MITSUBISHI ELECTRIC ENGINEERING

RFID Interface Module

MODEL

ECLEF-V680D2

FB Library Reference Manual

(For MELSEC iQ-R series)

Products for Monitoring and Traceability

CC-Link IE Field

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Reference Manual Revision History

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

Revision date	*Manual number.	Revision
Dec. 2015	50CM-D180209-A	First Edition
Sep. 2023	50CM-D180209-B	・Redesign of front and back covers ・Modified parts Section 2.2 P+MEE-ECLEF-V680D2_Read_R (Read ID tag) Section 2.3 P+MEE-ECLEF-V680D2_Write_R (Write to ID tag) ・Error correction Appendix 2 FB Library Application Examples

Japanese manual number: 50CM-D180204

1. Overview

1.1 Overview of the FB Library

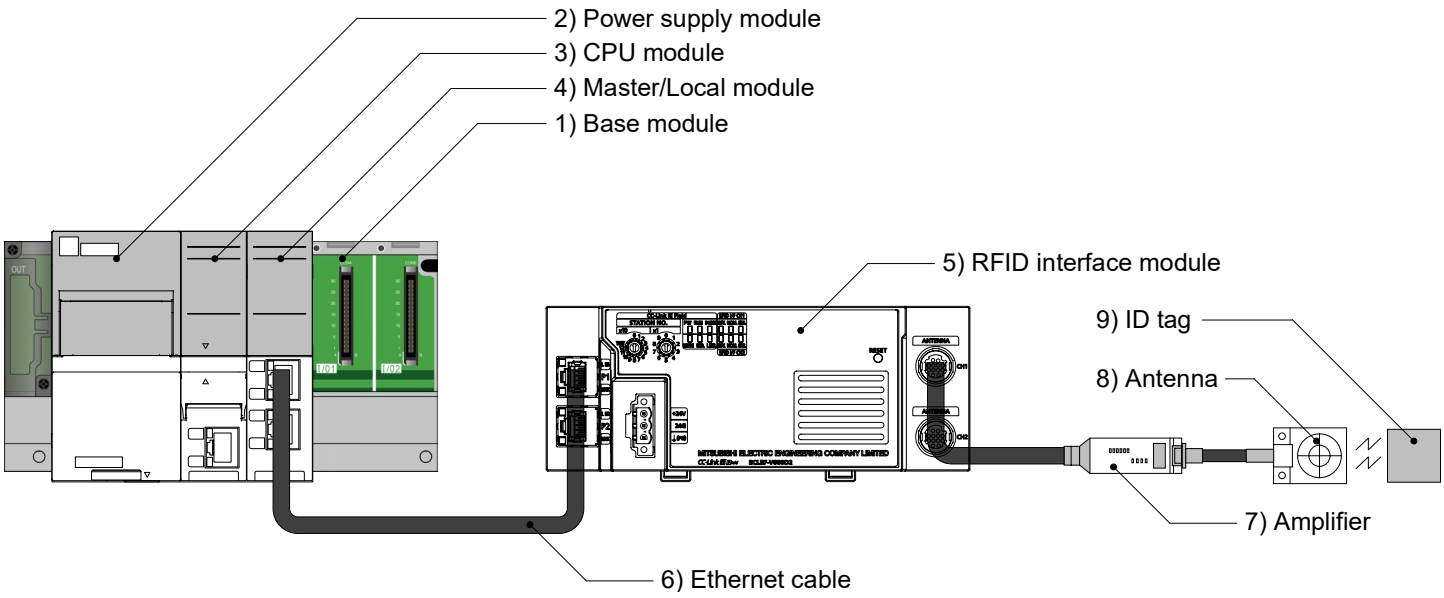
This FB library is the FB library for the system that uses the RFID interface unit ECLEF-V680D2 compatible with the OMRON V680 Series for CC-Link IE Field Network, using the MELSEC CC-Link system.

1.2 Function of the FB Library

No.	FB name (*1)	Description
1	P+MEE-ECLEF-V680D2_InitDataSet_R	Sets the initial data when a command is executed. (*2) *2 After turning on the power or releasing reset, be sure to perform this first.
2	P+MEE-ECLEF-V680D2_Read_R	Reads the data of an ID tag.
3	P+MEE-ECLEF-V680D2_Write_R	Writes data to an ID tag.
4	P+MEE-ECLEF-V680D2_Fill_R	Initializes the data of an ID tag using specified data.
5	P+MEE-ECLEF-V680D2_UIDRead_R	Reads the UID (unit identification number) of the ID tag.
6	P+MEE-ECLEF-V680D2_MeasureNoise_R	Measures the noise environment surrounding the antenna.
7	P+MEE-ECLEF-V680D2_InitDataRead_R	Reads the initial data settings.
8	P+MEE-ECLEF-V680D2_StatusRead_R	Read Module Status.
9	P+MEE-ECLEF-V680D2_Copy_R	Copies data of an ID tag between channel 1 and channel 2.

*1 This manual omits the version of the FB name.

1.3 System Configuration Examples



No.	Item	Description
1)	PLC	Base module: MELSEC iQ-R series
2)		Power supply module: R61P
3)		CPU module: Series: MELSEC iQ-R Series Model: R04CPU, R08CPU, R16CPU, R32CPU, R120CPU
4)	Master/Local module	RJ71GF11-T2
5)	RFID interface module	ECLEF-V680D2 CC-Link IE Field Network OMRON V680 series compatible RFID interface module
6)	Ethernet cable	Ethernet cable
7)	Amplifier	OMRON RFID system V680 series For compatible models, refer to the user's manual.
8)	Antenna	
9)	ID tag	

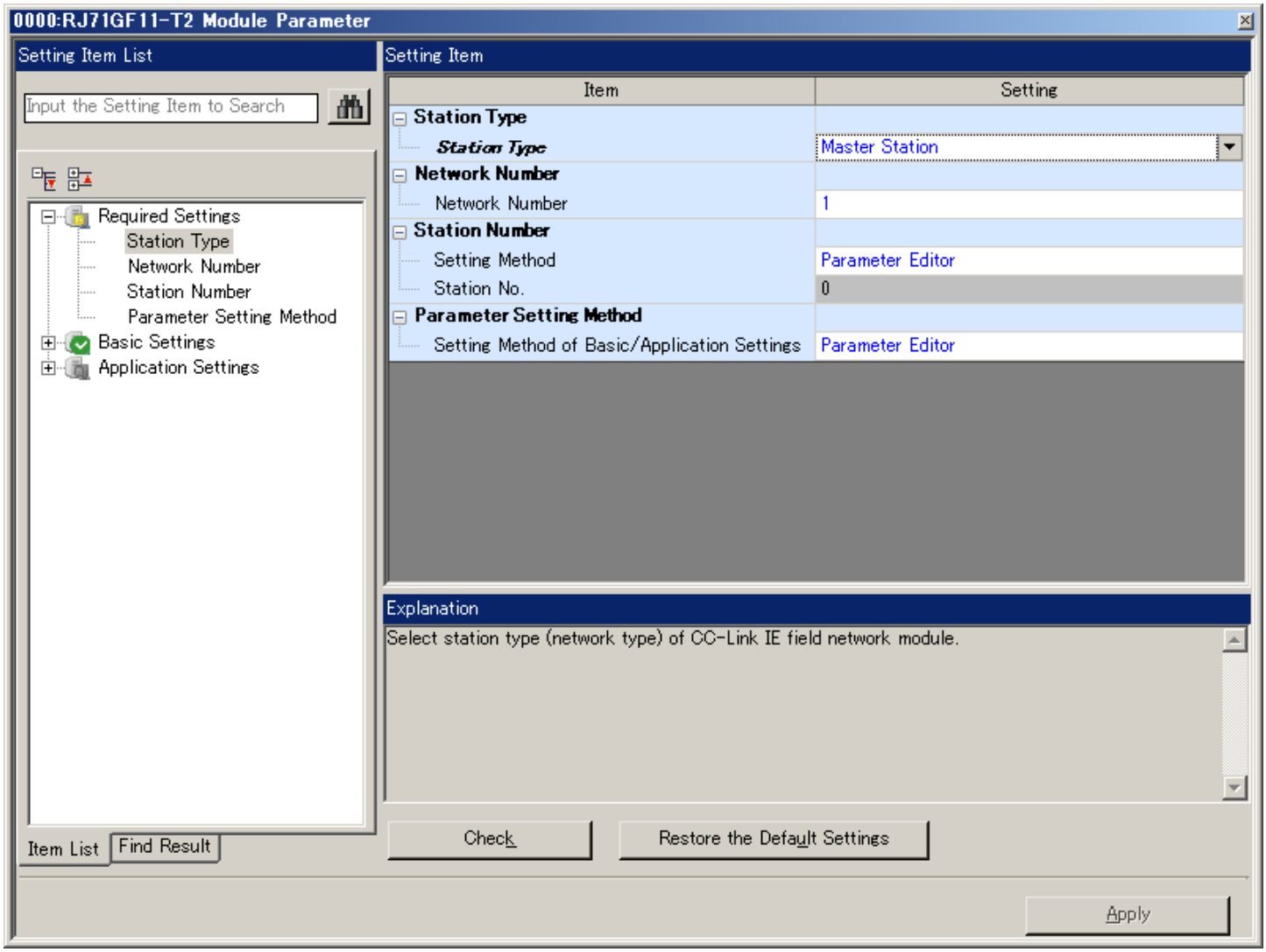
1.4 Setting the CC-Link IE Field Network Master/Local Module

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 Works3.

1.4.1 Unit parameter setting

Set as follows.

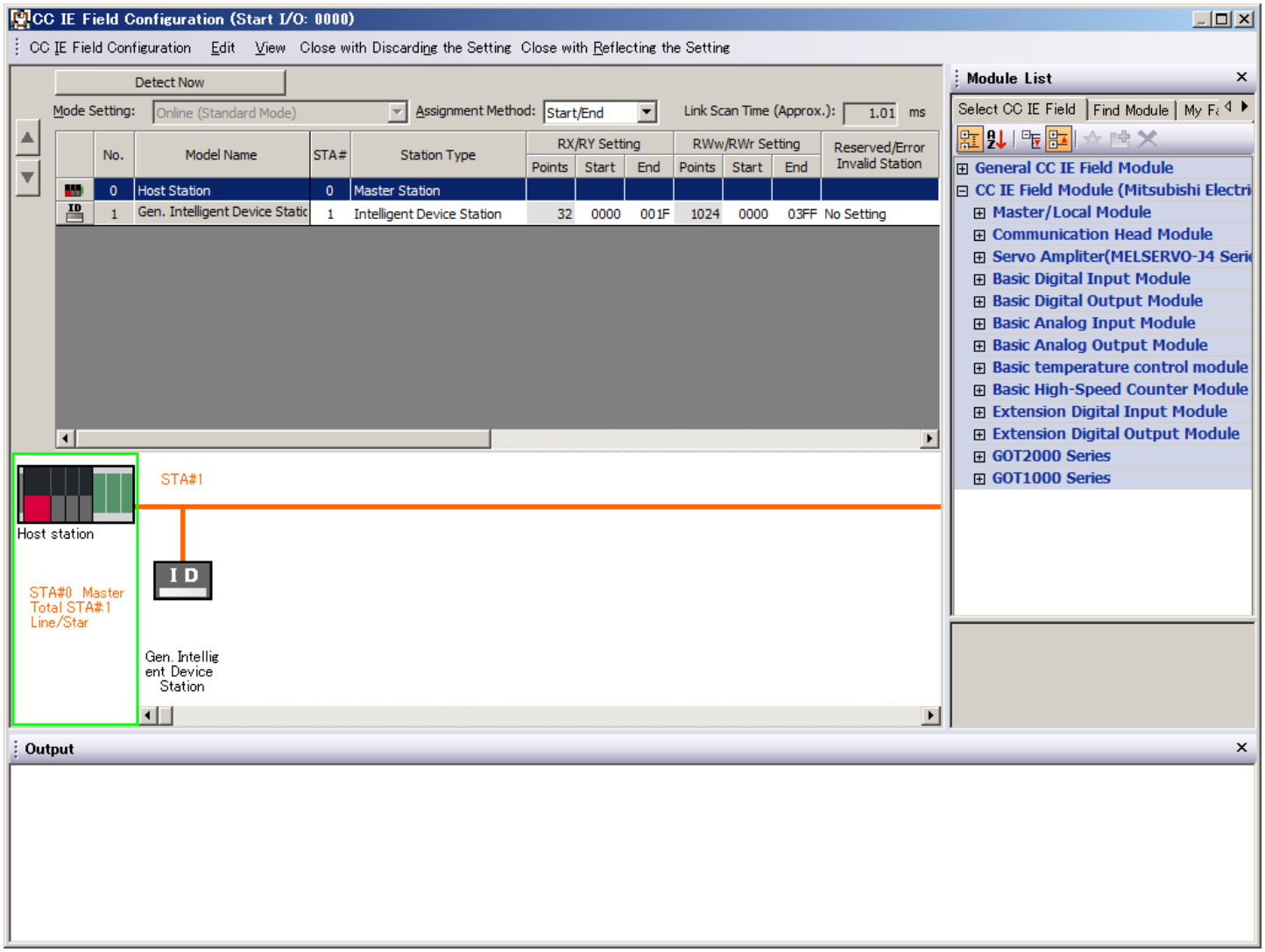
Item	Description
Station type	Set "Master station".
Network No.	1
Station number setting method	Configure "Set using parameters".
Basic/applied setting method	Configure "Set using parameters".



1.4.2 Setting network configuration

Set as follows.

Item	Description
Station Type	Set "Intelligent Device Station".
RX/RY Setting	Start: 0000 End: 001F
RWw/RWr Setting	Start: 0000 End: 03FF

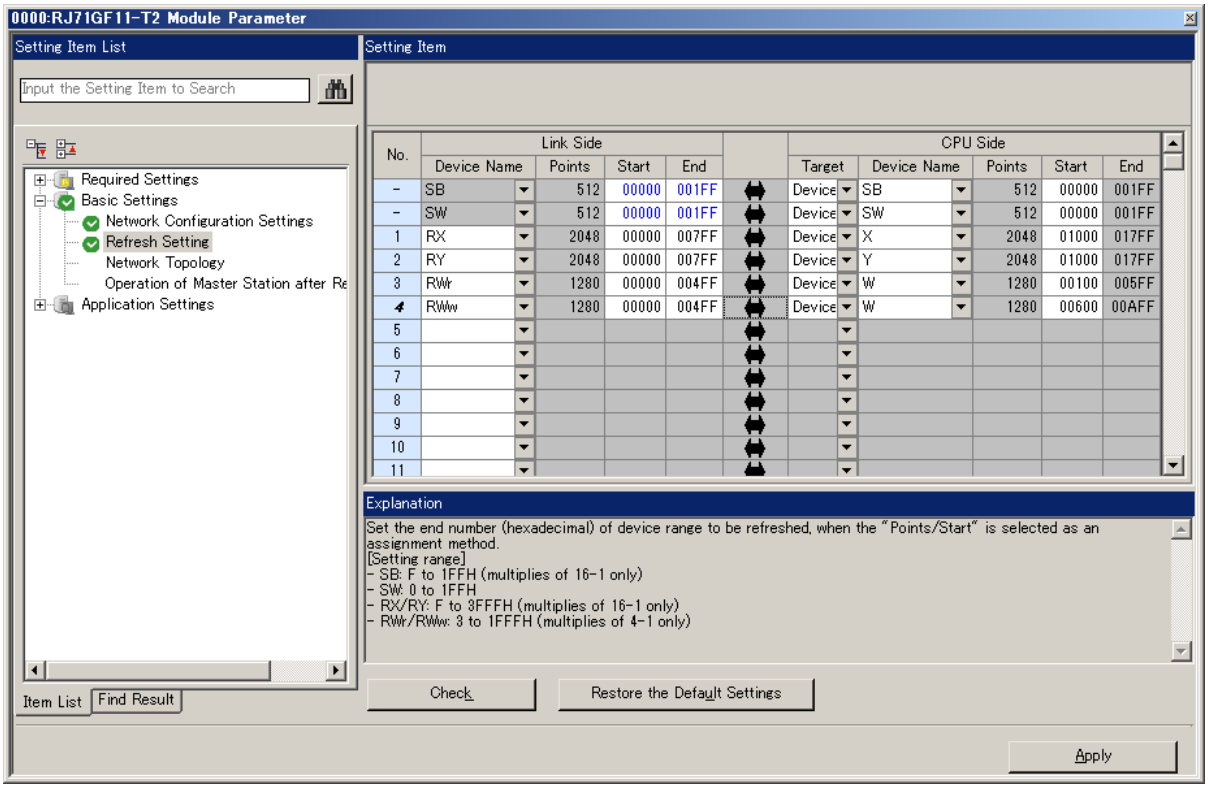


1.4.3 Refresh parameter setting

Set as follows.

Item	Description	
	Link Side	Link Side
Special relay (SB) refresh device	Device name: SB Start: 00000 End: 001FF	Refresh destination: specified device Device name: SB End: 00000
Special register (SW) refresh device	Device name: SW Start: 00000 End: 001FF	Refresh destination: specified device Device name: SW End: 00000
Remote input (RX) refresh device	Device name: RX Start: 00000 End: 007FF	Refresh destination: specified device Device name: X End: 01000
Remote output (RY) refresh device	Device name: RY Start: 00000 End: 007FF	Refresh destination: specified device Device name: Y End: 01000
Remote register (RWr) refresh device	Device name: RWr Start: 00000 End: 004FF	Refresh destination: specified device Device name: W End: 00100
Remote register (RWw) refresh device	Device name: RWw Start: 00000 End: 004FF	Refresh destination: specified device Device name: W End: 00600

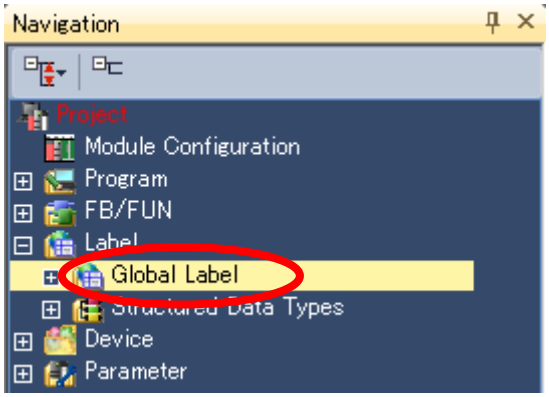
Link fresh settings for the IQ-R series PLC:



1.5 Setting Global Labels

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

Select "Global label" on the project tab in the navigation window.



G_RX Configure remote input (RX) settings.

Item	Description
Label name	Enter "G_RX".
Data type	Select "Bit".
Class	Select “VAR_GLOBAL”.
Assignment (device/label)	Enter by adding "Z9" to remote output (RX) entered in section 1.4.1. Enter "X1000Z9”.

G_RY Configure remote output (RY) settings.

Item	Description
Label name	Enter "G_RY”.
Data type	Select "Bit".
Class	Select “VAR_GLOBAL”.
Assignment (device/label)	Enter by adding "Z9" to remote output (RY) entered in section 1.4.1. Enter "Y1000Z9".

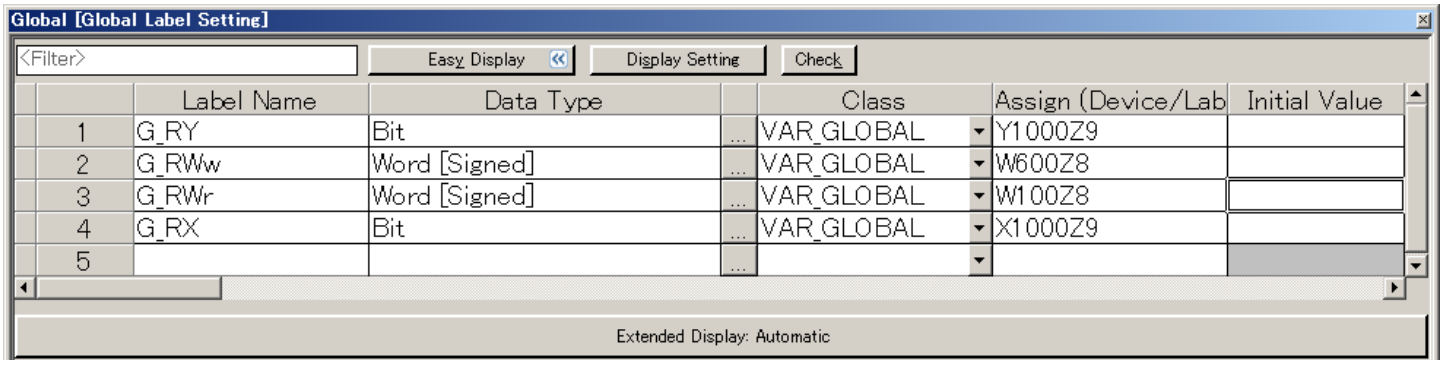
G_RWr Configure remote register (RWr) settings.

Item	Description
Label name	Enter "G_RWr”.
Data type	Select "Word [signed]".
Class	Select “VAR_GLOBAL”.
Assignment (device/label)	Enter by adding "Z8" to remote output (RWr) entered in section 1.4.1. Enter "W100Z8”.

G_RWw Configure remote register (RWw) settings.

Item	Description
Label name	Enter "G_RWw".
Data type	Select "Word [signed]".
Class	Select “VAR_GLOBAL”.
Assignment (device/label)	Enter by adding "Z8" to remote output (RWw) entered in section 1.4.1. Enter "W600Z8".

Global label settings for the IQ-R series PLC



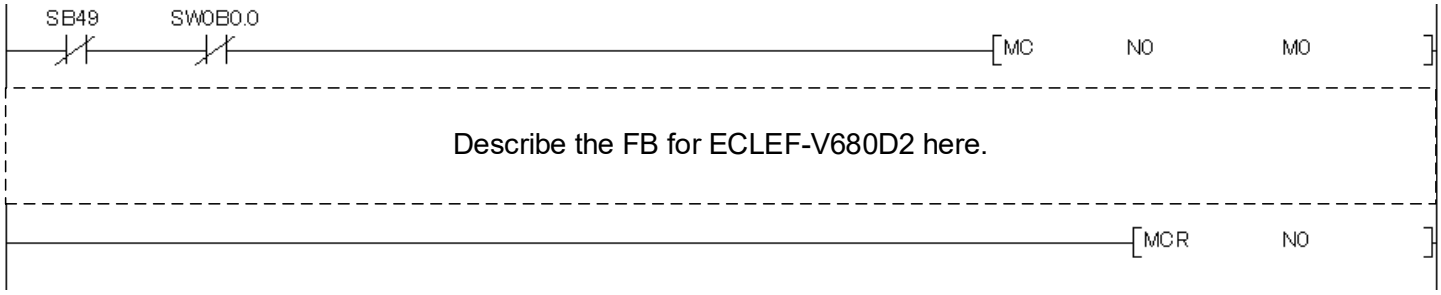
1.6 Creating Interlock Program

Interlock programs must be created for the FBs. The following is an example of an interlock program.
(Set a corresponding FB between MC and MCR instructions.)

In the interlock program, the following link special relay (SB) and the link special register (SW) should be interlocked.

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

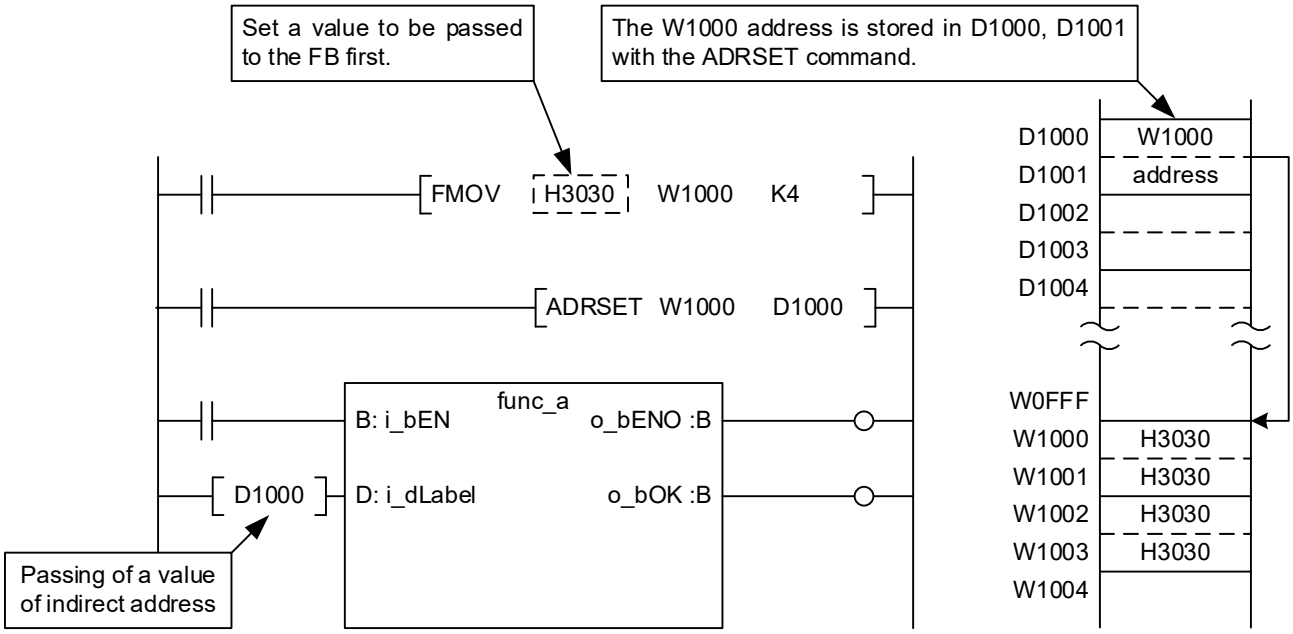
Example Interlock Examples (Station No.1)



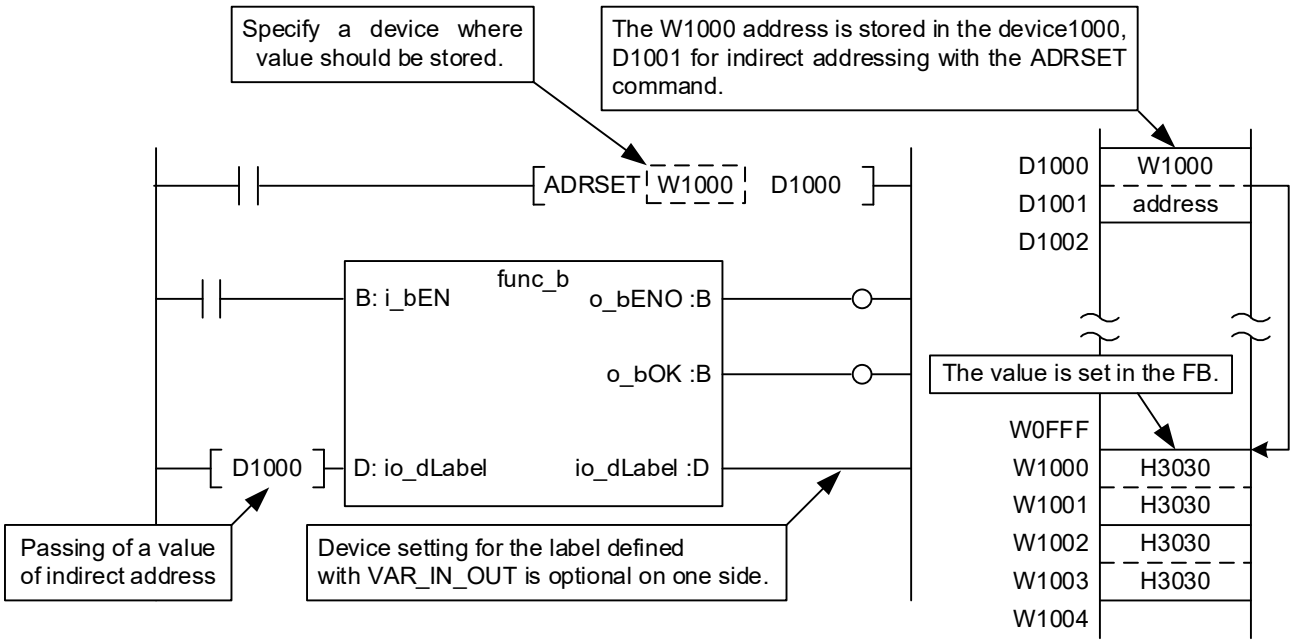
1.7 Indirect addressing

This FB library has an area for specifying an indirect address for input of the FB. Examples of using the indirect address are shown below:

(1) To pass a value (array) to the FB



(2) To get a value (array) from the FB



1.8 Relevant Manuals

- ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190)
- MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG)
- MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

1.9 Note

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

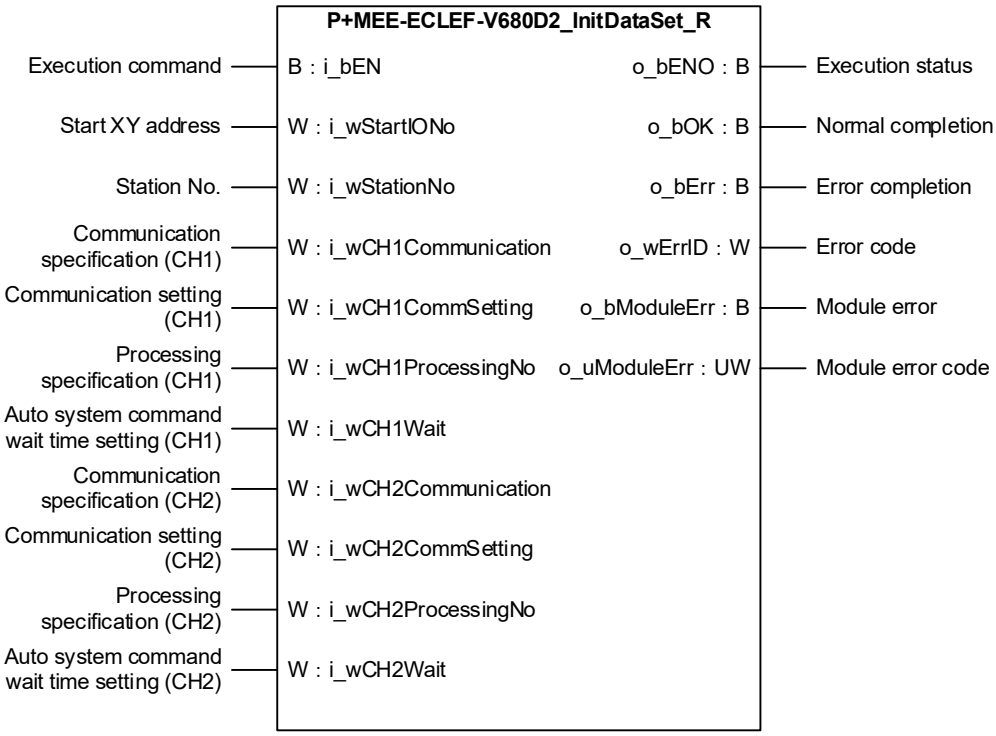
2. Details of the FB Library

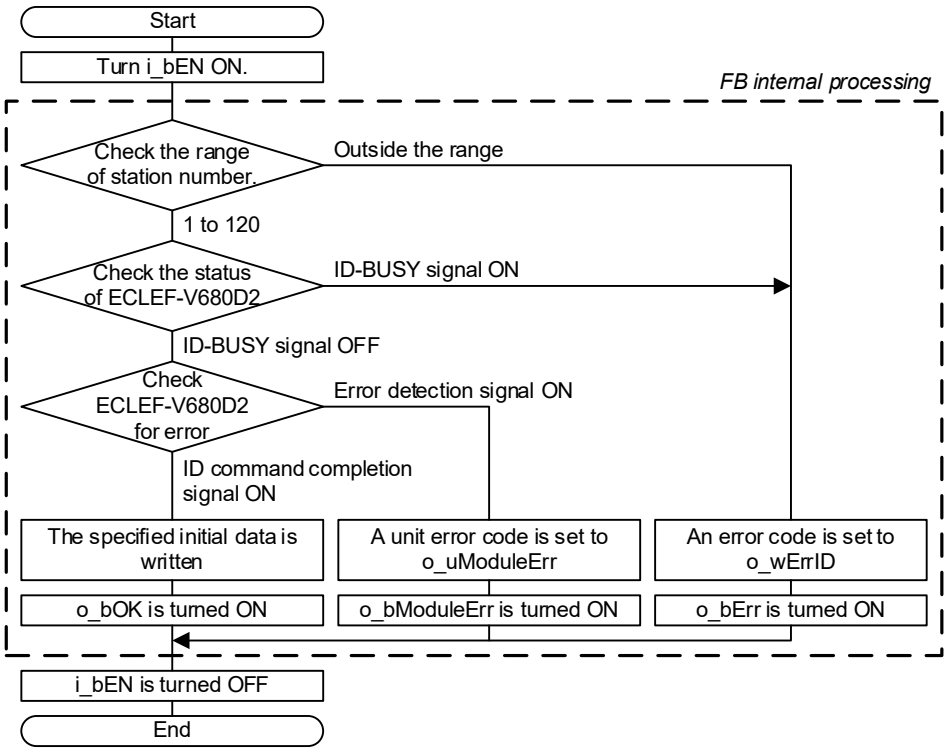
2.1 P+MEE-ECLEF-V680D2_InitDataSet_R (Initial data setting)

FB Name

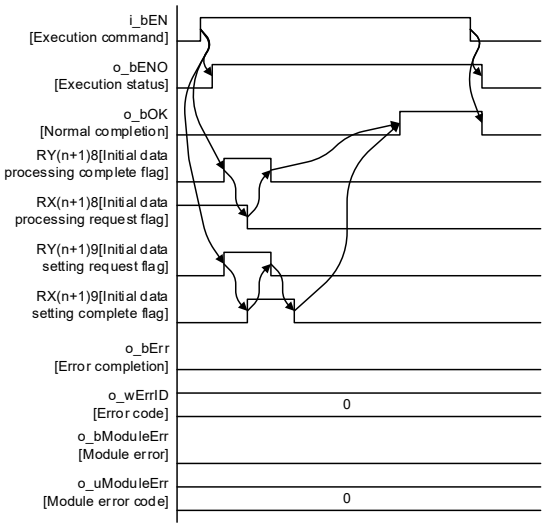
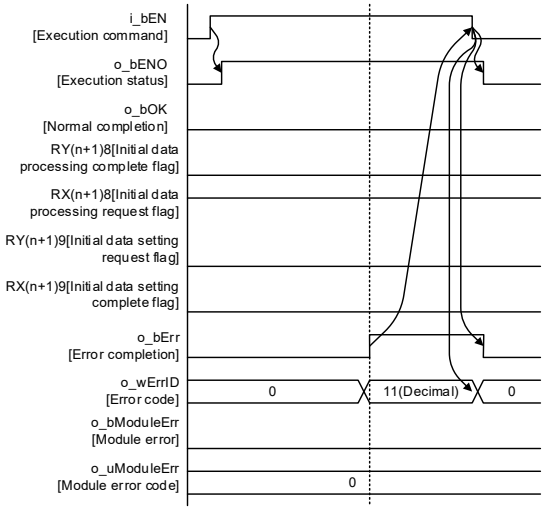
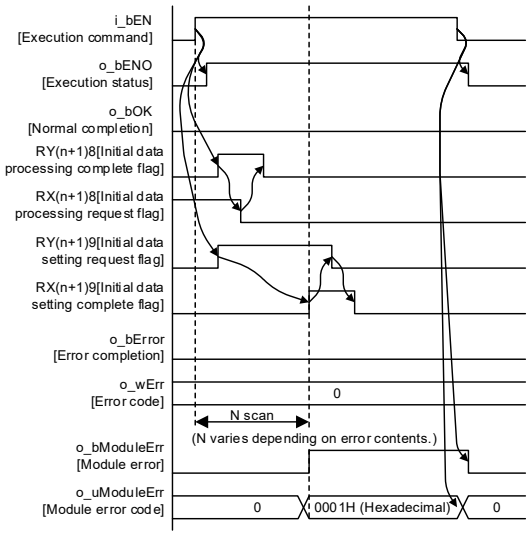
P+MEE-ECLEF-V680D2_InitDataSet_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Sets the initial data when a command is executed.
This should be performed when executing initial processing or changing initial data.
* After turning on the power or releasing reset, be sure to perform this first.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID Interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
</table>

Item	Description
Programming Language	Ladder
Number of steps	622Step (for MELSEC iQ-R series CPU) * The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) When i_bEN (Execution command) is turned ON, various initial data set is written to ECLEF-V680D2. When writing is completed, o_bOK (Normal completion) is turned ON.  2) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details. 3) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details.
Compiling method	Macro type

Item	Description
Restrictions and precautions	1) After turning on the power or releasing reset, be sure to perform this first. 2) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 3) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 4) Set the global label setting according to Section "1.5 Setting Global Labels". 5) The FB cannot be used in an interrupt program. 6) When multiple FBs are used, care should be taken not to use the same target station number. 7) Please ensure that the i_bEN 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. 8) This FB uses index registers Z5 to Z9. Please do not use these index registers in an interrupt program. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo (Start XY address) ・ i_wStationNo (Station No.) ・ i_wCH1Communication, i_wCH2Communication (Communication specification) ・ i_wCH1CommSetting, i_wCH2CommSetting (Communication setting) ・ i_wCH1ProcessingNo, i_wCH2ProcessingNo (Processing specification) ・ i_wCH1Wait, i_wCH2Wait (Auto system command wait time setting) 10) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 11) 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". 12) If the operation of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number or the remote output (RY) of the RFID interface unit is ON.
FB operation type	Pulsed execution (multiple scan execution type)

Item	Description
Timing chart	[When operation completes without error]  [When an error occurs]  [For Module error]  n: Address assigned to master station by station number setting.
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

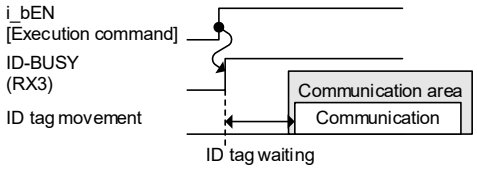
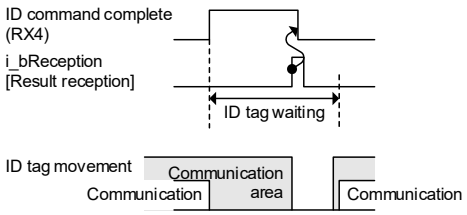
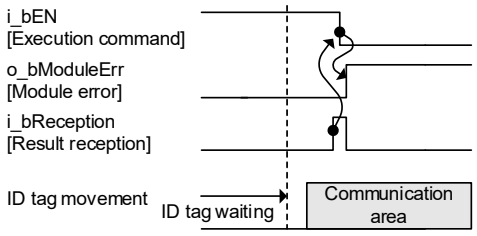
Error code	Description	Action
11 (Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
14 (Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input Labels

Name	Label Name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Communication specification	i_wCH1Communication (CH1) i_wCH2Communication (CH2)	Word	0: Trigger 1: Auto 2: Repeat auto 3: FIFO trigger 4: FIFO repeat	Specify the communication method for the ID tag.

<table>
<tr><th>Name</th><th>Label Name</th><th>Data type</th><th>Setting range</th><th>Description</th></tr>
<tr><td>Communication Setting</td><td>i_wCH1CommSetting (CH1)
i_wCH2CommSetting (CH2)</td><td>Word</td><td>0000 to 000F (Hexadecimal)</td><td>Select the communication setting for the ID tag.<table><tr><th>Bit</th><th>Description</th></tr><tr><td>0</td><td>Write verify setting
0: Execute
1: Do not execute</td></tr><tr><td>1</td><td>ID tag communication speed setting
0: Standard mode
1: High-speed mode</td></tr><tr><td>2</td><td>Write protect setting
0: Enable
1: Disable</td></tr><tr><td>3</td><td>Read/Write data code setting
0: Without ASCII/HEX conversion
1: With ASCII/HEX conversion</td></tr></table></td></tr>
<tr><td>Processing specification</td><td>i_wCH1ProcessingNo (CH1)
i_wCH2ProcessingNo (CH2)</td><td>Word</td><td>0, 1</td><td>Specify the order in which data is stored for the ID tag.<table><tr><th>Command</th><th>Processing specification</th></tr><tr><td>Read</td><td rowspan="3">Data storage order
0: Upper→Lower
1: Lower→Upper</td></tr><tr><td>Write</td></tr><tr><td>Fill Data</td></tr></table>For details, refer to the functional description of each command.
Commands other than the above do not use Processing specification.</td></tr>
</table>

Name	Label Name	Data type	Setting range	Description
Auto system Command wait time setting	i_wCH1Wait (CH1) i_wCH2Wait (CH2)	Word	1 to 9999, 0 (Decimal)	When i_wCH1Communication or i_wCH2Communication (Communication specification) is an auto system command (Auto, Repeat auto, FIFO repeat), specify the ID tag detection waiting time in the unit of 0.1 seconds. (For example, if the waiting time is 30 seconds, specify K300.) When 0 or value outside the effective range is specified, the detection waiting time is implemented until a response is received from the ID tag. The diagram below shows the waiting time when a command is executed by each FB. [For Auto, Repeat auto or FIFO repeat]  [For Repeat auto or FIFO repeat]  When the waiting time is set before i_bReception(Result reception) is turned ON expires, o_bModuleErr (Module error) is turned ON after i_bReception (Result reception) is turned ON. 

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.
Module error	o_bModuleErr	Bit	OFF	ON : Set Initial Data value error OFF: Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

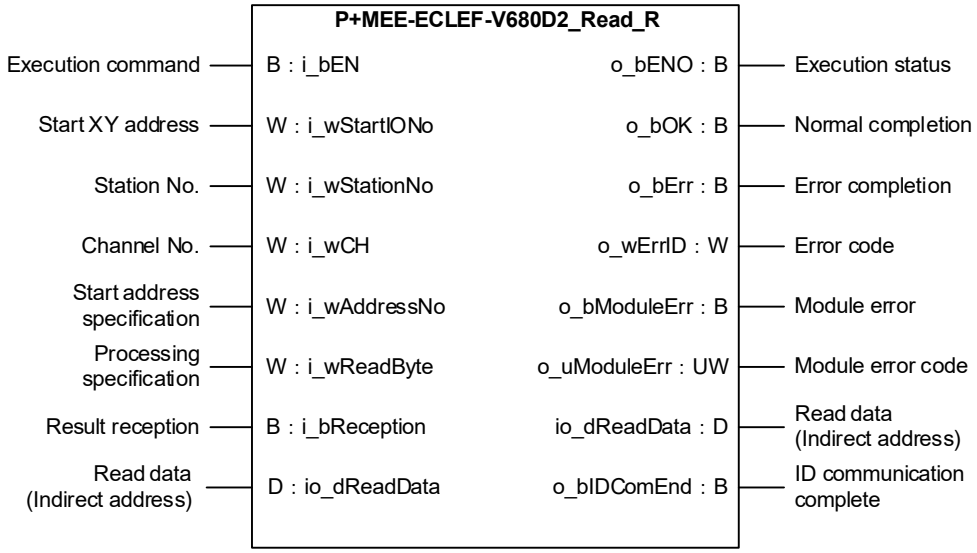
Please make sure to read user's manuals for the corresponding products before using the products.

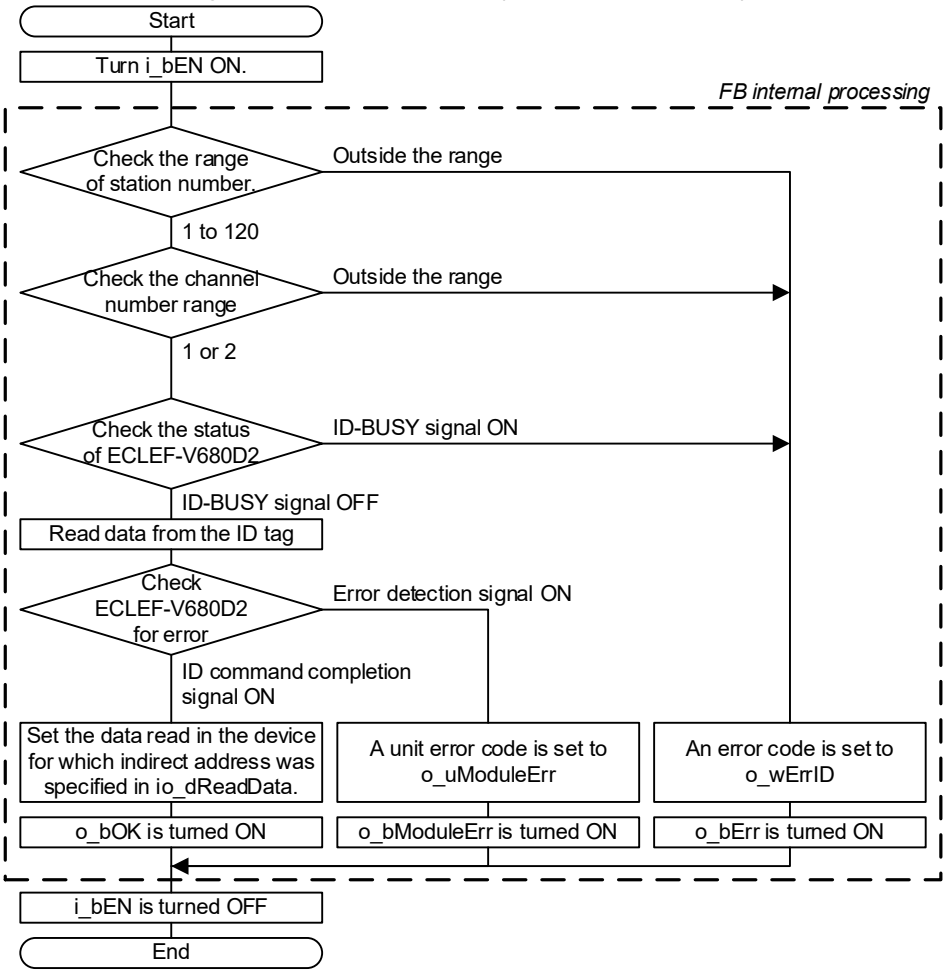
2.2 P+MEE-ECLEF-V680D2_Read_R (Read ID tag)

FB Name

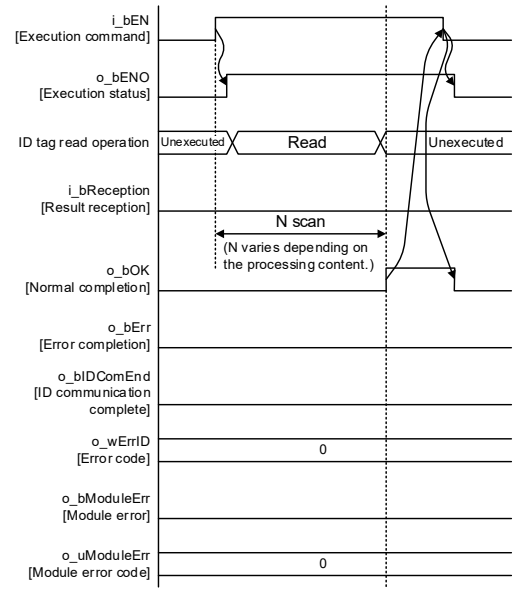
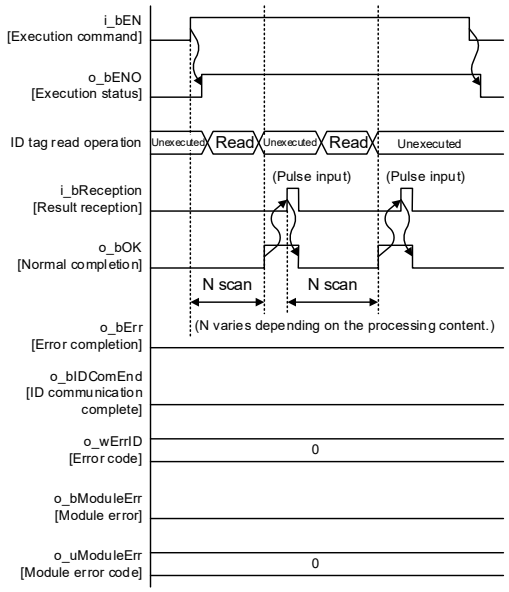
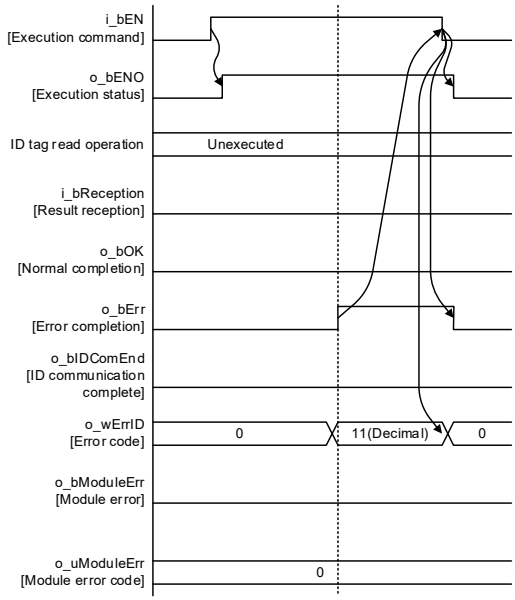
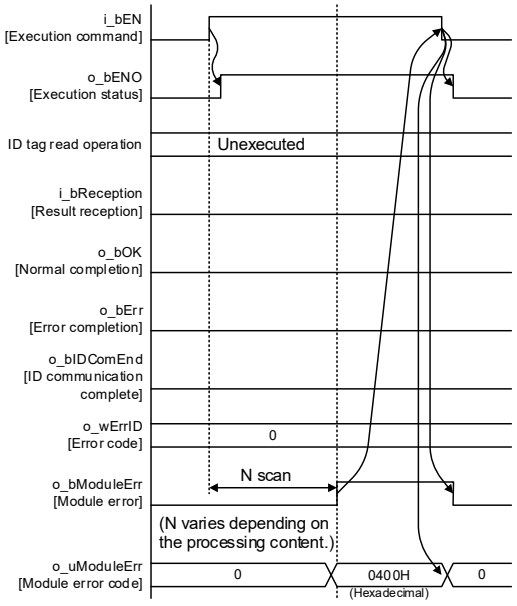
P+MEE-ECLEF-V680D2_Read_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Reads the data of an ID tag.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">986 (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN(Execution command) is turned ON, data with the number of bytes specified with i_wReadByte(Processing specification) is read from i_wAddressNo(Start address specification) in the ID tag. Data read is stored from the start device specified with io_dReadData (indirect address of read-out data). When reading is completed, o_bOK (Normal completion) is turned ON.  2) When Processing specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0, data is stored in order from the upper to the lower. When it is 1, data is stored in order from the lower to the upper. Example 0: Upper to the lower ID tag memory Address 0010 Data1 0011 Data2 0012 Data3 0013 Data4 → CPU unit devices Data1 Data2 Data3 Data4 1: lower to the upper ID tag memory Address 0010 Data1 0011 Data2 0012 Data3 0013 Data4 → CPU unit devices Data2 Data1 Data4 Data3 3) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 2(Repeat auto) or 4(FIFO repeat), the next ID tag detection will start when i_bReception(Result reception) is turned ON.

Item	Description
	4) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details. 5) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details. 6) When i_bEN(Execution command) is turned OFF during read-out operation, processing of the FB is suspended. Data read is stored in the device specified with io_dReadData (indirect address of read-out data) until processing is suspended.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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. 7) This FB uses index registers Z5 to Z9 and data registers D5000 to D5001. When an interrupt program is used, do not use these index registers and data registers. 8) For Communication specification, Communication setting, Processing specification and auto system command waiting time settings in the read of the ID tag, specify using P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) before executing this FB. 9) For io_dReadData (indirect address of read-out data), be sure to specify the indirect address of the device where data read is stored. The indirect address of the device is acquired using the ADRSET command. This may not be omitted. For details about indirect address, refer to section 1.7. 10) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo(Station No.) ・ i_wCH(Channel No.) ・ i_wAddressNo(Start address specification) ・ i_wReadByte(Processing specification) 11) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0 (trigger), 1 (auto) or 3 (FIFO trigger), i_bReception(Result reception) is ignored. 12) Enter pulse in i_bReception(Result reception). 13) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using.

Item	Description
	14) 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". 15) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)
Timing chart	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [For Module error] 

Item	Description
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

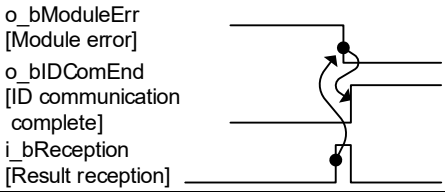
Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
13(Decimal)	i_wReadByte(Processing specification) is outside the specified range.	[Trigger] Specify value in the 0001 to 0800 range (Hexadecimal) for Processing specification. [Other than trigger] Specify the amount of data that can be read with a single ID command. For detailed range, refer to the RFID interface unit user's manual (details).
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the channel number where data is read.
Start address specification	i_wAddressNo	Word	0000 to FFFF (Hexadecimal)	Specify the start address where the ID tag is read.
Processing specification	i_wReadByte	Word	[Trigger] 0001 to 0800 (Hexadecimal) [Other than trigger] Depends on the amount of data that can be read with a single ID command. For detailed range, refer to the RFID interface unit user's manual (details).	Specify the number of bytes for processing to read from the ID tag.
Result reception	i_bReception	Bit	-	When the command that performs the read operation from multiple ID tags is executed, input a pulse to receive the next results. ON: Starts to detect the next ID tag
Read data (Indirect address)	io_dReadData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the indirect address of the device where data read is stored. For details about indirect address, refer to section 1.7.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.
Module error	o_bModuleErr	Bit	OFF	ON: An error occurred in the RFID interface unit. OFF: Normal
Module Error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.
Read data (Indirect address)	io_dReadData	Double word	-	Data read from the ID tag is stored for the number of bytes specified with Processing specification from the device specified with the indirect address.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface unit due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	First Edition
01A	Sep. 1, 2023	Function Optimization

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.

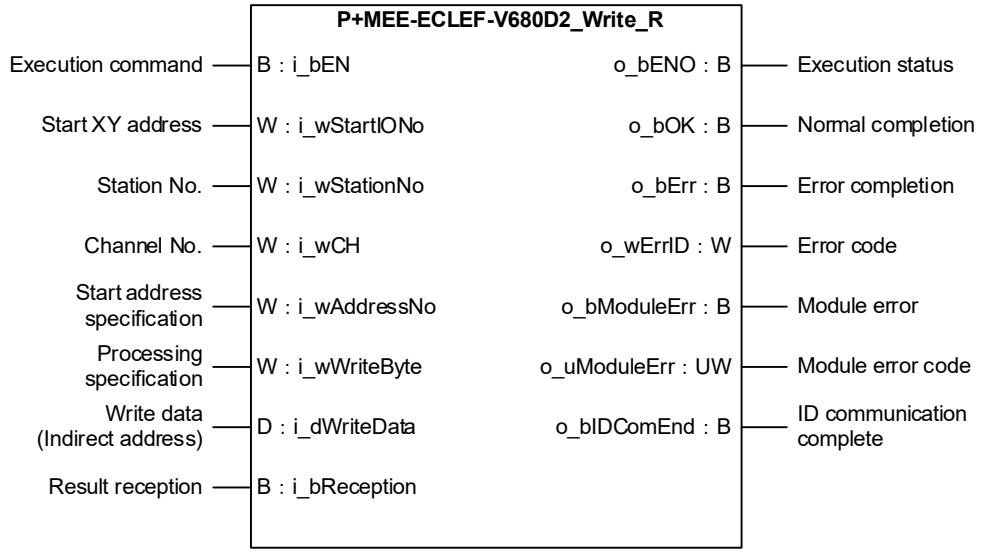
Please make sure to read user's manuals for the corresponding products before using the products.

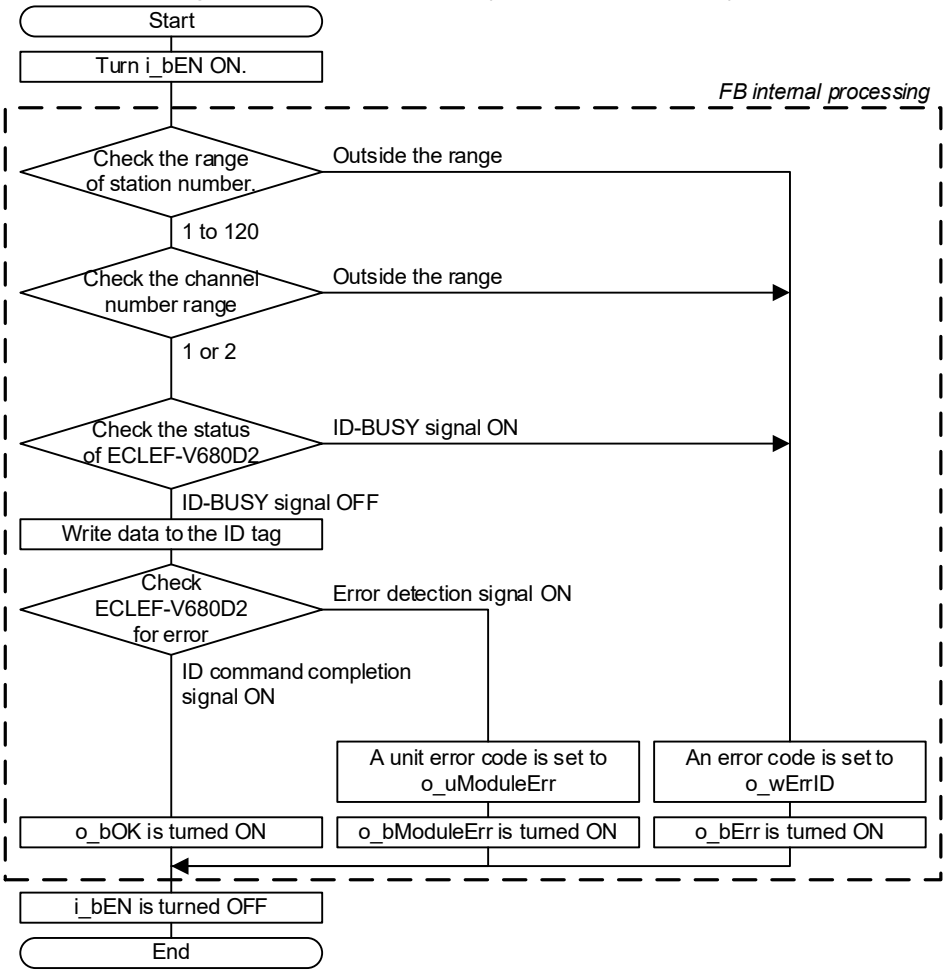
2.3 P+MEE-ECLEF-V680D2_Write _R (Write to ID tag)

FB Name

P+MEE-ECLEF-V680D2_Write_R

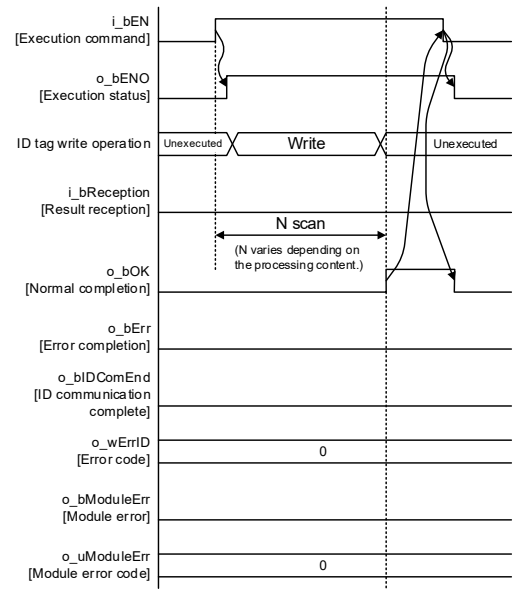
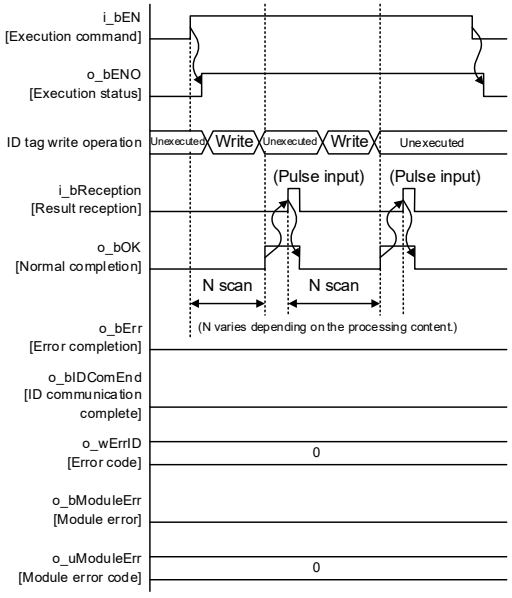
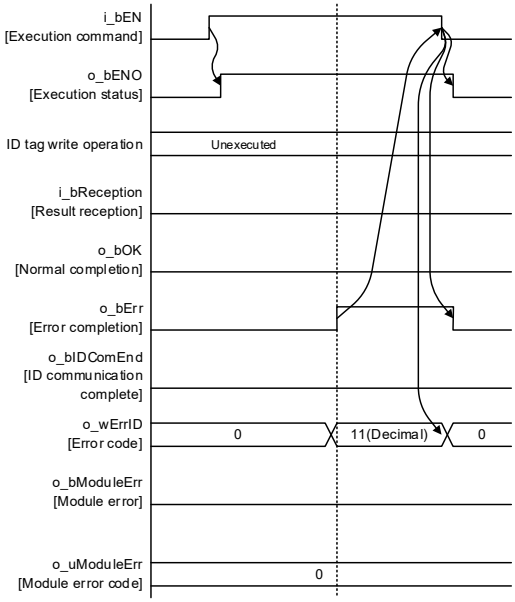
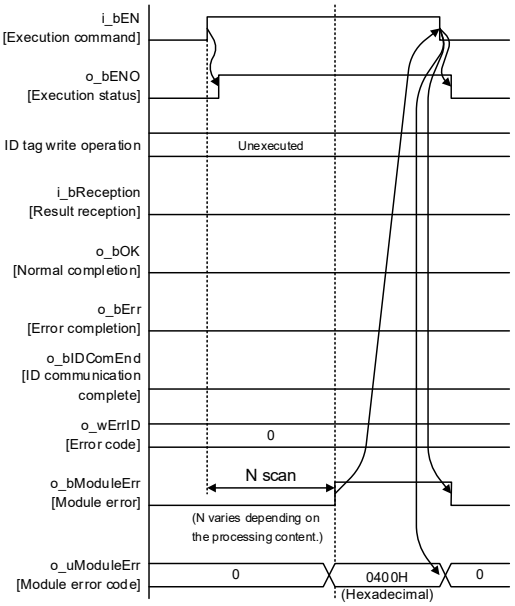
Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Writes data to an ID tag.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming Language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">998Step (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN(Execution command) is turned ON, data stored from the start devices specified with i_dWriteData (indirect address of write data) is written for the number of bytes specified with i_wWriteByte(Processing specification) from i_wAddressNo(Start address specification) in the ID tag. When writing is completed, o_bOK (Normal completion) is turned ON.  2) When Processing specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0, data is stored in order from the upper to the lower. When it is 1, data is stored in order from the lower to the upper. Example 0: Upper to the lower CPU unit devices: Data1 Data2 / Data3 Data4 → ID tag memory: 0010 Data1, 0011 Data2, 0012 Data3, 0013 Data4 1: Lower to the upper CPU unit devices: Data2 Data1 / Data4 Data3 → ID tag memory: 0010 Data1, 0011 Data2, 0012 Data3, 0013 Data4 3) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 2(Repeat auto) or 4(FIFO repeat), the next ID tag detection will start when i_bReception(Result reception) is turned ON.

Item	Description
	4) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details. 5) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details. 6) When i_bEN(Execution command) is turned OFF during write operation, processing of the FB is suspended. When data is being written to the ID tag, data before suspension is written.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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. 7) This FB uses index registers Z5 to Z9 and data registers D5000 to D5001. When an interrupt program is used, do not use these index registers and data registers. 8) For Communication specification, Communication setting, Processing specification and auto system command waiting time settings in the write of the ID tag, specify using P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) before executing this FB. 9) For i_dWriteData (indirect addressing of write data), be sure to specify the indirect address of the device where data to be written was stored. The indirect address of the device is acquired using the ADRSET command. This may not be omitted. For details about indirect address, refer to section 1.7. 10) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo (Start XY address) ・ i_wStationNo (Station No.) ・ i_wCH (Channel No.) ・ i_wAddressNo (Start address specification) ・ i_wWriteByte (Processing specification) ・ i_dWriteData (Indirect addressing of write data)

Item	Description
	11) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0 (trigger), 1 (auto) or 3 (FIFO trigger), i_bReception(Result reception) is ignored. 12) Enter pulse in i_bReception(Result reception). 13) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 14) 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". 15) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)

Item	Description
Timing chart	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [For Module error] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
13(Decimal)	i_wWriteByte(Processing specification) is outside the specified range.	[Trigger] Specify value in the 0001 to 0800 range (Hexadecimal) for Processing specification. [Other than trigger] Specify the amount of data that can be Write with a single ID command. For detailed range, refer to the RFID interface unit user's manual (details).
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

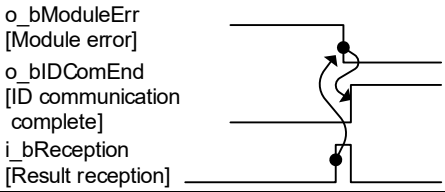
Labels

■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the channel number where writes data to an ID tag.
Start address specification	i_wAddressNo	Word	0000 to FFFF (Hexadecimal)	Specify the initial address where writes data to an ID tag.
Processing specification	i_wWriteByte	Word	[Trigger] 0001 to 0800 (Hexadecimal) [Other than trigger] Depends on the amount of data that can be write with a single ID command. For detailed range, refer to the RFID interface unit user's manual (details).	Specify the number of bytes for processing to writes data to an ID tag.
Write data (Indirect address)	i_dWriteData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the indirect address of the device where data to be written was stored. For details about indirect address, refer to section 1.7. For write data, write data for the number of bytes specified with i_dWriteByte(Processing specification).

Name	Label name	Data type	Setting range	Description
Result reception	i_bReception	Bit	-	When the command that performs the write operation to multiple ID tags is executed, input a pulse to receive the next results. ON: Starts to detect the next ID tag.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: EXECUTION COMMAND IS ON. OFF: EXECUTION COMMAND IS OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.
Module error	o_bModuleErr	Bit	OFF	ON: An error occurred in the RFID interface unit. OFF: Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface unit due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	First Edition
01A	Sep. 1, 2023	Function Optimization

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.

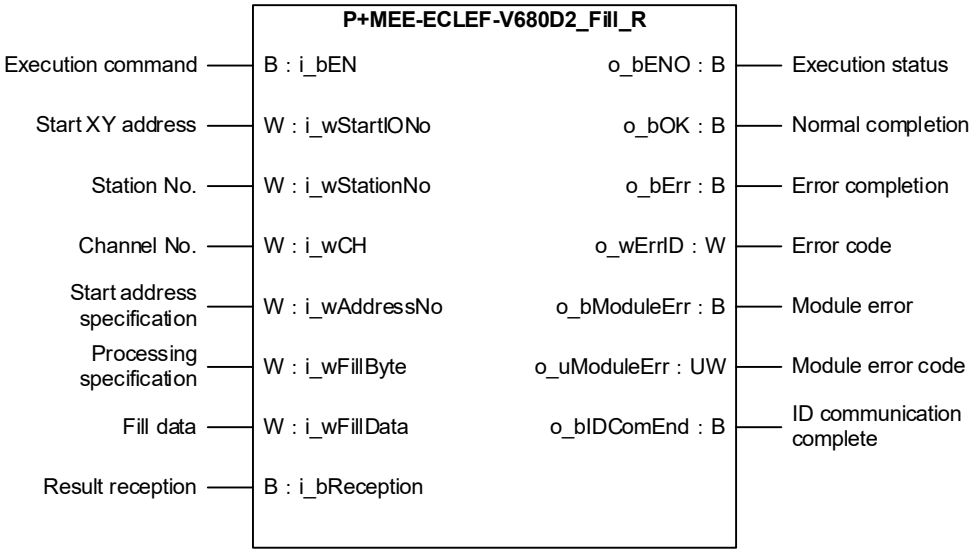
Please make sure to read user's manuals for the corresponding products before using the products.

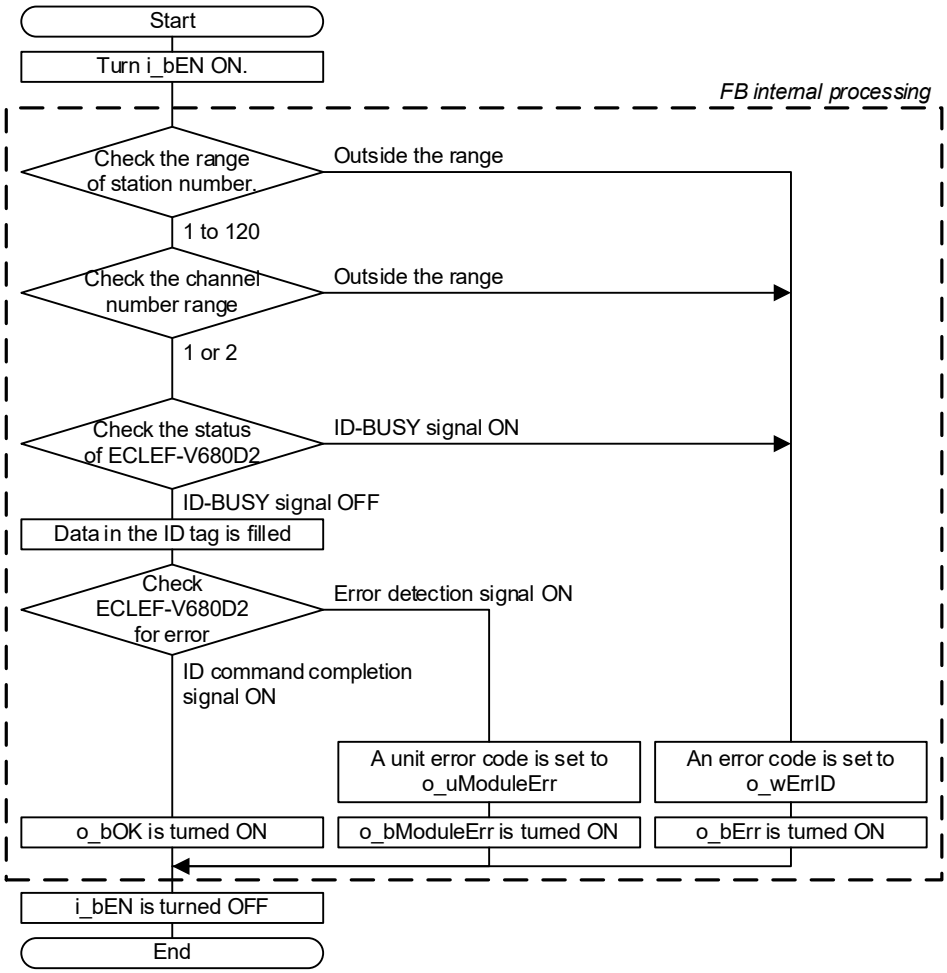
2.4 P+MEE-ECLEF-V680D2_Fill_R (Fill Data in ID Tag)

FB Name

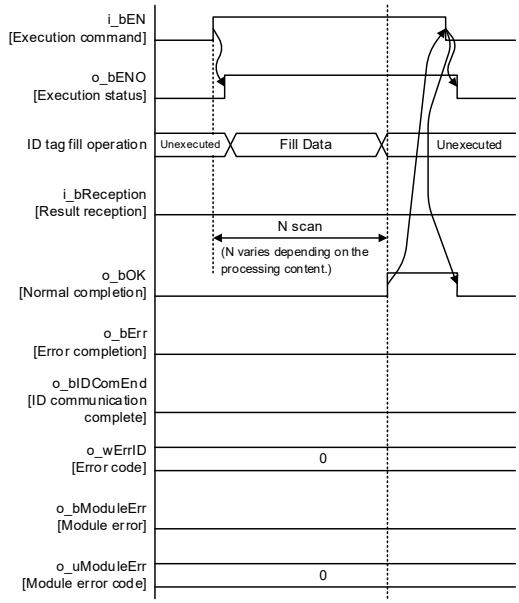
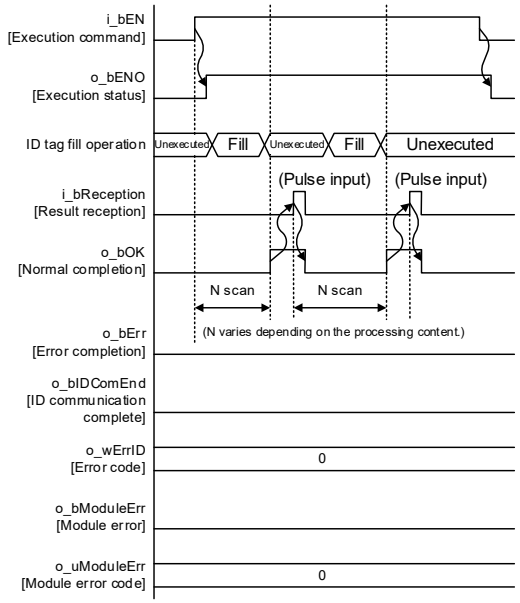
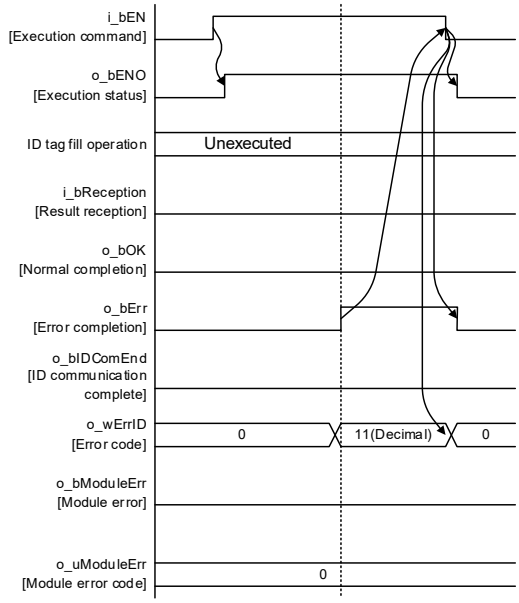
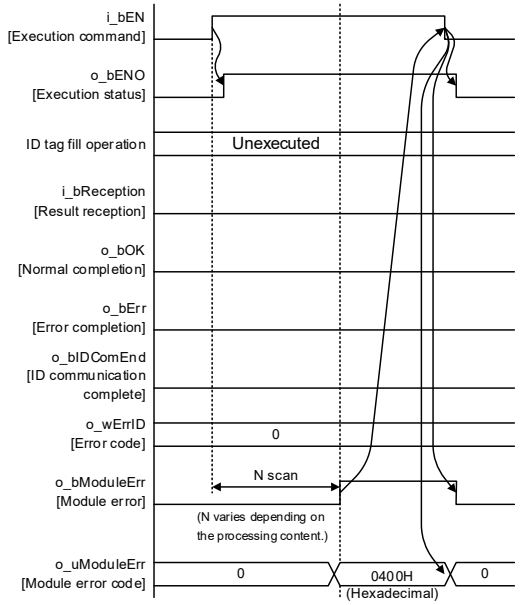
P+MEE-ECLEF-V680D2_Fill_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Initializes the data of an ID tag using specified data.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming Language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">865Step (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN(Execution command) is turned ON, the number of bytes specified with i_wFillByte(Processing specification) from i_wAddressNo(Start address specification) in the ID tag is filled. When filling is completed, o_bOK (Normal completion) is turned ON.  2) When Processing specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0, data is stored in order from the upper to the lower. When it is 1, data is stored in order from the lower to the upper. 0: Upper to the lower Fill data: Data1 | Data2 → ID tag memory: 0010 Data1, 0011 Data2, 0012 Data1, 0013 Data2 1: Lower to the upper Fill data: Data2 | Data1 → ID tag memory: 0010 Data1, 0011 Data2, 0012 Data1, 0013 Data2 3) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 2(Repeat auto) or 4(FIFO repeat), the next ID tag detection will start when i_bReception(Result reception) is turned ON. 4) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details.

Item	Description
	5) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details. 6) When i_bEN(Execution command) is turned OFF during fill operation, processing of the FB is suspended. When data is being written to the ID tag, data is written to the end.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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. 7) This FB uses index registers Z5 to Z9. When an interrupt program is used, do not use these index registers. 8) For Communication specification, Communication setting, Processing specification and auto system command waiting time settings in data fill of the ID tag, specify using P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) before executing this FB. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo(Station No.) ・ i_wCH(Channel No.) ・ i_wAddressNo(Start address specification) ・ i_wFillByte(Processing specification) ・ i_wFillData(Fill data) 10) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0 (trigger), 1 (auto) or 3 (FIFO trigger), i_bReception(Result reception) is ignored. 11) In data fill, the write protect does not function, because all data in the ID tag is initialized. 12) Enter pulse in i_bReception(Result reception). 13) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 14) 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".

Item	Description
	15) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)
Timing chart	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [For Module error] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

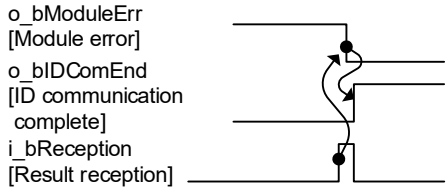
Labels

■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the channel number where the ID tag is filled.
Start address specification	i_wAddressNo	Word	0000 to FFFF (Hexadecimal)	Specify the initial address where the ID tag is filled.
Processing specification	i_wFillByte	Word	0001 to 0800, 0 (Hexadecimal) Depends on the memory capacity of the target ID tag. For detailed range, refer to the RFID interface unit user's manual (details).	Specify the number of bytes for processing to fill the ID tag. 0: Fills all data in the ID tag.

Name	Label name	Data type	Setting range	Description
Fill data	i_wFillData	Word	0000 to FFFF (Hexadecimal)	Specify data to be filled. With the fill operation, data is written for the number of bytes specified with i_wFillByte (Processing specification).
Result reception	i_bReception	Bit	-	When the command that performs the fill operation in multiple ID tags is executed, input a pulse to receive the next results. ON: Starts to detect the next ID tag.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: EXECUTION COMMAND IS ON. OFF: EXECUTION COMMAND IS OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.
Module error	o_bModuleErr	Bit	OFF	ON: An error occurred in the RFID interface unit. OFF: Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface unit due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

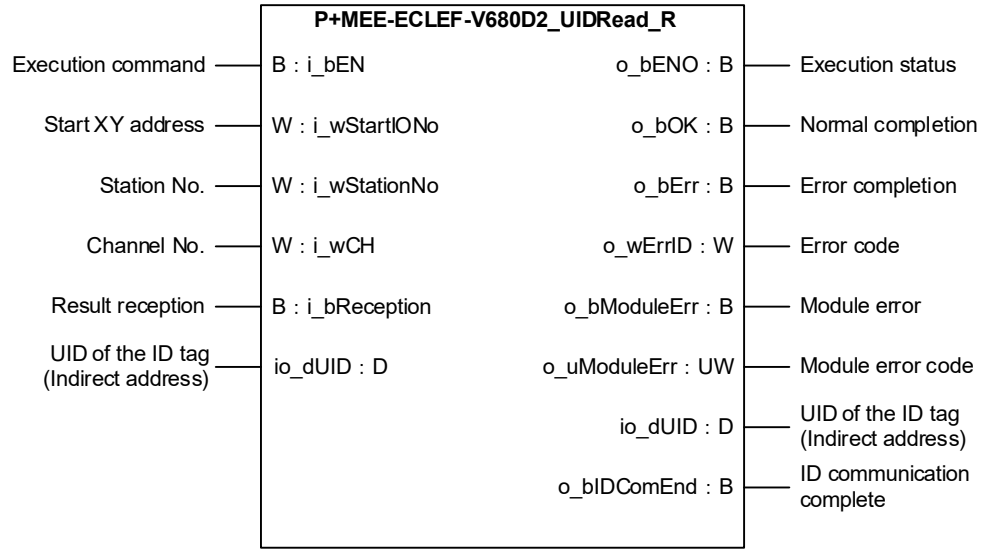
Please make sure to read user's manuals for the corresponding products before using the products.

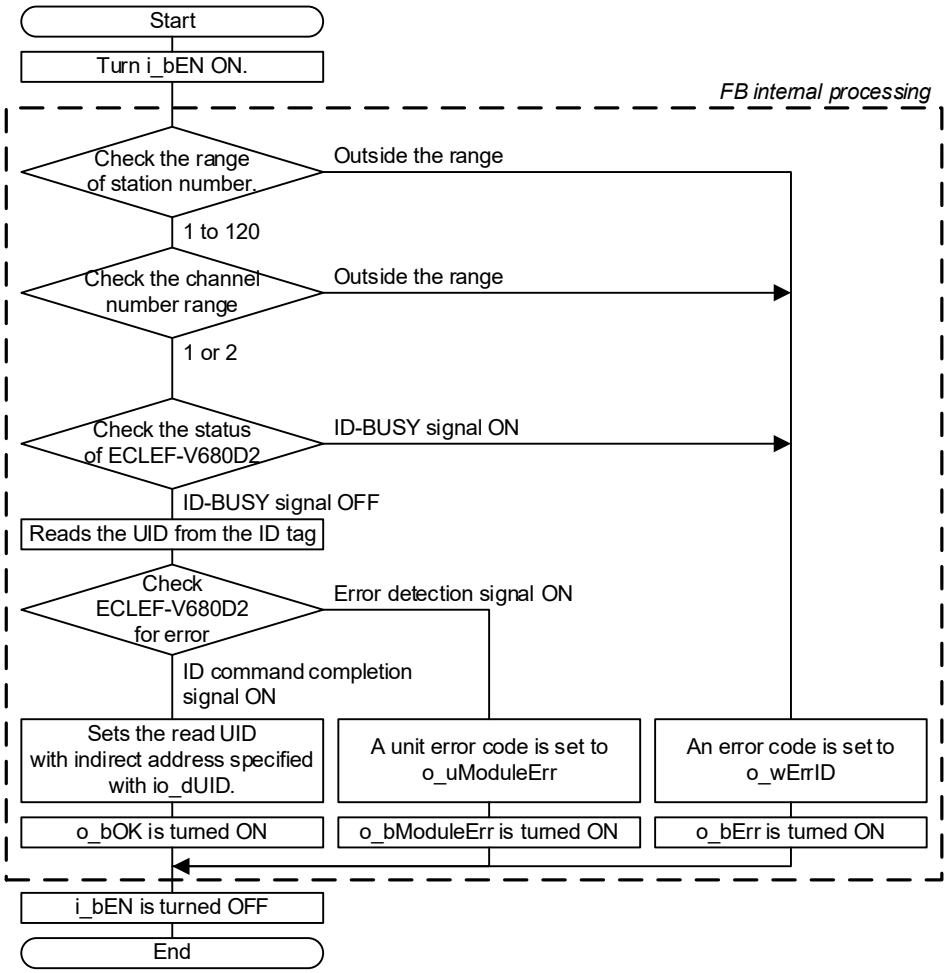
2.5 P+MEE-ECLEF-V680D2_UIDRead_R (Read UID of ID Tag)

FB Name

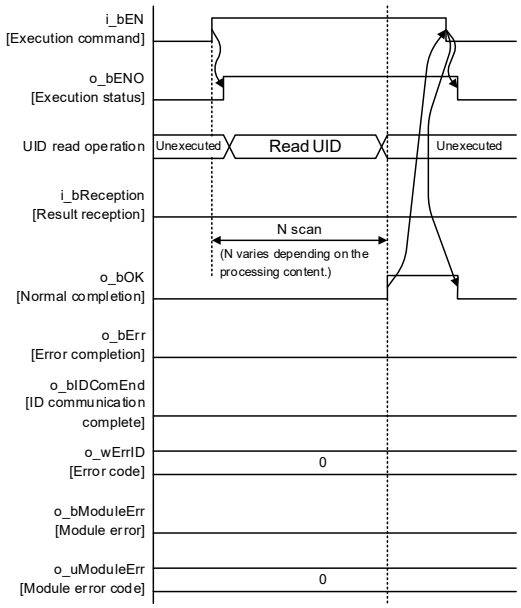
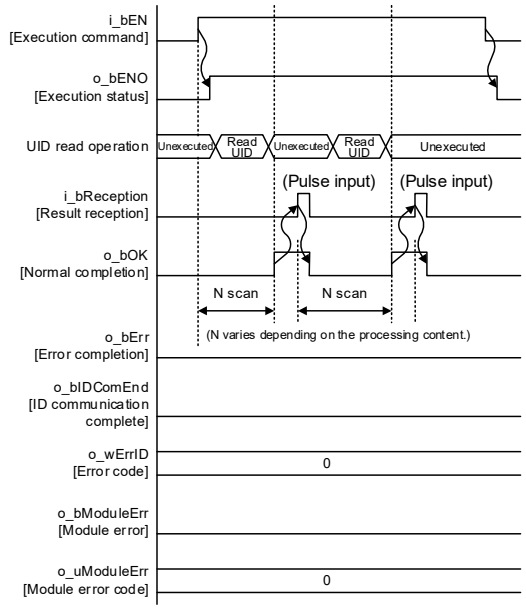
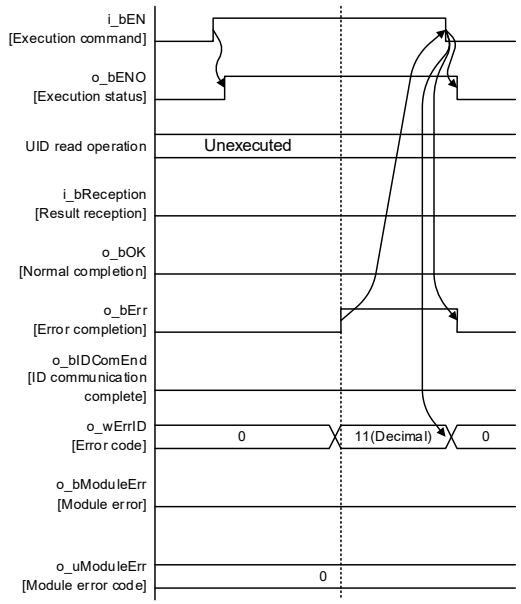
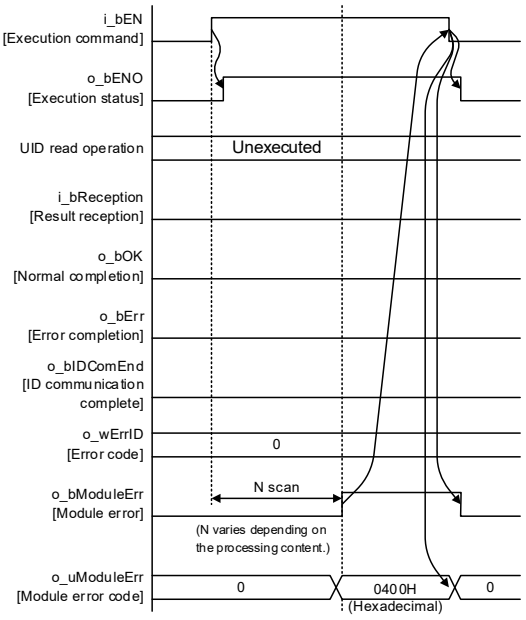
P+MEE-ECLEF-V680D2_UIDRead_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Reads the UID (unit identification number) of the ID tag.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming Language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">903Step (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN (Execution command) is turned ON, reads the UID (unit identification number) of the ID tag. Data read is stored from the start device specified with io_dUID (indirect address of the UID of the ID tag). When reading is completed, o_bOK (Normal completion) is turned ON.  2) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 2(Repeat auto) or 4(FIFO repeat), the next ID tag detection will start when i_bReception(Result reception) is turned ON. 3) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details. 4) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details. 5) When i_bEN(Execution command) is turned OFF during read operation, processing of the FB is suspended. Data read is not stored in the device specified with io_dUID (indirect address of the UID of the ID tag).
Compiling method	Macro type

Item	Description
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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. 7) This FB uses index registers Z5 to Z9 and data registers D5000 to D5001. When an interrupt program is used, do not use these index registers and data registers. 8) For Communication specification, Communication setting, Processing specification and auto system command waiting time settings in the UID read of the ID tag, specify using P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) before executing this FB. 9) i For io_dUID (indirect address of the UID of the ID tag), be sure to specify the indirect address of the device where the UID read is stored. The indirect address of the device is acquired using the ADRSET command. This may not be omitted. For details about indirect address, refer to section 1.7. 10) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo(Station No.) ・ i_wCH(Channel No.) 11) If Communication specification made in P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) is 0 (trigger), 1 (auto) or 3 (FIFO trigger), i_bReception(Result reception) is ignored. 12) Enter pulse in i_bReception(Result reception). 13) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 14) 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". 15) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)

Item	Description
Timing chart	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [For Module error] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

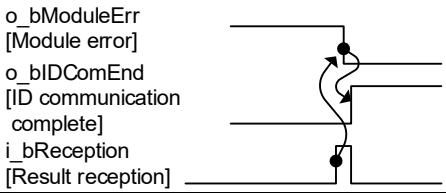
Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the channel number where Reads the UID of the ID tag.
Result reception	i_bReception	Bit	-	When the command that performs the UID read operation from multiple ID tags is executed, input a pulse to receive the next results. ON: Starts to detect the next ID tag.
UID of the ID tag (Indirect address)	io_dUID	Double word	00000000 to FFFFFFFF (Hexadecimal)	The UID of the ID tag is stored for 4 words from the device specified with the indirect address.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: EXECUTION COMMAND IS ON. OFF: EXECUTION COMMAND IS OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.
Module error	o_bModuleErr	Bit	OFF	ON: An error occurred in the RFID interface unit. OFF: Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.
UID of the ID tag (Indirect address)	io_dUID	Double word	-	The UID of the ID tag is stored for 4 words from the device specified with the indirect address.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface unit due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

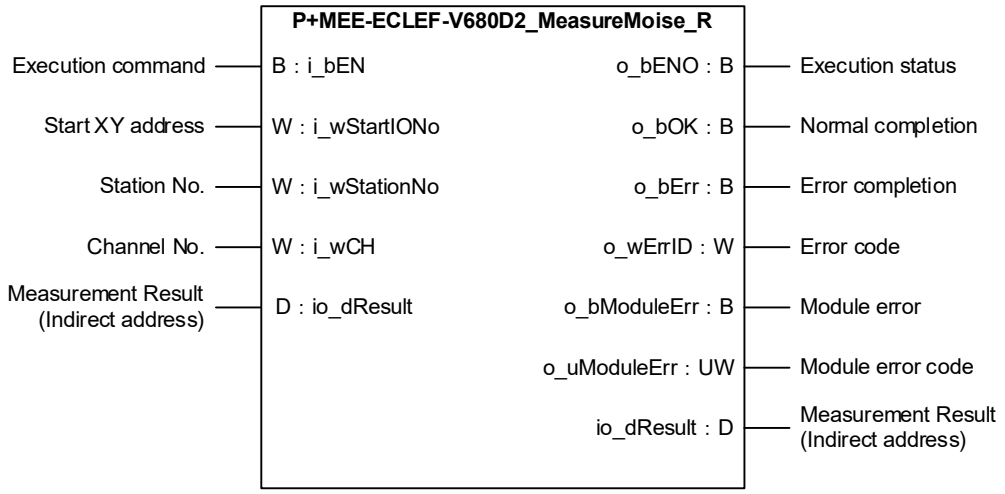
Please make sure to read user's manuals for the corresponding products before using the products.

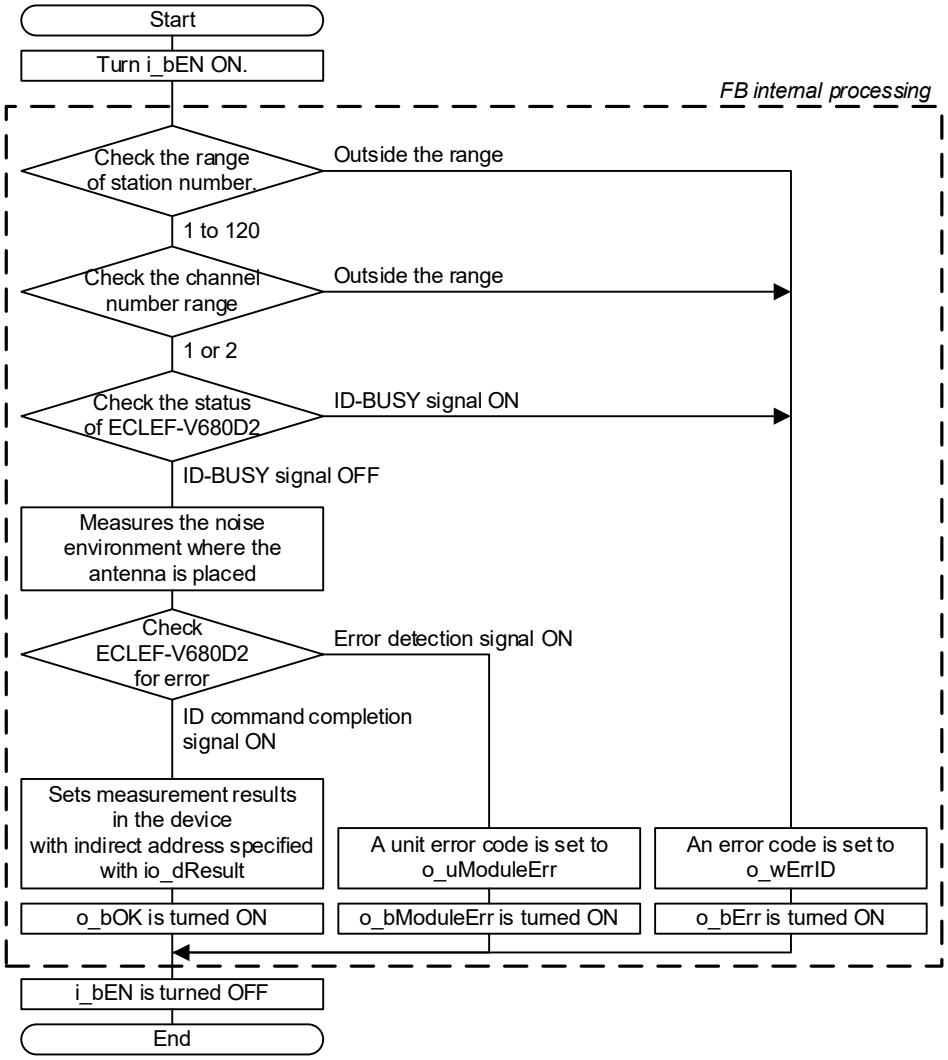
2.6 P+MEE-ECLEF-V680D2_MeasureNoise_R (Measures Noise)

FB Name

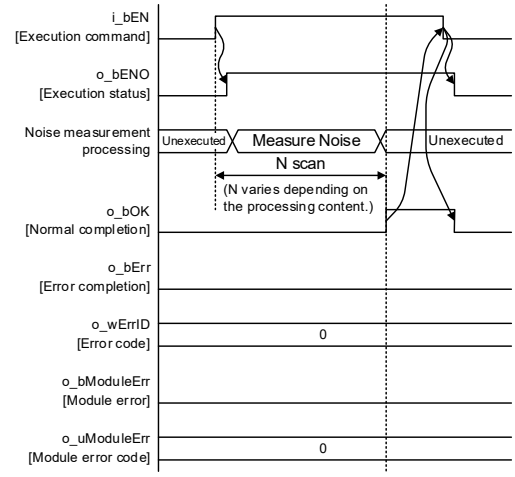
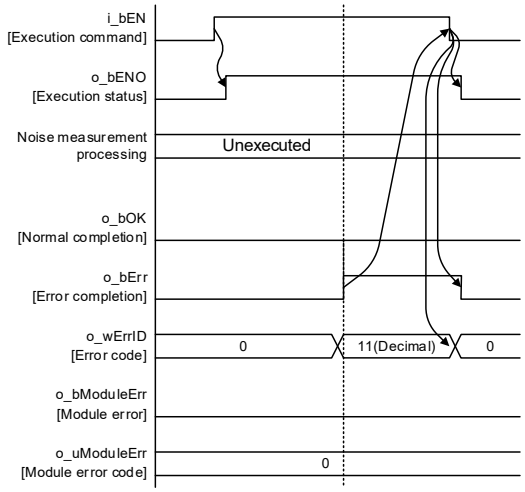
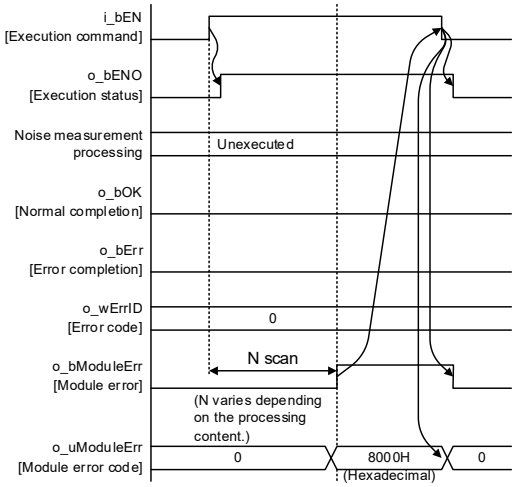
P+MEE-ECLEF-V680D2_MeasureNoise_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Measures the noise environment surrounding the antenna.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming Language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">714Step (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN(Execution command) is turned ON, measures the noise environment where the antenna is placed. Measurement results are stored from the start device specified with io_dResult (indirect address of measurement address). When measurement is completed, o_bOK (Normal completion) is turned ON.  2) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details. 3) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details. 4) When i_bEN (Execution command) is turned OFF when measuring noise, processing of the FB is suspended. Data read is not stored in the device specified with io_dResult (indirect address of measurement results).
Compiling method	Macro type

Item	Description
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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. 7) This FB uses index registers Z5 to Z9 and data registers D5000 to D5001. When an interrupt program is used, do not use these index registers and data registers. 8) For io_dResult (indirect address of measurement results), be sure to specify the address of the start device in the area where noise measurement results are stored. This may not be omitted. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo(Station No.) ・ i_wCH(Channel No.) 10) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 11) 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". 12) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)

Item	Description
Timing chart	[When operation completes without error]  [When an error occurs]  [For Module error] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the channel number where noise is measured
Measurement Result (Indirect address)	io_dResult	Double Word	00000000 to FFFFFFF (Hexadecimal)	Specify the indirect address of the device where noise measurements results are stored. For details about indirect address, refer to section 1.7.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: EXECUTION COMMAND IS ON. OFF: EXECUTION COMMAND IS OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.
Module error	o_bModuleErr	Bit	OFF	ON: An error occurred in the RFID interface unit. OFF: Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.
Measurement Result (Indirect address)	io_dResult	Double Word	-	Store noise measurement results for 3 words from the device with the indirect address specified. Storage area +0 Average value 0 to 99 (Decimal) +1 Maximum value 0 to 99 (Decimal) +2 Minimum value 0 to 99 (Decimal)

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

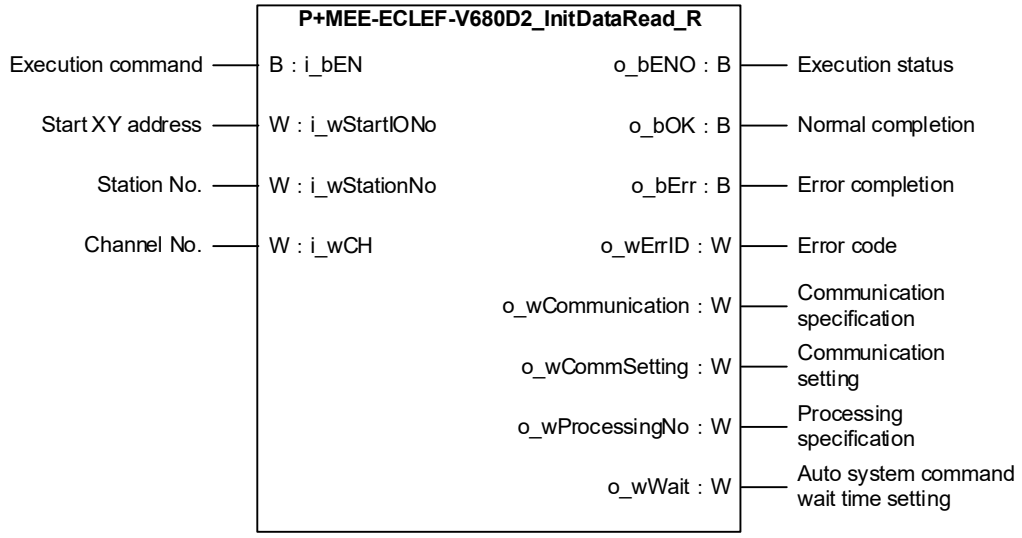
Please make sure to read user's manuals for the corresponding products before using the products.

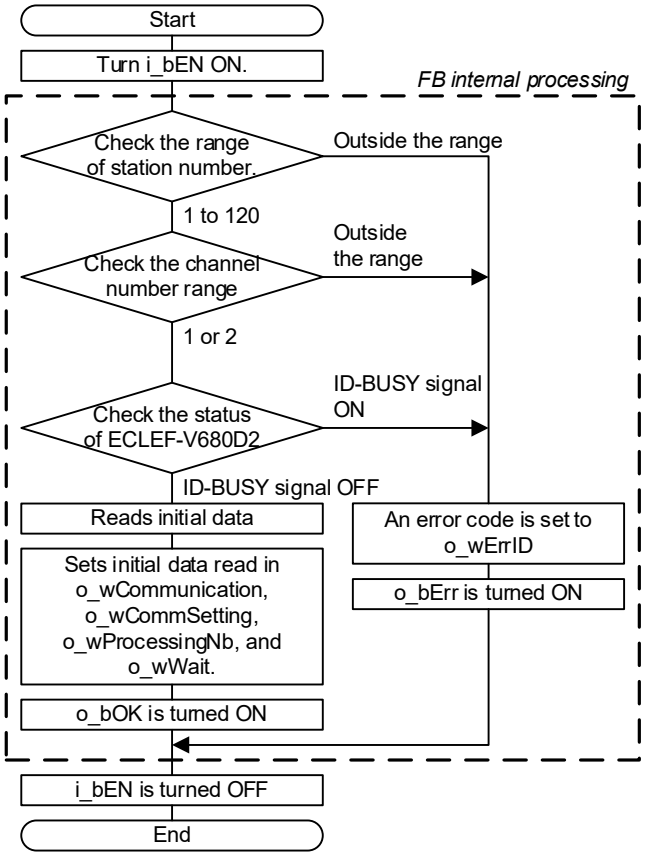
2.7 P+MEE-ECLEF-V680D2_InitDataRead_R (Read Initial Data Settings)

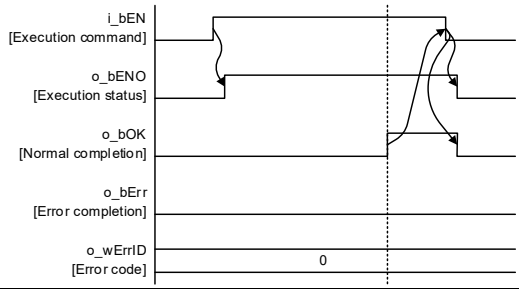
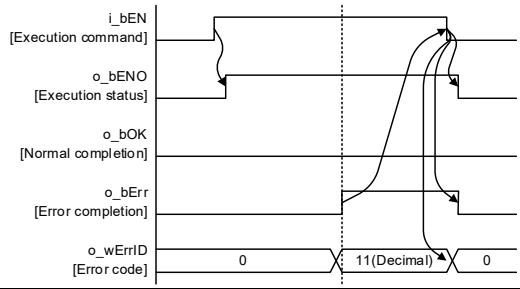
FB Name

P+MEE-ECLEF-V680D2_InitDataRead_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Reads the initial data settings.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming Language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">673Step (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN (Execution command) is turned ON, initial data is read. Data read is set in o_wCommunication(Communication specification), o_wCommSetting(Communication setting), o_wProcessingNo(Processing specification), and o_wWait(Auto system command wait time setting). When reading is completed, o_bOK (Normal completion) is turned ON.  2) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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.

Item	Description
	7) This FB uses index registers Z5 to Z9. Please do not use these index registers in an interrupt program. 8) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo(Station No.) ・ i_wCH(Channel No.) 9) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "Appendix 1 When Using the FB for 2 or More Master/Local Modules". 11) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)
Timing chart	[For successful completion]  [When an error occurs] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

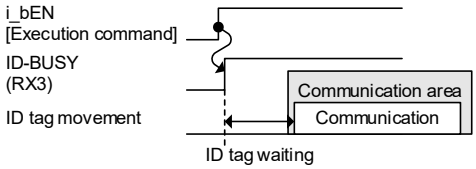
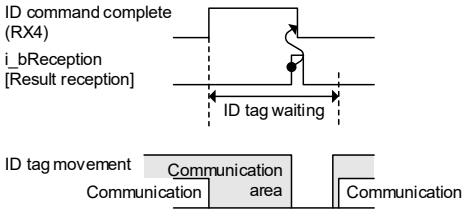
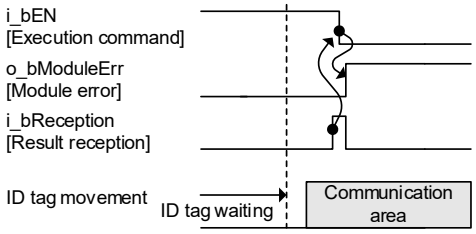
■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the Channel number where initial data read is performed.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: EXECUTION COMMAND IS ON. OFF: EXECUTION COMMAND IS OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	The error code that occurred in the FB is stored.

<table>
<tr><th>Name</th><th>Label name</th><th>Data type</th><th>Initial Value</th><th>Description</th></tr>
<tr><td>Communication specification</td><td>o_wCommunication</td><td>Word</td><td>0</td><td>The communication method for the ID tag is stored.
0: Trigger
1: Auto
2: Repeat auto
3: FIFO trigger
4: FIFO repeat</td></tr>
<tr><td>Communication setting</td><td>o_wCommSetting</td><td>Word</td><td>0</td><td>The communication setting for the ID tag is stored.
<table>
<tr><th>Bit</th><th>Description</th></tr>
<tr><td>0</td><td>Write verify setting
0: Execute
1: Do not execute</td></tr>
<tr><td>1</td><td>ID tag communication speed setting
0: Standard mode
1: High-speed mode</td></tr>
<tr><td>2</td><td>Write protect setting
0: Enable
1: Disable</td></tr>
<tr><td>3</td><td>Read/Write data code setting
0: Without ASCII/HEX conversion
1: With ASCII/HEX conversion</td></tr>
<tr><td>4 to 15</td><td>0</td></tr>
</table></td></tr>
<tr><td>Processing specification</td><td>o_wProcessingNo</td><td>Word</td><td>0</td><td>The command data processing method for the ID tag is stored.
<table>
<tr><th>Command</th><th>Processing specification</th></tr>
<tr><td>Read
Write
Fill data</td><td>Data storage order
0: Upper→Lower
1: Lower→Upper</td></tr>
</table>
For details, refer to the function description of each command.
Commands other than the above do not use Processing specification.</td></tr>
</table>

Name	Label name	Data type	Initial Value	Description
Auto system command wait time setting	o_wWait	Word	0	The ID tag detection waiting time is stored in 0.1 seconds when Communication specification is an auto system command (Auto, Repeat auto, FIFO repeat). (For example, if the waiting time is 30 seconds, K300 is stored.) When waiting for detection until a response is received from the ID tag, 0 is stored. The diagram below shows the waiting time when a command is executed by each FB. [For Auto, Repeat auto or FIFO repeat]  [For Repeat auto or FIFO repeat]  When the waiting time set before i_bReception(Result reception) is turned ON expires, o_bModuleErr(Module error) is turned ON after i_bReception(Result reception) is turned ON. 

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

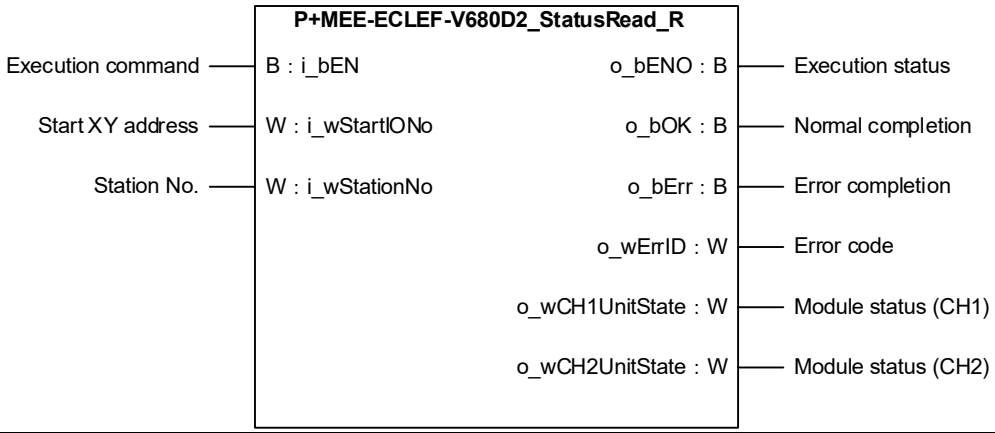
Please make sure to read user's manuals for the corresponding products before using the products.

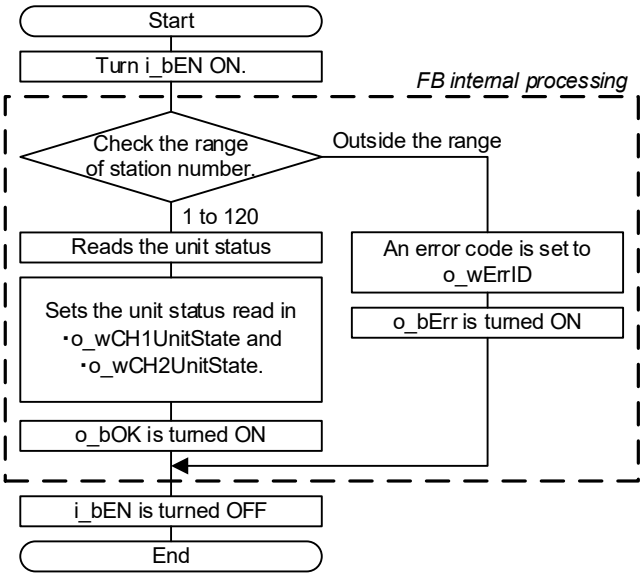
2.8 P+MEE-ECLEF-V680D2_StatusRead_R (Read Module Status)

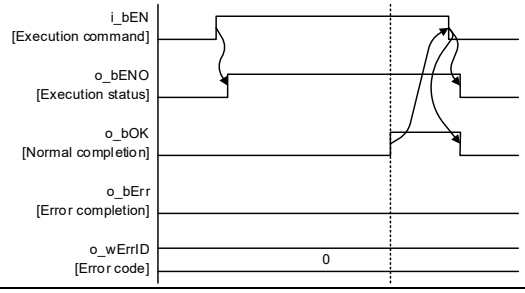
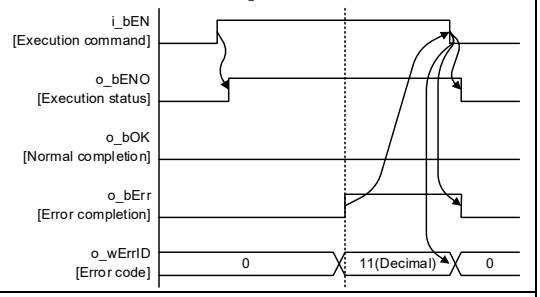
FB Name

P+MEE-ECLEF-V680D2_StatusRead_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Read Module Status.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Applicable hardware and software</td><td>RFID Interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming Language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">459Step (for MELSEC iQ-R series CPU)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN (Execution command) is turned ON, the unit status is read. The unit status read is set in o_wCH1UnitState and o_wCH2UnitState (Module status). When reading is completed, o_bOK (Normal completion) is turned ON.  2) This FB works only once when i_bEN(Execution command) is turned ON. 3) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) When multiple FBs are used, care should be taken not to use the same target station number. 6) Please ensure that the i_bEN 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. 7) This FB uses index registers Z5 to Z9. Please do not use these index registers in an interrupt program. 8) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo(Station No.) 9) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 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".

Item	Description
	11) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)
Timing chart	[When operation completes without error]  [When an error occurs] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.

Labels

■Input labels

Name	Label Name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	FB error code output.
Module status	o_wCH1UnitState (CH1) o_wCH2UnitState (CH2)	Word	0	The RFID Interface unit status can be verified. Bit 0: Antenna error 0: Normal or antenna not connected. The antenna different from the specified one is connected. Bit 1: Unused Bit 2: Test mode 0: In RUN mode 1: In test mode Bits 3 - 15: Unused

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

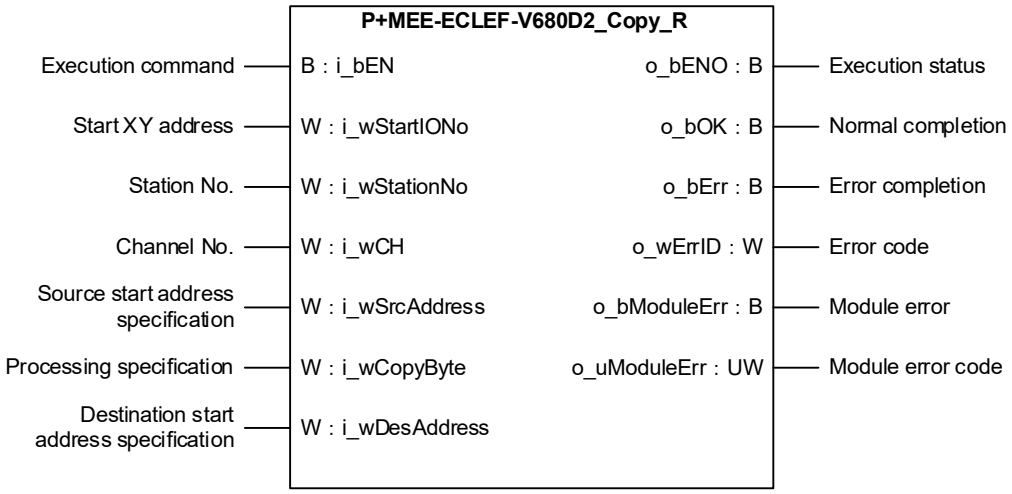
Please make sure to read user's manuals for the corresponding products before using the products.

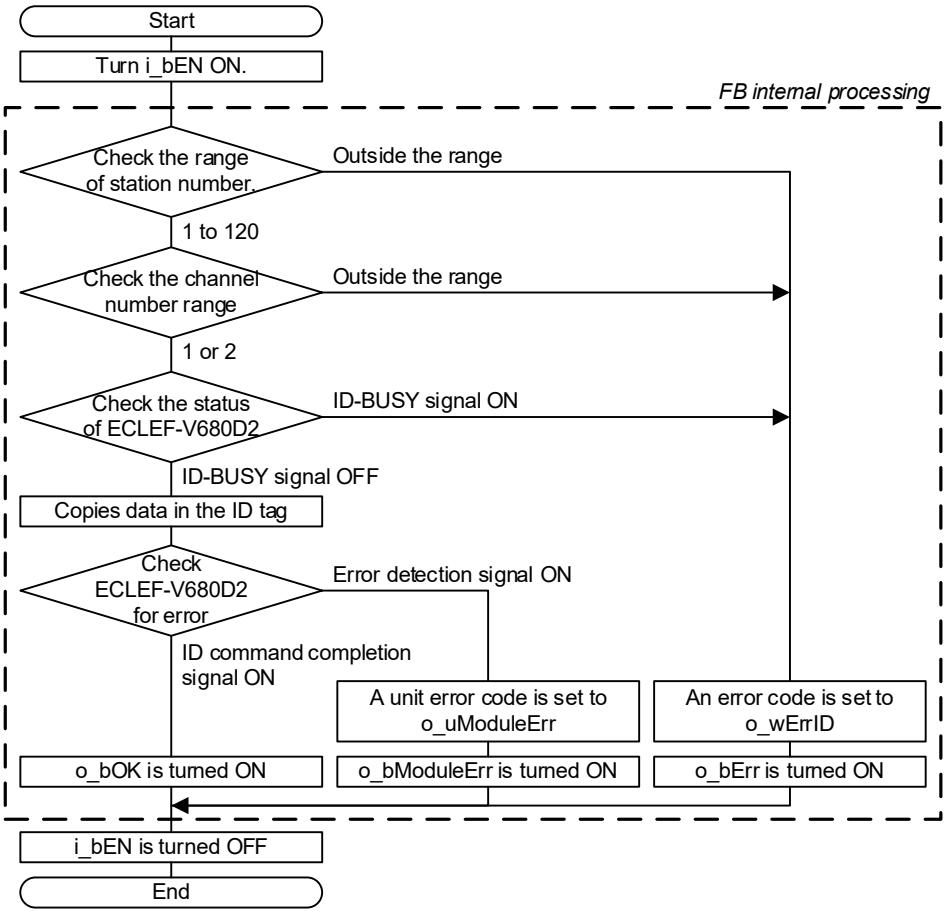
2.9 P+MEE-ECLEF-V680D2_Copy_R (Copies data of ID tag)

FB Name

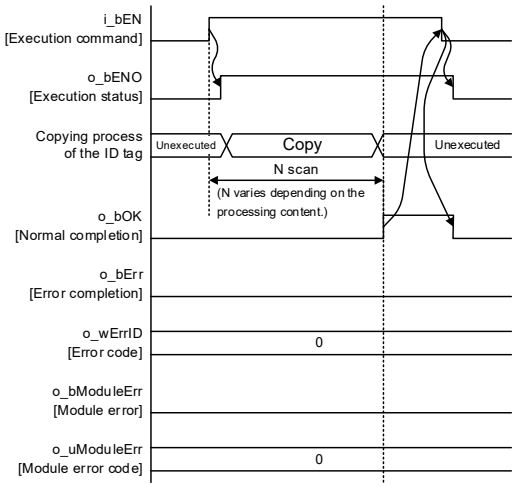
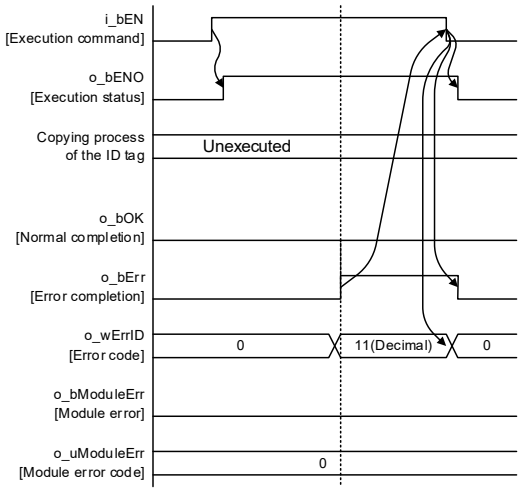
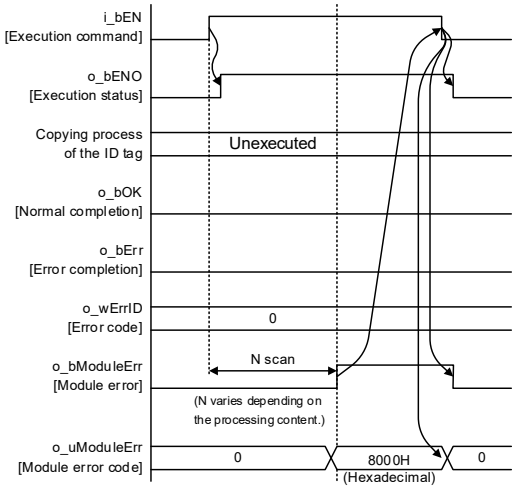
P+MEE-ECLEF-V680D2_Copy_R

Function Overview

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Copies data of an ID tag between channel 1 and channel 2.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>RFID interface module</td><td>ECLEF-V680D2</td></tr>
<tr><td>CC-Link IE Field Network module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>RJ71GF11-T2</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table></td></tr>
<tr><td>Engineering software</td><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R Series</td><td>Version1.015R or later</td></tr></table></td></tr>
<tr><td>Programming language</td><td colspan="2">Ladder</td></tr>
<tr><td>Number of steps</td><td colspan="2">717Step (for MELSEC iQ-R series)
* The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</td></tr>
</table>

Item	Description
Function description	1) When i_bEN(Execution command) is turned ON, data is read from the ID tag of the copy source and written to the ID tag of the copy destination. When copying is completed, o_bOK (Normal completion) is turned ON.  2) For Communication specification of the copy source, only Trigger or Auto can be specified. Communication specification of the copy destination cannot be selected. So Trigger is used for execution. 3) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_wErrID. Refer to the error code explanation section for details. 4) If an error occurs in ECLEF-V680D2, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the error code explanation section for details. 5) When i_bEN(Execution command) is turned OFF during the copying process, processing of the FB is suspended. When data is being written to the ID tag, data is written to the end.
Compiling method	Macro type

Item	Description
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) Set the refresh parameters of the network parameter setting according to Section "1.4 Setting the CC-Link IE Field Network Master/Local Module". 3) Set the global label setting according to Section "1.5 Setting Global Labels". 4) The FB cannot be used in an interrupt program. 5) Multiple FBs cannot be used. 6) This FB uses index registers Z5 to Z9. Please do not use these index registers in aninterrupt program. 7) For Communication specification for copying between the ID tags and auto system command waiting time settings, specify using P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) before executing this FB. 8) Do not change the following values while i_bEN (Execution command) is ON. ・ i_wStartIONo(Start XY address) ・ i_wStationNo (Station No.) ・ i_wCH (Channel No.) ・ i_wSrcAddress (Source start address specification) ・ i_wCopyByte (Processing specification) ・ i_wDesAddress (Destination start address specification) 9) Since the Y signal is operated in the FB using the index modification, multiple coil warnings may occur during compilation when multiple FBs are used. However, it does not cause any problem in using. 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "Appendix 1 When Using the FB for 2 or More Master/Local Modules". 11) If processing of this FB is not completed, check if i_wStartIONo(Start XY address) is correct, i_wStationNo (Station No.) matches the network station number, or P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data) has been completed before executing this FB.
FB operation type	Pulsed execution (multiple scan execution type)

Item	Description
Timing chart	[When operation completes without error]  [When an error occurs]  [For Module error] 
Relevant manuals	ECLEF-V680D2 RFID Interface Module User's Manual (Details) (50CM-D180190) MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) (SH-081256ENG) MELSEC iQ-R CC-Link IE Field Network User's Manual (Application) (SH-081259ENG)

Error codes

■Error code list

Error code	Description	Action
11(Decimal)	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 120.
12(Decimal)	Specification of i_wCH(Channel No.) is outside the range or the value is invalid.	Specify 1 or 2 for the Channel number.
14(Decimal)	ECLEF-V680D2 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input labels

Name	Label name	Data type	Setting range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Start XY address	i_wStartIONo	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the CC-Link IE Field Network master/local module is mounted. (For example, enter HA0 for XA0.)
Station No.	i_wStationNo	Word	1 to 120 (Decimal)	Specify the target station number.
Channel No.	i_wCH	Word	1, 2	Specify the channel number of the copy source.
Source start address specification	i_wSrcAddress	Word	0000 to FFFF (Hexadecimal)	Specify the start address of the ID tag of the copy source.
Processing specification	i_wCopyByte	Word	0001 to 0800 (Hexadecimal)	Specify the number of bytes for copying.
Destination start address specification	i_wDesAddress	Word	0000 to FFFF (Hexadecimal)	Specify the start address of the ID tag of the copy destination.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Normal completion	o_bOK	Bit	OFF	ON: FB completed successfully OFF: FB uncompleted
Error completion	o_bErr	Bit	OFF	ON: FB terminated abnormally OFF: FB uncompleted
Error code	o_wErrID	Word	0	FB error code output.
Module error	o_bModuleErr	Bit	OFF	ON: An error occurred in the RFID interface unit. OFF: Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	A description of the error occurred in the RFID interface unit is stored.

FB Version Upgrade History

Version	Date	Description
00A	Dec. 1, 2015	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.

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

Appendix1. 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.

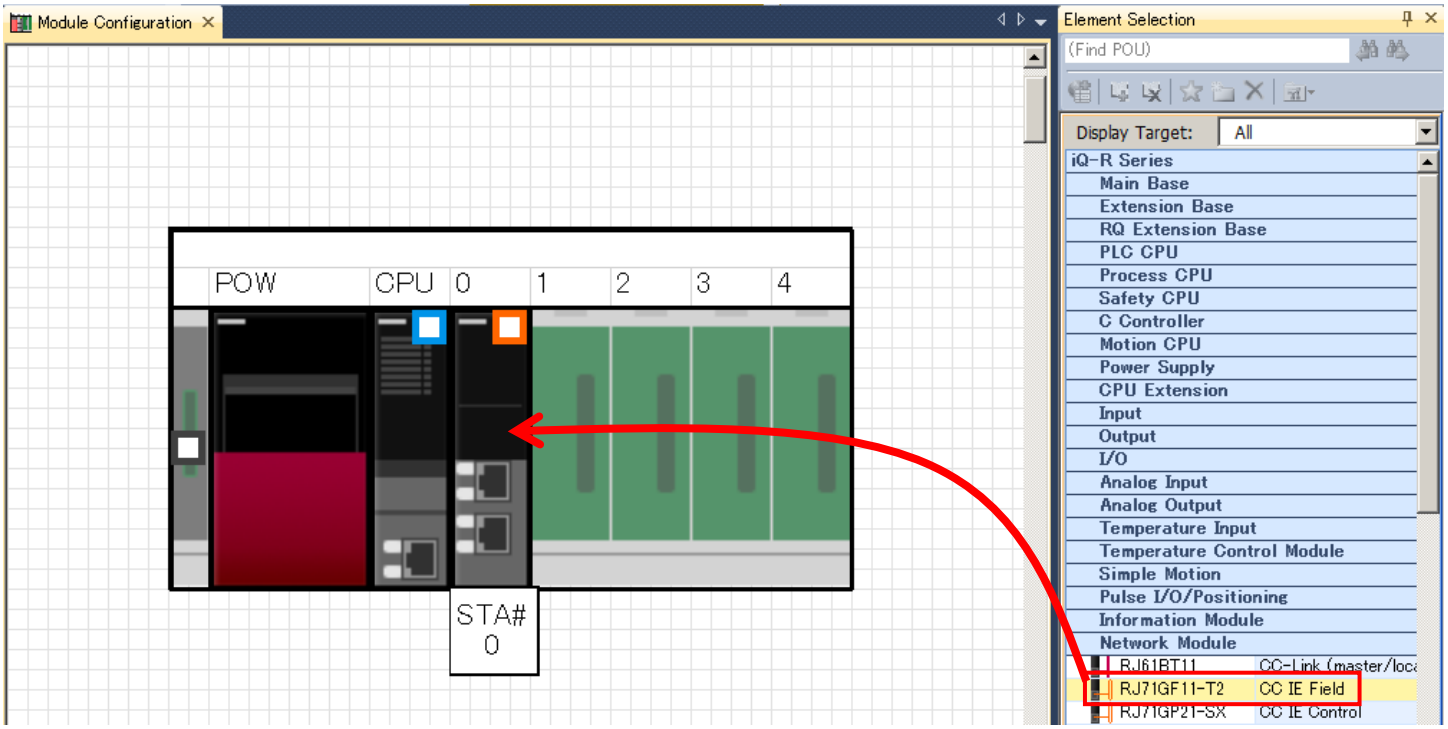
1) Enter network parameters.
2) Set global labels
3) Copy MELSOFT Library to create the FB for the second module
4) Replace devices to create the FB for the second module

Appendix1.1 Entering Network Parameters

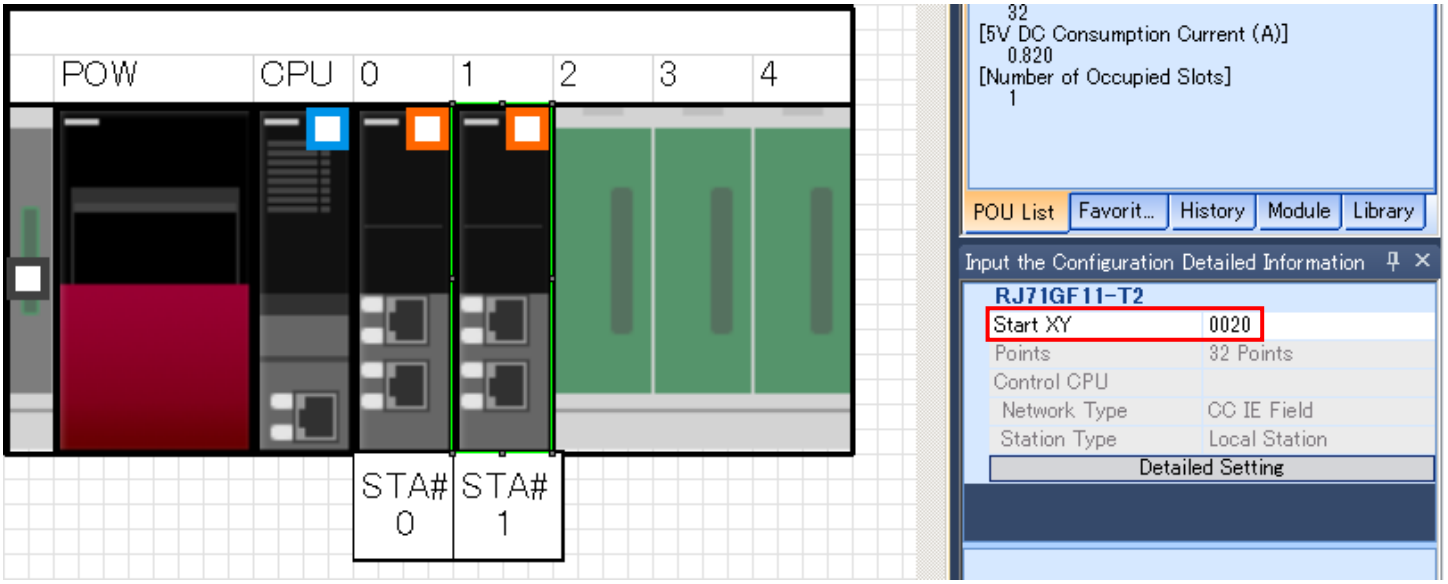
Set network parameters to be used for the second module.

1) Setting the unit configuration

Add the CC-Link IE Field Network master/local unit from the unit configuration diagram.



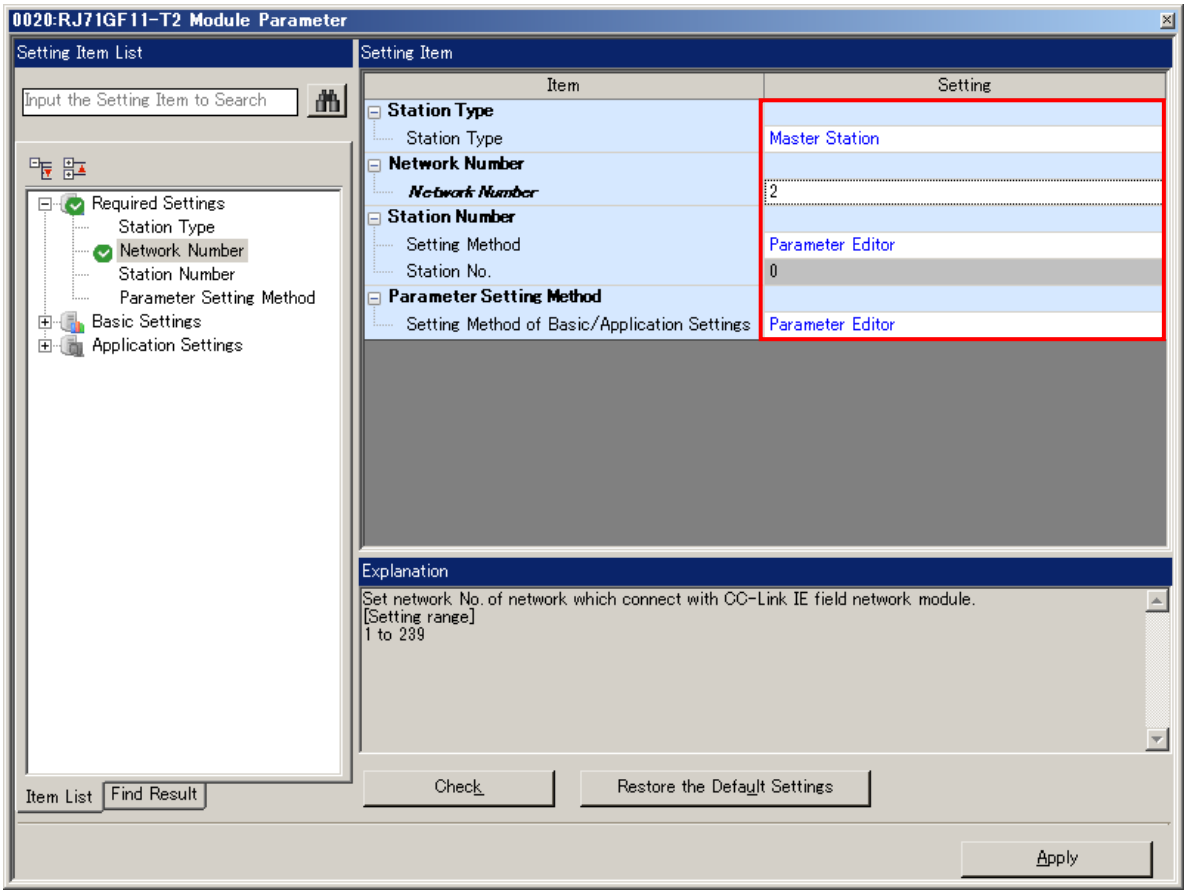
Set the starting XY address of the master/local unit of the second module to "0020".



2) Setting unit parameters

Set unit parameters for the master/local unit of the second module as follows:

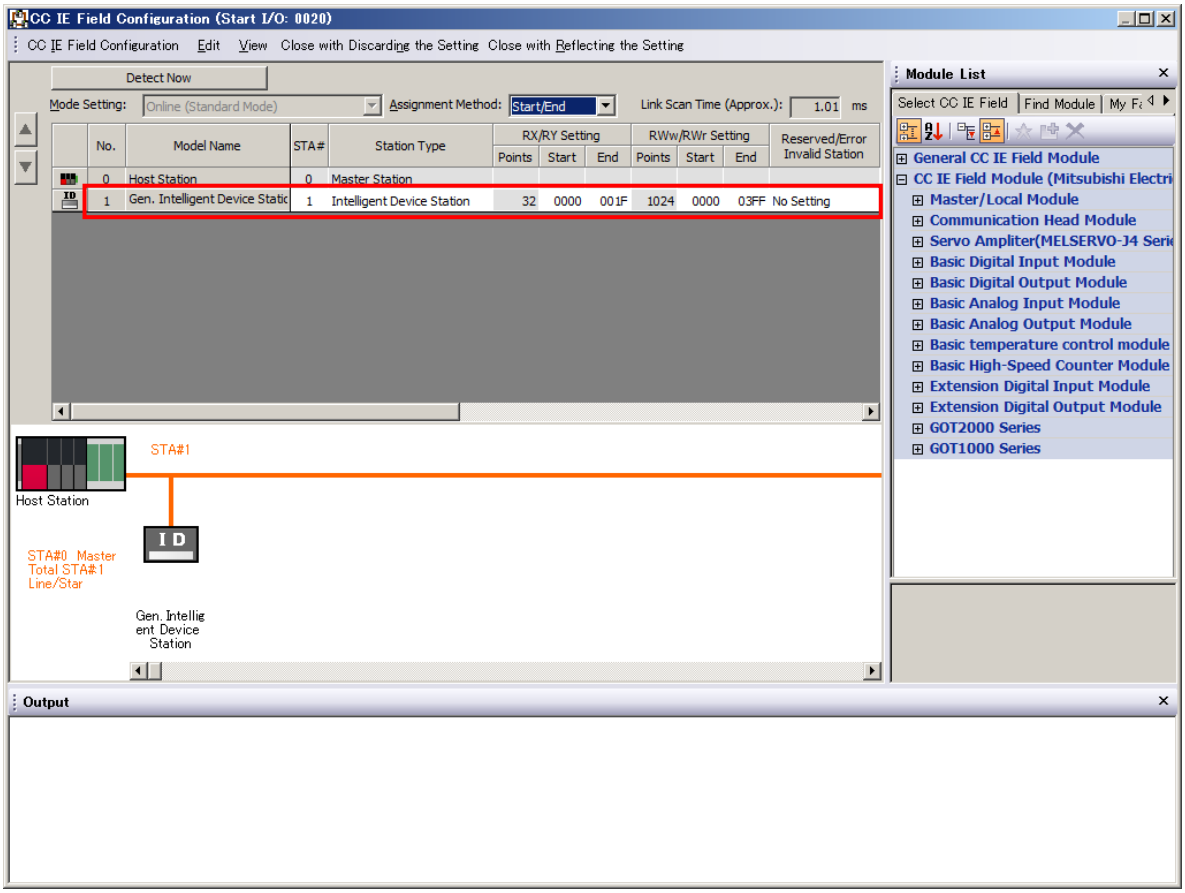
Item	Description
Station type	Set "Master station".
Network No.	2
Station number setting method	Configure "Set using parameters".
Basic/applied setting method	Configure "Set using parameters".



3) Setting network configuration

Set network configuration for the master/local unit of the second module as follows:

Item	Description
Station type	Set "Intelligent Device Station".
RX/RYSetting	Start: 0000 End: 001F
RWw/RWrSetting	Start: 0000 End: 03FF

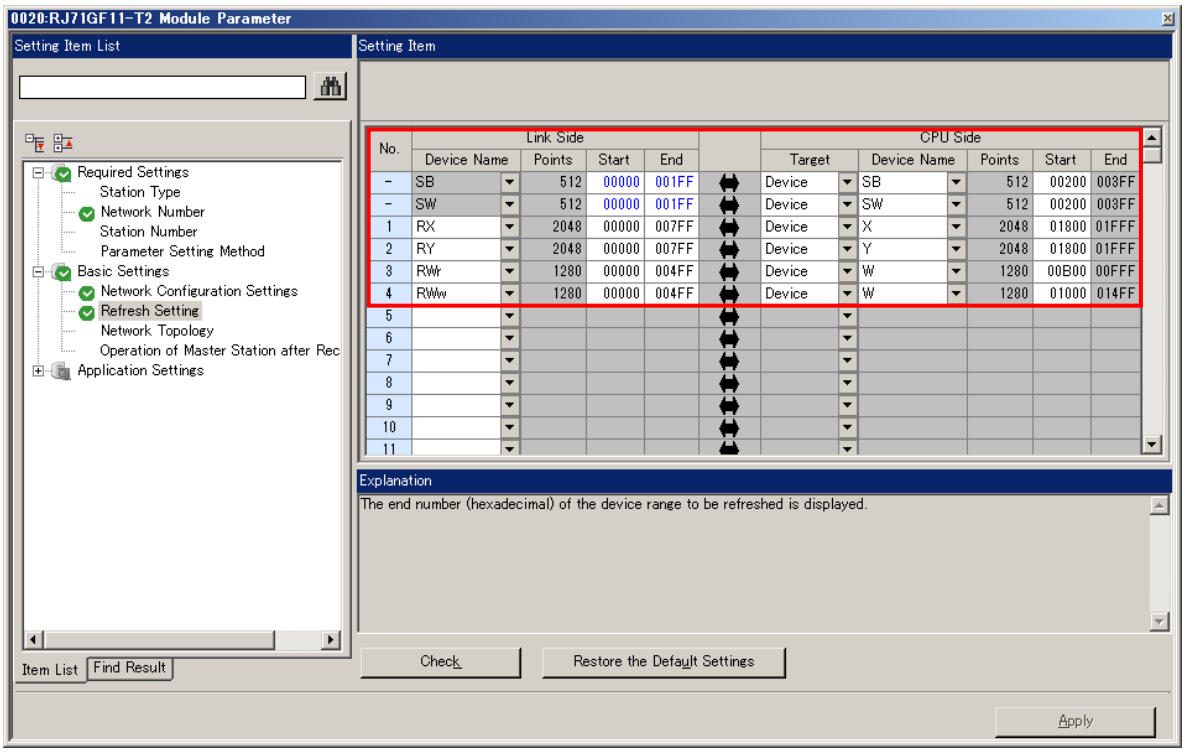


4) Link refresh setting

Configure link refresh setting for the master/local unit of the second module as follows:

Item	Description	
	Link side	Link side
Special relay (SB) refresh device	Device name: SB Start: 00000 End: 001FF	Refresh destination: specified device Device name: SB Start: 00200
Special register (SW) refresh device	Device name: SW Start: 00000 End: 001FF	Refresh destination: specified device Device name: SW Start: 00200
Remote input (RX) refresh device	Device name: RX Start: 00000 End: 007FF	Refresh destination: specified device Device name: X Start: 01800
Remote output (RY) refresh device	Device name: RY Start: 00000 End: 007FF	Refresh destination: specified device Device name: Y Start: 01800
Remote register (RWr) refresh device	Device name: RWr Start: 00000 End: 004FF	Refresh destination: specified device Device name: W Start: 00B00
Remote register (RWw) refresh device	Device name: RWw Start: 00000 End: 004FF	Refresh destination: specified device Device name: W Start: 01000

Link fresh settings for the IQ-R series PLC:



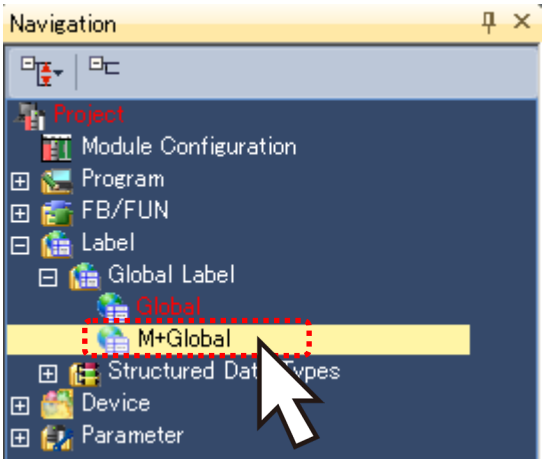
Appendix1.2 Entering Global Labels

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) Select "M+Global" under "Global label" on the project tab in the navigation window.



(2) Configure G_RX2 remote input (RX) settings.

Item	Description
Label name	Enter "G_RX2".
Data type	Select "Bit".
Class	Select "VAR_GLOBAL".
Assignment (device/label)	Enter by adding "Z9" to remote input (RX) entered in Appendix 1.1. Enter "X1800Z9".

(3) Configure G_RY2 remote output (RY) settings.

Item	Description
Label name	Enter "G_RY2”.
Data type	Select "Bit".
Class	Select "VAR_GLOBAL".
Assignment (device/label)	Enter by adding "Z9" to remote output (RX) entered in Appendix 1.1. Enter “Y1800Z9”.

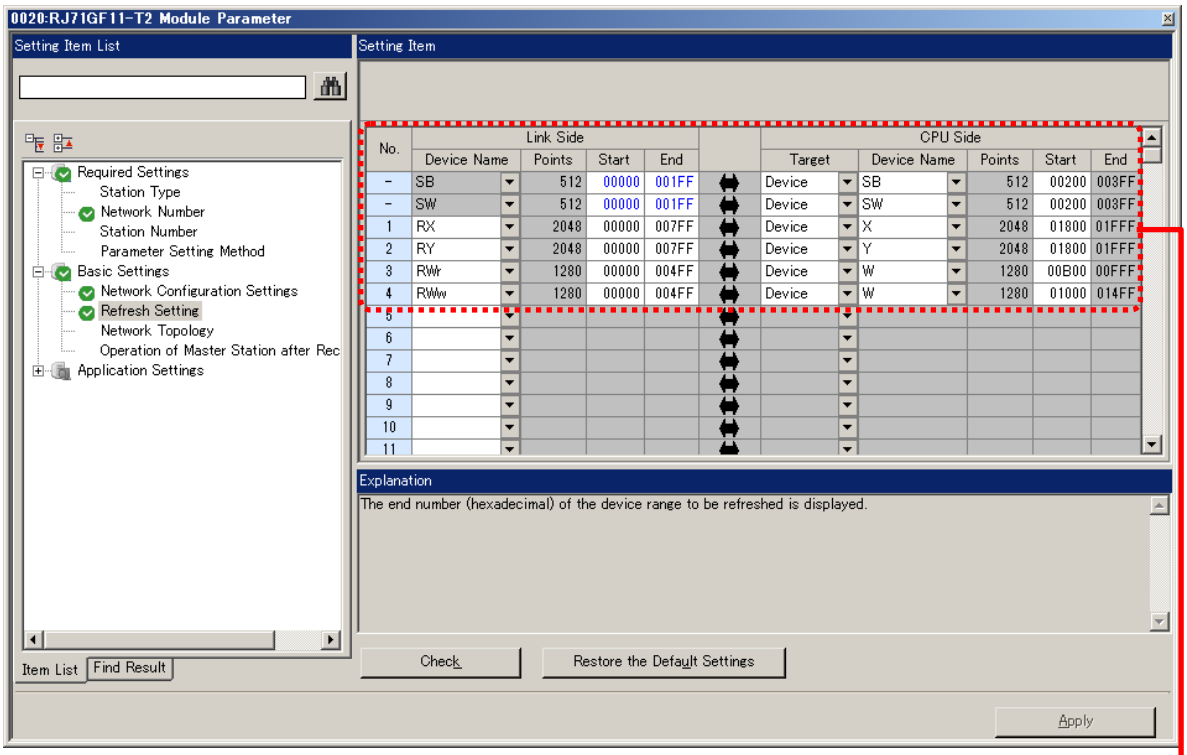
(4) Configure G_RWr2 remote register (RWr) settings.

Item	Description
Label name	Enter "G_RWr2”.
Data type	Select "Word [signed]".
Class	Select "VAR_GLOBAL".
Assignment (device/label)	Enter by adding "Z8" to remote register (RWr) entered in Appendix 1.1. Enter “W0B00Z8”.

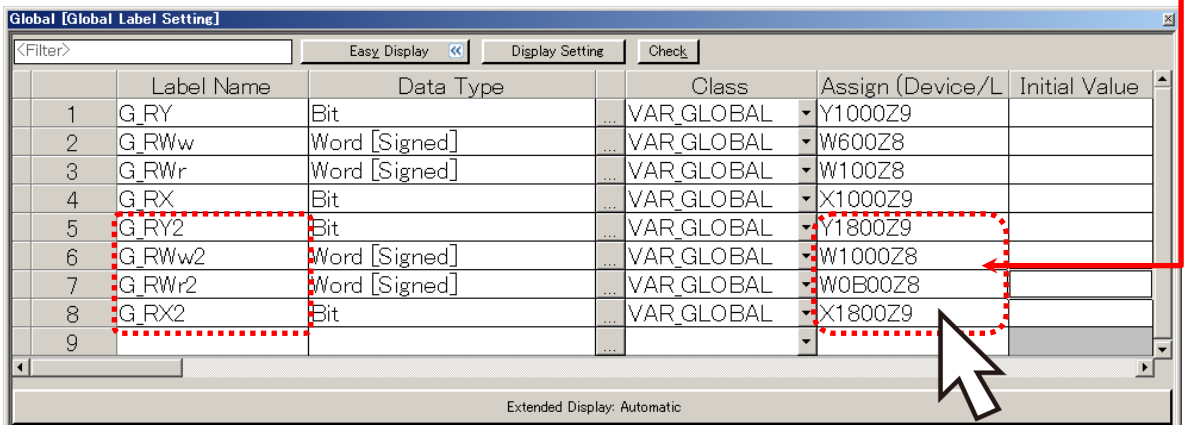
(5) Configure G_RWw2 remote register (RWw) settings.

Item	Description
Label name	Enter "G_RWw2".
Data type	Select "Word [signed]".
Class	Select "VAR_GLOBAL".
Assignment (device/label)	Enter by adding "Z8" to remote register (RWw) entered in Appendix 1.1. Enter “W1000Z8”.

Link refresh setting:

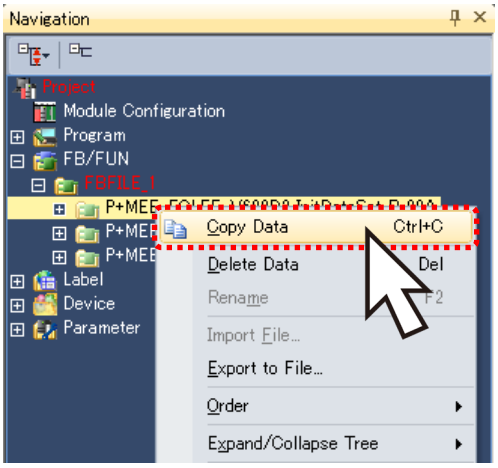


Global label setting:



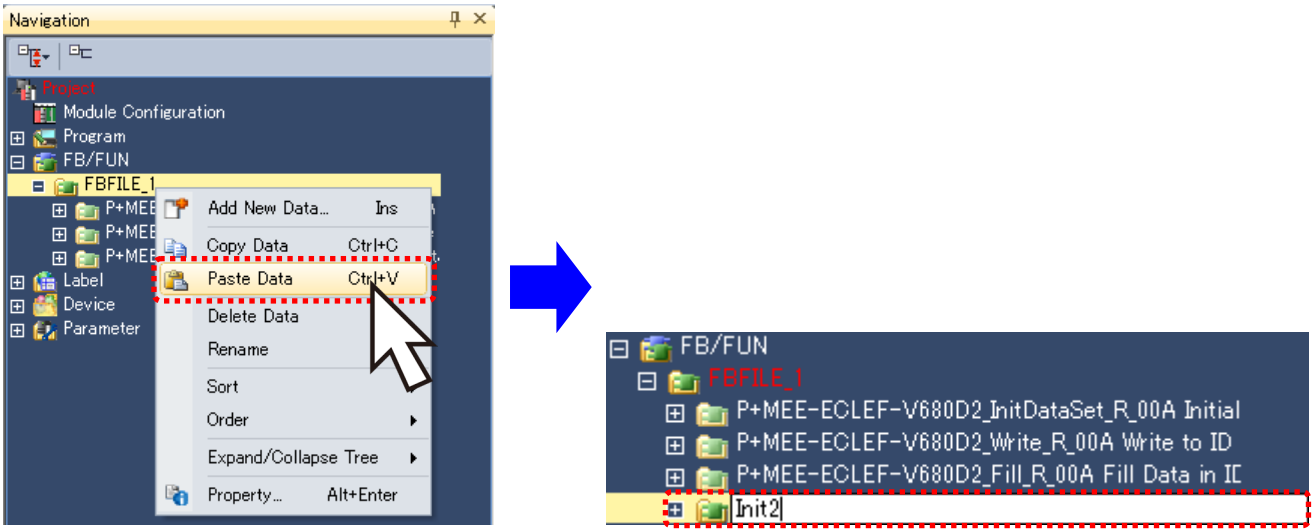
Appendix1.3 Copying MELSOFT Library to Create an FB for the Second Module

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



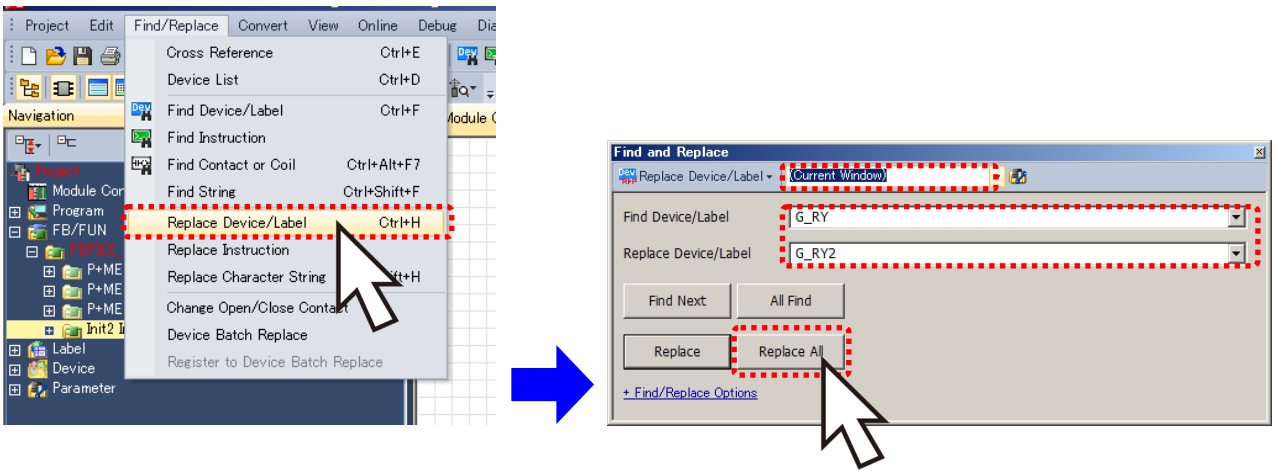
(3) Paste the copied FB to "FB_Pool" on the Project tab of the Navigation window.

Move the cursor to the pasted FB, press [F2], and enter the FB name after pasting. (Example: Init2)



Appendix1.4 Replacing Devices to Create the FB for the Second Module

Replace all devices of G_RX, G_RY, G_RWr and G_RWw for the copied FB. Open the "Program body" for the FB added from the navigation window and select "Search/Replace (F)" → "Replace device (R)" in the menu and display the "Search/Replace" screen. Specify "(Current window)" for the search location, "G_RX" for the search device, and "G_RX2" for the replacement device. Similarly, replace all devices of "G_RY", "G_RWr", and "G_RWw" with "G_RY2", "G_RWr2", and "G_RWw2".



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]

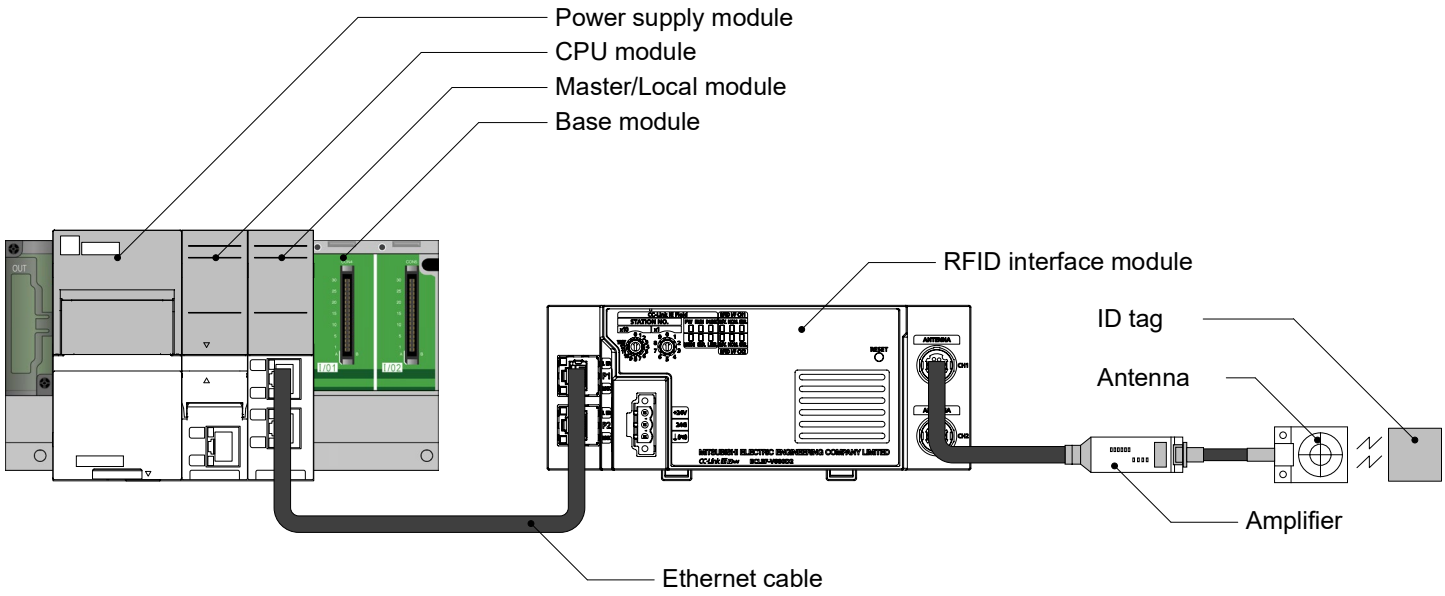
If MELSOFT Library is upgraded, MELSOFT Library FBs can be upgraded by importing them again. However, the FBs that were created by following these procedures for the second and subsequent modules are not upgraded even if the FBs are imported again.

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 RFID interface module FB are as follows.

(1) System Configuration



(2) List of devices

■ External Input (commands)

Device	FB Name	Application (ON details)
M1000	P+MEE-ECLEF-V680D2_InitDataSet_R	Set Initial Data command
M1002		Set Initial Data command retention
M1010	P+MEE-ECLEF-V680D2_Read_R	ID tag read command
M1011		ID tag read result reception
M1012		ID tag read command retention
M1020	P+MEE-ECLEF-V680D2_Write_R	ID tag write command
M1021		ID tag write result reception
M1022		ID tag write command retention
M1030	P+MEE-ECLEF-V680D2_Fill_R	ID tag data fill command
M1031		ID tag data fill result reception
M1032		ID tag data fill command retention
M1040	P+MEE-ECLEF-V680D2_UIDRead_R	ID tag UID read command
M1041		ID tag UID read result reception
M1042		ID tag UID read command retention
M1050	P+MEE-ECLEF-V680D2_MeasureNoise_R	Measure noise command
M1051		Measure noise command retention
M1060	P+MEE-ECLEF-V680D2_InitDataRead_R	Initial data read command
M1061		Initial data read command retention
M1070	P+MEE-ECLEF-V680D2_StatusRead_R	Module status read command

Device	FB Name	Application (ON details)
M1071		Module status read command retention
M1080	P+MEE-ECLEF-V680D2_Copy_R	Command to copy between ID tags
M1081		Retention of command to copy between ID tags
M1200	P+MEE-ECLEF-V680D2_InitDataSet_R P+MEE-ECLEF-V680D2_Read_R P+MEE-ECLEF-V680D2_Write_R P+MEE-ECLEF-V680D2_Fill_R P+MEE-ECLEF-V680D2_UIDRead_R P+MEE-ECLEF-V680D2_MeasureNoise_R P+MEE-ECLEF-V680D2_InitDataRead_R P+MEE-ECLEF-V680D2_StatusRead_R P+MEE-ECLEF-V680D2_Copy_R	Interlock contact (Prevents two or more FBs from being executed at the same time.)

■ External Input (data)

Device	FB Name	Application (ON details)
D2300 to D2301	P+MEE-ECLEF-V680D2_Write_R	Device for indirection of the device where data to be written to the ID tag is stored
D2302 to D2305	P+MEE-ECLEF-V680D2_Write_R	Specify data to be written to the ID tag. (up to 61 words)

■ External output (checks)

Device	FB Name	Application (ON details)
D1000	P+MEE-ECLEF-V680D2_InitDataSet_R	FB error code is stored when setting initial data
D1001		Module error code is stored when setting initial data
M1003		FB is being executed when setting initial data
M1004		FB completes successfully when setting initial data
M1005		FB terminates abnormally when setting initial data
M1006		Module error when setting initial data
D1010	P+MEE-ECLEF-V680D2_Read_R	FB error code is stored when reading data from the ID tag
D1011		Module error code is stored when reading data from the ID tag
D1200 to D1201		Device for indirection of the device where data read is stored
D1202 to D1205		Data read from the ID tag is stored. (up to 61 words)
M1013		FB is being executed when reading data from the ID tag
M1014		FB completes successfully when reading data from the ID tag
M1015		FB terminates abnormally when reading data from the ID tag
M1016		Module error when reading data from the ID tag
M1017		ID communication completes when reading data from the ID tag
D1020	P+MEE-ECLEF-V680D2_Write_R	FB error code is stored when writing data to the ID tag
D1021		Module error code is stored when writing data to the ID tag
M1023		FB is being executed when writing data to the ID tag

Device	FB Name	Application (ON details)
M1024	P+MEE-ECLEF-V680D2_Write_R	FB completes successfully when writing data to the ID tag
M1025		FB terminates abnormally when writing data to the ID tag
M1026		Module error when writing data to the ID tag
M1027		ID communication completes when writing data to the ID tag

Device	FB Name	Application (ON details)
D1030	P+MEE-ECLEF-V680D2_Fill_R	FB error code is stored when filling data in the ID tag
D1031		Module error code is stored when filling data in the ID tag
M1033		FB is being executed when filling data in the ID tag
M1034		FB completes successfully when filling data in the ID tag
M1035		FB terminates abnormally when filling data in the ID tag
M1036		Module error when filling data in the ID tag
M1037		ID communication completes when filling data in the ID tag
D1040	P+MEE-ECLEF-V680D2_UIDRead_R	FB error code is stored when reading the UID of the ID tag
D1041		Module error code is stored when reading the UID of the ID tag
D1042 to D1043		Device for indirection of the device where the UID of the ID tag is stored
D1044 to D1047		ID tag UID is stored when reading the UID of the ID tag (4 words)
M1043		FB is being executed when reading the UID of the ID tag
M1044		FB completes successfully when reading the UID of the ID tag
M1045		FB terminates abnormally when reading the UID of the ID tag
M1046		Module error when reading the UID of the ID tag
M1047		ID communication completes when reading the UID of the ID tag
D1050	P+MEE-ECLEF-V680D2_MeasureNoise_R	FB error code is stored when measuring noise
D1051		Module error code is stored when measuring noise
D1052 to D1053		Device for indirection of the device where the noise measurement results are stored
D1054 to D1056		Measurement results are stored when measuring noise (3 words)
M1052		FB is being executed when measuring noise
M1053		FB completes successfully when measuring noise
M1054		FB terminates abnormally when measuring noise
M1055		Module error when measuring noise
D1060	P+MEE-ECLEF-V680D2_InitDataRead_R	FB error code is stored when reading initial data
D1061		Communication specification is stored when reading initial data
D1062		Communication setting is stored when reading initial data
D1063		Processing specification is stored when reading initial data
D1064		Auto system command waiting time setting is stored when reading initial data

Device	FB Name	Application (ON details)
M1062	P+MEE-ECLEF-V680D2_InitDataRead_R	FB is being executed when reading initial data
M1063		FB completes successfully when reading initial data
M1064		FB terminates abnormally when reading initial data
D1070	P+MEE-ECLEF-V680D2_StatusRead_R	FB error code is stored when reading module status
D1071		CH1 module status is stored when reading the module status
D1072		CH2 module status is stored when reading the module status
M1072		FB is being executed when reading the module status
M1073		FB completes successfully when reading the module status
M1074		FB terminates abnormally when reading the module status
D1080	P+MEE-ECLEF-V680D2_Copy_R	FB error code is stored when copying data between the ID tags
D1081		Module error code is stored when copying data between the ID tags
M1082		FB is being executed when copying data between the ID tags
M1083		FB completes successfully when copying data between the ID tags
M1084		FB terminates abnormally when copying data between the ID tags
M1085		Module error when copying data between the ID tags

(4) Example of use Setting

■Common settings

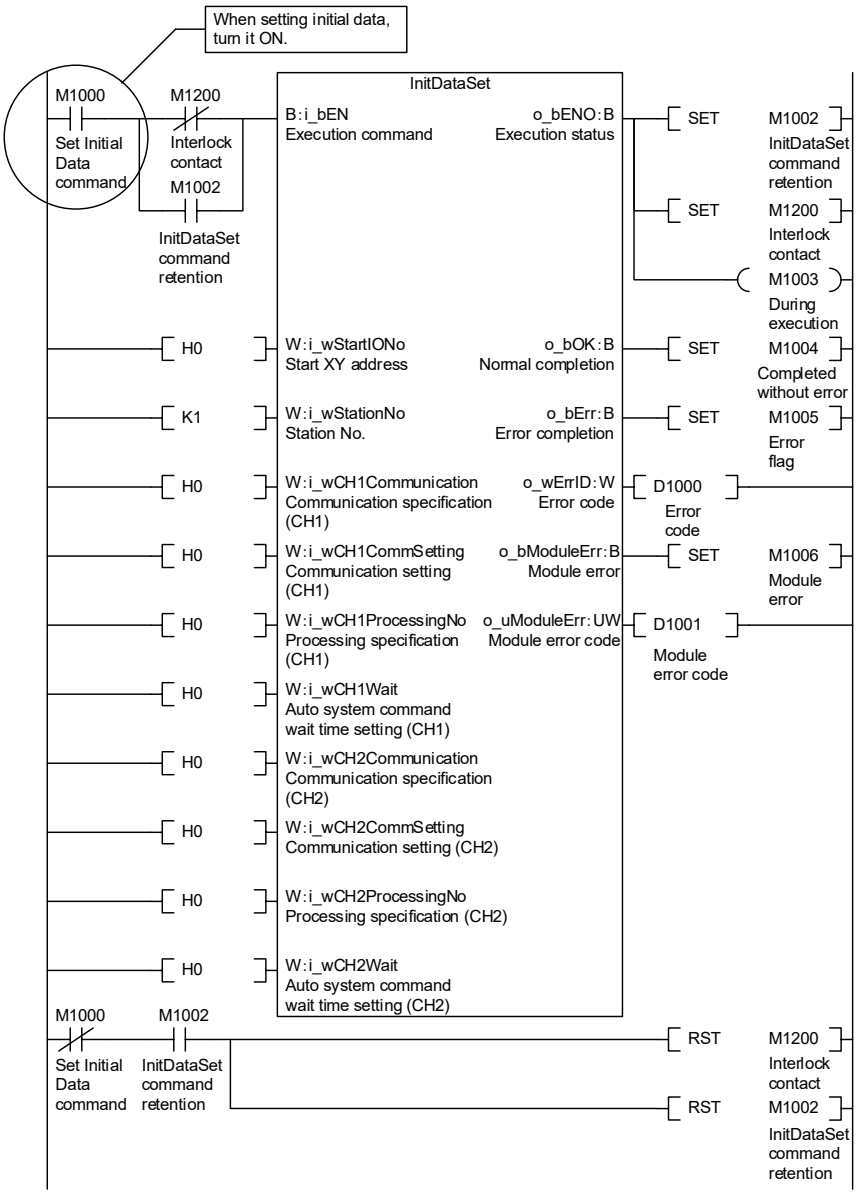
Input/Output item	Value	Description
Start XY address	H0	Specify the Start XY address where CC-Link IE Field Network system master/local unit for communication is installed.
Station No.	K1	Enter the station number of the RFID system to be connected.
Auto system command wait time setting	K0	In this example, the ID tag detection waiting time is specified in the unit of 0.1 seconds when i_wCommunication (Communication specification) is 2 (Repeat auto). In this example of use, processing continues until the response is received from the ID tag.

(5) Programs

(a) P+MEE-ECLEF-V680D2_InitDataSet_R (Set Initial Data)

Set initial data on the following conditions.

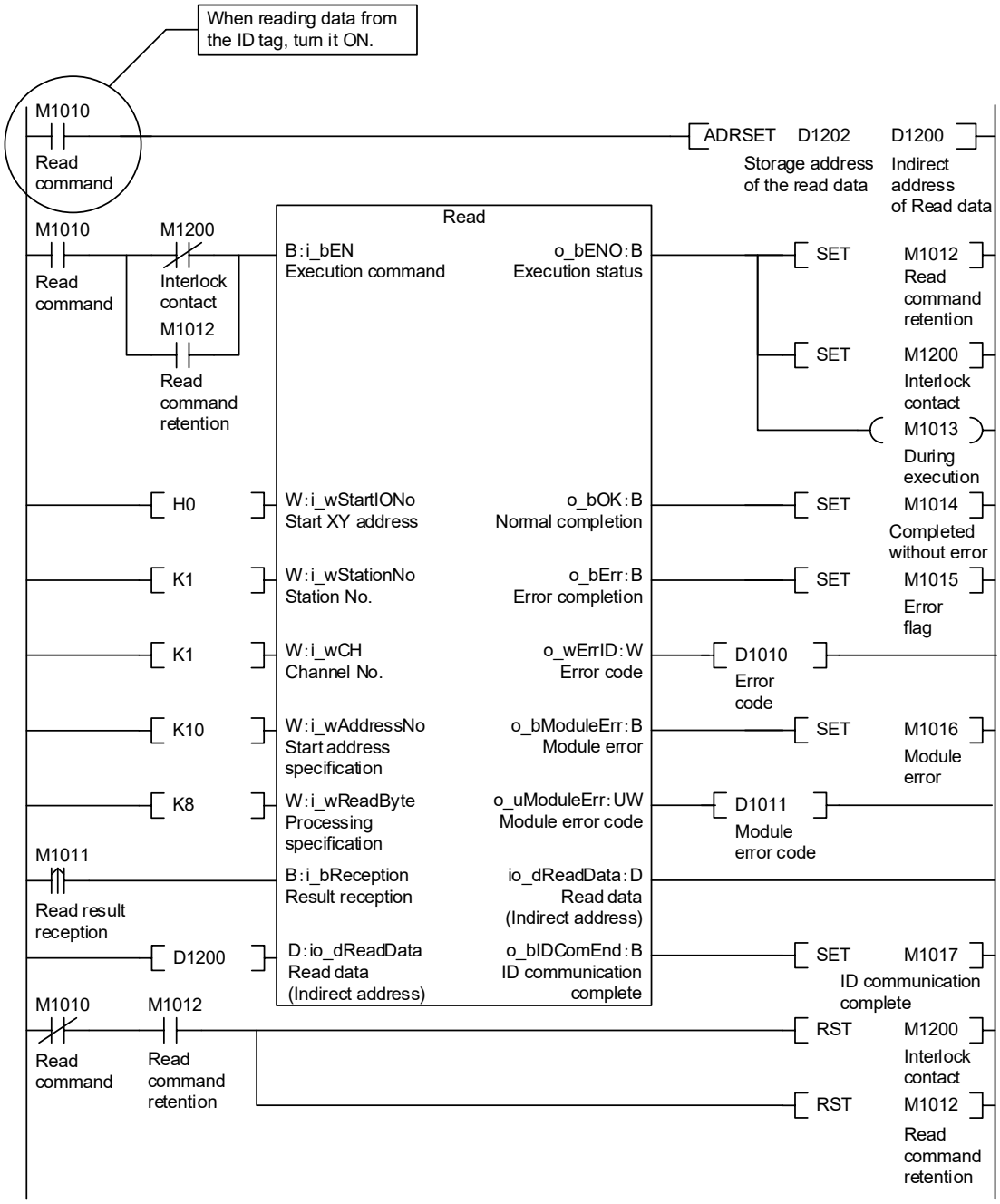
- Start XY address ·····0
- Station No. ·····1
- Communication specification·····0 (Trigger)
- Communication setting·····0 (Write verify setting :Execute
  ID tag communication speed setting :Standard mode
  Write protect setting :Enable
  Read/Write data code setting :Without ASCII/HEX conversion)
- Processing specification·····0
- Auto system command wait time setting 0 (Detection is waited until a response is received from the ID tag.)



(b) P+MEE-ECLEF-V680D2_Read_R (Read ID tag)

Read data from the ID tag on the following conditions.

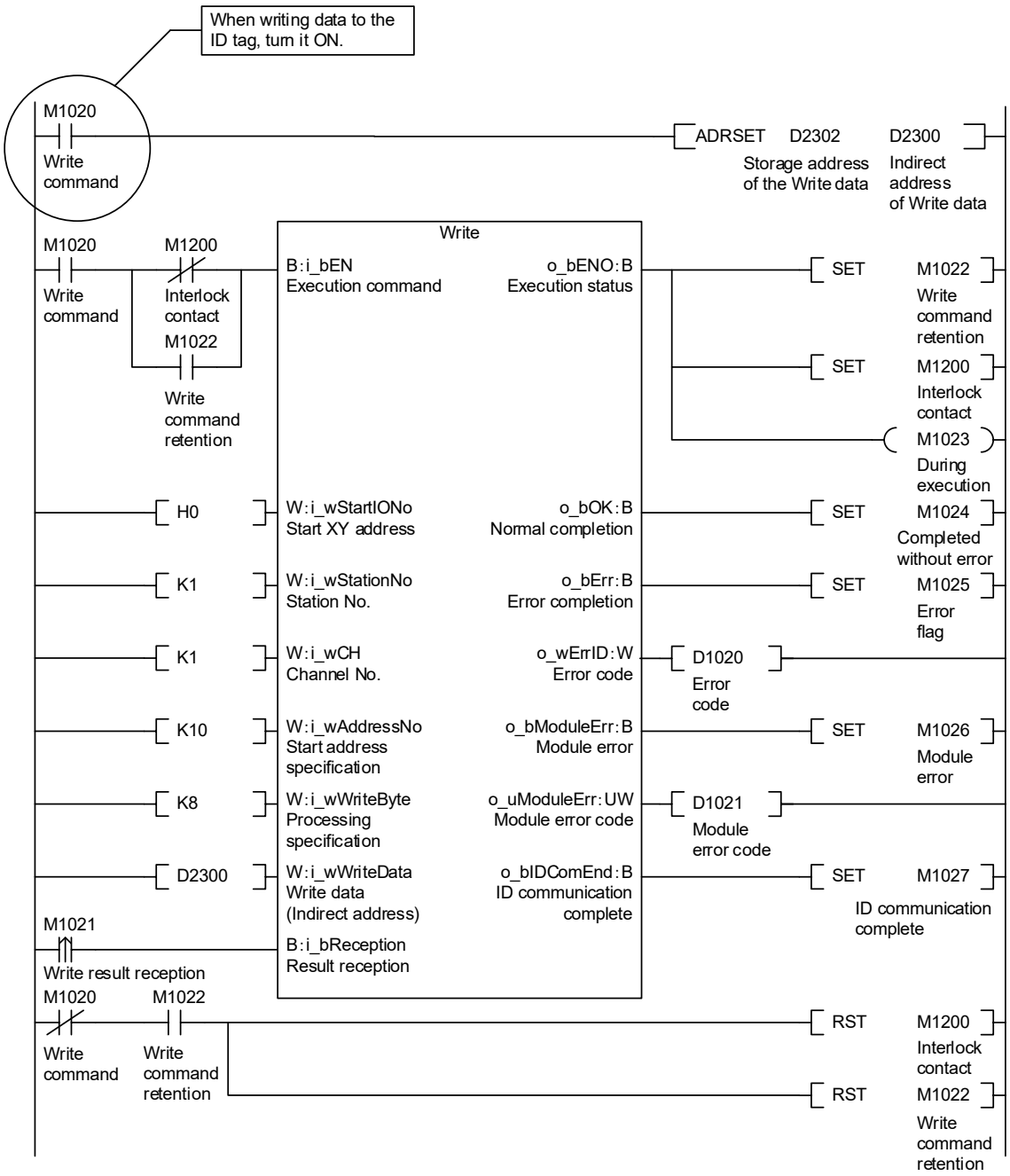
- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1
- Start address specification·····10
- Processing specification·····8 (8 bytes)
- Storage address of the Read data·····D1202 to D1205



(c) P+MEE-ECLEF-V680D2_Write_R (Write to ID Tag)

Write data to the ID tag on the following conditions.

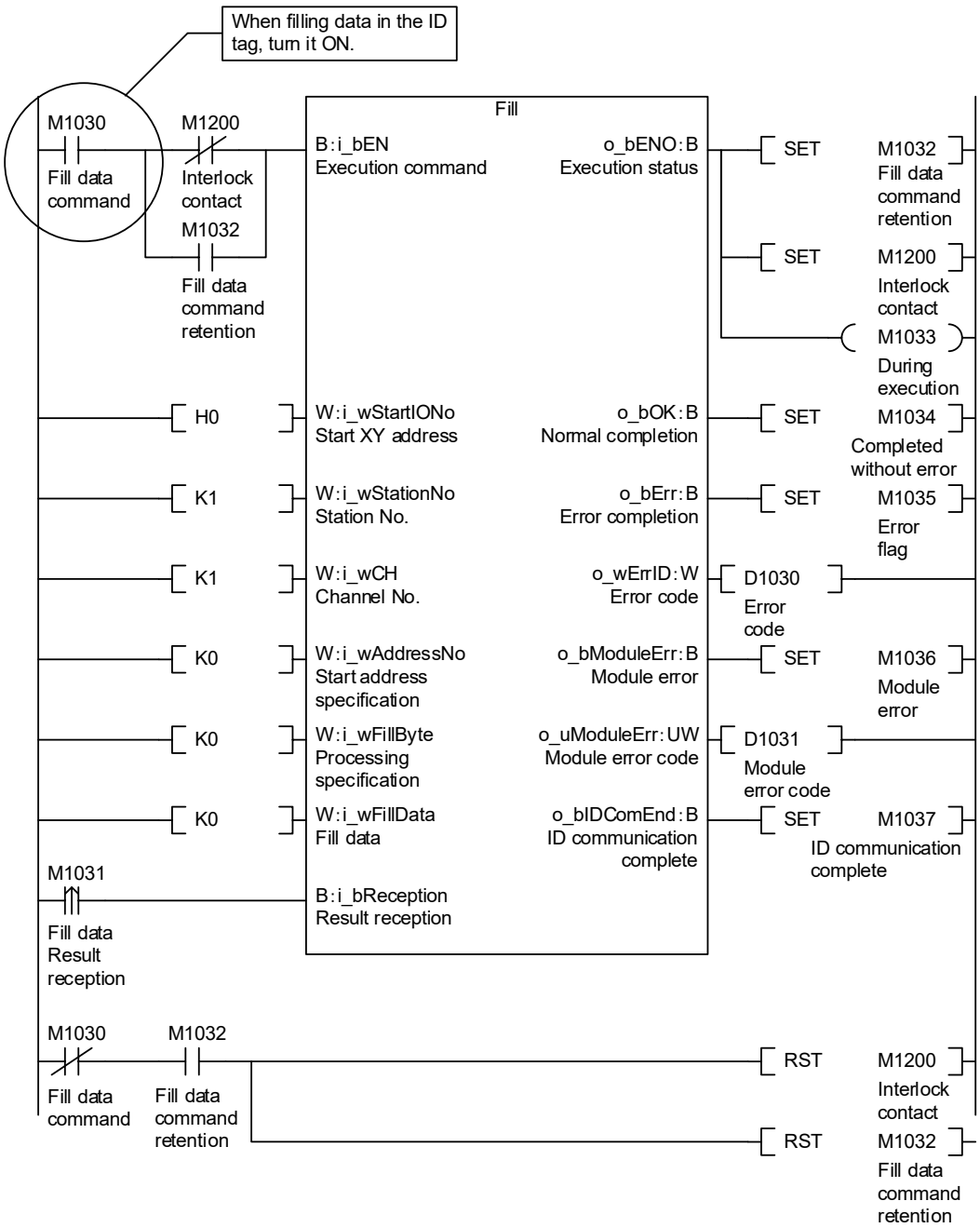
- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1
- Start address specification·····10
- Processing specification·····8 (8 bytes)
- Storage address of the Write data ·····D2302 to D2305



(d) P+MEE-ECLEF-V680D2_Fill_R (Fill Data in ID Tag)

Fill data in the ID tag on the following conditions.

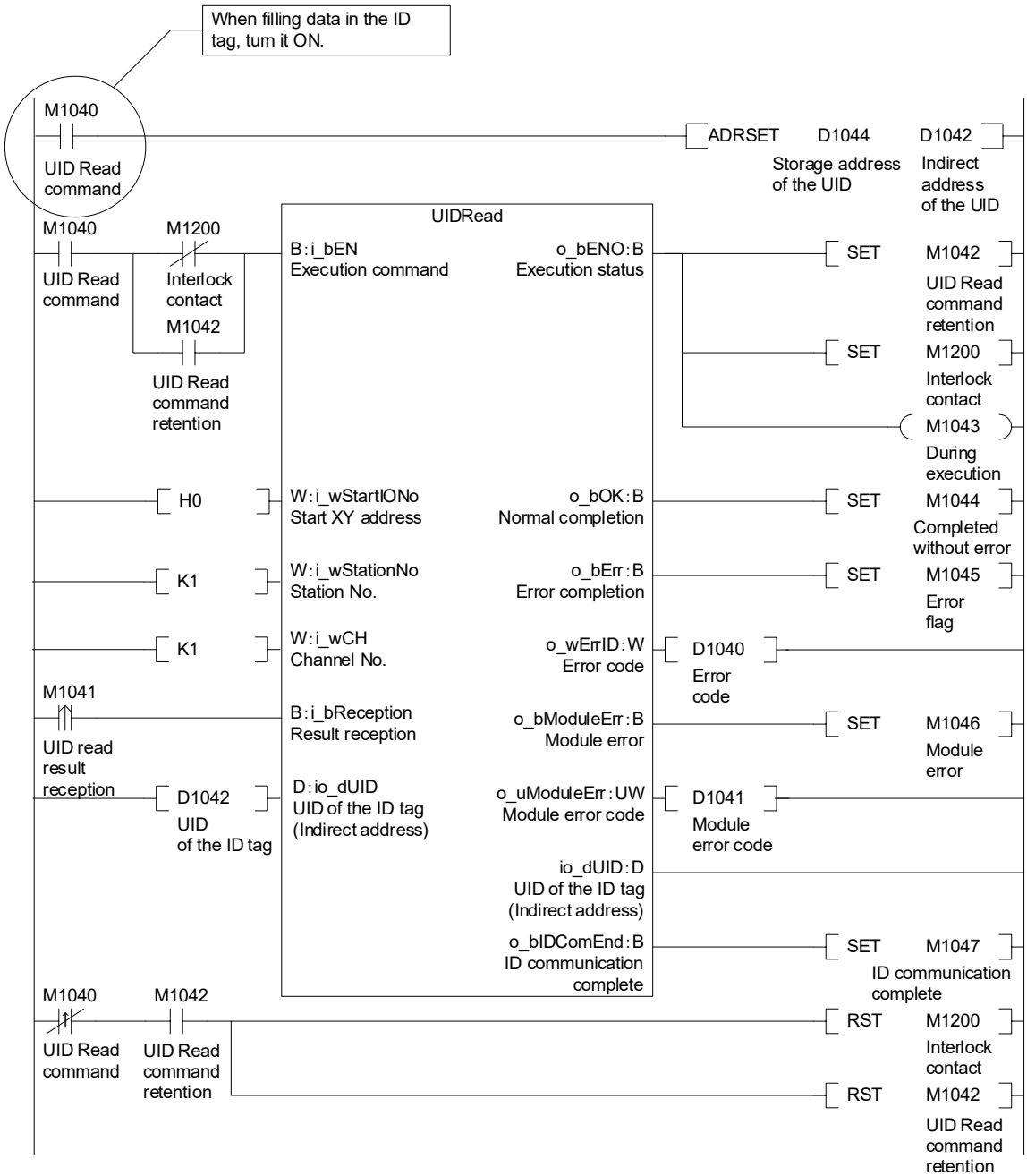
- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1
- Start address specification·····0
- Processing specification·····0 (Specify all data)
- Fill data·····0



(e) P+MEE-ECLEF-V680D2_UIDRead_R (Read UID of ID Tag)

Read UID of the ID tag on the following conditions.

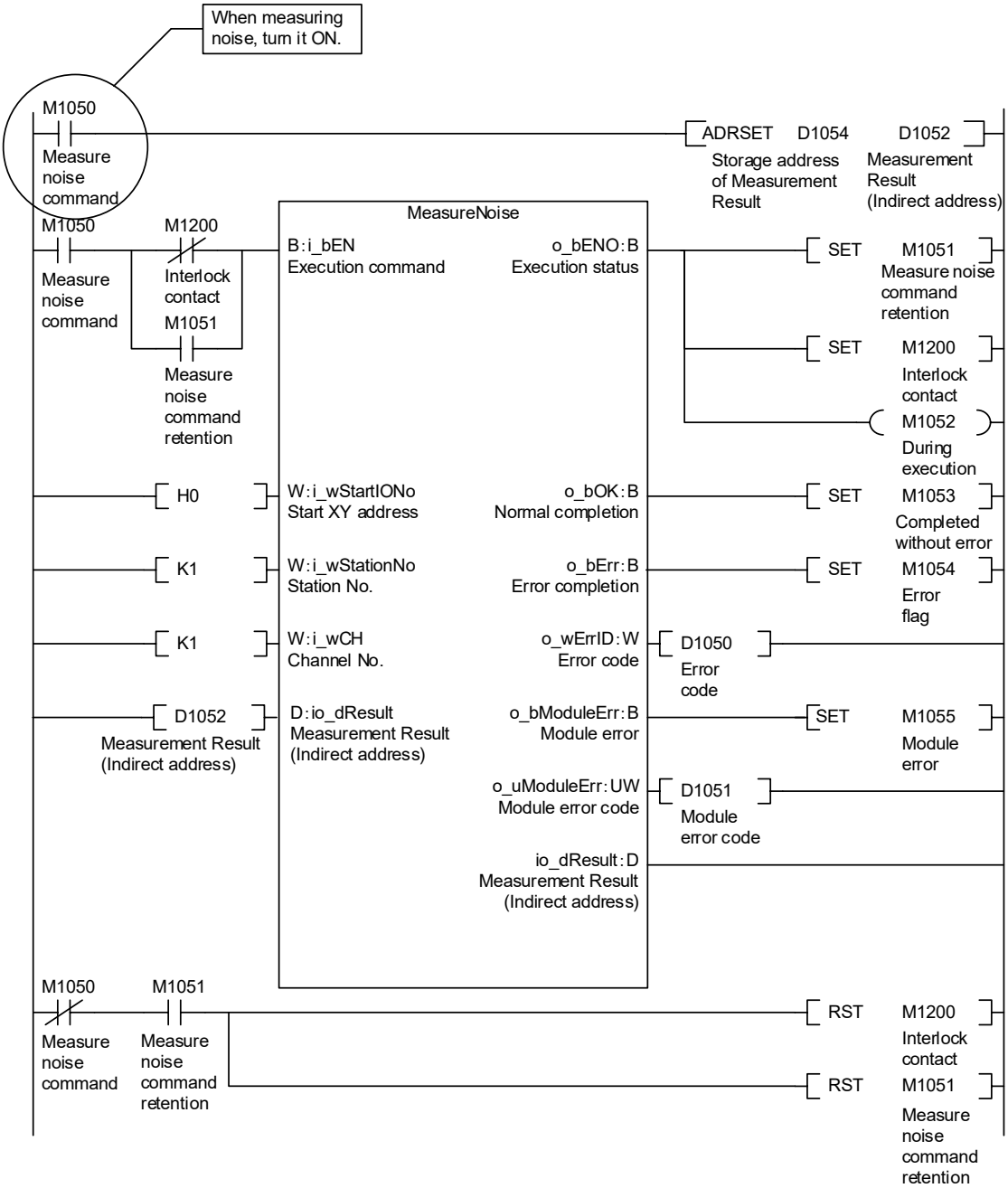
- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1
- Storage destination of UID·····D1044 to D1047



(f) P+MEE-ECLEF-V680D2_MeasureNoise_R (Measures Noise)

Measure noise on the following conditions.

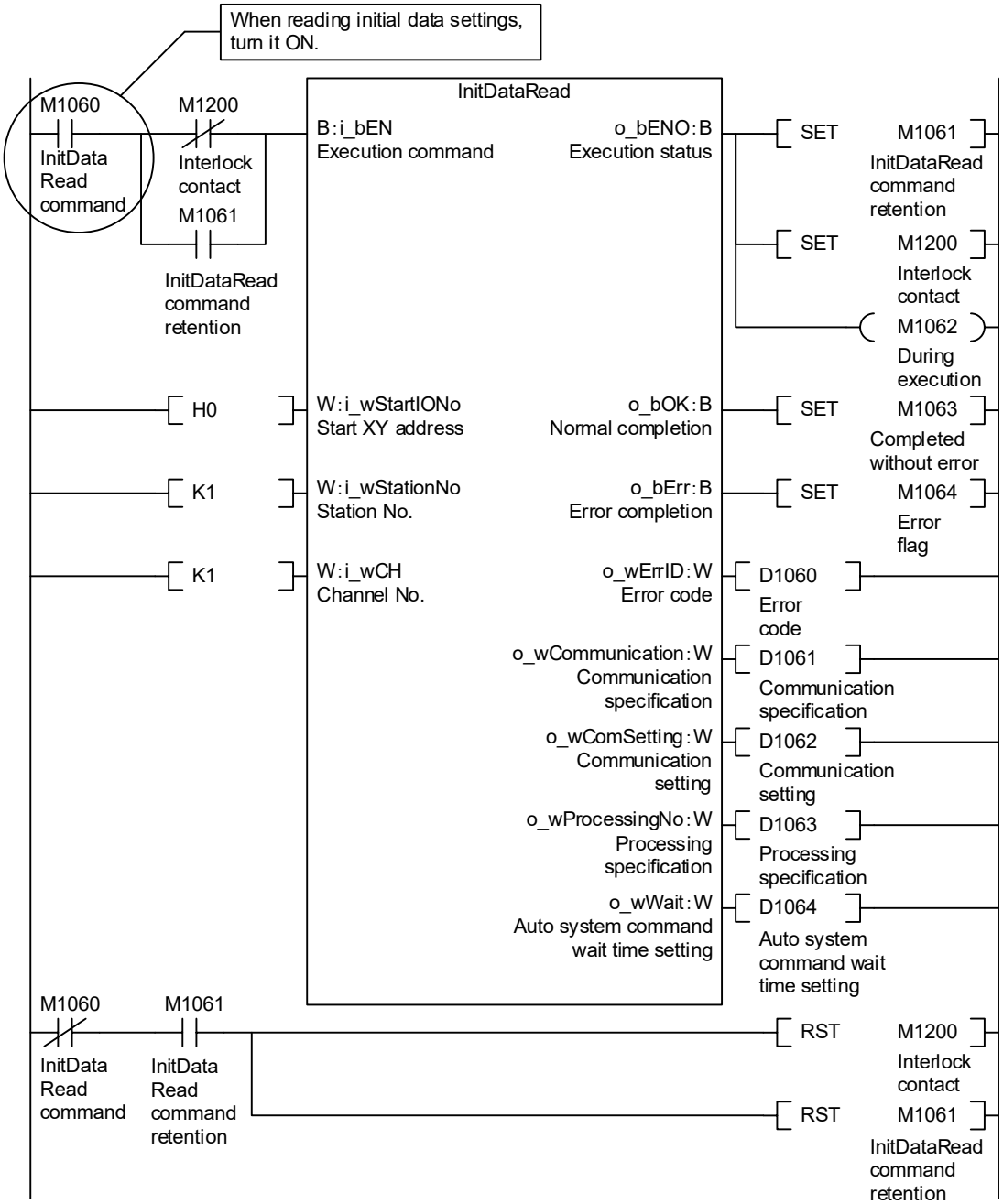
- Start XY address ····· 0
- Station No. ····· 1
- Channel No. ····· 1
- Storage address of Measurement result ···· D1054 to D1056



(g) P+MEE-ECLEF-V680D2_InitDataRead_R (Read initial data settings)

Read initial data on the following conditions.

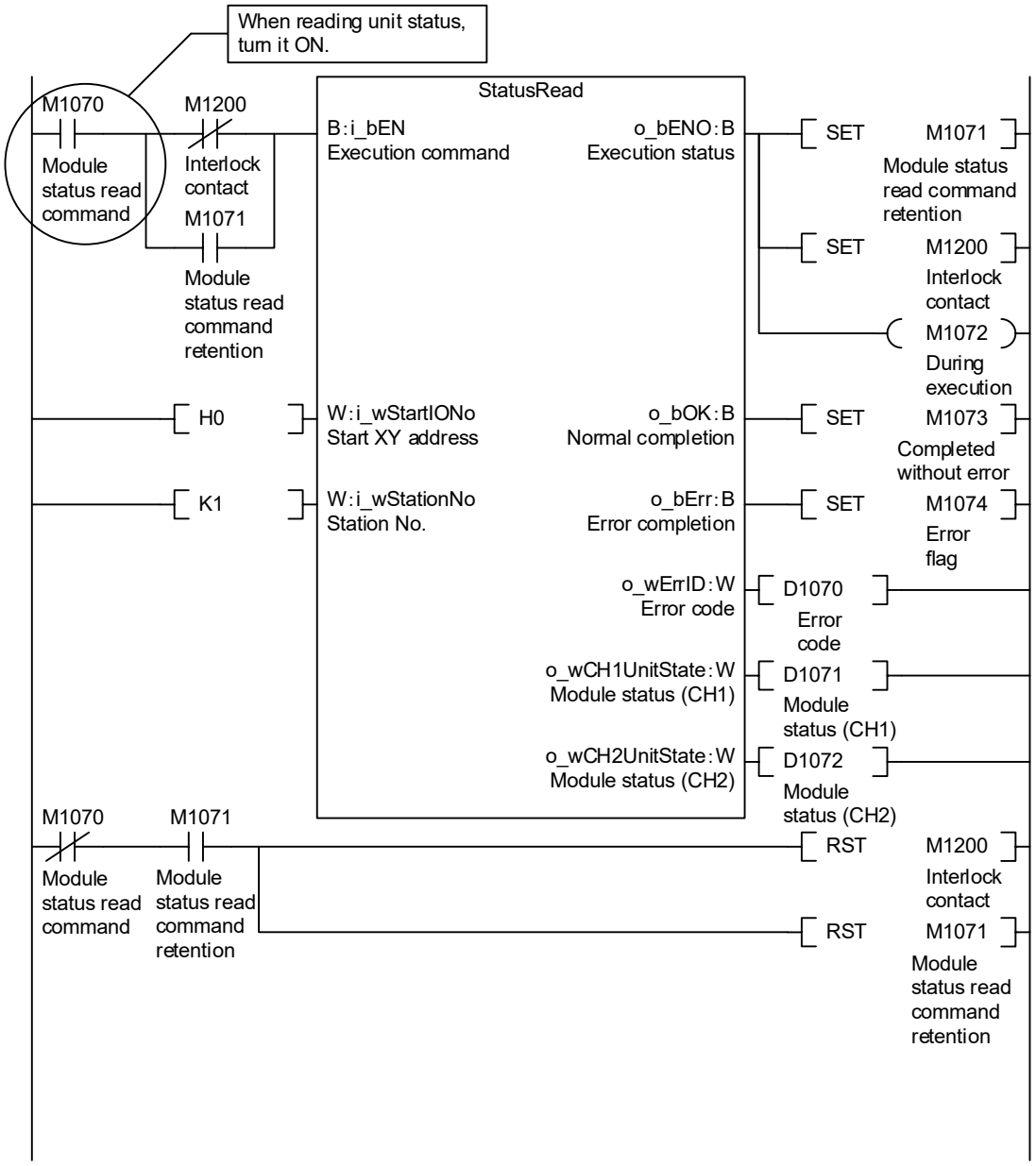
- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1



(h) P+MEE-ECLEF-V680D2_StatusRead_R (Read Module Status)

Read the unit status on the following conditions.

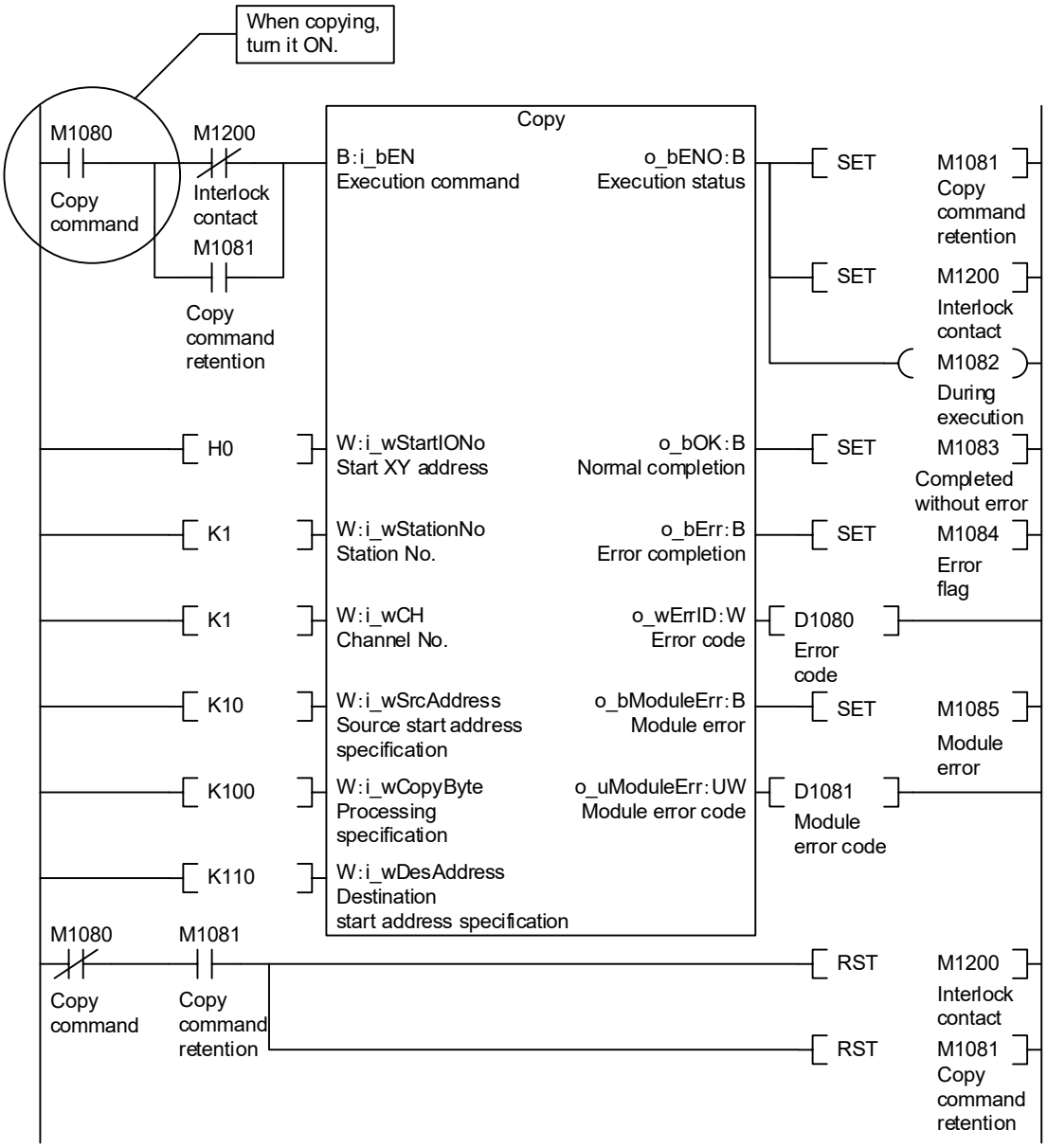
- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1



(i) P+MEE-ECLEF-V680D2_Copy_R (Copies data of ID tag)

Copy data between the ID tags on the following conditions.

- Start XY address ·····0
- Station No. ·····1
- Channel No. ·····1
- Source start address specification ·····10
- Processing specification ·····100 (100 bytes)
- Destination start address specification ·110



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