CC-Link IE Field Network Analog-Digital Converter Module FB Library Reference Manual

Applicable module:
NZ2GF2B-60AD4

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Reference Manual Revision History

Reference Manual Number	Date	Description
FBM-M096-A	2013/07/31	First edition

1. Overview

1.1. Overview of the FB Library

This FB Library is for using the CC-Link IE Field Network Analog-Digital Converter Module NZ2GF2B-60AD4.

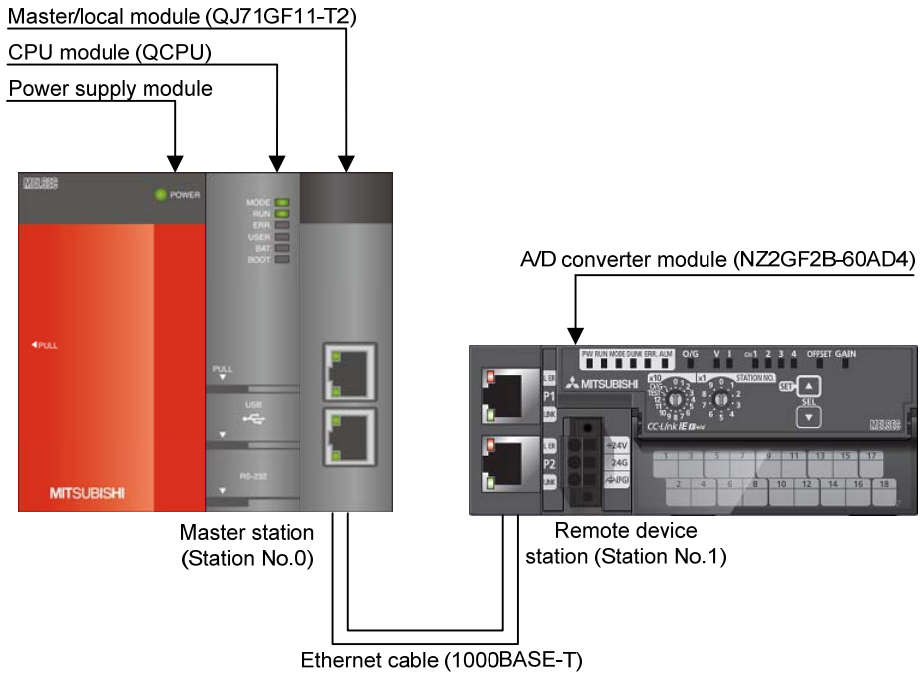
1.2. Function of the FB Library

Item	Description
M+NZ2GF2B60AD4_SetInitData	Configures the initial data setting.
M+NZ2GF2B60AD4_ErrorOperation	Monitors the error status and the warning status and clears an error.

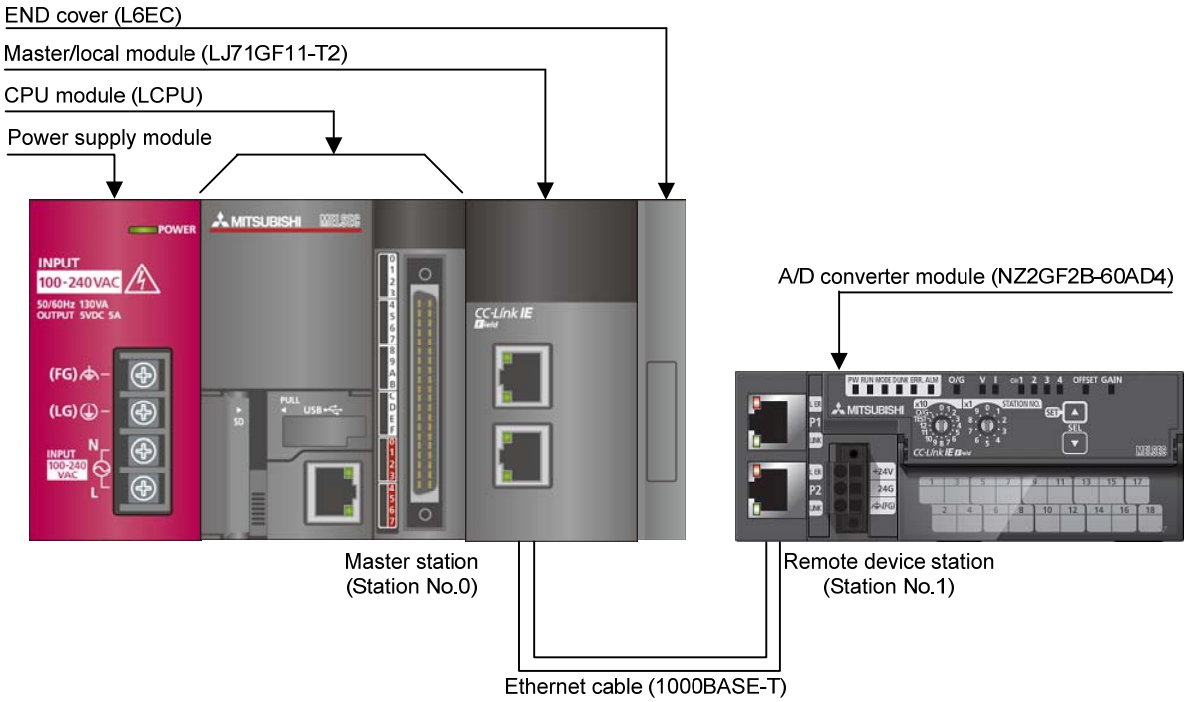
1.3. System Configuration Example

The following shows the system configuration when the analog-digital converter module (NZ2GF2B-60AD4) is used as the remote device station.

(1) Q-series system configuration



(2) L-series system configuration

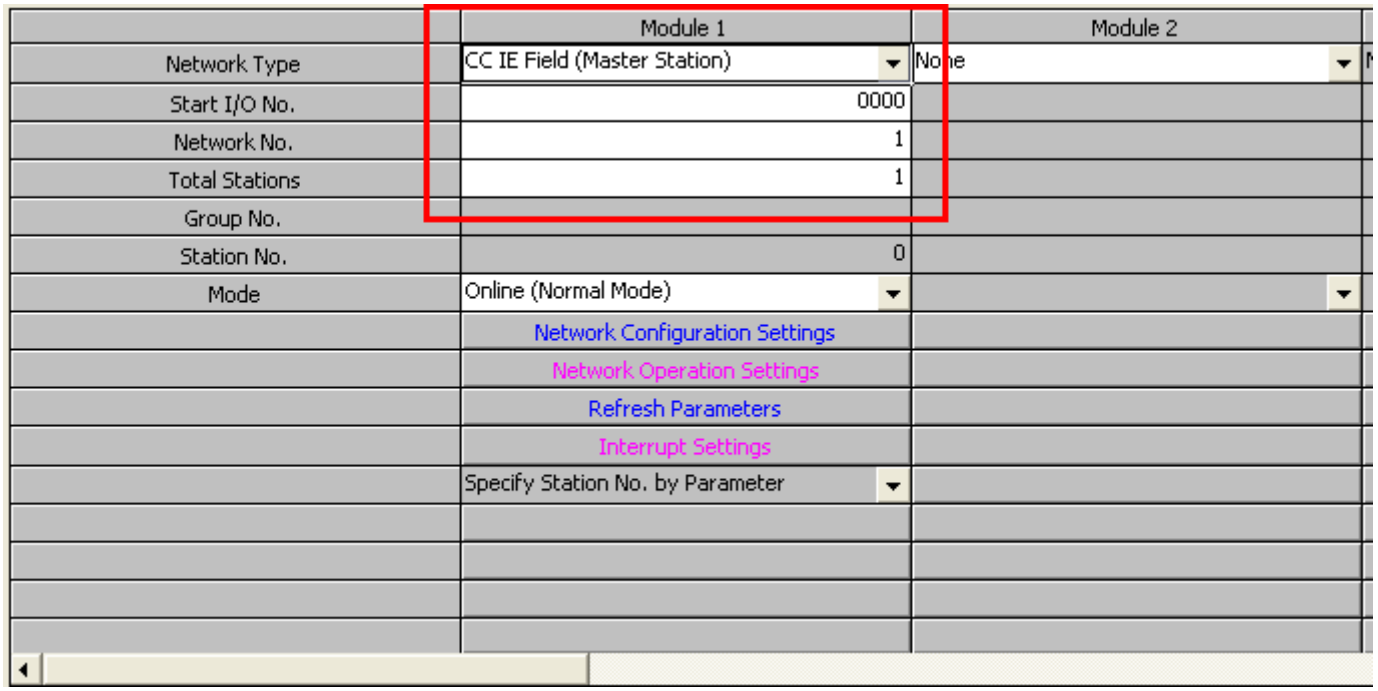


1.4. Setting the CC-Link IE Field Network Master/Local Module

This section explains the setting of the CC-Link IE Field Network master/local module based on Section "1.3 System Configuration Example". Set the following items with GX Works2.

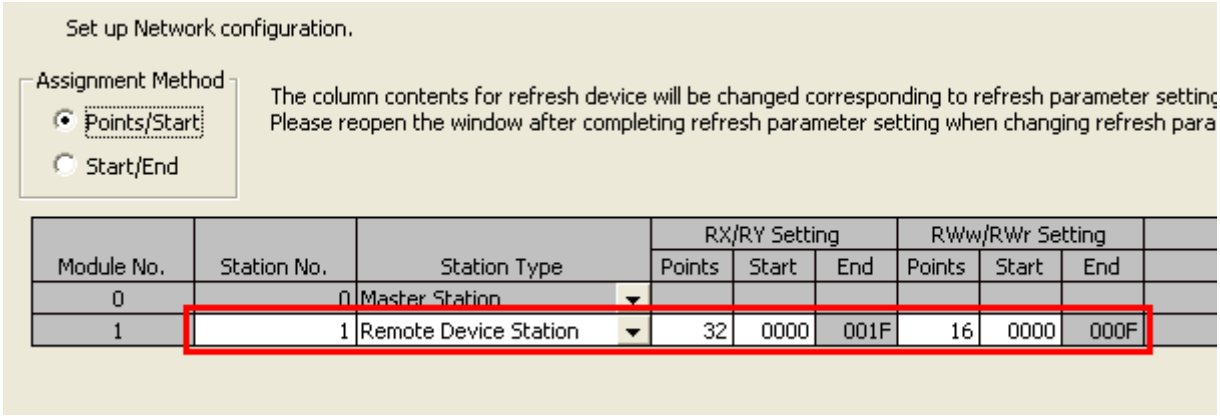
(1) Network parameters

Item	Description
Network Type	Select "CC IE Field (Master Station)".
Start I/O No.	Set the start I/O number of the master/local module in increments of 16 points. Set "0000".
Network No.	Set the network number of the master/local module. Set "1".
Total Stations	Set the number of remote device stations connected to the master station. Include the number of reserved slave stations. Set "1".



(2) Network configuration setting

Item	Description
Station No.	Set the station number of the remote device stations connected to the master station. Set "1".
Station Type	Set the station type of the remote device stations connected to the master station. Set "Remote Device Station".
RX/RY Setting	Set assignment for RX/RY for the remote device station connected to the master station. (a) Points Set "32". (b) Start Set "0000".
RWw/RWr Setting	Set assignment for RWw/RWr for the remote device station connected to the master station. (a) Points Set "16". (b) Start Set "0000".

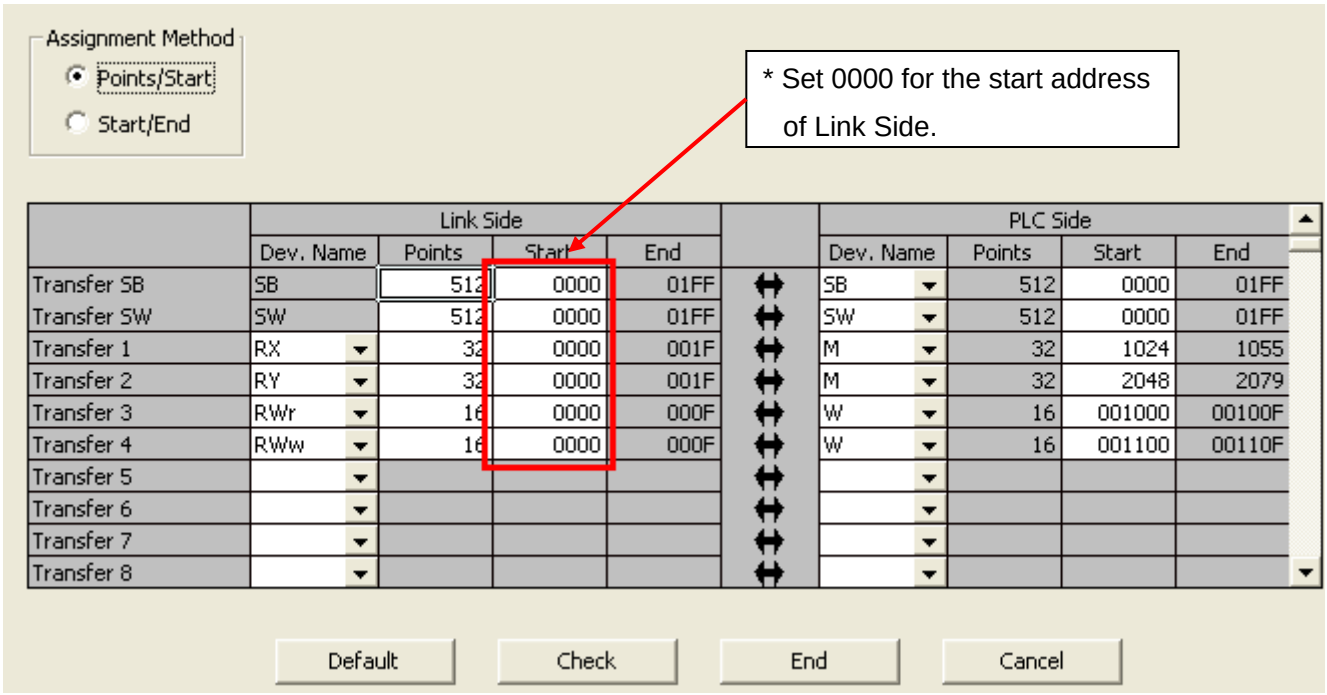


(3) Refresh parameter setting

Item	Description	Setting value
Transfer SB	Select the link refresh range of SB device.	• "Link Side Points" : 512 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : SB • "PLC Side Start" : 0000
Transfer SW	Select the link refresh range of SW device.	• "Link Side Points" : 512 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : SW • "PLC Side Start" : 0000
Transfer 1	Select the link refresh range of RX device.	• "Link Side Dev. Name" : RX • "Link Side Points" : 32 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : M • "PLC Side Start" : 1024
Transfer 2	Select the link refresh range of RY device.	• "Link Side Dev. Name" : RY • "Link Side Points" : 32 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : M • "PLC Side Start" : 2048
Transfer 3	Select the link refresh range of RWr device.	• "Link Side Dev. Name" : RWr • "Link Side Points" : 16 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : W • "PLC Side Start" : 1000
Transfer 4	Select the link refresh range of RWw device.	• "Link Side Dev. Name" : RWw • "Link Side Points" : 16 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : W • "PLC Side Start" : 1100

* Make sure to set "0000" for Start of Link Side.

* Change the Points of Link Side and Dev. Name and Start of PLC Side according to the system.
They must be the same as for "M_F_RX", "M_F_RY", and "M_F_RWr" devices of the global label setting.


Assignment Method
Points/Start
Start/End
* Set 0000 for the start address of Link Side.
Link Side
PLC Side
Dev. Name
Points
Start
End
Transfer SB SB 512 0000 01FF SB 512 0000 01FF
Transfer SW SW 512 0000 01FF SW 512 0000 01FF
Transfer 1 RX 32 0000 001F M 32 1024 1055
Transfer 2 RY 32 0000 001F M 32 2048 2079
Transfer 3 RWr 16 0000 000F W 16 001000 00100F
Transfer 4 RWw 16 0000 000F W 16 001100 00110F
Transfer 5
Transfer 6
Transfer 7
Transfer 8
Default
Check
End
Cancel

1.5. Setting Global Labels

Global labels must be set before using this FB. This section explains global label settings.

(1) M_F_RX Set remote input (RX).

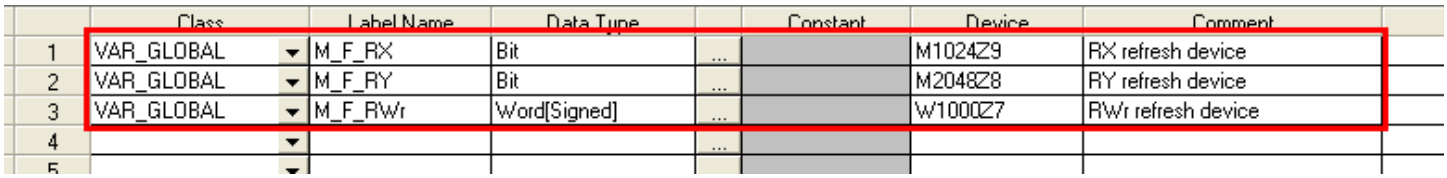
Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RX".
Data Type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a "Z9" prefix.

(2) M_F_RY Set remote output (RY).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RY".
Data Type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a "Z8" prefix.

(3) M_F_RWr Set remote output (RWr).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RWr".
Data Type	Select "Word[Signed]".
Device	Enter the refresh device set for the refresh parameter with a "Z7" prefix.



	Class	Label Name	Data Type		Constant	Device	Comment
1	VAR_GLOBAL	M_F_RX	Bit	...		M1024Z9	RX refresh device
2	VAR_GLOBAL	M_F_RY	Bit	...		M2048Z8	RY refresh device
3	VAR_GLOBAL	M_F_RWr	Word[Signed]	...		W1000Z7	RWr refresh device
4				...			
5							

1.6. Creating Interlock Programs

Interlock programs must be created for the FBs. The following is an example of an interlock program.

Set one interlock program to the cyclic transmission.

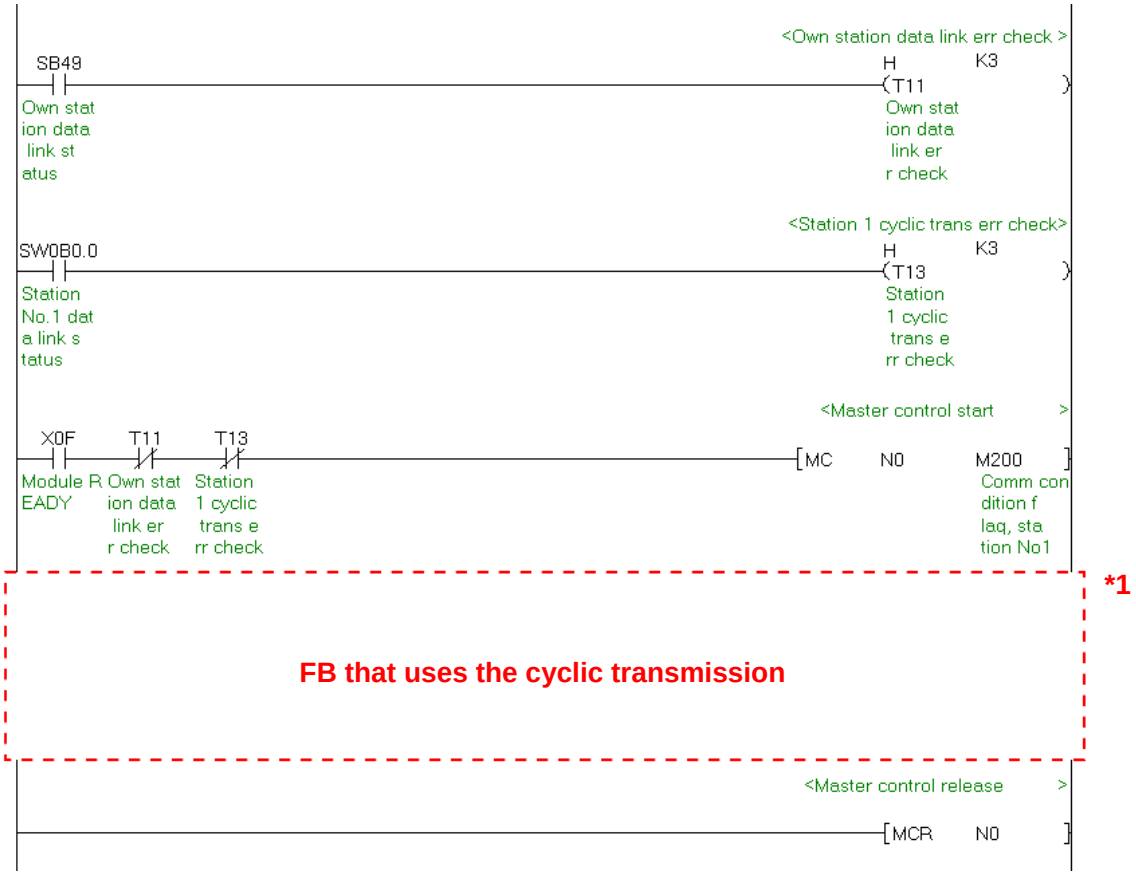
(Set a corresponding FB between MC and MCR instructions.)

1.6.1. Cyclic Transmission Program

Use link special relay (SB) and link special register (SW) to create an interlock for a cyclic transmission program.

- Own station data link status (SB0049)
- Each station data link status (SW00B0 to SW00B7)

Example: Interlock example (station No.1)



*1 All the FBs in this manual use the cyclic transmission.

1.7. Relevant Manuals

CC-Link IE Field Network Analog-Digital Converter Module User's Manual

MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual

MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual

QCPU User's Manual (Hardware Design, Maintenance and Inspection)

MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

GX Works2 Version 1 Operating Manual (Common)

GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

1.8. Note

Please make sure to read user's manuals for the corresponding products before using the products.

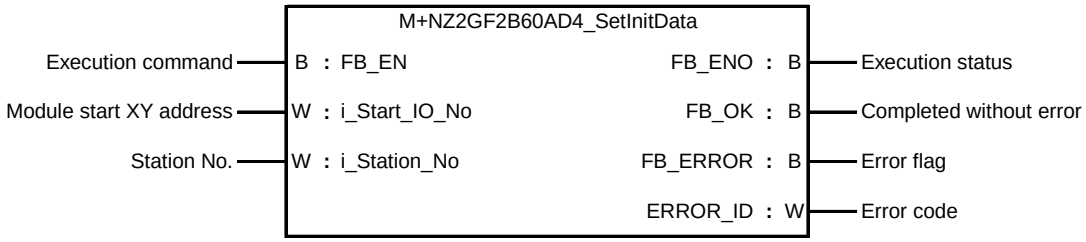
2. Details of the FB Library

2.1. M+NZ2GF2B60AD4_SetInitData (Initial data setting)

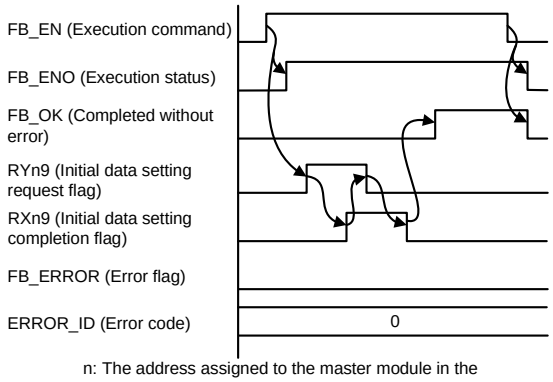
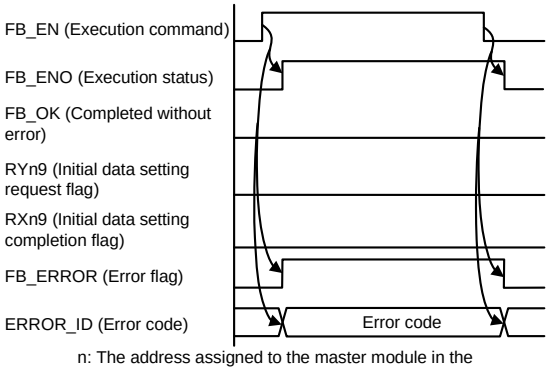
FB Name

M+NZ2GF2B60AD4_SetInitData

Function Overview

<table>
<tr><td>Item</td><td colspan="2">Description</td></tr>
<tr><td>Function overview</td><td colspan="2">Configures the initial data setting.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Applicable hardware and software</td><td>CC-Link IE Field Network analog-digital converter module</td><td>NZ2GF2B-60AD4</td></tr>
<tr><td>CC-Link IE Field Network module</td><td>CC-Link IE Field Network master/local module *1
*1 The first five digits of the serial number are "14102" or later.</td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC-Q Series *1</td><td>Universal model *2</td></tr><tr><td>MELSEC-L Series</td><td>LCPU *3</td></tr></table>*1 Not applicable to QCPU (A mode)
*2 The first five digits of the serial number are "12012" or later.
*3 The first five digits of the serial number are "13012" or later.</td></tr>
<tr><td>Engineering software</td><td>GX Works2 *1<table><tr><th>Language</th><th>Software version</th></tr><tr><td>English version</td><td>Version1.24A or later</td></tr><tr><td>Chinese version</td><td>Version1.49B or later</td></tr></table>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</td></tr>
<tr><td>Programming language</td><td colspan="2">Ladder</td></tr>
</table>

Item	Description
Number of steps	441 steps (for MELSEC-Q series universal model CPU) * The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) By turning ON FB_EN (Execution command), the operating condition of the target module is set. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans. 4) When the network configuration setting of the station number specified by i_Station_No (Station No.) is incorrect, FB_ERROR (Error flag) is turned ON and the processing is interrupted, and the error code 50 (decimal) is stored in ERROR_ID (Error code). Refer to the error code explanation section for details. 5) When the setting value of i_Station_No (Station No.) is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code 60 (Decimal) is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type

Item	Description
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop because it is impossible to turn OFF. 4) This FB uses index registers Z8 and Z9. Please do not use these index registers in an interrupt program. 5) A duplicated coil warning may occur during compile operation due to the RY signal being operated by index modification in the FB. However this is not a problem and the FB will operate without error. 6) Every input must be provided with a value for proper FB operation. 7) This FB uses the cyclic transmission. Therefore, an interlock program for the cyclic transmission is required. For the interlock program, refer to "1.6.1 Cyclic Transmission Program". 8) Set the refresh device of the network parameter setting according to "1.4 Setting the CC-Link IE Field Network Master/Local Module". 9) Set the global label setting according to "1.5 Setting Global Labels". 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "Appendix 1. When Using the FB for 2 or More Master/Local Modules". 11) If processing of the FB is not completed, check if the station number of CC-Link IE Field matches with the network station number.
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 2. FB Library Application Examples".
Timing chart	[When operation completes without error]  n: The address assigned to the master module in the station number setting [When an error occurs]  n: The address assigned to the master module in the station number setting

Item	Description
Relevant manuals	CC-Link IE Field Network Analog-Digital Converter Module User's Manual MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual QCPU User's Manual (Hardware Design, Maintenance and Inspection) MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) GX Works2 Version 1 Operating Manual (Common) GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error codes

●Error code list

Error code	Description	Action
50 (Decimal)	The network configuration setting of the station number specified by i_Station_No is incorrect.	Review the following setting. • Network configuration setting Refer to (2) of 1.4 Setting the CC-Link IE Field Network Master/Local Module. • The value entered in i_Station_No
60 (Decimal)	The specified station number is not valid. The station number is not within the range of 1 to 120.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted or connected. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1 to 120	Specify the station number of the target station.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the initial data setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2013/07/31	First edition

Note

This chapter includes information related to the function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

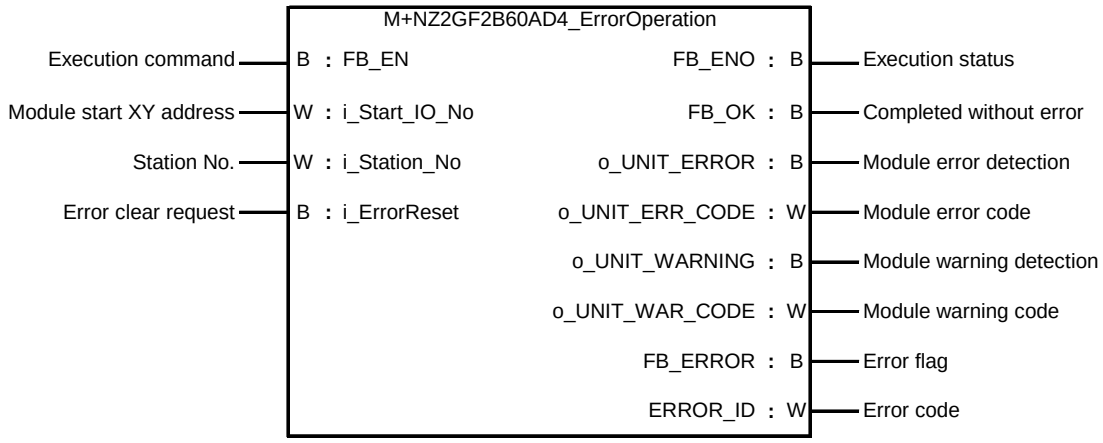
Please make sure to read user's manuals for the corresponding products before using the products.

2.2. M+NZ2GF2B60AD4_ErrorOperation (Error operation)

FB Name

M+NZ2GF2B60AD4_ErrorOperation

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Monitors the error status and the warning status and clears an error.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
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<tr><td>CC-Link IE Field Network module</td><td>CC-Link IE Field Network master/local module *1
*1 The first five digits of the serial number are "14102" or later.</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC-Q Series *1</td><td>Universal model *2</td></tr>
<tr><td>MELSEC-L Series</td><td>LCPU *3</td></tr>
</table>
*1 Not applicable to QCPU (A mode)
*2 The first five digits of the serial number are "12012" or later.
*3 The first five digits of the serial number are "13012" or later.
</td></tr>
<tr><td>Engineering software</td><td>GX Works2 *1
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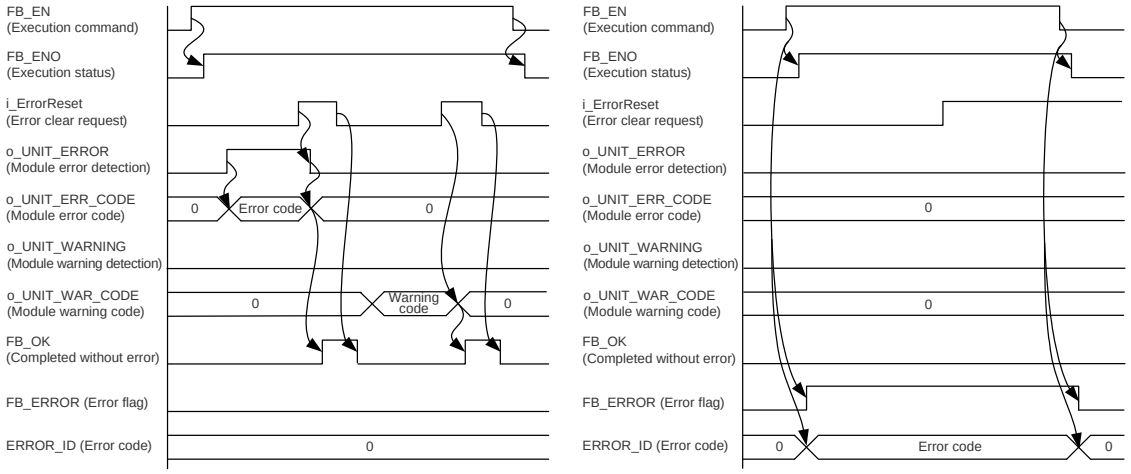
</table>
*1 For software versions applicable to the modules used, refer to "Relevant manuals".
</td></tr>
</table>

Item	Description
Programming language	Ladder
Number of steps	614 steps (for MELSEC-Q series universal model CPU) * The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) When FB_EN (Execution command) is turned ON, the error status and the warning status of the target module are monitored. 2) o_UNIT_ERROR (Module error detection) is turned ON and an error code is stored in o_UNIT_ERR_CODE (Module error code) when an error occurs. 3) o_UNIT_WARNING (Module warning detection) is turned ON and a warning code is stored in o_UNIT_WAR_CODE (Module warning code) when a warning occurs. 4) An alarm code is stored in o_UNIT_WAR_CODE (Module warning code) when an alarm occurs. 5) After FB_EN (Execution command) is turned ON, an error is cleared when i_ErrorReset (Error clear request) is turned ON during error occurrence. A warning that has occurred is automatically cleared five seconds after the cause of the minor error in the module is eliminated. 6) When the network configuration setting of the station number specified by i_Station_No (Station No.) is incorrect, FB_ERROR (Error flag) is turned ON and the processing is interrupted, and the error code 50 (decimal) is stored in ERROR_ID (Error code). Refer to the error code explanation section for details. 7) When the setting value of i_Station_No (Station No.) is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code 60 (Decimal) is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type

Item	Description
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop because it is impossible to turn OFF. 4) This FB uses index registers Z7 to Z9. Please do not use these index registers in an interrupt program. 5) A duplicated coil warning may occur during compile operation due to the RY signal being operated by index modification in the FB. However this is not a problem and the FB will operate without error. 6) Every input must be provided with a value for proper FB operation. 7) This FB uses the cyclic transmission. Therefore, an interlock program for the cyclic transmission is required. For the interlock program, refer to "1.6.1 Cyclic Transmission Program". 8) Set the refresh device of the network parameter setting according to "1.4 Setting the CC-Link IE Field Network Master/Local Module". 9) Set the global label setting according to "1.5 Setting Global Labels". 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "Appendix 1. When Using the FB for 2 or More Master/Local Modules". 11) If processing of the FB is not completed, check if the station number of CC-Link IE Field matches with the network station number. Check that the causes of errors, warnings, and alarms are all eliminated.
FB operation type	Real-time execution
Application example	Refer to "Appendix 2. FB Library Application Examples".
Timing chart	[When operation completes without error] [When an error occurs]



Item	Description
Relevant manuals	CC-Link IE Field Network Analog-Digital Converter Module User's Manual MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual QCPU User's Manual (Hardware Design, Maintenance and Inspection) MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) GX Works2 Version 1 Operating Manual (Common) GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error codes

●Error code list

Error code	Description	Action
50 (Decimal)	The network configuration setting of the station number specified by i_Station_No is incorrect.	Review the following setting. • Network configuration setting Refer to (2) of 1.4 Setting the CC-Link IE Field Network Master/Local Module. • The value entered in i_Station_No
60 (Decimal)	The specified station number is not valid. The station number is not within the range of 1 to 120.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted or connected. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1 to 120	Specify the station number of the target station.
Error clear request	i_ErrorReset	Bit	ON, OFF	Turn ON for the error clear. Turn OFF after Completed without error (FB_OK) is turned ON.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that clearing the error is completed.
Module error detection	o_UNIT_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Module error code	o_UNIT_ERR_CODE	Word	0	Module error code output.
Module warning detection	o_UNIT_WARNING	Bit	OFF	When ON, it indicates that a warning has occurred.
Module warning code	o_UNIT_WAR_CODE	Word	0	Module warning code output.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2013/07/31	First edition

Note

This chapter includes information related to the function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

Appendix 1. When Using the FB for 2 or More Master/Local Modules

To use 2 or more CC-Link IE field master/local modules and to use an FB for the second and subsequent CC-Link IE field master/local modules, it is necessary to create an FB for the second and subsequent modules from the MELSOFT Library CC-Link IE field master/local module FB using the following procedure.

The following four steps are required to create the FB for the second and subsequent modules.

(1) Enter network parameters

(2) Set global labels

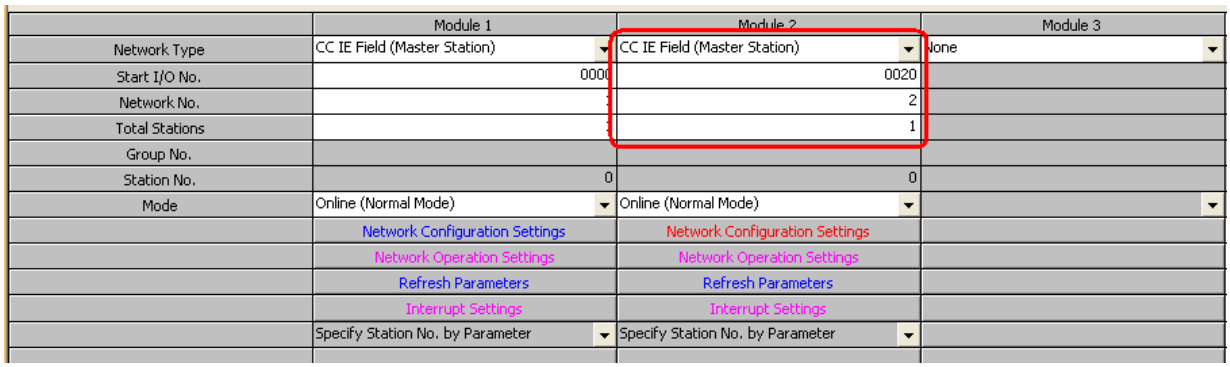
(3) Copy MELSOFT Library to create the FB for the second module

(4) Replace devices to create the FB for the second module

Appendix 1.1. Entering Network Parameters

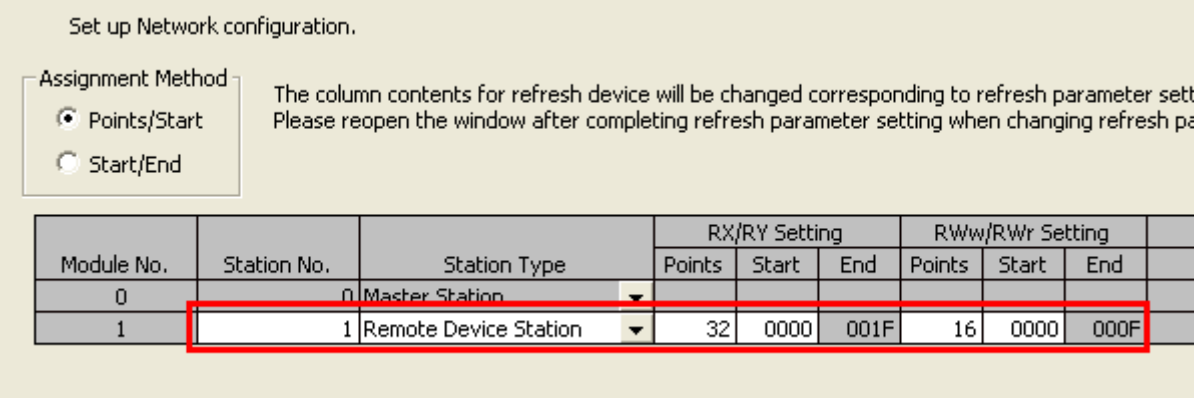
(1) Enter the network parameters for the second module.

Item	Description
Network Type	Select "CC IE Field (Master Station)".
Start I/O No.	Set the start I/O number of the master/local module in increments of 16 points. Set "0020".
Network No.	Set the network number of the master/local module. Set "2".
Total Stations	Set the number of remote device stations connected to the master station. Include the number of reserved slave stations. Set "1".



(2) Set the network configuration setting for the second module.

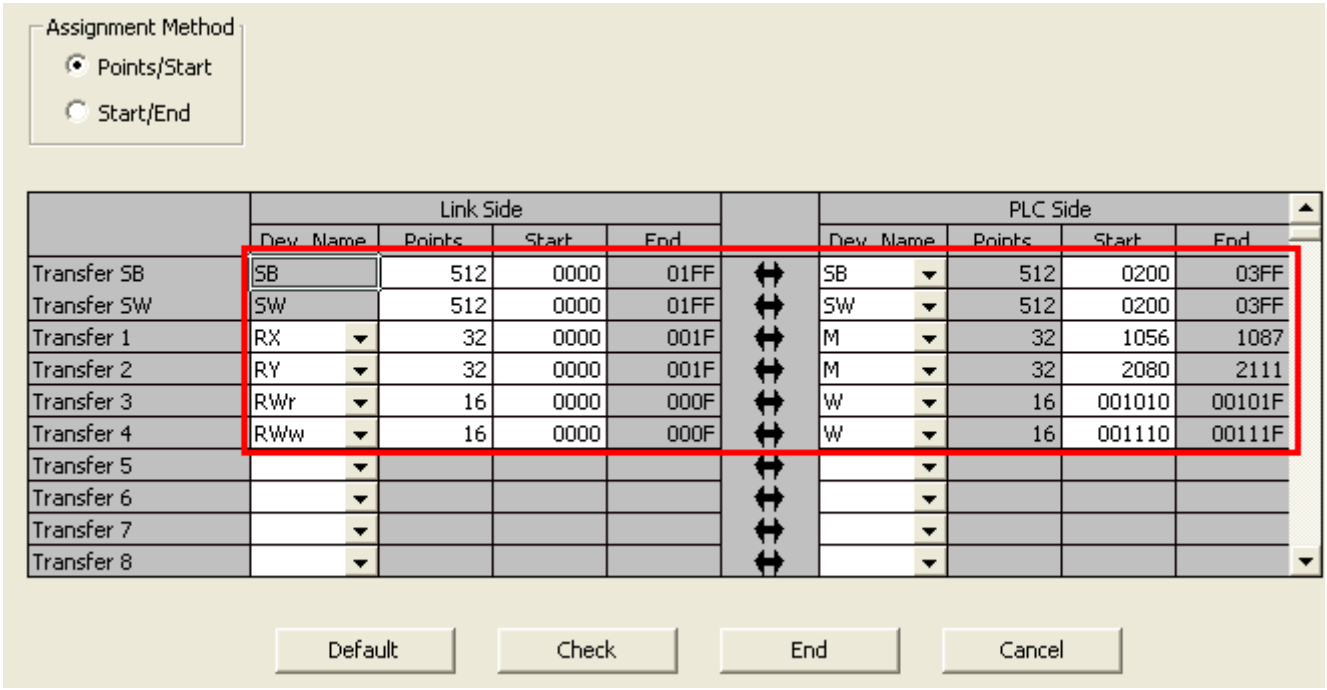
Item	Description
Station No.	Set the station number of the remote device stations connected to the master station. Set "1".
Station Type	Set the station type of the remote device stations connected to the master station. Set "Remote Device Station".
RX/RY Setting	Set assignment for RX/RY for the remote device station connected to the master station. (a) Points Set "32". (b) Start Set "0000".
RWr/RWw Setting	Set assignment for RWr/RWw for the remote device station connected to the master station. (a) Points Set "16". (b) Start Set "0000".



(3) Enter the network parameters for the second module.

Item	Description	Setting value
Transfer SB	Select the link refresh range of SB device.	• "Link Side Points" : 512 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : SB • "PLC Side Start" : 0200
Transfer SW	Select the link refresh range of SW device.	• "Link Side Points" : 512 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : SW • "PLC Side Start" : 0200
Transfer 1	Select the link refresh range of RX device.	• "Link Side Dev. Name" : RX • "Link Side Points" : 32 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : M • "PLC Side Start" : 1056
Transfer 2	Select the link refresh range of RY device.	• "Link Side Dev. Name" : RY • "Link Side Points" : 32 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : M • "PLC Side Start" : 2080
Transfer 3	Select the link refresh range of RWr device.	• "Link Side Dev. Name" : RWr • "Link Side Points" : 16 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : W • "PLC Side Start" : 1010
Transfer 4	Select the link refresh range of RWw device.	• "Link Side Dev. Name" : RWw • "Link Side Points" : 16 • "Link Side Start" : 0000 • "PLC Side Dev. Name" : W • "PLC Side Start" : 1110

* Change the Points of Link Side and Dev. Name and Start of PLC Side according to the system.


Assignment Method
Points/Start
Start/End
Link Side
PLC Side
Dev. Name
Points
Start
End
Transfer SB
SB
512
0000
01FF
SB
512
0200
03FF
Transfer SW
SW
512
0000
01FF
SW
512
0200
03FF
Transfer 1
RX
32
0000
001F
M
32
1056
1087
Transfer 2
RY
32
0000
001F
M
32
2080
2111
Transfer 3
RWr
16
0000
000F
W
16
001010
00101F
Transfer 4
RWw
16
0000
000F
W
16
001110
00111F
Transfer 5
Transfer 6
Transfer 7
Transfer 8
Default
Check
End
Cancel

Appendix 1.2. Entering Global Labels

Enter the global labels for the second module.

Specify label names for the second module. The names must be different from the label names for the first module.

The following explains how to set the global label for the second module.

(1) M_F_RX2 Set remote input (RX).

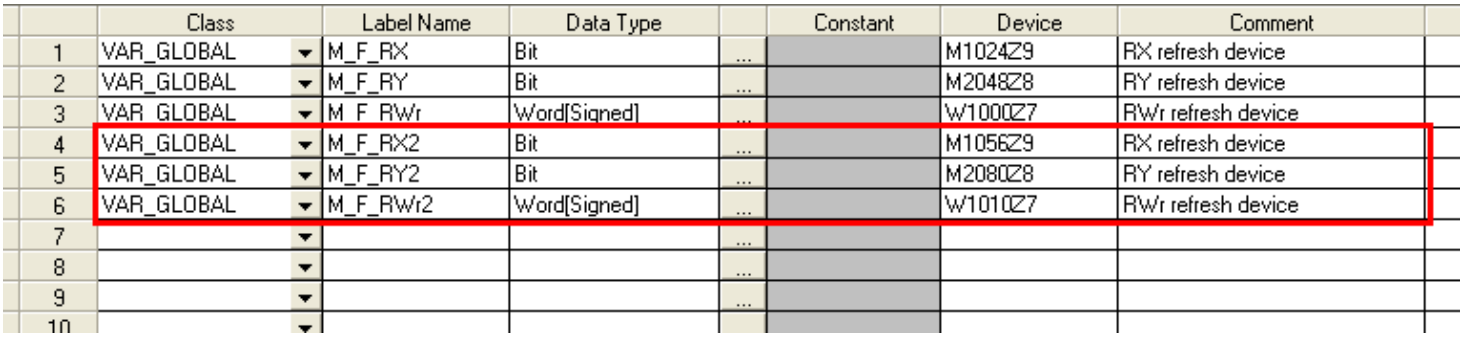
Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RX2".
Data Type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a "Z9" prefix.

(2) M_F_RY2 Set remote output (RY).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RY2".
Data Type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a "Z8" prefix.

(3) M_F_RWr2 Set remote output (RWr).

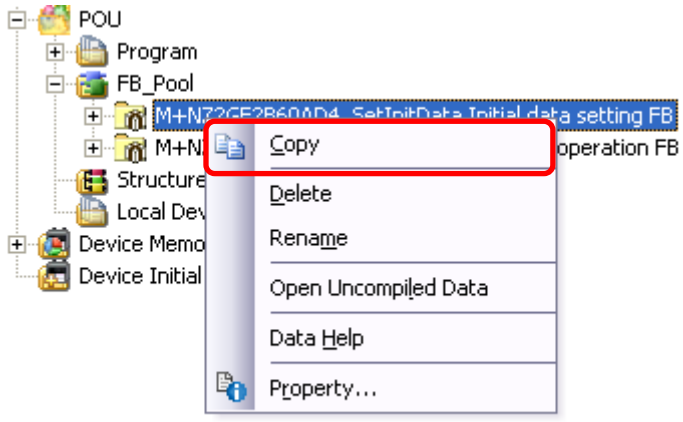
Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RWr2".
Data Type	Select "Word[Signed]".
Device	Enter the refresh device set for the refresh parameter with a "Z7" prefix.



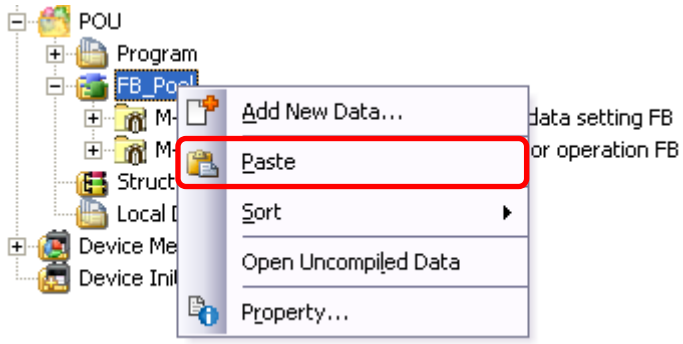
	Class	Label Name	Data Type		Constant	Device	Comment
1	VAR_GLOBAL	M_F_RX	Bit	...		M1024Z9	RX refresh device
2	VAR_GLOBAL	M_F_RY	Bit	...		M2048Z8	RY refresh device
3	VAR_GLOBAL	M_F_RWr	Word[Signed]	...		W1000Z7	RWr refresh device
4	VAR_GLOBAL	M_F_RX2	Bit	...		M1056Z9	RX refresh device
5	VAR_GLOBAL	M_F_RY2	Bit	...		M2080Z8	RY refresh device
6	VAR_GLOBAL	M_F_RWr2	Word[Signed]	...		W1010Z7	RWr refresh device
7				...			
8				...			
9				...			
10							

Appendix 1.3. Copying MELSOFT Library to Create an FB for the Second module

(1) Select an FB necessary for the second module from the Project tab of the Navigation window. Execute the Copy command.



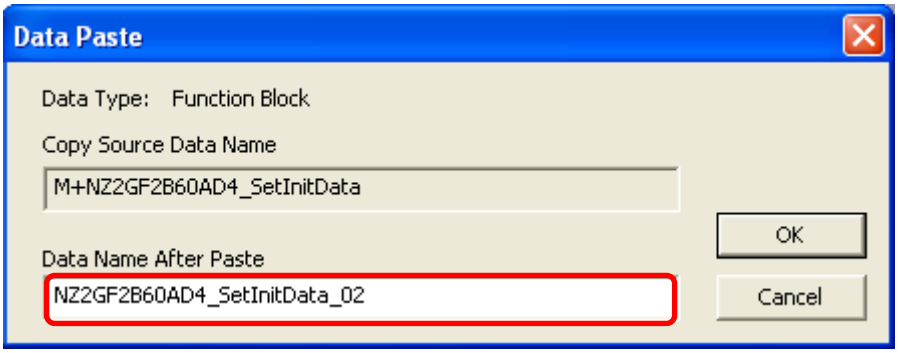
(2) Paste the copied FB to "FB_Pool" on the Project tab of the Navigation window.

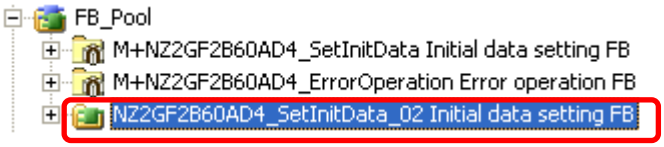


(3) After selecting the paste command, a window appears to enter an FB name. Enter an FB name after paste.

(Example: NZ2GF2B60AD4_SetInitData_02)

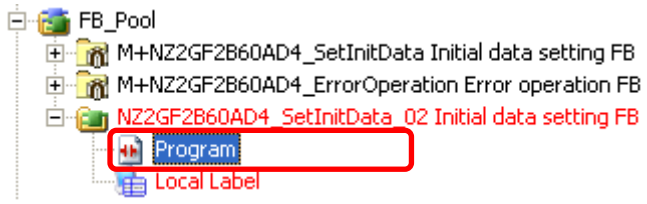
[Note] The character string "+" of M+... cannot be entered.



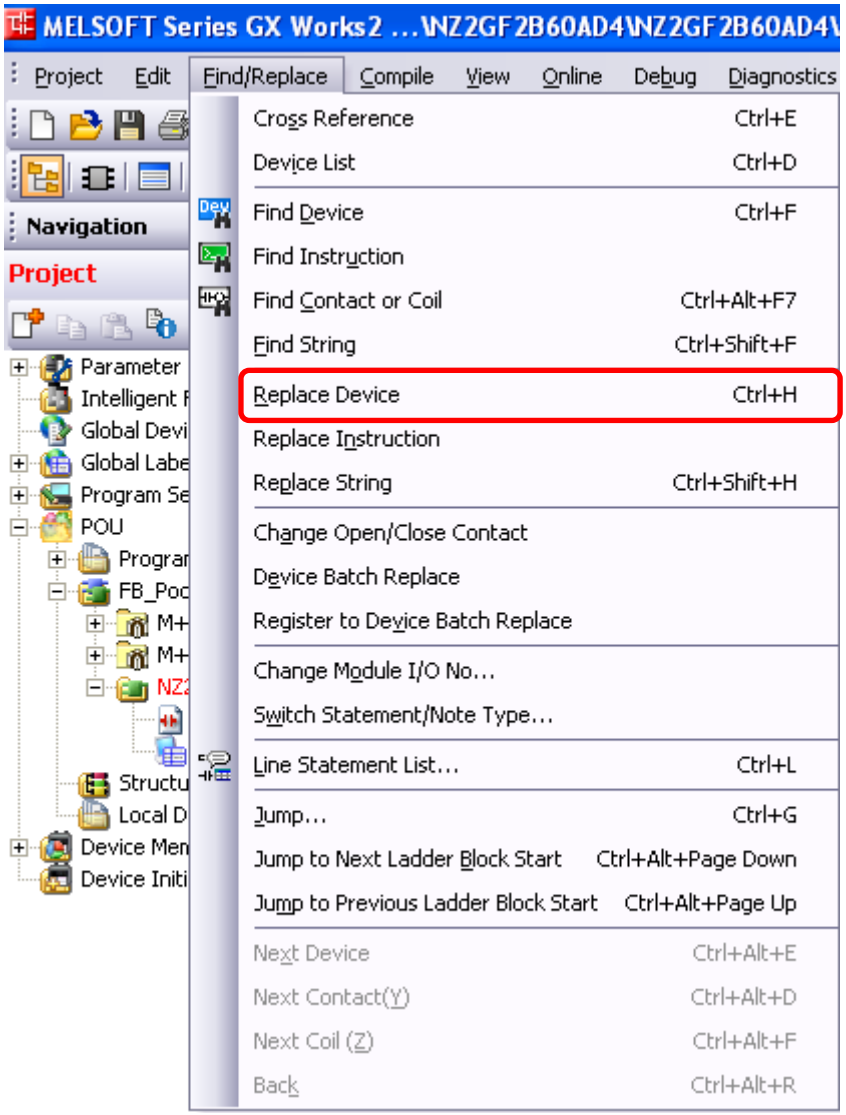


Appendix 1.4. Replacing Devices to Create the FB for the Second Module

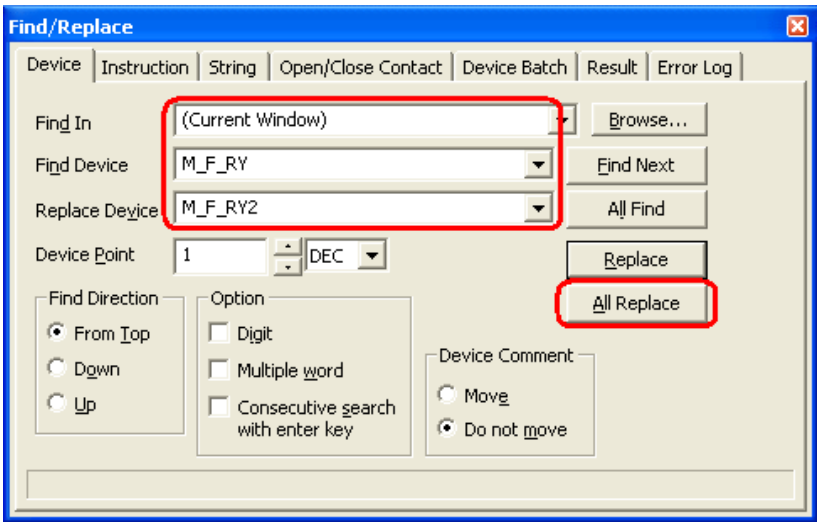
(1) Open "Program" of the added FB.



(2) Select "Find/Replace" menu and then select "Replace Device". "Find/Replace" window appears.



(3) Select "Current Window" from Find In, "M_F_RY" from Find Device, and "M_F_RY2" from Replace Device. Then replace all devices. In the same way, replace "M_F_RX" and "M_F_RWr".



By performing the steps above, the CC-Link IE field master/local FB can be used for the second module.

[Point]

(1) To use multiple FBs for the second CC-Link IE field master/local module, repeat the steps in Appendix 1. When Using the FB for 2 or More Master/Local Modules.

(2) To use an FB for third or subsequent CC-Link IE field master/local modules, make sure that the preset "Global label name", "Data Name After Paste" that was set when pasting FB data and "Replace Device" that was set when replacing devices are not duplicated for the first and second modules.

[Note]

If MELSOFT Library is upgraded, MELSOFT Library FBs can be upgraded by importing them again. However, the FBs that were created by following these procedures for the second and subsequent modules are not upgraded even if the FBs are imported again.

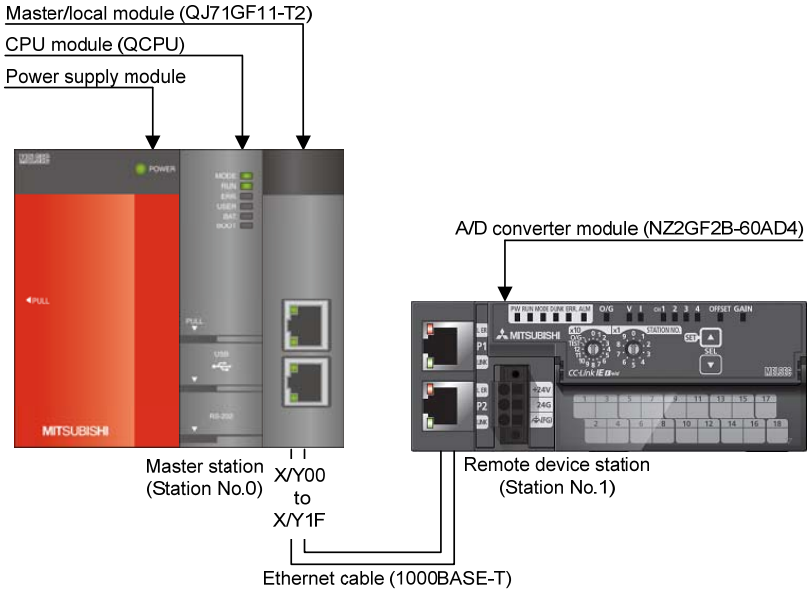
Therefore, to upgrade FBs that were created by following these procedures, after upgrading MELSOFT Library, follow these procedures again.

Appendix 2. FB Library Application Examples

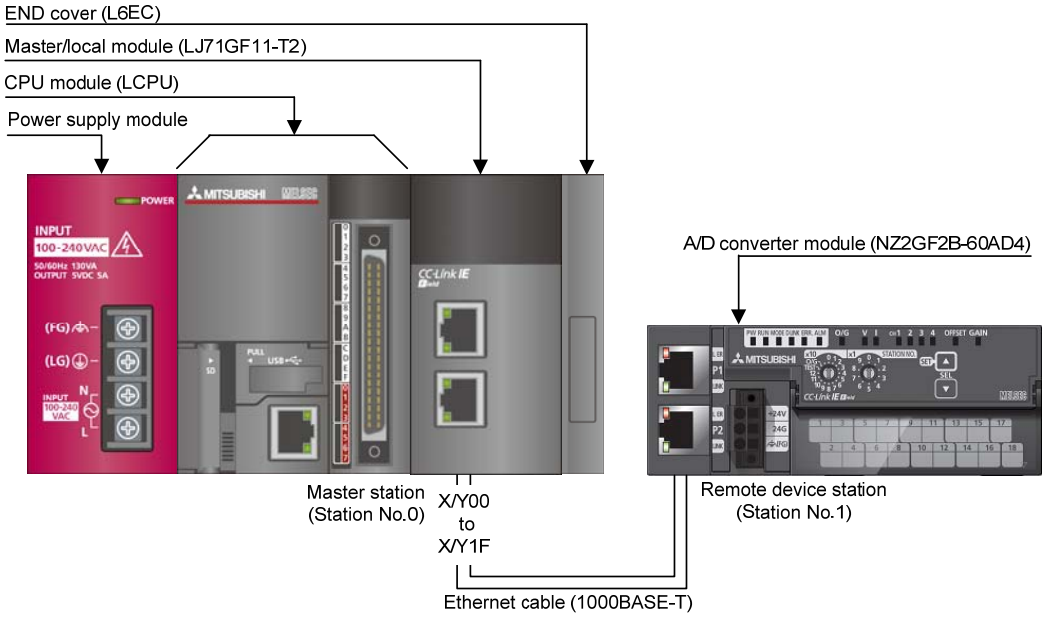
CC-Link IE Field Network analog-digital converter module FB application examples are as follows.

1) System configuration

(1) Q-series system configuration



(2) L-series system configuration

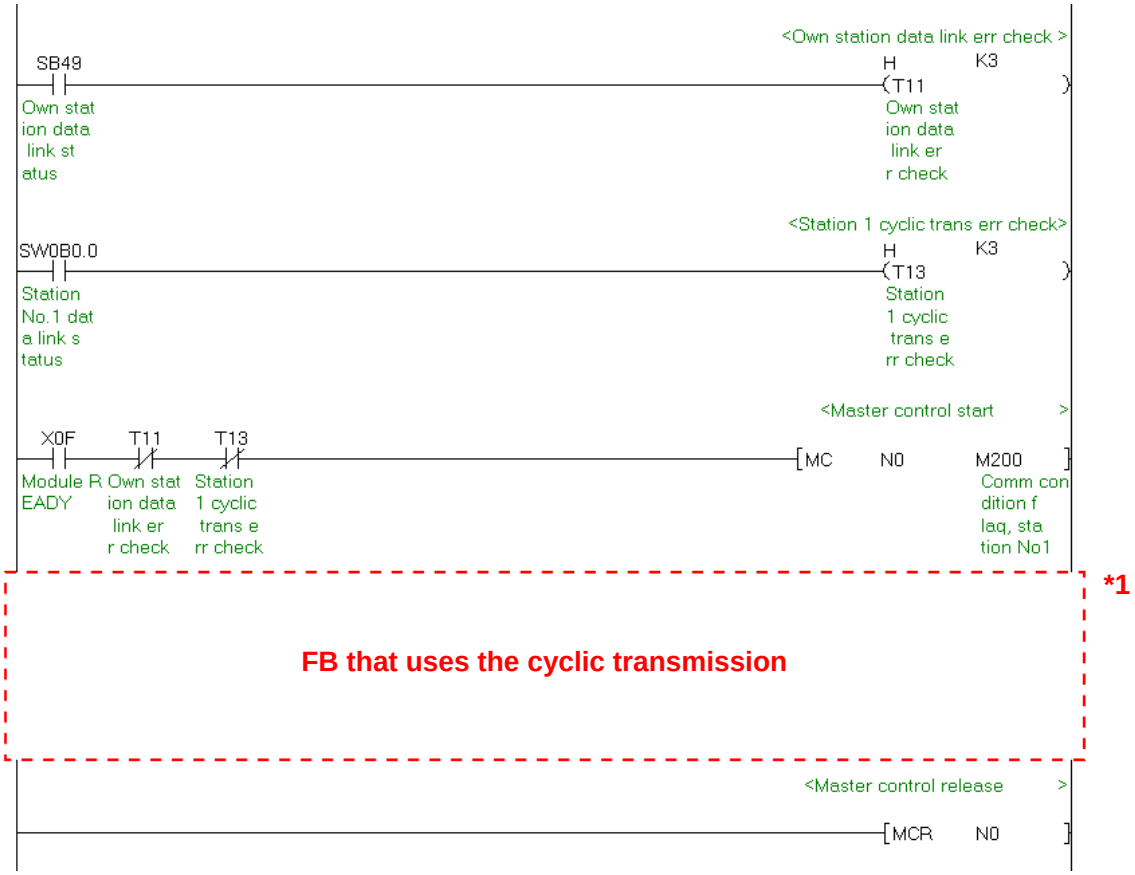


Reminder

- Every input must be provided with a value for proper FB operation.
  If not set, the values will be unspecified.
- Abbreviations may be used in the label comments due to the limitation on the number of the characters to display in GX Works2.

Interlock program

* The following is an example of an interlock program.



*1 All the FBs in this manual use the cyclic transmission.

2) List of devices

a) External input (commands)

Device	FB name	Application (ON details)
M0	M+NZ2GF2B60AD4_SetInitData	Initial data setting request
M10	M+NZ2GF2B60AD4_ErrorOperation	Error operation request
M11		Error clear request

b) External output (checks)

Device	FB name	Application (ON details)
M1	M+NZ2GF2B60AD4_SetInitData	Initial data setting FB ready
M2		Initial data setting FB comp.
F0		Initial data setting FB error
D0		Initial data setting FB err code
M12	M+NZ2GF2B60AD4_ErrorOperation	Error operation FB ready
M13		Error operation FB completed
M14		Module error detection
D10		Module error code
M15		Module warning detection
D11		Module warning code
F5		Error operation FB error
D12		Error operation FB error code

3) Global label setting

a) Common setting

Class	Label name	Data type	Device
VAR_GLOBAL	M_F_RX	Bit	M1024Z9
VAR_GLOBAL	M_F_RY	Bit	M2048Z8
VAR_GLOBAL	M_F_RWr	Word [signed]	W1000Z7

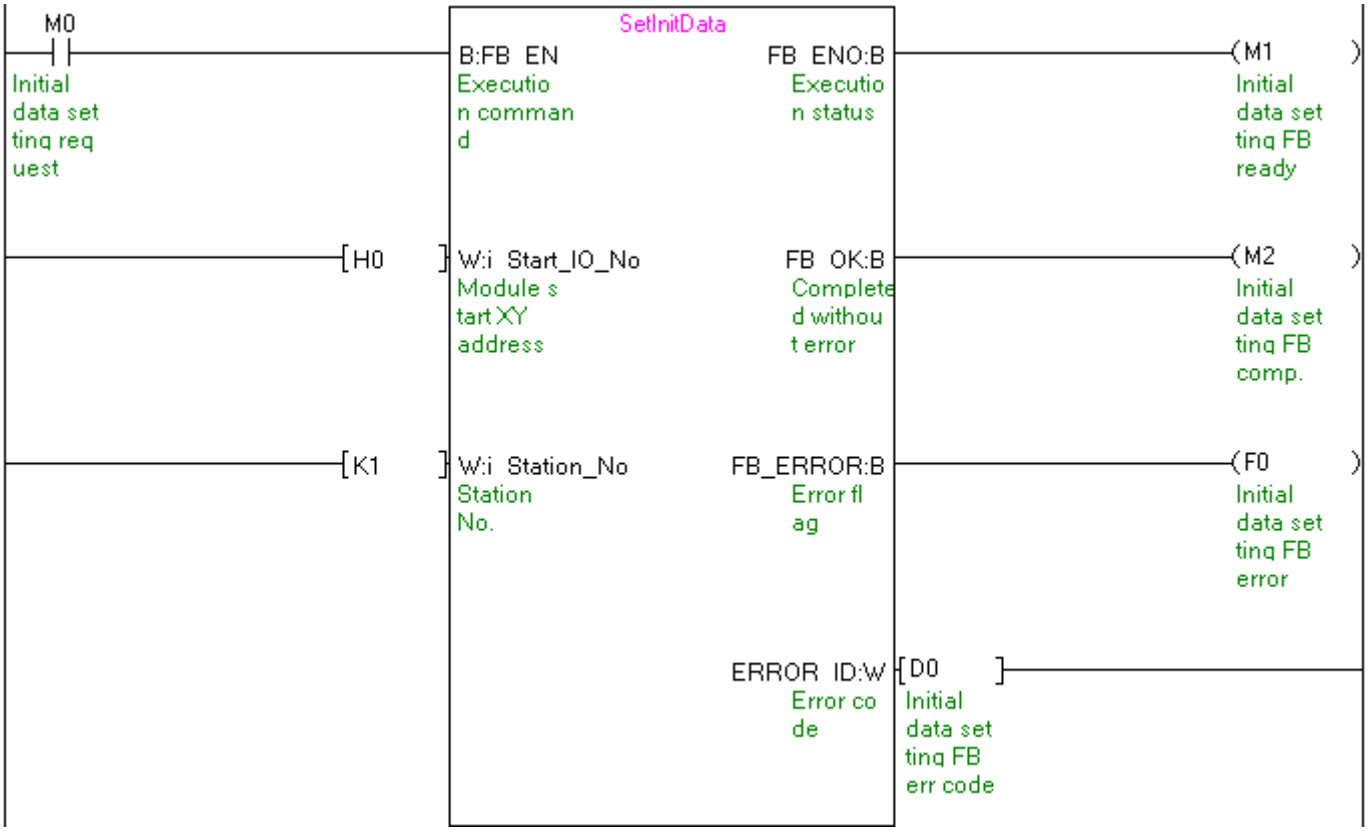
4) Programs

M+NZ2GF2B60AD4_SetInitData (Initial data setting)

The following shows the example program with the conditions described in the table below.

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the CC-Link IE Field Network master/local module is mounted or connected to 0H.
i_Station_No	K1	Set the target station number to 1.

By turning ON M0, the operating condition of the module is set.



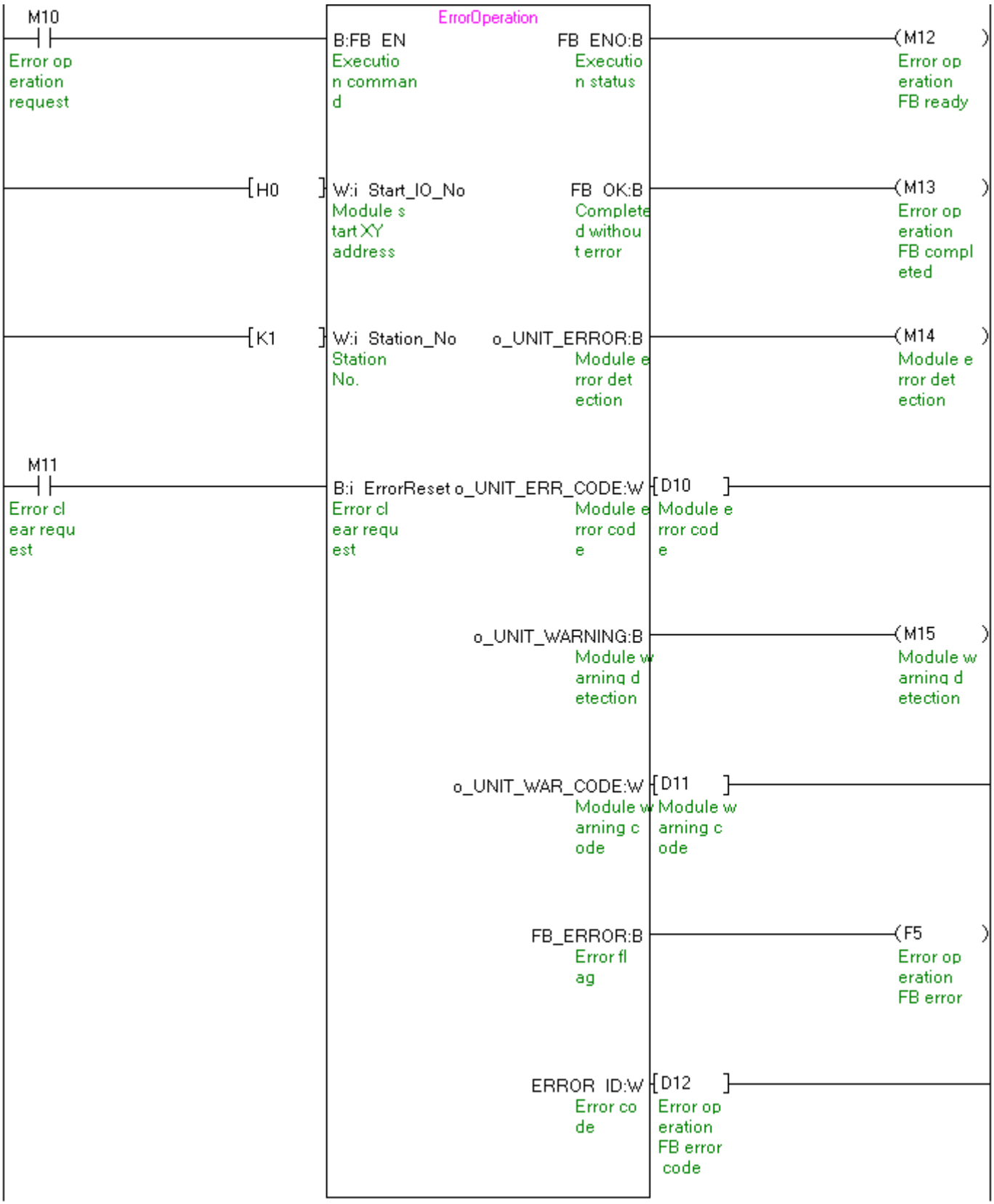
M+NZ2GF2B60AD4_ErrorOperation (Error operation)

The following shows the example program with the conditions described in the table below.

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the CC-Link IE Field Network master/local module is mounted or connected to 0H.
i_Station_No	K1	Set the target station number to 1.
i_ErrorReset	ON/OFF	Turn ON for the error clear.

By turning ON M10, occurrence of error and warning is monitored.

By turning ON M11 after turning ON M10, the error is cleared.


M10
Error operation request
ErrorOperation
B:FB_EN
Execution command
FB_ENO:B
Execution status
M12
Error operation FB ready
H0
W:i Start_IO_No
Module start XY address
FB_OK:B
Completed without error
M13
Error operation FB completed
K1
W:i Station_No
Station No.
o_UNIT_ERROR:B
Module error detection
M14
Module error detection
M11
Error clear request
B:i ErrorReset
Error clear request
o_UNIT_ERR_CODE:W
Module error code
D10
Module error code
o_UNIT_WARNING:B
Module warning detection
M15
Module warning detection
o_UNIT_WAR_CODE:W
Module warning code
D11
Module warning code
FB_ERROR:B
Error flag
F5
Error operation FB error
ERROR_ID:W
Error code
D12
Error operation FB error code