MITSUBISHI ELECTRIC ENGINEERING

RFID Interface Module

MODEL

ECL2-V680D1

FB Library Reference Manual

(For MELSEC iQ-F series)

Products for Monitoring and Traceability

CC-Link

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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 Details
Nov. 2018	50CM-D180347-A	First edition
Sep. 2023	50CM-D180347-B	Redesign of front and back covers

Japanese manual number: 50CM-D180349

1. Overview

1.1. FB Library Overview

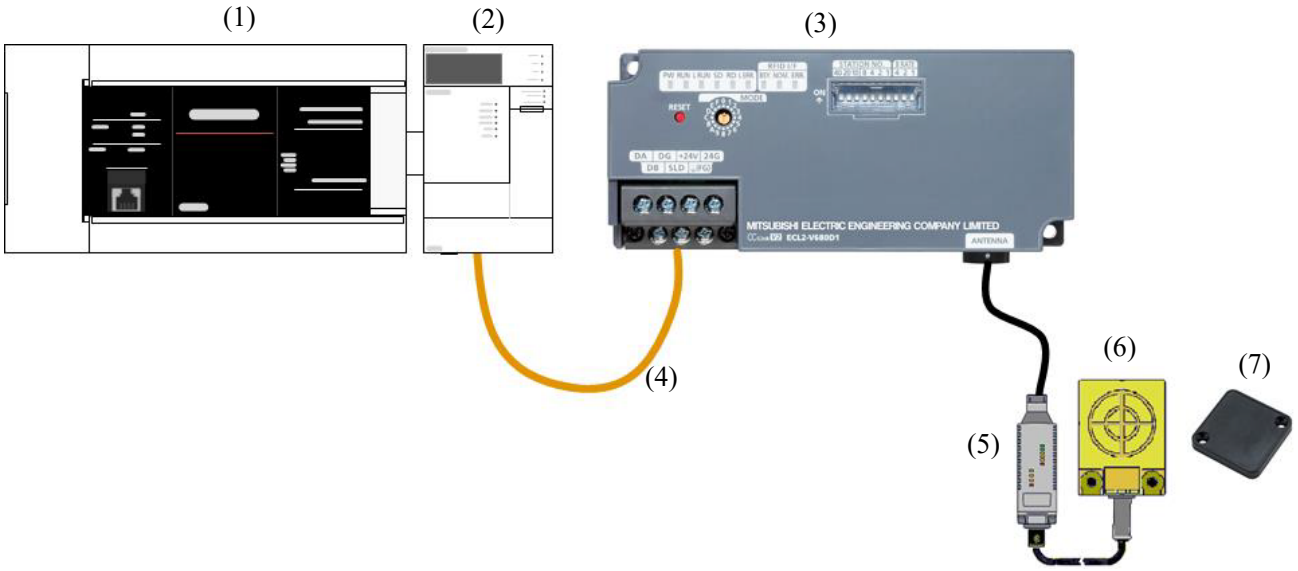
This FB library (for MELSEC iQ-F Series) is for using the ECL2-V680D1 CC-Link OMRON V680 series compatible RFID interface module.

1.2. FB Library List

No.	FB Name (*1)	Functions (*2)
1	P+MEE-ECL2-V680D1_InitDataSet_F	Sets the initial data when a command is executed. (*3)
2	P+MEE-ECL2-V680D1_Read_F	Reads data from an ID tag.
3	P+MEE-ECL2-V680D1_Write_F	Writes data to an ID tag.
4	P+MEE-ECL2-V680D1_Fill_F	Initializes data of an ID tag.
5	P+MEE-ECL2-V680D1_UIDRead_F	Reads the UID(module identification number) of an ID tag.
6	P+MEE-ECL2-V680D1_MeasureNoise_F	Measures the noise environment around an antenna.
7	P+MEE-ECL2-V680D1_InitDataRead_F	Reads the initial data setting.
8	P+MEE-ECL2-V680D1_StatusRead_F	Reads the module status.

*1 Suffixed added to the end of the FB name such as "_00A" indicate the version of the FB, however, the version will not be stated in this reference manual.
*2 Label comments descriptions may be abbreviated due to the character limits of GX Works3.
*3 Always execute the FB first after the power-on or reset clear.

1.3. System Configuration Examples



No.	Item	Explanation
(1)	Programmable controler	CPU module Series: MELSEC iQ-F series Model: FX5U CPU FX5UC CPU (*1)
(2)	CC-Link system master/intelligent device module	FX5-CCL-MS
(3)	CC-Link OMRON V680 series compatible RFID interface module.	ECL2-V680D1
(4)	Cable	CC-Link Cable
(5)	RFID amplifier	OMRON V680 series amplifier
(6)	RFID antenna	OMRON V680 series antenna
(7)	ID tag	OMRON V680 series ID tag

*1 FX5-CNV-IFC or FX5-C1PS-5V is necessary to connected to the FX5UC CPU and FX5-CCL-MS.

1.4. About used equipment and version

The range of Station No. that can be specified depends on the equipment and version to be used.

		iQ-F CPUModule F/W Version	
		Version 1.050 to less than Version 1.100	Version1.100 or later (*1)
GX Works3 Version	Version 1.042U to less than Version 1.047Z	1 to 24 stations	1 to 24 stations
	Version 1.047Z or later	1 to 24 stations	1 to 28 stations

*1 Version1. 100 corresponds to CPU serial number 17X *** or later.

Depending on the effective range, the setting of Link Refresh differs. Please refer to section 1.5.

Note: Input label [station number] of each FB can be entered from 1 to 28 stations as the effective range regardless of the equipment and version to be used. However, if your equipment and version does not correspond to 1 to 28 stations, please use 1 to 24 stations.

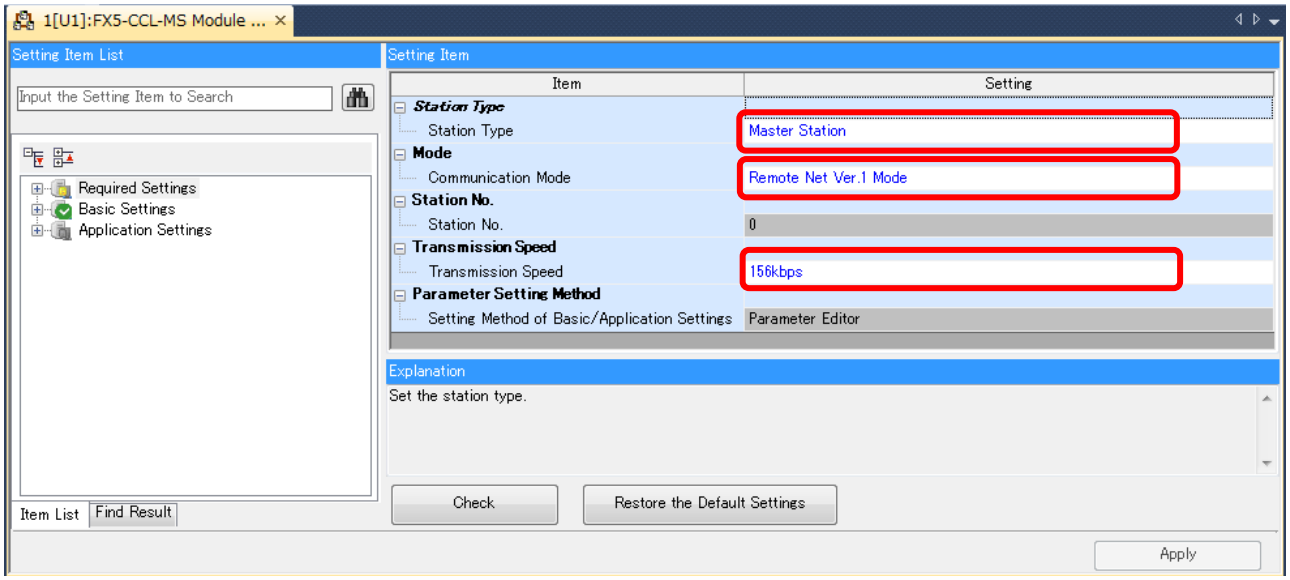
1.5. CC-Link System Master Station Module Parameter Settings

This section explains the details of the master station network parameter settings based on Section 1.3 “System Configuration Examples”. The following items are set using GX Works3.

1.5.1. Required Settings

Item	Description
Station Type	Set station type. Select the master station
Mode (*1)	Set the CC-Link operation mode. Example: Select “RemoteNet Ver. 1 Mode”.
Transmission speed (*2)	Set the CC-Link transmission speed. Example: Select “156 kbps”.

*1. Select the “RemoteNet - Ver. 1 mode” or “RemoteNet - Ver. 2 mode”.
*2. Select the “156kbps/625kbps/2.5Mbps/5Mbps/10Mbps”.

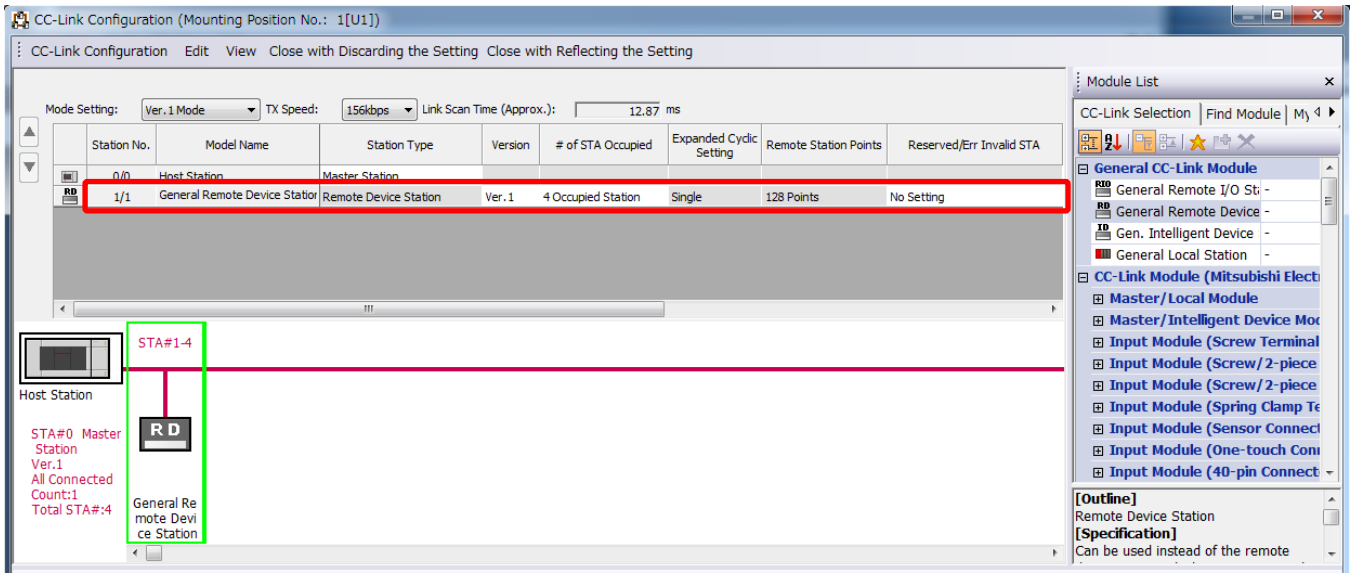


1.5.2. Basic Settings

Network Configuration Settings

Item	Description
Station type (*1)	Set the type of remote module station connected to the master station. Example : Set “Remote device station”.
Version (*1)	Set the Version. Example : Set“Ver.1”.
# of STA Occupied (*1)	Set the number of stations occupied by the remote module. Example : Select “4 Occupied Stations”.
Extended Cyclic Setting (*1)	The extended cyclic settings will vary according to the setting value for the RFID interface module’s mode selection switch. Example : Select “Single”. ("Single" is fixed when using Ver.1)
Reserved/Err Invalid STA	Select the remote module’s reserved station/invalid station. Example : Select “No setting”.

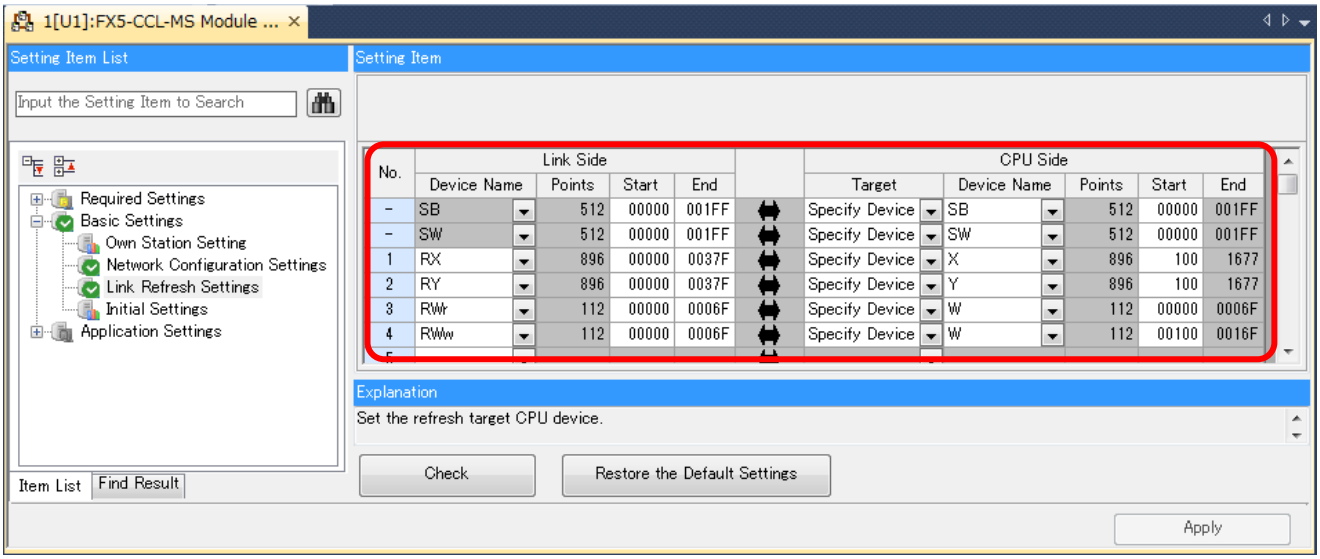
*1. Match the station information setting to the setting for the RFID interface module’s mode selection switch.
Refer to Appendix 4. Hardware Settings.



Link Refresh Settings

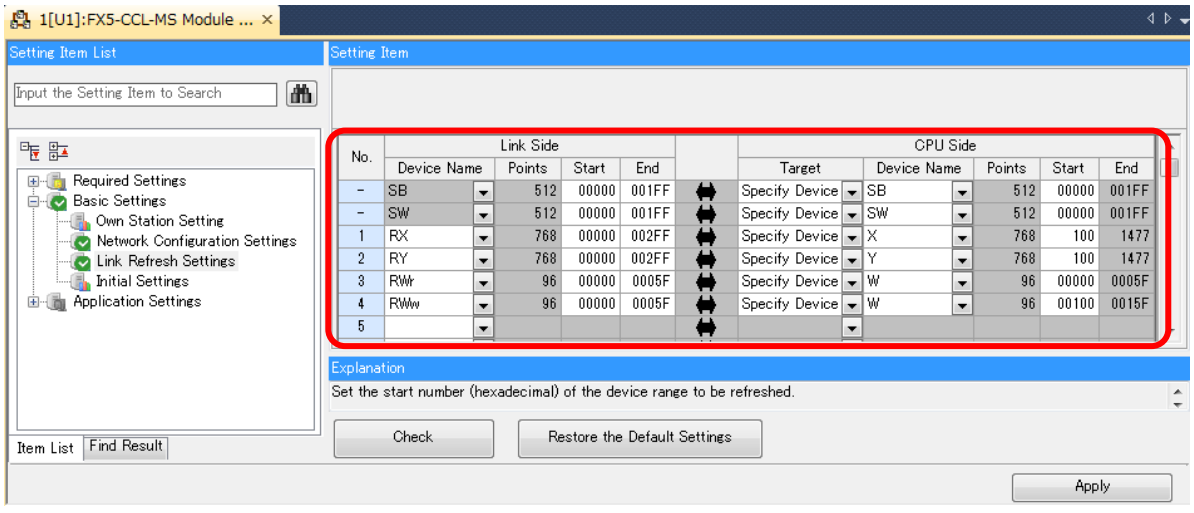
Setting for station number 1 to 28 stations

Set item	Link side		PLC side		
Device Name	Start	End	Device Name	Start	End
SB	00000	001FF	SB	00000	001FF
SW	00000	001FF	SW	00000	001FF
RX	00000	0037F	X	00100	1677
RY	00000	0037F	Y	00100	1677
RWr	00000	0006F	W	00000	0006F
RWw	00000	0006F	W	00100	0016F



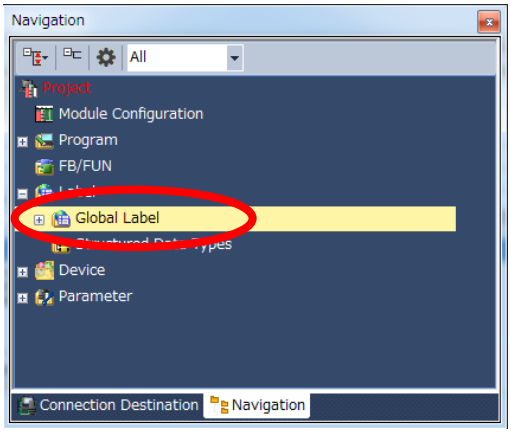
Setting for station number 1 to 24 stations

Set item	Link side		PLC side		
Device Name	Start	End	Device Name	Start	End
SB	00000	001FF	SB	00000	001FF
SW	00000	001FF	SW	00000	001FF
RX	00000	002FF	X	00100	1477
RY	00000	002FF	Y	00100	1477
RWr	00000	0005F	W	00000	0005F
RWw	00000	0005F	W	00100	0015F



1.6. 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 1.5.2 Enter "X100Z9”.

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 1.5.2. Enter "Y100Z9".

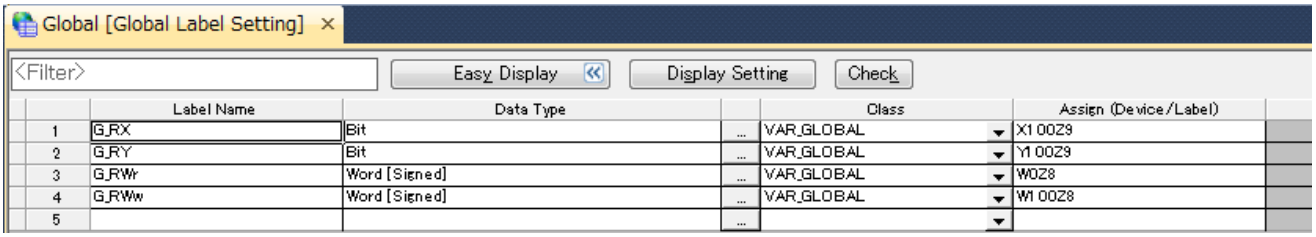
G_RWr Configure remote register (RWr) settings.

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 1.5.2. Enter "W0Z8”.

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 1.5.2. Enter "W100Z8”.

Global label settings for the MELSEC iQ-F series PLC



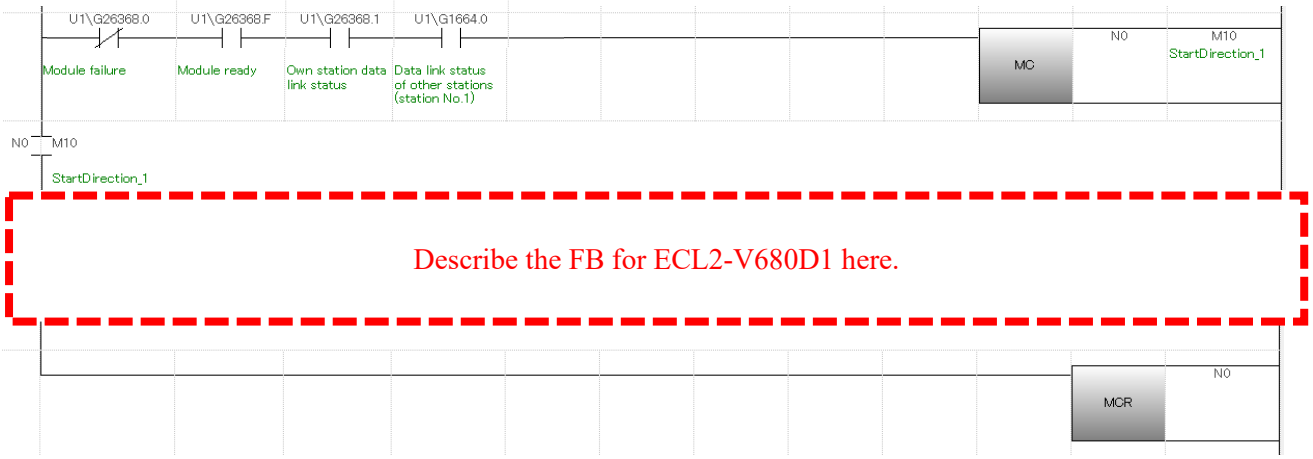
1.7. Creating Interlock Program

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, establish the interlock with the following device.

・Own station data link status (U1\G26368.1)

Example : Interlock Exsample (Station No.1)
(Module No.1)

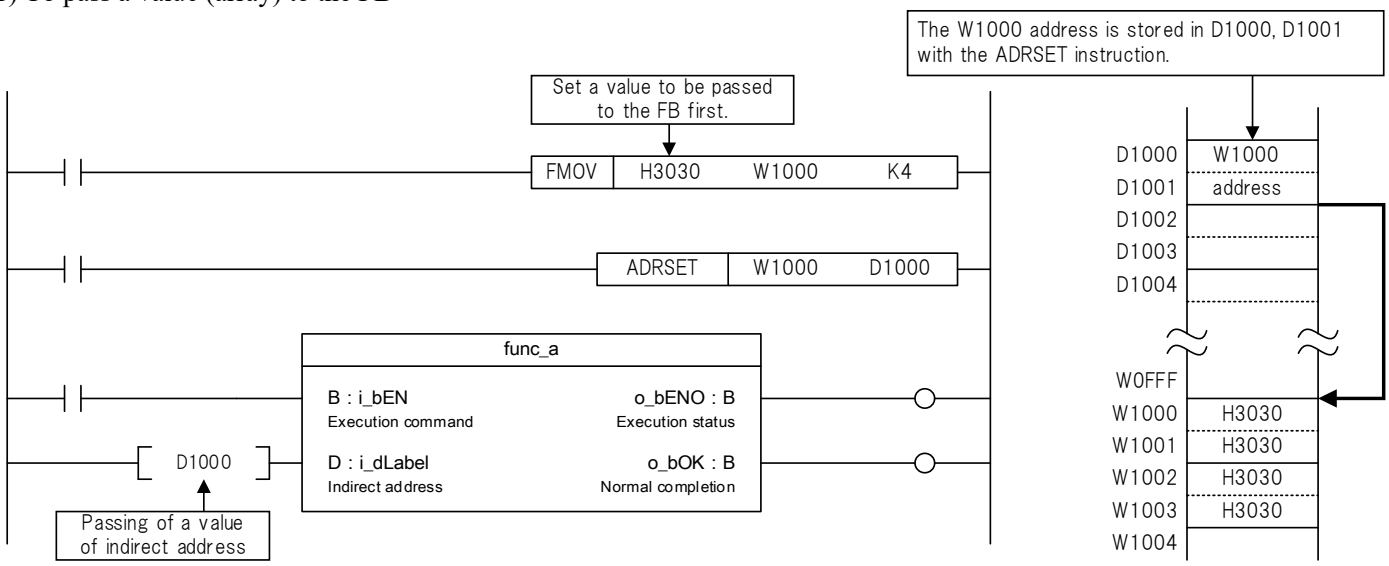


1.8. Indirect addressing

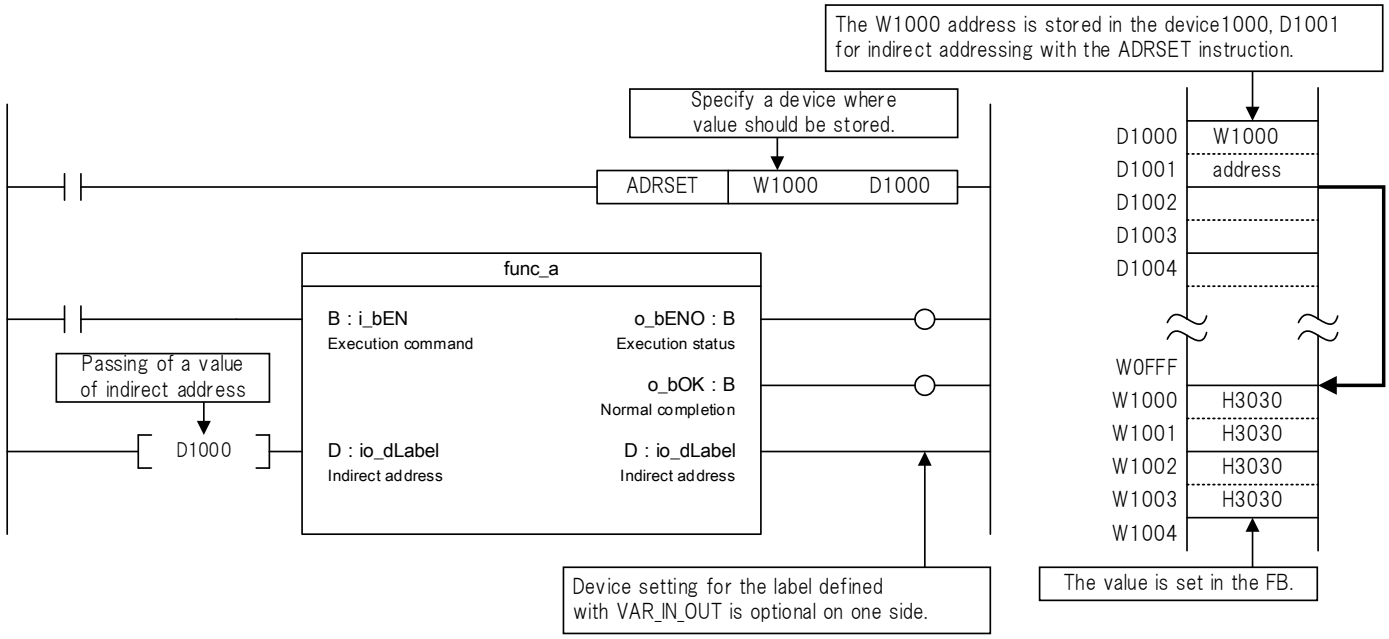
This FB library has an area for specifying an indirect address for input of the FB.

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



1.9. Relevant Manuals

ECL2-V680D1 User's Manual (Details Section) (50CM-D180160-E(1607)MEE)
MELSEC iQ-F FX5 User's Manual (CC-Link) (SH(NA)-081793ENG-B)

1.10. Note

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

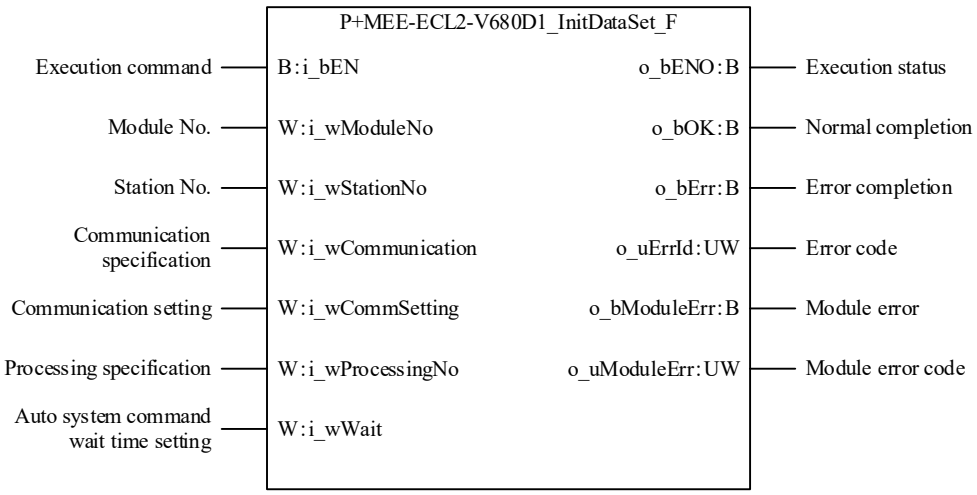
2. FB Library Details

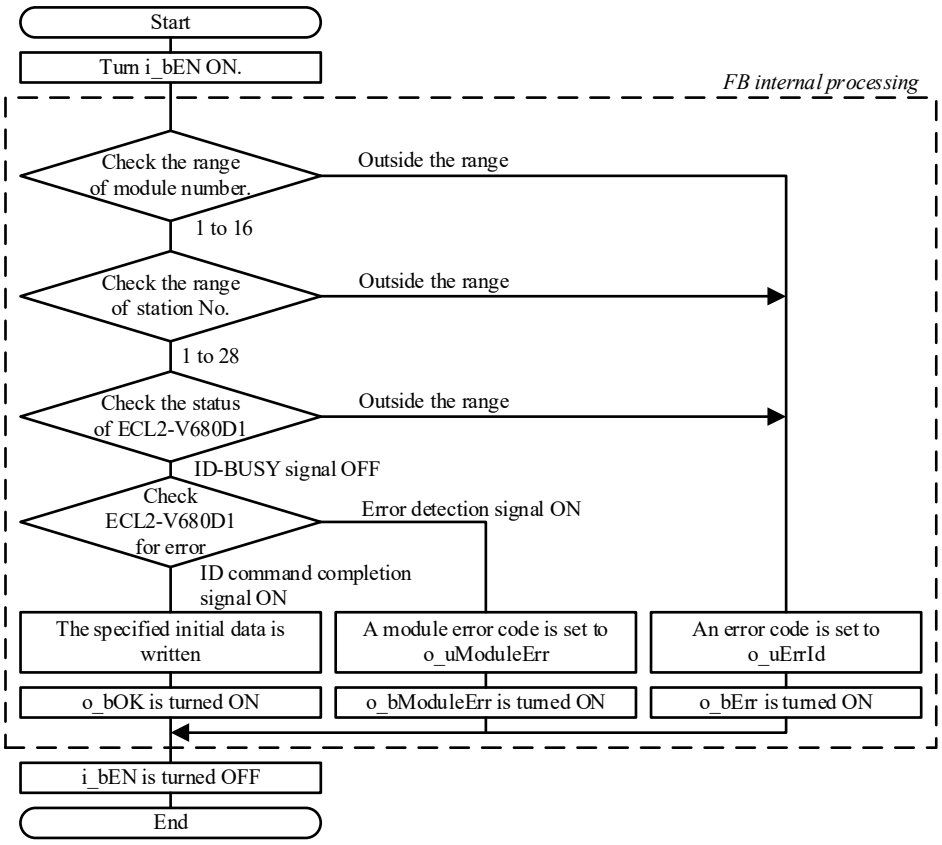
2.1. P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting)

Name

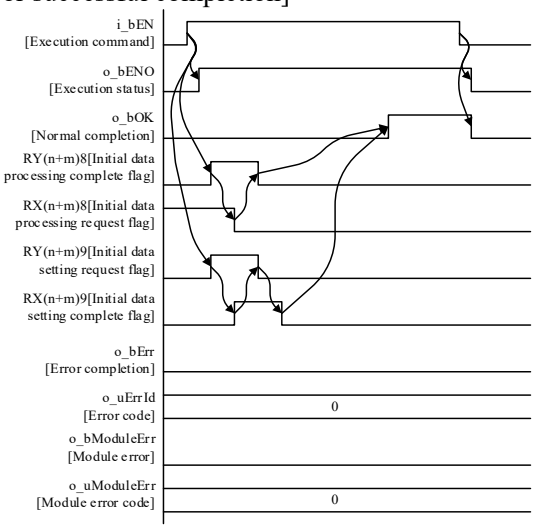
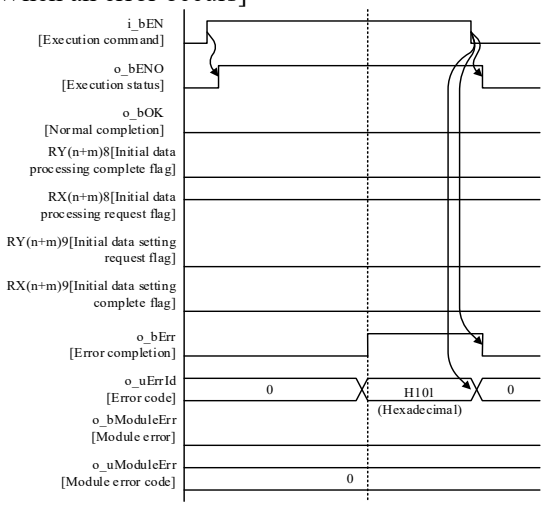
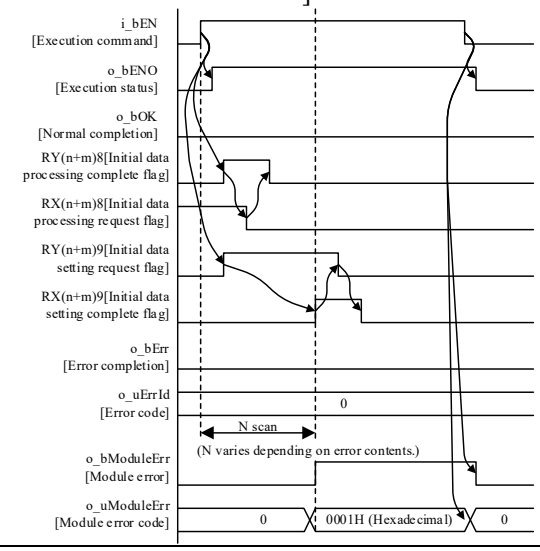
P+MEE-ECL2-V680D1_InitDataSet_F

Function Description

<table>
<tr><th>Items</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="4">Target device</td><td>Module</td><td>ECL2-V680D1</td></tr>
<tr><td>CC-Link system module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5-CCL-MS</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5U CPU
FX5UC CPU</td></tr></table></td></tr>
<tr><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>Version 1.042U or later</td></tr></table>*The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1049Step (for MELSEC iQ-F series)
*The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</td></tr>
</table>

Items	Description
Function Description	1) When i_bEN (Execution command) is turned ON, various initial data set is written to ECL2-V680D1.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 issuspended. In addition, an error code is set to o_uErrId(Error code). Refer to the Error code list for details. 3) If an error occurs in ECL2-V680D1, o_bModuleErr (Module error) is turned ON andprocessing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). Refer to the ECL2-V680D1 User's Manual (Details Section) for details on the settings.
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type

Items	Description
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 4) Set the global label setting according to Section "1.6. 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 (Execution command) 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) When i_bEN (Execution command) is ON, do not change the values set for i_wModuleNo (Module No.), i_wStationNo (Station No.), i_wCommunication (Communication specification), i_wCommSetting (Communication setting), i_wProcessingNo (Processing specification), or i_wWait (Auto system command wait time setting). 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) If this FB process does not end, confirm that the i_wStationNo (Station No.) matches the network station No. 11) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulse execution (multiple scan execution)

Items	Description
I/O signal timings	[For successful completion]  [When an error occurs]  [when a module error occurs]  n: Address assigned to master module by station number setting. m: Address assigned to mode selection switch setting.
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error code

■Error code list

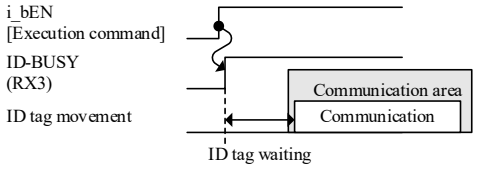
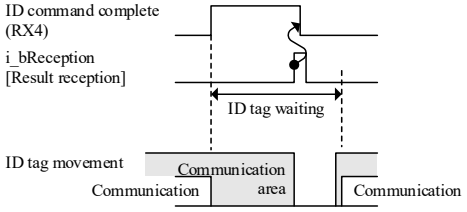
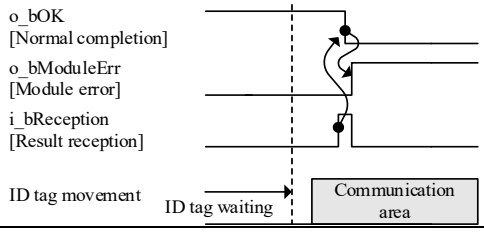
Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo (Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

Used Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	-	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. in which the target CC-Link system master/intelligent device module is mounted with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
Communication specification	i_wCommunication	Word [signed]	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>Range</th><th>Description</th></tr>
<tr><td>Communication Setting</td><td>i_wCommSetting</td><td>Word [signed]</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><tr><td>4 to 15</td><td>Unused</td></tr></table></td></tr>
<tr><td>Processing specification</td><td>i_wProcessingNo</td><td>Word [signed]</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	Range	Description
Auto system Command wait time setting	i_wWait	Word [signed]	1 to 9999, 0 (Decimal)	When i_wCH1Communication (Communication specification) is an auto system command (Auto, Repeat auto, FIFO repeat), specify the ID tag detection waiting time in the module 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: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	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 module is stored.

FB version history

Version	Date	Details
00A	2018/6/11	First edition

Note

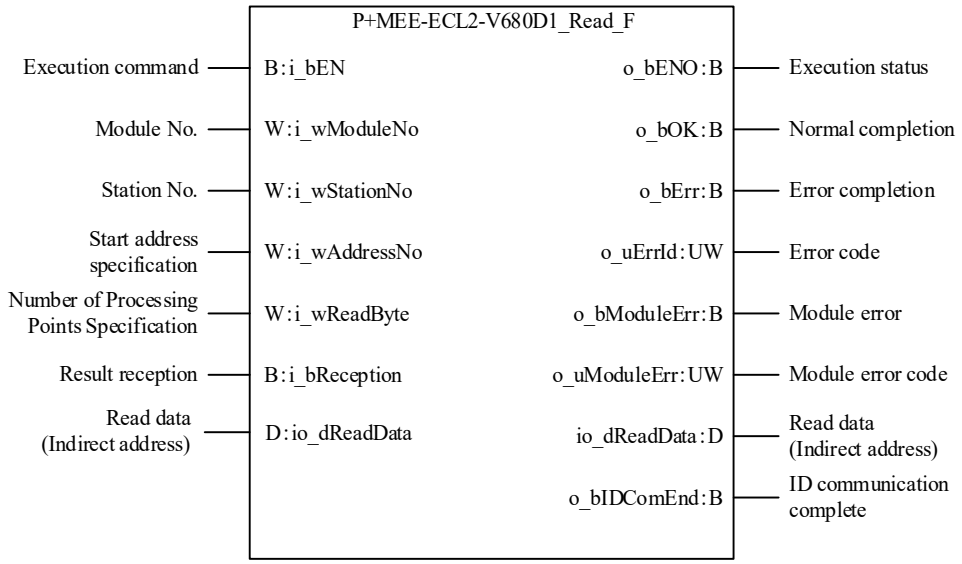
This chapter includes information related to this FB.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

2.2. P+MEE-ECL2-V680D1_Read_F (Reads data from an ID tag.)

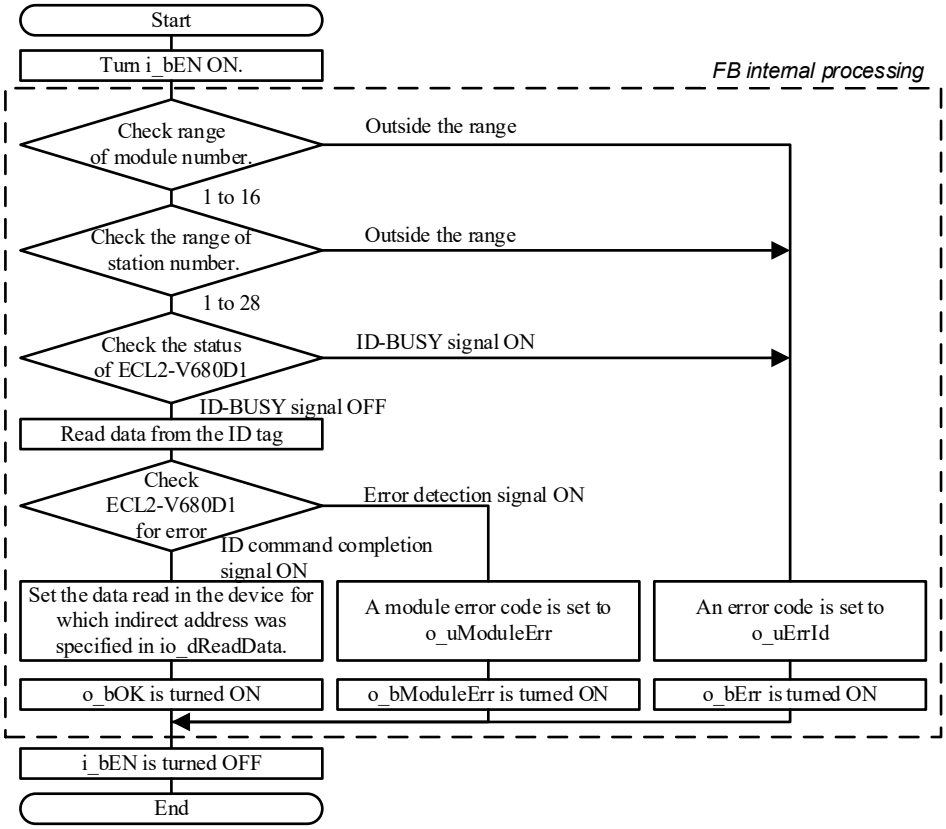
Name

P+MEE-ECL2-V680D1_Read_F

Function Description

Items	Description	
Function overview	Reads the data of an ID tag.	
Symbol		
Target device	Module	ECL2-V680D1
	CC-Link system module	Series: MELSEC iQ-F series / Model: FX5-CCL-MS
	CPU module	Series: MELSEC iQ-F series / Model: FX5U CPU, FX5UC CPU
	GX Works3	Series: MELSEC iQ-F series / Model: Version 1.042U or later *The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
Language	Ladder diagram	
Steps	1094Step (for MELSEC iQ-F series) *The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	

Items	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.
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.



2) When processing specification made in P+MEE-ECL2-V680D1_InitDataSet_F (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

Address	ID tag memory
0010	Data1
0011	Data2
0012	Data3

→

CPU module devices	
Data1	Data2
Data3	Data4

1: lower to the upper

Address	ID tag memory
0010	Data1
0011	Data2
0012	Data3

→

CPU module devices	
Data2	Data1
Data4	Data3

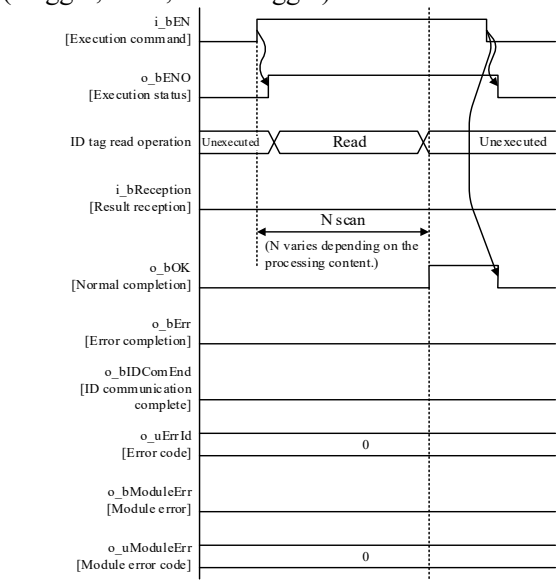
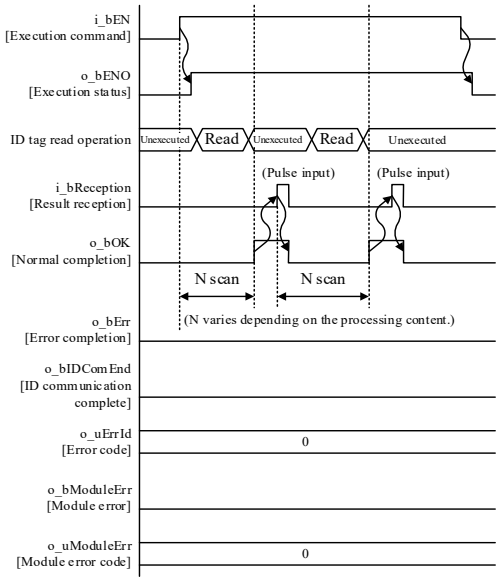
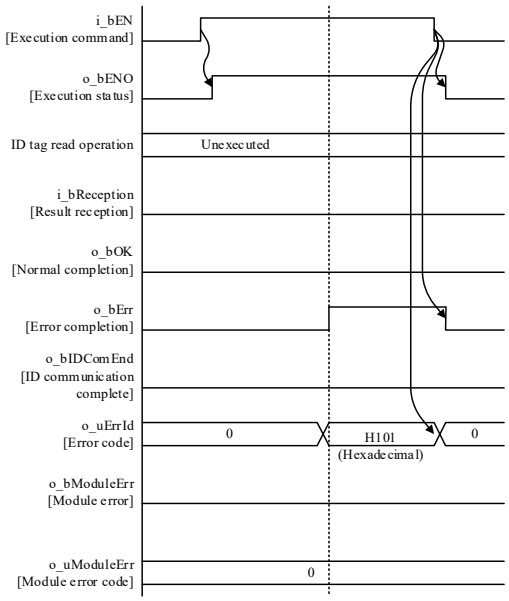
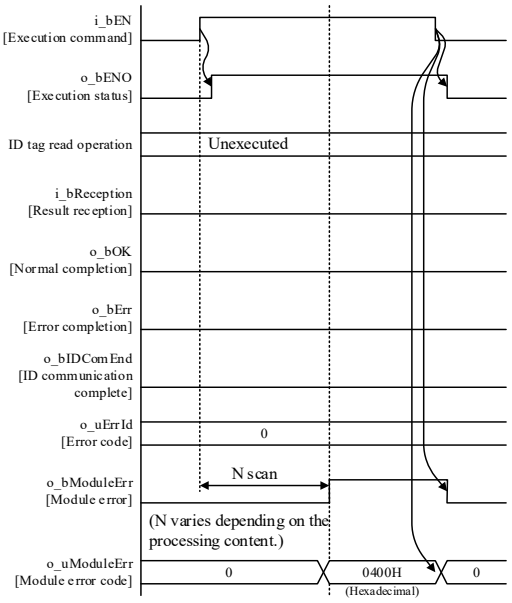
3) If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (Set Initial Data) is 2(Repeat auto) or 4(FIFO repeat), the next ID tag detection will start when i_bReception(Result reception) is turned ON.

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_uErrId(Error code). Refer to the Error code list for details.

5) If an error occurs in ECL2-V680D1, 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 ECL2-V680D1 User's Manual (Details Section) for details on the settings.

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.

Items	Description
FB compile format	Macro type
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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 (Execution command) 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 data registers D5000 to D5001. When an interrupt program is used, do not use the data registers. 8) Specify the ID tag read communication specification, communication setting, processing specification, and auto system command wait time setting with P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) 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 instruction. This may not be omitted. For details about indirect address, refer to section 1.8. 10) Do not change the value for i_wModuleNo (Module No.), i_wStationNo (Station No.), i_wAddressN (Start address specification), i_wReadByte (No. of processing point specification) or io_dReadData (indirect address of read-out data) while i_bEN (Execution command) is ON. 11) If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (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) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 15) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulse execution (multiple scan execution)

Items	Description
I/O signal timings	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto,FIFO repeat)  [When an error occurs]  [When a module error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error code

■Error code list

Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H103	i_wReadByte (Processing specification) is outside the range.	[Trigger] Specify value in the 0001 to 2048 range (decimal) for Processing specification. [Other than trigger] Specify the amount of data that can be read with a single ID command. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

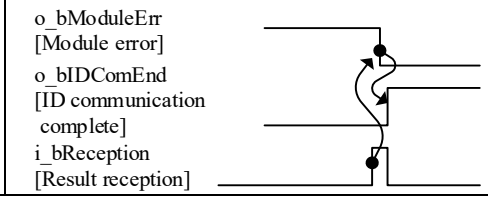
Used Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. in which the target CC-Link system master/intelligent device module is mounted with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
Start address specification	i_wAddressNo	Word [signed]	0000 to FFFF (Hexadecimal)	Specify the start address where the ID tag is read.

Name	Label name	Data type	Range	Description
Number of Processing Points Specification	i_wReadByte	Word [signed]	[Trigger] 0001 to 2048 (Decimal) [Other than trigger] Depends on the amount of data that can be read with a single ID command. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.	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

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	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 module. OFF: Normal
Module error code	o_uModuleErr	Word [unsigned]	0	A description of the error occurred in the RFID interface module is stored.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface module due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

■Input/Output labels

Name	Label name	Data type	Range	Description
Read data (Indirect address)	io_dReadData	Double word [signed]	00000000 to FFFFFFFF (Hexadecimal)	Specify the indirect address of the device where data read is stored. For details about indirect address, refer to section 1.8.

FB version history

Version	Date	Details
00A	2018/6/11	First edition

Note

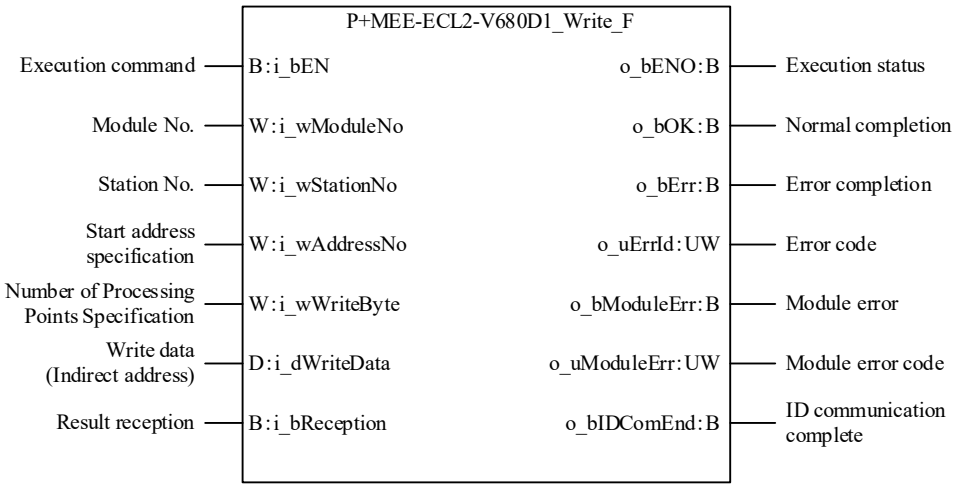
This chapter includes information related to this function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

2.3. P+MEE-ECL2-V680D1_Write_F (Writes to ID tag)

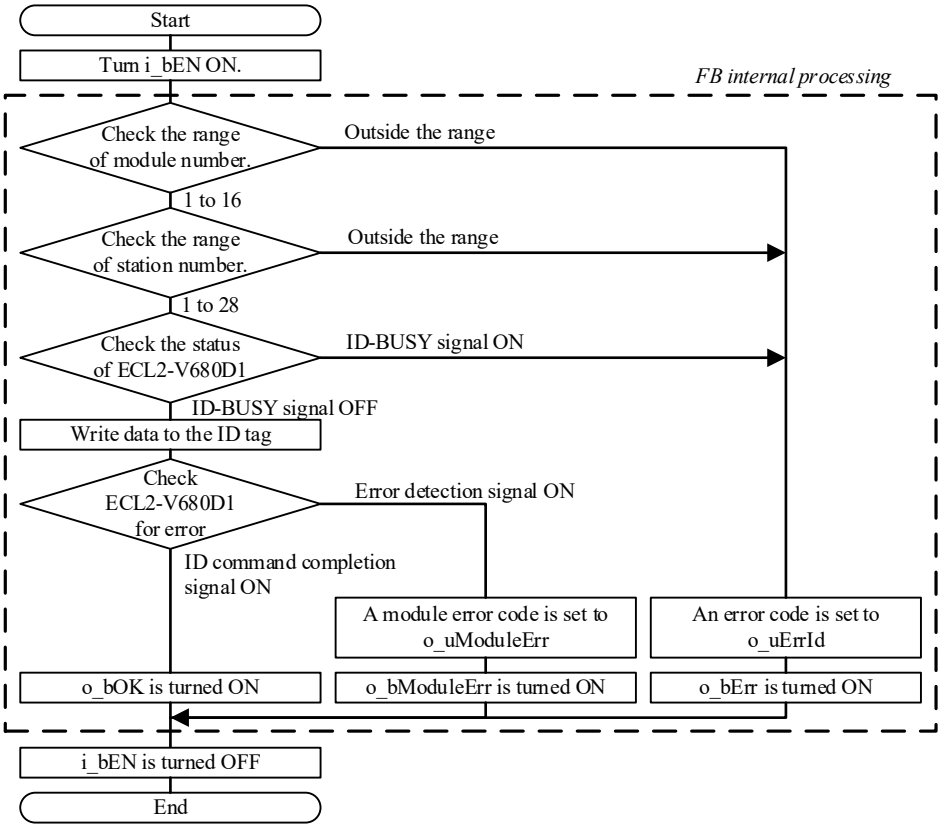
Name

P+MEE-ECL2-V680D1_Write_F

Function Description

<table>
<tr><th>Items</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="4">Target device</td><td>Module</td><td>ECL2-V680D1</td></tr>
<tr><td>CC-Link system module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-F series</td><td>FX5-CCL-MS</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-F series</td><td>FX5U CPU
FX5UC CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-F series</td><td>Version 1.042U or later</td></tr>
</table>
*The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1368Step (for MELSEC iQ-F series)
*The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</td></tr>
</table>

Items	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 ofbytes 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 +MEE-ECL2-V680D1_InitDataSet_F (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 module devices			Address	ID tag memory
Data1	Data2	→	0010	Data1
Data3	Data4		0011	Data2
			0012	Data3

1: Lower to the upper

CPU module devices			Address	ID tag memory
Data2	Data1	→	0010	Data1
Data4	Data3		0011	Data2
			0012	Data3

3)If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (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.

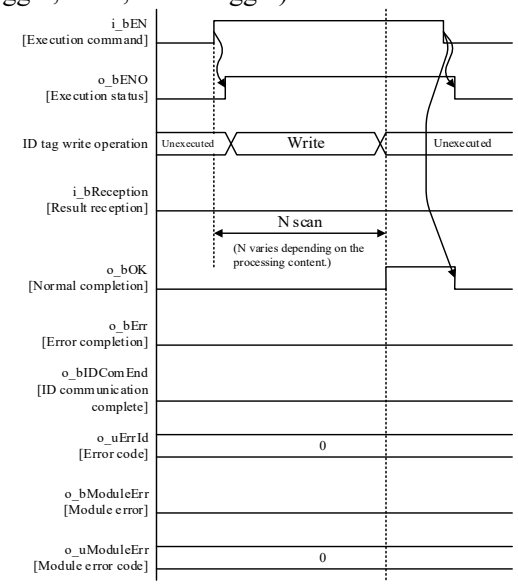
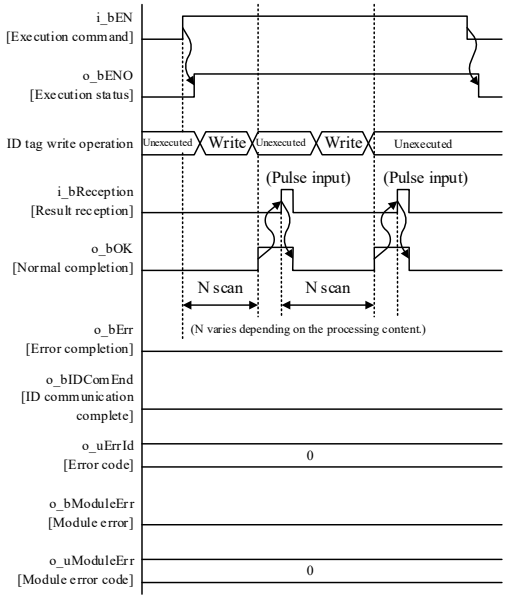
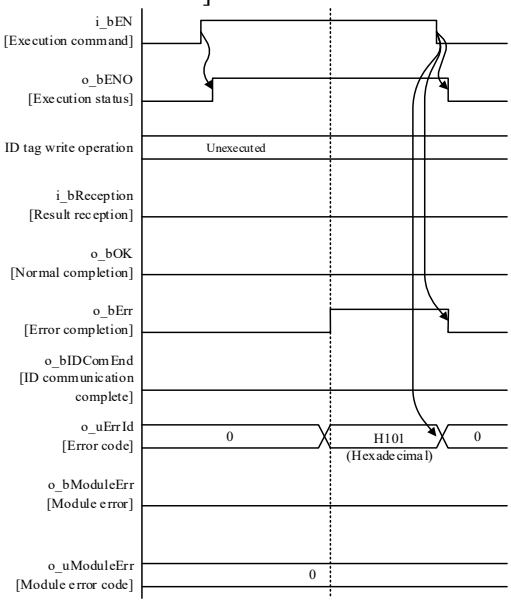
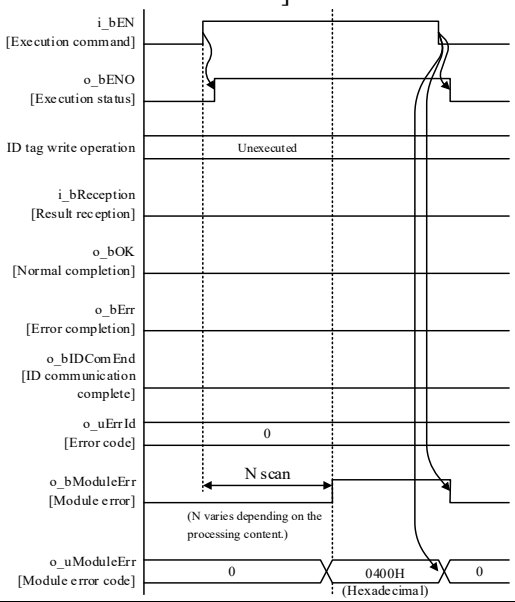
4) If an error occurs, o_bErr (Error completion) is turned ON and processing of the FB is suspended. In addition, an error code is set to o_uErrId(Error code). Refer to the Error code list for details.

5) If an error occurs in ECL2-V680D1, 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 ECL2-V680D1 User's Manual (Details Section) for the error code details.

6) If i_bEN (execution command) is turned OFF during a write process, the FB process will be stopped. If writing in data to the ID tag, the data up to the stopped point will be written in.

Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type

Items	Description
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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 (Execution command) 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 data registers D5000 to D5001. When an interrupt program is used, do not use the data registers. 8) Specify the ID tag write communication specification, communication setting, processing specification, and auto system command wait time setting with P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) before this FB is executed. 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 1.8. 10) Do not change the value for i_wModuleNo (Module No.), i_wStationNo (Station No.), i_wAddressNo (Start address specification), i_wWriteByte (No. of processing points specification), i_dWriteData (indirect addressing of write data) or i_dWriteData(Indirect address) while i_bEN (Execution command) is ON. 11) If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (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) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 15) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulse execution (multiple scan execution)

Items	Description
I/O signal timings	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [When a module error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error code

■Error code list

Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H103	i_wWriteByte(Processing specification) is outside the range.	[Trigger] Specify value in the 0001 to 2048 range (decimal) for Processing specification. [Other than trigger] Specify the amount of data that can be Write with a single ID command. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

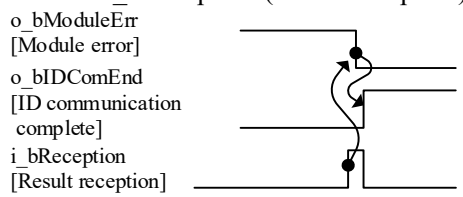
Used Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	-	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. for the target CC-Link system master and intelligent device module with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
Start address specification	i_wAddressNo	Word [signed]	0000 to FFFF (Hexadecimal)	Specify the initial address where writes data to an ID tag.

Name	Label name	Data type	Range	Description
Number of Processing Points Specification	i_wWriteByte	Word [signed]	[Trigger] 0001 to 2048 (decimal) [Other than trigger] Depends on the amount of data that can be write with a single ID command. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.	Specify the number of bytes for processing to writes data to an ID tag.
Write data (Indirect address)	i_dWriteData	Double word [signed]	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 1.8. For write data, write data for the number of bytes specified with i_wWriteByte (Processing specification).
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 (comment)	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: FB execution command is on. OFF: FB 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_uErrId	Word [unsigned]	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 module. OFF: Normal
Module error code	o_uModuleErr	Word [unsigned]	0	A description of the error occurred in the RFID interface module is stored.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface module due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

FB version history

Version	Date	Details
00A	2018/6/11	First edition

Note

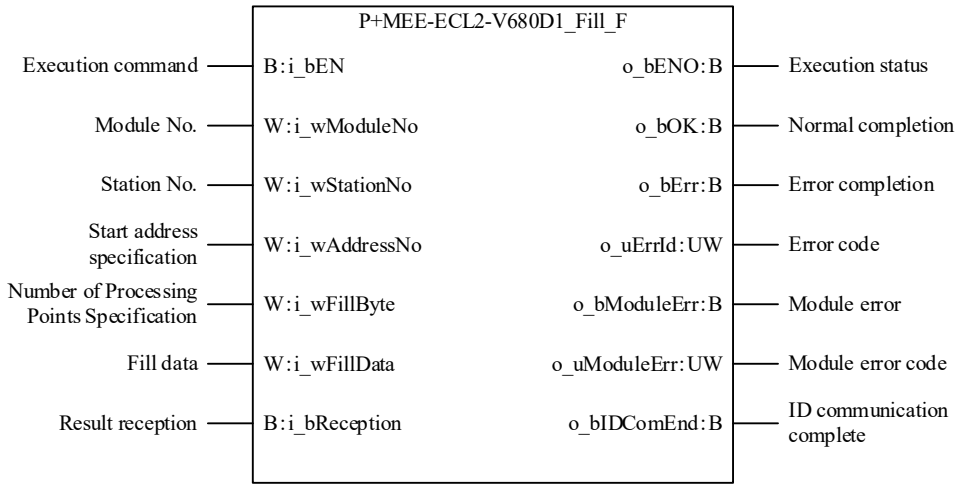
This chapter includes information related to this function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

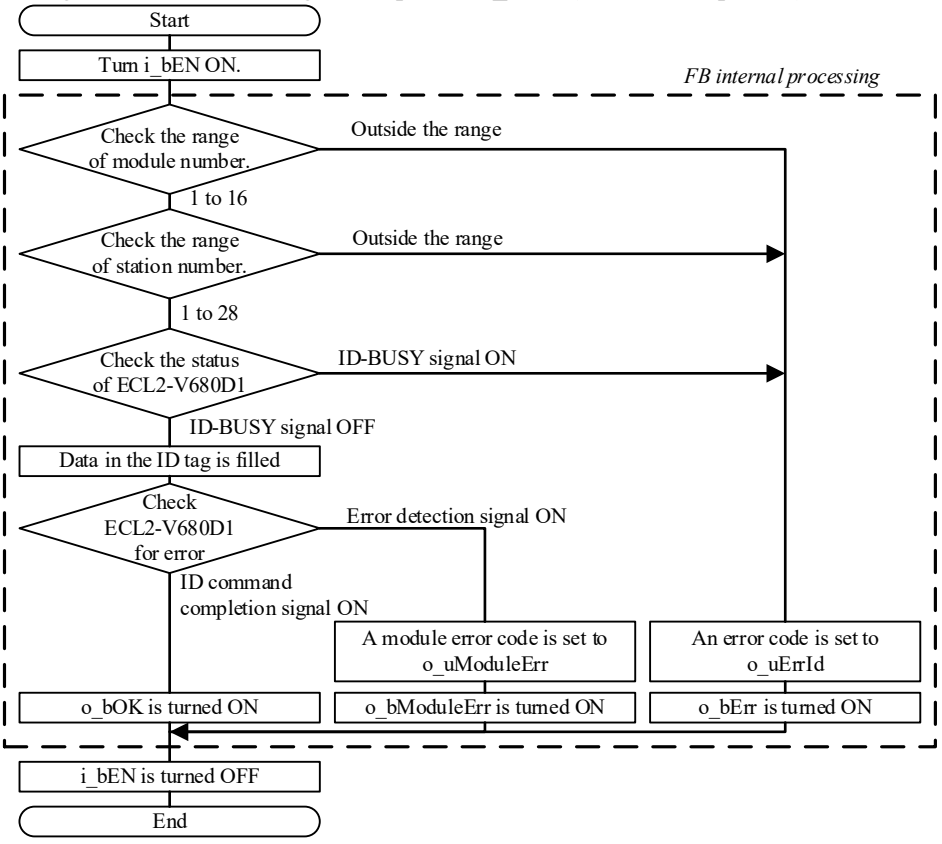
2.4. P+MEE-ECL2-V680D1_Fill_F (Fill Data in ID Tag)

Name

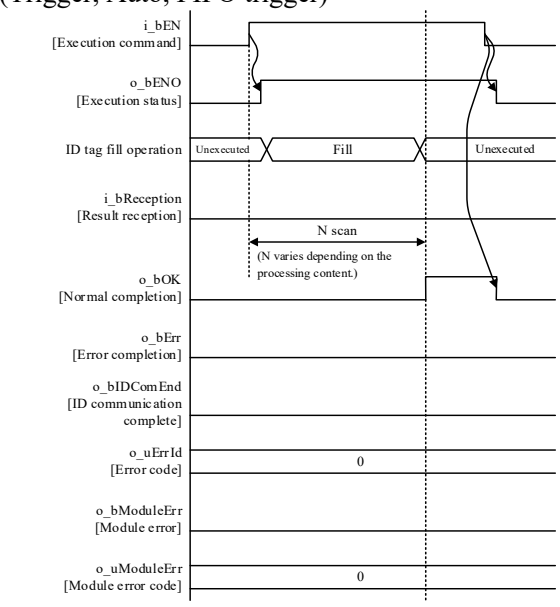
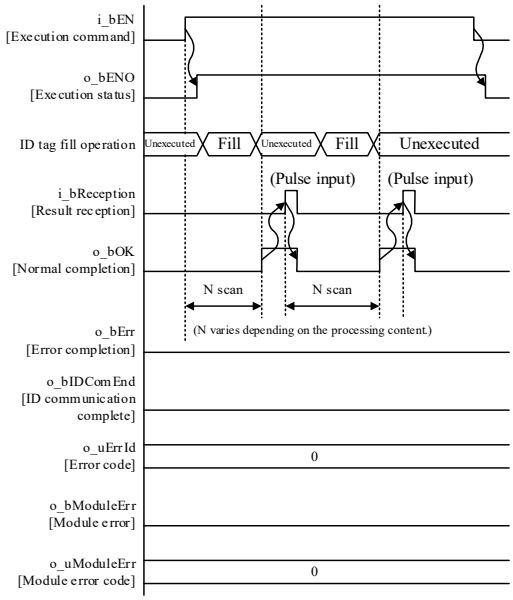
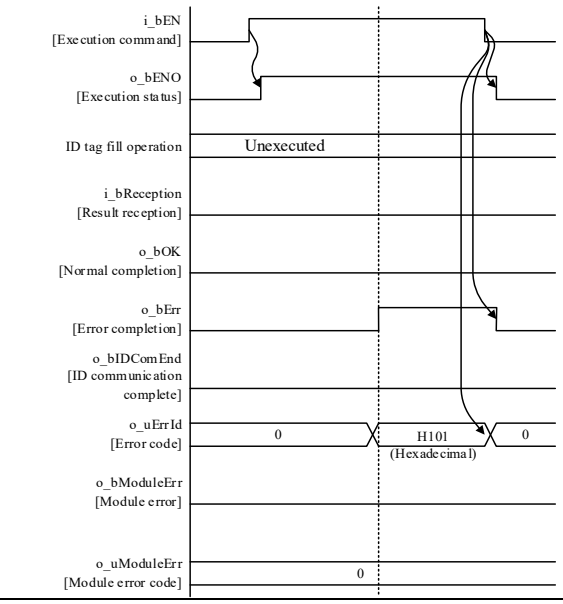
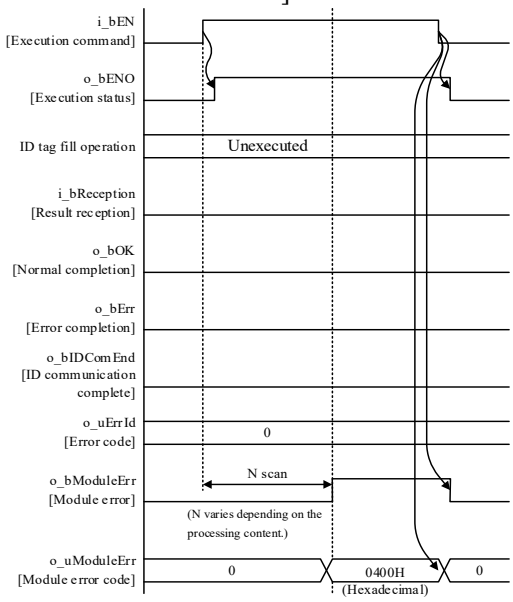
P+MEE-ECL2-V680D1_Fill_F

Function Description

<table>
<tr><th>Items</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="4">Target device</td><td>Module</td><td>ECL2-V680D1</td></tr>
<tr><td>CC-Link system module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5-CCL-MS</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5U CPU
FX5UC CPU</td></tr></table></td></tr>
<tr><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>Version 1.042U or later</td></tr></table>*The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1159Step (for MELSEC iQ-F series)
*The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</td></tr>
</table>

Items	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-ECL2-V680D1_InitDataSet_F (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 Fill data: Data1 Data2 → ID tag memory: Address 0010 Data1, 0011 Data2, 0012 Data1, 0013 Data2 1: Lower to the upper Fill data: Data2 Data1 → ID tag memory: Address 0010 Data1, 0011 Data2, 0012 Data1, 0013 Data2 3) If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (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_uErrId(Error code).Refer to the Error code list for details. 5) If an error occurs in ECL2-V680D1, o_bModuleErr (Module error) is turned ON and processing is suspended. In addition, an error code is set to o_uModuleErr (Module error code). 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.
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type

Items	Description
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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 (Execution command) 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) Specify the ID tag data fill communication specification, communication setting, processing specification, and auto system command wait time setting with P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) before this FB is executed. 8) Do not change the value for i_wModuleNo (Module No.), i_wStationNo (Station No.), i_wAddressNo (Start address specification), i_wFillByte (No. of processing points specification), or i_wFillData (Fill data) while i_bEN (Execution command) is ON. 9) If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (Set Initial Data) is 0 (trigger), 1 (auto) or 3 (FIFO trigger), i_bReception(Result reception) is ignored. 10) In data fill, the write protect does not function, because all data in the ID tag is initialized. 11) Enter pulse in i_bReception(Result reception). 12) 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. 13) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 14) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulse execution (multiple scan execution)

Items	Description
I/O signal timings	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [When a module error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error code

■Error code list

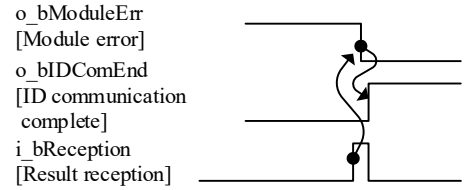
Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

Used Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	-	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. in which the target CC-Link system master/intelligent device module is mounted with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
Start address specification	i_wAddressNo	Word [signed]	0000 to FFFF (Decimal)	Specify the start address where the ID tag is read.
Number of Processing Points Specification	i_wFillByte	Word [signed]	[Trigger] 0001 to 2048, 0 (Decimal) Depends on the memory capacity for the ID tag. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.	Specify the number of bytes to be filled in ID tag. 0: Fill all data in ID tag
Fill data	i_wFillData	Word [signed]	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: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	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 module. OFF: Normal
Module error code	o_uModuleErr	Word [unsigned]	0	A description of the error occurred in the RFID interface module is stored.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface module due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

FB version history

Version	Date	Details
00A	2018/6/11	First edition

Note

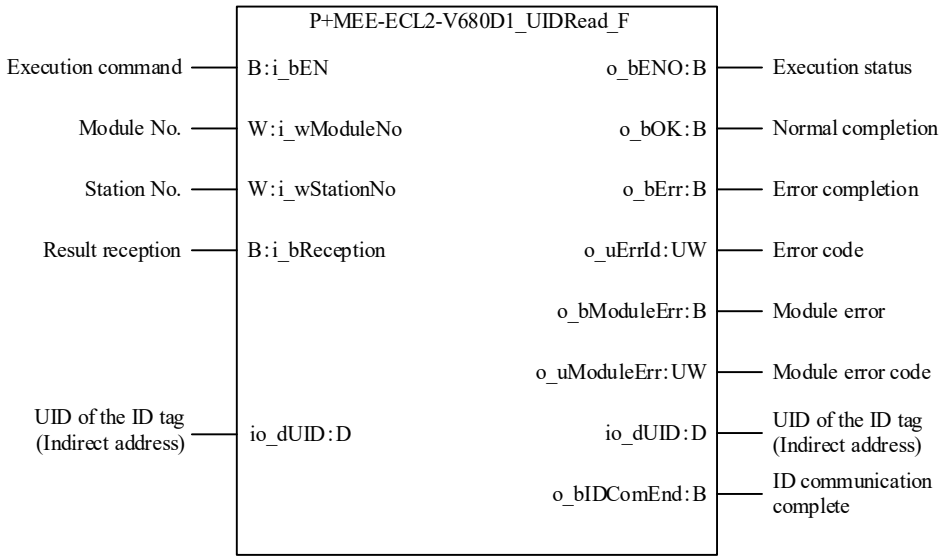
This chapter includes information related to this function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

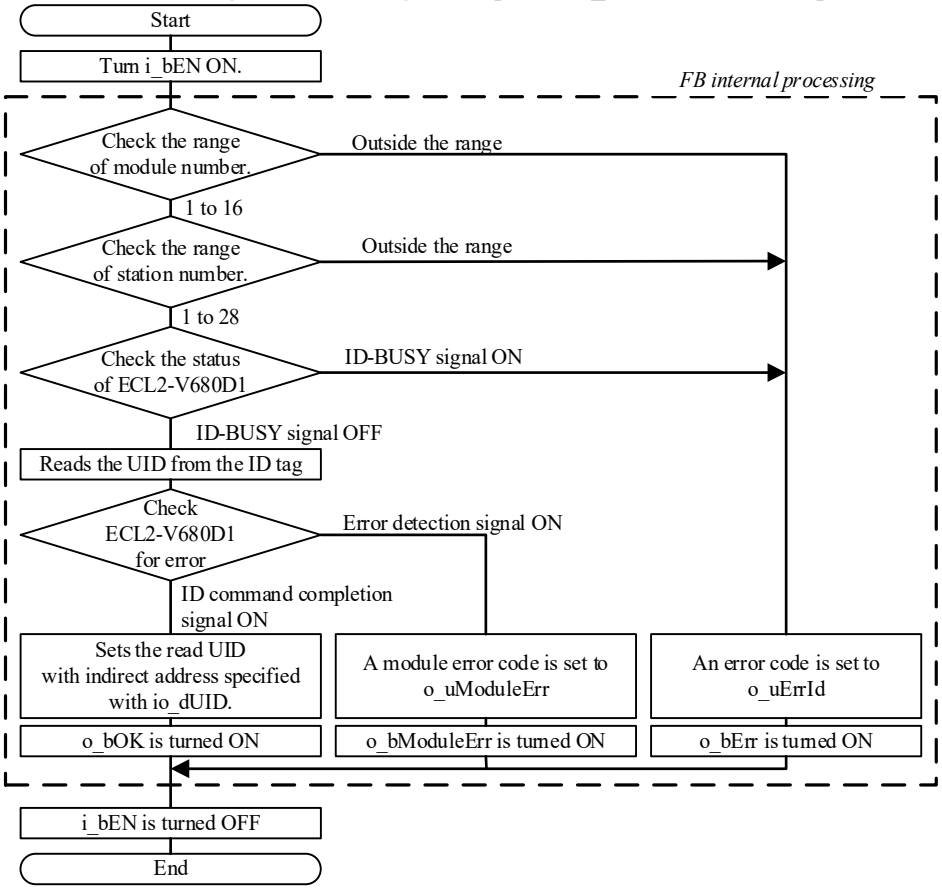
2.5. P+MEE-ECL2-V680D1_UIDRead_F (Read UID of ID Tag)

Name

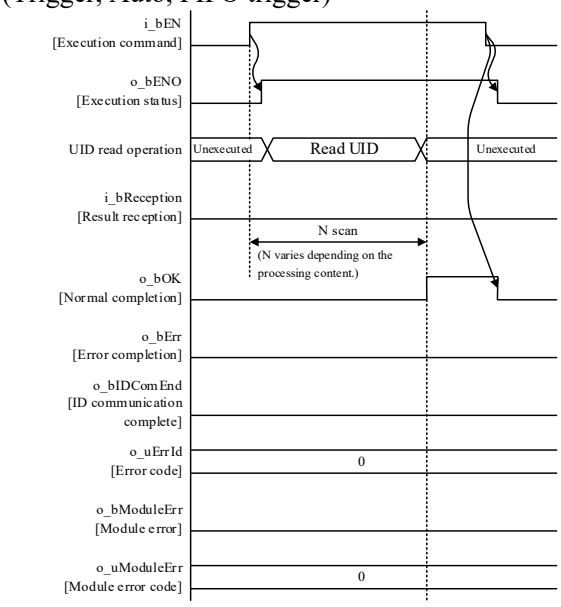
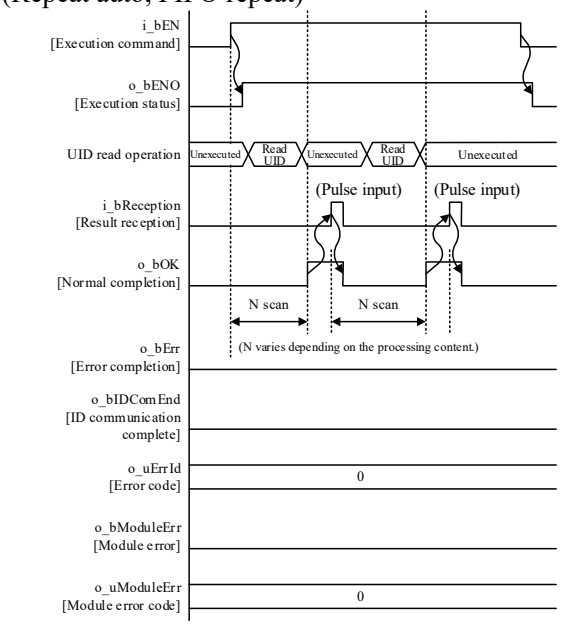
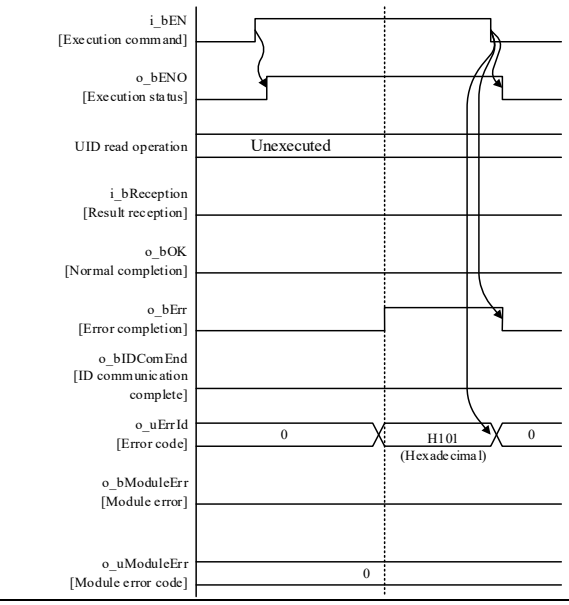
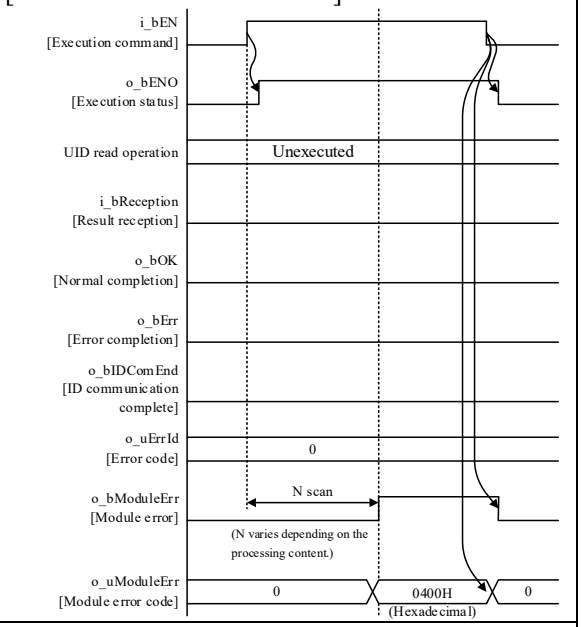
P+MEE-ECL2-V680D1_UIDRead_F

Function Description

Items	Description	
Function overview	Reads the UID (module identification number) of the ID tag.	
Symbol		
Target device	Module	ECL2-V680D1
	CC-Link system module	Series: MELSEC iQ-F series / Model: FX5-CCL-MS
	CPU module	Series: MELSEC iQ-F series / Model: FX5U CPU, FX5UC CPU
	GX Works3	Series: MELSEC iQ-F series / Model: Version 1.042U or later *The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
Language	Ladder diagram	
Steps	1220Step (for MELSEC iQ-F series) *The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.	

Items	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-ECL2-V680D1_InitDataSet_F (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_uErrId(Error code). Refer to the Error code list for details. 4) If an error occurs in ECL2-V680D1, 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 ECL2-V680D1 User's Manual (Details Section) for the error code 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).
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type

Items	Description
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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 (Execution command) 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 data registers D5000 to D5001. When an interrupt program is used, do not use the data registers. 8) Specify the ID tag UID read communication specification, communication setting, processing specification, and auto system command wait time setting with P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) before this FB is executed. 9) Always specify the indirect address of the device storing the read UID for the io_dUID (ID tag UID indirect address). The device’s indirect address is retrieved with the ADRSET command. It cannot be omitted. Refer to Section 1.8 for details on the indirect address. 10) Do not change the values for i_wModuleNo (Module No.) i_wStationNo (Station No.) or io_dUID(ID tag UID indirect address) while i_bEN (Execution command) is ON. 11) If Communication specification made in P+MEE-ECL2-V680D1_InitDataSet_F (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) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 15) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulsed execution (multiple scan execution type)

Items	Description
I/O signal timings	[For successful completion] (Trigger, Auto, FIFO trigger)  [For successful completion] (Repeat auto, FIFO repeat)  [When an error occurs]  [When a module error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error codes

■Error code list

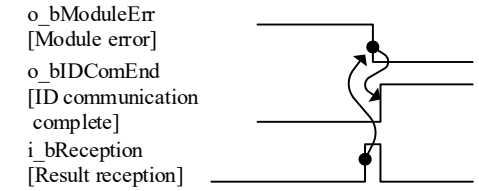
Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. for the target CC-Link system master and intelligent device module with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
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.

■Output labels

Name (comment)	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	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 module. OFF: Normal
Module error code	o_uModuleErr	Word [unsigned]	0	A description of the error occurred in the RFID interface module is stored.
ID communication complete	o_bIDComEnd	Bit	OFF	When communication is cut off on the side of the RFID interface module due to unconnected antenna, turn ON after i_bReception (Result reception) is turned ON. 

■Input/Output labels

Name	Label name	Data type	Range	Description
UID of the ID tag (Indirect address)	io_dUID	Double word [signed]	00000000 to FFFFFFFF (Hexadecimal)	The UID of the ID tag is stored for 4 words from the device specified with the indirect address. For details about indirect address, refer to section 1.8.

FB version history

Version	Date	Details
00A	2018/6/11	First edition

Note

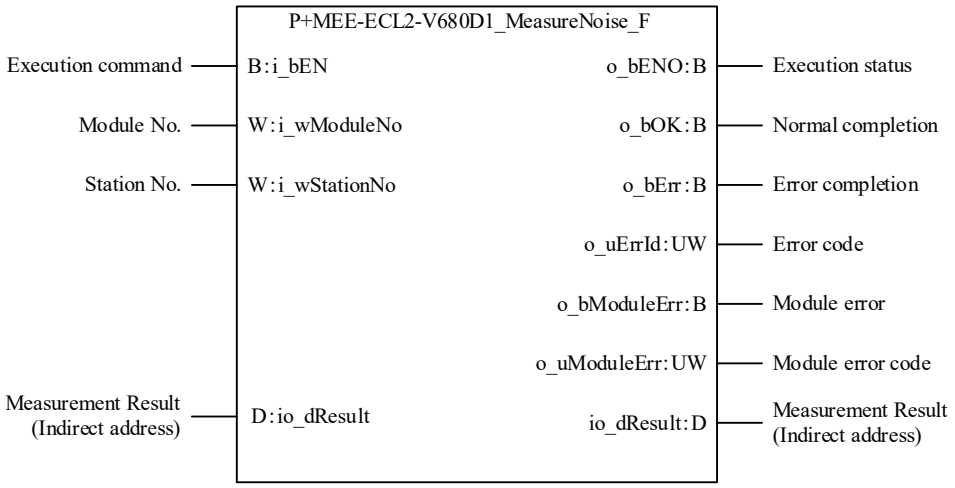
This chapter includes information related to this function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

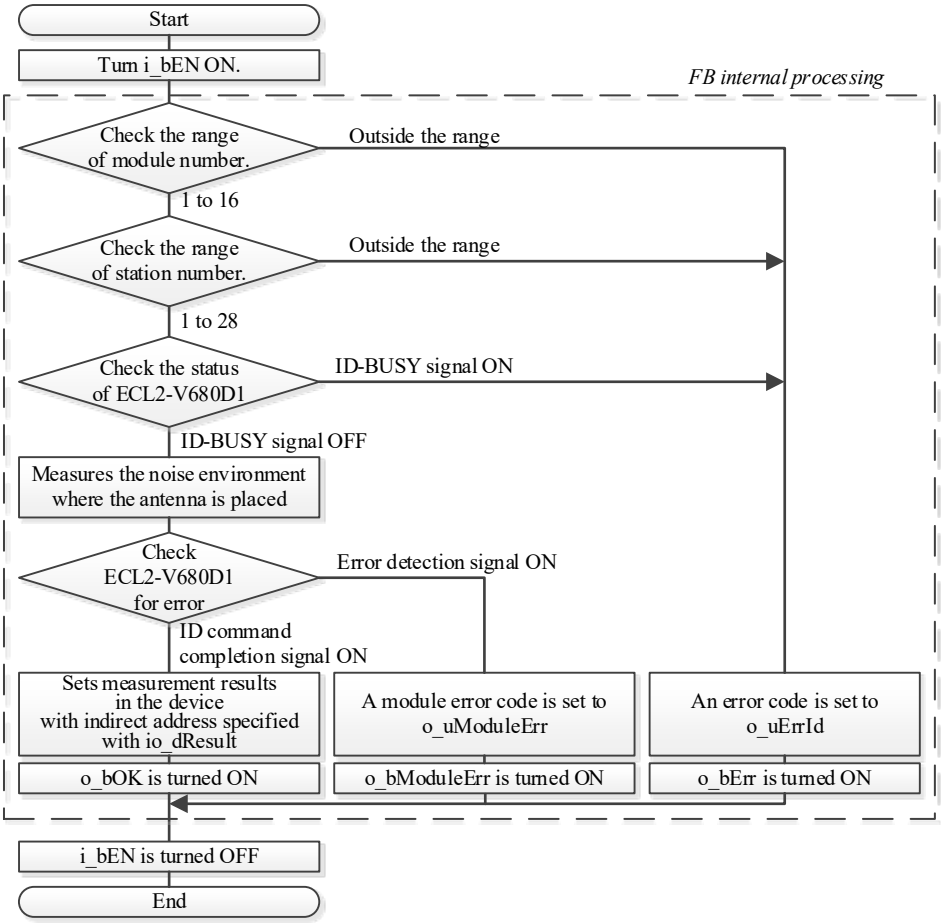
2.6. P+MEE-ECL2-V680D1_MeasureNoise_F (Measures Noise)

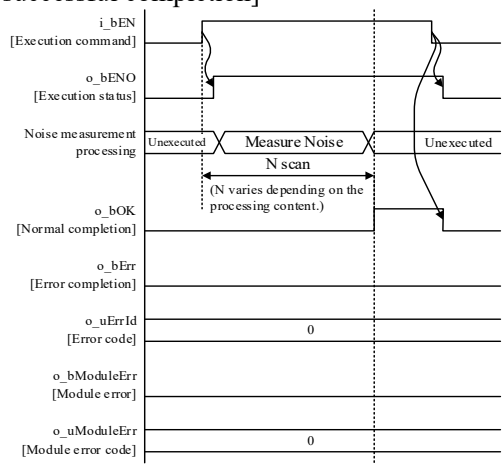
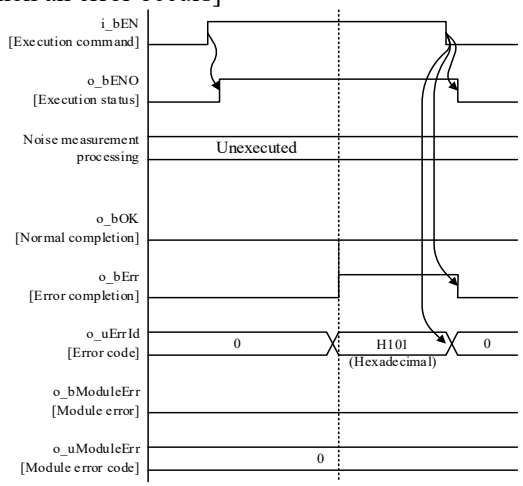
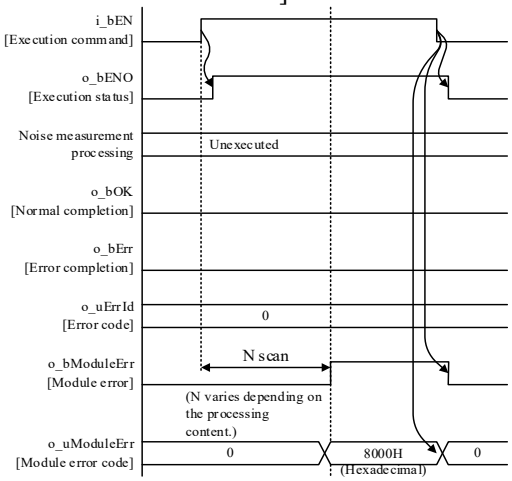
Name

P+MEE-ECL2-V680D1_MeasureNoise_F

Function Overview

<table>
<tr><th>Items</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="4">Target device</td><td>Module</td><td>ECL2-V680D1</td></tr>
<tr><td>CC-Link system module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5-CCL-MS</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5U CPU
FX5UC CPU</td></tr></table></td></tr>
<tr><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>Version 1.042U or later</td></tr></table>*The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1008Step (for MELSEC iQ-F series)
*The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</td></tr>
</table>

Items	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_uErrId(Error code). Refer to the error code explanation section for details. 3) If an error occurs in ECL2-V680D1, 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 ECL2-V680D1 User's Manual (Details Section) for the error code 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).
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type

Items	Description
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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 (Execution command) 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 data registers D5000 to D5001. When an interrupt program is used, do not use the 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 values for i_wModuleNo (Module No.), i_wStationNo (Station No.) or io_dResult(Indirect address of measurement results) while i_bEN (Execution command) is ON. 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) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 12) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulsed execution (multiple scan execution type)
I/O signal timings	[For successful completion]  [When an error occurs]  [When a module error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error codes

■Error code list

Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(StationNo.) is outside the range.	Specify the Station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	-	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. for the target CC-Link system master and intelligent device module with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	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 module. OFF: Normal
Module error code	o_uModuleErr	Word [unsigned]	0	A description of the error occurred in the RFID interface module is stored.

■Input/Output labels

Name	Label name	Data type	Range	Description
Measurement Result (Indirect address)	io_dResult	Double word [signed]	00000000 to FFFFFFF (Hexadecimal)	Specify the indirect address of the ice where noise measurements results are stored. For details about indirect address, refer to section 1.8. 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 history

Version	Date	Details
00A	2018/6/11	First edition

Note

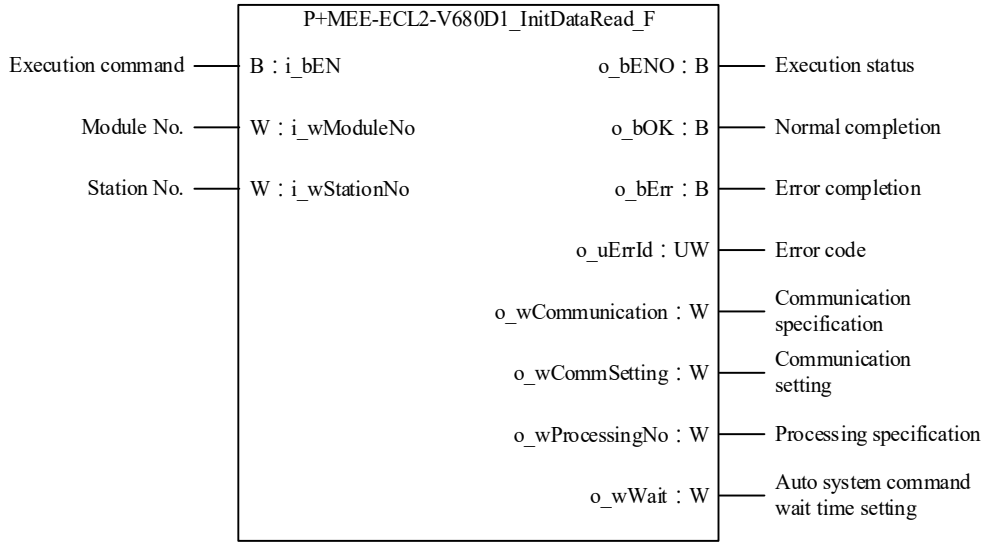
This chapter includes information related to this function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

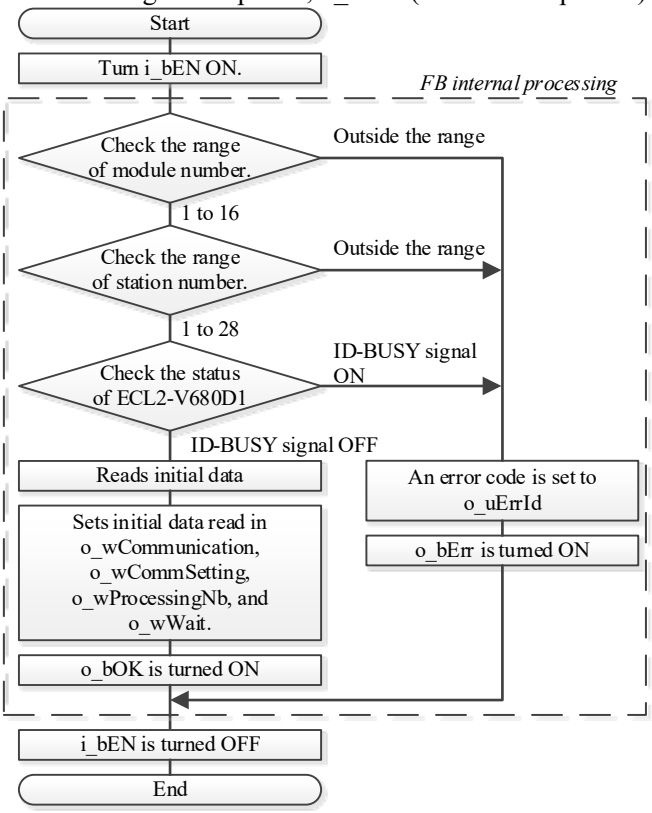
2.7. P+MEE-ECL2-V680D1_InitDataRead_F (Read Initial Data Settings)

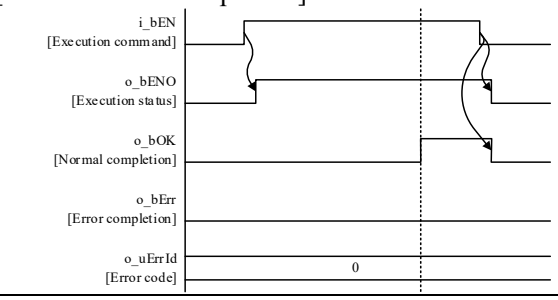
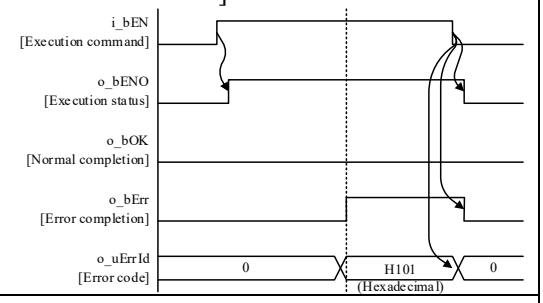
Name

P+MEE-ECL2-V680D1_InitDataRead_F

Function Overview

<table>
<tr><th>Items</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="4">Target device</td><td>Module</td><td>ECL2-V680D1</td></tr>
<tr><td>CC-Link system module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5-CCL-MS</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5U CPU
FX5UC CPU</td></tr></table></td></tr>
<tr><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>Version 1.042U or later</td></tr></table>*The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">909Step (for MELSEC iQ-F series)
*The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</td></tr>
</table>

Items	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_uErrId(Error code). Refer to the Error code list for details.
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type

Items	Description
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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. Please ensure that the i_bEN (Execution command) 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. 6) Do not change the values for i_wModuleNo (Module No.) or i_wStationNo (Station No.) while i_bEN (Execution command) is ON. 7) 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. 8) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 9) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulsed execution (multiple scan execution type)
I/O signal timings	[For successful completion]  [When an error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual MELSEC iQ-F FX5 User's Manual (CC-Link)

Error codes

■Error code list

Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

Labels

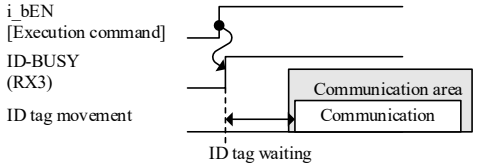
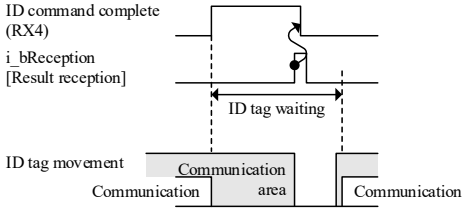
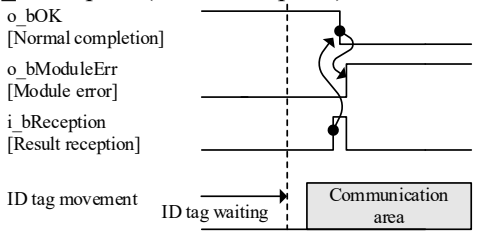
■Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	-	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. for the target CC-Link system master and intelligent device module with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	0	The error code that occurred in the FB is stored.
Communication specification	o_wCommunication	Word [signed]	0	The communication method for the ID tag is stored. 0: Trigger 1: Auto 2: Repeat auto 3: FIFO trigger 4: FIFO repeat

<table>
<tr><th>Name</th><th>Label name</th><th>Data type</th><th>Initial Value</th><th>Description</th></tr>
<tr><td>Communication setting</td><td>o_wCommSetting</td><td>Word [signed]</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: Fixed</td></tr></table></td></tr>
<tr><td>Processing specification</td><td>o_wProcessingNo</td><td>Word [signed]</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</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 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 [signed]	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 history

Version	Date	Details
00A	2018/6/11	First edition

Note

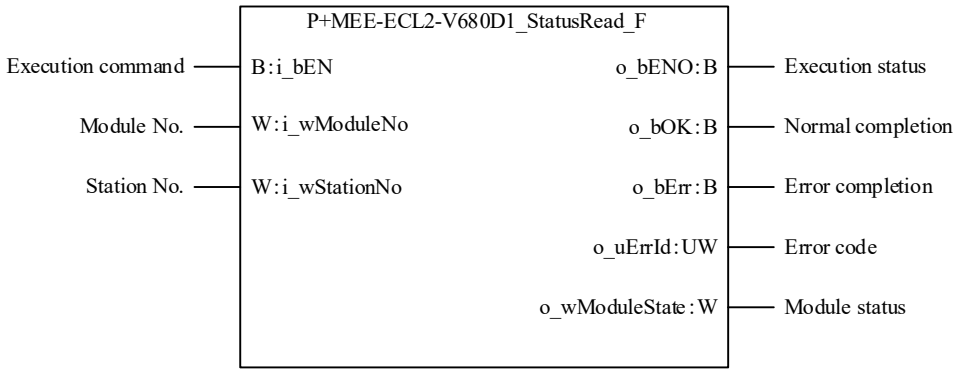
This chapter includes information related to this function block.
It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.
Please make sure to read user's manuals for the corresponding products before using the products.

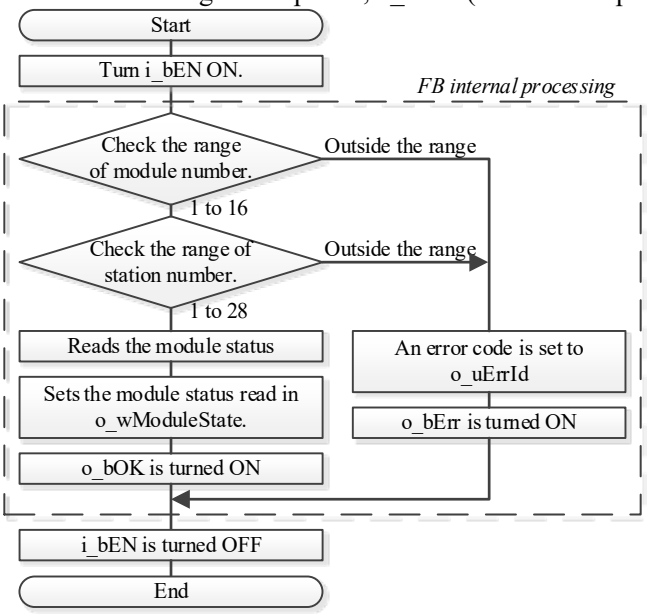
2.8. P+MEE-ECL2-V680D1_StatusRead_F (Read Module Status)

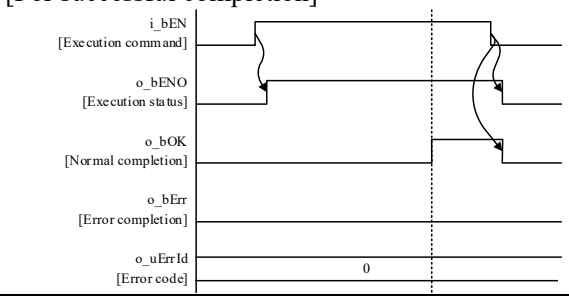
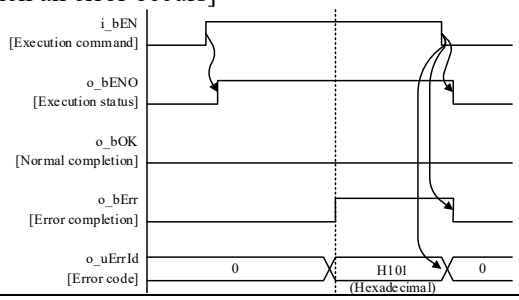
Name

P+MEE-ECL2-V680D1_StatusRead_F

Function Overview

<table>
<tr><th>Items</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">Target device</td><td>Module</td><td>ECL2-V680D1</td></tr>
<tr><td>CC-Link system module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5-CCL-MS</td></tr></table></td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>FX5U CPU
FX5UC CPU</td></tr></table></td></tr>
<tr><td>GX Works3</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-F series</td><td>Version 1.042U or later</td></tr></table>*The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">759Step (for MELSEC iQ-F series)
*The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the options setting of GX Works3. For the options setting of GX Works3, refer to the GX Works3 Operating Manual.</td></tr>
</table>

Items	Description
Function Description	1) When i_bEN (Execution command) is turned ON, the module status is read. The module status read is set in o_wModuleState (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_uErrId(Error code). Refer to the Error code list for details.
Index registers	Number of points used : 5 points Used device (Z9, Z8, Z7, Z6, Z5) *Please do not use these index registers in an interrupt program.
FB compile format	Macro type
Limitations, Precautions, etc.	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 Module parameter setting refresh device as explained in section “1.5. CC-Link System Master Station Module Parameter Settings”. 3) Set the global label setting according to Section "1.6. 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 (Execution command) 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) Do not change the values for i_wModuleNo (Module No.) or i_wStationNo (Station No.) while i_bEN (Execution command) is ON. 8) 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. 9) If this FB process does not end, check whether the i_wStationNo (Station No.) matches the network station No., and that P+MEE-ECL2-V680D1_InitDataSet_F (Initial data setting) is completed before this FB is executed. 10) The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.
FB operation	Pulsed execution (multiple scan execution type)

Items	Description
I/O signal timings	[For successful completion]  [When an error occurs] 
Relevant manuals	ECL2-V680D1 User's Manual (Details Section) MELSEC iQ-F FX5 User's Manual (CC-Link)

Error codes

■Error code list

Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo (Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal). The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.

Labels

■Input labels

Name	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module No.	i_wModuleNo	Word [signed]	1 to 16 (Decimal)	Specify the module No. for the target CC-Link system master and intelligent device module with a decimal. (If the module No. is 11, specify K11.) Refer to the CPU User's Manual for details.
Station No.	i_wStationNo	Word [signed]	1 to 28 (Decimal)	Specify the target station number to be connected to ECL2-V680D1. The range of Station No. that can be specified depends on the equipment and version to be used. Please refer to section1.4.

■Output labels

Name	Label name	Data type	Initial Value	Description
Execution status	o_bENO	Bit	OFF	ON: FB execution command is ON. OFF: FB 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_uErrId	Word [unsigned]	0	The error code that occurred in the FB is stored.
Module status	o_wModuleState	Word [signed]	0	The RFID Interface module status can be verified. Bit 0: Antenna error 0: Normal or antenna not connected. 1: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 to 15: Unused

FB version history

Version	Date	Details
00A	2018/6/11	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.

Appendix 1. SAFETY PRECAUTIONS

Before using this product, please read this reference manual and the relevant manuals introduced in this reference manual carefully and pay full attention to safety to ensure that the product is used correctly.
The precautions presented in this manual are concerned with this product only. For programmable controller system safety precautions, refer to the user's manual of the master module used.
In this reference manual, the safety precautions are ranked as "WARNING" and "CAUTION."

⚠ WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or minor injury and/or property damage.

Note that failure to observe the ⚠CAUTION level instructions may lead to a serious consequence according to the circumstances. Always follow the precautions of both levels because they are important to personal safety.
Please keep this reference manual in an easy-to-access location for future reference, and be sure to deliver the manual to the end user.

[DESIGN PRECAUTIONS]

⚠WARNING

- If a data link communication error occurs, the data of the master module will be retained. Using the communication status information, configure an interlock circuit in the sequence program to ensure that the system will operate safely.
- Any of the remote I/O signals marked "Use prohibited" are used by the system. Do not use these signals. In the unlikely event such a signal is used (ON/OFF), the function of the module cannot be guaranteed.

⚠CAUTION

- When installing the RFID interface module and amplifier/antenna cables, do not bundle the cables with or install the cables close to the main circuit, power lines, or the like. Be sure to separate the cables and lines by about 100mm or more. Failure to do so will cause noise, resulting in malfunction.
- When storing the product, be sure to observe the defined storage ambient temperature and humidity. Failure to do so will lead to module malfunction and failure.
- Look the control panel so that only those who are trained and have acquired enough knowledge of electric facilities can open control panel.
- Install the emergency stop switch outside the control panel so that workers can operate it easily.

[INSTALLATION PRECAUTIONS]

⚠CAUTION

- Use the module in an environment that reflects the general specifications stated in the user's manual. Using the module in an environment out of the general specification range results in the risk of electric shock, fire, malfunction, and product damage or deterioration.
- Fully secure the module using a DIN rail or installation screws, and fully tighten the screws within the specified torque range. If a screw is too loose, a dropped module, short circuit, or malfunction may result. If a screw is too tight, screw and/or module damage may occur, resulting in a dropped module, short circuit, or malfunction.
- Do not directly touch a powered section of the module. Doing so results in the risk of module malfunction and failure.

[WIRING PRECAUTIONS]

⚠WARNING

- Be sure to shut off all phases of the external power supply used by the system before performing work such as wiring. Failure to do so results in the risk of product damage, and malfunction.

⚠CAUTION

- Fully mount the antenna cable to the module connector. After mounting, check for separation. Insufficient contact results in the risk of erroneous input and output.
- Always ground the FG terminal with Class D grounding (Class 3 grounding) dedicated for the PLC. There is a risk of electric shock or malfunction.
- Always tighten the open terminal screws with the specified torque range (0.42 to 0.58 N.m). Failure to do so could result in short circuits.
- Use an applicable crimp terminal, and tighten with the specified torque. When an open end crimp terminal is used, if the terminal screw loosens, the terminal could drop off and trouble could occur.
- Be sure to place the communication cables and power cables connected to the module in a duct, or secure them with clamps. Failure to do so results in the risk of cable movement and drift, module or cable damage caused by careless pulling, and malfunction caused by insufficient cable contact.
- When connecting a cable, first verify the connection interface type and then connect the cable properly. Connecting a cable to a wrong interface or miswiring a cable results in the risk of module and external device malfunction.
- Tighten the screws within the specified torque range. If a screw is too loose, a short circuit or malfunction may result. If a screw is too tight, screw and/or module damage may occur, resulting in a short circuit or malfunction.
- When removing a communication cable or power cable connected to the module, do not pull the cable section. For cables with connectors, hold the connector of the section connected to the module during removal. For terminal block cables, loosen the screws of the terminal block and then remove the cable. Pulling a cable while it is connected to the module results in the risk of module and cable damage as well as malfunction due to a poor cable connection.
- Do not insert or remove an antenna cable with the power ON. Doing so results in the risk of failure.
- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter may cause fire, failure, or malfunction.
- Do not bunch the control wires and communication cables with the main circuit, power lines, or the like, or install them close to each other. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
- Do not invert the external power supply polarities +24V and 24G. The RFID interface module will not operate.

[STARTUP AND MAINTENANCE PRECAUTIONS]

⚠WARNING

- Do not touch the terminals while the module is powered. Doing so results in the risk of malfunction.

⚠CAUTION

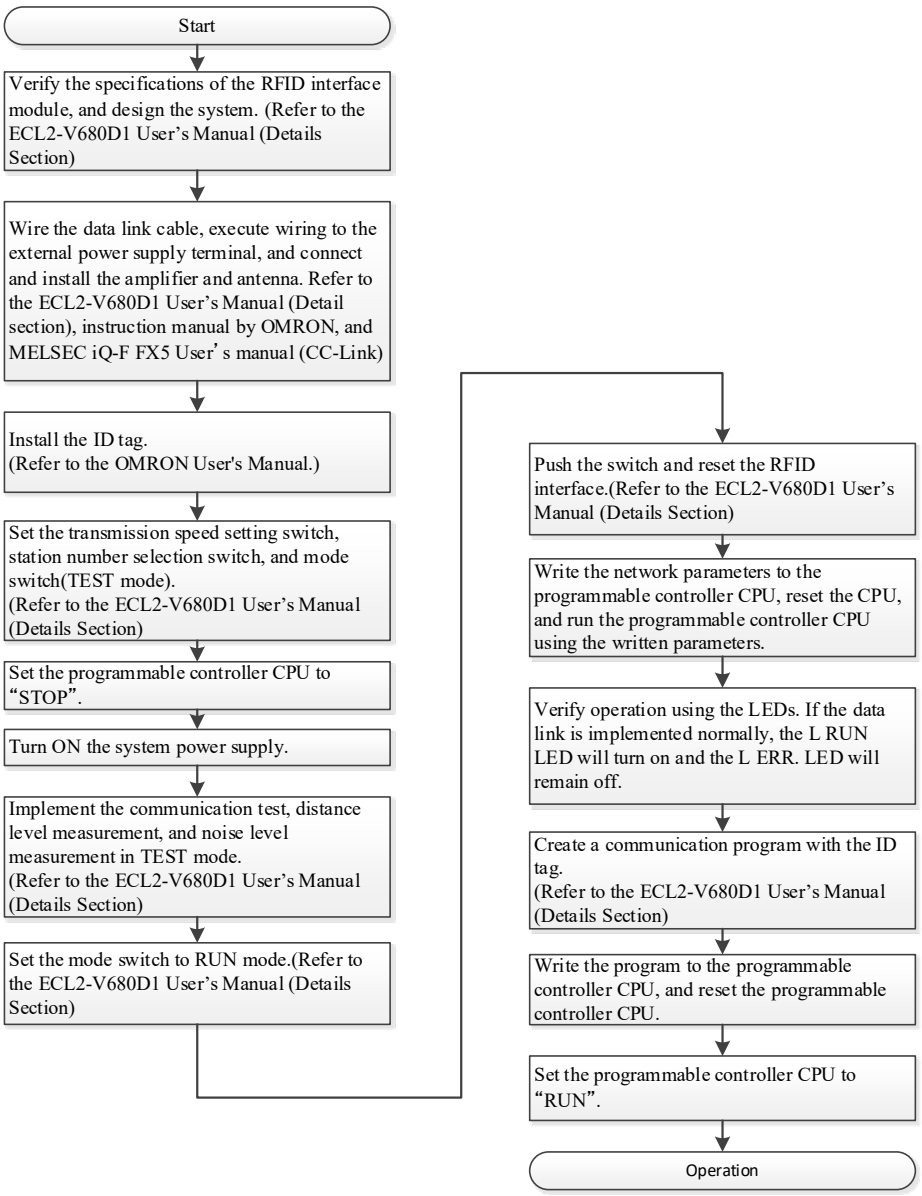
- Do not disassemble or modify the module. Doing so results in the risk of failure, malfunction, injury, and fire.
- Be sure to shut off all phases of the external power supply used by the system before module installation to or removal from the panel. Failure to do so results in the risk of module failure and malfunction.
- After product use begins, be sure the number of times the terminal block is installed and removed does not exceed 50 (JIS B 3502 compliant). Exceeding 50 results in the risk of malfunction.
- Be sure to shut off all phases of the external power supply used in the system before cleaning or tightening terminal screws or module screws. Failure to do so results in the risk of module failure and malfunction. If a screw is too loose, a dropped module, short circuit, or malfunction may result. If a screw is too tight, screw and/or module damage may occur, resulting in a dropped module, short circuit, or malfunction.
- The module case is made of plastic. Do not drop the case or expose the case to strong impact. Doing so results in the risk of module damage.
- Before touching the module, be sure to touch grounded metal or the like to release the static electricity from your body. Failure to do so results in the risk of module failure or malfunction.
- When cleaning, do not use thinner, benzene, acetone, or kerosene. Doing so results in the risk of module damage.
- Do not insert water or wire through the gaps in the case. Doing so results in the risk of fire or electric shock.
- This product cannot be used as a detector for physical protection. Erroneous output or malfunction may result in an accident.
- When installing or removing the antenna from the amplifier, first turn OFF the module power supply. Failure to do so results in the risk of module failure and malfunction.
- Installation of multiple antennas may result in a decrease in communication performance due to mutual interference. Refer to the description of mutual interference between antennas in the antenna user's manual.
- In the unlikely event that you feel something is wrong with the product, stop using the product immediately, turn OFF the power supply, and consult with your local Mitsubishi service center or representative. Continued use as is results in the risk of module failure and malfunction.
- Do not use the product in locations where chemical products and oil are scattered. Doing so results in the risk of module failure and malfunction.
- When using the product, be sure to observe the defined ambient temperature and humidity. Failure to do so results in the risk of module failure and malfunction.
- Do not touch any connectors when the module is powered. Doing so results in the risk of module malfunction caused by the static electricity in your body.

[DISPOSAL PRECAUTIONS]

⚠CAUTION

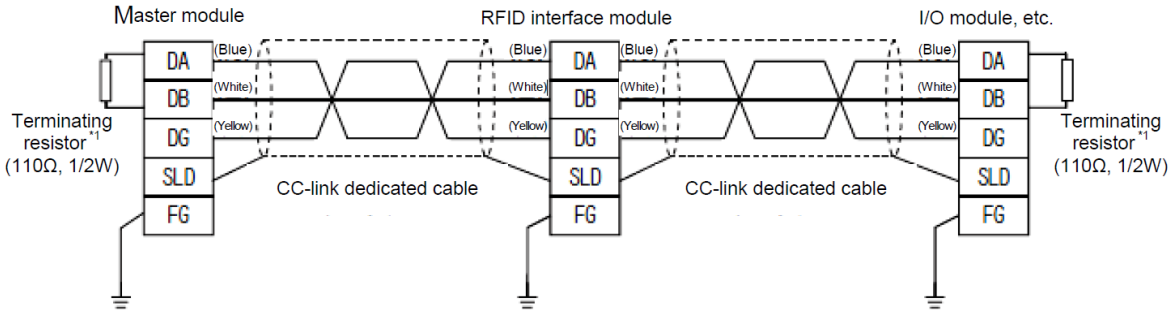
- At the time of disposal, treat the product as industrial waste.

Appendix 2. Setup and Procedures Prior to Operation



Appendix 3. Explanation of Connections and Wiring

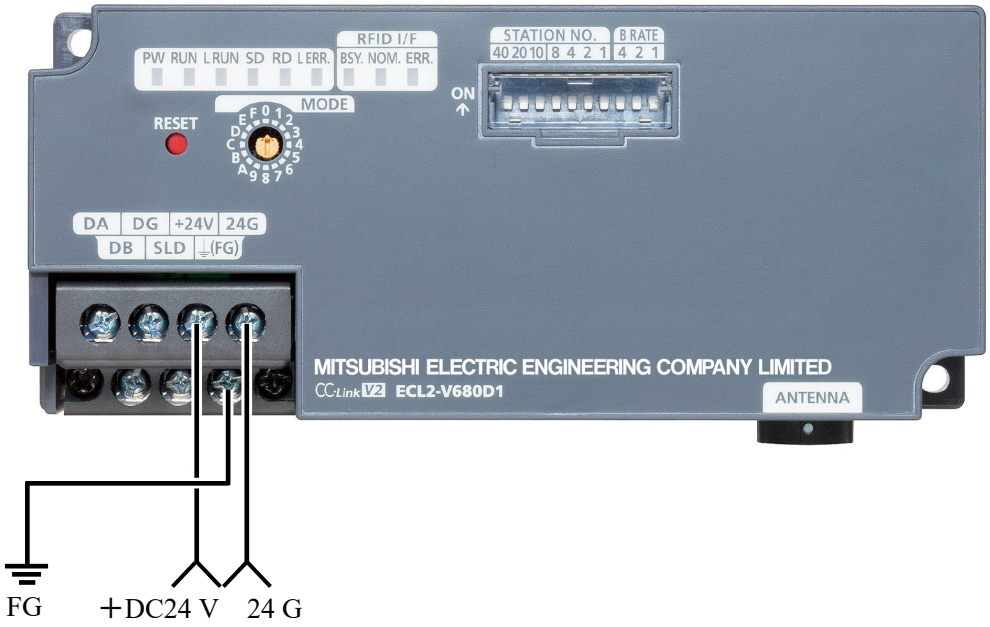
- Always use the designated cable for the CC-Link dedicated cable.
- Always connect between the CC-Link module and each station of the CC-Link with the FG line in the control panel with the following type of FG terminal.



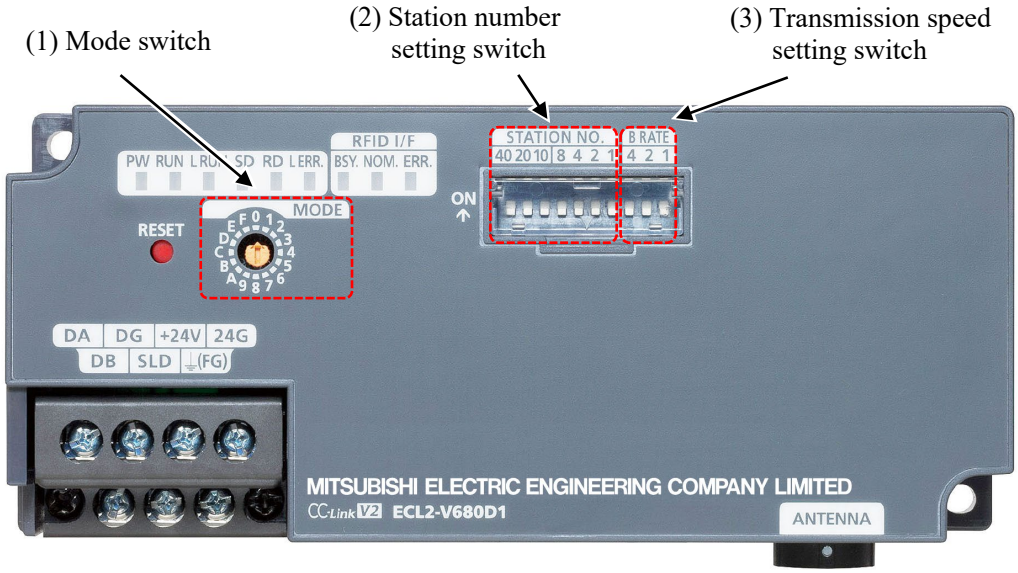
Use CE compatible products for the module power supply and the power supply connected to the external supply power. Always ground the FG terminal.

Point
Always connect the "terminating resistors" that come with the master module to the modules on both ends of the data link. (Connect across DA-DB.)

Wire the external power supply terminal as shown below.



Appendix 4. Hardware Settings



(1) Mode switch

Set Value	Station Type	Version	Number of Occupied Stations	Expanded Cyclic Setting	Remote station points
0	Remote Device Station	Ver.1	4 stations	—	128Points
4	Remote Device Station	Ver.1	2 stations	—	64Points
5	Remote Device Station	Ver.2	2 stations	Double	96 Points
6	Remote Device Station	Ver.2	2 stations	Quadruple	192 Points
7	Remote Device Station	Ver.2	2 stations	Octuple	384 Points

(2) Station number setting switch

Station No.	10's Place			1's Place			
	40	20	10	8	4	2	1
1	OFF	OFF	OFF	OFF	OFF	OFF	ON
2	OFF	OFF	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	OFF	OFF	ON	ON
4	OFF	OFF	OFF	OFF	ON	OFF	OFF
:	:	:	:	:	:	:	:
25	OFF	ON	OFF	OFF	ON	OFF	ON
26	OFF	ON	OFF	OFF	ON	ON	OFF
27	OFF	ON	OFF	OFF	ON	ON	ON
28	OFF	ON	OFF	ON	OFF	OFF	OFF

(3) Transmission speed setting switch

Set Value	Setting Switch			Transmission Speed
	4	2	1	
0	OFF	OFF	OFF	156kbps
1	OFF	OFF	ON	625kbps
2	OFF	ON	OFF	2.5Mbps
3	OFF	ON	ON	5.0Mbps
4	ON	OFF	OFF	10Mbps

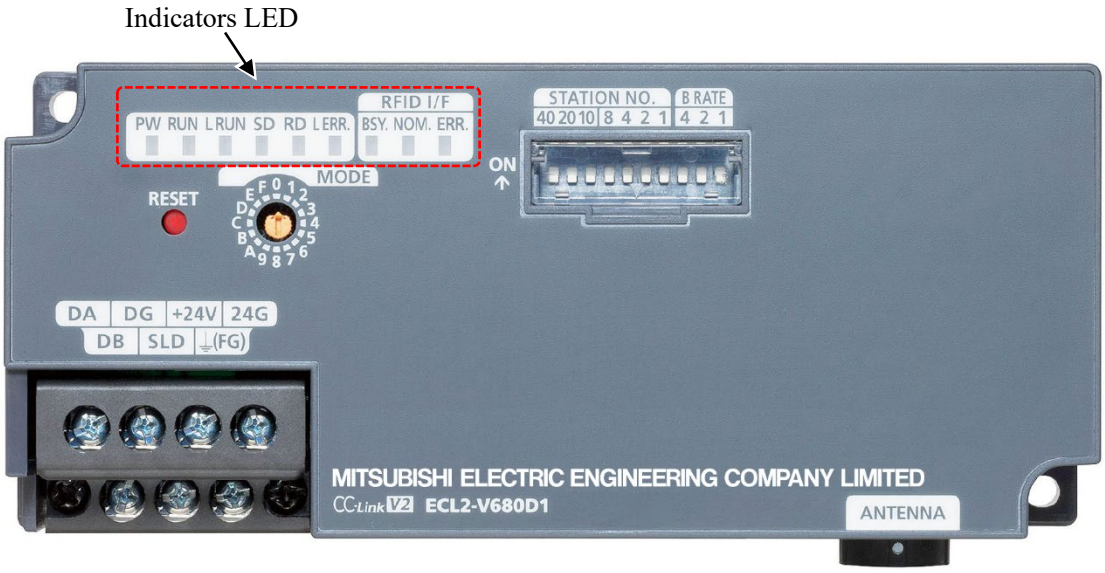
* Refer to the ECL2-V680D1 User's Manual (Details Section) for details on the settings.

Appendix 5. Verifying the connection

Follow the instruction below to verify the connection between ECL2-V680D1 and Programmable controller.

1. Set up [1.5. CC-Link System Master Station Module Parameter Settings].
2. Connect ECL2-V680D1 and Programmable controller.
3. Confirm indicator LED ECL2-V680D1 is as the following table.

Name	Description
PW	Indicates the power supply status. On: Power on
RUN	Indicates normal operation. On: Operating normally in RUN mode.
L RUN	Indicates the CC-Link data communication status. On: When communication is normal
SD	Indicates the CC-Link data send status. On: Sending data
RD	Indicates the CC-Link data reception status. On: Receiving data
L ERR.	Indicates a CC-Link error. Off: Operating normally
BSY.	Indicates the operating status. Off: Standby
NOM.	Indicates the communication complete status. Off: Standby or abnormal end
ERR.	Indicates whether or not an error exists. Off: Normal



Appendix 6. Error code list

A list of error codes is given below.

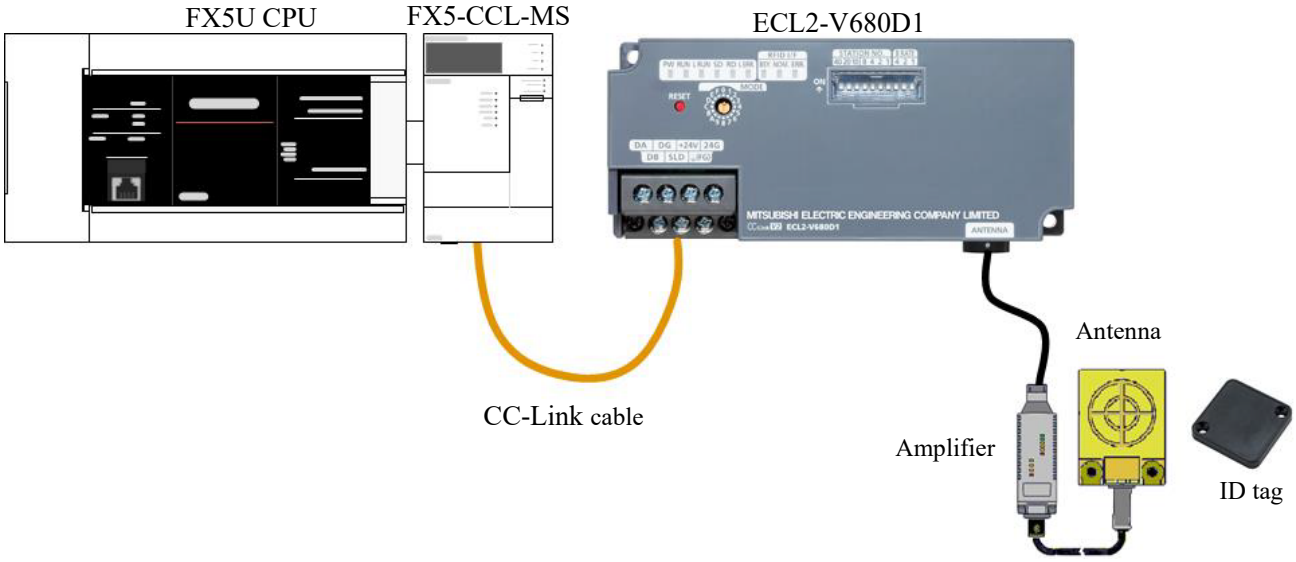
Error code list

Error code (Hexadecimal)	Description	Action
H100	Specification of i_wModuleNo (Module No.) is outside the range.	Specify the module number within the range from 1 to 16 (decimal).
H101	Specification of i_wStationNo(Station No.) is outside the range.	Specify the station number within the range from 1 to 28 (decimal).
H103	・P+MEE-ECL2-V680D1_Read_F i_wReadByte(Processing specification) is outside the specified range.	[Trigger] Specify value in the 0001 to 2048 range (decimal) for Processing specification. [Other than trigger] Specify the amount of data that can be read with a single ID command. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.
	・P+MEE-ECL2-V680D1_Write_F i_wWriteByte(Processing specification) is outside the specified range.	[Trigger] Specify value in the 0001 to 2048 range (decimal) for Processing specification. [Other than trigger] Specify the amount of data that can be written with a single ID command. Refer to the ECL2-V680D1 User's Manual (Details Section) for detailed range.
H110	ECL2-V680D1 is executing the ID command.	Start the FB after completion of execution of the ID command.

Appendix 7. FB Library Application Examples

An example of writing the data into the ID tag using the CC-Link system is given below.

(1) System Configuration



(2) List of devices

■External Input (commands)

Device	FB Name	Application (ON details)
M100	P+MEE-ECL2-V680D1_InitDataSet_F	Set Initial Data command
M102		Set Initial Data command retention
M110	P+MEE-ECL2-V680D1_Read_F	ID tag read command
M111		ID tag read result reception
M112		ID tag read command retention
M120	P+MEE-ECL2-V680D1_Write_F	ID tag write command
M121		ID tag write result reception
M122		ID tag write command retention
M130	P+MEE-ECL2-V680D1_Fill_F	ID tag data fill command
M131		ID tag data fill result reception
M132		ID tag data fill command retention
M140	P+MEE-ECL2-V680D1_UIDRead_F	ID tag UID read command
M141		ID tag UID read result reception
M142		ID tag UID read command retention
M150	P+MEE-ECL2-V680D1_MeasureNoise_F	Measure noise command
M151		Measure noise command retention
M160	P+MEE-ECL2-V680D1_InitDataRead_F	Initial data read command
M161		Initial data read command retention
M170	P+MEE-ECL2-V680D1_StatusRead_F	Module status read command
M171		Module status read command retention
M200	P+MEE-ECL2-V680D1_InitDataSet_F P+MEE-ECL2-V680D1_Read_F P+MEE-ECL2-V680D1_Write_F P+MEE-ECL2-V680D1_Fill_F P+MEE-ECL2-V680D1_UIDRead_F P+MEE-ECL2-V680D1_MeasureNoise_F P+MEE-ECL2-V680D1_InitDataRead_F P+MEE-ECL2-V680D1_StatusRead_F	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-ECL2-V680D1_Write_F	Device for indirection of the device where data to be written to the ID tag is stored
D2302 to D2305	P+MEE-ECL2-V680D1_Write_F	Specify data to be written to the ID tag. (up to 61 words)

■External output (checks)

Device	FB Name	Application (ON details)
D100	P+MEE-ECL2-V680D1_InitDataSet_F	FB error code is stored when setting initial data
D101		Module error code is stored when setting initial data
M103		FB is being executed when setting initial data
M104		FB completes successfully when setting initial data
M105		FB terminates abnormally when setting initial data
M106		Module error when setting initial data
D110	P+MEE-ECL2-V680D1_Read_F	FB error code is stored when reading data from the ID tag
D111		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)
M113		FB is being executed when reading data from the ID tag
M114		FB completes successfully when reading data from the ID tag
M115		FB terminates abnormally when reading data from the ID tag
M116		Module error when reading data from the ID tag
M117		ID communication completes when reading data from the ID tag
D120	P+MEE-ECL2-V680D1_Write_F	FB error code is stored when writing data to the ID tag
D121		Module error code is stored when writing data to the ID tag
M123		FB is being executed when writing data to the ID tag
M124		FB completes successfully when writing data to the ID tag
M125		FB terminates abnormally when writing data to the ID tag
M126		Module error when writing data to the ID tag
M127		ID communication completes when writing data to the ID tag
D130	P+MEE-ECL2-V680D1_Fill_F	FB error code is stored when filling data in the ID tag
D131		Module error code is stored when filling data in the ID tag
M133		FB is being executed when filling data in the ID tag
M134		FB completes successfully when filling data in the ID tag
M135		FB terminates abnormally when filling data in the ID tag
M136		Module error when filling data in the ID tag
M137		ID communication completes when filling data in the ID tag
D140	P+MEE-ECL2-V680D1_UIDRead_F	FB error code is stored when reading the UID of the ID tag
D141		Module error code is stored when reading the UID of the ID tag
D142 to D143		Device for indirection of the device where the UID of the ID tag is stored
D144 to D147		ID tag UID is stored when reading the UID of the ID tag (4 words)
M143		FB is being executed when reading the UID of the ID tag
M144		FB completes successfully when reading the UID of the ID tag
M145		FB terminates abnormally when reading the UID of the ID tag
M146		Module error when reading the UID of the ID tag
M147		ID communication completes when reading the UID of the ID tag

Device	FB Name	Application (ON details)
D150	P+MEE-ECL2-V680D1_MeasureNoise_F	FB error code is stored when measuring noise
D151		Module error code is stored when measuring noise
D152 to D153		Device for indirection of the device where the noise measurement results are stored
D154 to D156		Measurement results are stored when measuring noise (3 words)
M152		FB is being executed when measuring noise
M153		FB completes successfully when measuring noise
M154		FB terminates abnormally when measuring noise
M155		Module error when measuring noise
D160	P+MEE-ECL2-V680D1_InitDataRead_F	FB error code is stored when reading initial data
D161		Communication specification is stored when reading initial data
D162		Communication setting is stored when reading initial data
D163		Processing specification is stored when reading initial data
D164		Auto system command waiting time setting is stored when reading initial data
M162		FB is being executed when reading initial data
M163		FB completes successfully when reading initial data
M164		FB terminates abnormally when reading initial data
D170	P+MEE-ECL2-V680D1_StatusRead_F	FB error code is stored when reading module status
D171		Module status is stored when reading the module status
M172		FB is being executed when reading the module status
M173		FB completes successfully when reading the module status
M174		FB terminates abnormally when reading the module status

(3) Example of use Setting

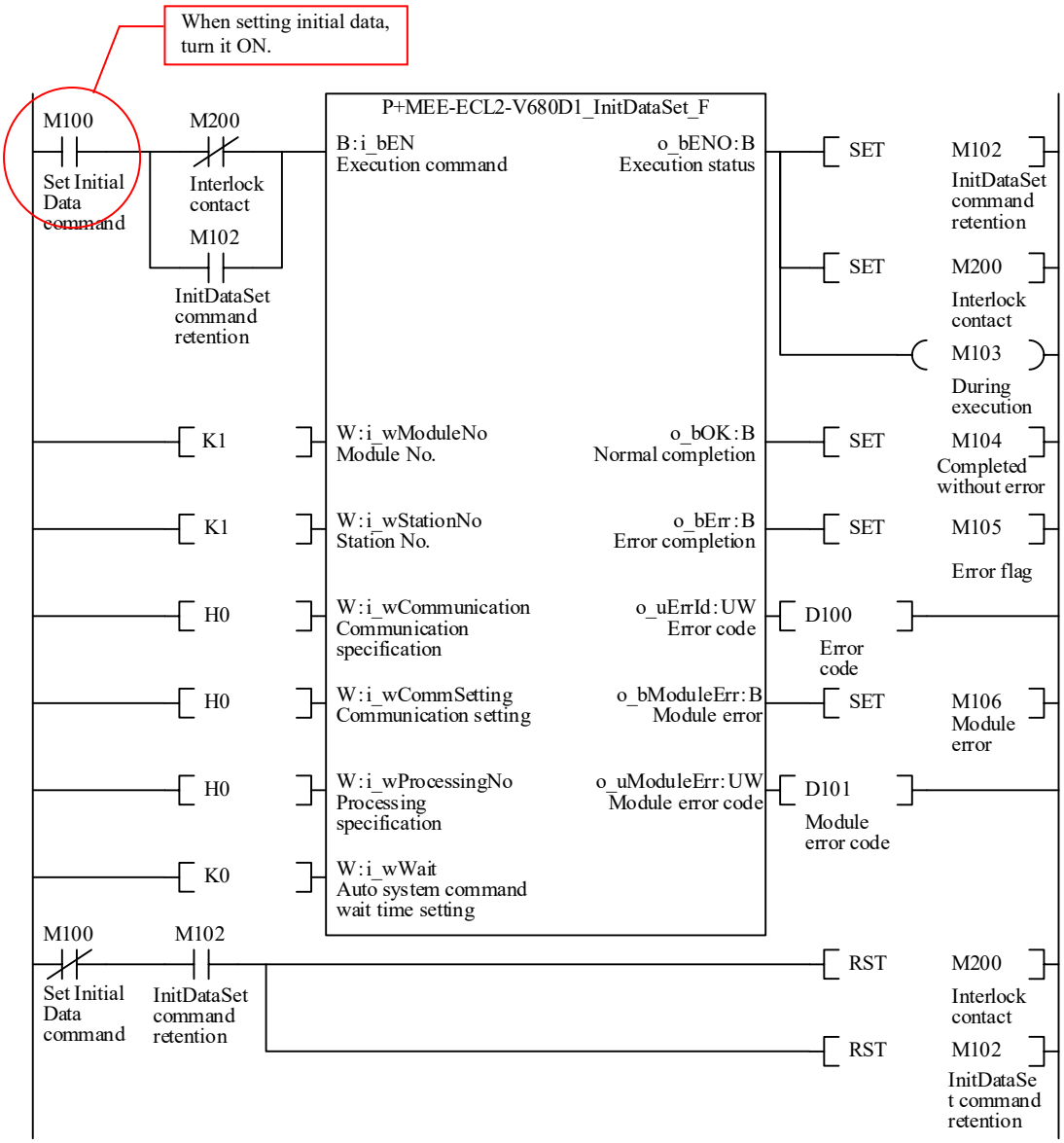
■Common settings

Input/Output item	Value	Description
Module No.	K1	Specify the module No. in which the CC-Link system master/intelligent device module for communication is mounted.
Station No.	K1	Enter the station number of the RFID system to be connected.

(4) Programs

(a) P+MEE-ECL2-V680D1_InitDataSet_F (Set initial data)
Set initial data on the following conditions.

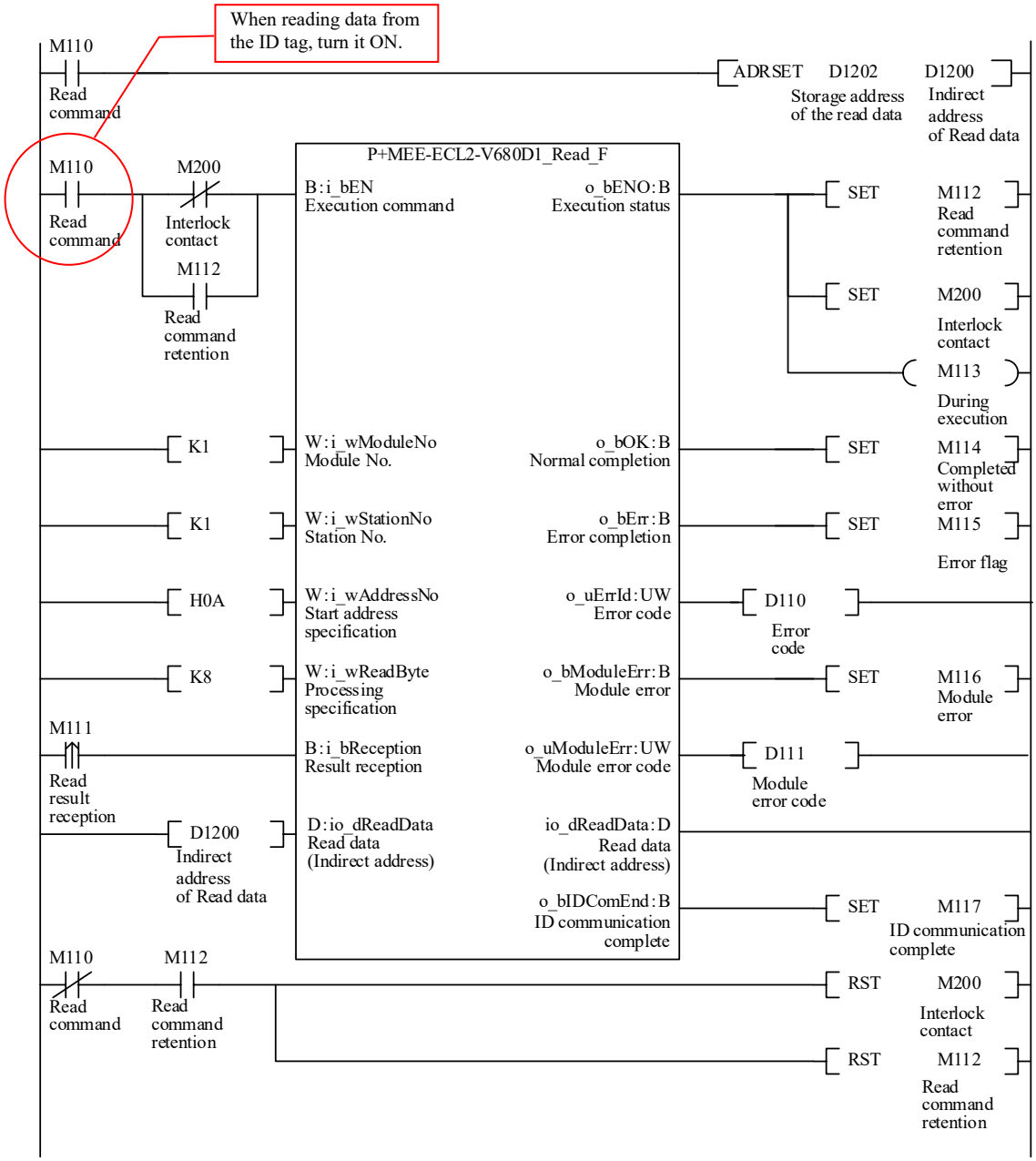
- Module No. ····· 1
- Station No. ····· 1
- Communication specification ····· 0 (Trigger)
- Communication setting ····· 0 (Write verify setting :Execute
  ID tag communication speed setting :Standard mode
  Write protect setting :Enable
  Read/Write data code setting :Without ASCII/HEX conversion)
- 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-ECL2-V680D1_Read_F (Read ID tag)

Read data from the ID tag on the following conditions.

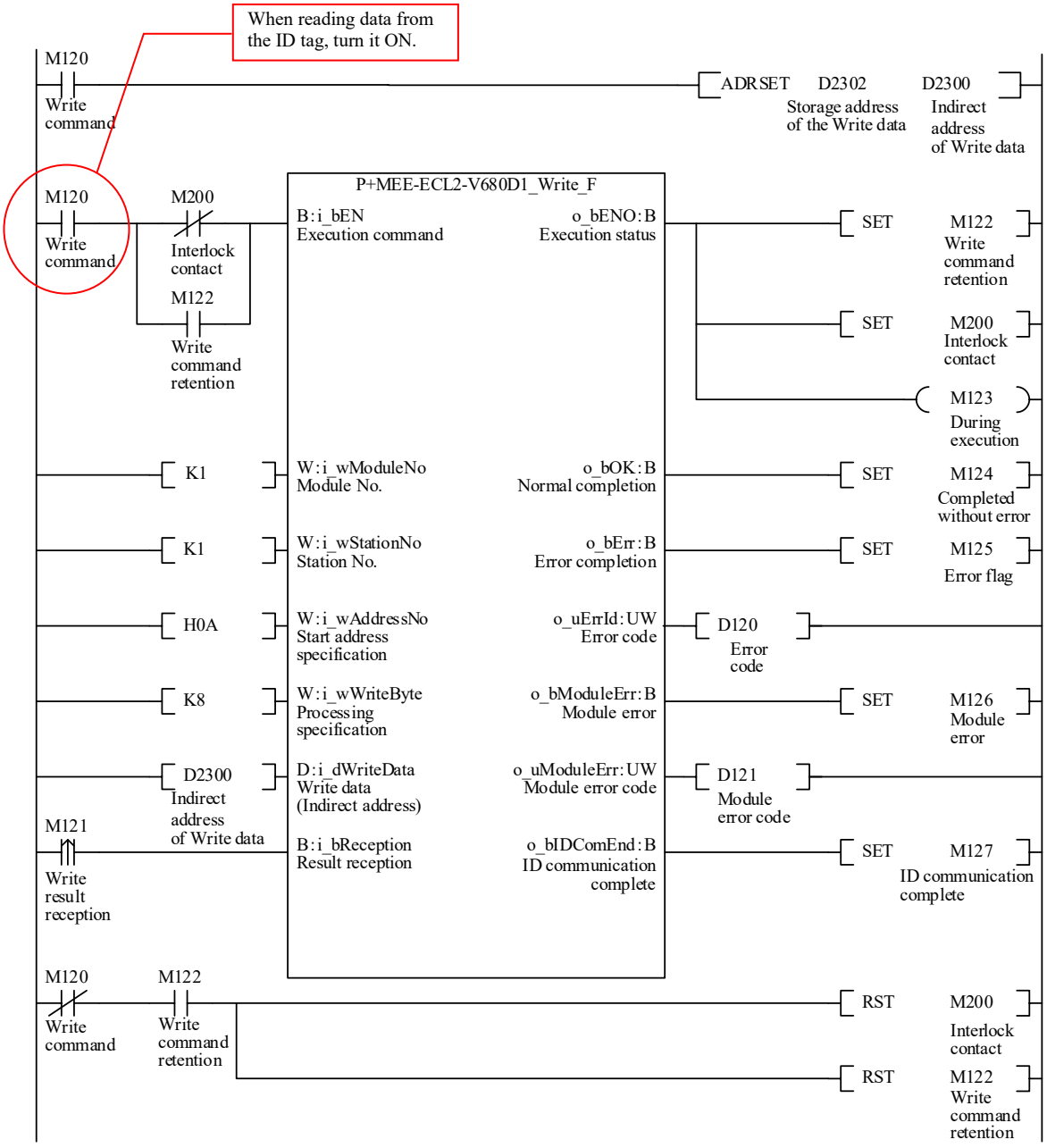
- Module No. ····· 1
- Station No. ····· 1
- Start address specification ····· 0AH
- Processing specification ····· 8 (8 bytes)
- Storage address of the Read data ····· D1202 to D1205



(c) P+MEE-ECL2-V680D1_Write_F (Write to ID Tag)

Write data to the ID tag on the following conditions.

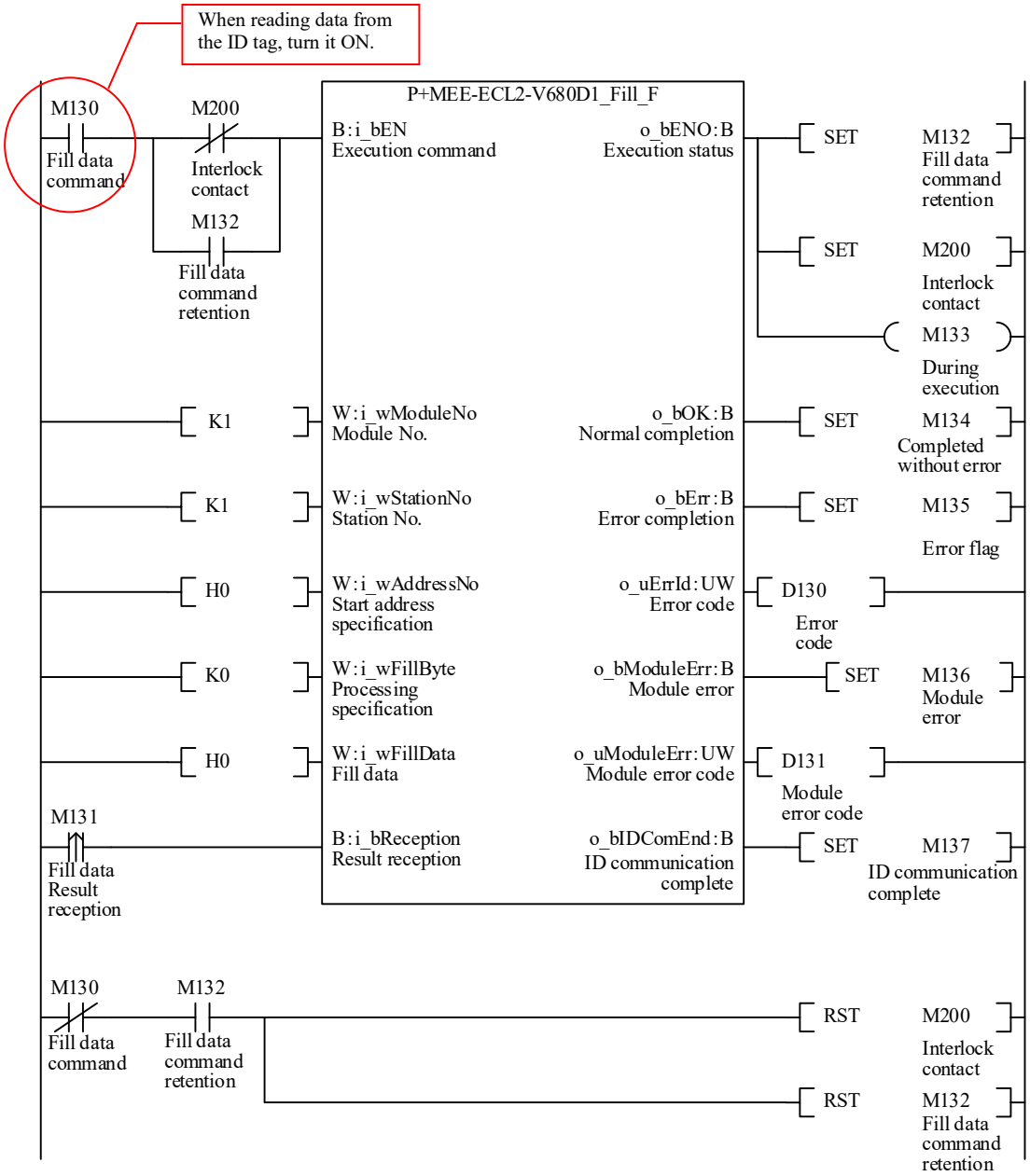
- Module No.·····1
- Station No. ·····1
- Start address specification·····0AH
- Processing specification ·····8 (8 bytes)
- Storage address of the Write data ·····D2302 to D2305



(d) P+MEE-ECL2-V680D1_Fill_F (Fill Data in ID Tag)

Fill data in the ID tag on the following conditions.

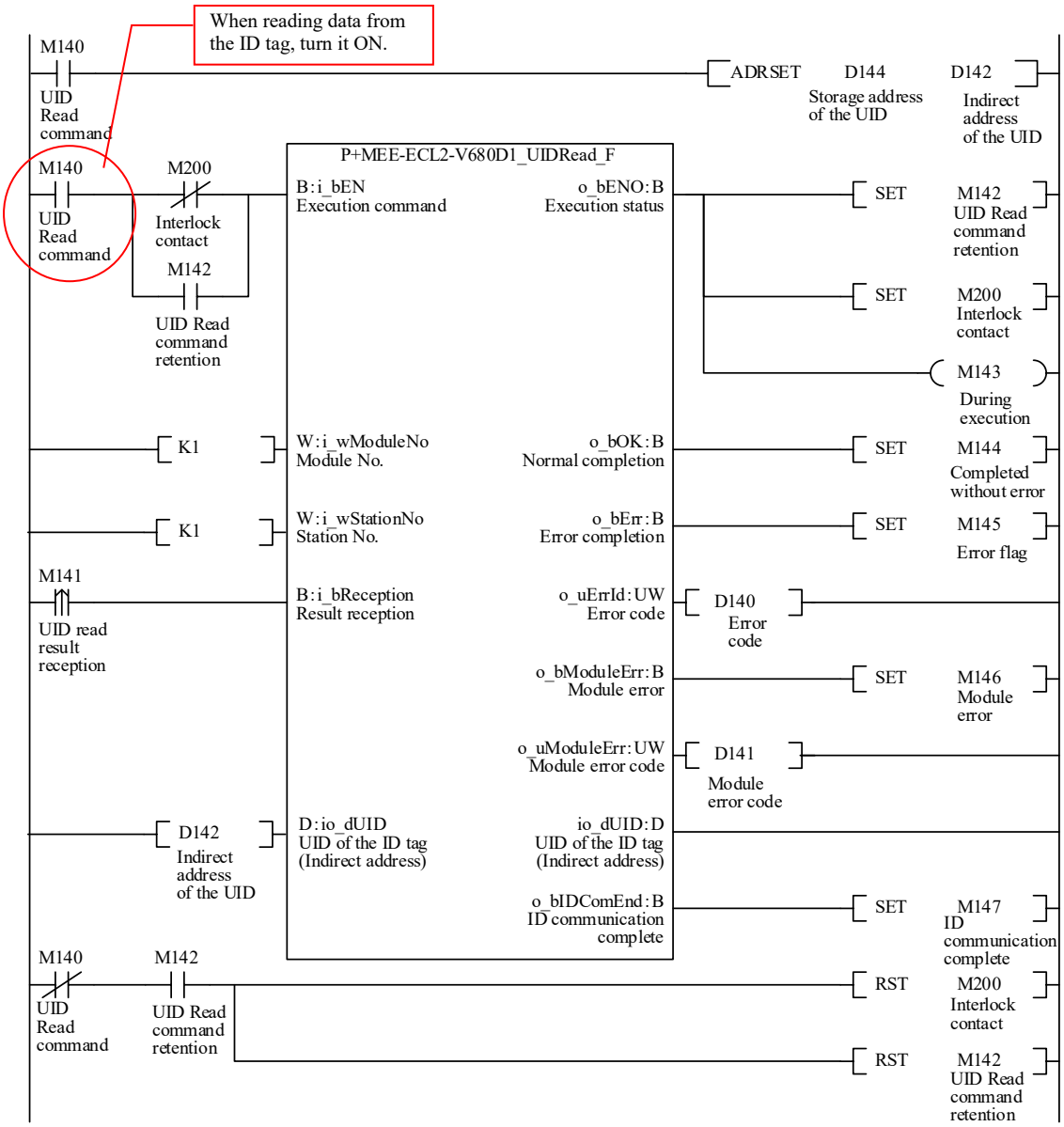
- Module No.·····1
- Station No. ·····1
- Start address specification·····0
- Processing specification ·····0 (Specify all data)
- Fill data ·····0



(e) P+MEE-ECL2-V680D1_UIDRead_F (Read UID of ID Tag)

Read UID of the ID tag on the following conditions.

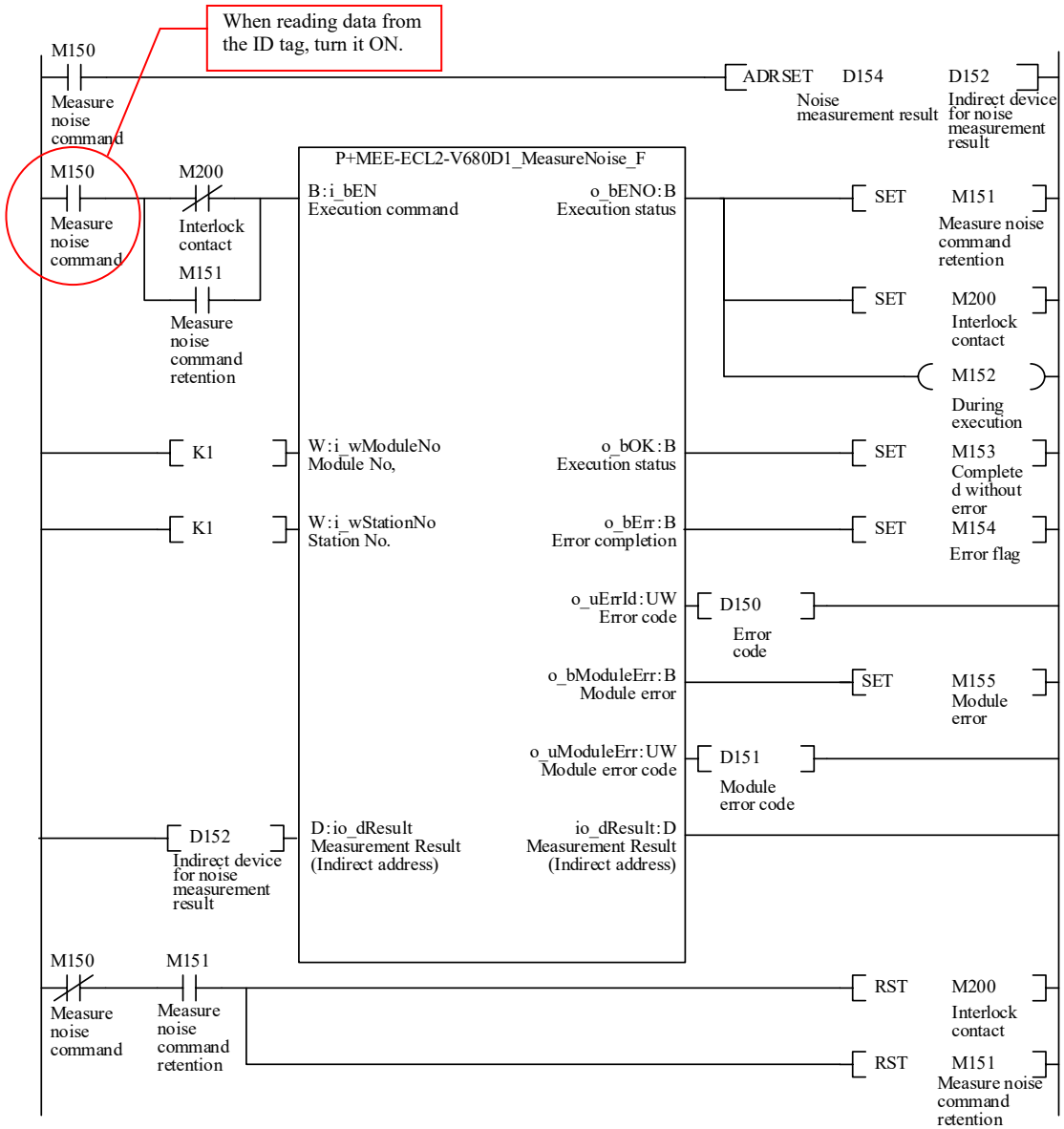
- Module No.·····1
- Station No. ·····1
- Storage destination of UID·····D144 to D147



(f) P+MEE-ECL2-V680D1_MeasureNoise_F (Measures Noise)

Measure noise on the following conditions.

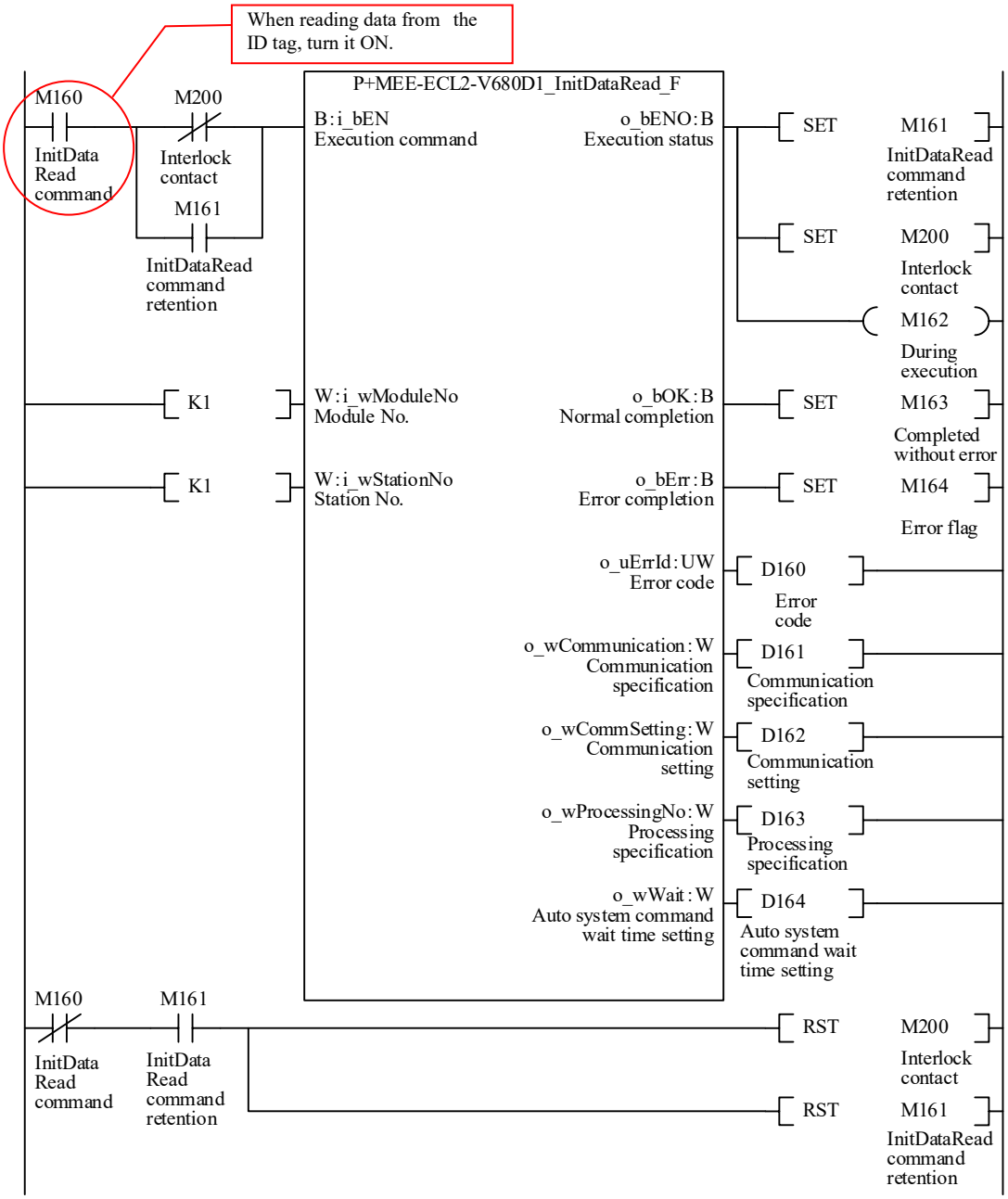
- Module No.·····1
- Station No. ·····1
- Storage address of Measurement result ·····D154 to D156



(g) P+MEE-ECL2-V680D1_InitDataRead_F (Read initial data settings)

Read initial data on the following conditions.

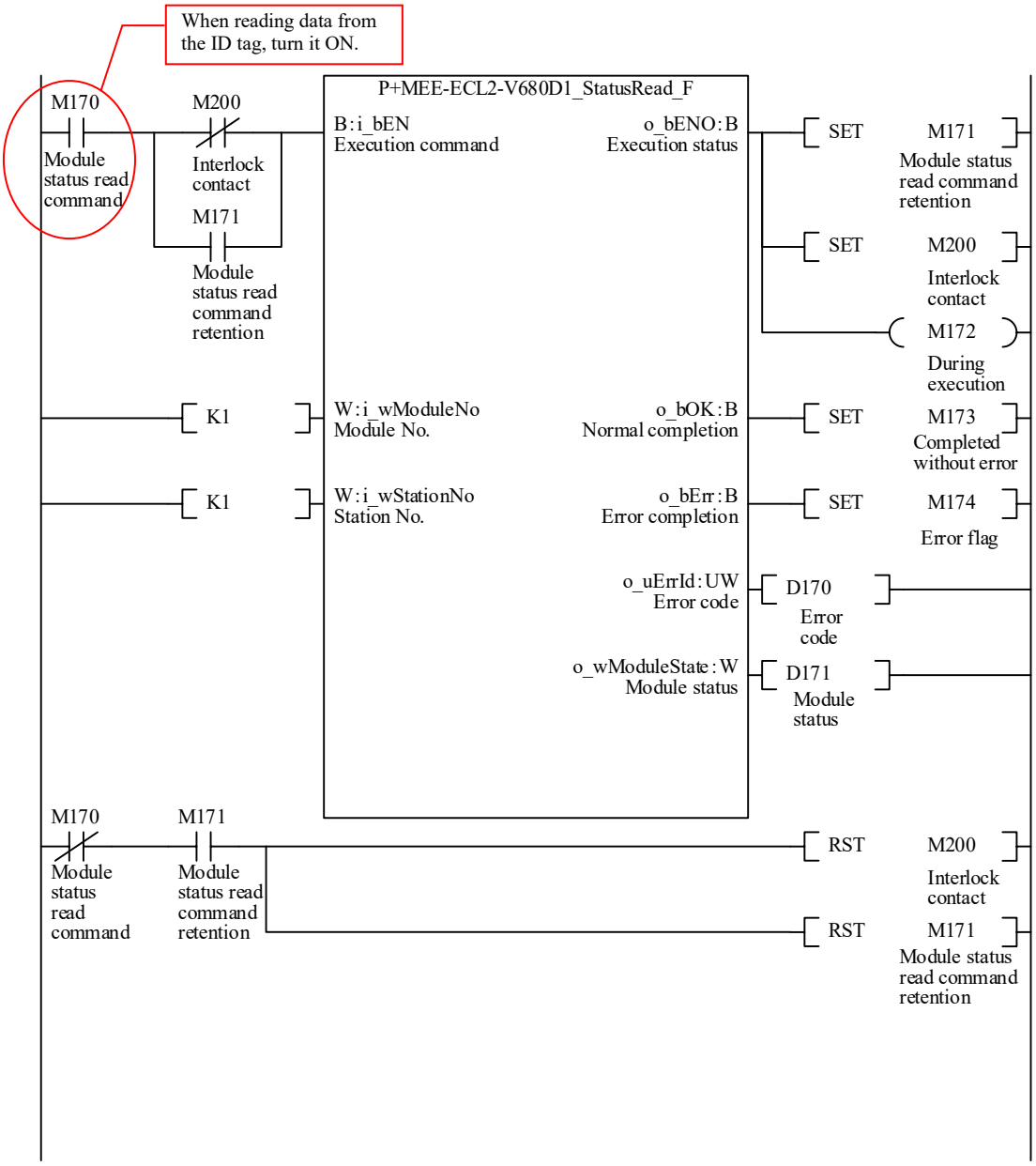
- Module No.·····1
- Station No. ·····1



(h) P+MEE-ECL2-V680D1_StatusRead_F (Read Module Status)

Read the module status on the following conditions.

- Module No. ····· 1
- Station No. ····· 1



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MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

NAGOYA ENGINEERING OFFICE | 1-9, Daiko-Minami, 1-Chome, Higashi-ku, Nagoya, Aichi 461-0047 Japan
Phone +81-52-6495 URL:https://www.mitsubishielectricengineering.com/

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