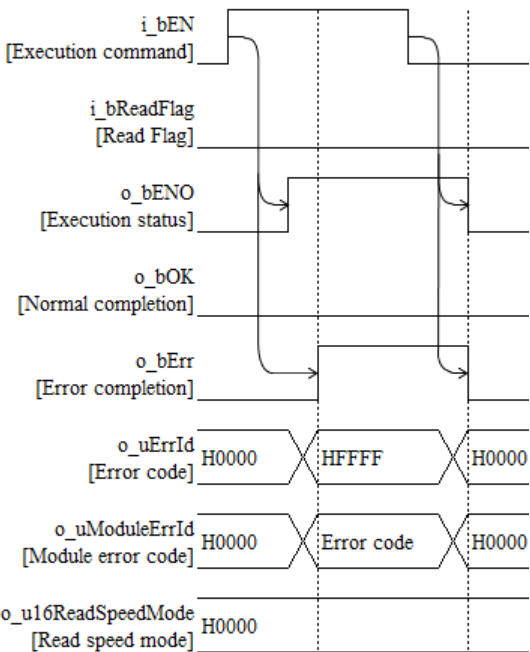
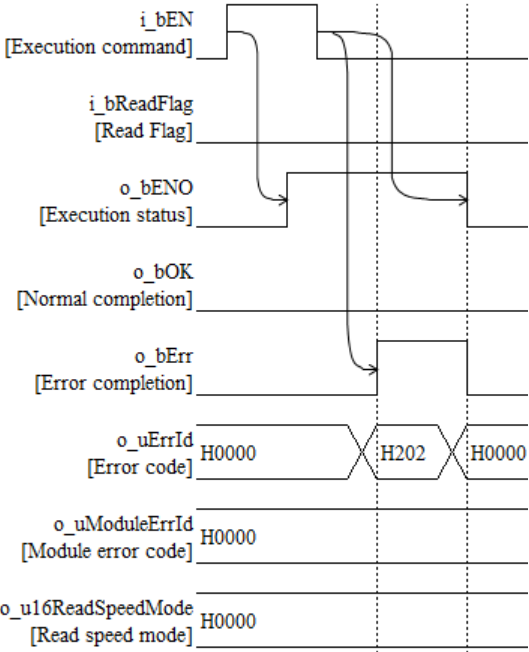


2.8. P+SUNX-SC-GU3-01-CC_SetSpeedMode_R (response speed setting)

Name																																							
P+SUNX-SC-GU3-01-CC_SetSpeedMode_R																																							
Functional Contents																																							
Item	Description																																						
Functional overview	Execute to read or write speed mode.																																						
Symbol	<table><tr><td colspan="5">P+SUNX-SC-GU3-01-CC_SetSpeedMode_R</td></tr><tr><td>Execution command</td><td>B</td><td>: i_bEN</td><td>o_bENO : B</td><td>Execution status</td></tr><tr><td>Start I/O No.</td><td>UW</td><td>: i_uStartIONo</td><td>o_bOK : B</td><td>Normal completion</td></tr><tr><td>Station No.</td><td>UW</td><td>: i_uStationNo</td><td>o_bErr : B</td><td>Error completion</td></tr><tr><td>Read Flag</td><td>B</td><td>: i_bReadFlag</td><td>o_uErrId : UW</td><td>Error code</td></tr><tr><td>Set controller</td><td>UW</td><td>: i_uSetController</td><td>o_uModuleErrId : UW</td><td>Module error code</td></tr><tr><td>Speed mode</td><td>UW</td><td>: i_uSpeedMode</td><td>o_u16ReadSpeedMode : UW</td><td>Read speed mode</td></tr></table>				P+SUNX-SC-GU3-01-CC_SetSpeedMode_R					Execution command	B	: i_bEN	o_bENO : B	Execution status	Start I/O No.	UW	: i_uStartIONo	o_bOK : B	Normal completion	Station No.	UW	: i_uStationNo	o_bErr : B	Error completion	Read Flag	B	: i_bReadFlag	o_uErrId : UW	Error code	Set controller	UW	: i_uSetController	o_uModuleErrId : UW	Module error code	Speed mode	UW	: i_uSpeedMode	o_u16ReadSpeedMode : UW	Read speed mode
P+SUNX-SC-GU3-01-CC_SetSpeedMode_R																																							
Execution command	B	: i_bEN	o_bENO : B	Execution status																																			
Start I/O No.	UW	: i_uStartIONo	o_bOK : B	Normal completion																																			
Station No.	UW	: i_uStationNo	o_bErr : B	Error completion																																			
Read Flag	B	: i_bReadFlag	o_uErrId : UW	Error code																																			
Set controller	UW	: i_uSetController	o_uModuleErrId : UW	Module error code																																			
Speed mode	UW	: i_uSpeedMode	o_u16ReadSpeedMode : UW	Read speed mode																																			
Target devices	Target module	RJ61BT11																																					
	Target CPU	<table><tr><td>Series</td><td colspan="2">Model</td></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>			Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU																					
		Series	Model																																				
		MELSEC iQ-R series	R04CPU	R04ENCPU																																			
R08CPU			R08ENCPU																																				
R16CPU			R16ENCPU																																				
R32CPU			R32ENCPU																																				
R120CPU	R120ENCPU																																						
Target engineering tool	GX Works3 Version 1.035M or later																																						
Program language	Ladder																																						
Number of basic steps	763 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																																						
FB dependencies	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R																																						

Item	Description																																																															
Description of functions	When Execution Command (i_bEN) is turned ON, this FB executes speed mode settings on the sensor amplifier specified by Set Controller (i_uSetController) in accordance with the settings of Write Speed Mode (i_uSpeedMode).																																																															
	If Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) ON, however, all the speed mode settings for the sensor amplifiers connected to Read Speed Mode (o_u16ReadSpeedMode) are output in accordance with the settings shown in the table below. In this case, the input setting values are ignored, and no setting takes place.																																																															
	<table><tr><th>Setting values</th><th>FX-301</th><th>FX-305</th><th>FX-501 FX-502</th><th>LS-403</th><th>LS-501</th><th>DPS-401 DPS-402</th></tr><tr><td>H0000</td><td>H-SP 65 us</td><td>H-SP 65 us</td><td>H-SP 25 us</td><td>H-SP 150 us</td><td>H-SP 60 us</td><td>150 us</td></tr><tr><td>H0001</td><td>FASt 150 us</td><td>FASt 150 us</td><td>FASt 60 us</td><td>FASt 250 us</td><td>FASt 150 us</td><td>500 us</td></tr><tr><td>H0002</td><td>S-d 250 us</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1 ms</td></tr><tr><td>H0003</td><td>Std 250 us</td><td>Std 250 us</td><td>Std 250 us</td><td>Std 500 us</td><td>Std 250 us</td><td>5 ms</td></tr><tr><td>H0004</td><td>-</td><td>StdF 700 us</td><td>-</td><td>-</td><td>-</td><td>10 ms</td></tr><tr><td>H0005</td><td>Long 2 ms</td><td>Long 2 ms</td><td>Long 2ms</td><td>-</td><td>Long 500 us</td><td>50 ms</td></tr><tr><td>H0006</td><td>-</td><td>U-Lg 4.5ms</td><td>U-Lg 4ms</td><td>U-Lg 4ms</td><td>U-Lg 5 ms</td><td>100 ms</td></tr><tr><td>H0007</td><td>-</td><td>-</td><td>Hypr 24ms</td><td>-</td><td>Hypr 24 ms</td><td>500 ms</td></tr></table>	Setting values	FX-301	FX-305	FX-501 FX-502	LS-403	LS-501	DPS-401 DPS-402	H0000	H-SP 65 us	H-SP 65 us	H-SP 25 us	H-SP 150 us	H-SP 60 us	150 us	H0001	FASt 150 us	FASt 150 us	FASt 60 us	FASt 250 us	FASt 150 us	500 us	H0002	S-d 250 us	-	-	-	-	1 ms	H0003	Std 250 us	Std 250 us	Std 250 us	Std 500 us	Std 250 us	5 ms	H0004	-	StdF 700 us	-	-	-	10 ms	H0005	Long 2 ms	Long 2 ms	Long 2ms	-	Long 500 us	50 ms	H0006	-	U-Lg 4.5ms	U-Lg 4ms	U-Lg 4ms	U-Lg 5 ms	100 ms	H0007	-	-	Hypr 24ms	-	Hypr 24 ms	500 ms
	Setting values	FX-301	FX-305	FX-501 FX-502	LS-403	LS-501	DPS-401 DPS-402																																																									
	H0000	H-SP 65 us	H-SP 65 us	H-SP 25 us	H-SP 150 us	H-SP 60 us	150 us																																																									
	H0001	FASt 150 us	FASt 150 us	FASt 60 us	FASt 250 us	FASt 150 us	500 us																																																									
	H0002	S-d 250 us	-	-	-	-	1 ms																																																									
	H0003	Std 250 us	Std 250 us	Std 250 us	Std 500 us	Std 250 us	5 ms																																																									
	H0004	-	StdF 700 us	-	-	-	10 ms																																																									
	H0005	Long 2 ms	Long 2 ms	Long 2ms	-	Long 500 us	50 ms																																																									
H0006	-	U-Lg 4.5ms	U-Lg 4ms	U-Lg 4ms	U-Lg 5 ms	100 ms																																																										
H0007	-	-	Hypr 24ms	-	Hypr 24 ms	500 ms																																																										
FB compilation method	Macro type																																																															
FB behavior	Pulse execution type (multi-scan execution type)																																																															
i_bEN input condition	None																																																															



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p> <p>If Read Flag (i_bReadFlag) is ON</p> <p>(When it is OFF, only the sensor amplifier settings are changed.):</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
		
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>
		 <p>At least 1 scan</p>

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) If Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) OFF, this FB changes the sensor amplifier internal settings for a period of 100 ms after Normal Completion (o_bOK) has turned ON. During this period, therefore, do not execute the command on the same sensor amplifier. (7) The detected value varies as you change the settings of this FB. Adjust the emitted light amount or the received light sensitivity as needed. (8) Configure the global label as instructed in "1.4 Global labels". (9) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (10) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (11) Do not run this FB on any device other than SC-GU3-01. (12) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
10C	The Write Speed Mode (i_uSpeedMode) is outside the valid range	Set the Write Speed Mode (i_uSpeedMode) to a value not greater than 7.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Read Flag	i_bReadFlag	Bit	ON, OFF	Start the FB with label ON to execute it in data read mode. Start the FB with label OFF to execute it in data write mode.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to set the speed mode. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Speed Mode	i_uSpeedMode	Word [Unsigned]	0 to 7	Set the speed mode. The valid setting range differs depending on the sensor amplifier model. Refer to the Functional Description.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Speed Mode	o_u16ReadSpeedMode[n]	Word [Unsigned]	0	Stores the speed mode settings. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created
01A	2018/11/29	Fix the wrong local label comment at English

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.9. P+SUNX-SC-GU3-01-CC_SetOutputMode_R (output logic settings)

Name

P+SUNX-SC-GU3-01-CC_SetOutputMode_R

Functional Contents

Item	Description																
Functional overview	Normally open or normally closed setting for amplifier.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_SetOutputMode_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Read Flag</div><div>B : i_bReadFlag</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>Set controller</div><div>UW : i_uSetController</div><div>o_uModuleErrId : UW</div><div>Module error code</div></div><div><div>Output mode</div><div>UW : i_uOutputMode</div><div>o_u16ReadOutputMode : UW</div><div>Read output mode</div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU	R32ENCPU																
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	844 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	P+SUNX-SC-GU3-01-CC_SetOutputMode_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R																

Item	Description																													
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB executes output logic settings on the sensor amplifier specified by Set Controller (i_uSetController) in accordance with the settings of Output Mode (i_uOutputMode).</p> <p>If Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) ON, however, all the output logic settings for the sensor amplifiers connected to Read Output Mode (o_u16ReadOutputMode) are output in accordance with the settings shown in the table below. In this case, the input setting values are ignored, and no setting takes place.</p> <table><tr><th rowspan="2">Setting values</th><th colspan="2">FX series/LS series</th><th colspan="2">DPS series</th></tr><tr><th>OUT1</th><th>OUT2</th><th>OUT1</th><th>OUT2</th></tr><tr><td>H0000</td><td>L-ON</td><td>L-ON</td><td>NO</td><td>NO</td></tr><tr><td>H0001</td><td>D-ON</td><td>L-ON</td><td>NC</td><td>NO</td></tr><tr><td>H0010</td><td>L-ON</td><td>D-ON</td><td>NO</td><td>NC</td></tr><tr><td>H0011</td><td>D-ON</td><td>D-ON</td><td>NC</td><td>NC</td></tr></table>	Setting values	FX series/LS series		DPS series		OUT1	OUT2	OUT1	OUT2	H0000	L-ON	L-ON	NO	NO	H0001	D-ON	L-ON	NC	NO	H0010	L-ON	D-ON	NO	NC	H0011	D-ON	D-ON	NC	NC
Setting values	FX series/LS series		DPS series																											
	OUT1	OUT2	OUT1	OUT2																										
H0000	L-ON	L-ON	NO	NO																										
H0001	D-ON	L-ON	NC	NO																										
H0010	L-ON	D-ON	NO	NC																										
H0011	D-ON	D-ON	NC	NC																										
FB compilation method	Macro type																													
FB behavior	Pulse execution type (multi-scan execution type)																													
i_bEN input condition	None																													



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p> <p>If Read Flag (i_bReadFlag) is ON (When it is OFF, only the sensor amplifier settings are changed.)</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>

At least 1 scan

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) This FB executes multiple commands. You can stop this FB by turning OFF Execution Command (i_bEN). You cannot, however, cancel the commands that have been executed before you stop the FB. (7) Do not input "H0010" or "H0011" to Output Mode (i_uOutputMode) for a one- output FX-301 or FX-501 amplifier because doing so causes a module error. (8) Configure the global label as instructed in "1.4 Global labels". (9) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (10) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (11) Do not run this FB on any device other than SC-GU3-01. (12) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
10D	Output Mode (i_uOutputMode) is outside the valid range	Set Output Mode (i_uOutputMode) to H0000, H0001, H0010, or H0011.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Read Flag	i_bReadFlag	Bit	ON, OFF	Start the FB with label ON to execute it in data read mode. Start the FB with label OFF to execute it in data write mode.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to set the output logic. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Output Mode	i_uOutputMode	Word [Unsigned]	H0000, H0001, H0010, H0011 (hexadecimal)	Set the output logic. The valid setting range differs depending on the sensor amplifier model. Refer to the Functional Description.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Output Mode	o_u16ReadOutputMode[n]	Word [Unsigned]	0	Stores the output logic setting. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.10. P+SUNX-SC-GU3-01-CC_SetThreshold_R (threshold settings)

Name

P+SUNX-SC-GU3-01-CC_SetThreshold_R

Functional Contents

Item	Description																
Functional overview	Threshold setting.																
Symbol	<div><div><div><div><div></div><div>Execution command</div></div><div><div>B</div><div>:</div><div>i_bEN</div></div></div><div><div>Start I/O No.</div><div>UW</div><div>:</div><div>i_uStartIONo</div></div><div><div>Station No.</div><div>UW</div><div>:</div><div>i_uStationNo</div></div><div><div>Read Flag</div><div>B</div><div>:</div><div>i_bReadFlag</div></div><div><div>Set controller</div><div>UW</div><div>:</div><div>i_uSetController</div></div><div><div>Write threshold</div><div>W</div><div>:</div><div>i_wThreshold</div></div></div><div><div><div>P+SUNX-SC-GU3-01-CC_SetThreshold_R</div></div><div><div>o_bENO</div><div>:</div><div>B</div></div><div><div>o_bOK</div><div>:</div><div>B</div></div><div><div>o_bErr</div><div>:</div><div>B</div></div><div><div>o_uErrId</div><div>:</div><div>UW</div></div><div><div>o_uModuleErrId</div><div>:</div><div>UW</div></div><div><div>o_w16ReadThreshold</div><div>:</div><div>W</div></div></div><div><div>Execution status</div></div><div><div>Normal completion</div></div><div><div>Error completion</div></div><div><div>Error code</div></div><div><div>Module error code</div></div><div><div>Read threshold</div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU	R32ENCPU																
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	889 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description																							
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB executes OUT1-1 threshold writing on the sensor amplifier specified by Set Controller (i_uSetController).</p> <p>If Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) ON, however, the OUT1-1 thresholds for all the sensor amplifiers connected to Read Threshold (o_w16ReadThreshold) are output. In this case, the input setting values are ignored, and no setting takes place.</p> <p>The valid range of Write Threshold (i_wThreshold) differs depending on the sensor amplifier model. See the following table to set the thresholds.</p> <table><tr><th colspan="2">Sensor amplifier type</th><th>Valid threshold range</th></tr><tr><td colspan="2">FX-301</td><td>1 to 4000</td></tr><tr><td colspan="2">FX-305</td><td rowspan="3">1 to 9999</td></tr><tr><td colspan="2">FX-501, FX-502</td></tr><tr><td colspan="2">LS-403, LS-501</td></tr><tr><td rowspan="3">DPS series</td><td>Combined pressure head</td><td>-1013 to 1051</td></tr><tr><td>Positive pressure head</td><td>-51 to 1020</td></tr><tr><td>Negative pressure head</td><td>-1013 to 51</td></tr><tr><td colspan="2">SC-A01, SC-A02</td><td>Threshold not configurable</td></tr></table> <p>* Displayed values are decimals</p>	Sensor amplifier type		Valid threshold range	FX-301		1 to 4000	FX-305		1 to 9999	FX-501, FX-502		LS-403, LS-501		DPS series	Combined pressure head	-1013 to 1051	Positive pressure head	-51 to 1020	Negative pressure head	-1013 to 51	SC-A01, SC-A02		Threshold not configurable
Sensor amplifier type		Valid threshold range																						
FX-301		1 to 4000																						
FX-305		1 to 9999																						
FX-501, FX-502																								
LS-403, LS-501																								
DPS series	Combined pressure head	-1013 to 1051																						
	Positive pressure head	-51 to 1020																						
	Negative pressure head	-1013 to 51																						
SC-A01, SC-A02		Threshold not configurable																						
FB compilation method	Macro type																							
FB behavior	Pulse execution type (multi-scan execution type)																							
i_bEN input condition	None																							



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p> <p>If Read Flag (i_bReadFlag) is ON</p> <p>(When it is OFF, only the sensor amplifier settings are changed.)</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) With the FX series sensor amplifiers except FX-301 and the LS series sensor amplifiers, the threshold upper and lower limit values may differ among the speed mode, the hysteresis mode, and the received light sensitivity settings even when within the valid range. Carefully note that any threshold set above the upper limit or below the lower limit will be automatically set to the upper or lower limit. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
10E	Write Threshold (i_wThreshold) is outside the valid range	Specify a value from -1013 to 9999. The valid range differs depending on the sensor amplifier model. Check the valid range.
10F	The sensor amplifier specified by Set Controller (i_uSetController) is SC-A01 or SC-A02	The specified sensor amplifier does not support threshold writing. Check the input value of Set Controller (i_uSetController).
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Read Flag	i_bReadFlag	Bit	ON, OFF	Start the FB with label ON to execute it in data read mode. Start the FB with label OFF to execute it in data write mode.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to set the thresholds. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Write Threshold	i_wThreshold	Word [Signed]	-1013 to 9999 (decimal)	Specify the threshold. The valid range differs depending on the sensor amplifier model and configuration. A module error occurs if the setting is rejected within the valid range.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Threshold	o_w16ReadThreshold[n]	Word [Signed]	0	Stores the thresholds. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



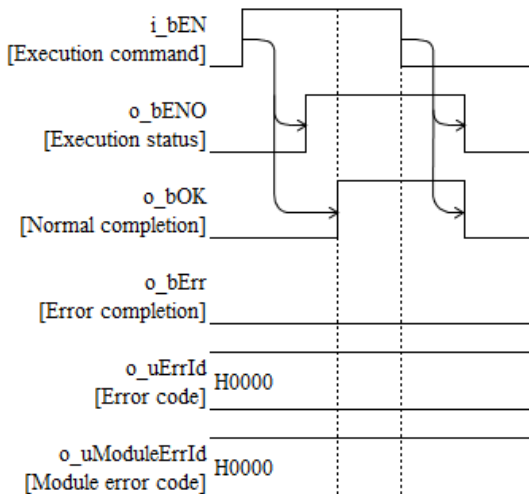
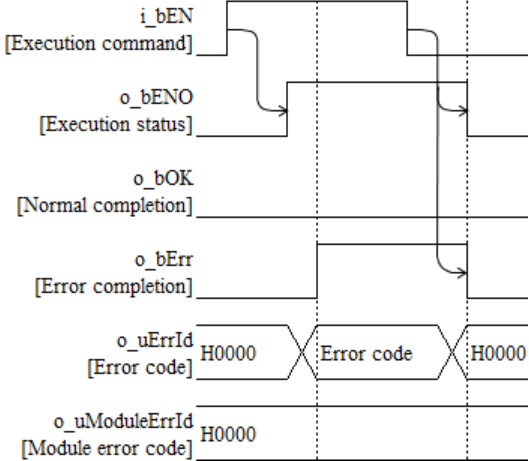
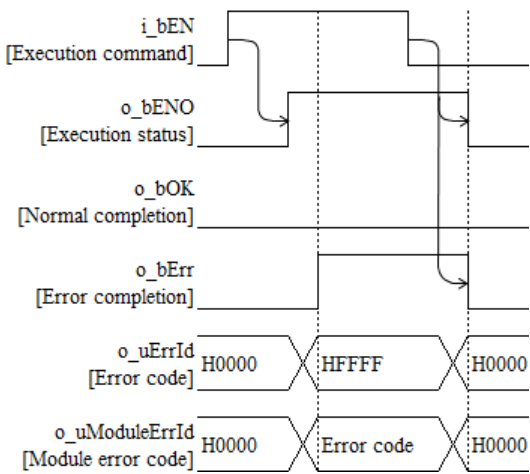
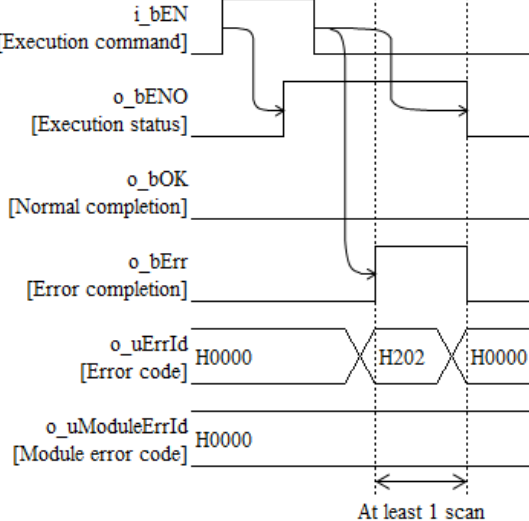
2.11. P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R (execute zero shift)

Name

P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R

Functional Contents

Item	Description																
Functional overview	Shift DPS series displayed value to "0".																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>Station No.</div><div>UW : i_uStationNo</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_uModuleErrId : UW</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Module error code</div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU	R32ENCPU																
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	741 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R																

Item	Description	
Description of functions	When Execution Command (i_bEN) is turned ON, this FB executes zero shift on all the DPS series sensor amplifiers connected.	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	<p>[Normal completion]</p> 	
	<p>[Error completion]</p> <p>If an FB error occurs:</p> 	
	<p>If a module error occurs:</p> 	
	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>  <p style="text-align: right;">At least 1 scan</p>	

Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) Configure the global label as instructed in "1.4 Global labels". (7) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (8) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (9) Do not run this FB on any device other than SC-GU3-01. (10) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup) MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application) GX Works3 Operating Manual CC-Link Communication Unit SC-GU3-01 User's Manual



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.

■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.



FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.12. P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R (check number of connected units)

Name

P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R

Functional Contents

Item	Description			
Functional overview	Check number of connected units.			
Symbol	<div><div><div>Execution command</div><div>Start I/O No.</div><div>Station No.</div></div><div><div><div>P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R</div><div><div>B : i_bEN</div><div>o_bENO : B</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_uModuleErrId : UW</div><div>o_uUnitNumber : UW</div></div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Module error code</div><div>Number of connecting unit</div></div></div></div>			
Target devices	Target module	RJ61BT11		
	Target CPU			
		Series	Model	
		MELSEC iQ-R series	R04CPU	R04ENCPU
R08CPU			R08ENCPU	
R16CPU			R16ENCPU	
R32CPU	R32ENCPU			
R120CPU	R120ENCPU			
Target engineering tool	GX Works3 Version 1.035M or later			
Program language	Ladder			
Number of basic steps	747 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.			
FB dependencies	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R			
Description of functions	When Execution Command (i_bEN) is turned ON, this FB checks the number of optically communicatable sensor amplifiers that are connected and outputs the result to Number of Connected Units (o_uUnitNumber).			
FB compilation method	Macro type			
FB behavior	Pulse execution type (multi-scan execution type)			
i_bEN input condition	None			



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>

Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) Configure the global label as instructed in "1.4 Global labels". (7) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (8) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (9) Do not run this FB on any device other than SC-GU3-01. (10) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.

■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Number of Connecting Unit	o_uUnitNumber	Word [Unsigned]	0	Stores the number of connected units.



FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.13. P+SUNX-SC-GU3-01-CC_CheckModelInfo_R (check model information)

Name																
P+SUNX-SC-GU3-01-CC_CheckModelInfo_R																
Functional Contents																
Item	Description															
Functional overview	Check model information of connected amplifiers.															
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_CheckModelInfo_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div></div><div></div><div>o_uErrId : UW</div><div>Error code</div></div><div><div></div><div></div><div>o_uModuleErrId : UW</div><div>Module error code</div></div><div><div></div><div></div><div>o_u16ModelInfo : UW</div><div>Model information</div></div></div></div>															
Target devices	Target module	RJ61BT11														
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>	Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
	Series	Model														
MELSEC iQ-R series	R04CPU	R04ENCPU														
	R08CPU	R08ENCPU														
	R16CPU	R16ENCPU														
	R32CPU	R32ENCPU														
	R120CPU	R120ENCPU														
Target engineering tool	GX Works3 Version 1.035M or later															
Program language	Ladder															
Number of basic steps	741 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.															
FB dependencies	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R															

Item	Description																		
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB checks the model information of sensor amplifiers connected and outputs the result to Model Information (o_u16ModelInfo).</p> <p>The model information is output in accordance with the following settings.</p> <table> <tr> <th>Setting values</th><th>Model</th></tr> <tr> <td>H0000</td><td>FX-301</td></tr> <tr> <td>H0001</td><td>FX-305</td></tr> <tr> <td>H0002</td><td>LS-403</td></tr> <tr> <td>H0003</td><td>DPS-401, DPS-402</td></tr> <tr> <td>H0004</td><td>SC-A01, SC-A02</td></tr> <tr> <td>H0005</td><td>FX-501</td></tr> <tr> <td>H0006</td><td>FX-502</td></tr> <tr> <td>H000A</td><td>LS-501</td></tr> </table>	Setting values	Model	H0000	FX-301	H0001	FX-305	H0002	LS-403	H0003	DPS-401, DPS-402	H0004	SC-A01, SC-A02	H0005	FX-501	H0006	FX-502	H000A	LS-501
Setting values	Model																		
H0000	FX-301																		
H0001	FX-305																		
H0002	LS-403																		
H0003	DPS-401, DPS-402																		
H0004	SC-A01, SC-A02																		
H0005	FX-501																		
H0006	FX-502																		
H000A	LS-501																		
FB compilation method	Macro type																		
FB behavior	Pulse execution type (multi-scan execution type)																		
i_bEN input condition	None																		



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p> <p>At least 1 scan</p>

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) Configure the global label as instructed in "1.4 Global labels". (7) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (8) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (9) Do not run this FB on any device other than SC-GU3-01. (10) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.

■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Model Information	o_u16ModelInfo[n]	Word [Unsigned]	0	Stores the model information. 16 arrays exist and each array stores (n+1)th read command response.



FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.14. P+SUNX-SC-GU3-01-CC_SetDataBank_R (save or load data bank)

Name																
P+SUNX-SC-GU3-01-CC_SetDataBank_R																
Functional Contents																
Item	Description															
Functional overview	Data bank load or save.															
Symbol	<div><div>P+SUNX-SC-GU3-01-CC_SetDataBank_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>Station No.</div><div>UW : i_uStationNo</div><div>Set controller</div><div>UW : i_uSetController</div><div>Load flag</div><div>B : i_bLoadFlag</div><div>Data bank No.</div><div>UW : i_uDataBankNo</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_uModuleErrId : UW</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Module error code</div></div></div>															
Target devices	Target module	RJ61BT11														
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>	Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model													
		MELSEC iQ-R series	R04CPU	R04ENCPU												
R08CPU			R08ENCPU													
R16CPU			R16ENCPU													
R32CPU	R32ENCPU															
R120CPU	R120ENCPU															
Target engineering tool	GX Works3 Version 1.035M or later															
Program language	Ladder															
Number of basic steps	765 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.															
FB dependencies	P+SUNX-SC-GU3-01-CC_SetDataBank_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R															

Item	Description	
Description of functions	When Execution Command (i_bEN) is turned ON and Load Flag (i_bLoadFlag) is OFF, this FB saves the setting value to the data bank identified by the value of Data Bank No. (i_uDataBankNo) for Set Controller (i_uSetController). If Load Flag (i_bLoadFlag) is ON, loads the data bank identified by the value Data Bank No. (i_uDataBankNo).	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	[Normal completion]	[Error completion] If an FB error occurs:
	If a module error occurs:	If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:



Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) The valid setting range of Data Bank No. (i_uDataBankNo) is "H0000" to "H0007" for FX-501, FX-502, LS-403, and LS-501 or "H0000" to "H0002" for FX-301, FX-305, DPS-401, and DPS-402. This means that setting Data Bank No. (i_uDataBankNo) to a value from "H0003" to "H0007" for FX-301, FX-305, DPS-401, DPS-402 results in a module error. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
110	Data Bank No. (i_uDataBankNo) is outside the valid range	Specify a value not greater than 7.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to execute save and load data banks. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Load Flag	i_bLoadFlag	Bit	ON, OFF	When started with this flag ON, the FB loads data bank. When started with this flag OFF, the FB saves data bank.
Data Bank No.	i_uDataBankNo	Word [Unsigned]	0 to 7	Specify the data bank number. For FX-301, FX-305, DPS-401, and DPS-402, setting this label to 4 to 7 results in a module error.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.

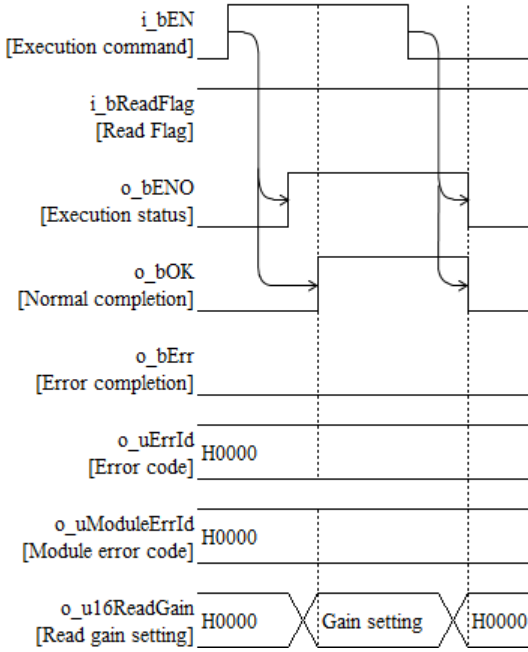
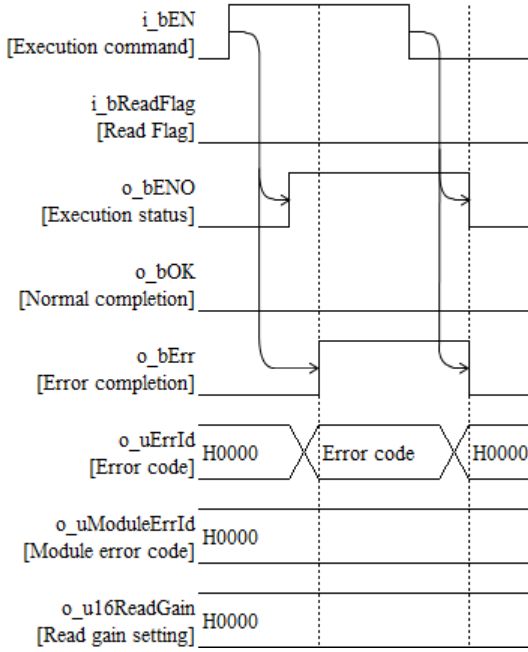
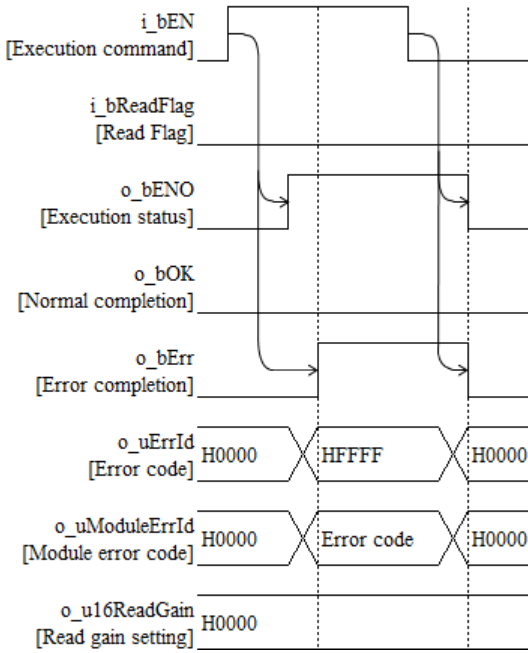
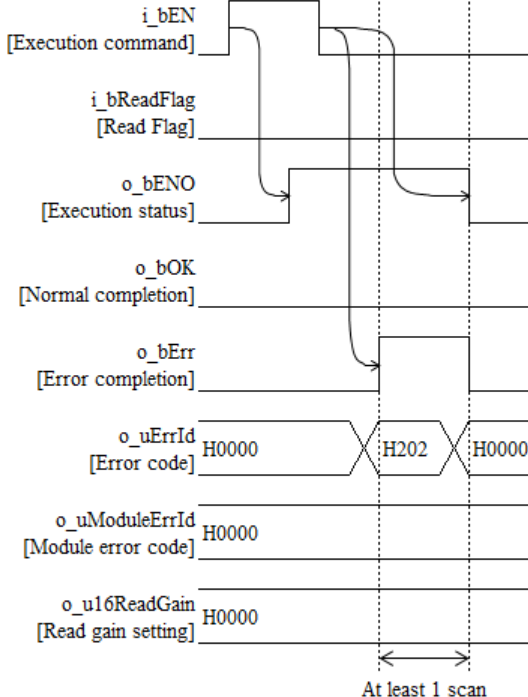


2.15. P+SUNX-SC-GU3-01-CC_SetGain_R (received light sensitivity setting)

Name																
P+SUNX-SC-GU3-01-CC_SetGain_R																
Functional Contents																
Item	Description															
Functional overview	Received light sensitivity setting for LS series.															
Symbol	<div><div>P+SUNX-SC-GU3-01-CC_SetGain_R</div><div><div>Execution command</div><div>B</div><div>:</div><div>i_bEN</div><div>o_bENO</div><div>:</div><div>B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW</div><div>:</div><div>i_uStartIONo</div><div>o_bOK</div><div>:</div><div>B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW</div><div>:</div><div>i_uStationNo</div><div>o_bErr</div><div>:</div><div>B</div><div>Error completion</div></div><div><div>Read Flag</div><div>B</div><div>:</div><div>i_bReadFlag</div><div>o_uErrId</div><div>:</div><div>UW</div><div>Error code</div></div><div><div>Set controller</div><div>UW</div><div>:</div><div>i_uSetController</div><div>o_uModuleErrId</div><div>:</div><div>UW</div><div>Module error code</div></div><div><div>Set gain</div><div>UW</div><div>:</div><div>i_uGainSet</div><div>o_u16ReadGain</div><div>:</div><div>UW</div><div>Read gain setting</div></div></div>															
Target devices	Target module	RJ61BT11														
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>	Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model													
		MELSEC iQ-R series	R04CPU	R04ENCPU												
R08CPU			R08ENCPU													
R16CPU			R16ENCPU													
R32CPU	R32ENCPU															
R120CPU	R120ENCPU															
Target engineering tool	GX Works3 Version 1.035M or later															
Program language	Ladder															
Number of basic steps	762 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.															
FB dependencies	P+SUNX-SC-GU3-01-CC_SetGain_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R															

Item	Description										
Description of functions	<p>When Execution Command (i_bEN) is turned ON, this FB executes received light sensitivity settings on LS series sensor amplifier specified by Set Controller (i_uSetController) in accordance with the Set Gain (i_uGainSet) shown in the table below.</p> <table> <tr> <th>Setting values</th><th>Setting</th></tr> <tr> <td>H0000</td><td>Level 1 (lowest sensitivity)</td></tr> <tr> <td>H0001</td><td>Level 2 (low sensitivity)</td></tr> <tr> <td>H0002</td><td>Level 3 (standard sensitivity)</td></tr> <tr> <td>H0003</td><td>Level 4 (high sensitivity) * Only if response time U-Lg is set</td></tr> </table> <p>When Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) ON, however, this FB loads the current settings and output them to Read Gain Setting (o_u16ReadGain). In this case, the input setting values are ignored, and no setting takes place.</p>	Setting values	Setting	H0000	Level 1 (lowest sensitivity)	H0001	Level 2 (low sensitivity)	H0002	Level 3 (standard sensitivity)	H0003	Level 4 (high sensitivity) * Only if response time U-Lg is set
Setting values	Setting										
H0000	Level 1 (lowest sensitivity)										
H0001	Level 2 (low sensitivity)										
H0002	Level 3 (standard sensitivity)										
H0003	Level 4 (high sensitivity) * Only if response time U-Lg is set										
FB compilation method	Macro type										
FB behavior	Pulse execution type (multi-scan execution type)										
i_bEN input condition	None										



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p> <p>If Read Flag (i_bReadFlag) is ON</p> <p>(When it is OFF, only the sensor amplifier settings are changed.)</p>	<p>[Error completion]</p> <p>If an FB error occurs:</p>
		
	<p>If a module error occurs:</p>	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>
		

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) No module error occurs even if this FB is executed on a sensor amplifier other than the LS series or a sensor amplifier not connected. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
111	Set Gain (i_uGainSet) is outside the valid range	Specify a value not greater than 3.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Read Flag	i_bReadFlag	Bit	ON, OFF	Start the FB with label ON to execute it in data read mode. Start the FB with label OFF to execute it in data write mode.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to set the received light sensitivity. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Set Gain	i_uGainSet	Word [Unsigned]	0 to 3	Set the received light sensitivity.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Gain Setting	o_u16ReadGain[n]	Word [Unsigned]	0	Stores the gain settings. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.16. P+SUNX-SC-GU3-01-CC_SetEmitterPw_R (emission adjustment)

Name

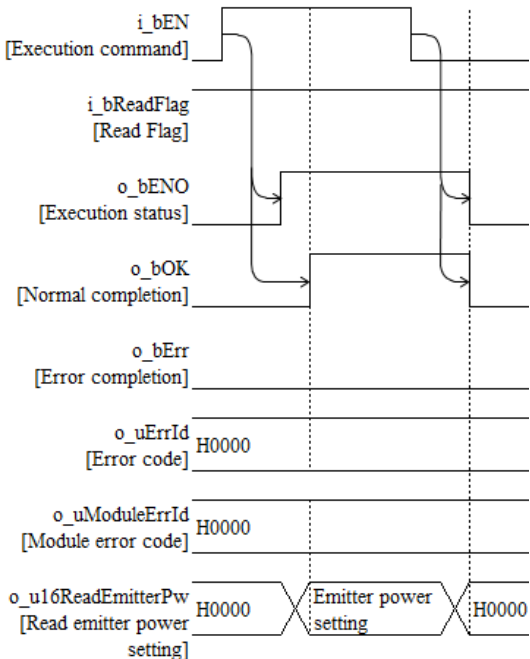
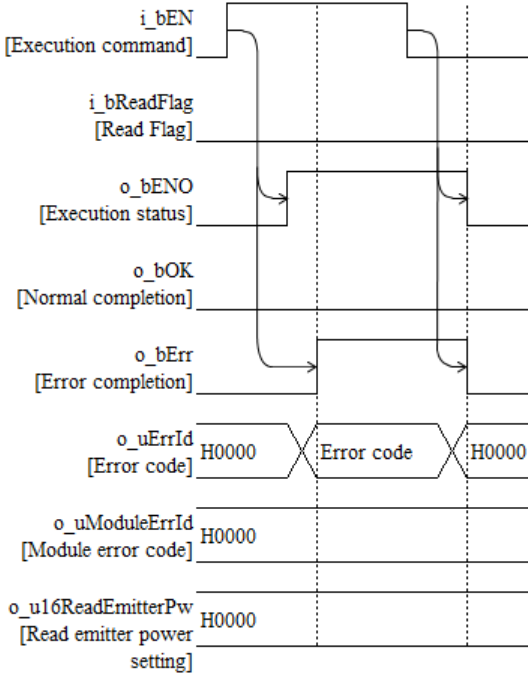
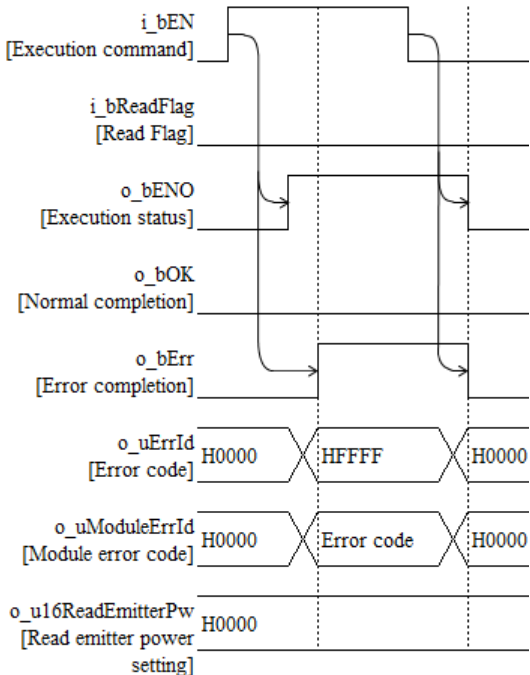
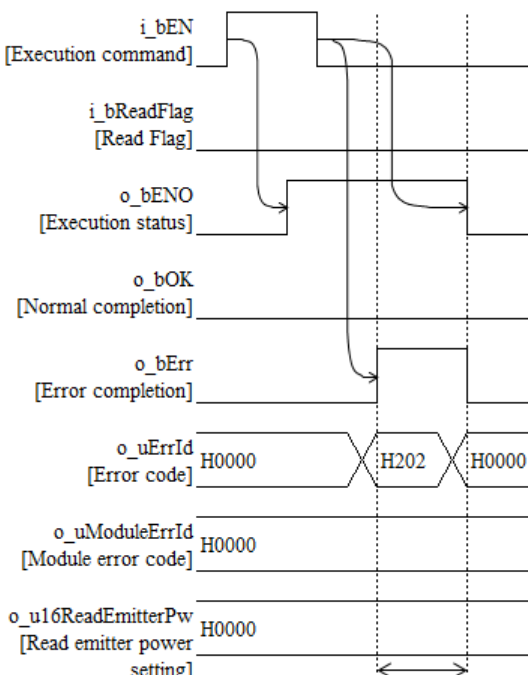
P+SUNX-SC-GU3-01-CC_SetEmitterPw_R

Functional Contents

Item	Description																
Functional overview	Emission adjustment setting for FX series.																
Symbol	<div><div><div>P+SUNX-SC-GU3-01-CC_SetEmitterPw_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Read Flag</div><div>B : i_bReadFlag</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>Set controller</div><div>UW : i_uSetController</div><div>o_uModuleErrId : UW</div><div>Module error code</div></div><div><div>Emitter power setting</div><div>UW : i_uEmitterPwSetti</div><div>o_u16ReadEmitterPw : UW</div><div>Read emitter power setting</div></div></div></div>																
Target devices	Target module	RJ61BT11															
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>		Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model														
		MELSEC iQ-R series	R04CPU	R04ENCPU													
R08CPU			R08ENCPU														
R16CPU			R16ENCPU														
R32CPU			R32ENCPU														
R120CPU	R120ENCPU																
Target engineering tool	GX Works3 Version 1.035M or later																
Program language	Ladder																
Number of basic steps	933 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.																
FB dependencies	None																

Item	Description																									
Description of functions	When Execution Command (i_bEN) is turned ON, this FB changes the settings on the sensor amplifier specified by Set Controller (i_uSetController) in accordance with the settings of Emitter Power Setting (i_uEmitterPwSetting).																									
	If Execution Command (i_bEN) is turned ON with Read Flag (i_bReadFlag) ON, however, the settings for all the FX series sensor amplifiers connected to Read Emitter Power Setting (o_u16ReadEmitterPw) are output. In this case, the input setting values are ignored, and no setting takes place.																									
	<table><tr><th>Model</th><th>Setting values</th><th>Setting</th></tr><tr><td>FX-301</td><td>H0000</td><td>0% (Stop emission)</td></tr><tr><td rowspan="4">FX-305</td><td>H0002</td><td>Approx. 12%</td></tr><tr><td>H0003</td><td>Approx. 25%</td></tr><tr><td>H0004</td><td>Approx. 50%</td></tr><tr><td>H0005</td><td>100%</td></tr><tr><td>FX-501</td><td>H**00</td><td>Low emission power (*)</td></tr><tr><td rowspan="3">FX-502</td><td>H**01</td><td>Medium emission power (*)</td></tr><tr><td>H**02</td><td>High emission power (*)</td></tr><tr><td>H000A</td><td>Emission auto adjustment</td></tr></table>	Model	Setting values	Setting	FX-301	H0000	0% (Stop emission)	FX-305	H0002	Approx. 12%	H0003	Approx. 25%	H0004	Approx. 50%	H0005	100%	FX-501	H**00	Low emission power (*)	FX-502	H**01	Medium emission power (*)	H**02	High emission power (*)	H000A	Emission auto adjustment
Model	Setting values	Setting																								
FX-301	H0000	0% (Stop emission)																								
FX-305	H0002	Approx. 12%																								
	H0003	Approx. 25%																								
	H0004	Approx. 50%																								
	H0005	100%																								
FX-501	H**00	Low emission power (*)																								
FX-502	H**01	Medium emission power (*)																								
	H**02	High emission power (*)																								
	H000A	Emission auto adjustment																								
	(*) The higher 8 bits control the light emission percentage within the range of 25 to 100%. (hexadecimal)																									
	<table><tr><th></th><th colspan="2">Min.</th><th colspan="2">Max.</th></tr><tr><td>Higher 8 bits</td><td>Decimal</td><td>Hexadecimal</td><td>Decimal</td><td>Hexadecimal</td></tr><tr><td>Light emission percentage setting</td><td>25</td><td>H19**</td><td>100</td><td>H64**</td></tr></table>		Min.		Max.		Higher 8 bits	Decimal	Hexadecimal	Decimal	Hexadecimal	Light emission percentage setting	25	H19**	100	H64**										
	Min.		Max.																							
Higher 8 bits	Decimal	Hexadecimal	Decimal	Hexadecimal																						
Light emission percentage setting	25	H19**	100	H64**																						
	If Read Flag (i_bReadFlag) is OFF, this FB configures settings on FX-301/FX-305 or FX-501/FX-502 depending on the value of Emitter Power Setting (i_uEmitterPwSetting). If specified settings are not compatible with the sensor amplifier specified by Set Controller (i_uSetController), such settings are not executed on that sensor amplifier.																									
FB compilation method	Macro type																									
FB behavior	Pulse execution type (multi-scan execution type)																									
i_bEN input condition	None																									



Item	Description	
I/O signal flow movement	<p>[Normal completion]</p> <p>If Read Flag (i_bReadFlag) is ON (When it is OFF, only the sensor amplifier settings are changed.)</p> 	<p>[Error completion]</p> <p>If an FB error occurs:</p> 
	<p>If a module error occurs:</p> 	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>  <p style="text-align: right;">At least 1 scan</p>

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) This FB executes multiple commands. You can stop this FB by turning OFF Execution Command (i_bEN). You cannot, however, cancel the commands that have been executed before you stop the FB. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
102	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0.
112	Emitter Power Setting (i_uEmitterPwSetting) is outside the valid range	Specify a value within the valid range.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Read Flag	i_bReadFlag	Bit	ON, OFF	Start the FB with label ON to execute it in data read mode. Start the FB with label OFF to execute it in data write mode.
Set Controller	i_uSetController	Word [Unsigned]	16-bit data other than 0	Stores the word information (consisting of 16 pieces of bit information) that corresponds to the sensor amplifier on which to set the emission. bit 0: 1st unit bit 1: 2nd unit to bit 14: 15th unit bit 15: 16th unit
Emitter Power Setting	i_uEmitterPwSetting	Word [Unsigned]	H0000, H0002 to H0005, H000A, H**00 to H**02 (** is H19 to H64 in hexadecimal)	Set the emission. For more information, see the Functional Description.



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.
Read Emitter Power Setting	o_u16ReadEmitterPw[n]	Word [Unsigned]	0	Stores the emission settings. 16 arrays exist and each array stores (n+1)th read command response.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

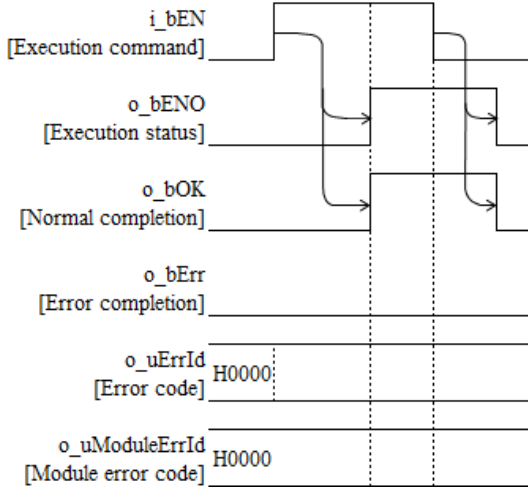
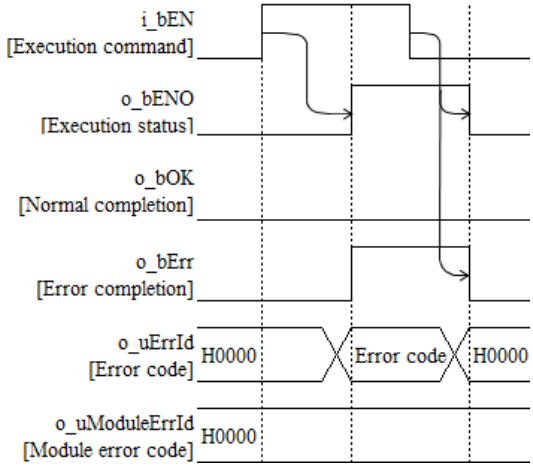
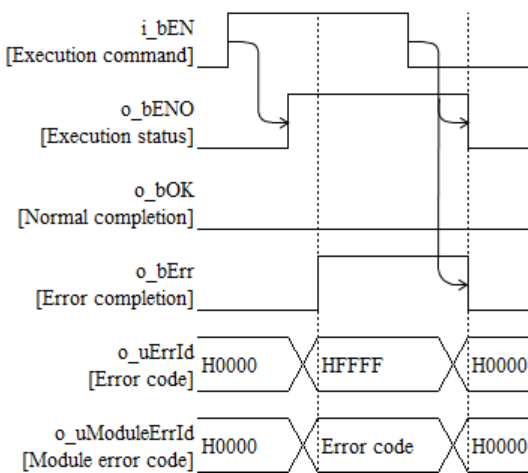
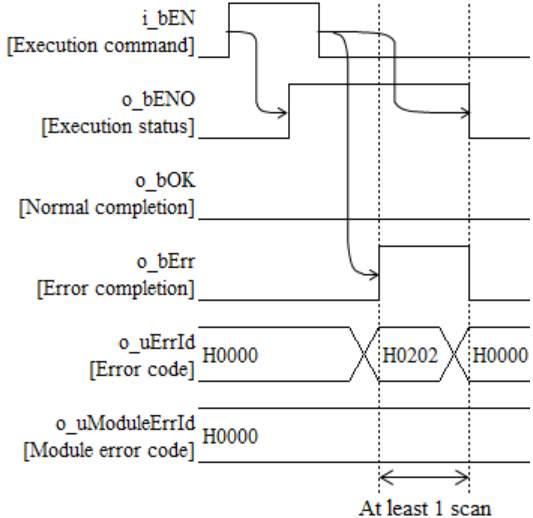
Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



2.17. P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R (turn on or off the keylock)

Name																
P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R																
Functional Contents																
Item	Description															
Functional overview	Execute or perform reset to keylock and Eco setting.															
Symbol	<div><div>P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R</div><div><div>Execution command</div><div>B : i_bEN</div><div>o_bENO : B</div><div>Execution status</div></div><div><div>Start I/O No.</div><div>UW : i_uStartIONo</div><div>o_bOK : B</div><div>Normal completion</div></div><div><div>Station No.</div><div>UW : i_uStationNo</div><div>o_bErr : B</div><div>Error completion</div></div><div><div>Set Eco mode</div><div>B : i_bEcoModeSet</div><div>o_uErrId : UW</div><div>Error code</div></div><div><div>Reset flag</div><div>B : i_bReset</div><div>o_uModuleErrId : UW</div><div>Module error code</div></div></div>															
Target devices	Target module	RJ61BT11														
	Target CPU	<table><tr><th>Series</th><th colspan="2">Model</th></tr><tr><td rowspan="5">MELSEC iQ-R series</td><td>R04CPU</td><td>R04ENCPU</td></tr><tr><td>R08CPU</td><td>R08ENCPU</td></tr><tr><td>R16CPU</td><td>R16ENCPU</td></tr><tr><td>R32CPU</td><td>R32ENCPU</td></tr><tr><td>R120CPU</td><td>R120ENCPU</td></tr></table>	Series	Model		MELSEC iQ-R series	R04CPU	R04ENCPU	R08CPU	R08ENCPU	R16CPU	R16ENCPU	R32CPU	R32ENCPU	R120CPU	R120ENCPU
		Series	Model													
		MELSEC iQ-R series	R04CPU	R04ENCPU												
R08CPU			R08ENCPU													
R16CPU			R16ENCPU													
R32CPU	R32ENCPU															
R120CPU	R120ENCPU															
Target engineering tool	GX Works3 Version 1.035M or later															
Program language	Ladder															
Number of basic steps	797 Steps (for MELSEC iQ-R series) * The number of FB steps incorporated into a program differs depending on the CPU module in use, the I/O definitions, and the option settings of GX Works3. For information on GX Works3 option settings, refer to GX Works3 Operating Manual.															
FB dependencies	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R └P+SUNX-SC-GU3-01-CC_ExecuteCommand_R															

Item	Description	
Description of functions	<p>Turns on or off the keylock and Eco setting on all the connected sensor amplifiers.</p> <p>If you turn ON Set Eco Mode (i_bEcoModeSet) with Reset Flag (i_bReset) OFF and turn ON Execution Command (i_bEN), this FB sets both the keylock and Eco mode. If you turn OFF Set Eco Mode (i_bEcoModeSet) and turn ON Execution Command (i_bEN), it sets only the keylock.</p> <p>When Reset Flag (i_bReset) is ON, this FB ignores the input value of Set Eco Mode (i_bEcoModeSet) and turns off the keylock and Eco mode.</p>	
FB compilation method	Macro type	
FB behavior	Pulse execution type (multi-scan execution type)	
i_bEN input condition	None	
I/O signal flow movement	<p>[Normal completion]</p> 	<p>[Error completion]</p> <p>If an FB error occurs:</p> 
	<p>If a module error occurs:</p> 	<p>If Execution Command (i_bEN) is turned from ON to OFF before Normal Completion (o_bOK) or Error Completion (o_bErr) turns ON:</p>  <p style="text-align: right;">At least 1 scan</p>

Item	Description
Restrictions and precautions	<ul style="list-style-type: none"> (1) This FB does not contain error recovery processing. As needed, create an error recovery processing block to suit your system requirements and other needs. (2) With this FB, the communication unit may be communicating with the sensor amplifier until Execution Status (o_bENO) is turned OFF. While Execution Status (o_bENO) is ON, do not run any FB other than this on the same communication unit. (3) Use this FB as a macro type FB. (4) You cannot use this FB in an interrupt program. (5) If this FB is used in a run-once program (such as a subroutine program or a FOR ... NEXT program), it will fail to operate normally due to the inability to turn OFF Execution Command (i_bEN). For this reason, be sure to use this FB in a program with the ability to turn OFF Execution Command (i_bEN). (6) This FB executes multiple commands. You can stop this FB by turning OFF Execution Command (i_bEN). You cannot, however, cancel the commands that have been executed before you stop the FB. (7) Configure the global label as instructed in "1.4 Global labels". (8) This FB uses the index registers Z8 and Z9. Do not use Z8 and Z9 in an interrupt program. (9) This FB results in an ignorable "double coil" warning because it uses the index register to operate the remote output (RY). (10) Do not run this FB on any device other than SC-GU3-01. (11) If you are using two or more CC-Link master/local modules and want to control the SC-GU3-01 connected to each module, create the FBs for use with the second and subsequent modules as instructed in "Appendix.5 How to Use FBs across two or more master/local modules".
Related manuals	<p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)</p> <p>MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)</p> <p>GX Works3 Operating Manual</p> <p>CC-Link Communication Unit SC-GU3-01 User's Manual</p>



■ List of error codes

Error code (hexadecimal)	Description	Meaning
100	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
101	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
200	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
201	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
202	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
203	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
FFFF	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



■ Input labels

Name	Variable name	Data type	Valid range	Description
Execution Command	i_bEN	Bit	ON, OFF	Turn ON this label to start the FB. You can exit from the FB by turning it from ON to OFF.
Start I/O No.	i_uStartIONo	Word [Unsigned]	Depends on the range of the number of input/output points of the target CPU unit. For more information, refer to the CPU User's Manual.	Specify in hexadecimal the number of the starting I/O where the target CC-Link master/local module is installed. (For example, specify H0A0 if the starting I/O No. is 00A0.)
Station No.	i_uStationNo	Word [Unsigned]	1 to 64 (decimal)	Specify the station number of the communication unit you want to configure.
Set Eco Mode	i_bEcoModeSet	Bit	ON, OFF	If you turn Reset Flag (i_bReset) from OFF to ON and execute this FB, it sets the Eco mode.
Reset Flag	i_bReset	Bit	ON, OFF	Execute this FB with this label ON to turn off the keylock and Eco mode. Execute this FB with this label OFF to turn on the keylock and set the Eco mode in accordance with the value of Eco Mode (i_bEcoModeSet).



■ Output labels

Name	Variable name	Data type	Default	Description
Execution Status	o_bENO	Bit	OFF	Stays ON while the FB is running.
Normal Completion	o_bOK	Bit	OFF	Turns ON upon normal completion of the FB.
Error Completion	o_bErr	Bit	OFF	Turns ON upon error completion of the FB.
Error Code	o_uErrId	Word [Unsigned]	0	Stores the error code that occurred in the FB.
Module Error Code	o_uModuleErrId	Word [Unsigned]	0	Stores the error code that occurred in the communication unit.

FB Version Upgrade History

Version	Date	Description
00A	2018/02/22	Newly created

Precaution

This chapter describes the functions of function blocks (FBs).

Restrictions on the use of units and sequencer CPUs and on their combinations are not included in the scope of this chapter.

Before use, be sure to read the User's Manuals of the products you are going to use.



Appendix.1. Connection procedure

This appendix describes the steps for constructing the operating environment for FB library use examples introduced in "Appendix.3 FB Library Use Examples".

Appendix.1.1 Safety Precautions

Before you use the products introduced in this reference manual, carefully read the related manuals mentioned in "1.5 Related Manuals". To use those products, take sufficient safety care and handle them correctly.

In particular, power supplies and other hazardous parts should be connected and wired by quantified engineers who have expertise in electrical and mechanical engineering.

These "Safety Precautions" use two safety flags to indicate different levels of danger: "⚠Warning" and "⚠Caution".



Failure to correctly handle the product may result in a dangerous situation where death or serious injury may occur.

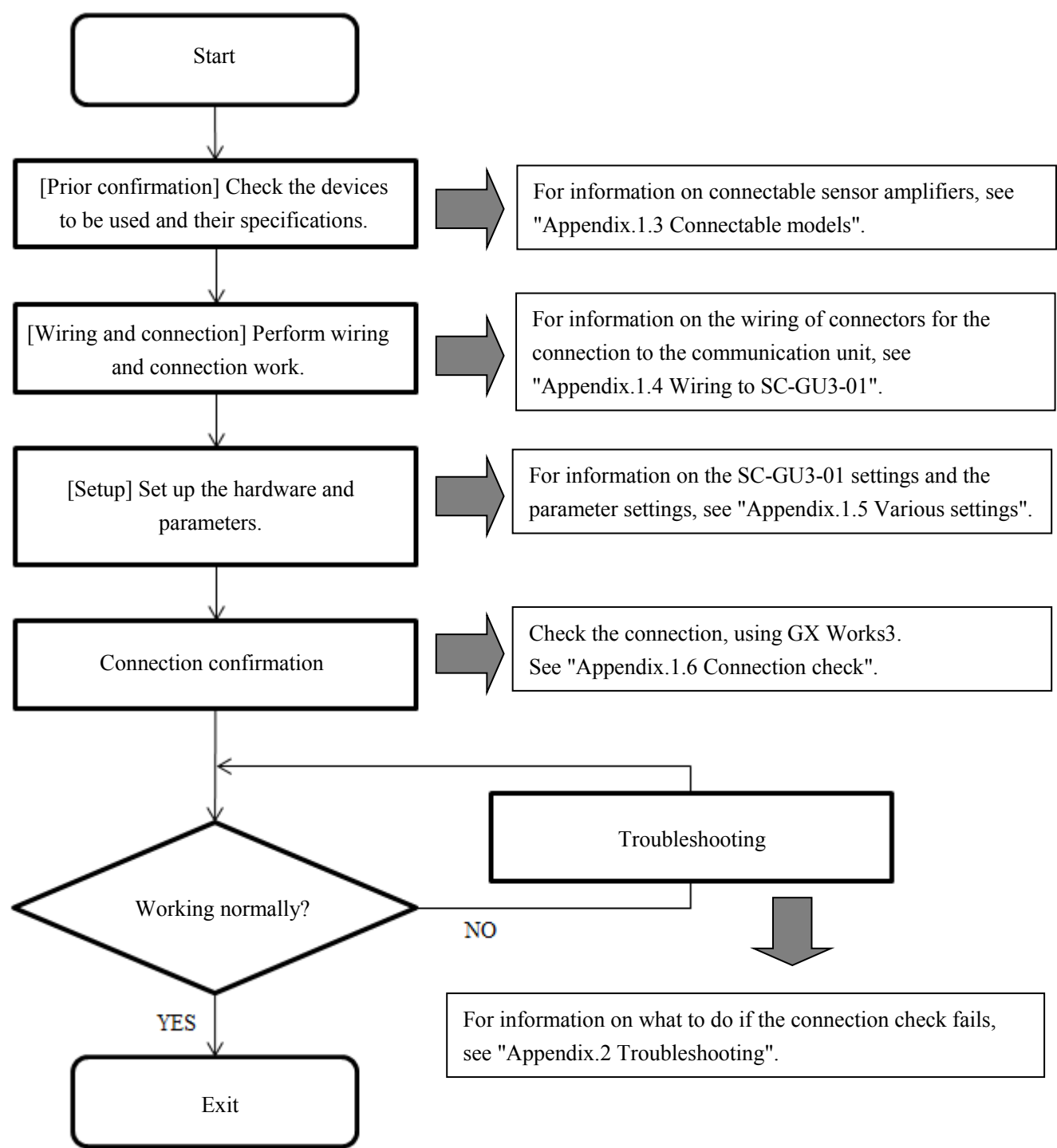


Failure to correctly handle the product may result in a dangerous situation where minor or moderate injury may occur or where only physical damage may occur.



Appendix.1.2 Connection procedure workflow

The following diagram shows the procedure workflow until starting up the system.

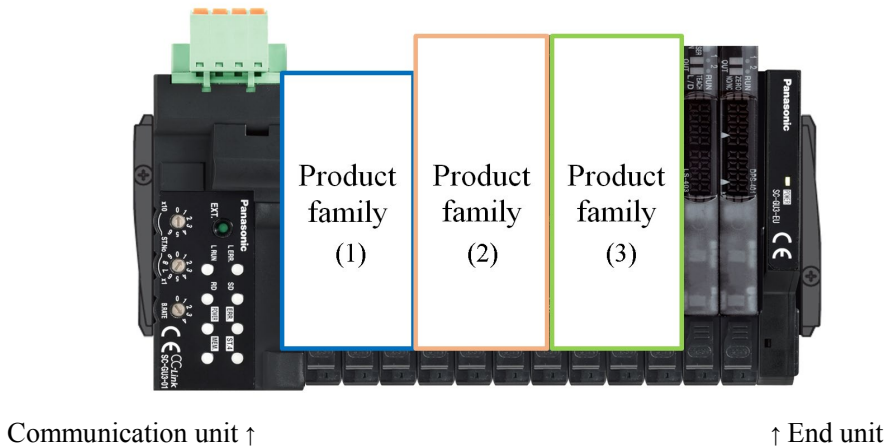


Appendix.1.3 Connectable models

This FB library allows you to check and change the settings of the following models when they are installed between communication unit SC-GU3-01 and the end unit SC-GU3-EU.

Model	Model name	Product family
Digital Fiber Sensor	FX-301, FX-305	(1)
	FX-501, FX-502	(2)
Digital Laser Sensor	LS-403, LS-501	(3)
Digital Pressure Sensor	DPS-401, DPS-402	
1ch Connector Input Unit (Analog Communication Unit)	SC-A01, SC-A02	

Arrange the product families in the order of (1) to (3) when viewed from the communication unit side.
The products in same product family may be arranged in any order.



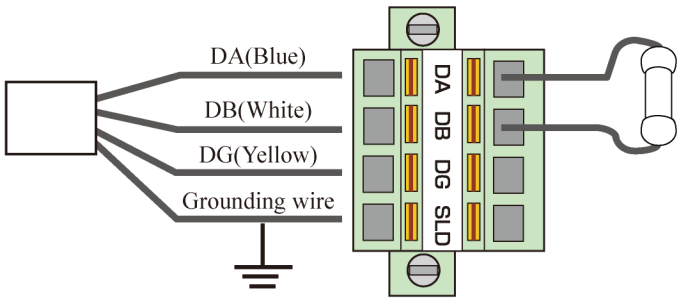
Appendix.1.4 Wiring to SC-GU3-01



Warning

Before wiring the devices, turn off the power.

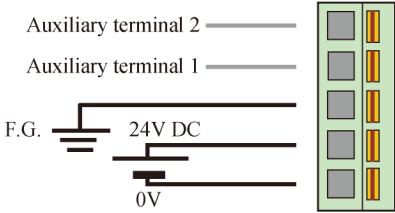
CC-Link connector



Ground the grounding wire as specified for CC-Link.

**Resistor 110Ω 1/2W
(brown-brown-brown-gold)**
If no next device exists on the crossover side and the center unit is at the endmost position, install a termination resistor between DA and DB.

Power supply connector



Appendix.1.5 Various settings

Appendix.1.5.1 Communication unit settings

Check the communication unit settings. Change the settings as needed.

Set the baud rate setting switch with reference to the following table.

Baud Rate Setting Switch	Baud Rate
0	156kbps
1	6.25kbps
2	2.5Mbps
3	5Mbps
4	10Mbps

The number of occupied stations can be "1 station" or "4 stations" and you can switch between the two options by turning on the power while holding down the "EXT.switch".

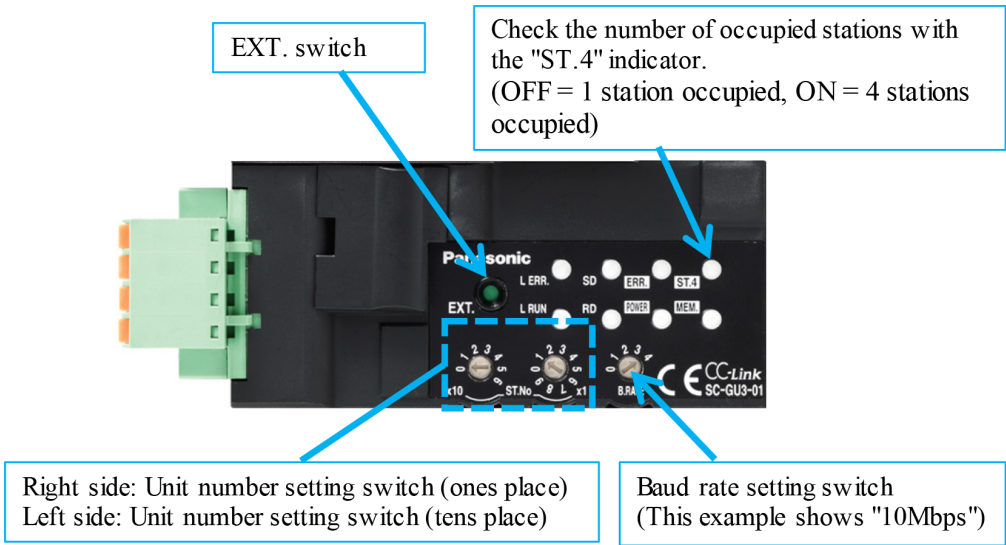


Figure 1.5-1: Hardware settings

Appendix.1.5.2 Parameter settings

Open GX Works3 to configure these settings.

Use the following steps to create PLC configuration data and then configure the CC-Link slaves.

(1) Creating a new project

[Project] → [New]

Enter the series, type, and program language as shown in figure 1.5-2.

Change the model name depending on the actual system configuration.

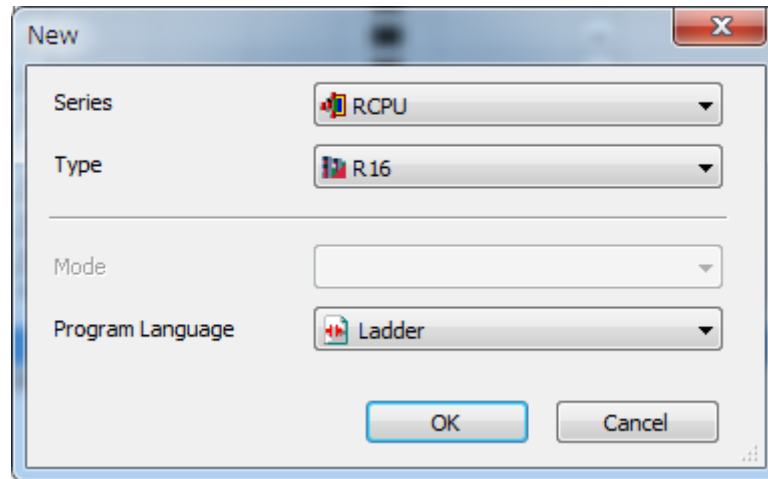


Figure 1.5-2: Parameter settings ([New])

(2) Creating the module configuration

If a Windows® PC where the target CPU module and GX Works3 are already installed is connected via USB, you can load the CPU module configuration.

Once the setup is complete, the Start XY of the CC-Link master/local module becomes the Start I/O No. (i_uStartIONo) of the FB common input for this FB library. In the settings shown below (Figure 1.5-4), "H0000" becomes the input value.

Navigation window → [Parameter] → [System Parameter]

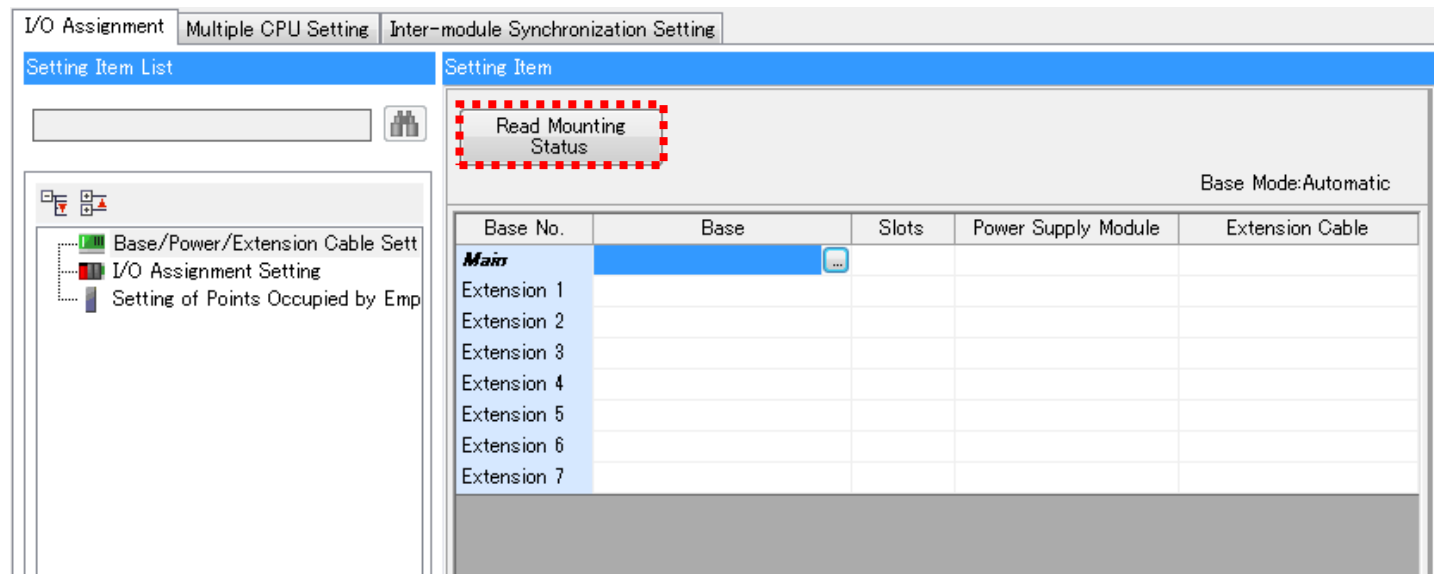


Figure 1.5-3: System parameters

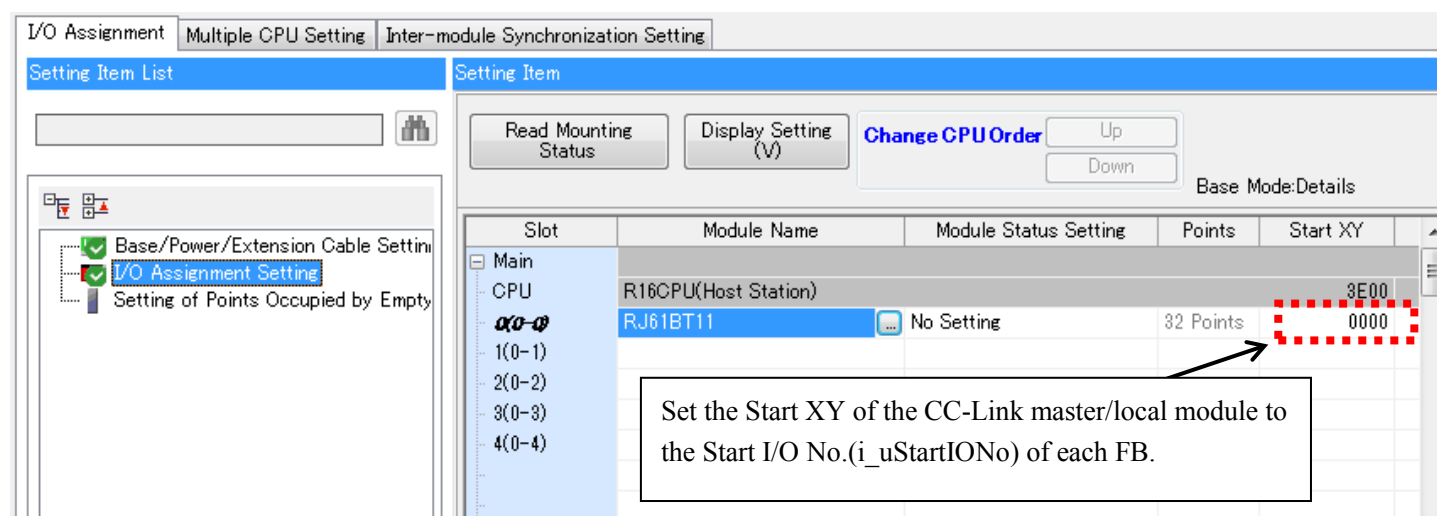


Figure 1.5-4: System parameters (after reading the mounting state)

If a Windows® PC where the target CPU unit and GX Works3 are already installed is NOT connected via USB, you must select I/O Assignment Setting and set various configuration information.

Carefully note that if the settings you entered here differ from the actual system configuration, an error occurs.

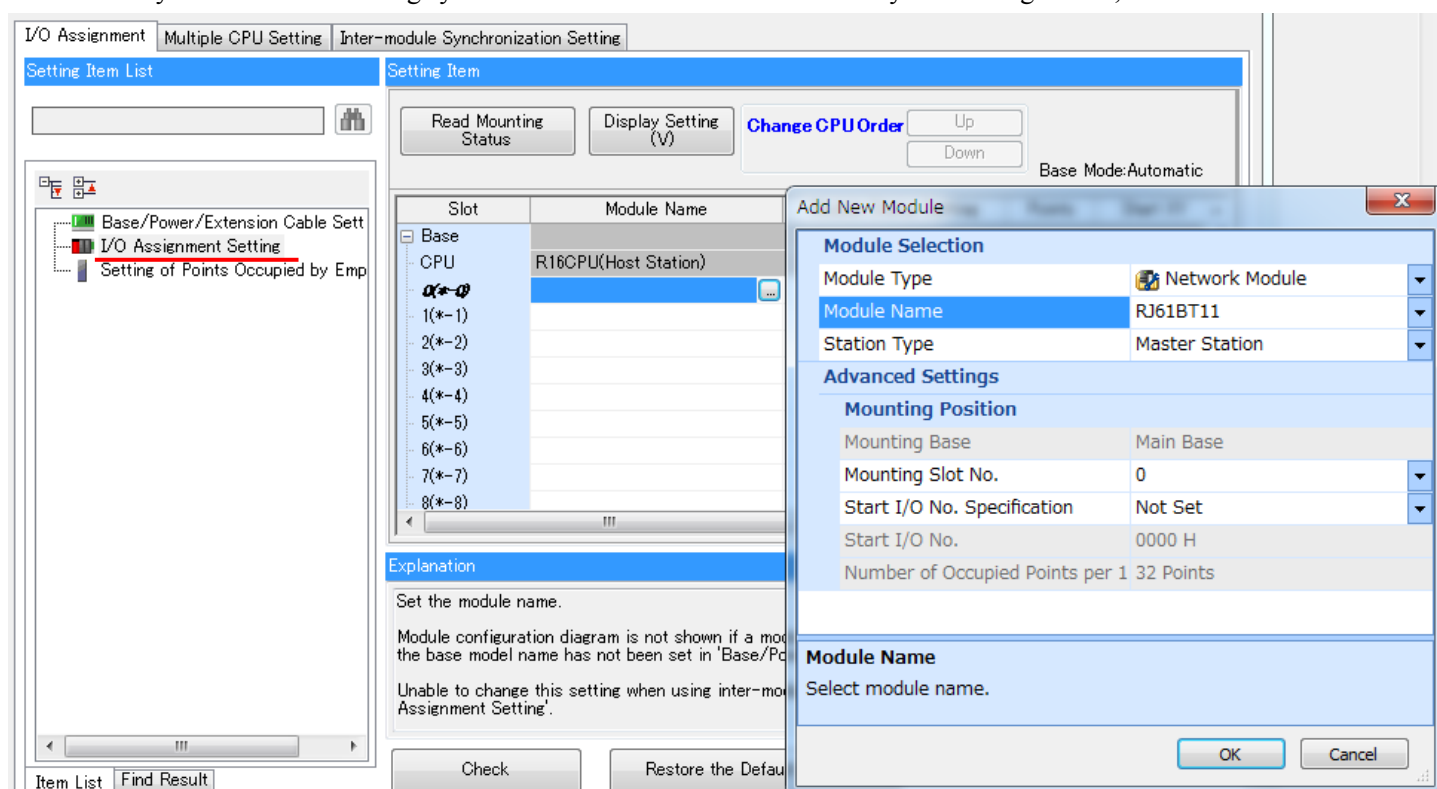


Figure 1.5-5: System parameters (manual setting)

(3) Setting module parameters

Next, configure the module parameters.

Configure "CC-Link configuration" and "link refresh settings" under "basic settings".

Navigation window → Parameter → Module information → (Start XY): RJ61BT11 → Module parameter

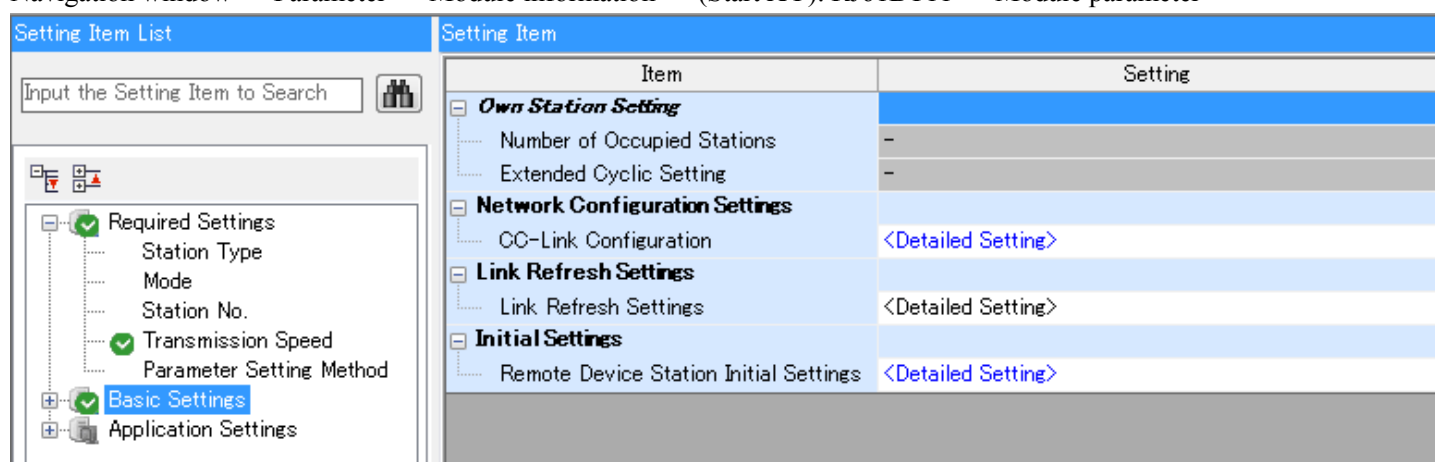


Figure 1.5-6: Module parameter (basic settings)

Under "CC-Link configuration", set the communication unit to be connected.

You can also drag a "General Remote Device Station" from the unit list at the right and down it onto the configuration below.

At this time, you can restrict the setting items by using CSP+ of SC-GU3-01.

Ensure that the red-framed information you configure or check here is the same as configured on the communication unit.

Since SC-GU3-01 supports CC-Link Ver.1.10, the mode may be either "Ver.1 mode" or "Ver.2 mode".

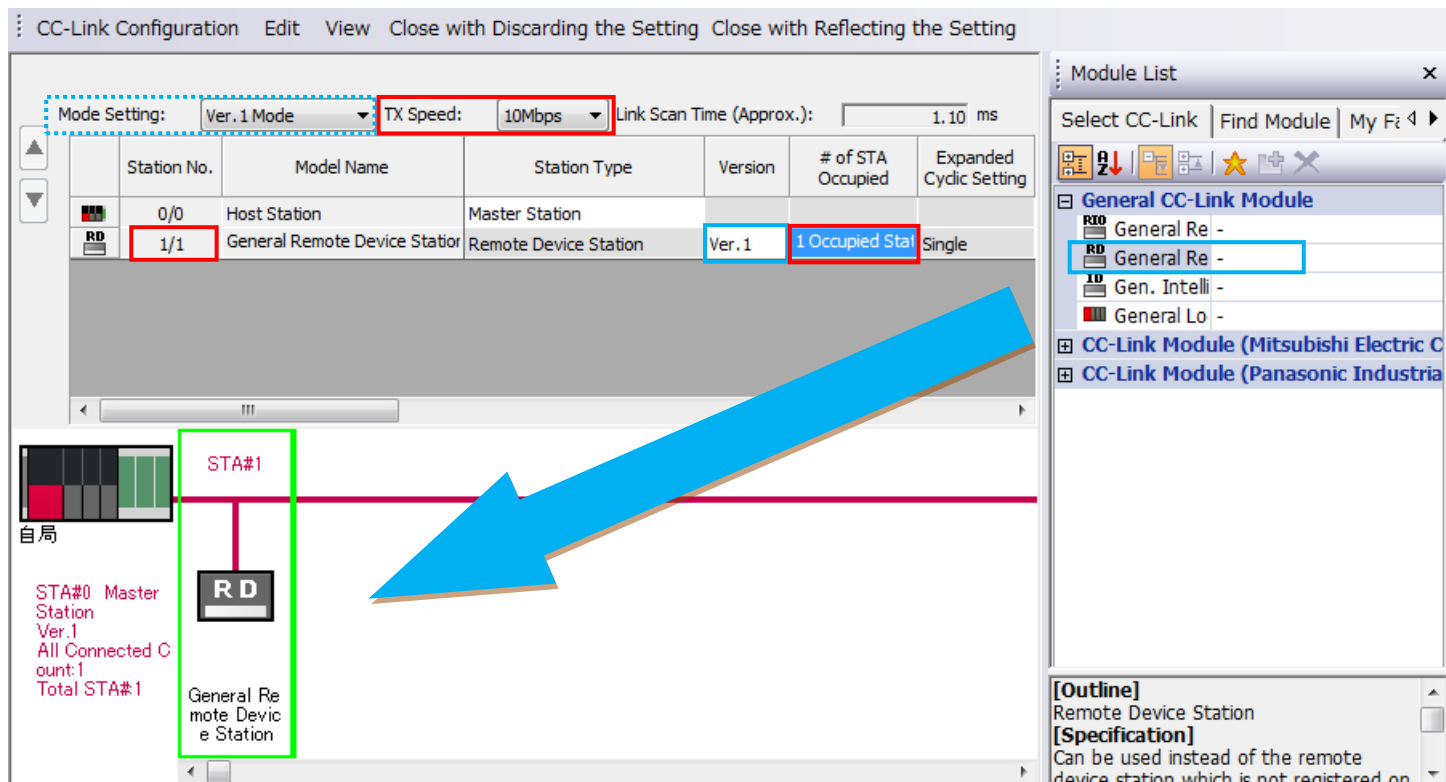


Figure 1.5-7: CC-Link configuration

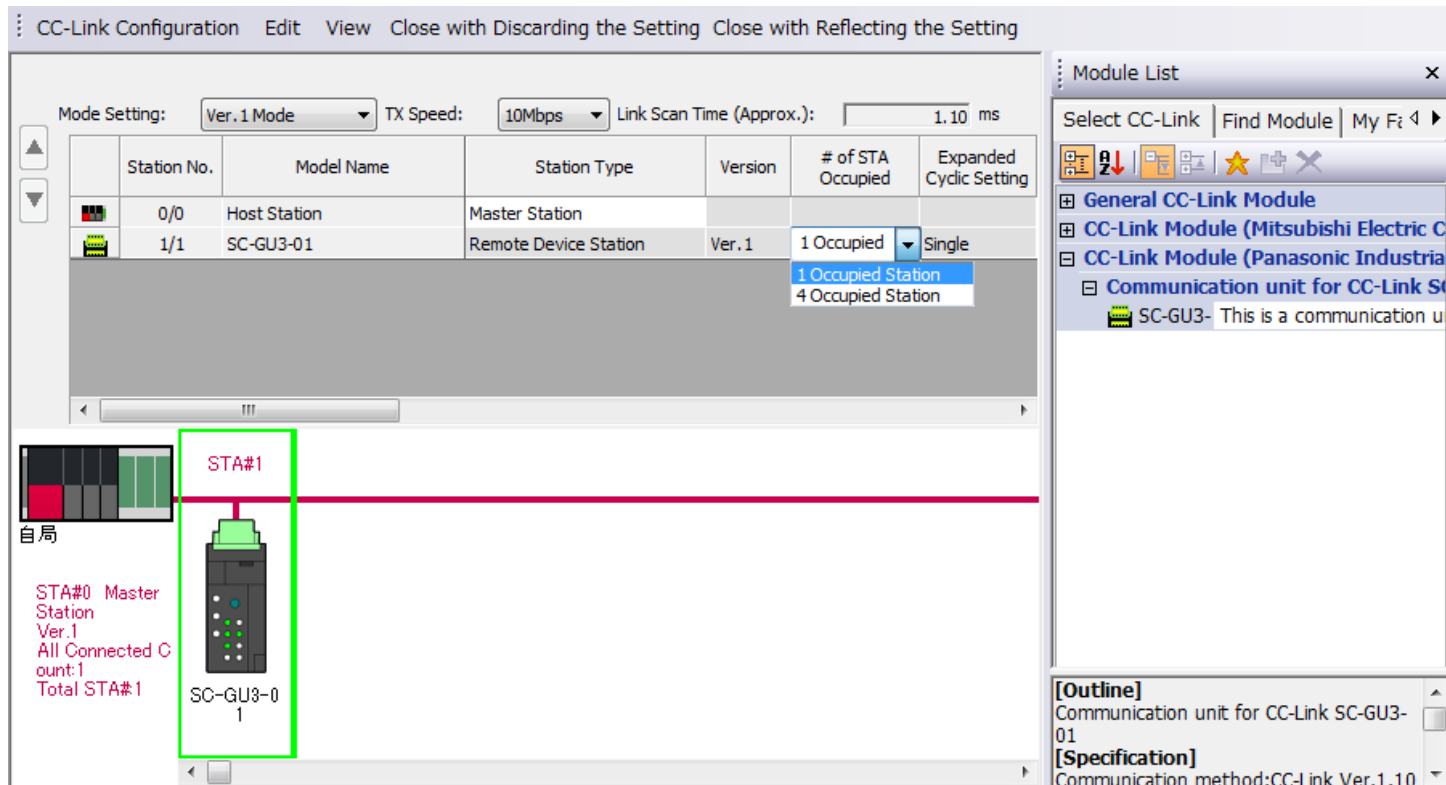


Figure 1.5-8: CC-Link configuration (when using CSP+)

Under "link refresh settings", you must check and set the information of the final slave station connected to the CC-Link master/local module.

For more information, refer to "MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)".

In the following example, this is set by changing [Device Assignment Method] to [Points/Start].

Link side settings

The number of link points must be set so that it matches all the slave station information.

The following table show the number of link points for SC-GU3-01. Check the number of link points as needed.

Figure 1.5-9 shows an example where only one unit of SC-GU3-01 is connected and used in "1-station occupied" mode.

Number of occupied stations	Number of link points	
	RX / RY	RW _r / RW _w
1-station occupied	32	4
4-station occupied	128	16

The first character on the link side should be 0.

CPU side settings

Specify the bit and word devices for the refresh target device name.

Also, the start may be arbitrarily set. When specifying the same device, take care to avoid overlapping from the start to end.

The "device names" and "start" you specify here relate to the global label configuration. For more information, see "1.4.3 Identifying the starting device".

Setting Item List

Setting Item

Input the Setting Item to Search

Required Settings

Basic Settings

Own Station Setting

Network Configuration Setting

Link Refresh Settings

Initial Settings

Application Settings

No.	Device Name	Points	Start	End	Target	Device Name	Points	Start	End
-	SB								
-	SW								
1	RX	32	00000	0001F	Specify Device	X	32	01000	0101F
2	RY	32	00000	0001F	Specify Device	Y	32	01000	0101F
3	RWr	4	00000	00003	Specify Device	W	4	00000	00003
4	RWw	4	00000	00003	Specify Device	W	4	01000	01003
5									
6									
7									
8									
9									
10									
11									

Explanation

Set the number of points (decimal).

[Setting range]

- SB: 16 to 512 (multiples of 16 only)
- SW: 1 to 512
- RX/RX: 16 to 8192 (multiples of 16 only)
- RW_r/RW_w: 4 to 2048 (multiples of 4 only)

Device Assignment Method

Word Device Setting Value Input Format

IP Address Input Format

Start/End

Points/Start

Figure 1.5-9: Link refresh setting (in the case of "1-station occupied")

Appendix.1.6 Connection check

Upon completion of various settings, write the parameters to the CPU module and restart the PC to check the communication.

[Online] → [Monitor] → [Device/Buffer Memory Batch Monitor]

Once you enter the starting device in the device name box, all the information from the 1st station becomes visible.

In this example, check if SC-GU3-01 communication is possible by checking the Remote READY flag for station number 1 in "1-station occupied" mode.

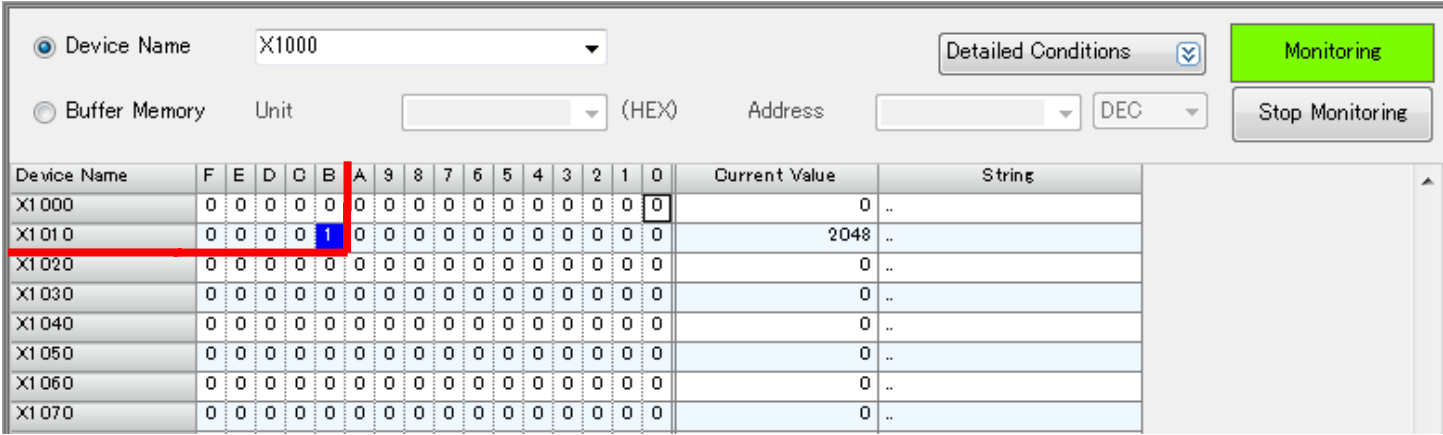


Figure 1.6-1: Remote READY flag check (1-station occupied)

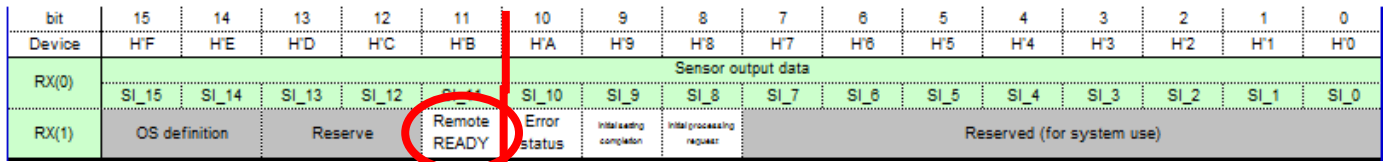
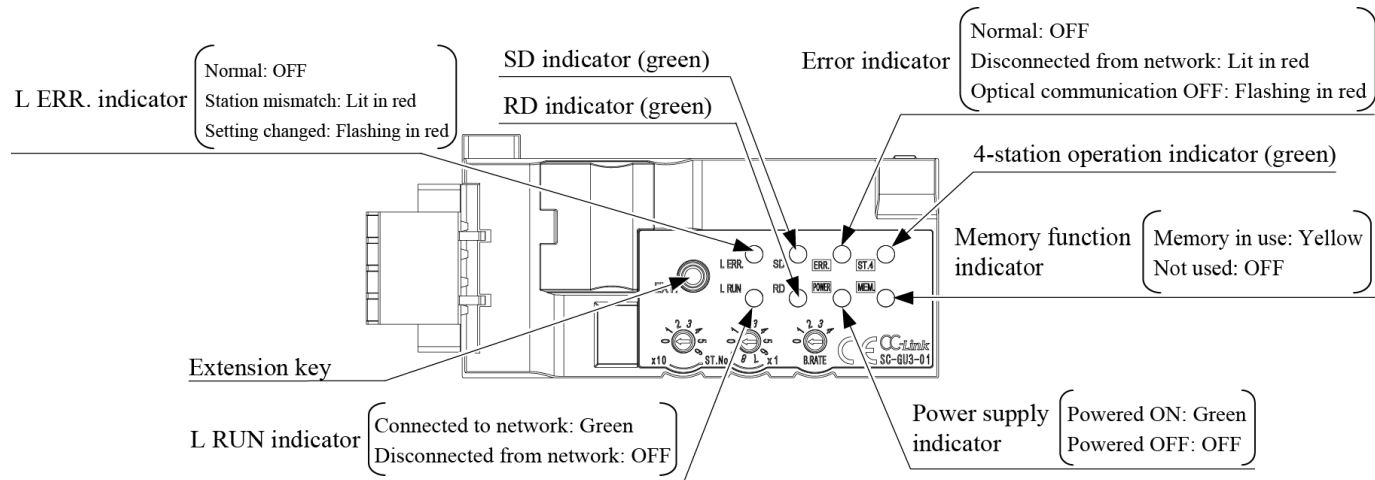


Figure 1.6-2: SC-GU3-01 remote input (RX) memory map

Appendix.2. Troubleshooting

Appendix.2.1 Connection error

If the communication with the CC-Link master/local module fails or a module error occurs, you can check the error with the indicators of SC-GU3-01.



Indicator	Status	Description of error	Meaning
Error indicator (red)	Lights Up	CC-Link communication is down (Communication was performed and then stopped.)	<ul style="list-style-type: none">• Check that the CC-Link connector is connected.• Check the status of the master station.
	Flashes	Optical communication is faulty.	<ul style="list-style-type: none">• Check the connection status of the coupled sensor amplifier or sensor unit.• Check the optical communication commands and send data.• Press the extension key to clear the error.
L ERR. indicator (red)	Lights Up	The baud rate or station number is not set correctly.	<ul style="list-style-type: none">• Check that the baud rate and station number are within the valid range.
	Flashes	The baud rate or station number setting was changed after power-ON.	<ul style="list-style-type: none">• Reset the baud rate and station number settings to the defaults at the time of power-ON or turn OFF and back ON the power.



Appendix.2.2 FB error code (o_uErrId) list

The following is a list of error codes output by the FBs in this FB library to Error Code (o_uErrId).

Error Code Hexadecimal (Decimal)		Description	Meaning
Input value error related error codes	100 (256)	The Station No. (i_uStationNo) is outside the valid range	Set the Station No. (i_uStationNo) to a value from 1 to 64.
	101 (257)	The information derived from the input Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) is not SC-GU3-01.	Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
	102 (258)	Set Controller (i_uSetController) is zero	Make the value of Set Controller (i_uSetController) greater than 0 or turn ON All Controller Set Request (i_bAllSettingFlag).
	103 (259)	Input Command (i_uCommand) is outside the valid range	Enter the correct command.
	104 (260)	Timer Mode (i_uTimerMode) is outside the valid range	Set Timer Mode (i_uTimerMode) to a value not greater than 5.
	105 (261)	Timer Range (i_uTimerRange) is outside the valid range	Set Timer Range (i_uTimerRange) to a value not greater than 2.
	106 (262)	Timer Span (i_uTimerSpan1/i_uTimerSpan2) is outside the valid range	Set Timer Span (i_uTimerSpan1/i_uTimerSpan2) to a value not greater than 9999.
	107 (263)	Set to unconfigurable sensor amplifier	Setting Timer Mode (i_uTimerMode) to 3 or 5 requires you to select sensor amplifier other than FX-301 and LS-403.
	108 (264)	Set to unconfigurable range	Setting Timer Range (i_uTimerRange) to other than 1 requires you to select sensor amplifier other than FX-301, FX-305, and LS-403.
	109 (265)	Teaching Steps (i_uTeachStep) is outside the valid range	Set Teaching Steps (i_uTeachStep) to a value not greater than 2.
	10A (266)	"1-point teaching (limit teaching)" is selected and Shift Amount (i_wShiftAmount) is set to 0	Selecting "1-point teaching (limit teaching)" requires you to set Shift Amount (i_wShiftAmount) to a non-zero value within the valid range.
	10B (267)	Input Signal (i_bInputSignal) is ON and Execution Command (i_bEN) is ON	Turn OFF Input Signal (i_bInputSignal) and then turn ON Execution Command (i_bEN).
	10C (268)	The Write Speed Mode (i_uSpeedMode) is outside the valid range	Set the Write Speed Mode (i_uSpeedMode) to a value not greater than 7.



Error Code Hexadecimal (Decimal)		Description	Meaning
Input value error related error codes	10D (269)	Output Mode (i_uOutputMode) is outside the valid range	Set Output Mode (i_uOutputMode) to H0000, H0001, H0010, or H0011.
	10E (270)	Write Threshold (i_wThreshold) is outside the valid range	Specify a value from -1013 to 9999. The valid range differs depending on the sensor amplifier model. Check the valid range.
	10F (271)	The sensor amplifier specified by Set Controller (i_uSetController) is SC-A01 or SC-A02	The specified sensor amplifier does not support threshold writing. Check the input value of Set Controller (i_uSetController).
	110 (272)	Data Bank No. (i_uDataBankNo) is outside the valid range	Specify a value not greater than 7.
	111 (273)	Set Gain (i_uGainSet) is outside the valid range	Specify a value not greater than 3.
	112 (274)	Emitter Power Setting (i_uEmitterPwSetting) is outside the valid range	Specify a value within the valid range.



Error Code Hexadecimal (Decimal)		Description	Meaning
FB behavior related error codes	200 (512)	Remote READY flag OFF	Check whether or not an error has occurred in the communication unit. Check if the Start I/O No. (i_uStartIONo) and the Station No. (i_uStationNo) settings correctly indicate the target communication unit.
	201 (513)	End unit is not connected	End unit is not recognized. Check the installation status. You may be able to fix the problem by requesting an initialization.
	202 (514)	Execution Command (i_bEN) turned OFF before normal or error completion	Check that Normal Completion (o_bOK) or Error Completion (o_bErr) has turned ON and then turn OFF Execution Command (i_bEN). This error code is output also when Execution Command (i_bEN) is intentionally turned OFF before completion.
	203 (515)	Execution Command (i_bEN) was turned from ON to OFF and then turned from OFF to ON while Execution Status (o_bENO) was ON	Check that Execution Status (o_bENO) turned OFF and then turn ON Execution Command (i_bEN).
	204 (516)	Input Signal (i_bInputSignal) is turned from OFF to ON with Waiting Signal (o_bSignalWait) OFF	Check that Waiting Signal (o_bSignalWait) is ON and then turn ON Input Signal (i_bInputSignal).
	205 (517)	After the teaching for the 1st point, Input Signal (i_bInputSignal) is turned from OFF to ON with Waiting Signal (o_bSignalWait) OFF	Input Signal (i_bInputSignal) was turned ON before the teaching for the 2nd point became acceptable. This FB will forcibly terminate the teaching. Check the threshold.
	206 (518)	Execution Command (i_bEN) turns OFF after the teaching for the 1st point	Execution Command (i_bEN) was turned OFF before the teaching for the 2nd point was successfully executed. This FB will forcibly terminate the teaching. Check the threshold.
	FFFF (65535)	Module error occurs	Check the Module Error Code (o_uModuleErrId). For information on module error codes, see "Appendix.2.3 Module Error Code (o_uModuleErrId) list".



Appendix.2.3 Module Error Code (o_uModuleErrId) list

Some FBs in this FB library return an error code to Module Error Code (o_uModuleErrId) when a module error occurs (with o_uErrId is a hexadecimal value of "FFFF").

The output error code has specific information in its lower 8 bits. Interpret the information by referring to the ON bits in the following table. The higher 8 bits are always OFF.

Error bit	Description of error	Meaning
7	Error in using the MEMORY function	Check if SC-GU3-01 is correctly connected to the sensor amplifier and end unit. Check that the sensor amplifier combination configuration is unchanged.
6	Send data error	Check if the data to be sent is compatible with the destination sensor amplifier.
5	Receive error	Check if SC-GU3-01 is correctly connected to the sensor amplifier and end unit. Check if the copy lock is turned ON.
4	Timeout error	Check if SC-GU3-01 is correctly connected to the sensor amplifier and end unit.
3	Link error	Check if SC-GU3-01 is correctly connected to the sensor amplifier and end unit.
2	Model setting error	Check if the destination sensor amplifier is correctly configured.
1	Unit selection error	Check if the destination sensor amplifier is correctly configured.
0	Communication command error	Check if the destination sensor amplifier is correctly configured. Check if the command to be sent is compatible with the destination sensor amplifier.



Appendix.3. FB Library Use Examples

(1) System configuration

For information on the system configuration, see "1.3 System configuration example".

The following examples assume that eight sensor amplifiers, FX-301, FX-305, FX-501, FX-502, LS-501, LS-403, DPS-402, and SC-A01, are connected in this order.

(2) List of devices in use

■ Common external input

Device	FB name		Purpose (what occurs when FB is ON)
M0	(a)	P+SUNX-SC-GU3-01-CC_InitializeUnit_R	Execution Command ON
	(b)	P+SUNX-SC-GU3-01-CC_ClearError_R	
	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	
	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(k)	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	
	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	
	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	
	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	
M2	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	Read Flag ON
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	



Device	FB name		Purpose (what occurs when FB is ON)
D0	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	Set Controller
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	

■ External input

Device	FB name		Purpose (what occurs when FB is ON)
D1	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	Set Blank Unit Controller
M1	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	All Controller Set Request ON
D2			Input Command
D3			Command Data
D4	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	Timer Mode
D5			Timer Range
D6			Timer Span 1
D7			Timer Span 2
M3	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	Input Signal ON
D8			Teaching Steps
D9			Shift Amount
D10	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	Speed Mode
D11	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	Output Mode
D12	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	Write Threshold
M4	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	Load Flag ON
D13			Data Bank No.
D14	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	Set Gain
D15	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	Emitter Power Setting
M5	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	Set Eco Mode ON
M6			Reset Flag ON



■ Common external output

Device	FB name		Purpose
M100	(a)	P+SUNX-SC-GU3-01-CC_InitializeUnit_R	FB execution status
	(b)	P+SUNX-SC-GU3-01-CC_ClearError_R	
	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	
	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(k)	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	
	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	
	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	
	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	
M101	(a)	P+SUNX-SC-GU3-01-CC_InitializeUnit_R	Normal completion of FB
	(b)	P+SUNX-SC-GU3-01-CC_ClearError_R	
	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	
	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(k)	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	
	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	
	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	
	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	



Device	FB name		Purpose
M102	(a)	P+SUNX-SC-GU3-01-CC_InitializeUnit_R	Error completion of FB
	(b)	P+SUNX-SC-GU3-01-CC_ClearError_R	
	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	
	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(k)	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	
	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	
	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	
	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	
D100	(a)	P+SUNX-SC-GU3-01-CC_InitializeUnit_R	FB error code
	(b)	P+SUNX-SC-GU3-01-CC_ClearError_R	
	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	
	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(k)	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	
	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	
	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	
	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	



Device	FB name		Purpose
D101	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	Module Error Code
	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	
	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	
	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	
	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	
	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	
	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	
	(k)	P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R	
	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	
	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	
	(n)	P+SUNX-SC-GU3-01-CC_SetDataBank_R	
	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	
	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	
	(q)	P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R	

■ External output

Device	FB name		Purpose
D102	(c)	P+SUNX-SC-GU3-01-CC_SetBlankUnit_R	Set Controller Reflected Blank Unit
D103	(d)	P+SUNX-SC-GU3-01-CC_CheckOutData_R	Sensor Output
D110 to D125			Detected Value
D130 to D145	(e)	P+SUNX-SC-GU3-01-CC_ExecuteCommand_R	Read Command Response
D150 to D165	(f)	P+SUNX-SC-GU3-01-CC_SetOutTimer_R	Read Timer Mode
M103	(g)	P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R	Waiting Signal
D170 to D185	(h)	P+SUNX-SC-GU3-01-CC_SetSpeedMode_R	Read Speed Mode
D190 to D205	(i)	P+SUNX-SC-GU3-01-CC_SetOutputMode_R	Read Output Mode
D210 to D225	(j)	P+SUNX-SC-GU3-01-CC_SetThreshold_R	Read Threshold
D104	(l)	P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R	Number of Connected Units
D230 to D245	(m)	P+SUNX-SC-GU3-01-CC_CheckModelInfo_R	Model Information
D250 to D265	(o)	P+SUNX-SC-GU3-01-CC_SetGain_R	Read Gain Setting
D270 to D285	(p)	P+SUNX-SC-GU3-01-CC_SetEmitterPw_R	Read Emitter Power Setting



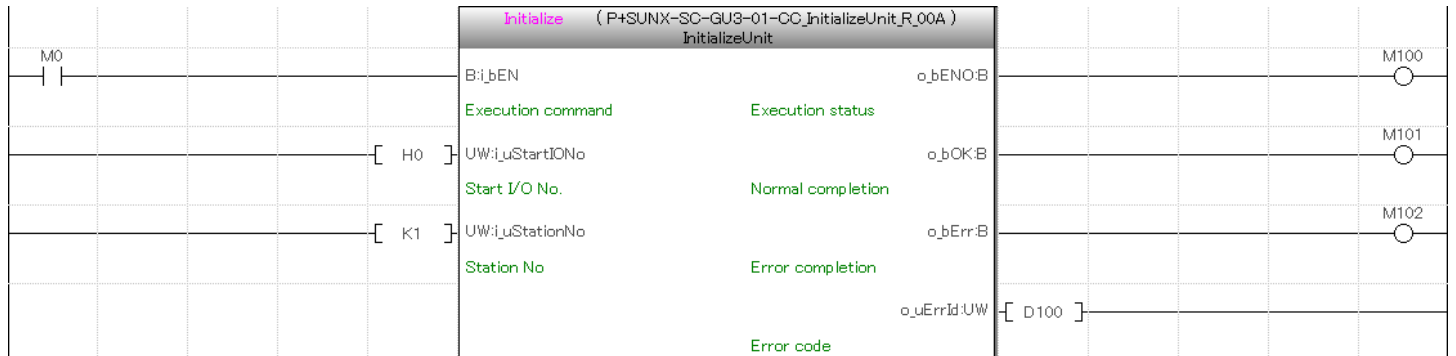
(3) Program

Common settings

Label name	Setting values	Description
Start I/O No.	H0	Specify the Start XY address of the RJ61BT11 to communicate with.
Station No.	K1	Specify the station number of the communication unit you want to operate.

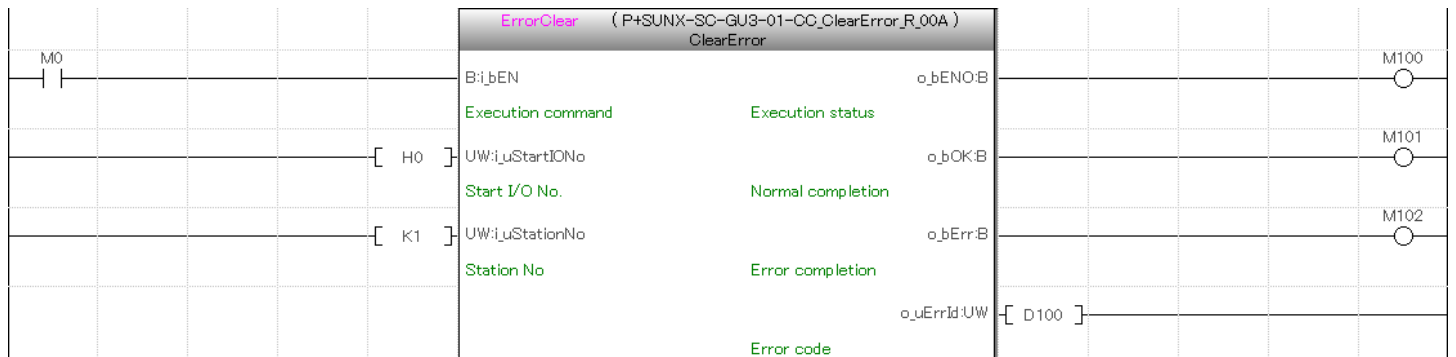
(a) P+SUNX-SC-GU3-01-CC_InitializeUnit_R (initialization)

When M0 is turned ON, this FB initializes the SC-GU3-01 with its station number set to 1.



(b) P+SUNX-SC-GU3-01-CC_ClearError_R (error clear)

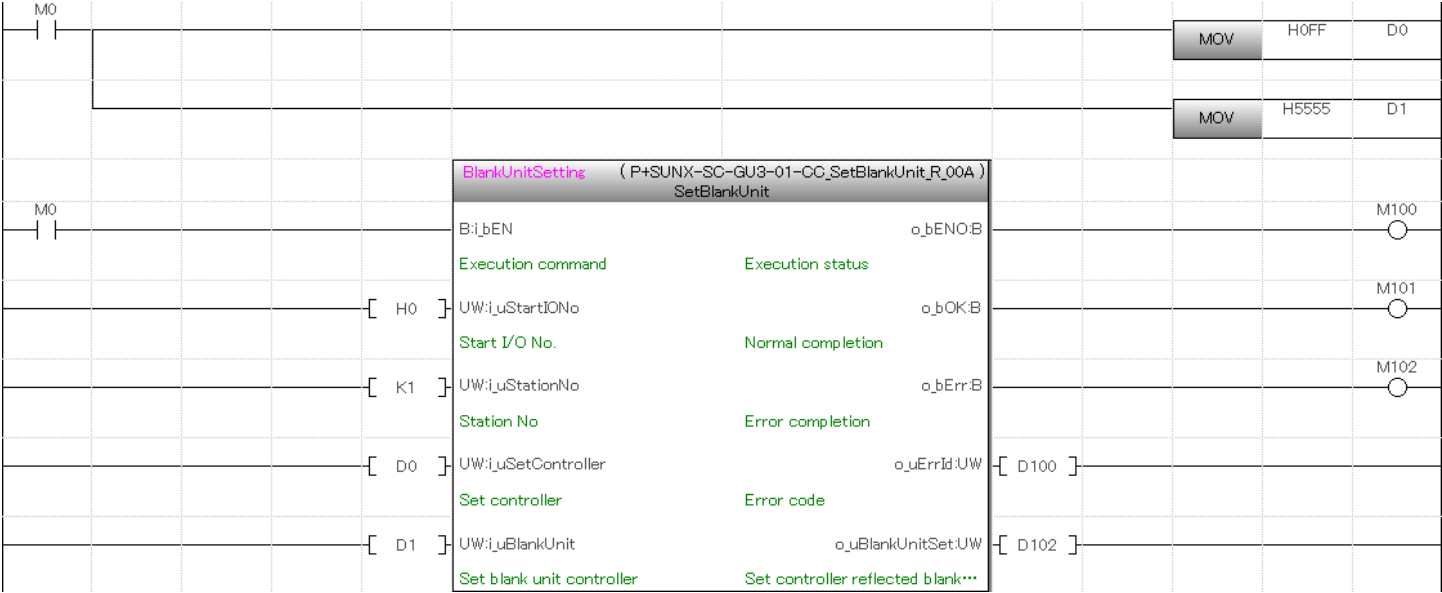
When M0 is turned ON, this FB clears the error of the SC-GU3-01 with its station number set to 1.



(c) P+SUNX-SC-GU3-01-CC_SetBlankUnit_R (blank unit setting)

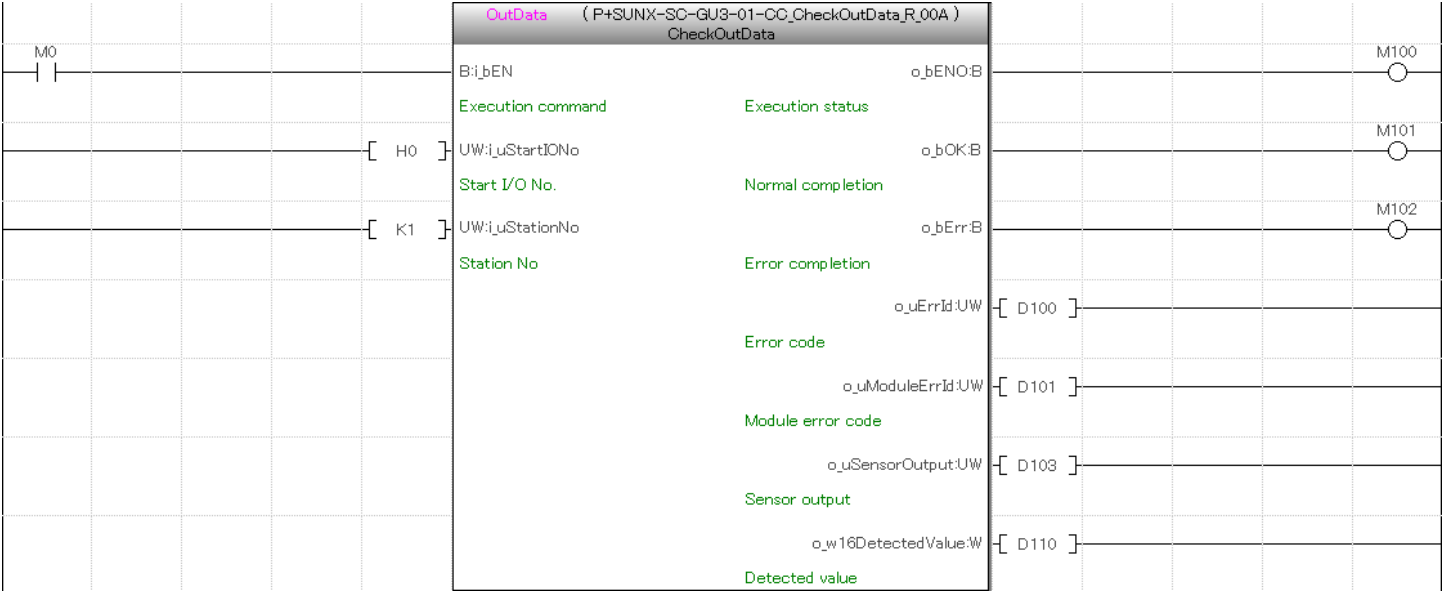
When M0 is turned ON, this FB performs blank unit setting on the SC-GU3-01 with its station number set to 1 in accordance with the setting input to D1. In the following example, D0 is set to "FF" in hexadecimal (meaning "8 units connected"; "0000 0000 1111 1111" in binary) and D1 is set to "5555" in hexadecimal ("0101 0101 0101 0101" in binary). Executing this FB outputs "AAAA" in hexadecimal ("1010 1010 1010 1010" in binary) to D102.

Setting another FB's D0 to this output D102 allows you to use FBs without having to be aware of blank units.



(d) P+SUNX-SC-GU3-01-CC_CheckOutData_R (sensor output read)

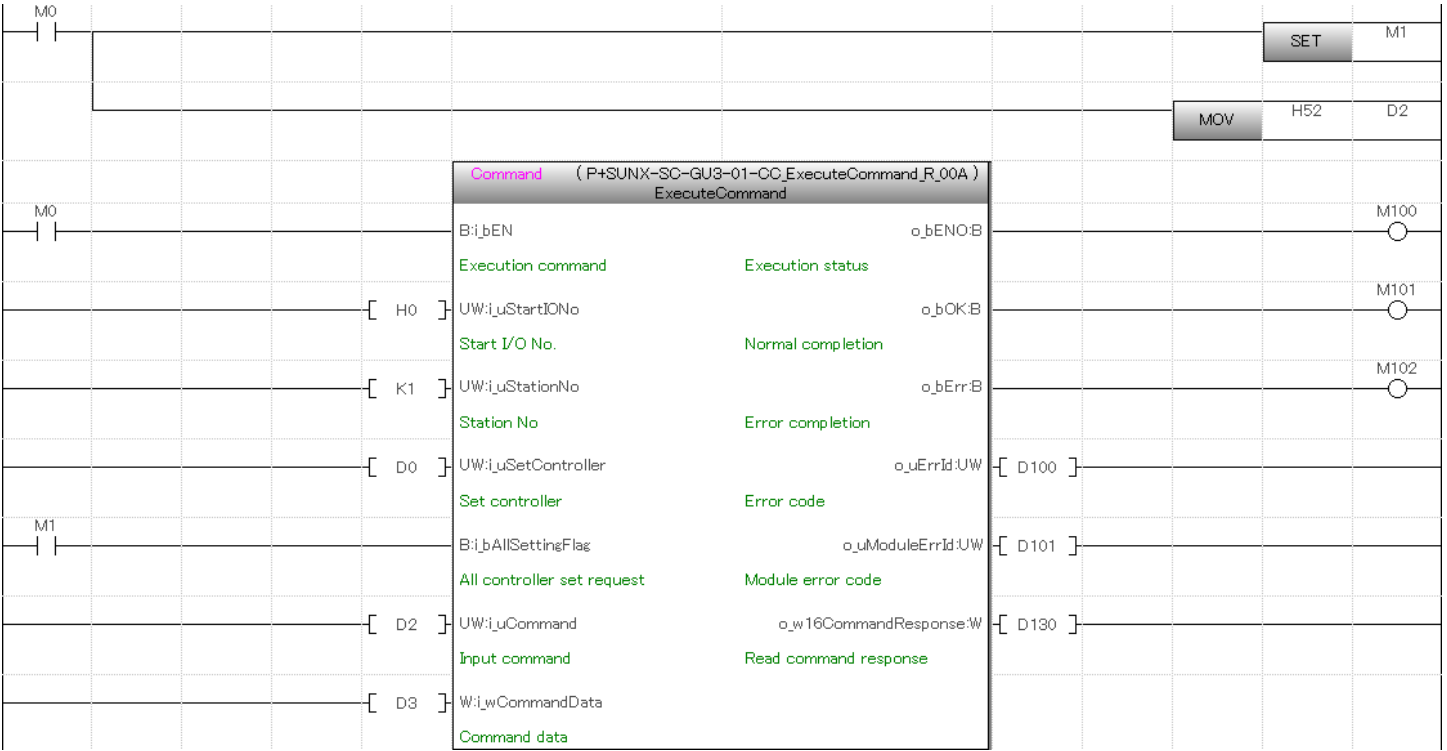
When M0 is turned ON, this FB outputs the output and detected values of the sensor amplifier connected to the SC-GU3-01 with its station number set to 1 to D103 and the 16-word devices from D110 to D125, respectively.



(e) P+SUNX-SC-GU3-01-CC_ExecuteCommand_R (execute specified command)

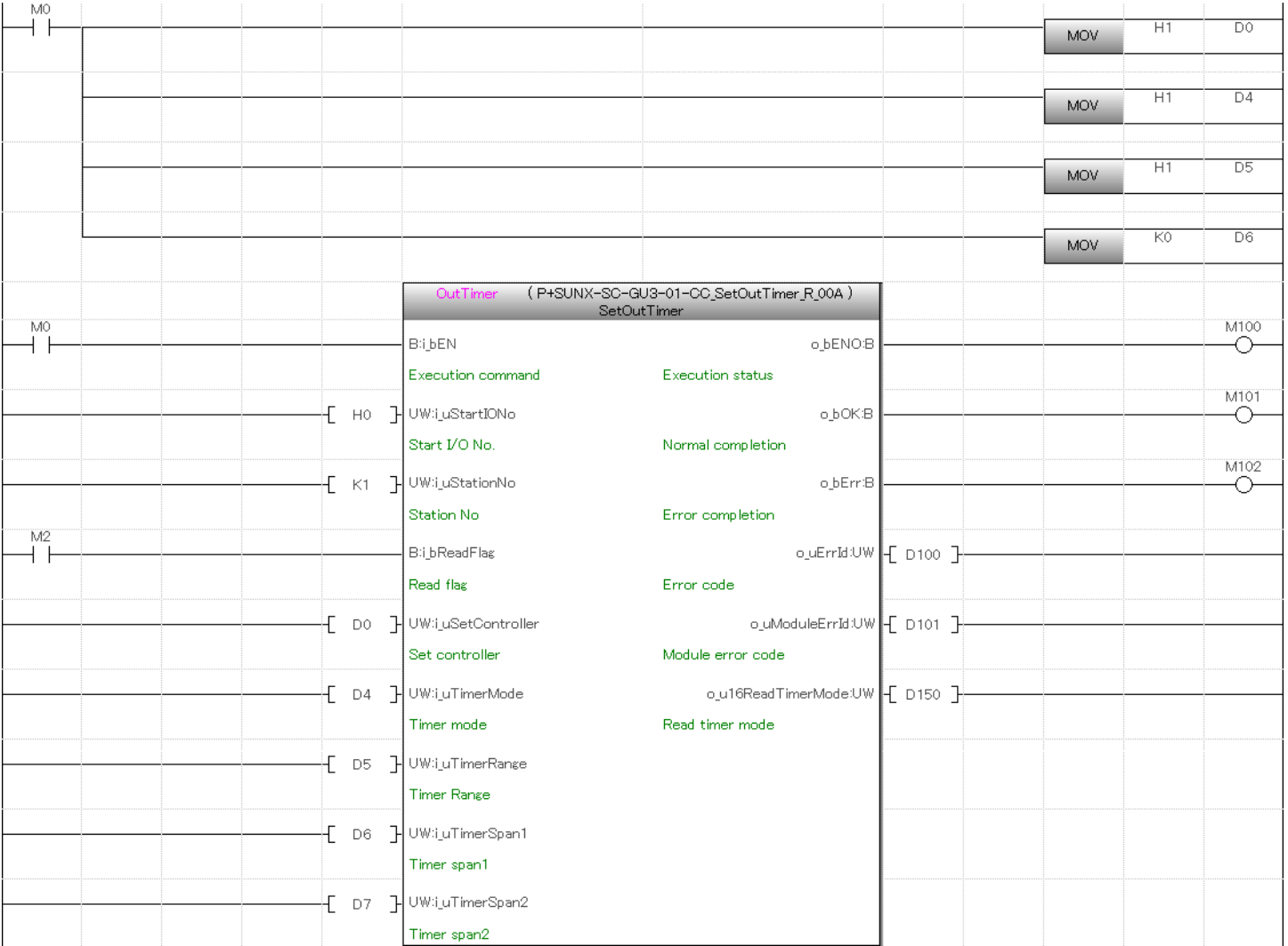
When M0 is turned ON, this FB executes the "H52" command (reset) on all the sensor amplifiers connected to the SC-GU3-01 with its station number set to 1.

You do not have to enter the value of D0 because it is disabled when M1 is turned ON. Also, "H52" input to D2 is a command that does not require the input of command data (configuration parameter), and therefore you do not have to input a value to D3. For more information on the commands, refer to "CC-Link Communication Unit SC-GU3-01 User's Manual".



(f) P+SUNX-SC-GU3-01-CC_SetOutTimer_R (output operation setting)

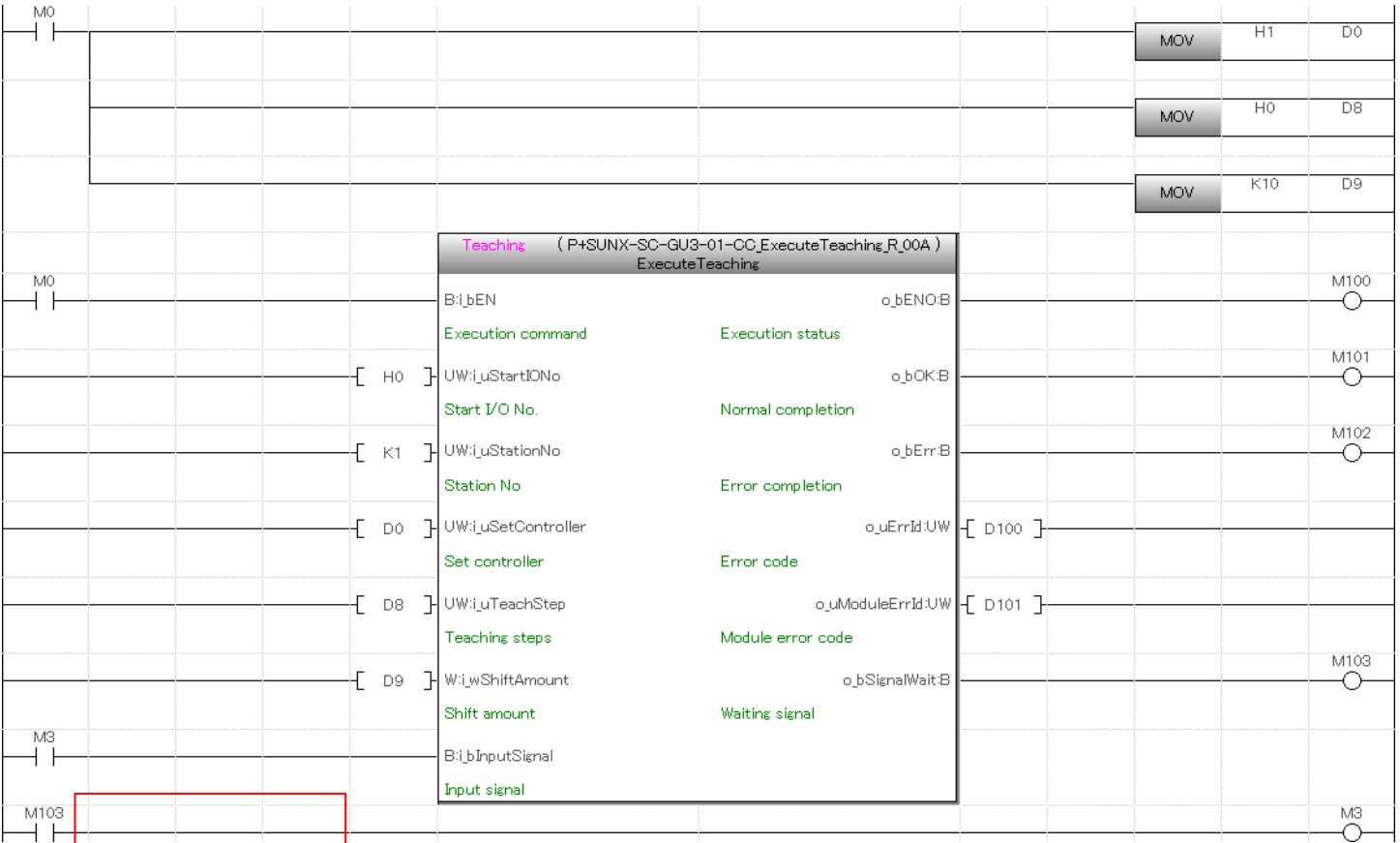
When M0 is turned ON, this FB sets an OFF delay of 0.5 ms on the first sensor amplifier connected to the SC-GU3-01 with its station number set to 1.



(g) P+SUNX-SC-GU3-01-CC_ExecuteTeaching_R (execute teaching)

When M0 is turned ON, this FB sets a normal output operation and executes +10% limit teaching on the first sensor amplifier connected to the SC-GU3-01 with its station number set to 1.

In the following example, M3 is turned ON when M103 is turned ON; you can, however, execute teaching at any time by adding a contact for external input or ladder operation behind the M103 contact.

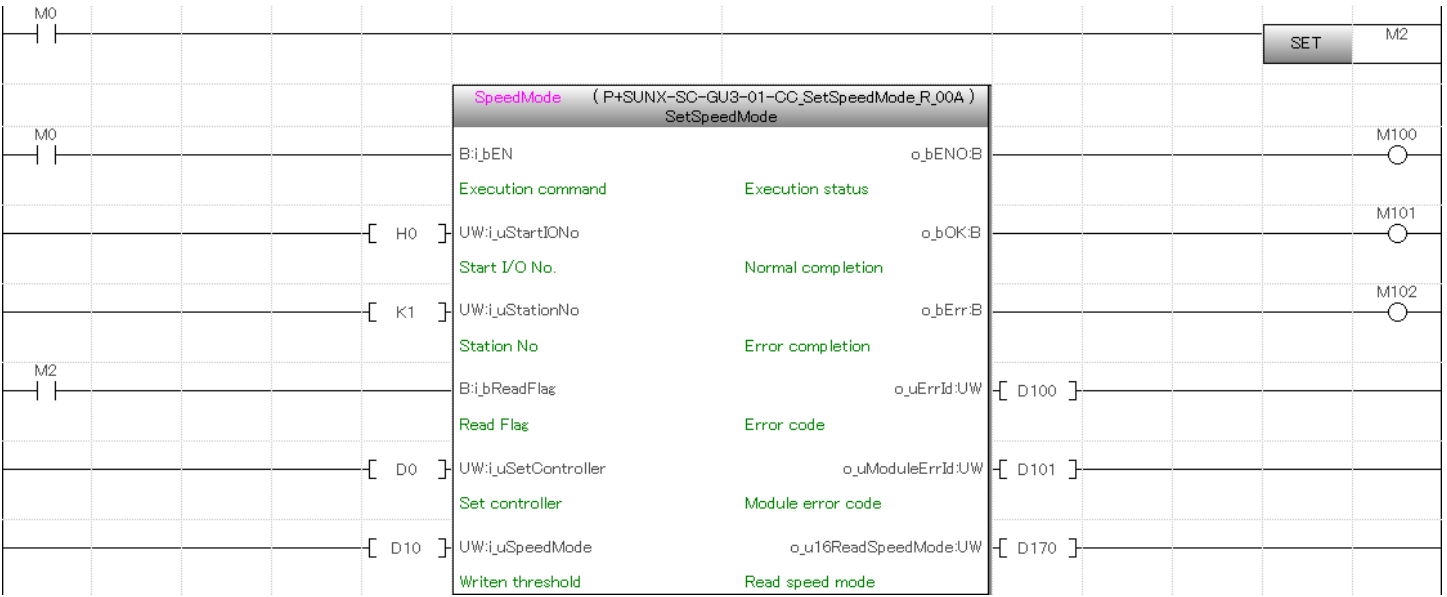


Add a contact for external input or ladder operation, as needed, to turn ON M3 (Input signal) at your desired time.

Be sure to provide the M103 (Teaching Wait Flag) to turn ON M3 (Input signal) because otherwise an FB error may occur.

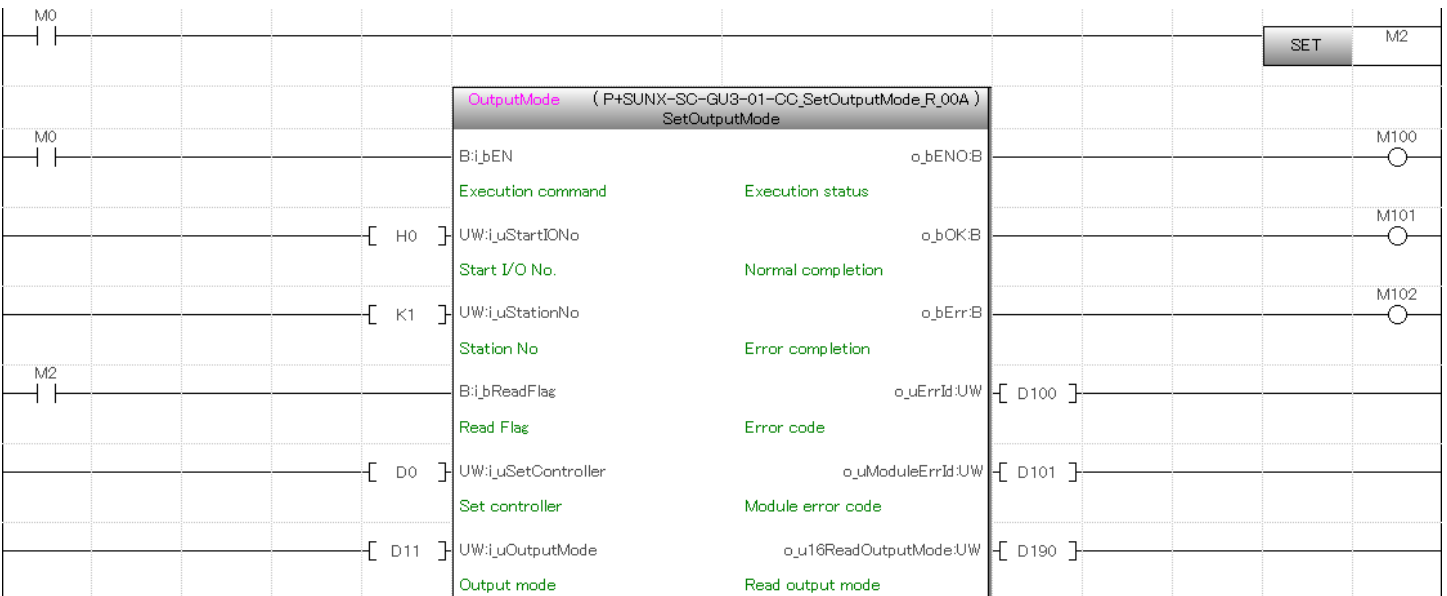
(h) P+SUNX-SC-GU3-01-CC_SetSpeedMode_R (response speed setting)

When M0 is turned ON, this FB outputs the speed mode information for all the sensor amplifiers connected to the SC-GU3-01 with its station number set to 1 to the 16-word devices from D170 to D185, respectively.



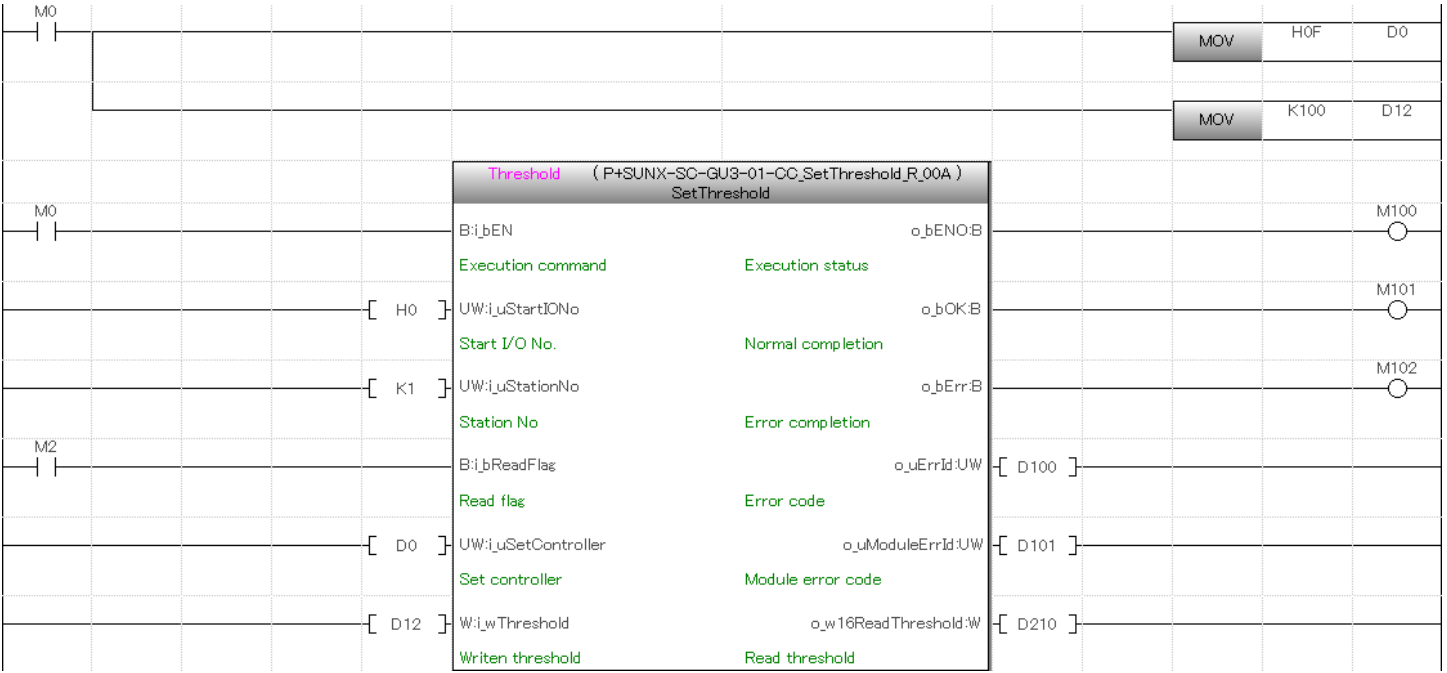
(i) P+SUNX-SC-GU3-01-CC_SetOutputMode_R (output logic setting)

When M0 is turned ON, this FB outputs the output logic information for all the sensor amplifiers connected to the SC-GU3-01 with its station number set to 1 to the 16-word devices from D190 to D205, respectively.



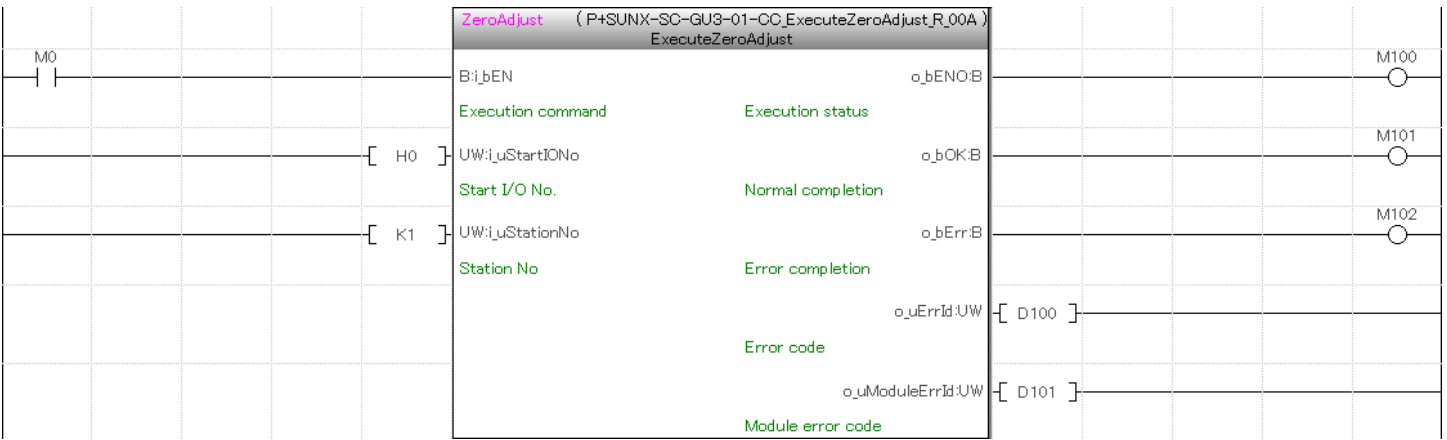
(j) P+SUNX-SC-GU3-01-CC_SetThreshold_R (threshold settings)

When M0 is turned ON, this FB sets to 100 the thresholds of the first to fourth sensor amplifiers connected to the SC-GU3-01 with its station number set to 1.



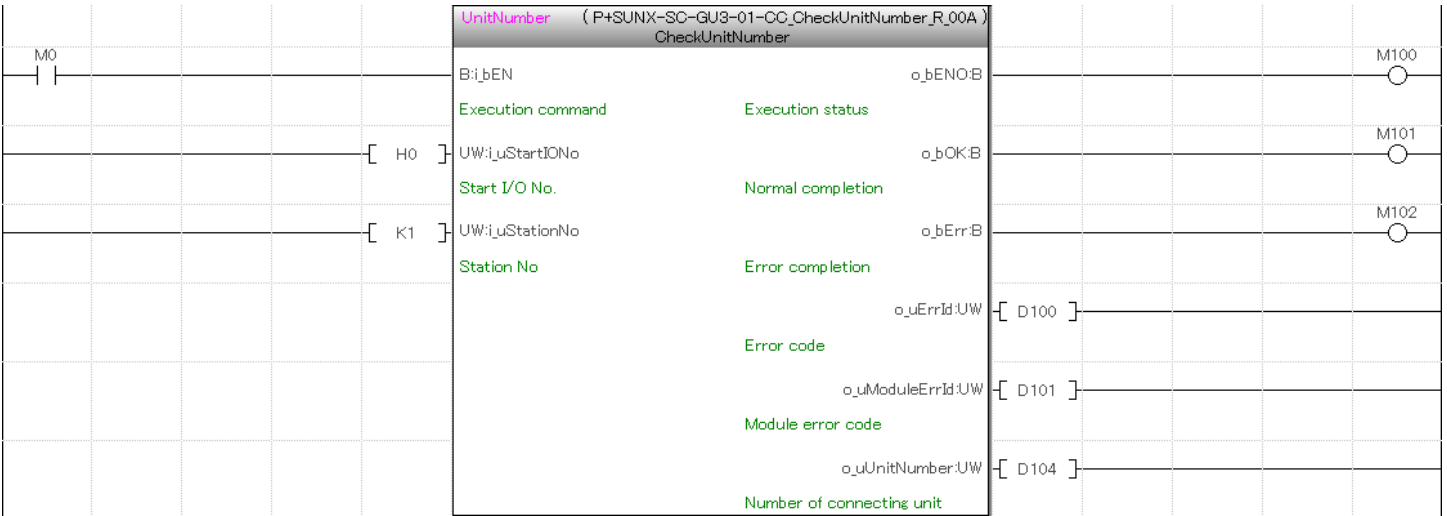
(k) P+SUNX-SC-GU3-01-CC_ExecuteZeroAdjust_R (execute zero shift)

When M0 is turned ON, this FB executes zero shift on the DPS-402 connected to the SC-GU3-01 with its station number set to 1.



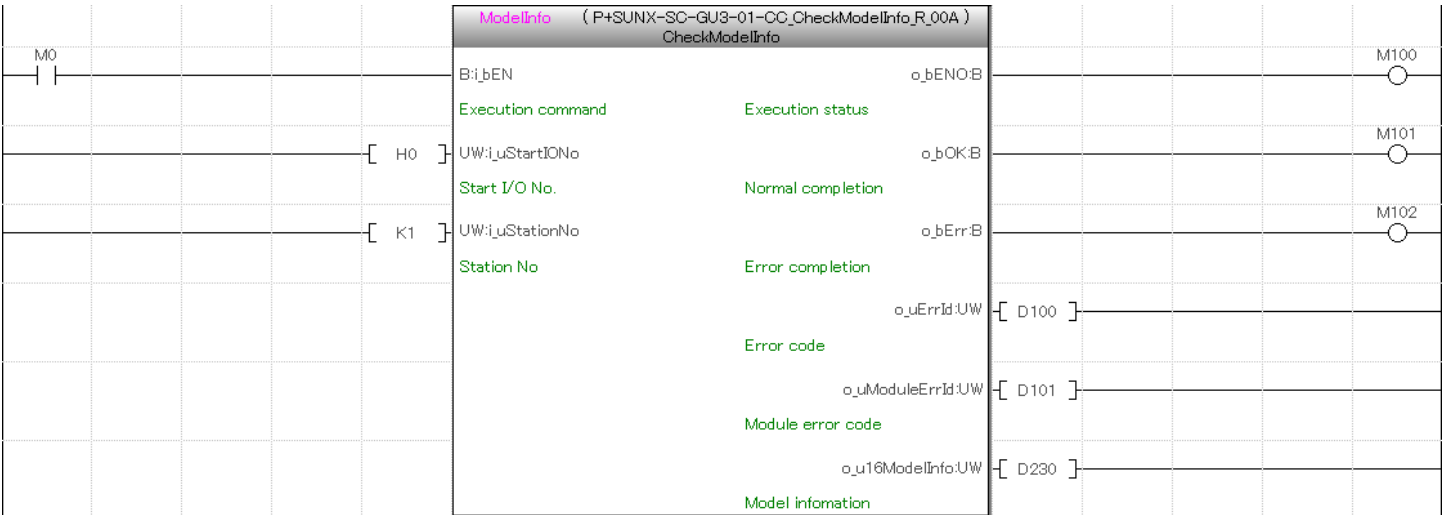
(l) P+SUNX-SC-GU3-01-CC_CheckUnitNumber_R (check number of connected units)

When M0 is turned ON, this FB outputs the number of sensor amplifiers connected to the SC-GU3-01 with its station number set to 1 to D104.



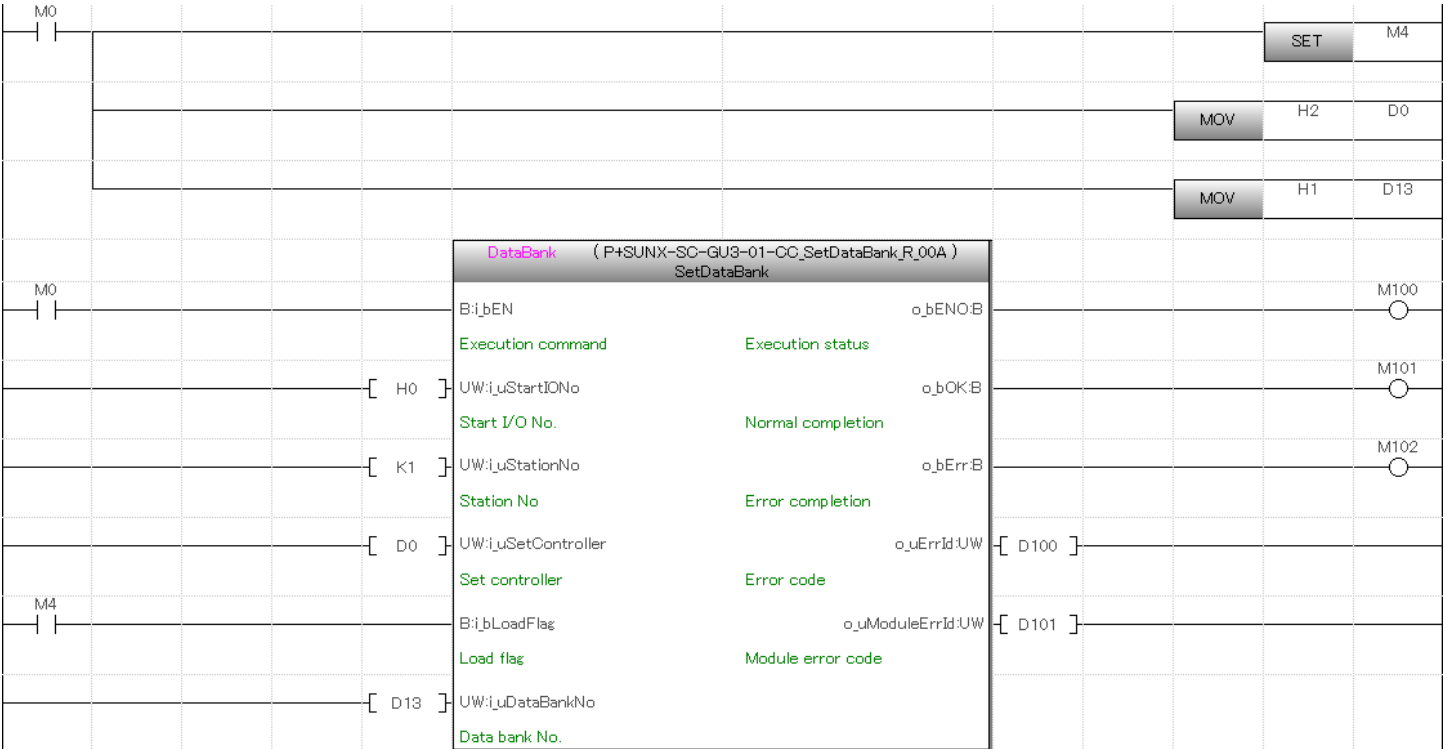
(m) P+SUNX-SC-GU3-01-CC_CheckModelInfo_R (check model information)

When M0 is turned ON, this FB outputs the model information for all the sensor amplifiers connected to the SC-GU3-01 with its station number set to 1 to the 16-word devices from D230 to D245, respectively.



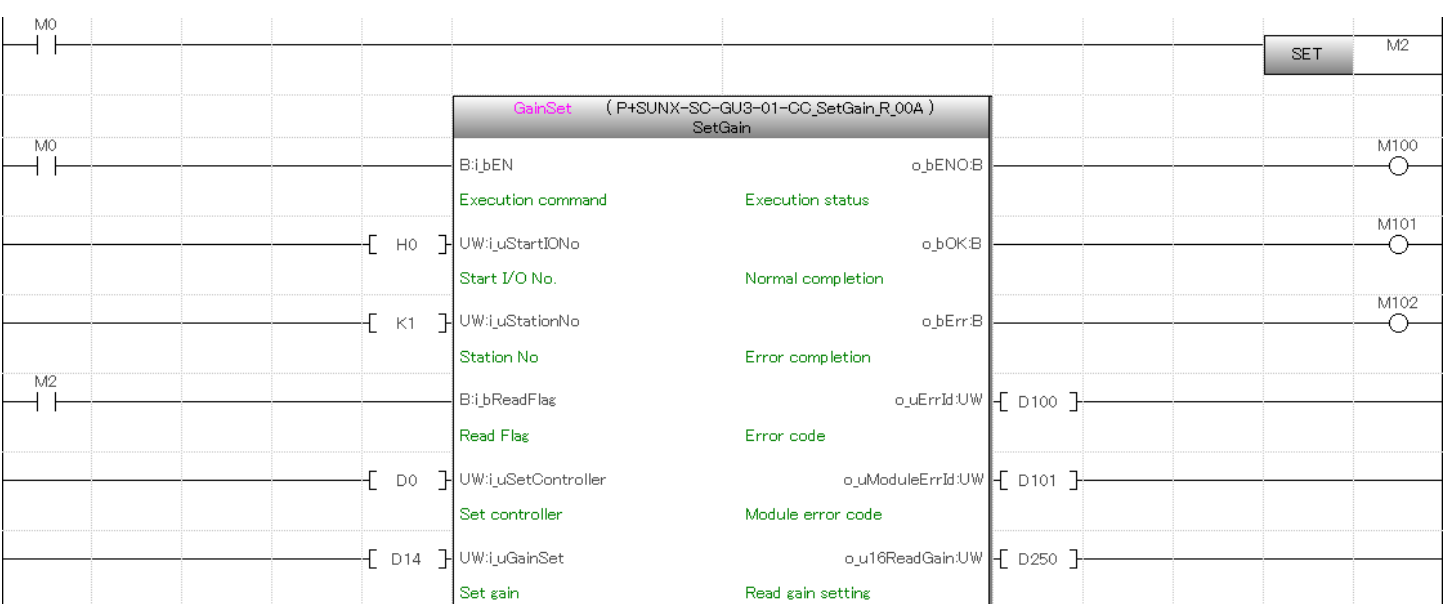
(n) P+SUNX-SC-GU3-01-CC_SetDataBank_R (save or load data bank)

When M0 is turned ON, this FB loads the content saved in data bank No.1 on the second sensor amplifier connected to the SC-GU3-01 with its station number set to 1.



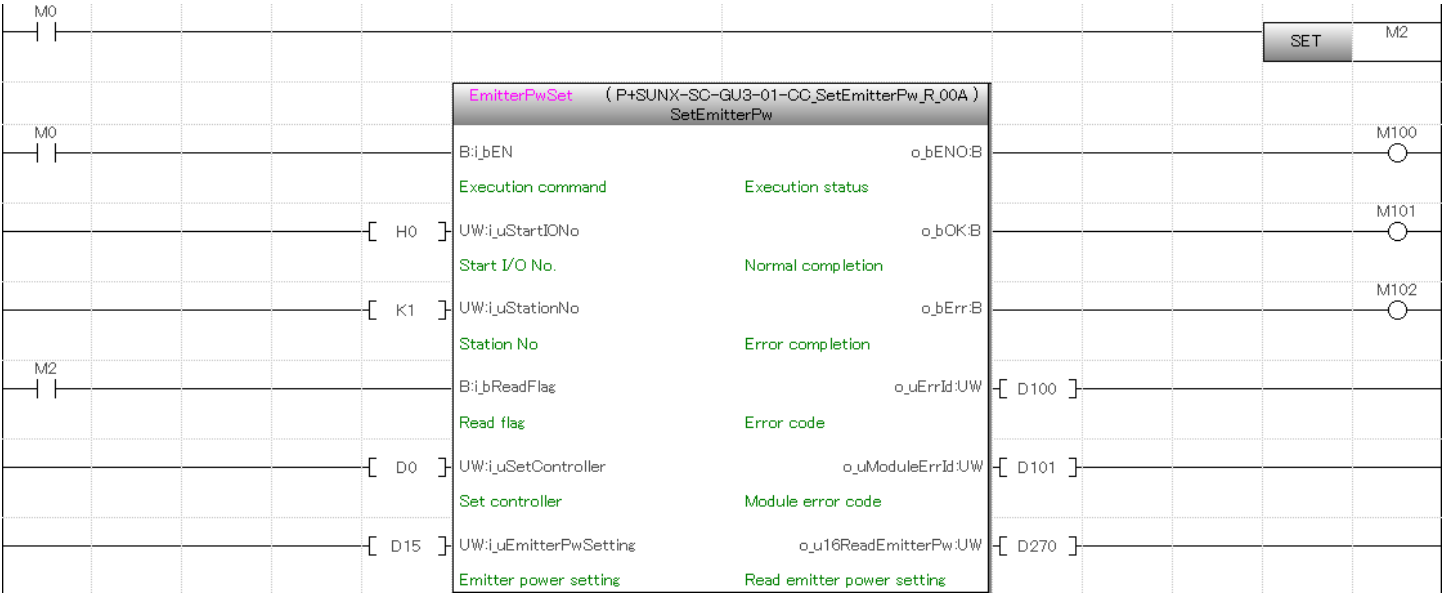
(o) P+SUNX-SC-GU3-01-CC_SetGain_R (received light sensitivity setting)

When M0 is turned ON, this FB outputs the received light sensitivity settings for the LS-403 and LS-501 connected to the SC-GU3-01 with its station number set to 1 to the 16-word devices from D250 to D265, respectively.



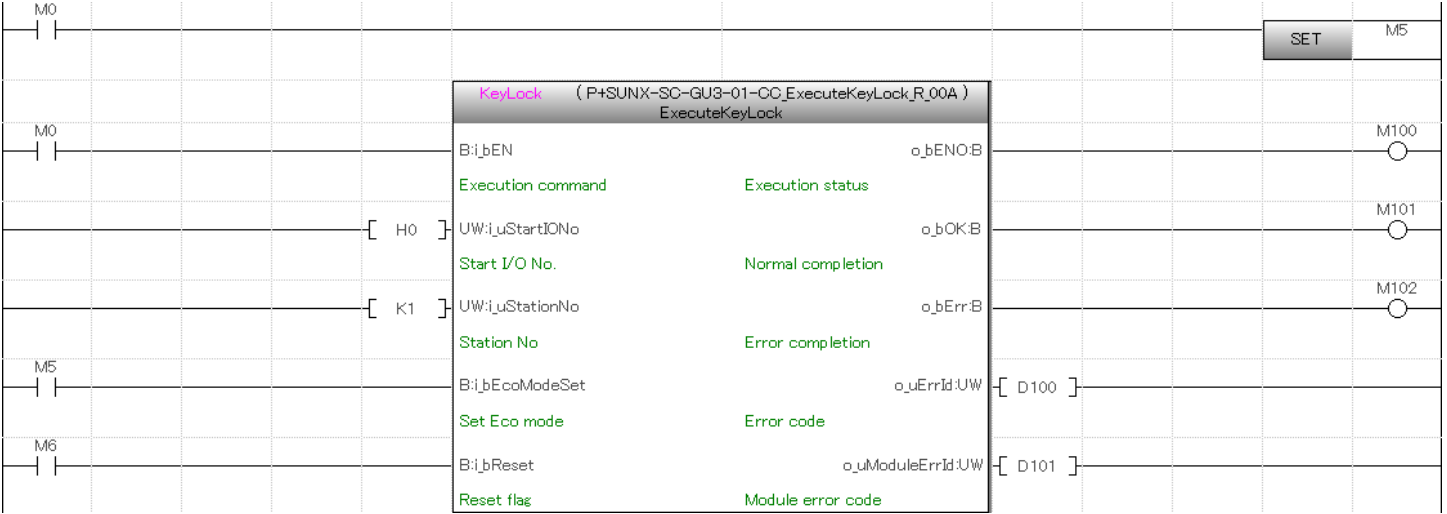
(p) P+SUNX-SC-GU3-01-CC_SetEmitterPw_R (emission adjustment)

When M0 is turned ON, this FB outputs the emitted light amount settings for all the FX-series sensor amplifiers connected to the SC-GU3-01 with its station number set to 1 to the 16-word devices from D270 to D285, respectively.



(q) P+SUNX-SC-GU3-01-CC_ExecuteKeyLock_R (turn on or off the keylock)

When M0 is turned ON, this FB sets the keylock and Eco mode on all the sensor amplifiers connected to the SC-GU3-01 with its station number set to 1.



Appendix.4. Password-based read/write protection of a ladder program

You can configure a password for a ladder program for read/write protection.
This feature is useful to prevent the leakage of confidential data contained in a ladder program.

[Project] → [Security] → [File Password Setting]
Select the data to protect with a password and press [Register].

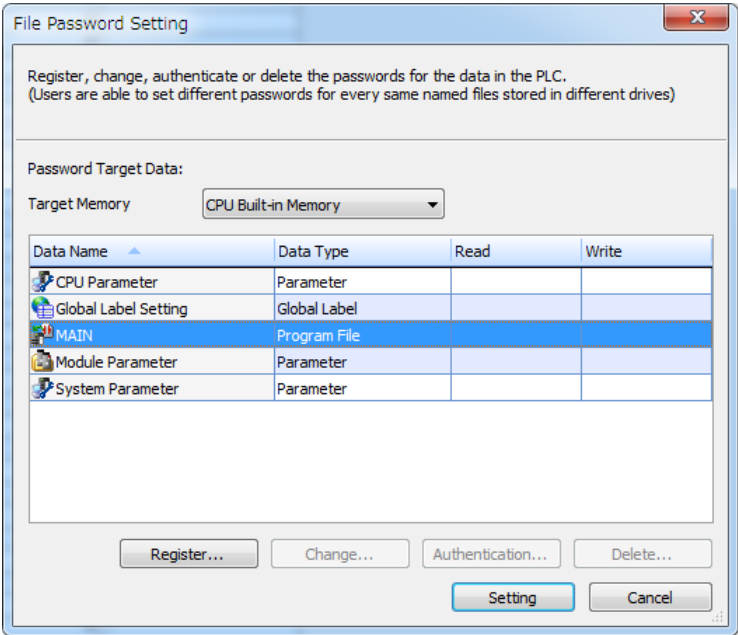


Figure 4-1: Selecting the file to protect with a password

Select [Read/Write Protection] in the [Target Password] box, set the password, then press the [Completed] button.

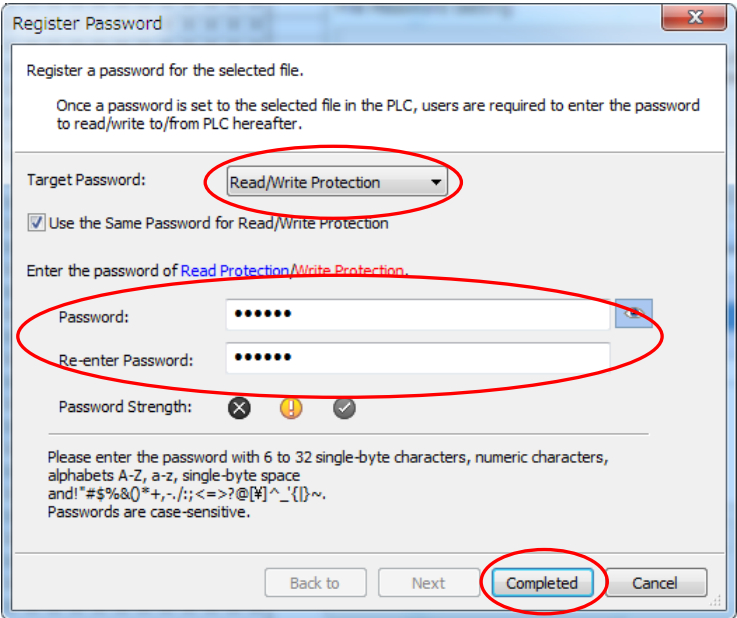


Figure 4-2: Setting the password

Check that [Password Registration] is [Authenticated] and then press the [Setting] button.

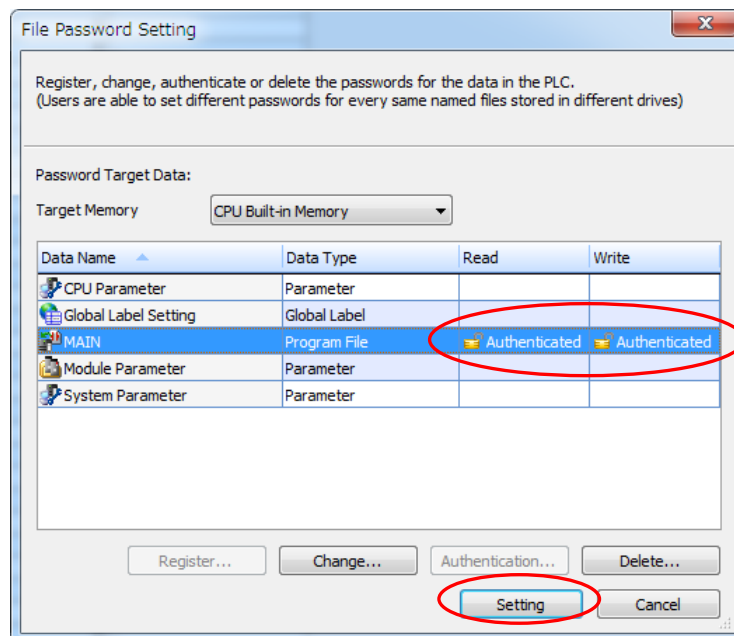


Figure 4-3: Setting the file password

If after password registration, the project data you "load from the PC" is different than that for which you registered a password, the [File Password Setting] dialog prompts you for password authentication, so you can determine whether or not a password has been set.

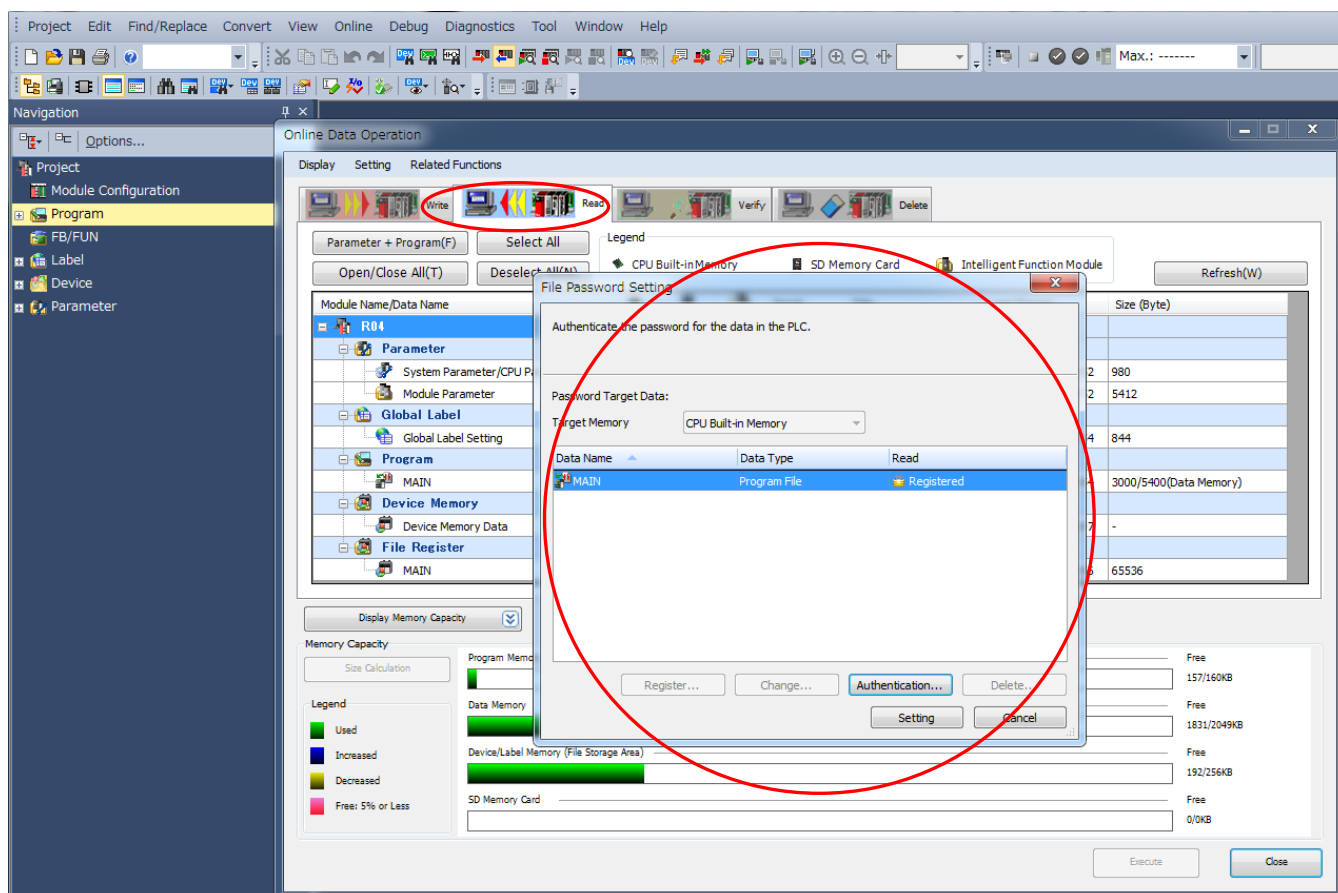


Figure 4-4: Checking the file password settings



Appendix.5. How to Use FBs across two or more master/local modules

When you are using two or more CC-Link master/local modules and want to use the FBs in this FB library on each CC-Link master/local module, you have to create the FBs for the second and subsequent CC-Link master/local modules using the steps in "Appendix 5.1" to "Appendix 5.3".

Appendix.5.1 Configuring the global labels for the second and subsequent CC-Link master/local modules

Assign the "Label Name" and "Assign (Device/Label)" of the global labels so that they are different from those for the 1st module.

The starting device for "Assign (Device/Label)" should be specified by append the starting device specified for each of the second and subsequent CC-Link master/local modules with an index register. You do not have to separate the index registers "Z8" and "Z9" from those for the first module.

	Label Name	Data Type		Class	Assign (Device/Label)
1	G_bRX	Bit	...	VAR_GLOBAL	X1 000Z9
2	G_bRY	Bit	...	VAR_GLOBAL	Y1 000Z9
3	G_wRWw	Word [Signed]	...	VAR_GLOBAL	W0Z8
4	G_wRWw	Word [Signed]	...	VAR_GLOBAL	W1 000Z8
5	G_bRX2	Bit	...	VAR_GLOBAL	X2000Z9
6	G_bRY2	Bit	...	VAR_GLOBAL	Y2000Z9
7	G_wRWw2	Word [Signed]	...	VAR_GLOBAL	W500Z8
8	G_wRWw2	Word [Signed]	...	VAR_GLOBAL	W1 500Z8

Figure 5.1-1: Examples of configuring global labels

Appendix.5.2 Copying and pasting the FBs for the second and subsequent master/local modules

Navigation window → FB/FUN → FBFILE

Right-click the FB you want to use also for the second modules and copy the data. (Figure 5.2-1)

Select and right-click FBFILE and paste the data. (Figure 5.2-2)

Select the pasted FB and press "F2" on the keyboard to rename the FB. (Figure 5.2-3)

When you rename the pasted FB, carefully note that you cannot enter "+" or "-" (hyphen).

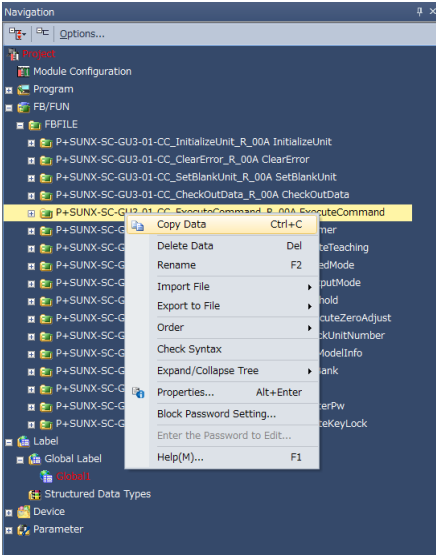


Figure 5.2-1 FB: Copying a FB

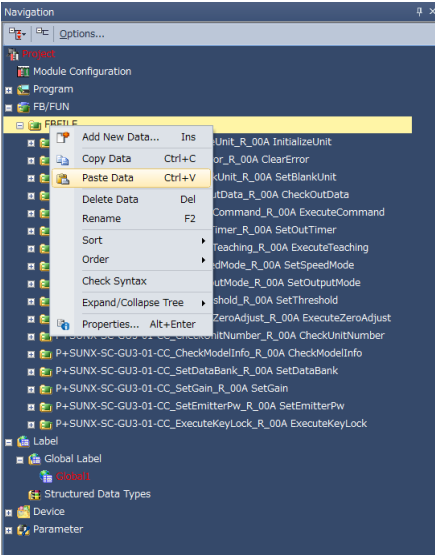


Figure 5.2-2: Pasting the FB

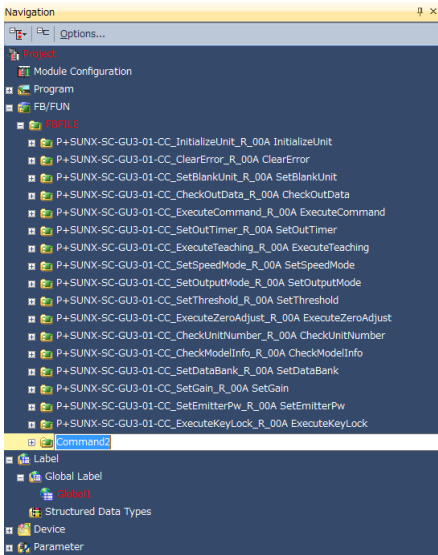


Figure 5.2-3 Renaming the FB

Appendix.5.3 Replacing the global labels of the FBs for the second and subsequent master/local modules

Because the FB global labels you created in "Appendix.5.2 Copying and pasting the FBs for the second and subsequent master/local modules" are identical to the original FB global labels, you have to replace them with the global labels you configured in "Appendix.5.1 Configuring the global labels for the second and subsequent CC-Link master/local modules".

Open the program body where you pasted the FBs by double-clicking it.

[Find and Replace] → [Replace Device/Label]

Open the [Find and Replace] window, select the current window from the tab list. Enter the original global label in the Find Device/Label, and the global label created in "Appendix.5.1 Configuring the global labels for the second and subsequent CC-Link master/local modules" in the Replace Device/Label. (Figure 5.3-1)

Complete the replacement by pressing [Replace All]. Similarly, replace the global labels "G_bRY", "G_wRWr", and "G_wRWw" with new global labels.

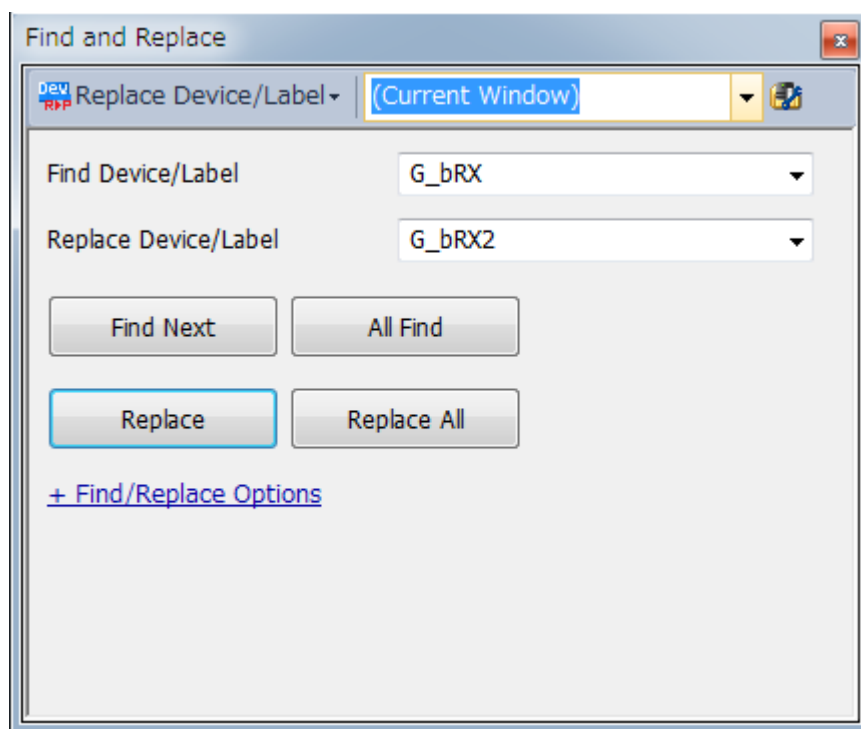


Figure 5.3-1: Replacing "G_bRX"



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