CC-Link IE Field Network Waterproof/Dustproof Remote I/O Module FB Library Reference Manual

Applicable modules:

NZ2GF12A4-16D, NZ2GF12A2-16T, NZ2GF12A42-16DT, NZ2GF12A4-16DE, NZ2GF12A2-16TE, NZ2GF12A42-16DTE

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Reference Manual Revision History

Reference Manual	Date	Description
Number		
FBM-M187-A	2017/01	First edition



1. Overview

1.1. Overview of the FB Library

This FB library is for using NZ2GF12A4-16D, NZ2GF12A2-16T, NZ2GF12A42-16DT, NZ2GF12A4-16DE, NZ2GF12A2-16TE, and NZ2GF12A42-16DTE CC-Link IE Field Network remote I/O modules.

1.2. Function of the FB Library

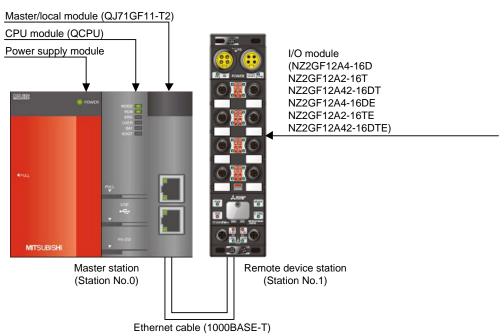
Item	Description
M+NZ2GF12A16_InitialProcessing	Performs the initial processing after power-on.
M+NZ2GF12A16_SetOpeCondition	Performs the operation condition setting.
M+NZ2GF12A16_ErrorOperation	Monitors the error status and warning status, and performs error clear.



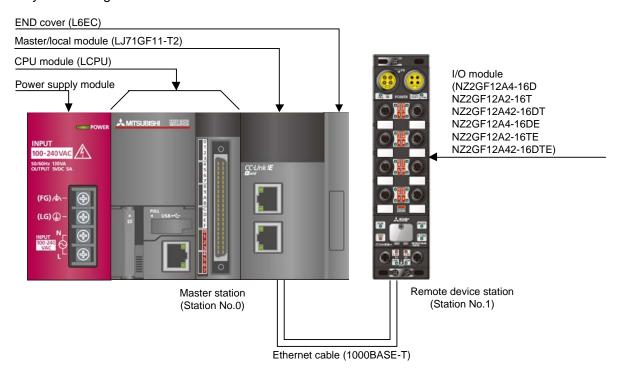
1.3. System Configuration Examples

The following examples show system configurations when using the I/O modules (NZ2GF12A4-16D, NZ2GF12A2-16T, NZ2GF12A42-16DT, NZ2GF12A4-16DE, NZ2GF12A2-16TE, NZ2GF12A42-16DTE) as remote device stations.

(1) Q series system configuration



(2) L series system configuration



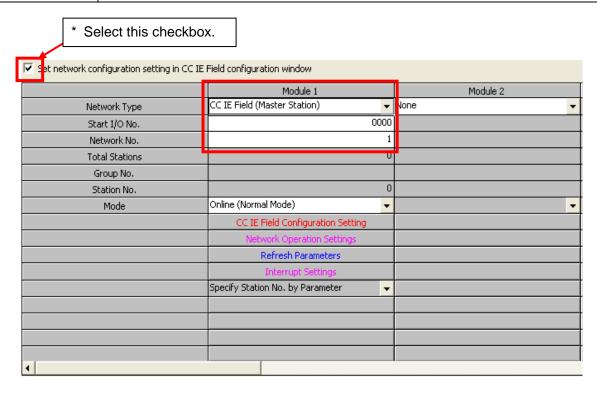


1.4. Setting the CC-Link IE Field Network Master/Local Module

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

(1) Network parameters

Item	Description
Network Type	Select the 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".



(2) CC IE Field configuration setting

Item	Description			
Station No.	Set the station number of the remote device station connected to the master station.			
	Set "1".			
Station Type	Set the station type of the remote device station 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) Start Set "0000".			
	(b) End Set "000F".			
RWw/RWr Setting	Set assignment for RWw/RWr for the remote device station connected to the master			
	station.			
	(a) Start Set "0000".			
	(b) End Set "000B".			

[When using NZ2GF12A4-16D]

	No. Model Nam	Model Name	STA#	Station Type	RX/RY Setting		RWw/RWr Setting		tting	Refresh Device	
	IVO.	Model Name	SIA#		Points	Start	End	Points	Start	End	RX
•	0	Host Station	0	Master Station							
=	1	NZ2GF12A4-16D	1	Remote Device Station	16	0000	000F	12	0000	000B	M1024 (16 points)

*Set the module to be used according to the environment.



(3) Refresh parameter setting

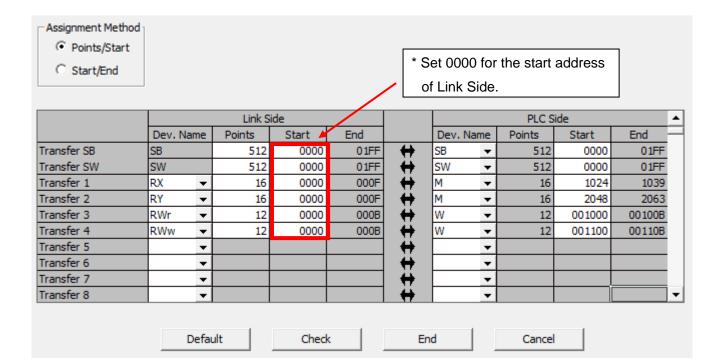
Item	Description	Setting value
Transfer SB	Select the link refresh range of SB device.	•"Link Side Points" : 512
		•"Link Side Start" : 0000
		•"PLC Side Dev. Name" : SB
		•"PLC Side Start" : 0000
Transfer SW	Select the link refresh range of SW device.	•"Link Side Points" : 512
		•"Link Side Start" : 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" : 16
		•"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" : 16
		•"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" : 12
		•"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" : 12
		•"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_RWr" and "M_F_RWw" devices of the global label setting.



1.5. Setting Global Labels

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

(1) M_F_RWr Set remote input (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.

(2) M_F_RWw Set remote output (RWw).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RWw".
Data Type	Select "Word [Signed]".
Device	Enter the refresh device set for the refresh parameter with a "Z6" prefix.

	Class	Label Name	Data Type	Constant	Device	Comment
1	VAR_GLOBAL ▼	M_F_RWr	Word[Signed]		W1000Z7	RWr refresh device
2	VAR_GLOBAL ▼	M_F_RWw	Word[Signed]		W1100Z6	RWw refresh device
3	▼					
4	▼					
5	▼					



1.6. Creating Interlock Program

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

Set an interlock program for cyclic transmission.

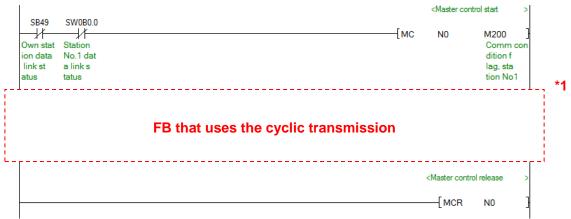
(Set a corresponding FB between MC and MCR instructions.)

1.6.1. Cyclic Transmission Program

Use link special relay (SB) and link special register (SW) to create an interlock for 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 Waterproof/Dustproof Remote I/O 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+NZ2GF12A16_InitialProcessing (Initial processing)

FB Name

M+NZ2GF12A16_InitialProcessing

Function Overview

Item	Description				
Function overview	Performs the initial processing after power-on.				
Symbol		M+NZ2GF12A16_InitialProcessing			
	Execution command——	B : FB_EN FE	B_ENO : B Execution status		
	Module start XY address	W : i_Start_IO_No F	FB_OK : B ——Completed without error		
	Station No.	W : i_Station_No FB_E	ERROR: B Error flag		
		ERR	OR_ID : W Error code		
Applicable hardware	CC-Link IE Field	NZ2GF12A4-16D, NZ2GF12A2-	16T, NZ2GF12A42-16DT,		
and software	Network remote I/O	NZ2GF12A4-16DE, NZ2GF12A2	2-16TE, NZ2GF12A42-16DTE		
	module				
	CC-Link IE Field	CC-Link IE Field Network maste	r/local module *1		
	Network module	*1 The first five digits of the seria	al number are "14102" or later.		
	CPU module				
		Series	Model		
		MELSEC-Q Series *1	Universal model QCPU *2		
		MELSEC-L Series	LCPU *3		
		*1 Not applicable to QCPU (A me	ode)		
		*2 The first five digits of the seria	al number are "12012" or later.		
		*3 The first five digits of the seria	al number are "13012" or later.		
	Engineering software	GX Works2 *1			
		Language	Software version		
		Japanese version	Version1.86Q or later		
		English version	Version1.24A or later		
		Chinese (Simplified) version	Version1.49B or later		
		Chinese (Traditional) version	Version1.49B or later		
		Korean version	Version1.49B or later		
		*1 For software versions applicate "Relevant manuals".	ole to the modules used, refer to		



Item	Description			
Programming	Ladder			
language				
Number of steps	449 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 initial processing after power-on is			
	executed.			
	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) turns ON and			
	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 and 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	The FB does not include error recovery processing. Program the error recovery				
precautions	processing separately in accordance with the required system operation.The FB cannot be used in an interrupt program.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 Z6 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 cyclic transmission. Therefore, an interlock program for cyclic				
	transmission is required. For the interlock program, refer to Section "1.6.1 Cyclic				
	Transmission Program".				
	8) Set the refresh parameters of the network parameter setting according to Section "1.4				
	Setting the CC-Link IE Field Network Master/Local Module".				
	9) Set the global label setting according to Section "1.5 Setting Global Labels".				
	0) 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 the processing of this FB is not completed, check if the station number of CC-Link IE				
	Field matches the station number of the network.				
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] [When an error occurs]				
	FB_EN (Execution command) FB_ENO (Execution status) FB_OK (Completed without error) RWrm+0 bit8 (Initial processing request flag) RWwm+0 bit1 (Remote READY) FB_ERROR (Error flag) ERROR_ID (Error code) m: Address allocated to the master module by setting the station number FB_EN (Execution command) FB_ENO (Execution status) FB_OK (Completed without error) RWrm+0 bit8 (Initial processing request flag) RWwm+0 bit8 (Initial processing completion flag) RWwm+0 bit11 (Remote READY) FB_ERROR (Error flag) ERROR_ID (Error code) m: Address allocated to the master module by setting the station number				



Item	Description			
Relevant manuals	CC-Link IE Field Network Waterproof/Dustproof Remote I/O 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	Review the following setting.
	station number specified by i_Station_No	Network configuration setting
	is incorrect.	Refer to (2) in Section 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.	Please try again after confirming the setting.
	The station number is not within the range	
	of 1 to 120.	



Labels

●Input labels

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

Output labels

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



FB Version Upgrade History

Version	Date	Description
1.00A	2017/01	First edition

Note

This chapter includes information related to this function block.

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

Before using any Mitsubishi products, please read all the relevant manuals.



2.2. M+NZ2GF12A16_SetOpeCondition (Operation condition setting)

FB Name

M+NZ2GF12A16_SetOpeCondition

Function Overview

Item	Description			
Function overview	Performs the operation condition setting.			
Symbol		M+NZ2GF12A16_SetOpeCondition		
	Execution command	B : FB_EN FE	B_ENO : B Execution status	
	Module start XY address	W : i_Start_IO_No F	B_OK : B Completed without error	
	Station No.	W : i_Station_No FB_E	ERROR: B Error flag	
		ERR	OR_ID : W Error code	
Applicable hardware	CC-Link IE Field	NZ2GF12A4-16D, NZ2GF12A2-	16T, NZ2GF12A42-16DT,	
and software	Network remote I/O	NZ2GF12A4-16DE, NZ2GF12A2	2-16TE, NZ2GF12A42-16DTE	
	module			
	CC-Link IE Field	CC-Link IE Field Network maste	r/local module *1	
	Network module	*1 The first five digits of the seria	al number are "14102" or later.	
	CPU module			
		Series	Model	
		MELSEC-Q Series *1	Universal model QCPU *2	
		MELSEC-L Series LCPU *3		
		*1 Not applicable to QCPU (A mo	ode)	
		*2 The first five digits of the seria	al number are "12012" or later.	
		*3 The first five digits of the seria	al number are "13012" or later.	
	Engineering software	GX Works2 *1		
		Language	Software version	
		Japanese version	Version1.86Q or later	
		English version	Version1.24A or later	
		Chinese (Simplified) version	Version1.49B or later	
		Chinese (Traditional) version	Version1.49B or later	
		*1 For software versions applicable to the modules used, refer to "Relevant Manuals".		



Item	Description
Programming	Ladder
language	
Number of steps	461 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	By turning ON FB_EN (Execution command), the operation condition setting of the
	target module is performed.
	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) turns ON and
	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 and 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	1) The FB does not include error recovery processing. Program the error recovery				
precautions	processing separately in accordance with the required system operation.				
	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 Z6 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 cyclic transmission. Therefore, an interlock program for cyclic				
	transmission is required. For the interlock program, refer to Section "1.6.1 Cyclic				
	Transmission Program".				
	8) Set the refresh parameters of the network parameter setting according to Section "1.4				
	Setting the CC-Link IE Field Network Master/Local Module".				
	9) Set the global label setting according to Section "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 the processing of this FB is not completed, check if the station number of CC-Link IE				
	Field matches the station number of the network.				
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] [When an error occurs]				
	FB_EN (Execution command) FB_ENO (Execution status) FB_OK (Completed without error) RWwm+0 bit9 (Operation condition setting request flag) RWrm+0 bit9 (Operation condition setting completion flag) FB_ERROR (Error flag) ERROR_ID (Error code) m: Address allocated to the master module by setting the station number FB_EN (Execution command) FB_ENO (Execution status) FB_OK (Completed without error) RWwm+0 bit9 (Operation condition setting request flag) RWrm+0 bit9 (Operation condition setting request flag) RWrm+0 bit9 (Operation condition setting completion flag) FB_ERROR (Error flag) ERROR_ID (Error code) m: Address allocated to the master module by setting the station number				



Item	Description			
Relevant manuals	CC-Link IE Field Network Waterproof/Dustproof Remote I/O 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	Review the following setting.
	station number specified by i_Station_No	Network configuration setting
	is incorrect.	Refer to (2) in Section 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.	Please try again after confirming the setting.
	The station number is not within the range	
	of 1 to 120.	



Labels

●Input labels

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

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 operation condition 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	2017/01	First edition

Note

This chapter includes information related to this function block.

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

Before using any Mitsubishi products, please read all the relevant manuals.



2.3. M+NZ2GF12A16_ErrorOperation (Error operation)

FB Name

M+NZ2GF12A16_ErrorOperation

Function Overview

Item	Description			
Function overview	Monitors the error status and warning status, and performs error clear.			
Symbol		M+NZ2GF12A16_ErrorOperation		
	Execution command ———	B : FB_EN F	B_ENO : BExecution status	
	Module start XY address ——	W : i_Start_IO_No	FB_OK : B Completed without error	
	Station No.	W: i_Station_No o_UNIT_	ERROR : BModule error detection	
	Error clear request———	B : i_ErrorReset o_UNIT_ERF	R_CODE : W Module error code	
		o_UNIT_W/	ARNING: BModule warning detection	
		o_UNIT_WAF	R_CODE: WModule warning code	
		FB_	ERROR : B ——Error flag	
		ER	ROR_ID : W Error code	
Applicable hardware	CC-Link IE Field	NZ2GF12A4-16D, NZ2GF12A2	-16T, NZ2GF12A42-16DT,	
and software	Network remote I/O	NZ2GF12A4-16DE, NZ2GF12A	2-16TE, NZ2GF12A42-16DTE	
	module			
	CC-Link IE Field	CC-Link IE Field Network maste	er/local module *1	
	Network module	*1 The first five digits of the seri	al number are "14102" or later.	
	CPU module			
		Series	Model	
		MELSEC-Q Series *1	Universal model QCPU *2	
		MELSEC-L Series	LCPU *3	
		*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 seri	al number are "13012" or later.	

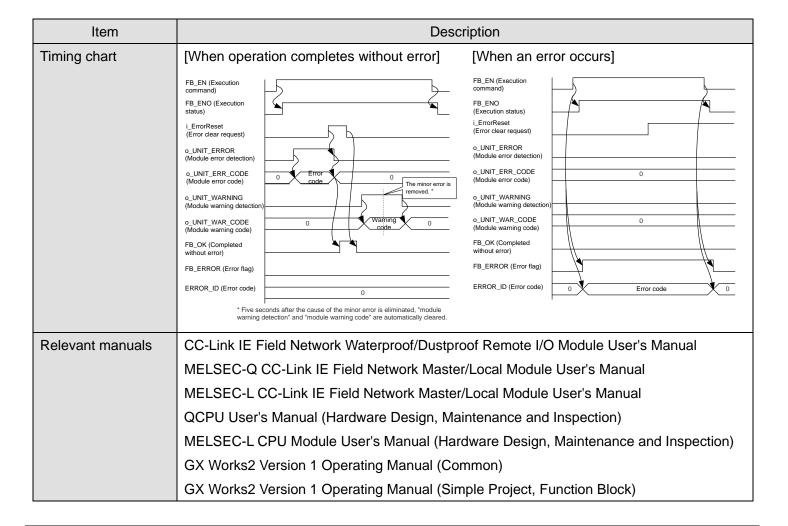


Item	Description				
	Engineering software	GX Works2 *1			
		Language	Software version		
		Japanese version	Version1.86Q or later		
		English version	Version1.24A or later		
		Chinese (Simplified) version	Version1.49B or later		
		Chinese (Traditional) version	Version1.49B or later		
		Korean version	Version1.49B or later		
		*1 For software versions applica	ble to the modules used, refer to		
		"Relevant Manuals".			
Programming	Ladder				
language					
Number of steps	575 steps (for MELSE)	C-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 defin	nition.			
Function description	1) By turning ON FB	_EN (Execution command), the error	or status and warning status in		
	the target module	is monitored.			
	2) When an error occ	curs, o_UNIT_ERROR (Module erro	or detection) is turned ON and the		
	error code is store	ed in o_UNIT_ERR_CODE (Module	error code).		
	3) When a warning occurs, o_UNIT_WARNING (Module warning detection) is turned ON				
	and the warning code is stored in o_UNIT_WAR_CODE (Module warning code).				
	,				
	warning code).				
	,	cution command) is turned ON, err	•		
	_ ,	or clear request) is turned ON during			
		ally five seconds after the cause of	the minor error in the module is		
	removed.				
		configuration setting of the station			
	,	ion No.) is incorrect, FB_ERROR (.		
		rupted, and the error code 50 (deci	mal) is stored in ERROR_ID		
	(Error code).				
		code explanation section for details			
	,	value of i_Station_No (Station No.)	•		
	·	nd processing is interrupted, and th	ie error code 60 (decimai) is		
	stored in ERROR	,			
Compiling maths a		code explanation section for details	j.		
Compiling method	Macro type				



Item	Description
Restrictions and	The FB does not include error recovery processing. Program the error recovery
precautions	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 Z6 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 cyclic transmission. Therefore, an interlock program for cyclic
	transmission is required. For the interlock program, refer to Section "1.6.1 Cyclic
	Transmission Program".
	8) Set the refresh parameters of the network parameter setting according to Section "1.4
	Setting the CC-Link IE Field Network Master/Local Module".
	9) Set the global label setting according to Section "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 the processing of this FB is not completed, check if the station number of CC-Link IE
	Field matches the station number of the network. Also, confirm that the causes of the
	error, warning and alarm have been removed.
FB operation type	Real-time execution
Application example	Refer to "Appendix 2 FB Library Application Examples".





Error codes

●Error code list

Error code	Description	Action
50 (Decimal)	The network configuration setting of the	Review the following setting.
	station number specified by i_Station_No	Network configuration setting
	is incorrect.	Refer to (2) in Section 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.	Please try again after confirming the setting.
	The station number is not within the range	
	of 1 to 120.	



Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN		ON, OFF	ON: The FB is activated.
		Bit		OFF: The FB is not
				activated.
Module start XY	i_Start_IO_No		Depends on the I/O point	Specify the starting XY
address			range of the CPU.	address (in hexadecimal)
			For details, refer to the	where the CC-Link IE Field
		Word	CPU user's manual.	Network master/local
				module is mounted. (For
				example, enter H10 for
				X10.)
Station No.	i_Station_No	Word	1 to 120	Specify the target station
		vvora		number.
Error clear request	i_ErrorReset		ON, OFF	Turn ON when performing
				error clear. Turn OFF the
		Bit		request when FB_OK
				(Completed without error) 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 error clear is completed.
Module error detection	o_UNIT_ERROR	Bit	OFF	When ON, it indicates an error has occurred.
Module error code	o_UNIT_ERR_CODE	Word	0	Return the error code for an error that occurred in the module.
Module warning detection	o_UNIT_WARNING	Bit	OFF	When ON, it indicates a warning has occurred.
Module warning code	o_UNIT_WAR_CODE	Word	0	Return the warning code for a warning that occurred in the module.



Name (Comment)	Label name	Data type	Initial value	Description
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	2017/01	First edition

Note

This chapter includes information related to this function block.

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

Before using any Mitsubishi products, please read all the relevant manuals.



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.

Four steps are required to create the FB for the second and subsequent modules.

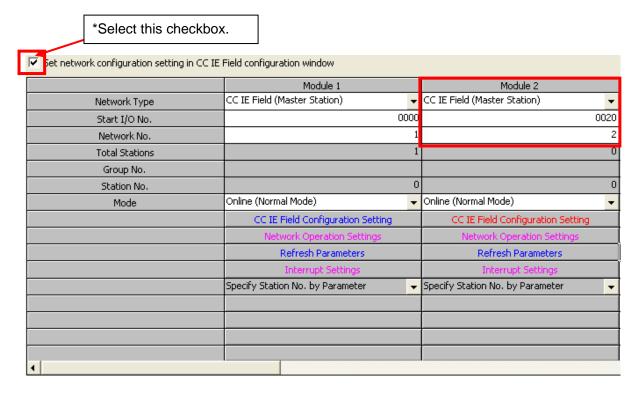
- (1) Enter network parameters
- (2) Set global labels
- (3) Copy MELSOFT Library to create the FB for the second module
- (4) Replace devices to create the FB for the second module



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".



(2) Set the CC IE Field configuration setting for the second module.

Item	Description
Station No.	Set the station number of the remote device station connected to the master station.
	Set "1".
Station Type	Set the station type of the remote device station 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) Start Set "0000.
	(b) End Set "000F".
RWw/RWr Setting	Set assignment for RWw/RWr for the remote device station connected to the master
	station.
	(a) Start Set "0000".
	(b) End Set "000B".

[When using NZ2GF12A4-16D]

	No.	Model Name	STA#	Station Type	RX/RY S		RY Setting		RWw/RWr Setting		Refresh Device
	INO.	Model Name	SIA#	Station Type	Points	Start	End	Points	Start	End	RX
•	0	Host Station	0	Master Station							
=	1	NZ2GF12A4-16D	1	Remote Device Station	16	0000	000F	12	0000	000B	M1040 (16 points)

*Set the module to be used according to the environment.

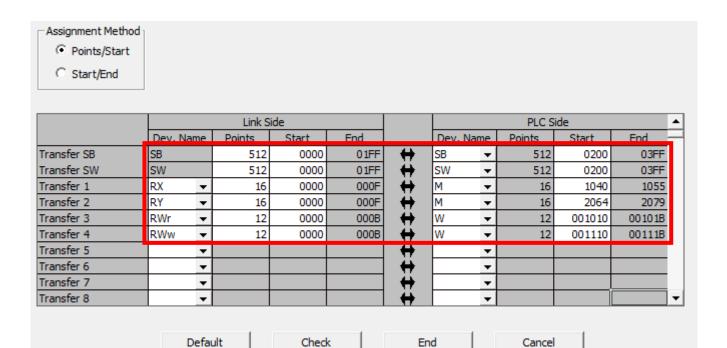


(3) Enter the refresh parameters for the second module.

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" : 16
		•"Link Side Start" : 0000
		•"PLC Side Dev. Name" : M
		•"PLC Side Start" : 1040
Transfer 2	Select the link refresh range of RY device.	•"Link Side Dev. Name" : RY
		•"Link Side Points" : 16
		•"Link Side Start" : 0000
		•"PLC Side Dev. Name" : M
		•"PLC Side Start" : 2064
Transfer 3	Select the link refresh range of RWr device.	•"Link Side Dev. Name" : RWr
		•"Link Side Points" : 12
		•"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" : 12
		•"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.







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_RWr2 Set remote register (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.

(2) M_F_RWw2 Set remote register (RWw).

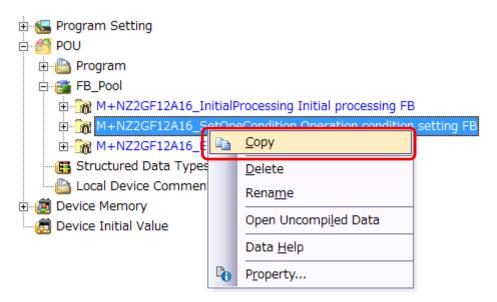
Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RWw2".
Data Type	Select "Word [Signed]".
Device	Enter the refresh device set for the refresh parameter with a "Z6" prefix.

	Class	Label Name	Data Type		Constant	Device	Comment
1	VAR_GLOBAL	M.F.RWr	Word[Signed]			WI 000Z7	RWr refrash device
2	VAR_GLOBAL	M.F.RWw	Word[Signed]			W1100Z6	RWw refrash device
3	VAR_GLOBAL ▼	M.F.RWr2	Word[Signed]			WI 01 027	RWr refrash device
4	VAR_GLOBAL ▼	MJFJRWw2	Word[Signed]			W1110Z6	RWw refrash device
5	▼			:			
6	▼						

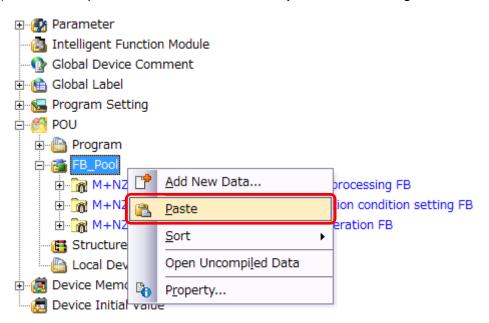


Appendix 1.3. Copying MELSOFT Library to Create an FB for the Second Module

(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.





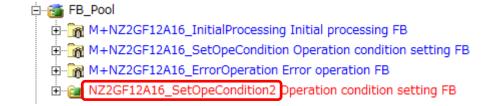
(3) After selecting the paste command, a window appears to enter an FB name. Enter an FB name after paste.

(Example: NZ2GF12A16_SetOpeCondition2)

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

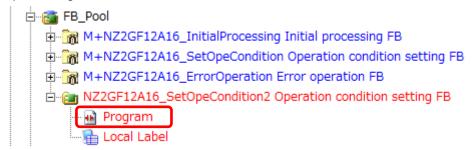




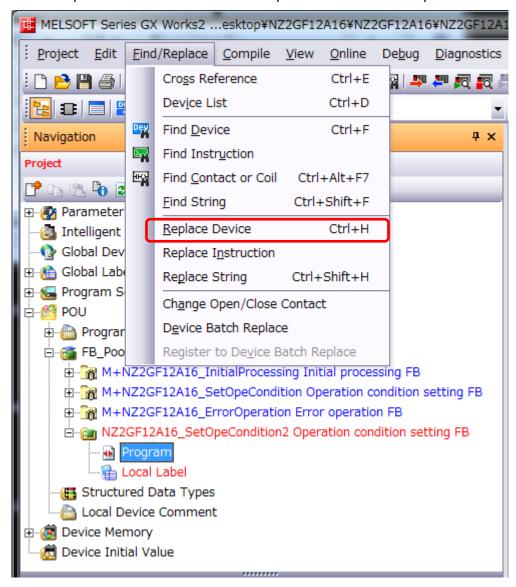


Appendix 1.4. Replacing Devices to Create the FB for the Second Module

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

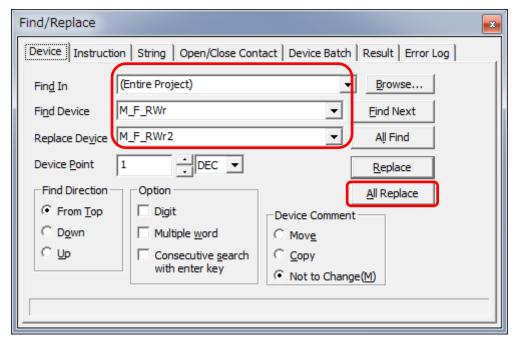


(2) Select "Find/Replace" menu and then select "Replace Device". "Find/Replace" window appears.





(3) Select "Current Window" from Find In, "M_F_RWr" from Find Device, and "M_F_RWr2" from Replace Device. Then replace all devices. In the same way, replace "M_F_RWw" all at once.



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 "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 "Global label name", "Data Name After Paste" that is set when pasting FB data and "Replace Device" that is 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.

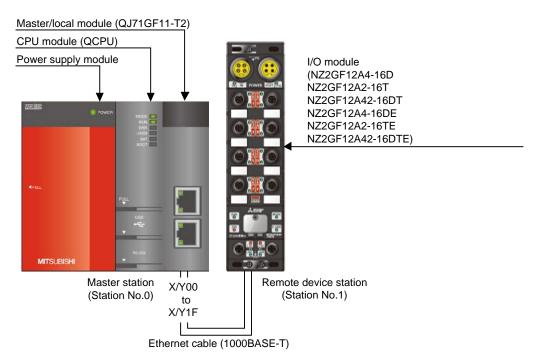


Appendix 2. FB Library Application Examples

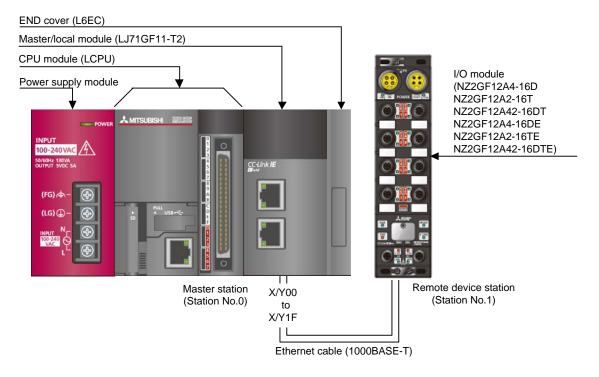
The application examples of the CC-Link IE Field Network remote I/O module FB are as follows.

1) System configuration

(1) Q series system configuration



(2) L series system configuration





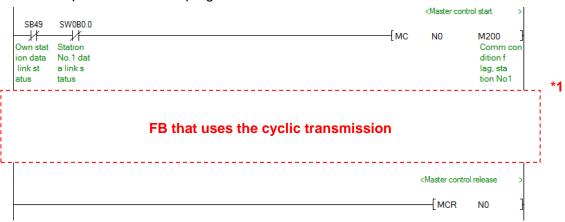
Reminder

- 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)
MO	M+NZ2GF12A16_InitialProcessing	Initial processing request
M10	M+NZ2GF12A16_SetOpeCondition	Operation condition setting request
M20	M+NZ2GF12A16_ErrorOperation	Error operation request
M21		Error clear request

b) External output (checks)

Device	FB name	Application (ON details)
M1	M+NZ2GF12A16_InitialProcessing	Initial processing FB ready
M2		Initial processing FB complete
F0		Initial processing FB error
D0		Initial processing FB error code
M11	M+NZ2GF12A16_SetOpeCondition	Operation condition setting FB ready
M12		Operation condition setting FB complete
F5		Operation condition setting FB error
D10		Operation condition setting FB error code
M22	M+NZ2GF12A16_ErrorOperation	Error operation FB ready
M23		Error operation FB complete
M24		Module error detection
D20		Module error code
M25		Module warning detection
D21		Module warning code
F10		Error operation FB error
D22		Error operation FB error code

3) Global label setting

a) Common setting

Class	Label name	Data type	Device
VAR_GLOBAL	M_F_RWr	Word [Signed]	W1000Z7
VAR_GLOBAL	M_F_RWw	Word [Signed]	W1100Z6



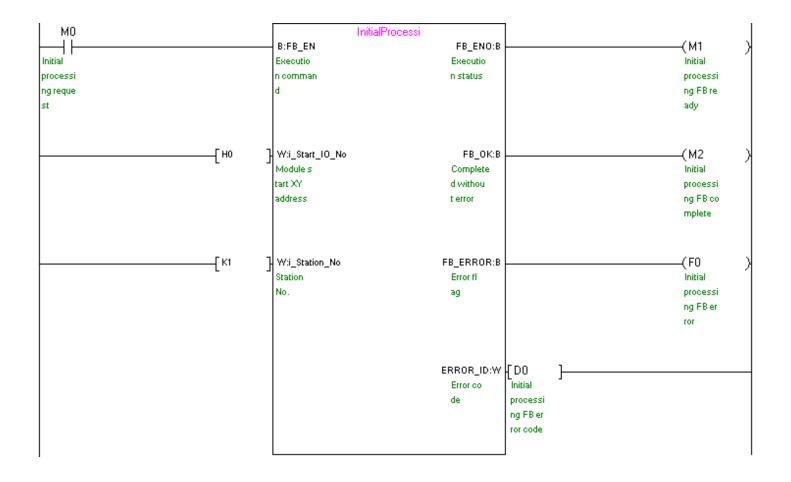
4) Programs

M+NZ2GF12A16_InitialProcessing (Initial processing)

The example below shows a program with the following conditions.

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

By turning ON M0, the initial processing is performed.



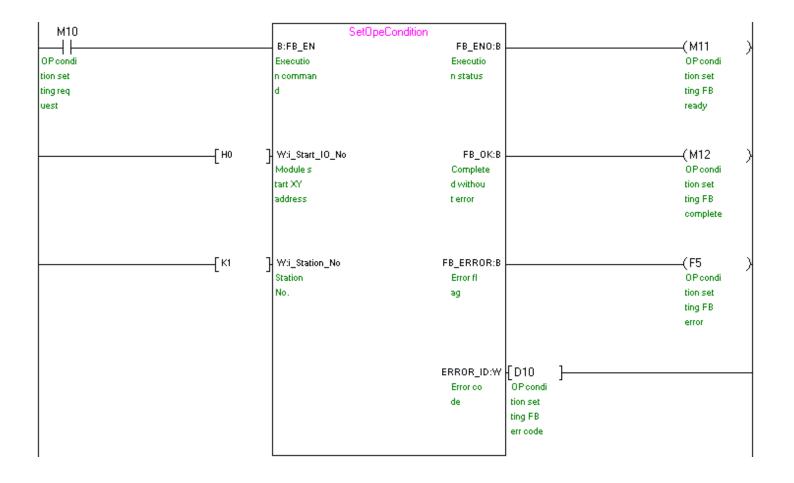


M+NZ2GF12A16_SetOpeCondition (Operation condition setting)

The example below shows a program with the following conditions.

Label name	Setting value	Description
i_Start_IO_No	Н0	Set the starting XY address where the CC-Link IE Field Network master/local module is mounted to 0H.
i_Station_No	K1	Set the target station number to 1.

By turning ON M10, the operation condition of the module is set.





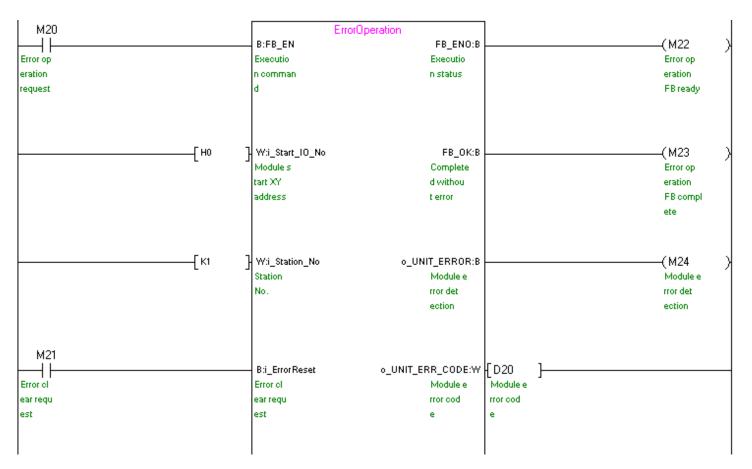
M+NZ2GF12A16_ErrorOperation (Error operation)

The example below shows a program with the following conditions.

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

By turning ON M20, error and warning occurrences are monitored.

After turning ON M20, by turning ON M21, error clear is performed.



(Continues to the next page)



