



Programmable Controller

MELSEC iQ-R
series

CC-Link IE Field Network Waterproof
Remote IO-Link Module Function Block Reference
(For MELSEC iQ-R)

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1 MODULE FUNCTION BLOCK (FB) LIST

This chapter lists the module FBs for CC-Link IE Field Network IO-Link module.

Name	Description
M+NZ2GF12A-60IOLH8_CCIEFIOAdv_R	Sets the process data size and the operation of each channel.
M+NZ2GF12A-60IOLH8_RdEventData_R	Reads the event data from the specified channel.
M+NZ2GF12A-60IOLH8_RdIdtData_R	Reads the IO-Link module identification data from the NZ2GF12A-60IOLH8.
M+NZ2GF12A-60IOLH8_RdInitOprSet_R	Reads the initial operation setting from the NZ2GF12A-60IOLH8.
M+NZ2GF12A-60IOLH8_RdISDUData_R	Reads the ISDU data from the specified channel.
M+NZ2GF12A-60IOLH8_RdStrData_R	Reads the data storage from the specified channel.
M+NZ2GF12A-60IOLH8_WtDataStrSet_R	Writes the data storage setting to each channel.
M+NZ2GF12A-60IOLH8_WtInitOprSet_R	Writes the initial operation setting to the NZ2GF12A-60IOLH8.
M+NZ2GF12A-60IOLH8_WtISDUData_R	Writes the ISDU data to the specified channel.
M+NZ2GF12A-60IOLH8_WtDeviceValid_R	Configures the device validation setting of the specified channel.

Precautions

- These module FBs are for GX Works3.
- These module FBs do not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation.
- Do not use these module FBs in an interrupt program.
- Configure the ladder setting for all the input labels in these module FBs.
- Errors not related to these module FBs are not stored in o_uErrId (error code).

2 CC-Link IE Field Network Waterproof Remote IO-Link Module FB

2.1 M+NZ2GF12A-60IOLH8_CCIEFIOAdv_R

Name

M+NZ2GF12A-60IOLH8_CCIEFIOAdv_R


Overview

Item	Description																								
Functional overview	This module FB sets the process data size and the operation of each channel.																								
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">M+NZ2GF12A-60IOLH8_CCIEFIOAdv_R</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">(1) — B: i_bEN</td> <td style="width: 40%;"></td> <td style="width: 30%;">o_bENO: B — (9)</td> </tr> <tr> <td>(2) — UW: i_uStart_IO_No</td> <td></td> <td>o_bOK: B — (10)</td> </tr> <tr> <td>(3) — W: i_wStation_No</td> <td></td> <td>o_bErr: B — (11)</td> </tr> <tr> <td>(4) — W: i_wIn_OutSwitch</td> <td></td> <td>o_uErrId: UW — (12)</td> </tr> <tr> <td>(5) — W: i_wModeSwitch</td> <td></td> <td>o_wRYOutputs: W — (13)</td> </tr> <tr> <td>(6) — W: i_wEventsClear</td> <td></td> <td>o_bUnitError: B — (14)</td> </tr> <tr> <td>(7) — W: i_wDataSwap</td> <td></td> <td>o_bUnitReady: B — (15)</td> </tr> <tr> <td>(8) — W: i_wProcDataSize</td> <td></td> <td></td> </tr> </table> </div>	(1) — B: i_bEN		o_bENO: B — (9)	(2) — UW: i_uStart_IO_No		o_bOK: B — (10)	(3) — W: i_wStation_No		o_bErr: B — (11)	(4) — W: i_wIn_OutSwitch		o_uErrId: UW — (12)	(5) — W: i_wModeSwitch		o_wRYOutputs: W — (13)	(6) — W: i_wEventsClear		o_bUnitError: B — (14)	(7) — W: i_wDataSwap		o_bUnitReady: B — (15)	(8) — W: i_wProcDataSize		
(1) — B: i_bEN		o_bENO: B — (9)																							
(2) — UW: i_uStart_IO_No		o_bOK: B — (10)																							
(3) — W: i_wStation_No		o_bErr: B — (11)																							
(4) — W: i_wIn_OutSwitch		o_uErrId: UW — (12)																							
(5) — W: i_wModeSwitch		o_wRYOutputs: W — (13)																							
(6) — W: i_wEventsClear		o_bUnitError: B — (14)																							
(7) — W: i_wDataSwap		o_bUnitReady: B — (15)																							
(8) — W: i_wProcDataSize																									

Labels

Input arguments

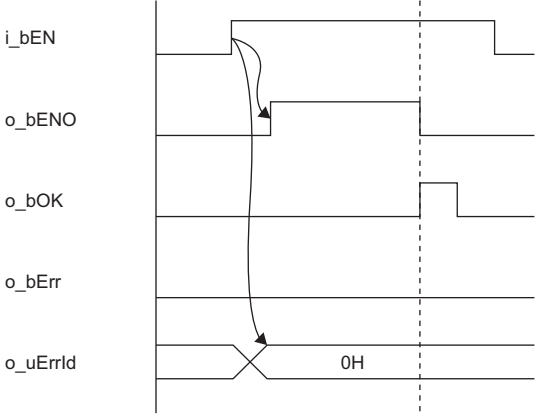
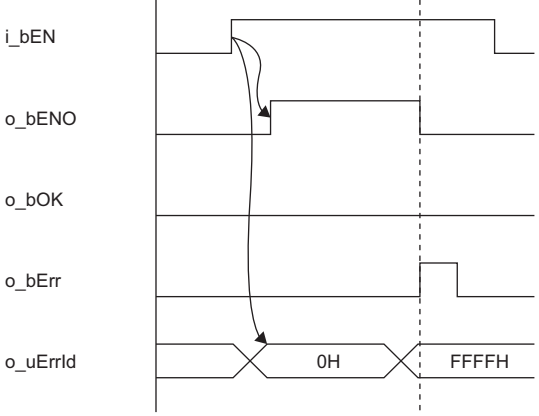
No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wIn_OutSwitch	I/O switching setting	Word	0000H to FFFFH	Specifies the input/output for Q/CQ of each channel. This setting is not reflected when the CQ of the corresponding channel is in the IO-Link mode. For details on the specification method, refer to the following. Page 40 Input/Output Switching Setting
(5)	i_wModeSwitch	Mode switching setting	Word	00H to FFH	Specifies the mode of each channel in the lower byte. For details on the specification method, refer to the following. Page 41 Mode Switching Setting
(6)	i_wEventsClear	Event clear setting	Word	00H to FFH	Specifies the event clear of each channel in the lower byte. For details on the specification method, refer to the following. Page 42 Event Clear Setting
(7)	i_wDataSwap	Upper and lower byte data swap setting	Word	00H to FFH	Specifies whether to enable/disable the upper and lower byte data swap function of each channel in the lower byte. For details on the specification method, refer to the following. Page 43 Upper and Lower Byte Data Swap Setting

No.	Variable name	Name	Data type	Scope	Description
(8)	i_wProcDataSize	Process data size setting	Word	—	Specifies the start device of the area where the process data size is stored. The (start device) + 0 to + 7 words are used for the storage area. The effective range of the process data size of each channel is from 0 to 16. If 0 or less is set, 0 is specified, and if 16 or more is set, 16 is specified. For details on the specification method, refer to the following.  Page 44 Process Data Size Setting


■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(9)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(10)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(11)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(12)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0
(13)	o_wRYOutputs	Remote output value	Word	Specifies the start number of the device to be stored in the remote output (RY). Write a value to be stored in the remote output (RY) in the following area. (Output start device)+0: (Start device of remote output)+1 (Output start device)+1: (Start device of remote output)+2	0
(14)	o_bUnitError	Error status flag	Bit	Indicates the error status in the module status area. On: Moderate or major error Off: No errors	Off
(15)	o_bUnitReady	Remote READY status	Bit	Indicates the remote READY status in the module status area. On: Remote READY is on. Off: Remote READY is off.	Off

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	612 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the process data size and the operation of each channel are set.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. • This module FB outputs the I/O switching setting, mode switching setting, and event clear setting by converting the format of these settings to that writable to the remote output on the IO-Link module. Separately create a program for writing the output values to the remote output on the IO-Link module. • This module FB does not include the processing for turning on the initial processing completed flag or the operating condition setting request flag when the processing is completed successfully. Separately create a program for turning on the initial processing completed flag or the operating condition setting request flag. • Turn on the initial processing completed flag or the operating condition setting request flag after 500ms have passed from completion of the execution of this module FB. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.2 M+NZ2GF12A-60IOLH8_RdEventData_R

Name

M+NZ2GF12A-60IOLH8_RdEventData_R

Overview

Item	Description																														
Functional overview	This module FB reads the event data from the specified channel.																														
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">M+NZ2GF12A-60IOLH8_RdEventData_R</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">(1) —</td> <td style="width: 40%;">B: i_bEN</td> <td style="width: 20%;"></td> <td style="width: 20%;">o_bENO: B</td> <td style="width: 10%;">(5)</td> </tr> <tr> <td>(2) —</td> <td>UW: i_uStart_IO_No</td> <td></td> <td>o_bOK: B</td> <td>(6)</td> </tr> <tr> <td>(3) —</td> <td>W: i_wStation_No</td> <td></td> <td>o_bErr: B</td> <td>(7)</td> </tr> <tr> <td>(4) —</td> <td>W: i_wTarget_CH</td> <td></td> <td>o_uErrId: UW</td> <td>(8)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>o_wEventDisc: W</td> <td>(9)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>o_wEventCode: W</td> <td>(10)</td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B	(5)	(2) —	UW: i_uStart_IO_No		o_bOK: B	(6)	(3) —	W: i_wStation_No		o_bErr: B	(7)	(4) —	W: i_wTarget_CH		o_uErrId: UW	(8)				o_wEventDisc: W	(9)				o_wEventCode: W	(10)
(1) —	B: i_bEN		o_bENO: B	(5)																											
(2) —	UW: i_uStart_IO_No		o_bOK: B	(6)																											
(3) —	W: i_wStation_No		o_bErr: B	(7)																											
(4) —	W: i_wTarget_CH		o_uErrId: UW	(8)																											
			o_wEventDisc: W	(9)																											
			o_wEventCode: W	(10)																											

Labels

■ Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wTarget_CH	Target channel	Word	1 to 8	Specifies the channel from which the event data is read. If a value of 0 or less is set, channel 1 is specified, and if a value of 9 or more is set, channel 8 is specified.


■ Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(7)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(8)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0
(9)	o_wEventDisc	Event identifier	Word	Stores the read event identifier.	0
(10)	o_wEventCode	Event code	Word	Stores the read event code. For details on the event code, refer to the manual of the connected IO-Link device.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	338 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the event data is read from the specified channel.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully 	
	<ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.3 M+NZ2GF12A-60IOLH8_RdldtData_R

Name

M+NZ2GF12A-60IOLH8_RdldtData_R

Overview

Item	Description
Functional overview	This module FB reads the IO-Link module identification data from the NZ2GF12A-60IOLH8.
Symbol	<p>The diagram shows a rectangular box representing the function block. On the left side, there are four input variables: (1) B: i_bEN, (2) UW: i_uStart_IO_No, (3) W: i_wStation_No, and (4) W: i_wldtIndex. On the right side, there are five output variables: (5) o_bENO: B, (6) o_bOK: B, (7) o_bErr: B, (8) o_uErrld: UW, and (9) o_wldtData: W.</p>

Labels

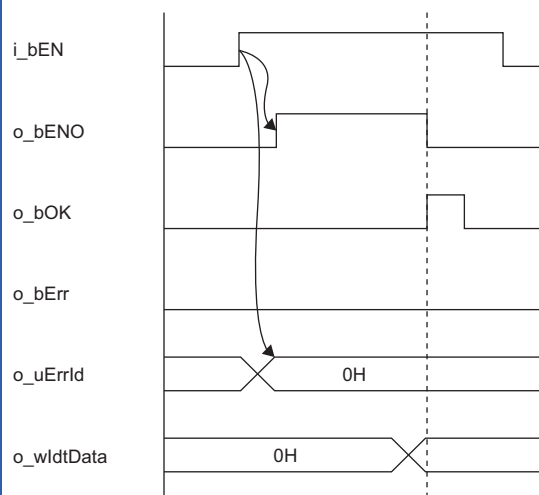
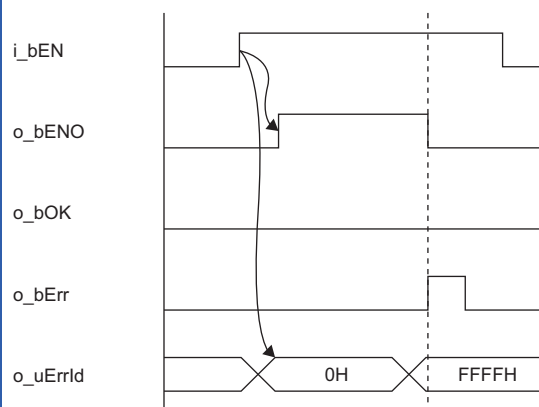
Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wldtIndex	Item of IO-Link module identification data	Word	10H to 14H	Specifies the item of IO-Link module identification data to be read. 10H: Manufacturer 11H: Manufacturer text 12H: Product name 13H: Product ID 14H: Product text


Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(7)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(8)	o_uErrld	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0
(9)	o_wldtData	IO-Link module identification data	Word	Specifies the start number of the device to store values of the IO-Link module identification data. The size of the storage area for the IO-Link module identification data depends on the read item of the IO-Link module identification data.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	338 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the IO-Link module identification data of the specified IO-Link module is read.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
0101H	Item of the IO-Link module identification data is out of range between 10H and 14H.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.4 M+NZ2GF12A-60IOLH8_RdInitOprSet_R

Name

M+NZ2GF12A-60IOLH8_RdInitOprSet_R

Overview

Item	Description
Functional overview	This module FB reads the initial operation setting from the NZ2GF12A-60IOLH8.
Symbol	

Labels

Input arguments

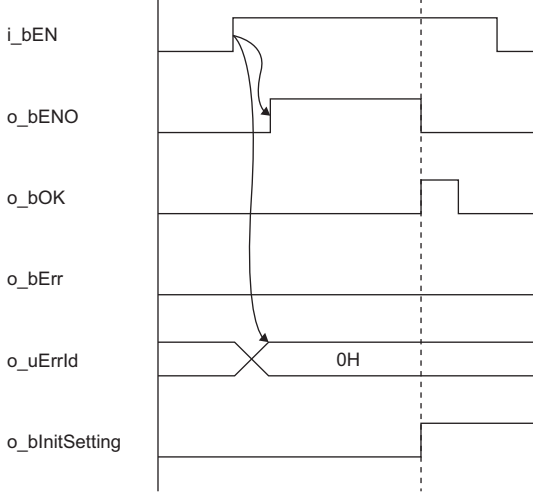
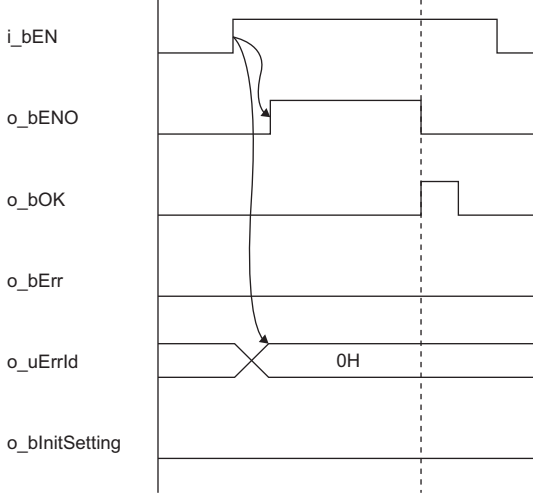
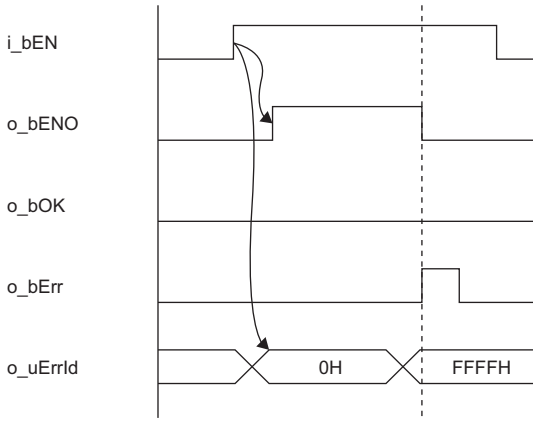
No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.

Output arguments


No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(6)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(7)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0
(8)	o_bInItSetting	Initial operation setting	Bit	On: Initial operation is not performed. Off: Initial operation is performed.	Off

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	<p>335 steps</p> <p>The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</p>	
Functional description	When i_bEN (execution command) is turned on, the initial operation setting is read from the specified IO-Link module.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	

Item	Description
Timing chart of I/O signals	<p data-bbox="331 174 986 203">• When the processing (with initial operation setting) is completed successfully</p> 
	<p data-bbox="331 734 1011 763">• When the processing (without initial operation setting) is completed successfully</p> 
	<p data-bbox="331 1294 746 1323">• When the processing is completed with an error</p> 
Precautions	<ul data-bbox="331 1787 1453 1917" style="list-style-type: none"> <li data-bbox="338 1787 1453 1865">• If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). <li data-bbox="338 1870 1453 1917">• This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program.

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.5 M+NZ2GF12A-60IOLH8_RdISDUData_R

Name

M+NZ2GF12A-60IOLH8_RdISDUData_R

Overview

Item	Description																					
Functional overview	This module FB reads the ISDU data from the specified channel.																					
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">M+NZ2GF12A-60IOLH8_RdISDUData_R</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">(1) — B: i_bEN</td> <td style="width: 30%;"></td> <td style="width: 30%;">o_bENO: B — (8)</td> </tr> <tr> <td>(2) — UW: i_uStart_IO_No</td> <td></td> <td>o_bOK: B — (9)</td> </tr> <tr> <td>(3) — W: i_wStation_No</td> <td></td> <td>o_bErr: B — (10)</td> </tr> <tr> <td>(4) — W: i_wTarget_CH</td> <td></td> <td>o_uErrId: UW — (11)</td> </tr> <tr> <td>(5) — W: i_wIndex</td> <td></td> <td>o_wISDUData: B — (12)</td> </tr> <tr> <td>(6) — W: i_wSubIndex</td> <td></td> <td></td> </tr> <tr> <td>(7) — W: i_wISDUDataLen</td> <td></td> <td></td> </tr> </table> </div>	(1) — B: i_bEN		o_bENO: B — (8)	(2) — UW: i_uStart_IO_No		o_bOK: B — (9)	(3) — W: i_wStation_No		o_bErr: B — (10)	(4) — W: i_wTarget_CH		o_uErrId: UW — (11)	(5) — W: i_wIndex		o_wISDUData: B — (12)	(6) — W: i_wSubIndex			(7) — W: i_wISDUDataLen		
(1) — B: i_bEN		o_bENO: B — (8)																				
(2) — UW: i_uStart_IO_No		o_bOK: B — (9)																				
(3) — W: i_wStation_No		o_bErr: B — (10)																				
(4) — W: i_wTarget_CH		o_uErrId: UW — (11)																				
(5) — W: i_wIndex		o_wISDUData: B — (12)																				
(6) — W: i_wSubIndex																						
(7) — W: i_wISDUDataLen																						

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wTarget_CH	Target channel	Word	1 to 8	Specifies the channel from which the ISDU data is read. If a value of 0 or less is set, channel 1 is specified, and if a value of 9 or more is set, channel 8 is specified.
(5)	i_wIndex	Index	Word	0000H to FFFFH	Specifies the index value of the ISDU data to be read. ^{*3}
(6)	i_wSubIndex	Sub index	Word	00H to FFH	Specifies the sub index value of the ISDU data to be read in the lower byte. Data in the upper byte is ignored. Store 0. ^{*3}
(7)	i_wISDUDataLen	ISDU data length	Word	Depends on the ISDU data read. ^{*1}	Specify the ISDU data length to be read in bytes. ^{*2}

*1 For details, refer to the manual of the connected IO-Link device.

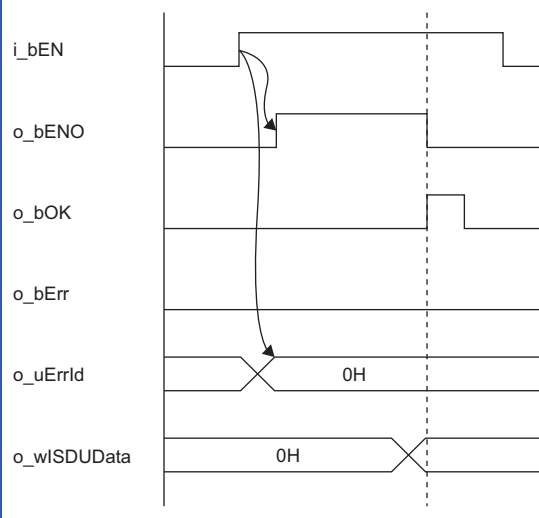
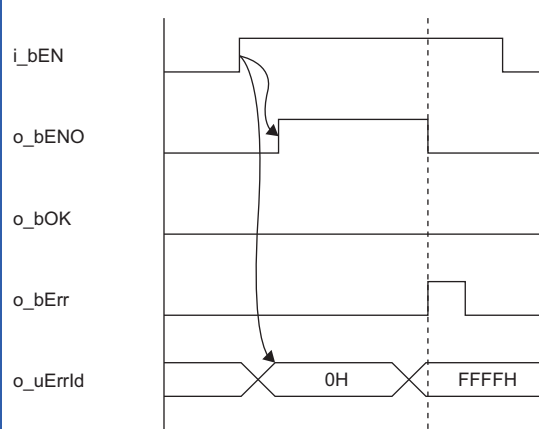
*2 When the ISDU data length is set to an odd number, the ISDU data of (specified length + 1) bytes is read.

*3 Refer to the manual of the connected IO-Link device.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(8)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(9)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(10)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(11)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0
(12)	o_wISDUData	ISDU data	Word	Stores the read value of the ISDU data. Specify the start device of the storage area for the ISDU data value. The size of the storage area for the ISDU data depends on the ISDU data read. Do not store other data to the device of the data storage area.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	483 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the ISDU data is read from the specified channel.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual. 📖 MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E211H to E241H	A module error has occurred.	For error codes, refer to the following manual. 📖 CC-Link IE Field Network Waterproof Remote IO-Link Module User's Manual

2.6 M+NZ2GF12A-60IOLH8_RdStrData_R

Name

M+NZ2GF12A-60IOLH8_RdStrData_R

Overview

Item	Description
Functional overview	This module FB reads the data storage from the specified channel.
Symbol	<p>The diagram shows a rectangular box labeled 'M+NZ2GF12A-60IOLH8_RdStrData_R'. On the left side, there are six input variables: (1) B: i_bEN, (2) UW: i_uStart_IO_No, (3) W: i_wStation_No, (4) W: i_wTarget_CH, (5) W: i_wSectionNo, and (6) W: i_wStrDataLen. On the right side, there are five output variables: (7) o_bENO: B, (8) o_bOK: B, (9) o_bErr: B, (10) o_uErrId: UW, and (11) o_wStorageData: W.</p>

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wTarget_CH	Target channel	Word	1 to 8	Specifies the channel from which the event data is read. If a value of 0 or less is set, channel 1 is specified, and if a value of 9 or more is set, channel 8 is specified.
(5)	i_wSectionNo	Section No.	Word	0 to 2	Specifies the section of the data storage to be read. If 0 or less is set, section 0 is specified, and if 2 or more is set, section 2 is specified.
(6)	i_wStrDataLen	Storage data length	Word	<ul style="list-style-type: none"> Section 0 or 1: 0001H to 0156H Section 2: 0001H to 0154H 	Specifies the length of the data storage to be read (in words). If 0001H or less is set, the data length is specified to 0001H, and if 0156H or more is set, the data length is specified to 0156H.


Output arguments

No.	Variable name	Name	Data type	Description	Default value
(7)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(8)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(9)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(10)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0
(11)	o_wStorageData	Data storage	Word	Stores the read data storage. Specify the start device of the area where the data storage value is stored. The data storage is stored in the area of words specified by the data storage length (i_wStrDataLen).	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	357 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the data storage is read from the specified channel.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWR0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully <p>The timing chart shows the following sequence of events:</p> <ul style="list-style-type: none"> i_bEN: A pulse that starts the execution. o_bENO: Goes high immediately after i_bEN starts. o_bOK: Goes high after a short delay. o_bErr: Remains low throughout the successful execution. o_uErrId: Transitions from 0H to a high state and then back to 0H. o_wStorageData: Transitions from 0H to a high state and then back to 0H. 	
	<ul style="list-style-type: none"> • When the processing is completed with an error <p>The timing chart shows the following sequence of events:</p> <ul style="list-style-type: none"> i_bEN: A pulse that starts the execution. o_bENO: Goes high immediately after i_bEN starts. o_bErr: Goes high after a short delay. o_bOK: Remains low throughout the error execution. o_uErrId: Transitions from 0H to FFFFH. 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.7 M+NZ2GF12A-60IOLH8_WtDataStrSet_R

Name

M+NZ2GF12A-60IOLH8_WtDataStrSet_R

Overview

Item	Description																																			
Functional overview	This module FB writes the data storage setting to each channel.																																			
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">M+NZ2GF12A-60IOLH8_WtDataStrSet_R</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">(1) —</td> <td style="width: 50%;">B: i_bEN</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: left;">o_bENO: B — (8)</td> </tr> <tr> <td style="text-align: right;">(2) —</td> <td>UW: i_uStart_IO_No</td> <td></td> <td></td> <td style="text-align: left;">o_bOK: B — (9)</td> </tr> <tr> <td style="text-align: right;">(3) —</td> <td>W: i_wStation_No</td> <td></td> <td></td> <td style="text-align: left;">o_bErr: B — (10)</td> </tr> <tr> <td style="text-align: right;">(4) —</td> <td>W: i_wDataStrSU</td> <td></td> <td></td> <td style="text-align: left;">o_uErrId: UW — (11)</td> </tr> <tr> <td style="text-align: right;">(5) —</td> <td>W: i_wDataStrUL</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">(6) —</td> <td>W: i_wDataStrDL</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">(7) —</td> <td>W: i_wDataStrClr</td> <td></td> <td></td> <td></td> </tr> </table> </div>	(1) —	B: i_bEN			o_bENO: B — (8)	(2) —	UW: i_uStart_IO_No			o_bOK: B — (9)	(3) —	W: i_wStation_No			o_bErr: B — (10)	(4) —	W: i_wDataStrSU			o_uErrId: UW — (11)	(5) —	W: i_wDataStrUL				(6) —	W: i_wDataStrDL				(7) —	W: i_wDataStrClr			
(1) —	B: i_bEN			o_bENO: B — (8)																																
(2) —	UW: i_uStart_IO_No			o_bOK: B — (9)																																
(3) —	W: i_wStation_No			o_bErr: B — (10)																																
(4) —	W: i_wDataStrSU			o_uErrId: UW — (11)																																
(5) —	W: i_wDataStrUL																																			
(6) —	W: i_wDataStrDL																																			
(7) —	W: i_wDataStrClr																																			

Labels

Input arguments

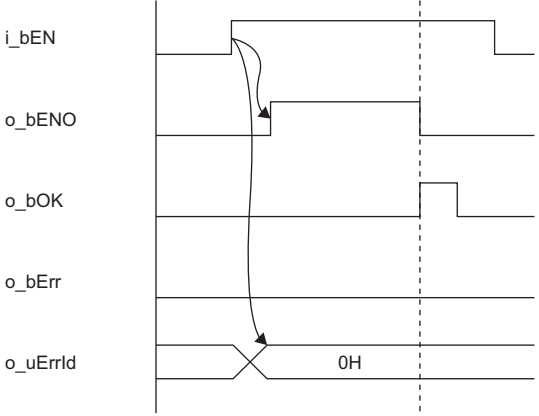
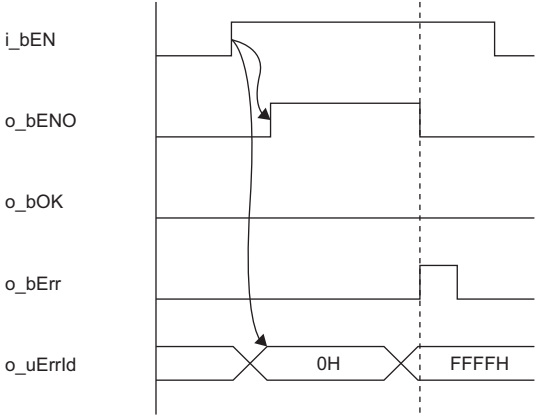
No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wDataStrSU	Data storage enable setting	Word	00H to FFH	Specifies whether to enable/disable the data storage of each channel in the lower byte. For details on the specification method, refer to the following.*1 Page 45 Data storage enable setting
(5)	i_wDataStrUL	Upload setting	Word	00H to FFH	Specifies whether to upload the data storage parameters of each channel to the IO-Link device parameters in the lower byte. For details on the specification method, refer to the following.*1 Page 45 Upload setting
(6)	i_wDataStrDL	Download setting	Word	00H to FFH	Specifies whether to download the parameters from the IO-Link device parameters to the data storage of each channel from the IO-Link device parameters in the lower byte. For details on the specification method, refer to the following.*1 Page 45 Download setting
(7)	i_wDataStrClr	Data storage clear setting	Word	00H to FFH	Specifies whether to clear the data storage parameters of each channel in the lower byte. For details on the specification method, refer to the following.*1 Page 46 Data storage clear setting

*1 Data in the upper byte is ignored. Store 0.


■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(8)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(9)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(10)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(11)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	678 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the data storage setting is written to each channel.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWR0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. • To reflect the setting in this FB, turn on the operating condition setting request flag after this module FB is executed. Separately create a program to reflect the setting. • Turn on the operating condition setting request flag after 500ms have passed from completion of the execution of this module FB. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.8 M+NZ2GF12A-60IOLH8_WtlnitOprSet_R

Name

M+NZ2GF12A-60IOLH8_WtlnitOprSet_R

Overview

Item	Description
Functional overview	This module FB writes the initial operation setting to the NZ2GF12A-60IOLH8.
Symbol	<p>The diagram shows a rectangular box representing the function block. Inside the box, the name 'M+NZ2GF12A-60IOLH8_WtlnitOprSet_R' is centered at the top. On the left side, there are four input variables: (1) B: i_bEN, (2) UW: i_uStart_IO_No, (3) W: i_wStation_No, and (4) B: i_blnitSetting. On the right side, there are four output variables: (5) o_bENO: B, (6) o_bOK: B, (7) o_bErr: B, and (8) o_uErrld: UW.</p>

Labels

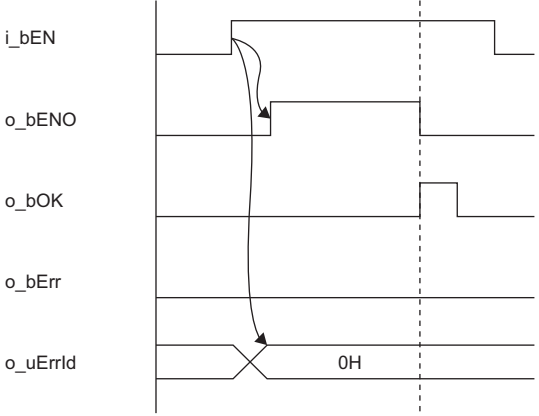
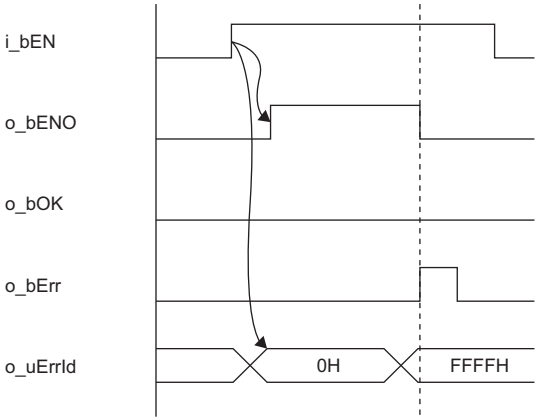
Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_blnitSetting	Initial operation setting	Bit	On or off	On: Initial operation is not performed. Off: Initial operation is performed.


Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(7)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(8)	o_uErrld	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	335 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the initial operation setting is written to the specified IO-Link module.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. • To reflect the setting in this FB, turn on the operating condition setting request flag after this module FB is executed. Separately create a program to reflect the setting. • Turn on the operating condition setting request flag after 500ms have passed from completion of the execution of this module FB. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

2.9 M+NZ2GF12A-60IOLH8_WtISDUData_R

Name

M+NZ2GF12A-60IOLH8_WtISDUData_R

Overview

Item	Description																																
Functional overview	This module FB writes the ISDU data to the specified channel.																																
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 10px auto;"> <p style="text-align: center; margin: 0;">M+NZ2GF12A-60IOLH8_WtISDUData_R</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 15%;"></td> <td style="width: 20%; text-align: left;">o_bENO: B — (9)</td> </tr> <tr> <td style="text-align: right;">(2) —</td> <td>UW: i_uStart_IO_No</td> <td></td> <td style="text-align: left;">o_bOK: B — (10)</td> </tr> <tr> <td style="text-align: right;">(3) —</td> <td>W: i_wStation_No</td> <td></td> <td style="text-align: left;">o_bErr: B — (11)</td> </tr> <tr> <td style="text-align: right;">(4) —</td> <td>W: i_wTarget_CH</td> <td></td> <td style="text-align: left;">o_uErrId: UW — (12)</td> </tr> <tr> <td style="text-align: right;">(5) —</td> <td>W: i_wIndex</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">(6) —</td> <td>W: i_wSubIndex</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">(7) —</td> <td>W: i_wISDUDataLen</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">(8) —</td> <td>W: i_wISDUData</td> <td></td> <td></td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B — (9)	(2) —	UW: i_uStart_IO_No		o_bOK: B — (10)	(3) —	W: i_wStation_No		o_bErr: B — (11)	(4) —	W: i_wTarget_CH		o_uErrId: UW — (12)	(5) —	W: i_wIndex			(6) —	W: i_wSubIndex			(7) —	W: i_wISDUDataLen			(8) —	W: i_wISDUData		
(1) —	B: i_bEN		o_bENO: B — (9)																														
(2) —	UW: i_uStart_IO_No		o_bOK: B — (10)																														
(3) —	W: i_wStation_No		o_bErr: B — (11)																														
(4) —	W: i_wTarget_CH		o_uErrId: UW — (12)																														
(5) —	W: i_wIndex																																
(6) —	W: i_wSubIndex																																
(7) —	W: i_wISDUDataLen																																
(8) —	W: i_wISDUData																																

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wTarget_CH	Target channel	Word	1 to 8	Specifies the channel from which the ISDU data is read. If a value of 0 or less is set, channel 1 is specified, and if a value of 9 or more is set, channel 8 is specified.
(5)	i_wIndex	Index	Word	0000H to FFFFH	Specifies the index value of the ISDU data to be written.*3
(6)	i_wSubIndex	Sub index	Word	00H to FFH	Specifies the sub index value of the ISDU data to be written in the lower byte. Data in the upper byte is ignored. Store 0.*3
(7)	i_wISDUDataLen	ISDU data length	Word	Depends on the ISDU data to be written.*1	Specify the ISDU data length to be written (in bytes). If 0 or less is set, the data length is specified to 0, and if 118 or more is set, the data length is specified to 118.
(8)	i_wISDUData	ISDU data	Word	Depends on the ISDU data to be written.*1	Specify the content to write to the ISDU data.*2

*1 For details, refer to the manual of the connected IO-Link device.

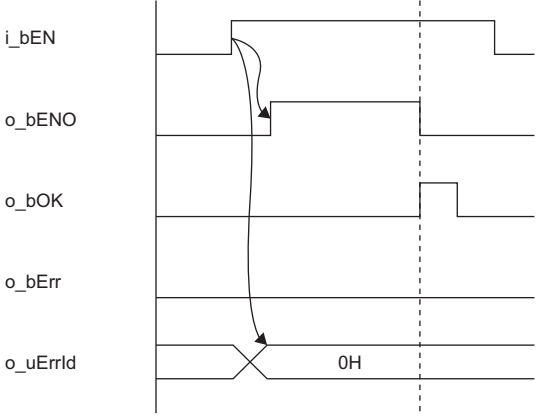
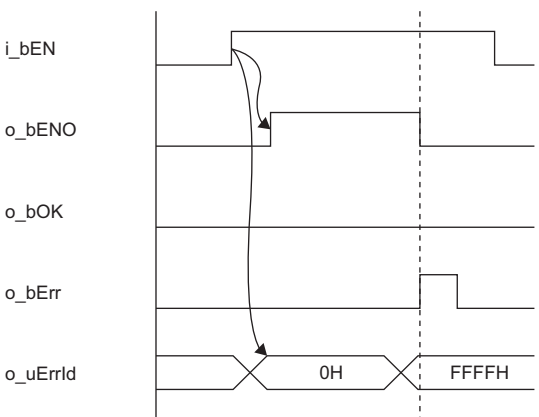
*2 When the ISDU data length is set to an odd number, the ISDU data of (specified length + 1) bytes is read.

*3 Refer to the manual of the connected IO-Link device.



■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(9)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(10)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(11)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(12)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	414 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the ISDU data is written to the specified channel.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. 	

Error code

Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E211H to E241H	A module error has occurred.	For error codes, refer to the following manual.  CC-Link IE Field Network Waterproof Remote IO-Link Module User's Manual

2.10 M+NZ2GF12A-60IOLH8_WtDeviceValid_R

Name

M+NZ2GF12A-60IOLH8_WtDeviceValid_R

Overview

Item	Description																																								
Functional overview	This module FB configures the device validation setting of the specified channel.																																								
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">M+NZ2GF12A-60IOLH8_WtDeviceValid_R</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 15%;"></td> <td style="width: 20%; text-align: left;">o_bENO: B</td> <td style="width: 5%; text-align: right;">(9)</td> </tr> <tr> <td>(2) —</td> <td>UW: i_uStart_IO_No</td> <td></td> <td>o_bOK: B</td> <td>(10)</td> </tr> <tr> <td>(3) —</td> <td>W: i_wStation_No</td> <td></td> <td>o_bErr: B</td> <td>(11)</td> </tr> <tr> <td>(4) —</td> <td>W: i_wTarget_CH</td> <td></td> <td>o_uErrId: UW</td> <td>(12)</td> </tr> <tr> <td>(5) —</td> <td>W: i_wValidConf</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(6) —</td> <td>W: i_wVendorID</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(7) —</td> <td>D: i_dDeviceID</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(8) —</td> <td>D: i_d4SerialNo</td> <td></td> <td></td> <td></td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B	(9)	(2) —	UW: i_uStart_IO_No		o_bOK: B	(10)	(3) —	W: i_wStation_No		o_bErr: B	(11)	(4) —	W: i_wTarget_CH		o_uErrId: UW	(12)	(5) —	W: i_wValidConf				(6) —	W: i_wVendorID				(7) —	D: i_dDeviceID				(8) —	D: i_d4SerialNo			
(1) —	B: i_bEN		o_bENO: B	(9)																																					
(2) —	UW: i_uStart_IO_No		o_bOK: B	(10)																																					
(3) —	W: i_wStation_No		o_bErr: B	(11)																																					
(4) —	W: i_wTarget_CH		o_uErrId: UW	(12)																																					
(5) —	W: i_wValidConf																																								
(6) —	W: i_wVendorID																																								
(7) —	D: i_dDeviceID																																								
(8) —	D: i_d4SerialNo																																								

Labels

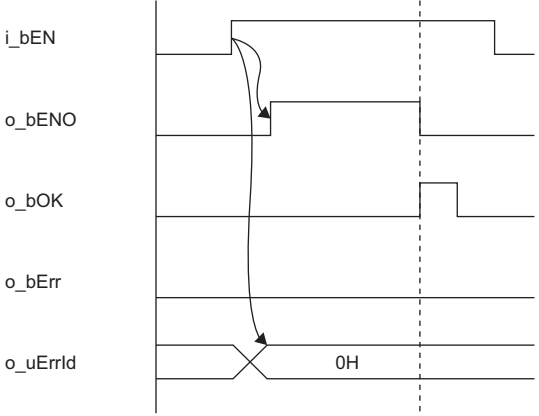
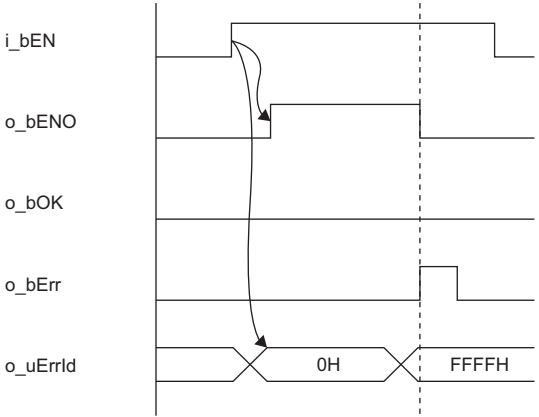
Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The module FB is activated. Off: The module FB is not activated.
(2)	i_uStart_IO_No	XY address of module mounted	Word [unsigned]	Depends on the number of I/O points of the CPU module.	Specifies the start I/O number to which CC-Link IE Field Network master/local module is mounted.
(3)	i_wStation_No	Station number	Word	1 to 120	Specifies the target station number of the NZ2GF12A-60IOLH8.
(4)	i_wTarget_CH	Target channel	Word	1 to 8	Specifies the channel from which the event data is read. If a value of 0 or less is set, channel 1 is specified, and if a value of 9 or more is set, channel 8 is specified.
(5)	i_wValidConf	Device validation setting	Word	00H to 02H	Sets the device validation. 00H: Disabled 01H: Verification of compatibility 02H: Verification of identification If 00H or less is set, the device validation setting is specified to 00H, and if 02H or more is set, the device validation setting is specified to 02H.
(6)	i_wVendorID	Vendor ID	Word	0000H to FFFFH	Specifies the vendor ID to be compared with the connected IO-Link device. For details on the specification method, refer to the following. ☞ Page 47 Vendor ID
(7)	i_dDeviceID	Device ID	Double word	00000000H to 00FFFFFFH	Specifies the device ID to be compared with the connected IO-Link device. Data in the most significant byte is ignored. Store 0. For details on the specification method, refer to the following. ☞ Page 47 Device ID
(8)	i_d4SerialNo	Serial number	Double word [signed] (0..3)	—	Specifies the serial number to be compared with the connected IO-Link device. For details on the specification method, refer to the following. ☞ Page 47 Serial number


■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(9)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(10)	o_bOK	Normal completion	Bit	The on state indicates that the module FB processing has been completed successfully.	Off
(11)	o_bErr	Error completion	Bit	The on state indicates that the module FB processing has been completed with an error.	Off
(12)	o_uErrId	Error code	Word [unsigned]	Error code is stored when the processing has been completed with an error.	0

FB details

Item	Description	
Available device	Target module	NZ2GF12A-60IOLH8
	Network module	<ul style="list-style-type: none"> • RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	362 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	
Functional description	When i_bEN (execution command) is turned on, the device validation of the specified channel is set.	
FB compilation method	Macro type	
FB operation	Pulse execution type (multiple scan execution type)	
FB_EN input condition	An interlock program needs to be created. Configure an interlock with the baton pass status of own station (on the master station) (SB0047), the baton pass status of each station (SW00A0 to SW00A7), and the remote READY (RWr0.b11).	
Timing chart of I/O signals	<ul style="list-style-type: none"> • When the processing is completed successfully  <ul style="list-style-type: none"> • When the processing is completed with an error 	
Precautions	<ul style="list-style-type: none"> • If this module FB is used in a program that will be executed only once (such as a subroutine program and a program that uses the FOR to NEXT instruction), i_bEN (execution command) is not turned off and the operation is not performed normally. To use this module FB in such programs, create a program to turn off i_bEN (execution command). • This module FB uses the index register (Z9). When an interrupt program is used, do not use the index register (Z9) in the interrupt program. • To reflect the setting in this FB, turn on the operating condition setting request flag after this module FB is executed. Separately create a program to reflect the setting. • Turn on the operating condition setting request flag after 500ms have passed from completion of the execution of this module FB. 	

Error code

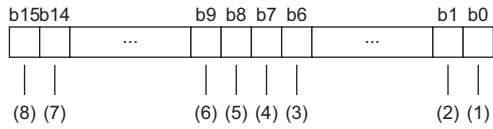
Error code	Description	Action
0100H	The station number is out of range between 1 and 120.	Check the setting, and execute the module FB again.
D000H to DFFFH	A failure has occurred in CC-Link IE Field Network.	For error codes, refer to the following manual.  MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

APPENDICES

Appendix 1 Input/Output Switching Setting

This item specifies the input/output of Q/CQ of each channel.

The channel and Q/CQ corresponding to each bit are indicated.



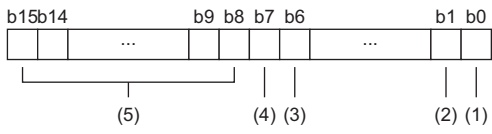
- (1) CH1, CQ 0: Input, 1: Output
- (2) CH1, Q 0: Input, 1: Output
- (3) CH4, CQ 0: Input, 1: Output
- (4) CH4, Q 0: Input, 1: Output
- (5) CH5, CQ 0: Input, 1: Output
- (6) CH5, Q 0: Input, 1: Output
- (7) CH8, CQ 0: Input, 1: Output
- (8) CH8, Q 0: Input, 1: Output

Appendix 2 Mode Switching Setting

This item specifies the mode of each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



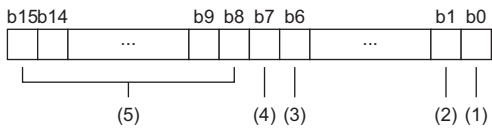
- (1) CH1 0: SIO mode, 1: IO-Link mode
- (2) CH2 0: SIO mode, 1: IO-Link mode
- (3) CH7 0: SIO mode, 1: IO-Link mode
- (4) CH8 0: SIO mode, 1: IO-Link mode
- (5) Not used

Appendix 3 Event Clear Setting

This item specifies whether to clear the event that has occurred on each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



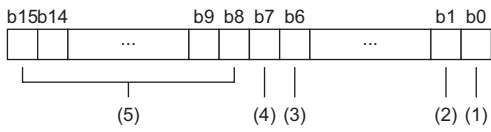
- (1) CH1 0: All events not cleared, 1: All events cleared
- (2) CH2 0: All events not cleared, 1: All events cleared
- (3) CH7 0: All events not cleared, 1: All events cleared
- (4) CH8 0: All events not cleared, 1: All events cleared
- (5) Not used

Appendix 4 Upper and Lower Byte Data Swap Setting

This item sets the upper and lower byte data swap of each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



- (1) CH1 0: Upper and lower byte data swap disabled, 1: Upper and lower byte data swap enabled
- (2) CH2 0: Upper and lower byte data swap disabled, 1: Upper and lower byte data swap enabled
- (3) CH7 0: Upper and lower byte data swap disabled, 1: Upper and lower byte data swap enabled
- (4) CH8 0: Upper and lower byte data swap disabled, 1: Upper and lower byte data swap enabled
- (5) Not used

Appendix 5 Process Data Size Setting

This item specifies the process data size for each channel in the device of successive 8 words.

Specify the process data size corresponding to each channel.

Do not store other data.

Device	Process data size
(Start device) + 0	CH1 process data size
(Start device) + 1	CH2 process data size
(Start device) + 2	CH3 process data size
(Start device) + 3	CH4 process data size
(Start device) + 4	CH5 process data size
(Start device) + 5	CH6 process data size
(Start device) + 6	CH7 process data size
(Start device) + 7	CH8 process data size

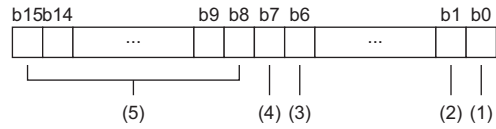
Appendix 6 Data Storage Setting

Data storage enable setting

This item specifies whether to enable/disable the data storage of each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



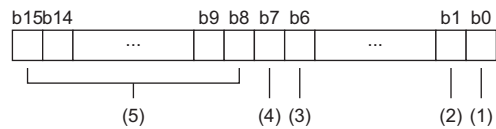
- (1) CH1 0: Data storage disabled, 1: Data storage enabled
- (2) CH2 0: Data storage disabled, 1: Data storage enabled
- (3) CH7 0: Data storage disabled, 1: Data storage enabled
- (4) CH8 0: Data storage disabled, 1: Data storage enabled
- (5) Not used

Upload setting

This item sets the data storage upload of each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



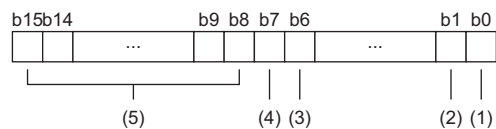
- (1) CH1 0: Upload disabled, 1: Upload enabled
- (2) CH2 0: Upload disabled, 1: Upload enabled
- (3) CH7 0: Upload disabled, 1: Upload enabled
- (4) CH8 0: Upload disabled, 1: Upload enabled
- (5) Not used

Download setting

This item sets the data storage download of each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



- (1) CH1 0: Download disabled, 1: Download enabled
- (2) CH2 0: Download disabled, 1: Download enabled
- (3) CH7 0: Download disabled, 1: Download enabled
- (4) CH8 0: Download disabled, 1: Download enabled
- (5) Not used

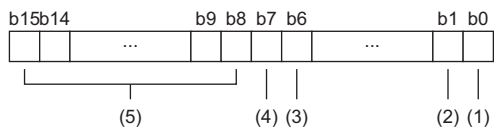


Data storage clear setting

This item specifies whether to clear the data storage parameters of each channel.

The channel corresponding to each bit is indicated.

Data in the upper byte is ignored. Store 0.



- (1) CH1 0: Parameters not deleted, 1: Parameters deleted
- (2) CH2 0: Parameters not deleted, 1: Parameters deleted
- (3) CH7 0: Parameters not deleted, 1: Parameters deleted
- (4) CH8 0: Parameters not deleted, 1: Parameters deleted
- (5) Not used

Appendix 7 Device Validation Setting

Vendor ID

This item specifies the vendor ID for the device validation.

Specify the vendor ID corresponding to each bit.

b15	b8 b7	b0
(1)	(2)	

(1) Vendor ID (upper)

(2) Vendor ID (lower)

Device ID

This item specifies the device ID for the device validation.

Specify the device ID corresponding to each bit.

b31	b16 b15	b0
(1)	(2)	

(1) Device ID (upper)

(2) Device ID (lower)

Serial number

This item specifies the serial number for the device validation.

Specify the serial number corresponding to each bit.

Device	b31 to b24	b23 to b16	b15 to b8	b7 to b0
(Start device) + 0	Serial number 4	Serial number 3	Serial number 2	Serial number 1
(Start device) + 1	Serial number 8	Serial number 7	Serial number 6	Serial number 5
(Start device) + 2	Serial number 12	Serial number 11	Serial number 10	Serial number 9
(Start device) + 3	Serial number 16	Serial number 15	Serial number 14	Serial number 13

A

MEMO

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M+NZ2GF12A-60IOLH8_RdInitOprSet_R	14
M+NZ2GF12A-60IOLH8_RdISDUData_R	18
M+NZ2GF12A-60IOLH8_RdStrData_R	22
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MEMO

REVISIONS

*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Description
April 2018	BCN-P5999-0989-A	First edition

Japanese manual number: BCN-P5999-0964-A

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mitsubishi electric corporation

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