MITSUBISHI ELECTRIC ENGINEERING

FL-net (OPCN-2) Interface Module

MODEL

ER-1FL2-T

FB Library Reference Manual

(For MELSEC iQ-R series)

Network Devices

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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
Sep. 2017	50CM-D180282-A	First edition
Sep. 2023	50CM-D180282-B	・Redesign of front and back covers ・Error correction

Japanese manual number: 50CM-D180281

1. Overview

1.1. FB Library Overview

This FB library is for using the ER-1FL2-T FL-net (OPCN-2) interface Module (hereinafter referred to as FL-net Module.)

1.2. FB Library List

No.	FB Name (*1)	Functions (*3)
1	P+MEE-007ER-1FL2-T_Initialize_R	Sets the network parameter area of the local node.
2	P+MEE-007ER-1FL2-T_ByteBlockRead_R	Reads the byte block.
3	P+MEE-007ER-1FL2-T_ByteBlockWrite_R	Writes the byte block.
4	P+MEE-007ER-1FL2-T_WordBlockRead_R	Reads the word block.
5	P+MEE-007ER-1FL2-T_WordBlockWrite_R	Writes the word block.
6	P+MEE-007ER-1FL2-T_NetworkParameterRead_R	Reads the network parameter /join node information.
7	P+MEE-007ER-1FL2-T_NetworkParameterWrite_R	Writes the network parameter.
8	P+MEE-007ER-1FL2-T_OperateCommand_R	Issues the operation command.
9	P+MEE-007ER-1FL2-T_StopCommand_R	Issues the stop command.
10	P+MEE-007ER-1FL2-T_DeviceProfileRead_R	Reads the device profile.
11	P+MEE-007ER-1FL2-T_LogInformationRead_R	Reads the log information.
12	P+MEE-007ER-1FL2-T_LogInformationClear_R	Clears the log information.
13	P+MEE-007ER-1FL2-T_MessageReturn_R	Returns the message.
14	P+MEE-007ER-1FL2-T_SendTransparentMessage_R	Sends the transparent type message.
15	P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R	Receives the transparent message.
16	P+MEE-007ER-1FL2-T_RefreshCyclicDataOther_R	Refreshes the cyclic data of other nodes.
17	P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal _R	Refreshes the cyclic data of the local node.

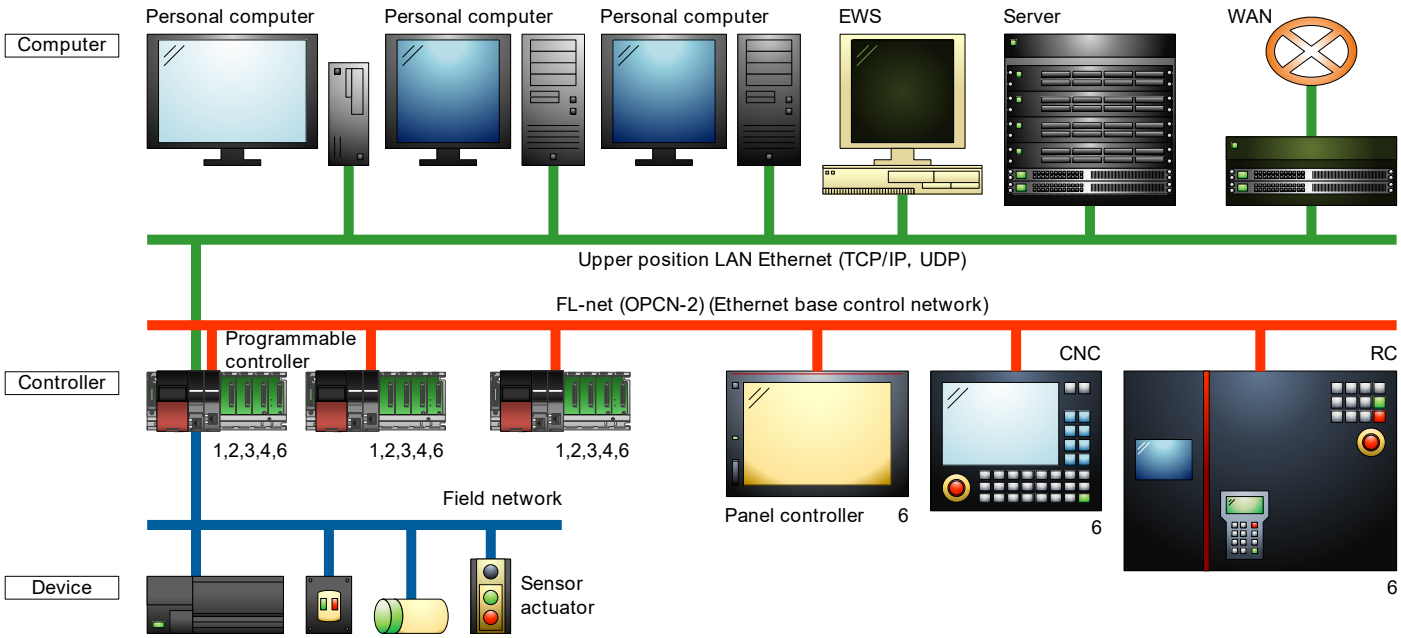
*1 Suffixed added to the end of the FB name such as "_00A" indicate the version of the FB, however, the version will not be stated in this reference manual.

*2 Always execute the FB first after the power-on or reset clear. If module parameters are set in GX Works 3, the execution is not required.

*3 Label comments descriptions may be abbreviated due to the character limits of GX Works3.

1.3. System Configuration Examples

(1) MELSEC iQ-R series system configuration



The following table shows the equipment used in FL-net (OPCN-2) of Ethernet base control network.

No.	Device Name	Description
1	MELSEC-iQ-R series programmable controler	Base module
2		Power supply module
3		CPU module
4	FL-net module	ER-1FL2-T
5	Cable	Ethernet cable
6	Ethernet cable	Cat 5e or better Ethernet cable
7	FL-net (OPCN-2) supported device	Such as a programmable controller, Panel controller, CNC, RC, etc.

1.4. Related Manuals

No.	Manual name	Manufacturer	Manual No.
1	FL-net (OPCN-2) Interface module ER-1FL2-T User's manual (Hardware Edition)	Mitsubishi Electric Engineering Co., Ltd.	50CM-D180275
2	FL-net (OPCN-2) Interface module ER-1FL2-T User's manual (Detailed Edition)		50CM-D180277
3	MELSEC iQ-R Module Configuration Manual	Mitsubishi Electric Co., Ltd.	SH-081262ENG
4	MELSEC iQ-R CPU Module User's Manual (Startup)		SH-081263ENG
5	MELSEC iQ-R CPU Module User's Manual (Application)		SH-081264ENG
6	MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)		SH-081266ENG
7	MELSEC iQ-R Programming Manual (Program Design)		SH-081265ENG
8	GX Works3 Operating Manual		SH-081215ENG

1.5. Notes

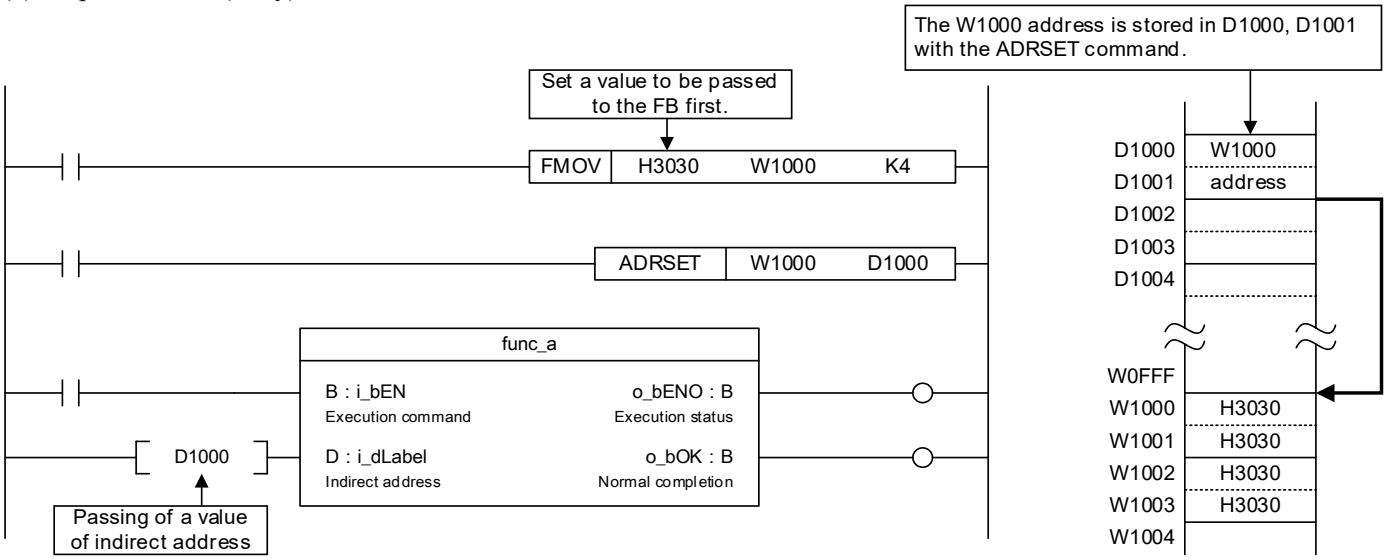
Please read the latest user's manual of the product prior to use.

1.6. Indirect addressing

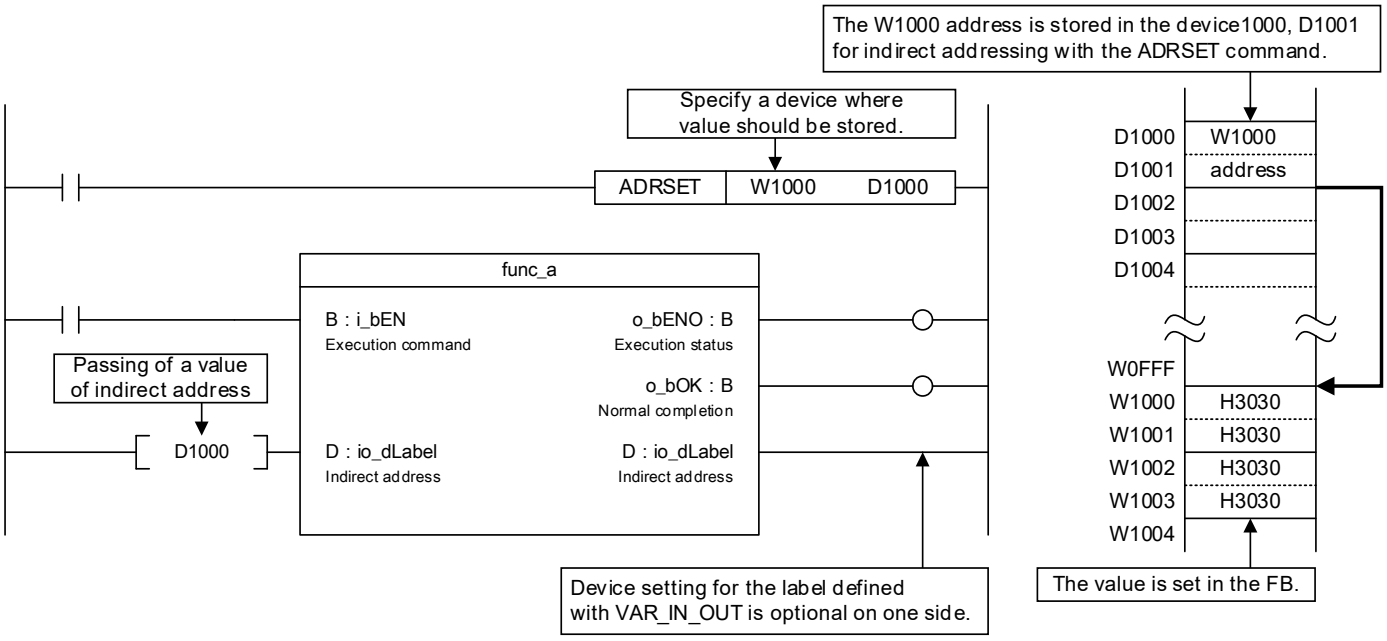
This FB library has an area for specifying an indirect address for input of the FB.

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



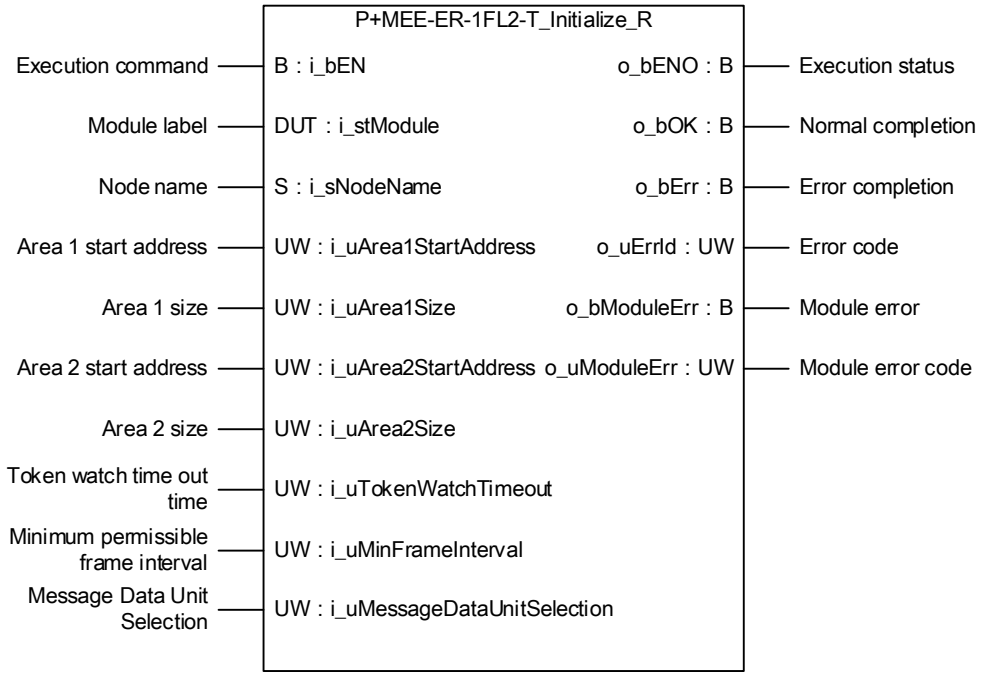
2. FB Library Details

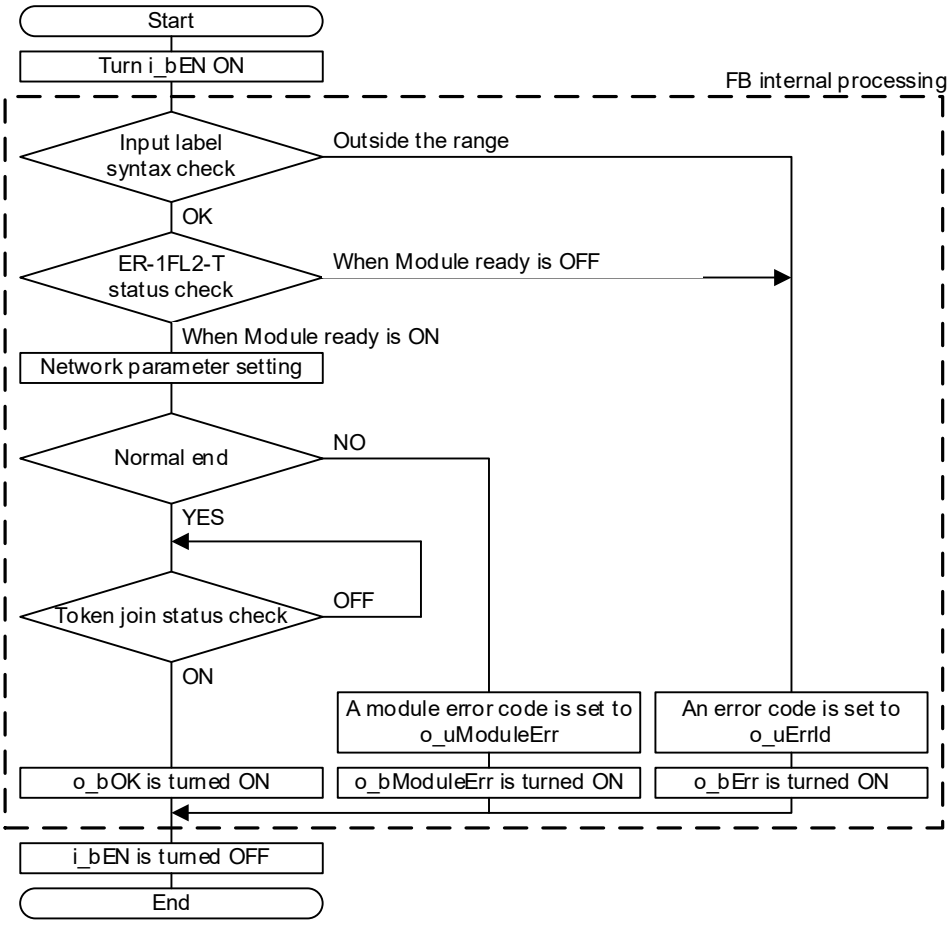
2.1. P+MEE-007ER-1FL2-T_Initialize_R (Local node network parameter area setting)

Function Name

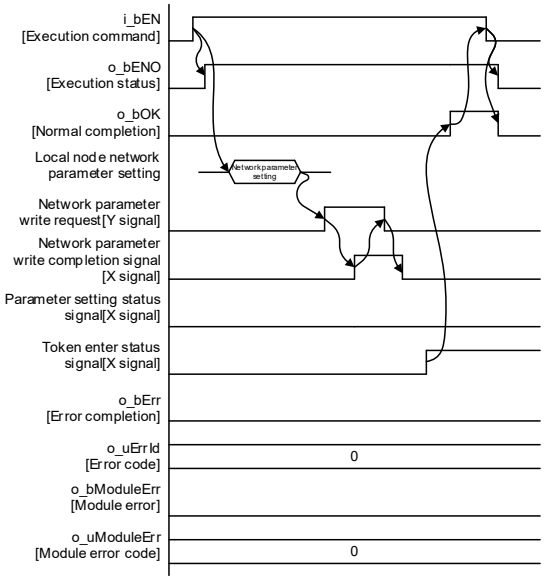
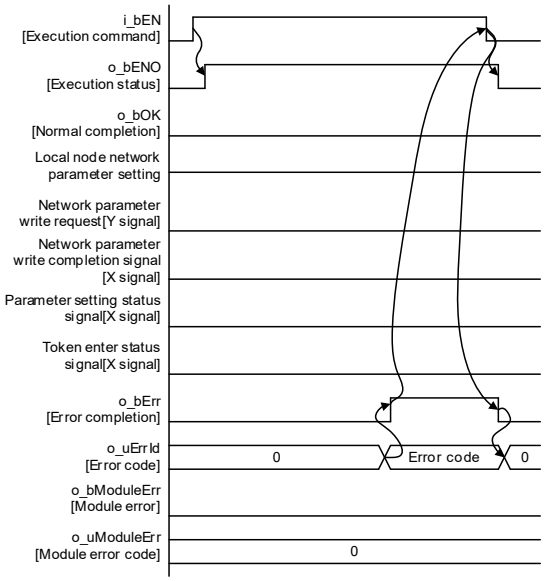
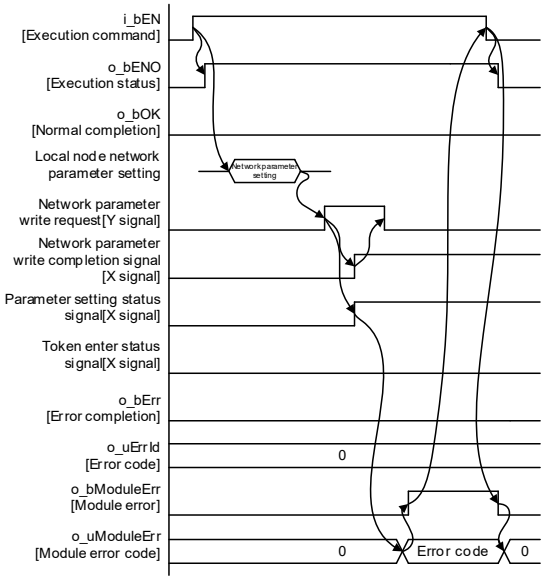
P+MEE-007ER-1FL2-T_Initialize_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">Set the network parameter area of the local node for an initial processing of the FL-net module.
* Always execute the FB first after the power-on or reset clear. If basic settings are set with the module parameters are set in GX Works 3, the execution is not required.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td></td><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
</table>

Items	Description
Language	Ladder diagram
Steps	1046Step (for MELSEC iQ-R series / R04CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.
Consumption label capacity	36word
Function Description	1) Turning on i_bEN (Execution status) executes the initial processing of ER-1FL2-T. When the initial processing is completed successfully, o_bOK (Normal completion) turns on.  2) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 3) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details.
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) Always execute the FB first after power-on or reset clear. If basic settings are set with the module parameters in GX Works 3, the execution is not required. 3) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 4) This FB cannot be used within interrupt programs. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The setting of the input label i_sNodeNam (node) is optional. If it is not set, a blank is written at the initial processing. 8) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_sNodeName (Node name) ・ i_uArea1StartAddress (Area 1 start address) ・ i_uArea1Size (Area 1 size) ・ i_uArea2StartAddress (Area 2 start address) ・ i_uArea2Size (Area 2 size) ・ i_uTokenWatchTimeout (Token watch time out time) ・ i_uMinFrameInterval (Minimum permissible frame interval) ・ i_uMessageDataUnitSelection (Message data unit selection) 10) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 11) If the processing of this FB is not completed, check for the system configuration. 12) Label comments descriptions may be abbreviated due to the character limits of GX Works3. 13) If an area duplication occurs with another node, no error is detected until area duplication is detected.
FB operation type	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

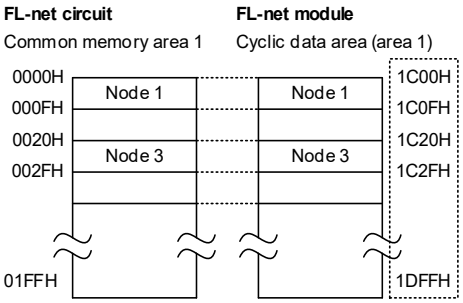
Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

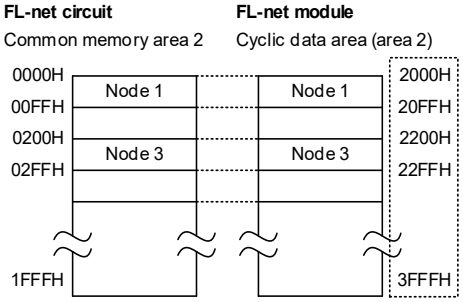
Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H111	Token watch time out time is out of range.	Set the value within the following range. ・ 1 to 255 (Decimal) Review and correct the settings and then execute the FB again.
H112	Minimum permissible frame interval is out of range.	Set the value within the following range. ・ 0 to 50 (Decimal) Review and correct the settings and then execute the FB again.
H113	Area 1 start address is out of range.	Set the value within the following range. ・ 0 to 1FF (Hexadecimal) Review and correct the settings and then execute the FB again.
H114	Area 1 size is out of range.	Set the value within the following range. ・ 0 to 200 (Hexadecimal) Review and correct the settings and then execute the FB again.
H115	Area 2 start address is out of range.	Set the value within the following range. ・ 0 to 1FFF (Hexadecimal) Review and correct the settings and then execute the FB again.
H116	Area 2 size is out of range.	Set the value within the following range. ・ 0 to 2000 (Hexadecimal) Review and correct the settings and then execute the FB again.
H117	Message data unit selection is out of range.	Set the value within the following range. ・ 0, 1 Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Node name	i_sNodeName	String	Within 10 bytes	Set Node name. (optional) Specify it within 10 bytes.
Area 1 start address	i_uArea1StartAddress	Word [Unsigned]	0 to 1FF (Hexadecimal)	Set the start address of the local node common memory Area 1 (bit area). Set the offset value of the cyclic data area (Area 1) (address: 1C00 to 1DFFH) in the buffer memory. 
Area 1 size	i_uArea1Size	Word [Unsigned]	0 to 200 (Hexadecimal)	Set the size of the common memory Area 1 (bit area) of the local node. The setting is in increments of 1 word. For example, set "2H" to specify 32-bit.

*1 The valid range depends on Module label.

Name (comment)	Label name	Data type	Range	Description
Area 2 start address	i_uArea2StartAddress	Word [Unsigned]	0 to 1FFF (Hexadecimal)	Set the start address of the common memory Area 2 (word area) of the local node. Set the offset value of the cyclic data area (Area 2) (address: 2000 to 3FFFH) in the buffer memory. 
Area 2 size	i_uArea2Size	Word [Unsigned]	0 to 2000 (Hexadecimal)	Set the size of the local node common memory Area 2 (word area). The setting is in increments of 1 word.
Token watch time out time	i_uTokenWatchTimeout	Word [Unsigned]	1 to 255 (Decimal)	Set the monitoring time from the reception of the token for the local node to delivery of the token to the next node. When other nodes hold the token, this monitoring time is used as a monitoring time until the node releases the token. The setting is in increments of 1 ms.
Minimum permissible frame interval	i_uMinFrameInterval	Word [Unsigned]	0 to 50 (Decimal)	Set the time from the reception of the token for the local node to sending of a frame by the local node. It is also used as the frame interval time for the message transmission or frame division. The setting is in increments of 100 μs.
Message data unit selection	i_uMessageData UnitSelection	Word [Unsigned]	0, 1	Sets the unit for when message data is handled. 0: Word unit 1: Byte unit

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

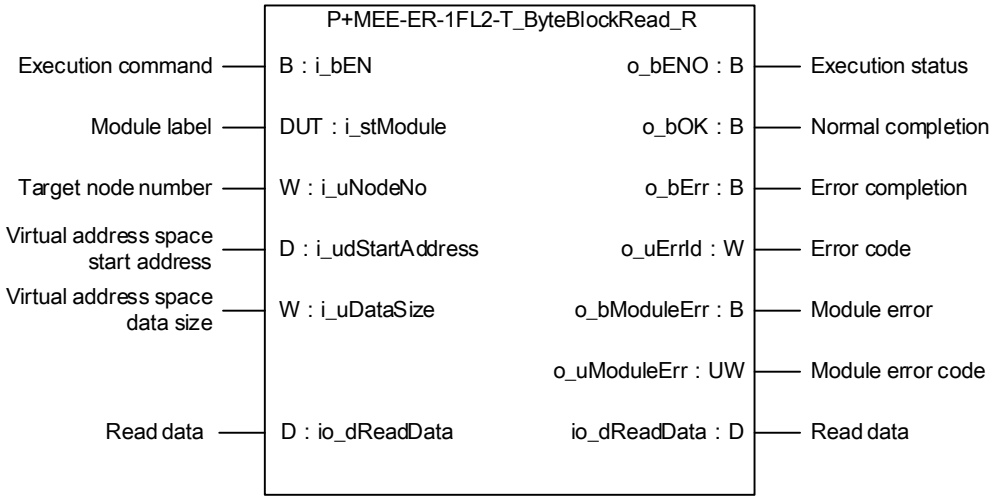
Please read the user's manuals for those products prior to use.

2.2. P+MEE-007ER-1FL2-T_ByteBlockRead_R (Reads the byte block)

Function Name

P+MEE-007ER-1FL2-T_ByteBlockRead_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This is a message function to write the data in units of bytes (1 address 8-bit units) to the Virtual address space (32-bit address space) of the correspondent node via the network.
Note that the virtual address space depends on the FL-net device where the data is read.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
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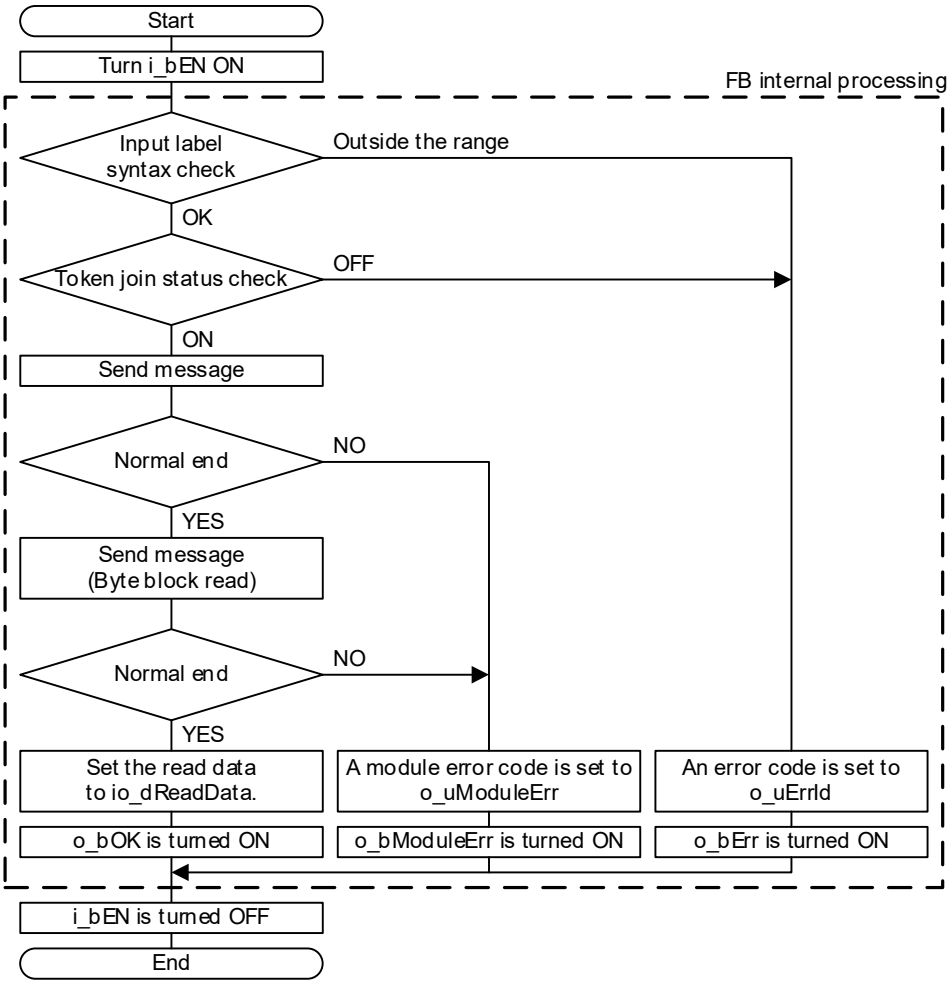
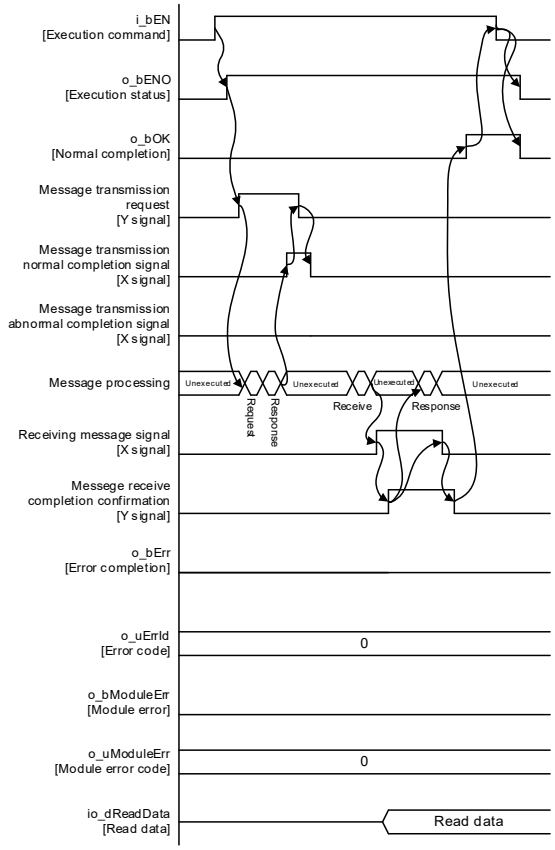
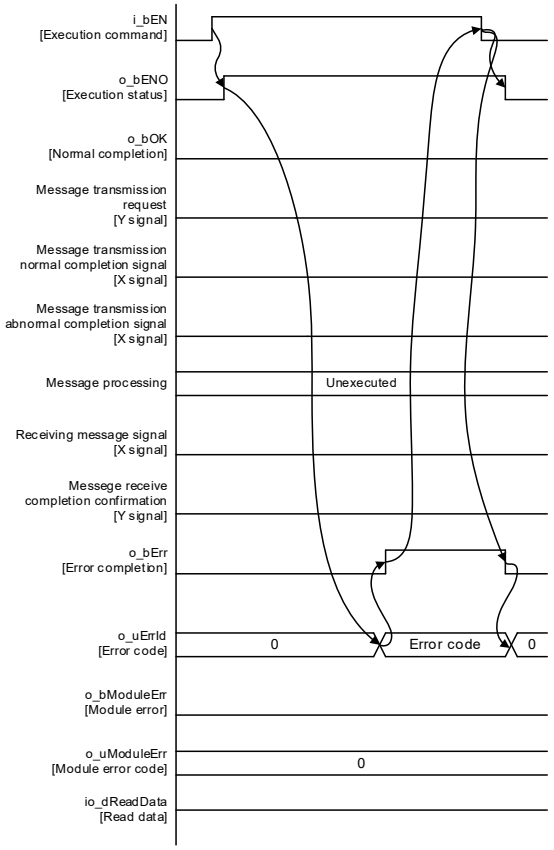
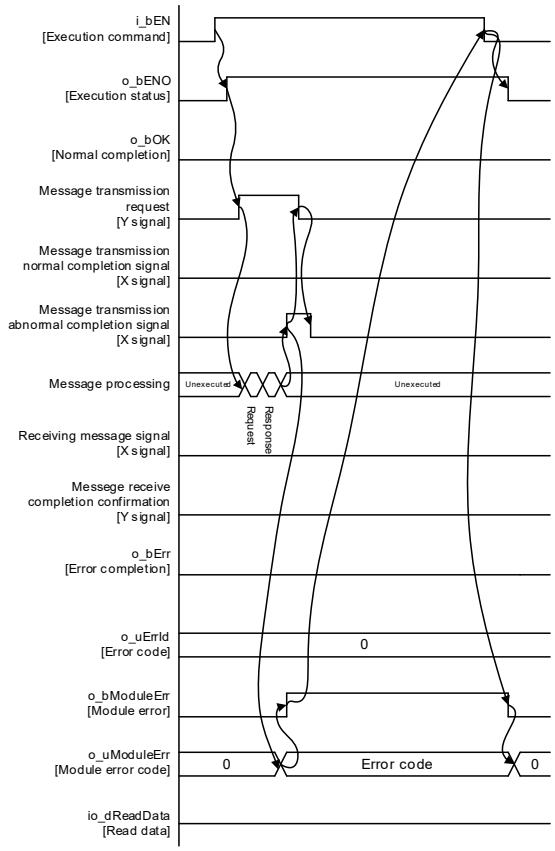
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1258Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
</table>

Items	Description
Consumption label capacity	16word
Function Description	1) Turning on i_bEN (Execution status) reads the data for the number of bytes specified by i_udStartAddress(Virtual address space start address) and i_uDataSize(Virtual address space data size) from the Virtual address space of the node specified by i_uNodeNo(Target node number). 2) Data read is stored from the start device specified with io_dReadData (Read data). When reading is completed, o_bOK (Normal completion) is turned ON.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) 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(Read data) until processing is suspended.

Items	Description
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReadData(Read data), always specify the device that stores the read data. 11) When odd byte is set, it is rounded up to the word unit by internal processing of FB. One byte (upper side) of the last of data is undefined. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_udStartAddress (Virtual address space start address) ・ i_uDataSize (Virtual address space data size) ・ io_dReadData (Read data) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) The range check of the virtual address space and device is not performed. Specify the address according to the CPU module used. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error Code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H124	Virtual address space data size is out of range.	Set the value within the following range. ・ 1 to 1024 (Decimal) Review and correct the settings and then execute the FB again. When the error is notified from the external device, the error codes is stored in the module error code of the output label.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Virtual address space start address	i_udStartAddress	Double word [Unsigned]	*2	Specify the start address of the Virtual address space.
Virtual address space data size	i_uDataSize (Unit: bytes)	Word [Unsigned]	1 to 1024 (Decimal)	Specify the data size be read from the Virtual address space. The unit is byte.
Read data	io_dReadData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the read data.

*1 The valid range depends on Module label.

*2 The valid range depends on the CPU module of the target node.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Read data	io_dReadData	Double word	-	Stores the data read from the Virtual address space.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

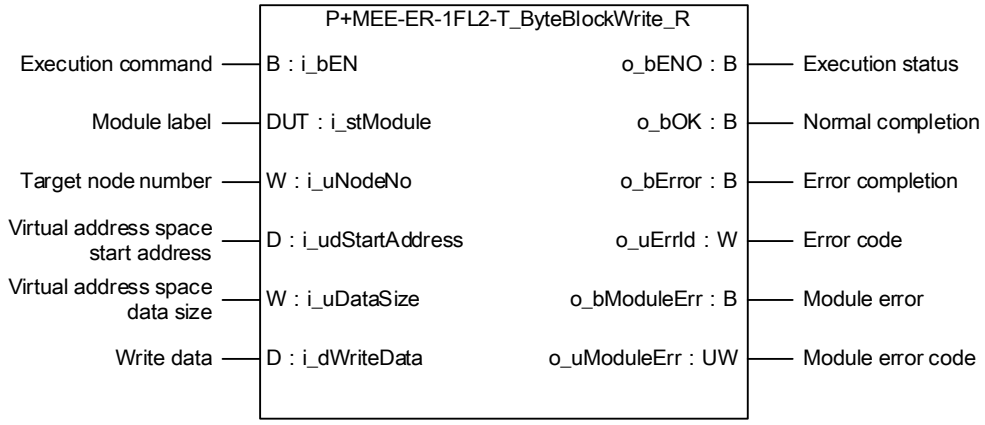
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

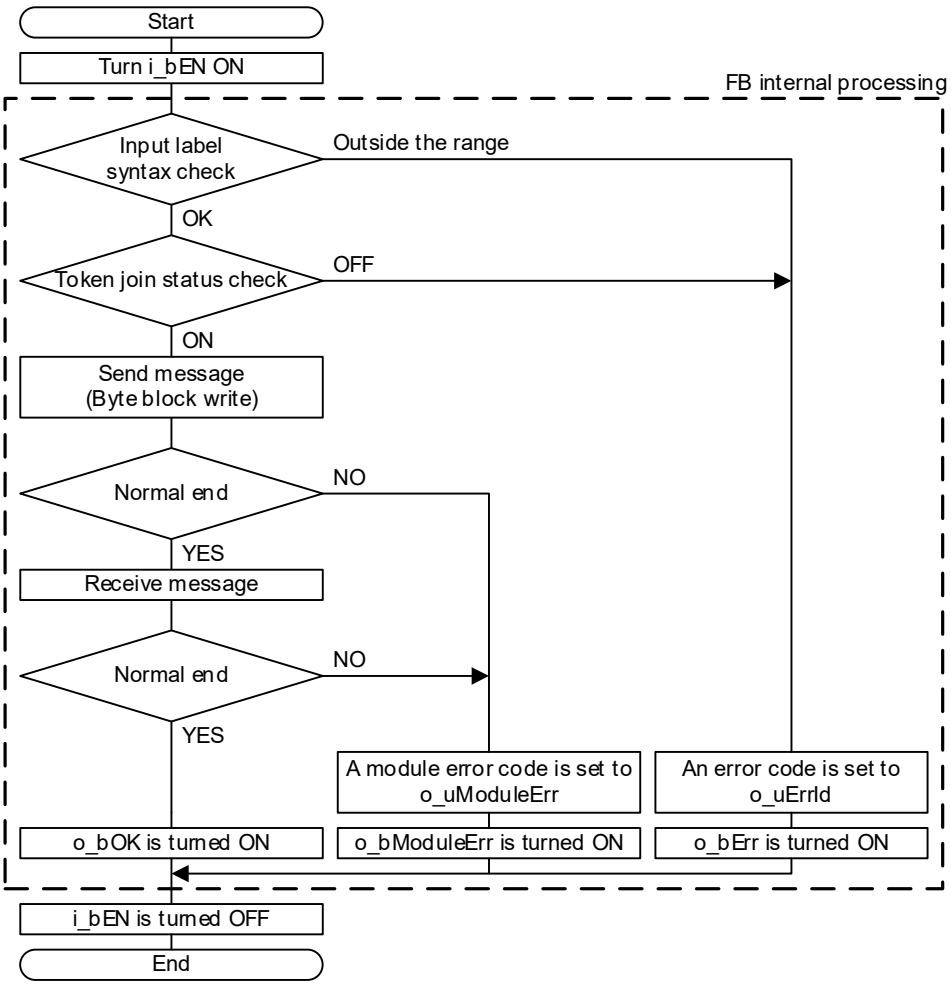
2.3. P+MEE-007ER-1FL2-T_ByteBlockWrite_R (Writes the byte block)

Function Name

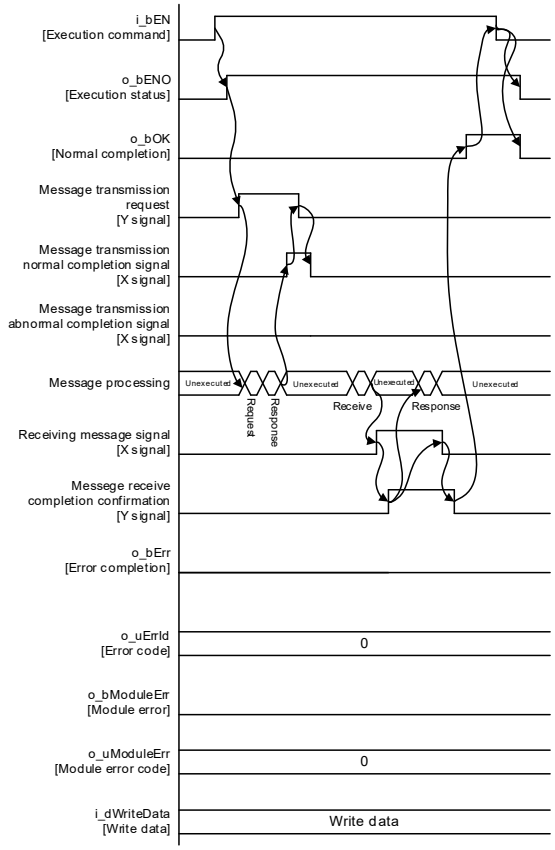
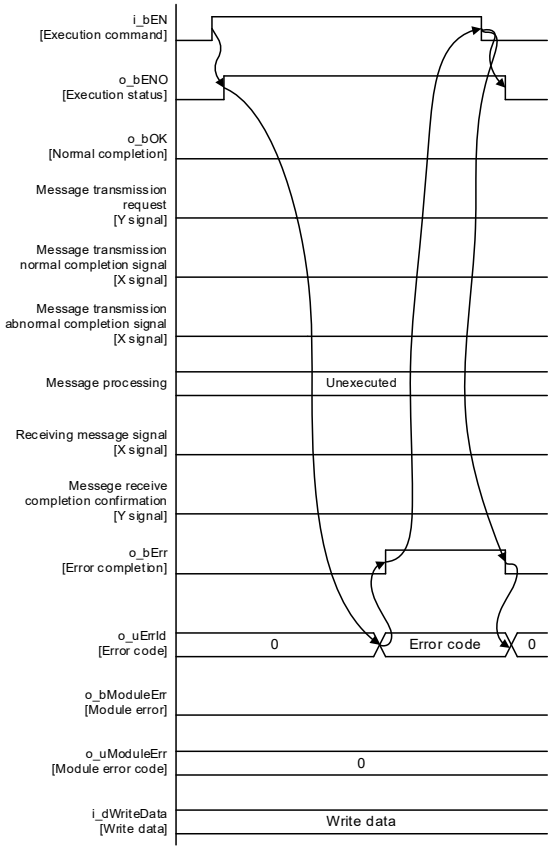
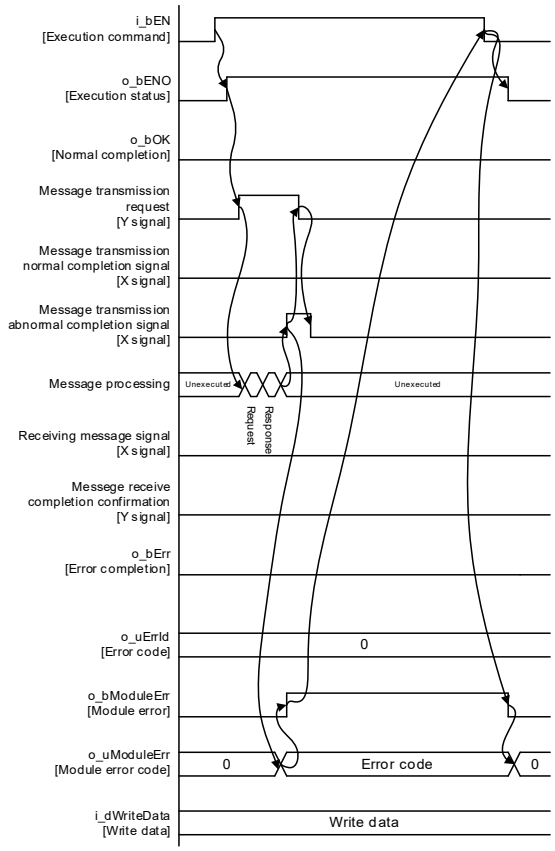
P+MEE-007ER-1FL2-T_ByteBlockWrite_R

Function Description

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This is a message function to write the data in units of bytes (1 address 8-bit units) to the Virtual address space (32-bit address space) of the correspondent node via the network.
Note that the virtual address space depends on the FL-net device where the data is written.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1262Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">16word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) writes the number of bytes data specified by i_udStartAddress (Virtual address space start address) and i_uDataSize (Virtual address space data size) to the Virtual address space that the node specified by i_uNodeNo (Target node number) holds. 2) Read the write data from the device specified by i_dWriteData (Write data). o_bOK (Normal completion) turns on after the data has been written.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when i_bEN (Execution status) turns off during the writing process. If the data is being written to the target node, the data before suspension is written.

Items	Description
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For i_dWriteData (Write data), always specify the device that stores the write data. 11) When odd byte is set, it is rounded up to the word unit by internal processing of FB. One byte (upper side) of the last of data is undefined. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_udStartAddress (Virtual address space start address) ・ i_uDataSize (Virtual address space data size) ・ i_dWriteData (Write data) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) The range check of the virtual address space and device is not performed. Specify the address according to the CPU module used. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H124	Virtual address space data size is out of range.	Set the value within the following range. ・ 1 to 1024 (Decimal) Review and correct the settings and then execute the FB again. When the error is notified from the external device, the error codes is stored in the module error code of the output label.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Virtual address space start address	i_udStartAddress	Double word [Unsigned]	*2	Specify the start address of the Virtual address space.
Virtual address space data size	i_uDataSize (Unit: bytes)	Word [Unsigned]	1 to 1024 (Decimal)	Specify the size of send data. The unit is byte.
Write data	i_dWriteData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the data to be written.

*1 The valid range depends on Module label.

*2 The valid range depends on the CPU module of the target node.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

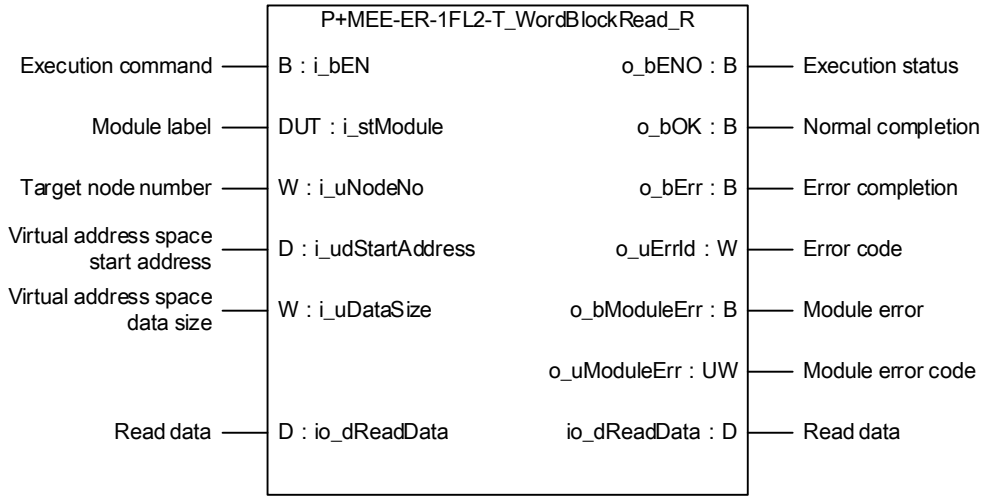
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

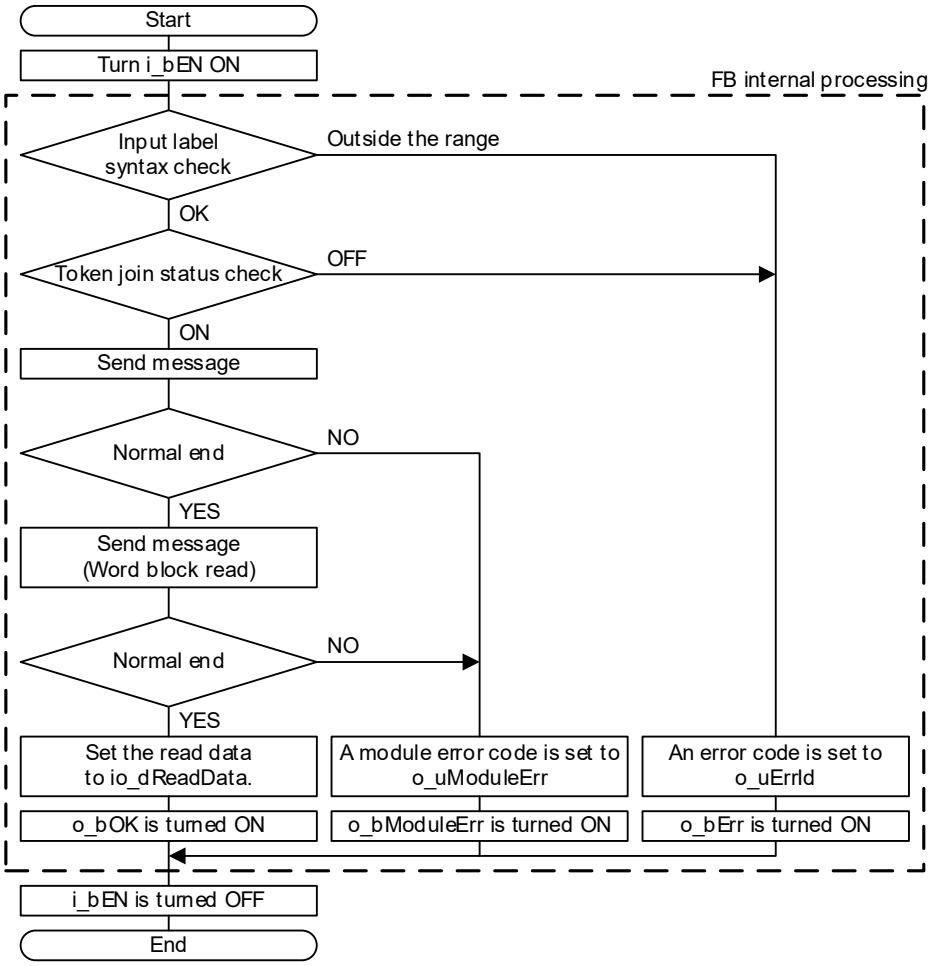
2.4. P+MEE-007ER-1FL2-T_WordBlockRead_R (Reads the word block)

Function Name

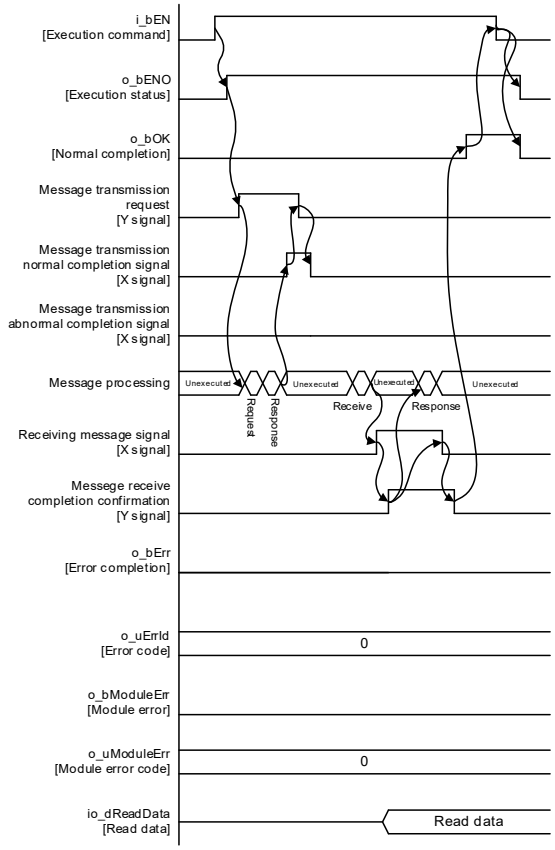
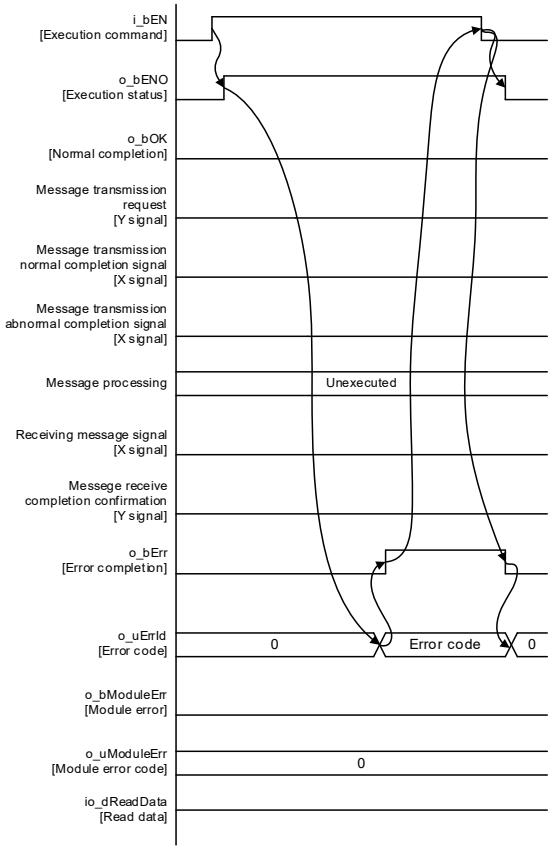
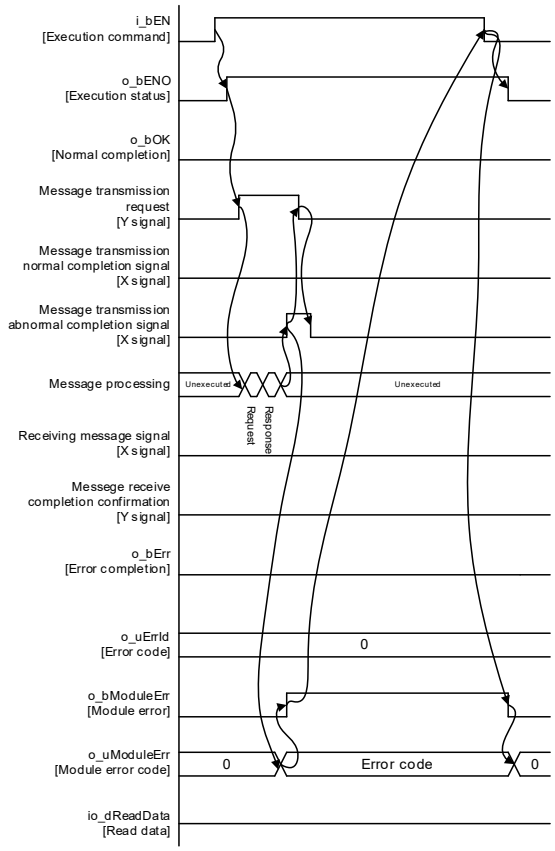
P+MEE-007ER-1FL2-T_WordBlockRead_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This is a message function to read the data in units of words (1 address 16-bit units) from the Virtual address space (32-bit address space) of the correspondent node via the network.
Note that the virtual address space depends on the FL-net device where the data is read.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td></td><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1278Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
</table>

Items	Description
Consumption label capacity	16word
Function Description	1) Turning on i_bEN (Execution status) reads the number of words data specified by i_udStartAddress(Virtual address space start address) and i_uDataSize (Virtual address space data size) from the Virtual address space of the node specified by i_uNodeNo(Target node number) holds. 2) Data read is stored from the start device specified with io_dReadData (Read data). When reading is completed, o_bOK (Normal completion) is turned ON.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when i_bEN (Execution status) turns off during the reading process. The data that has been read until suspension is written to the device specified by the io_dReadData (Read data).

Items	Description
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReadData(Read data), always specify the device that stores the read data. 11) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_udStartAddress (Virtual address space start address) ・ i_uDataSize (Virtual address space data size) ・ io_dReadData (Read data) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 13) The range check of the virtual address space and device is not performed. Specify the address according to the CPU used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H124	Virtual address space data size is out of range.	Set the value within the following range. ・ 1 to 512 (Decimal) Review and correct the settings and then execute the FB again. When the error is notified from the external device, the error codes is stored in the module error code of the output label.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Virtual address space start address	i_udStartAddress	Double word [Unsigned]	*2	Specify the start address of the Virtual address space.
Virtual address space data size	i_uDataSize (Unit: words)	Word [Unsigned]	1 to 512 (Decimal)	Specify the size of read data. The unit is word.
Read data	io_dReadData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the read data.

*1 The valid range depends on Module label.

*2 The valid range depends on the CPU module of the target node.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Read data	io_dReadData	Double word	-	Stores the data read from the Virtual address space.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

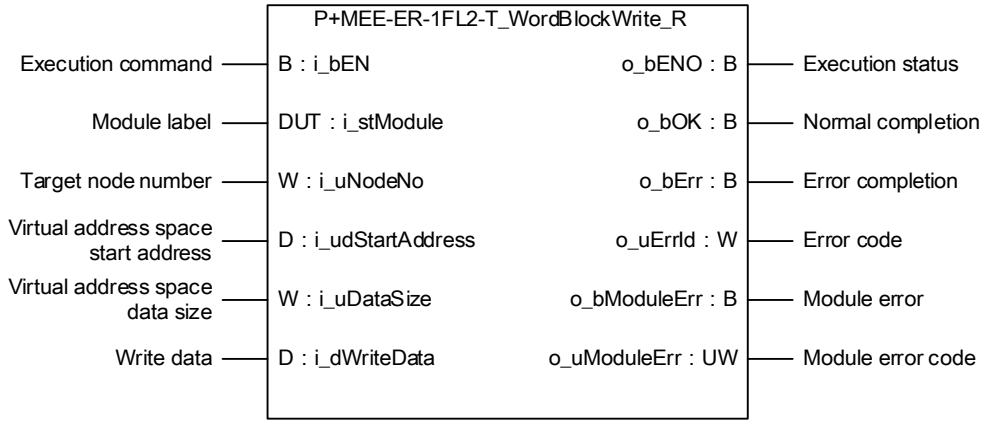
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

2.5. P+MEE-007ER-1FL2-T_WordBlockWrite_R (Writes the word block)

Function Name

P+MEE-007ER-1FL2-T_WordBlockWrite_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This is a message function to write the data in units of words (1 address 16-bit units) to the Virtual address space (32-bit address space) of the correspondent node via the network.
Note that the virtual address space depends on the FL-net device where the data is written.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
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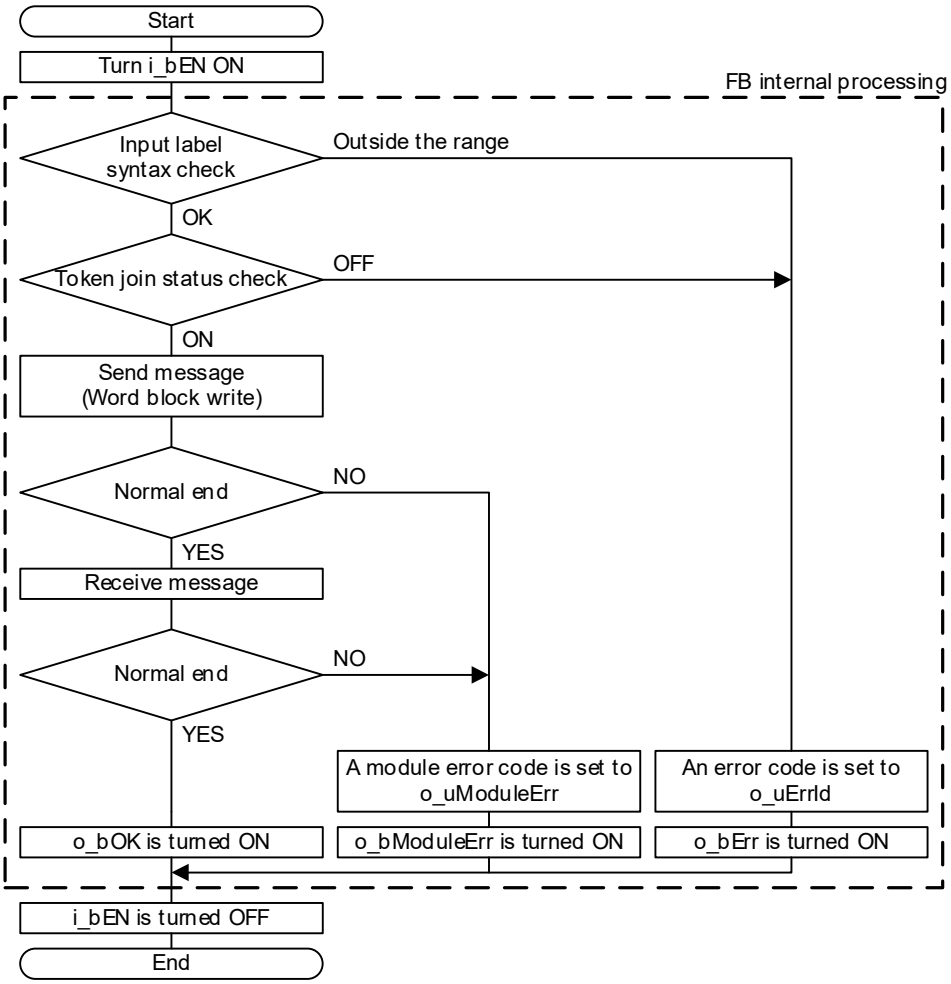
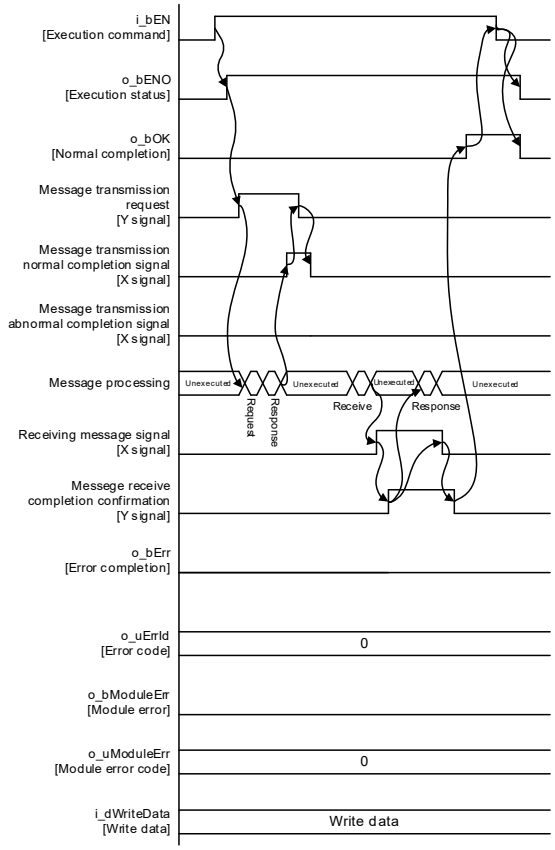
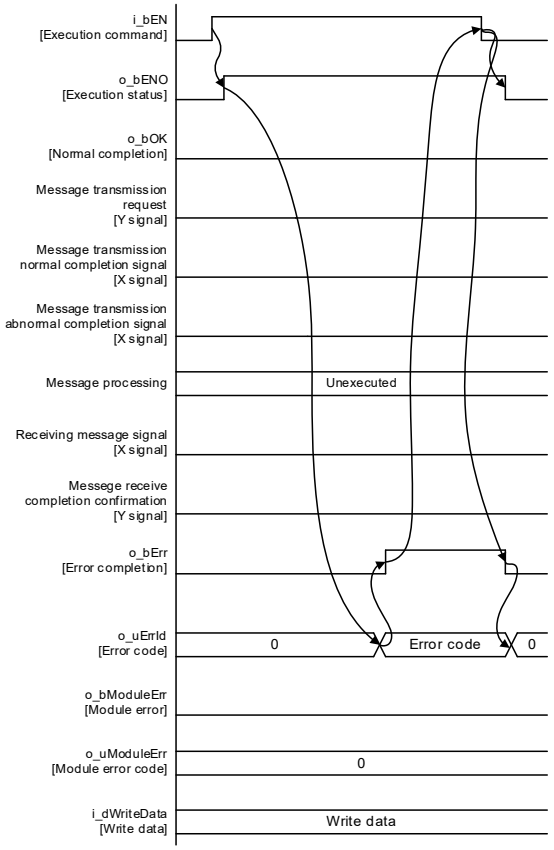
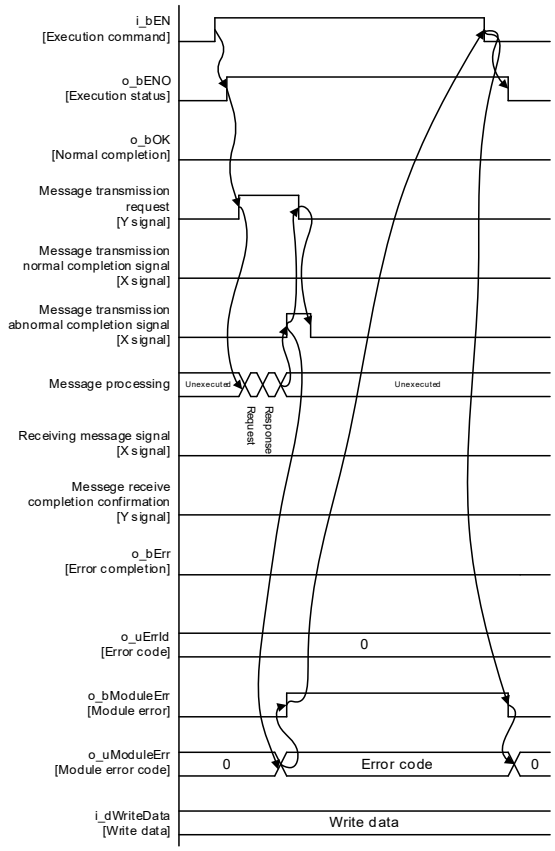
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1247Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">16word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) writes the data for the number of words specified by i_udStartAddress(Virtual address space start address) and i_uDataSize (Virtual address space data size) to the Virtual address space of the node specified by i_uNodeNo(Target node number). 2) Read the write data from the device specified by i_dWriteData (Write data). o_bOK (Normal completion) turns on after the data has been written.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when i_bEN (Execution status) turns off during the writing process. If the data is being written to the target node, the data before suspension is written.

Items	Description
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For i_dWriteData (Write data), always specify the device that stores the write data. 11) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_udStartAddress (Virtual address space start address) ・ i_uSize (Virtual address space data size) ・ i_dWriteData (Write data) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 13) The range check of the virtual address space and device is not performed. Specify the address according to the CPU module used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H124	Virtual address space data size is out of range.	Set the value within the following range. ・ 1 to 512 (Decimal) Review and correct the settings and then execute the FB again. When the error is notified from the external device, the error codes is stored in the module error code of the output label.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Virtual address space start address	i_udStartAddress	Double word [Unsigned]	*2	Specify the start address of the Virtual address space.
Virtual address space data size	i_uDataSize (Unit: words)	Word [Unsigned]	1 to 512 (Decimal)	Specify the size of send data. The unit is word.
Write data	i_dWriteData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the data to be written.

*1 The valid range depends on Module label.

*2 The valid range depends on the CPU module of the target node.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

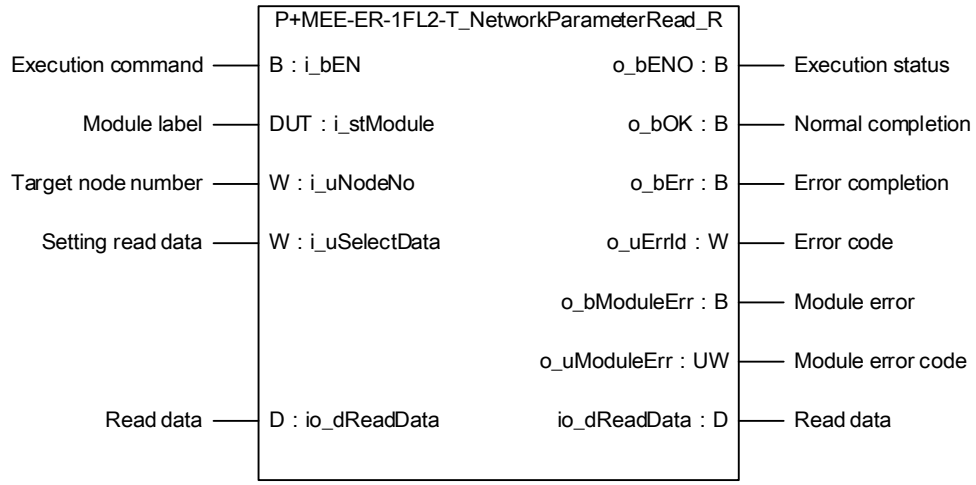
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

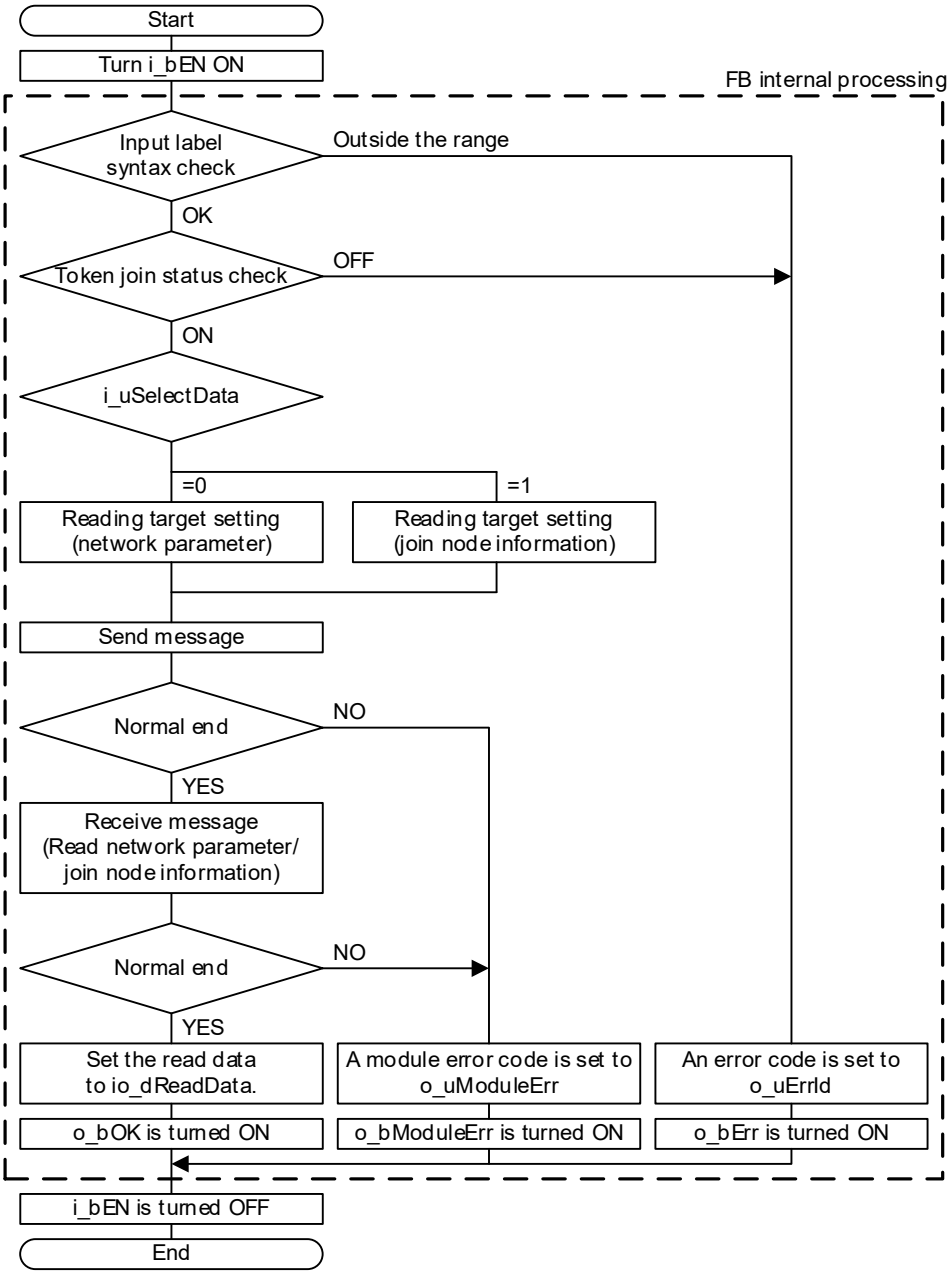
2.6. P+MEE-007ER-1FL2-T_NetworkParameterRead_R (Reads the network parameter)

Function Name

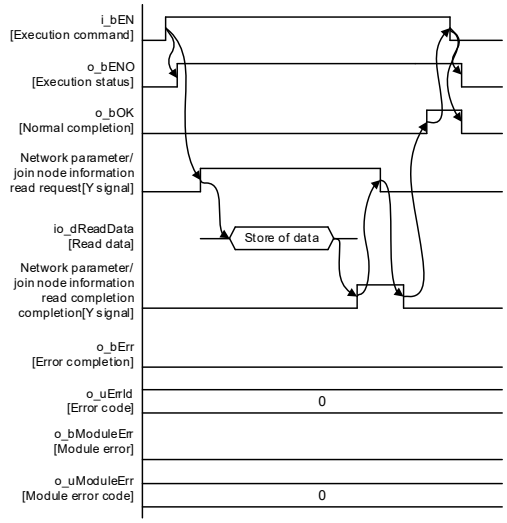
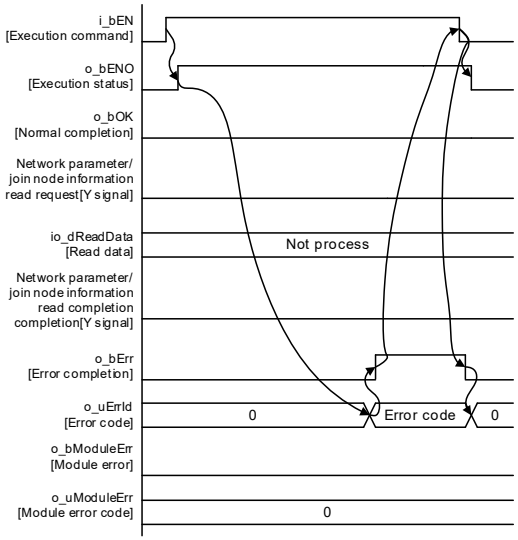
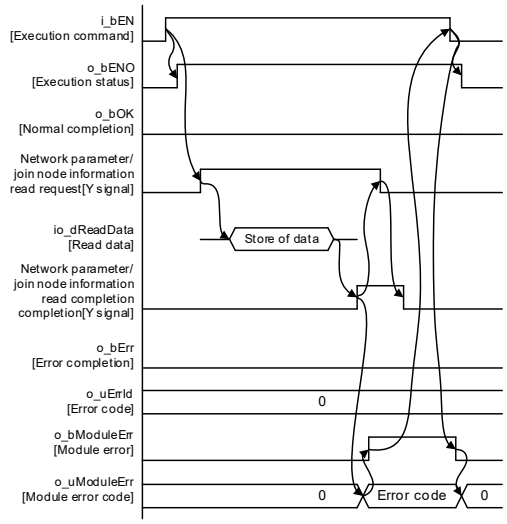
P+MEE-007ER-1FL2-T_NetworkParameterRead_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function reads the network parameter information of the correspondent node via the network. In addition, this function gets the token join status at the correspondent nodes in units of bits.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1005Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">12word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) reads the network parameter or join node specified by i_uNodeNo (Target node number). 2) Sets whether to read the network parameter or the join node according to the value of i_uSelectData (Read data setting). 3) Data read is stored from the start device specified with io_dReadData (Read data). When reading is completed, o_bOK (Normal completion) is turned ON.  4) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details.

Items	Description
Function Description	5) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 6) Stop the FB processing when i_bEN (Execution status) turns off during the reading process. The data that has been read until suspension is written to the device specified by the io_dReadData(Read data).
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReadData(Read data), always specify the device that stores the read data. 11) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_uSelectData (Setting read data) ・ io_dReadData (Read data) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 13) The range check of the virtual address space and device is not performed. Specify the address according to the CPU used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.

Items	Description
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to “Appendix 2. FB Library Usage Examples”.
I/O signal timings	[When the process is completed without an error] [When the process is completed with an error]   [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H122	Read data setting is out of range.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Setting read data	i_uSelectData	Word [Unsigned]	0, 1 (Decimal)	Set whether to read network parameters or read join node information. Setting value: 0 — Network parameter; 1 — Join node information The value other than 0 or 1 cannot be specified.
Read data	io_dReadData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the read data.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Read data	io_dReadData	Double word	-	Stores the read network parameter or join node.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

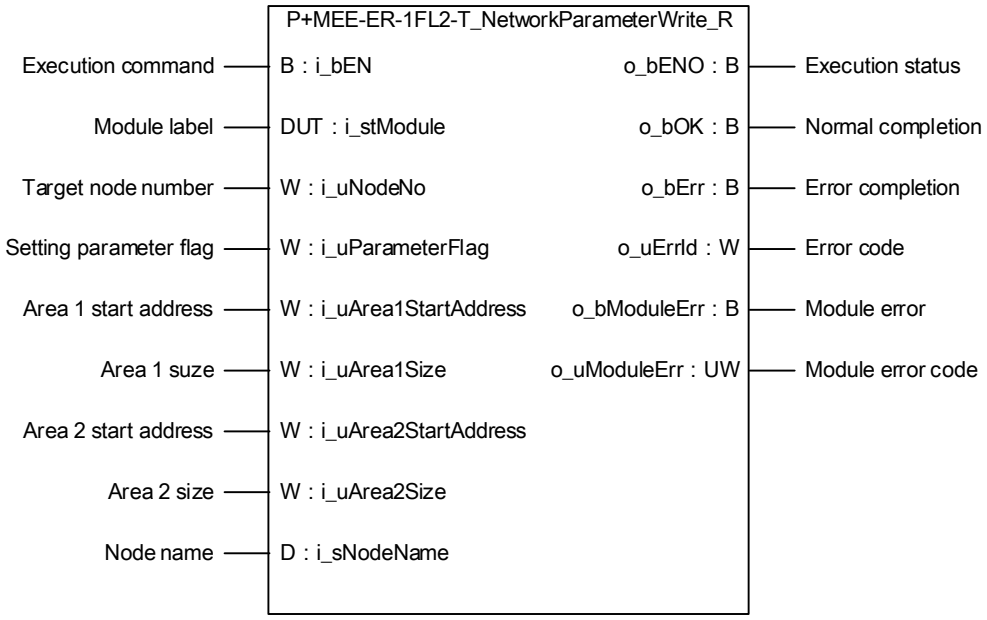
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

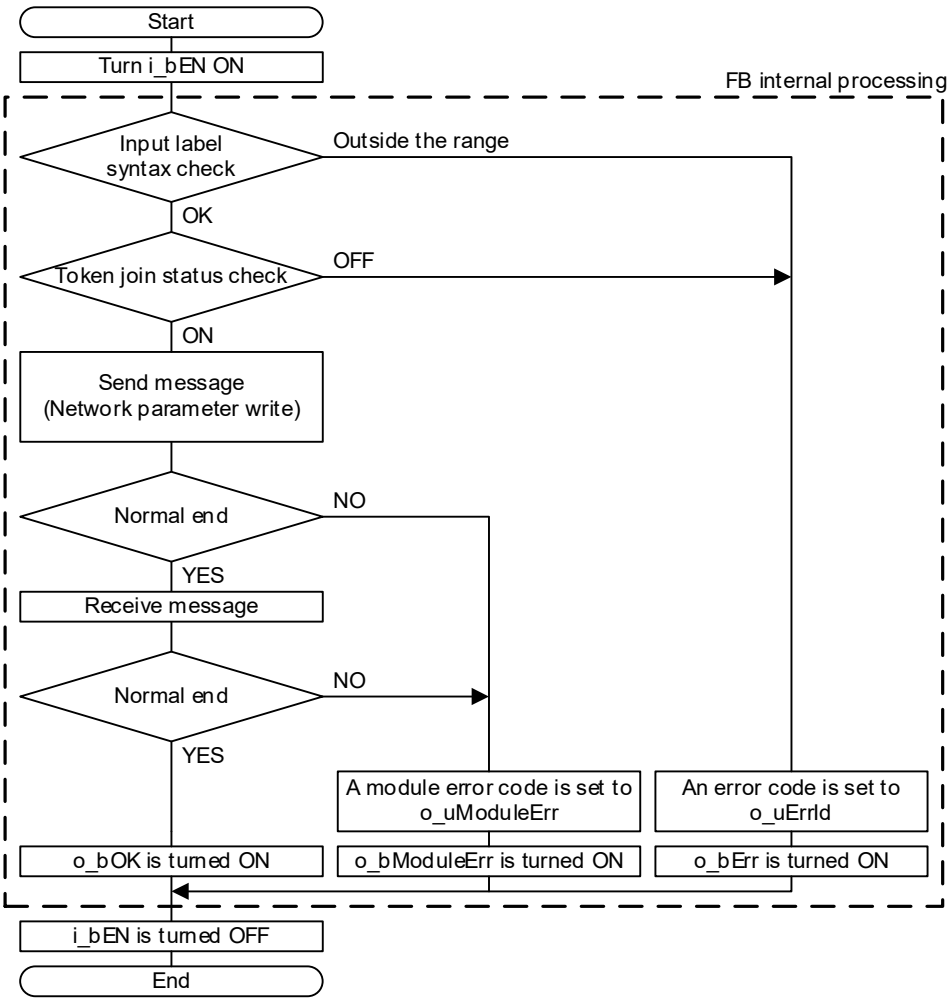
2.7. P+MEE-007ER-1FL2-T_NetworkParameterWrite_R (Writes the network parameter)

Function Name

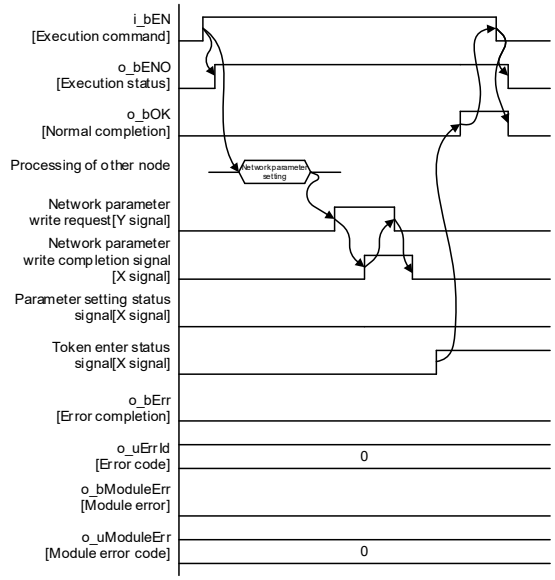
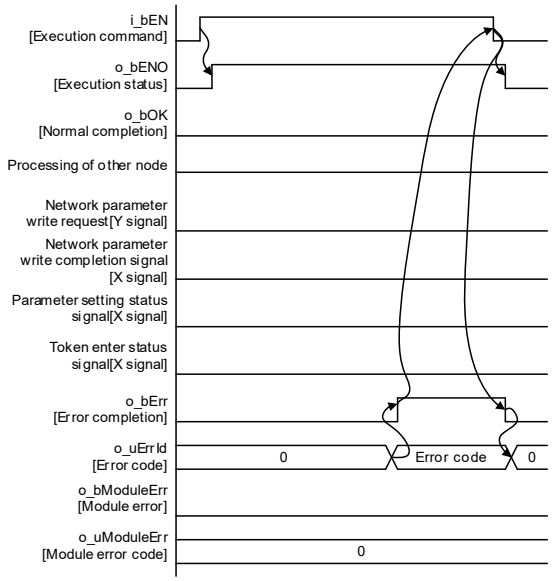
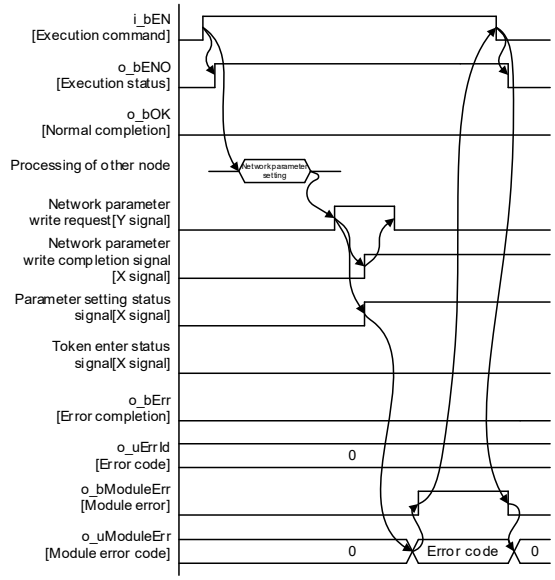
P+MEE-007ER-1FL2-T_NetworkParameterWrite_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function changes the network parameter information of the correspondent node via the network.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1418Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
</table>

Items	Description
Consumption label capacity	36word
Function Description	1) Turning on the i_bEN (Execution status) writes the network parameter set to the input label to the node specified by i_uNodeNo(Target node number). 2) o_bOK (Normal completion) turns on after the data has been written.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when the i_bEN (Execution status) turns off during the writing process. If the data is being written to the target node, the data until suspension is written.
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses index register Z9. 5) If the address of the common memory is changed, the correspondent node leaves the network and rejoin. The correspondent node does not leave when only Node name is changed. 6) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 7) An interlocking program is required for this FB. 8) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 9) Check that the initial processing has completed successfully before using this FB. 10) For this FB, a circuit must be set for every input label. 11) The circuit of the input label that is not to be written can be omitted when i_uParameterFlag (Setting parameter flag) is set to write only specific data. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_uParameterFlag (Setting parameter flag) ・ i_uArea1StartAddress (Area 1 start address) ・ i_uArea1Size (Area 1 size) ・ i_uArea2StartAddress (Area 2 start address) ・ i_uArea2Size (Area 2 size) ・ i_sNodeName (Node name) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3. 15) If an area duplication occurs with another node, no error is detected until area duplication is detected.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H113	Area 1 start address is out of range.	Set the value within the following range. ・ 0 to 1FF (Hexadecimal) Review and correct the settings and then execute the FB again.
H114	Area 1 size is out of range.	Set the value within the following range. ・ 0 to 200 (Hexadecimal) Review and correct the settings and then execute the FB again.
H115	Area 2 start address is out of range.	Set the value within the following range. ・ 0 to 1FFF (Hexadecimal) Review and correct the settings and then execute the FB again.
H116	Area 2 size is out of range.	Set the value within the following range. ・ 0 to 2000 (Hexadecimal) Review and correct the settings and then execute the FB again.
H121	Setting parameter flag is out of range.	Set the value within the following range. ・ 1 to 3 (Decimal) Review and correct the settings and then execute the FB again.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.

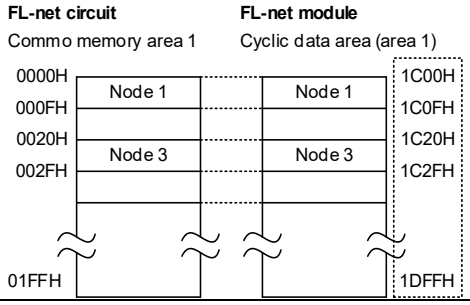
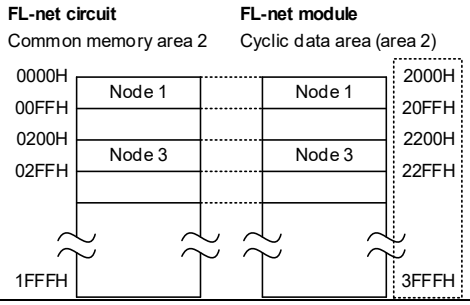
Error code (Hexadecimal)	Description	Action
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word	1 to 254 (Decimal)	Specify Target node number.
Setting parameter flag	i_uParameterFlag	Word [Unsigned]	1 to 3 (Decimal)	Select the parameter to be set. Setting value: 1 — Set address and size only Setting value: 2 — Set node name only Setting value: 3 — Set address, size and node name The value other than 1 to 3 cannot be specified.

*1 The valid range depends on Module label.

Name (comment)	Label name	Data type	Range	Description
Area 1 start address	i_uArea1StartAddress	Word [Unsigned]	0 to 1FF (Hexadecimal)	Set the start address of common memory Area 1 (bit area). Set the offset value of cyclic data area (Area 1) (address: 1C00 to 1DFFH) in the buffer memory. 
Area 1 size	i_uArea1Size	Word [Unsigned]	0 to 200 (Hexadecimal)	Set the size of common memory Area 1 (bit area). The setting is in increments of 1 word. For example, set "2H" to specify 32-bit.
Area 2 start address	i_uArea2StartAddress	Word [Unsigned]	0 to 1FFF (Hexadecimal)	Set the start address of the common memory Area 2 (word area). Set the offset value of the cyclic data area (Area 2) (address : 2000 to 3FFFH) in the buffer memory. 
Area 2 size	i_uArea2Size	Word [Unsigned]	0 to 2000 (Hexadecimal)	Set the size of the common memory Area 2 (word area). The setting is in increments of 1 word.
Node name	i_sNodeName	String	Within 10 bytes	Set Node name. (optional) Specify it within 10 bytes.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

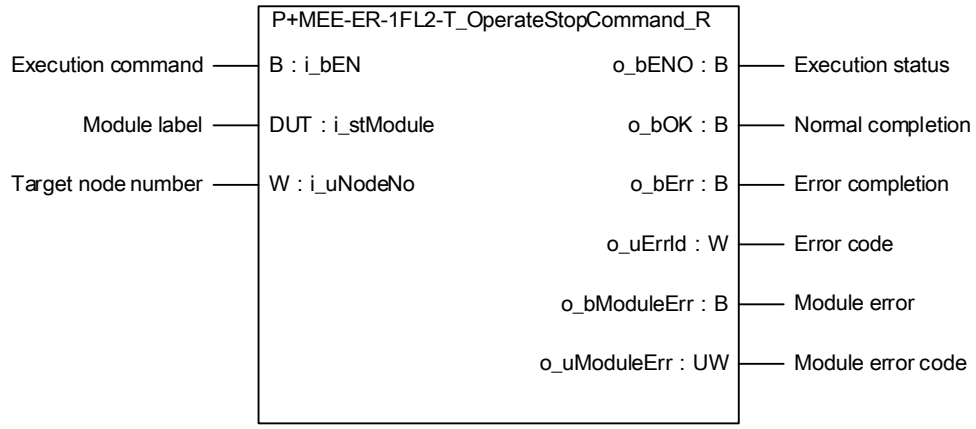
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

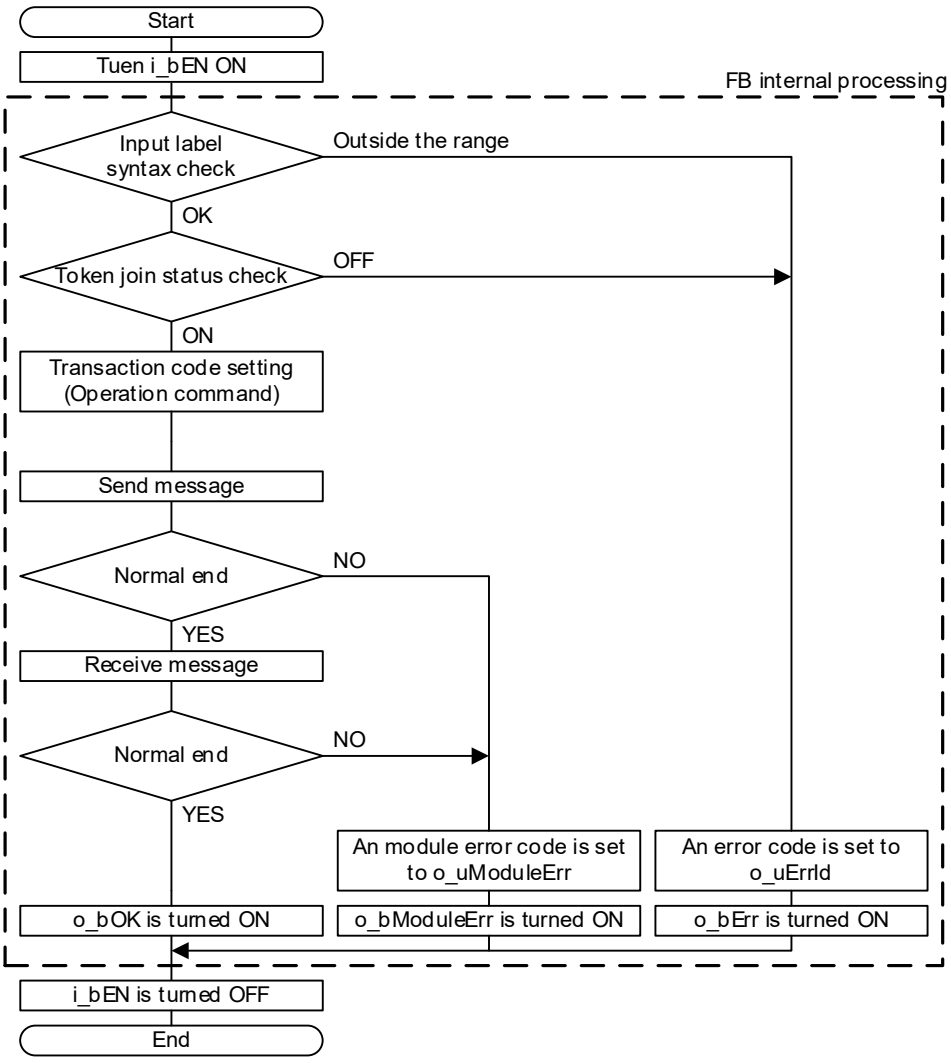
2.8. P+MEE-007ER-1FL2-T_OperateCommand_R (Issues the operation command)

Function Name

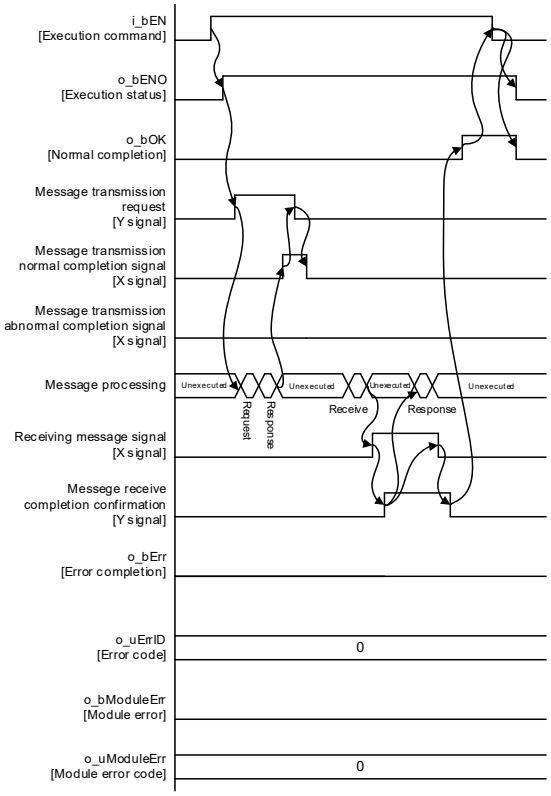
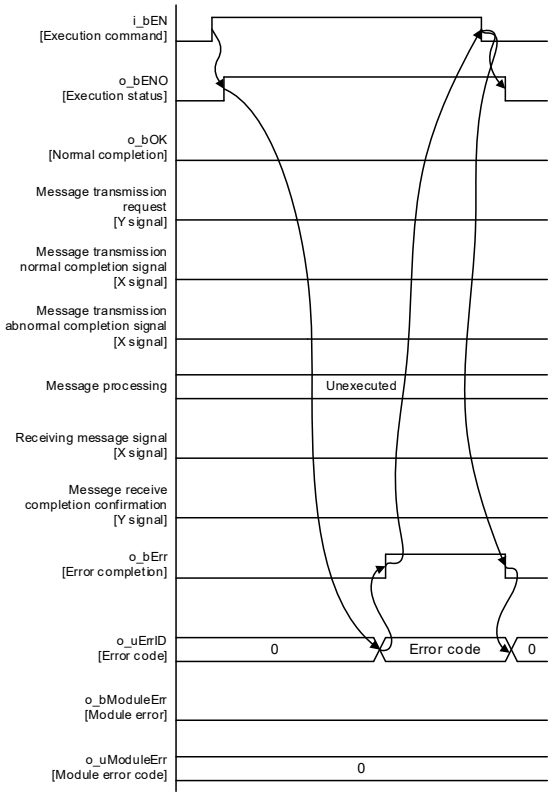
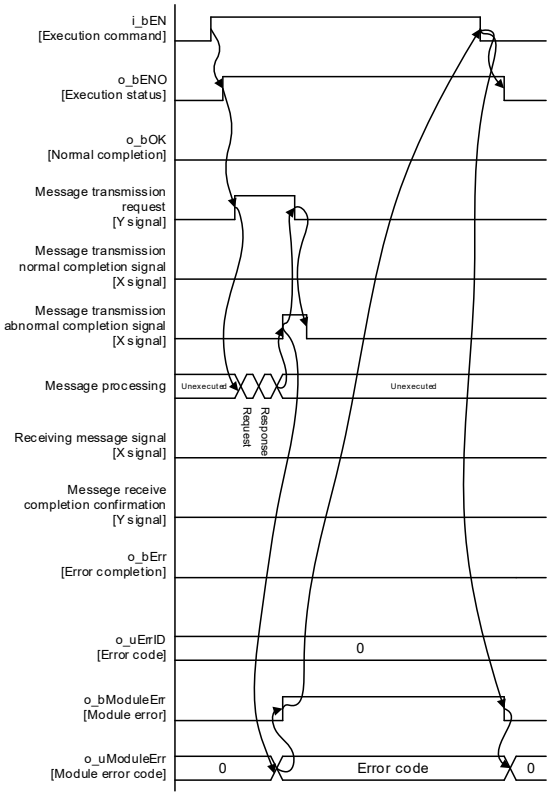
P+MEE-007ER-1FL2-T_OperateCommand_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function remotely operates the device connected to FL-net via the network.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">899Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">8word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) issues the operation command to the node specified by i_uNodeNo (Target node number). 2) o_bOK (Normal completion) turns on when the process is completed successfully.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details.
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 5) An interlocking program is required for this FB. 6) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 7) Check that the initial processing has completed successfully before using this FB. 8) For this FB, a circuit must be set for every input label. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) 10) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 11) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

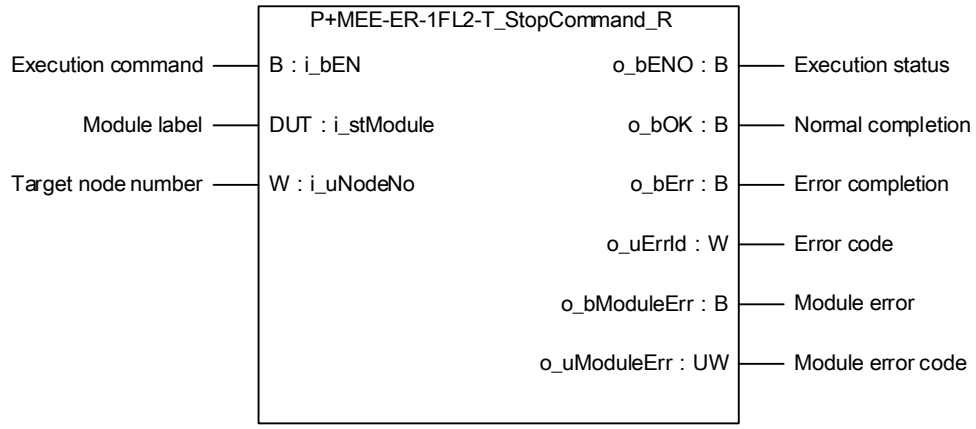
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

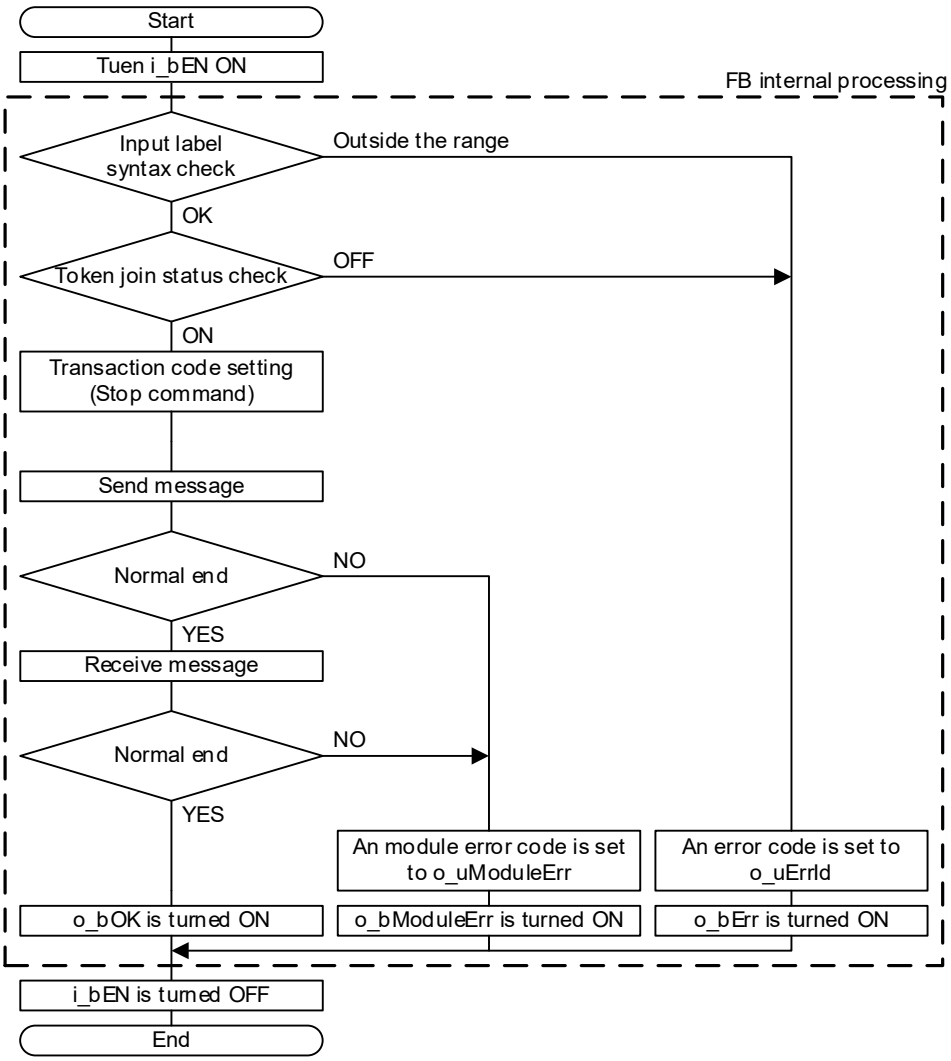
2.9. P+MEE-007ER-1FL2-T_StopCommand_R (Issues the stop command)

Function Name

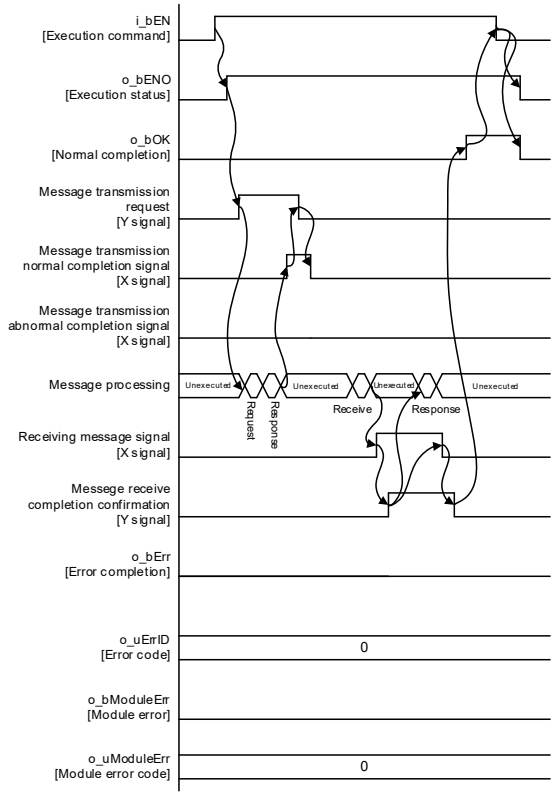
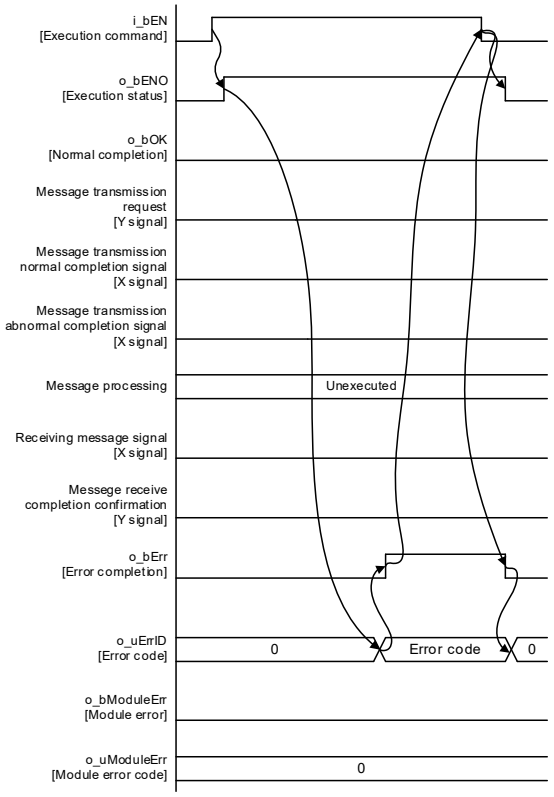
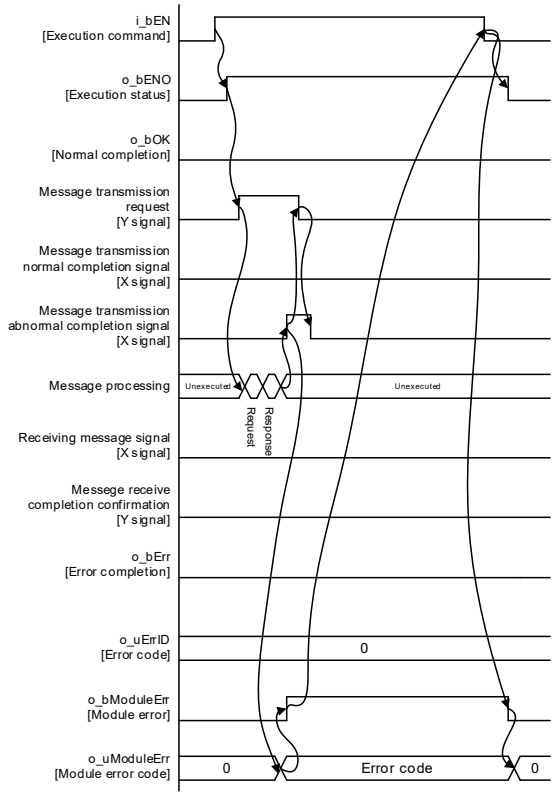
P+MEE-007ER-1FL2-T_StopCommand_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function stops the operation of the device connected to FL-net via the network.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">901Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">8word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) issues the stop command to the node specified by i_uNodeNo (Target node number). 2) o_bOK (Normal completion) turns on when the process is completed successfully.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details.

Items	Description
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 5) An interlocking program is required for this FB. 6) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 7) Check that the initial processing has completed successfully before using this FB. 8) For this FB, a circuit must be set for every input label. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) 10) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 11) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

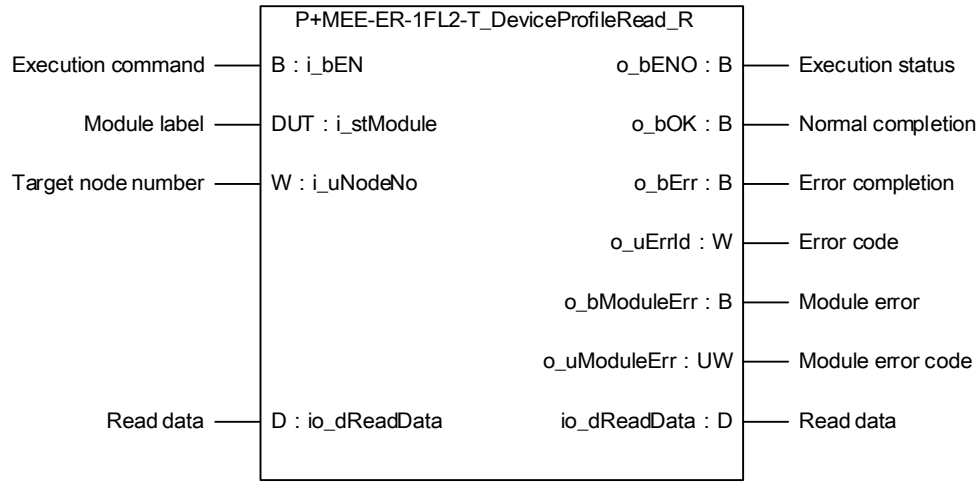
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

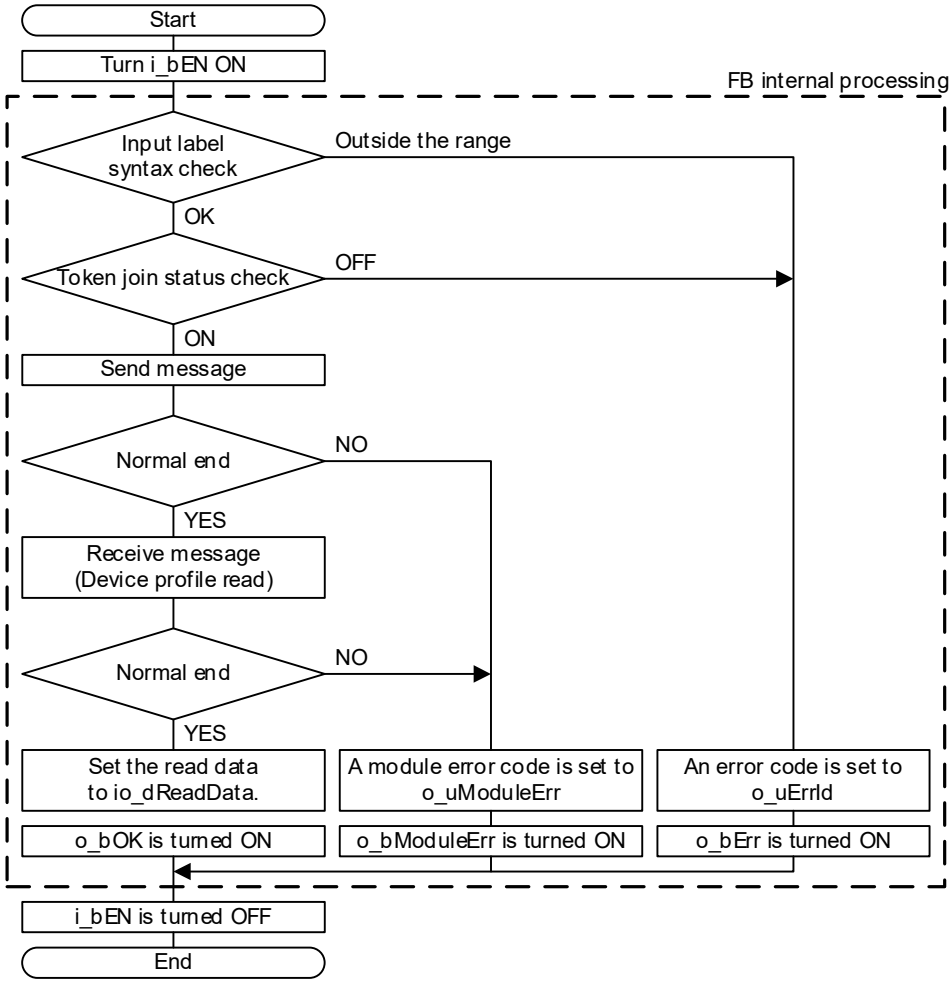
2.10. P+MEE-007ER-1FL2-T_DeviceProfileRead_R (Reads the device profile)

Function Name

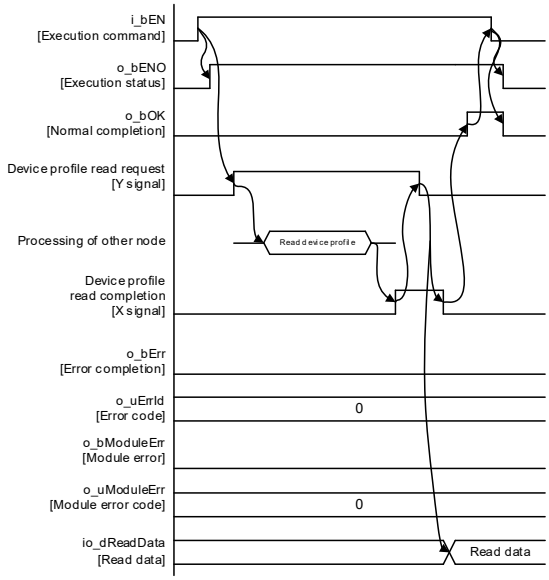
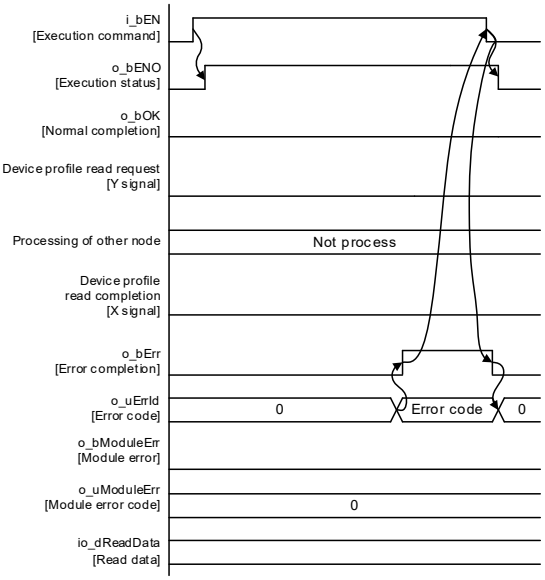
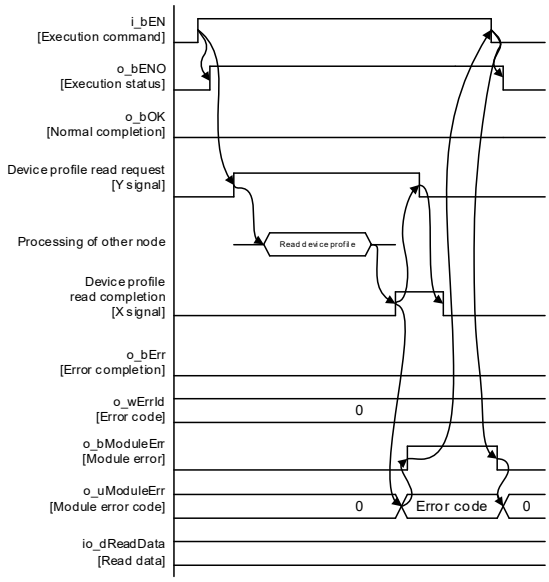
P+MEE-007ER-1FL2-T_DeviceProfileRead_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function reads the system parameter in the device profile which is the information of the correspondent node via the network.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">854Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">12word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) reads the device profile information from the node specified by i_uNodeNo (Target node number). 2) The read data is stored in the device specified by io_dReadData (Read data). o_bOK (Normal completion) turns on when the data has been read.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when i_bEN (Execution status) turns off during the reading process. The data that has been read until suspension is written to the device specified by the io_dReadData(Read data).
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReadData(Read data), always specify the device that stores the read data. 11) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ io_dReadData (Read data) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 13) The range check of the virtual address space and device is not performed. Specify the address according to the CPU used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Read data	io_dReadData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the read device profile.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Read data	io_dReadData	Double word	-	Stores the read device profile.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

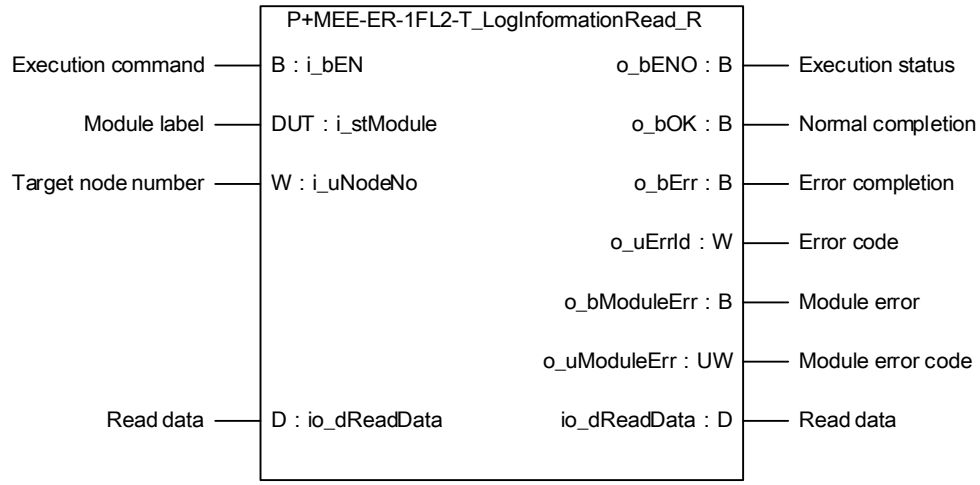
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

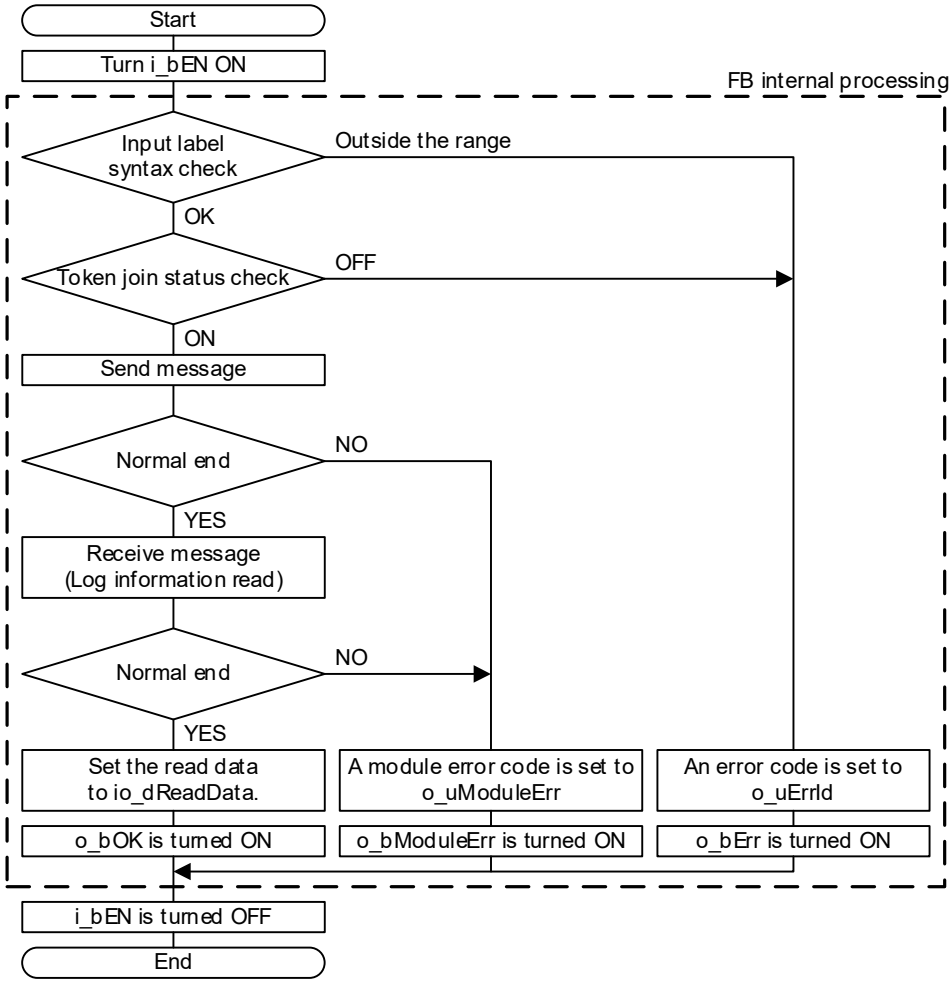
2.11. P+MEE-007ER-1FL2-T_LogInformationRead_R (Reads the log information)

Function Name

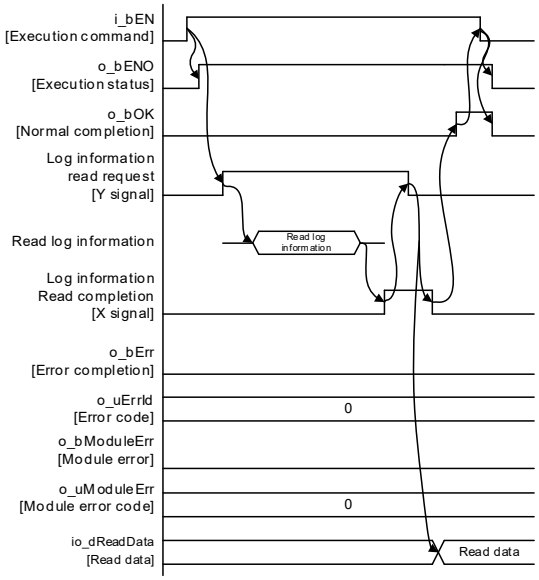
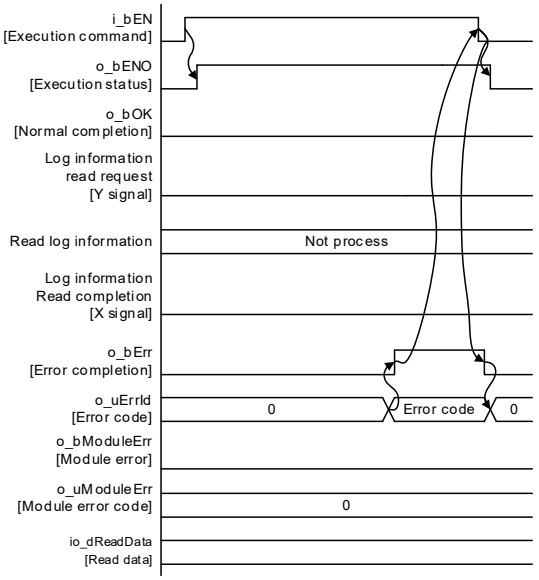
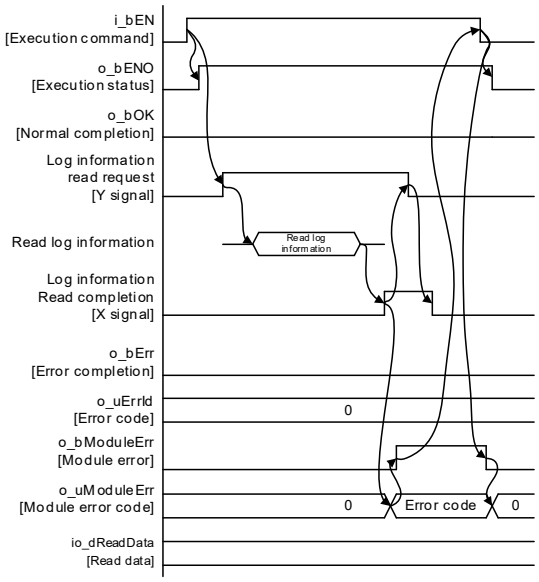
P+MEE-007ER-1FL2-T_LogInformationRead_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function reads log information of the correspondent node via the network.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">804Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">12word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) reads the log information of the node specified by i_uNodeNo (Target node number). 2) Data read is stored from the start device specified with io_dReadData (Read data). When reading is completed, o_bOK (Normal completion) is turned ON.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when i_bEN (Execution status) turns off during the reading process. The data that has been read until suspension is written to the device specified by the io_dReadData(Read data).
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReadData(Read data), always specify the device that stores the read data. 11) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ io_dReadData (Read data) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 13) The range check of the virtual address space and device is not performed. Specify the address according to the CPU used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	0 to 254 (Decimal)	Specify Target node number.
Read data	io_dReadData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the log information acquisition results.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Read data	io_dReadData	Double word	-	Stores the read log information.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

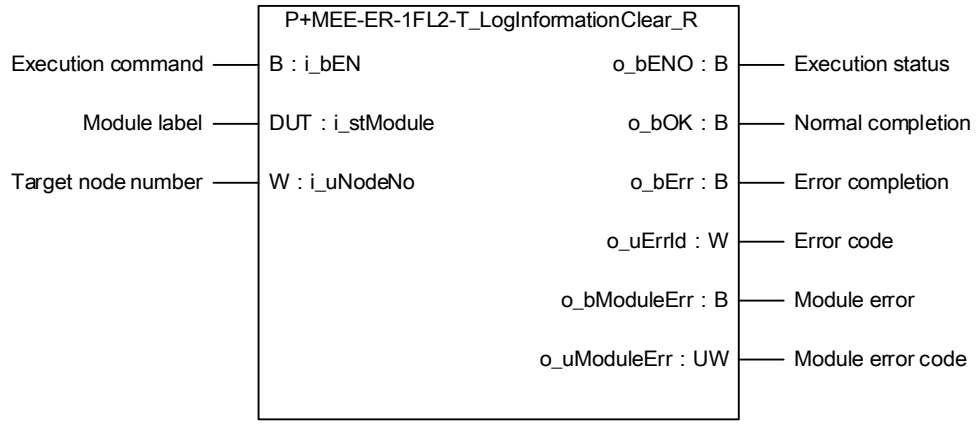
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

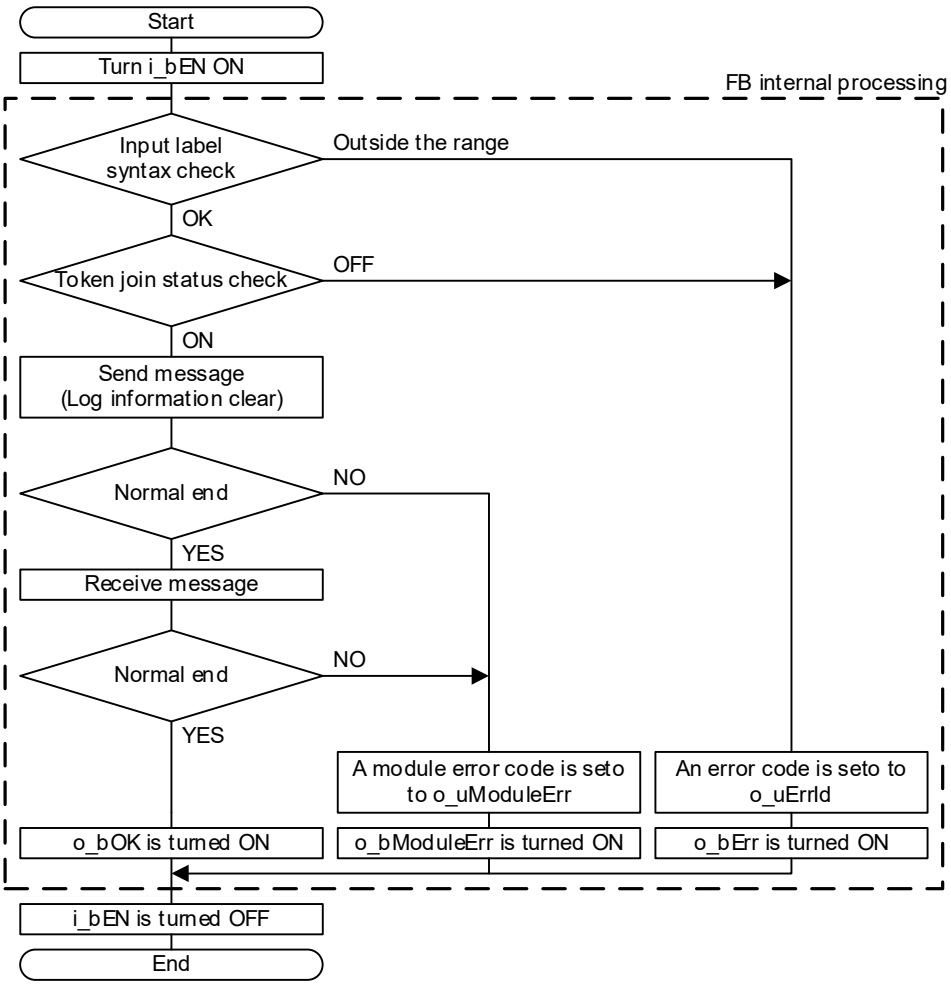
2.12. P+MEE-007ER-1FL2-T_LogInformationClear_R (Clears the log information)

Function Name

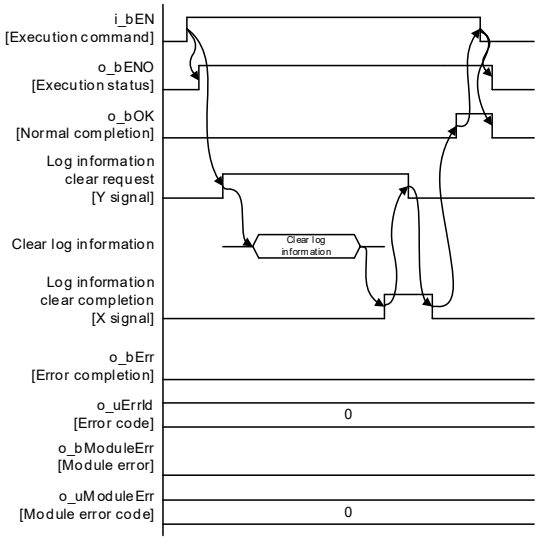
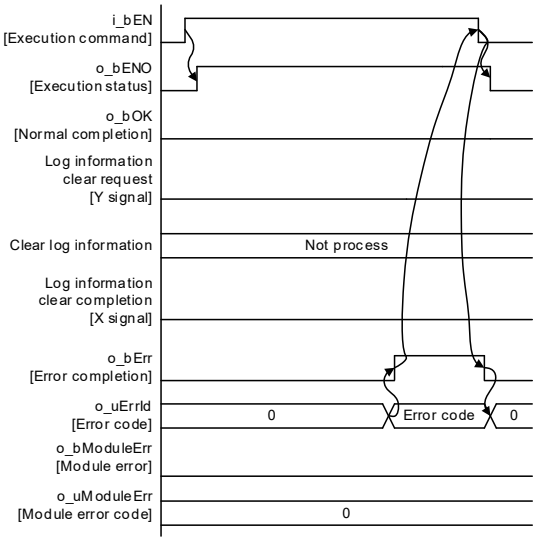
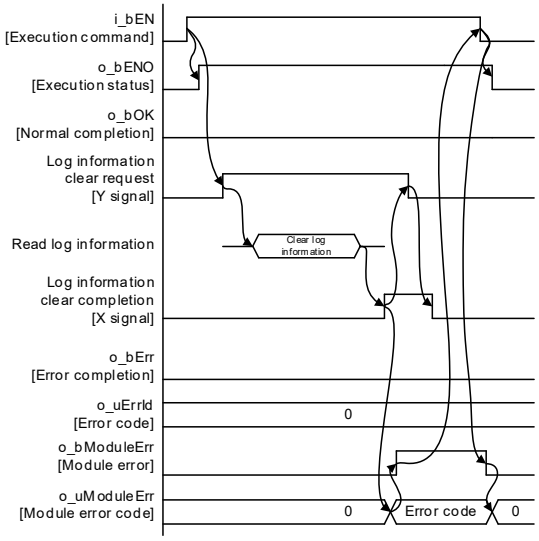
P+MEE-007ER-1FL2-T_LogInformationClear_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function clears log information of the correspondent node via the network.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">753Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">8word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) clears the log information of the node specified by i_uNodeNo (Target node number). 2) o_bOK (Normal completion) turns on when the process is completed successfully.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when the i_bEN (Execution status) turns off during the reading process. The data that has been read until suspension is written to the device specified by io_dReadData(Read data).
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 5) An interlocking program is required for this FB. 6) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 7) Check that the initial processing has completed successfully before using this FB. 8) For this FB, a circuit must be set for every input label. 9) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) 10) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 11) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 255 (Decimal) Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 255 (Decimal)	Specify Target node number.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

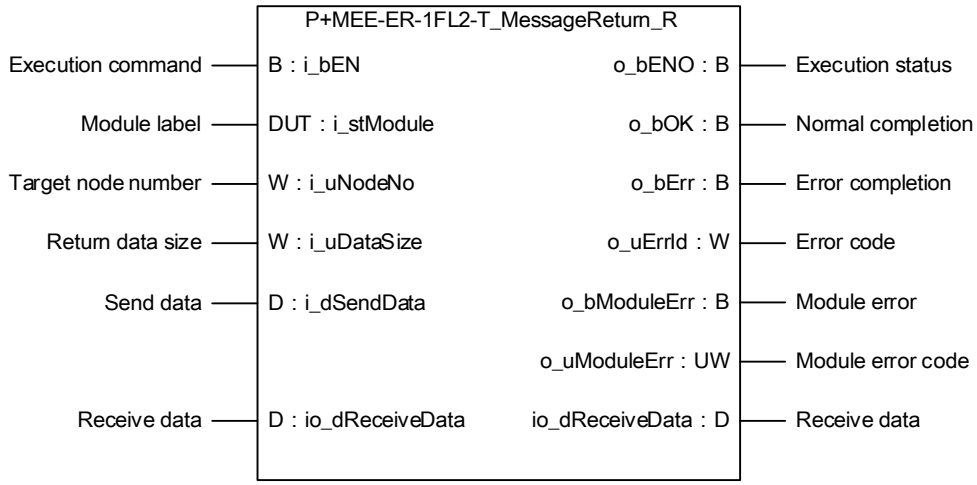
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

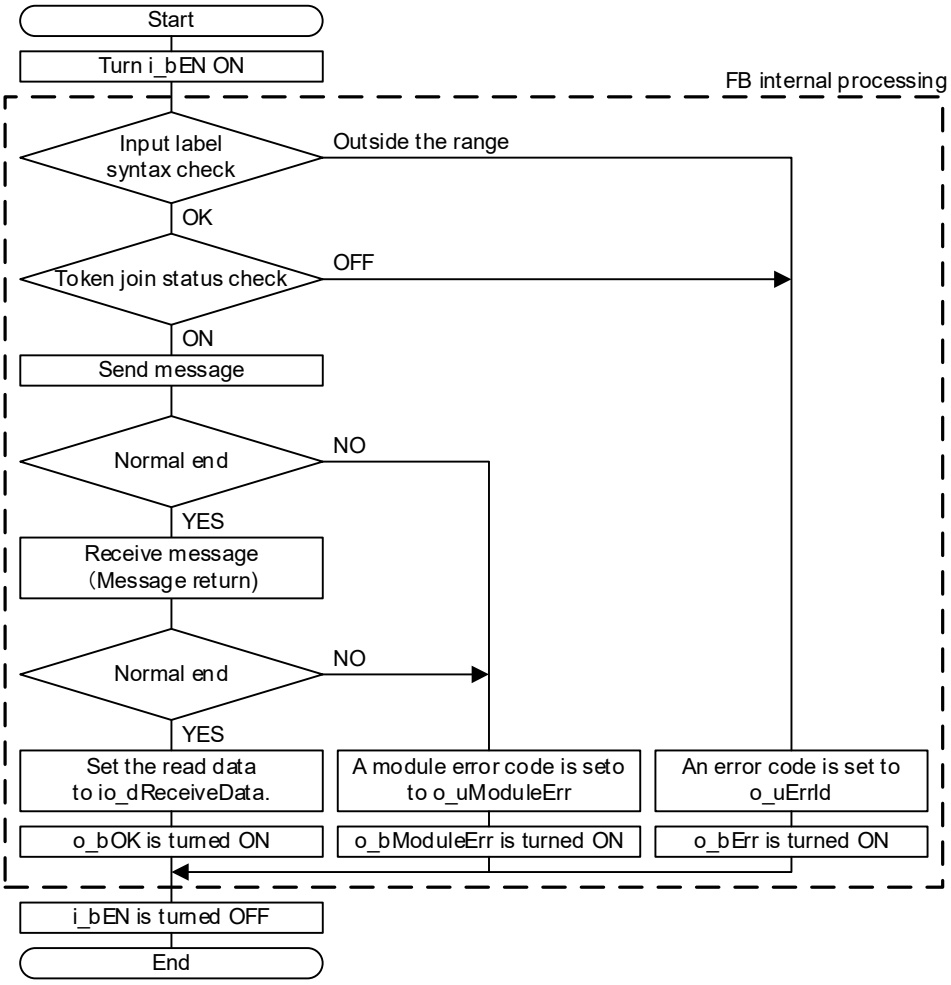
2.13. P+MEE-007ER-1FL2-T_MessageReturn_R (Returns the received message)

Function Name

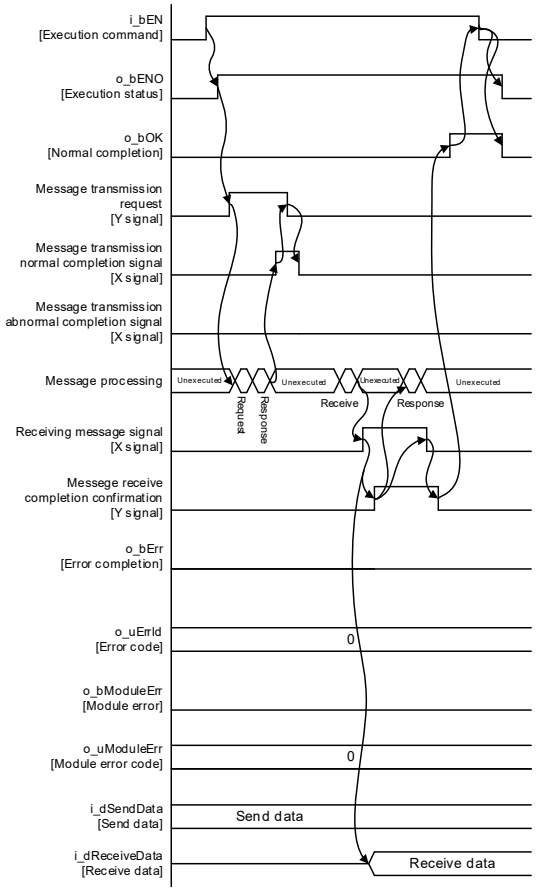
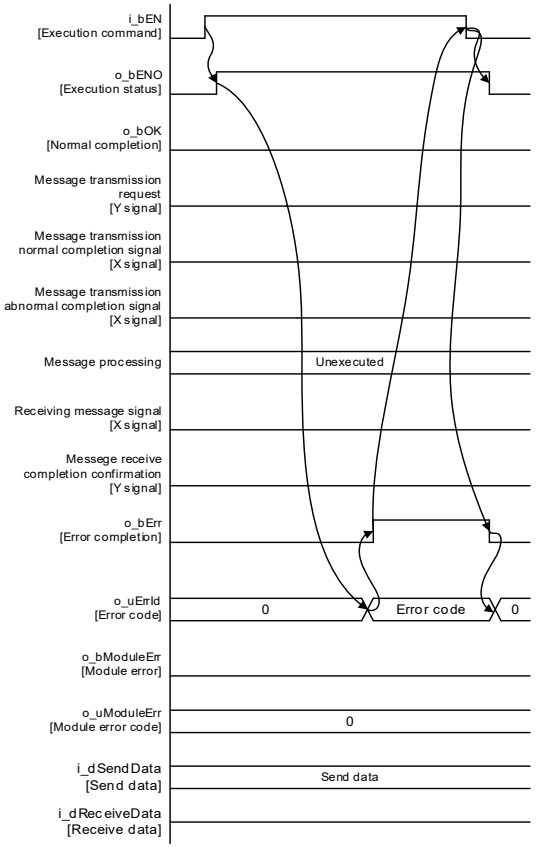
P+MEE-007ER-1FL2-T_MessageReturn_R

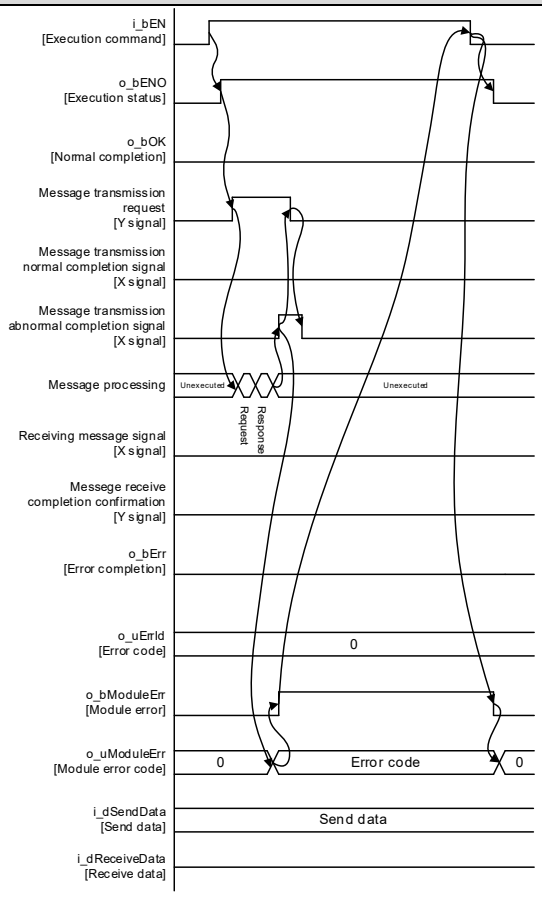
Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function executes the message communication test by returning the received message data.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1141Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">16word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) sends the message to the node specified by i_uNodeNo (Target node number) and receives the returned message. 2) The send data is read from the device specified by i_dSendData (Send data). 3) The returned data is stored in the device specified by io_dReceiveData (Receive data). o_bOK (Normal completion) turns on when the data has been returned.  4) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 5) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 6) Stop the FB processing when the i_bEN (Execution status) turns off during the returning process. The data that has been read until suspension is written to the device specified by the io_dReceiveData (Receive data).
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReceiveData(Receive data), always specify the device that stores the return data. 11) When odd byte is set, it is rounded up to the word unit by internal processing of FB. One byte (upper side) of the last of data is undefined. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_uDataSize (Return data size) ・ i_dSendData (Send data) ・ io_dReceiveData (Receive data) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Item	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error]

Item	Description
	

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.
H122	Read data setting is out of range.	Set the value within the following range. ・ 1 to 512 (Decimal) *1 ・ 1 to 1024 (Decimal) *2 Review and correct the settings and then execute the FB again.
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.

Error code (Hexadecimal)	Description	Action
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

*1 When message data unit selection is 0 (word unit).

*2 When message data unit selection is 1 (byte unit).

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word [Unsigned]	1 to 254 (Decimal)	Specify Target node number.
Return data size	i_uDataSize (Unit: bytes/words)	Word [Unsigned]	1 to 1024 bytes 1 to 512 words (Decimal)	Specify the size of send data. The data unit (byte or word) is selected in "Message Data Unit Select" of the network parameter.
Send data	i_dSendData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the send data.
Receive data	io_dReceiveData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the message return data.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Receive data	io_dReceiveData	Double word	-	Stores the message that is returned and received.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

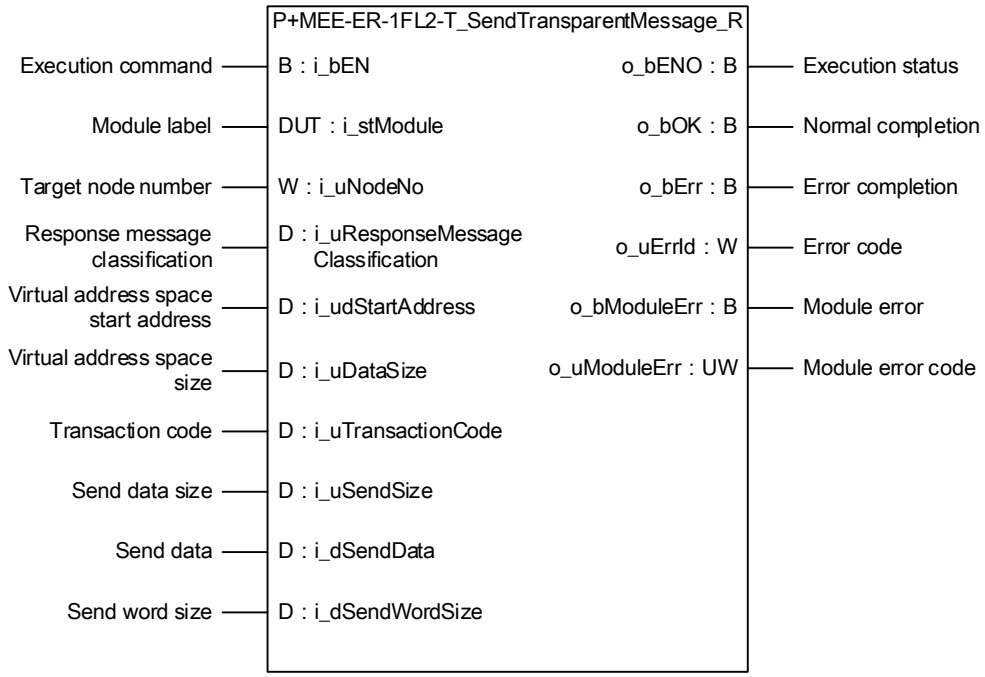
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

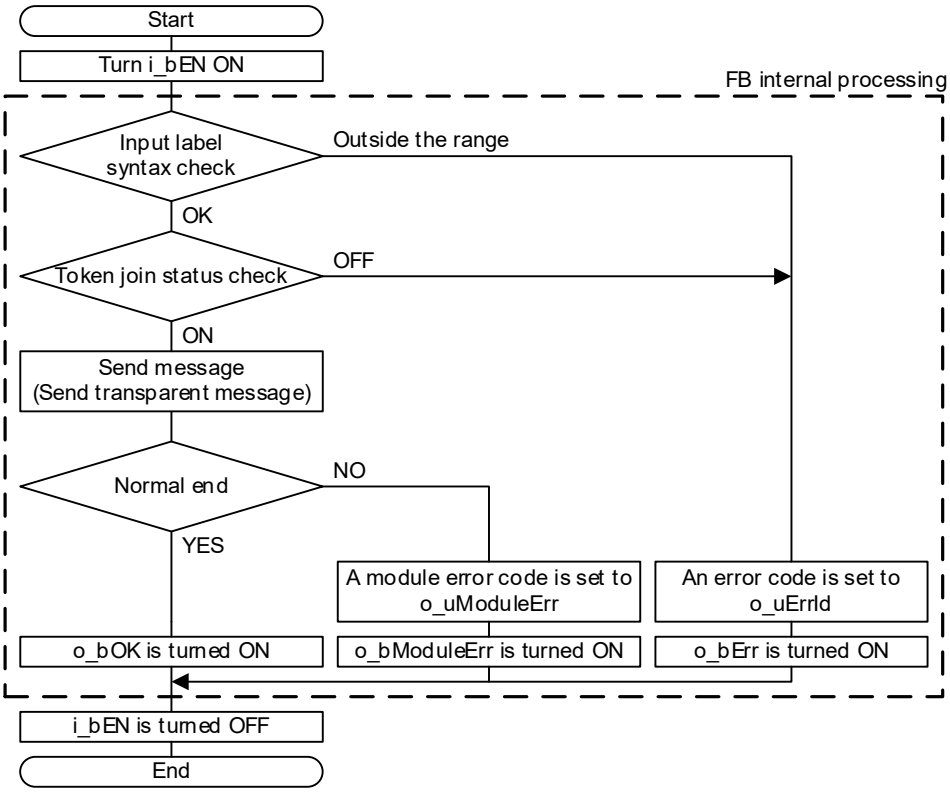
2.14. P+MEE-007ER-1FL2-T_SendTransparentMessage_R (Sends the transparent type message)

Function Name

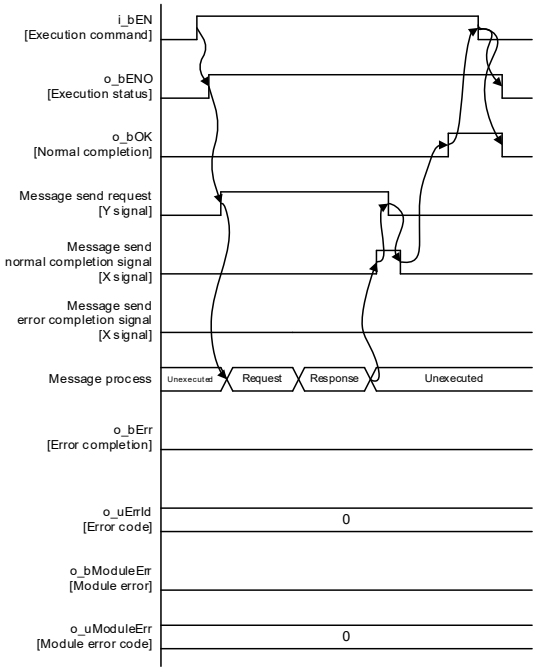
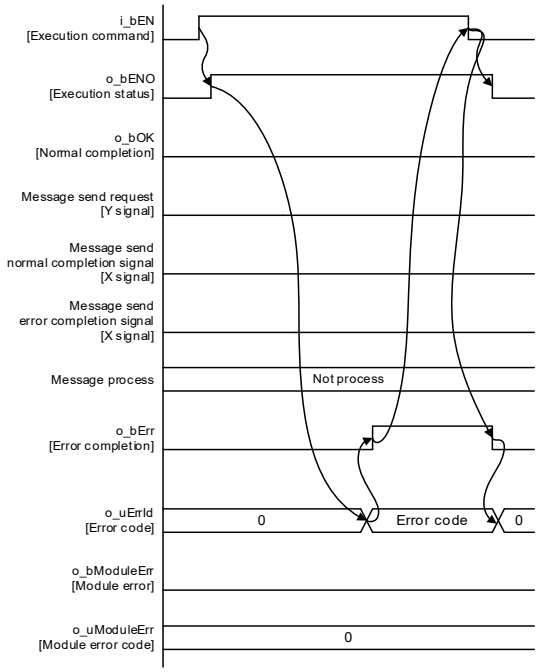
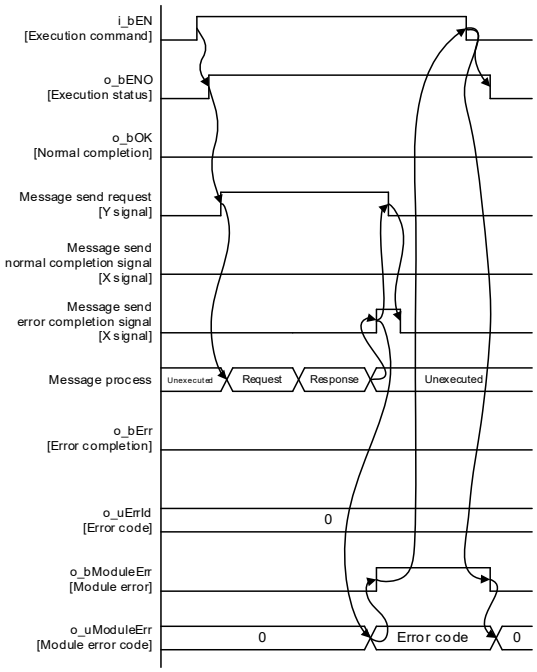
P+MEE-007ER-1FL2-T_SendTransparentMessage_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function sends the transparent type message to the upper layer of FL-net.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="3">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td></td><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
</table>

Items	Description
Steps	828Step (for MELSEC iQ-R series / R04CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.
Consumption label capacity	20word
Function Description	1) Turning on i_bEN (Execution status) sends the transparent type message to the node specified by i_uNodeNo (Target node number). 2) Read the send data from the device specified by i_dSendData (Send data). o_bOK (Normal completion) turns on after the data has been sent.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when the i_bEN (Execution status) turns off during the writing process. If the data is being written to the target node, the data until suspension is written.
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For i_dSendData (Send data), always specify the device that stores the send data. 11) When odd byte is set, it is rounded up to the word unit by internal processing of FB. One byte (upper side) of the last of data is undefined. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ i_uResponseMessageClassification (Response message classification) ・ i_udStartAddress (Virtual address space start address) ・ i_uDataSize (Virtual address space data size) ・ i_uTransactionCode (Transaction code) ・ i_uSendSize (Send data size) ・ i_dSendData (Send data) ・ i_uSendWordSize (Send word data) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) The range check of the virtual address space and device is not performed. Specify the address according to the CPU used. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 255 (Decimal) Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word	1 to 255 (Decimal)	Specify Target node number.
Response message classification	i_uResponseMessageClassification	Word [Unsigned]	—	Indicates the message classification (status) of message transmission using message send area.
Virtual address space start address	i_udStartAddress	Double Word [Unsigned]	—	Indicates data size when using virtual address space in the transmission of message used for message send area.
Virtual address space data size	i_uDataSize	Word [Unsigned]	—	Indicates the start address (32 bits) when using virtual address space in the transmission of message used for message send area.
Transaction code	i_uTransactionCode	Word [Unsigned]	—	Sets the transaction code.
Send data size	i_uDataSize	Word [Unsigned]	—	Sets the message data size to be sent. The data unit (byte or word) is selected in "Message Data Unit Select" of the network parameter.
Send data	i_dSendData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the send data.
Send word size	i_uSendWordSize	Word [Unsigned]	—	Sets the data size to send in word units. It is used for internal processing of FB.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

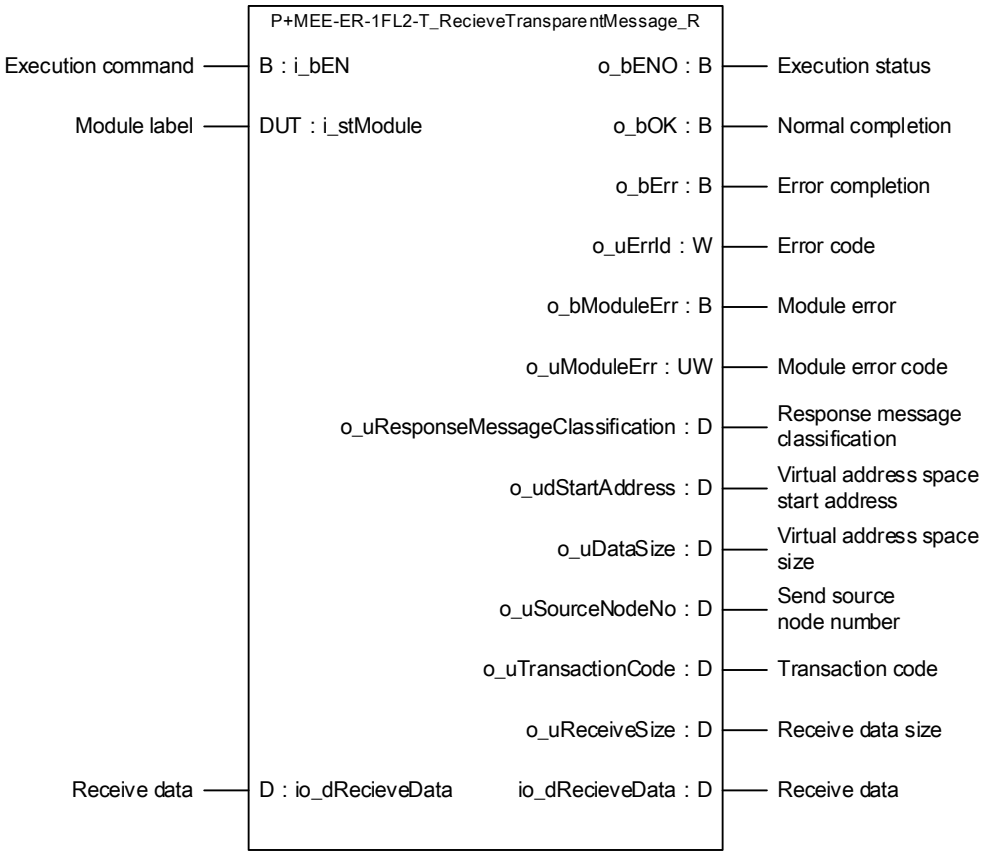
Please read the user's manuals for those products prior to use.

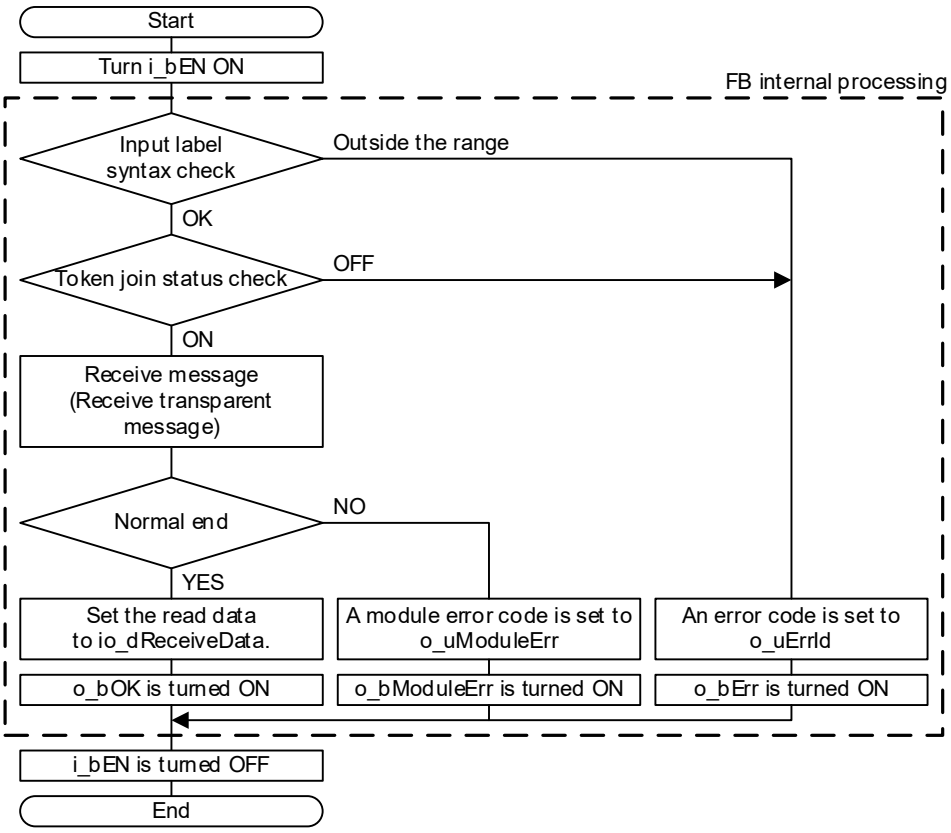
2.15. P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R (Receives the transparent type message)

Function Name

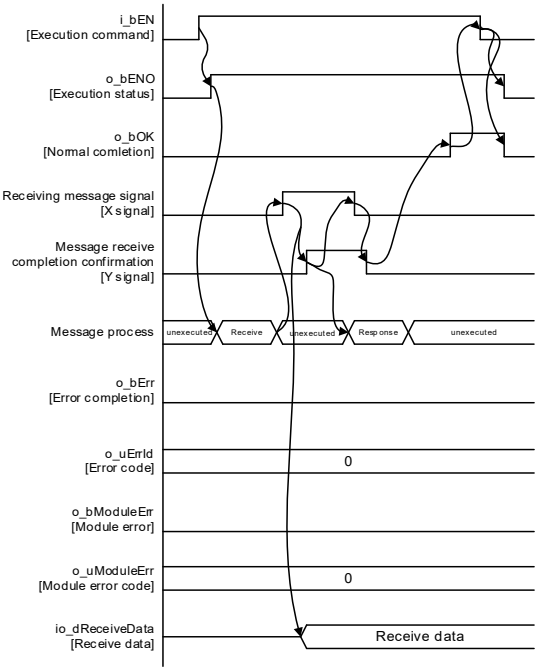
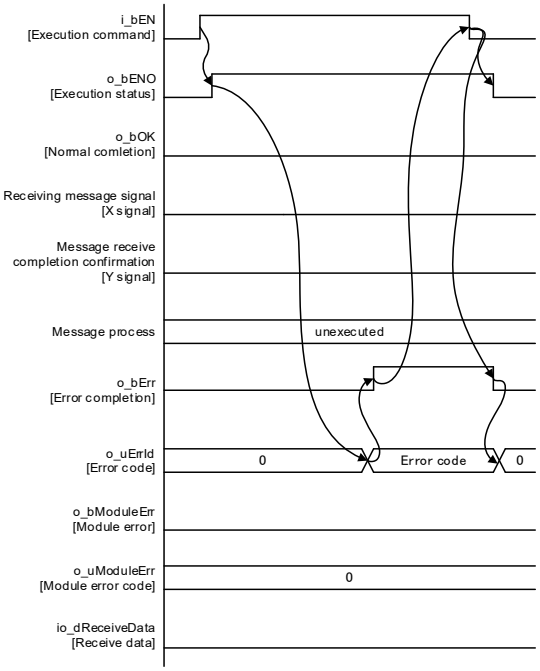
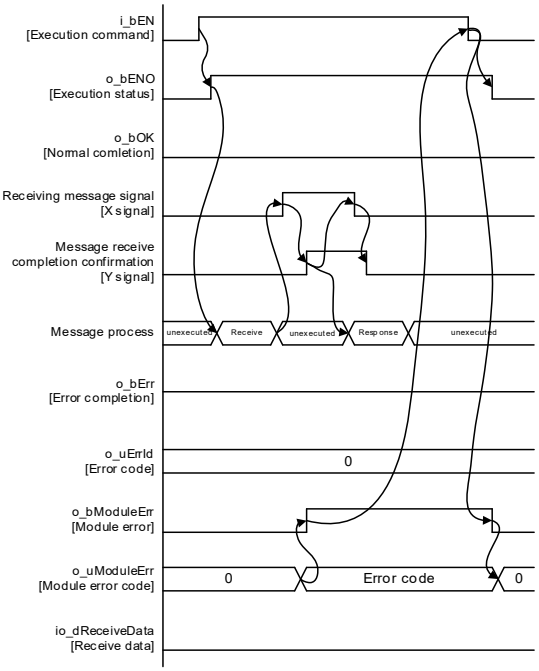
P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function receives the transparent type message from the upper layer of FL-net.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
</table>

Items	Description
Language	Ladder diagram
Steps	860Step (for MELSEC iQ-R series / R04CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.
Consumption label capacity	16word
Function Description	1) Turning on i_bEN (Execution status) receives the transparent type message from the node specified by i_uNodeNo (Target node number). 2) The received data is stored in the device specified by io_dRecieveData (Recieved data). o_bOK (Normal completion) turns on when the data has been received.  3) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 4) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 5) Stop the FB processing when the i_bEN (Execution status) turns off during the reading process. The data that has been read until suspension is stored in the device specified by the io_dRecieveData (Receive data).

Items	Description
FB compile format	Macro
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses data registers D5000 to D5001. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) For io_dReceiveData (Receive data), always specify the device that stores the read data. 11) When odd byte is set, it is rounded up to the word unit by internal processing of FB. One byte (upper side) of the last of data is undefined. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ io_dRecieveData (Receive data) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) The range check of the virtual address space and device is not performed. Specify the address according to the CPU used. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Pulse execution (multiple scan execution)
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error] 

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Receive data	io_dRecieveData	Double word	00000000 to FFFFFFFF (Hexadecimal)	Specify the device that stores the receive data.

*1 The valid range depends on Module label.

(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Response message classification	o_uResponseMessage Classification	Word [Unsigned]	—	
Virtual address space start address	o_udStartAddress	Double word [Unsigned]	—	
Virtual address space data size	o_uDataSize	Word [Unsigned]	—	
Send source node number	o_uSourceNodeNo	Word [Unsigned]	—	
Transaction code	o_uTransactionCode	Word [Unsigned]	—	
Receive data size	o_uReceiveSize	Word [Unsigned]	—	
Receive data	io_dRecieveData	Double word	—	Stores the data that is received.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

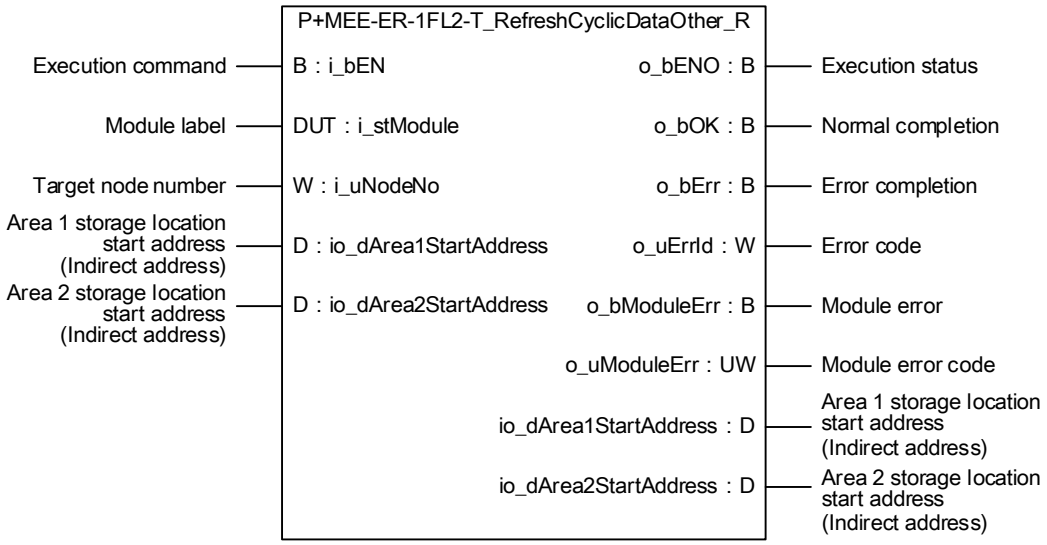
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

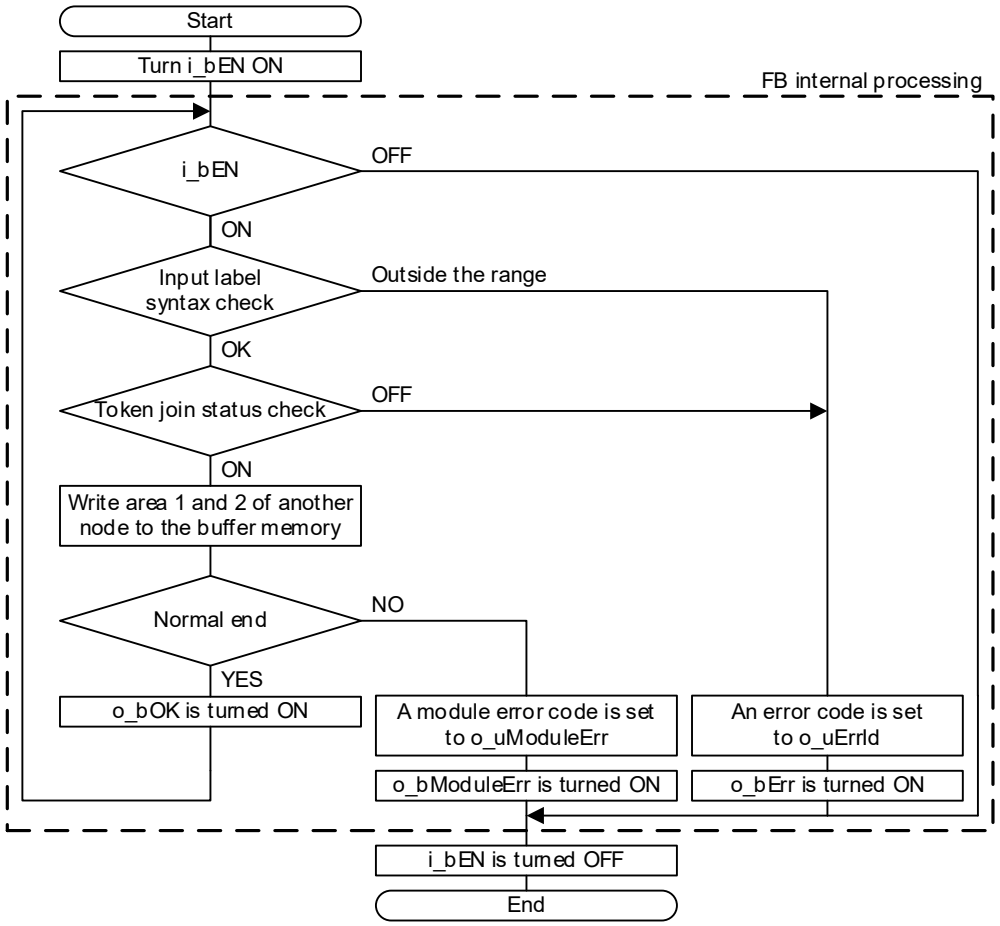
2.16. P+MEE-007ER-1FL2-T_RefreshCyclicDataOther_R (Refresh cyclic data (Other node))

Function Name

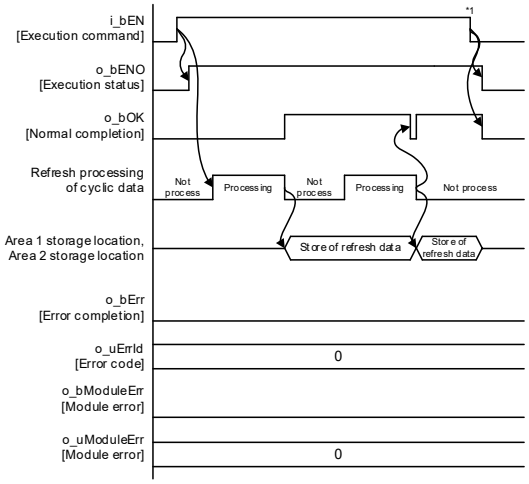
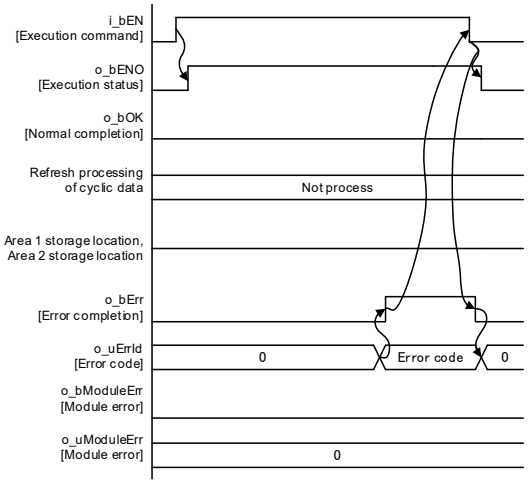
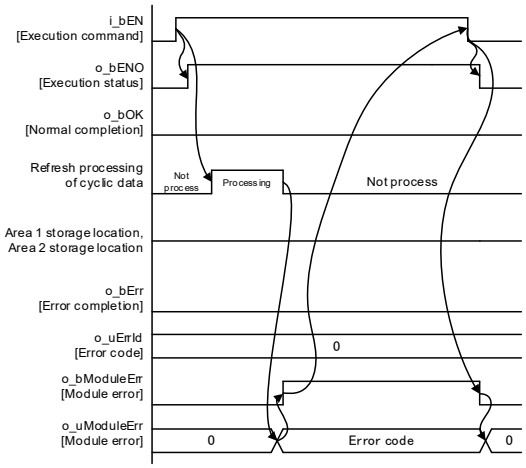
P+MEE-007ER-1FL2-T_RefreshCyclicDataOther_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function refreshes the cyclic data of other nodes by transferring the data between cyclic data area (Area 1, Area 2) and the device of the programmable controller CPU.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1131Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
</table>

Items	Description
Consumption label capacity	16word
Function Description	1) Turning on i_bEN (Execution status) refreshes the cyclic data of the node specified by i_uNodeNo (Target node number). 2) This FB is constantly executed after i_bEN (Execution command) is turned ON. 3) o_bOK (Normal completion) turns on when the process is completed successfully.  4) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 5) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 6) Stop the FB processing when the i_bEN (Execution status) turns off during the refresh process. The refresh is executed to the end even when the processing is stopped.
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses index registers Z6 to Z9 and data registers D5000 to D5003. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) Specify the indirect address of the storage location to the following labels. ・ io_dArea1StartAddress (Area 1 storage location start address (Indirect address)) ・ io_dArea2StartAddress (Area 2 storage location start address (Indirect address)) 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 1.6. 11) Specify the bit device as a multiple of 16. Due to the constraints of the ADRSET instruction, bit devices are truncated to multiples of 16. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_uNodeNo (Target node number) ・ io_dArea1StartAddress (Area 1 storage location start address (Indirect address)) ・ io_dArea2StartAddress (Area 2 storage location start address (Indirect address)) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) The range check of the indirect address is not performed. Specify the address according to the CPU used. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Real-time execution
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error]  *1 To terminate the FB at normal completion, turn off i_bEN at an arbitrary timing.

Error code

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 254 (Decimal) Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

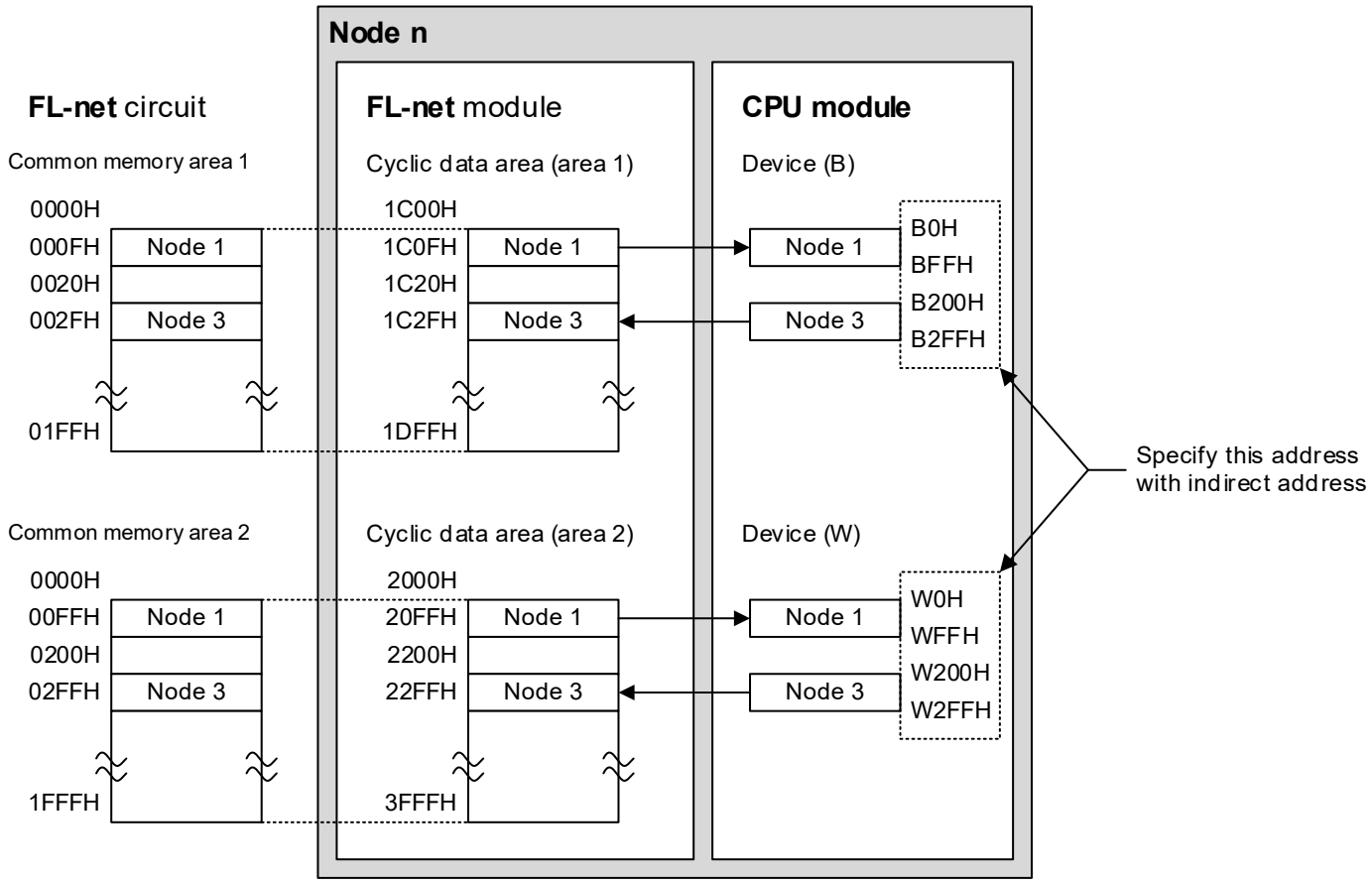
Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	—	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Target node number	i_uNodeNo	Word	1 to 254 (Decimal)	Specify Target node number.
Area 1 storage location start address (Indirect address)	io_dArea1StartAddress	Double word	00000000 to FFFFFFFF (Hexadecimal)	Set the start address that stores data of the common memory Area 1 (bit area) of the target node. Specify the link relay device (B) of the CPU module with indirect address. (*2,*3)
Area 2 storage location start address (Indirect address)	io_dArea2StartAddress	Double word	00000000 to FFFFFFFF (Hexadecimal)	Set the start address that stores data of the common memory Area 2 (word area) of the target node. Specify the link register (W) of the CPU module with indirect address. (*2,*3)

*1 The valid range depends on Module label.

*2 For the relation among the common memory area, link relay device of the CPU module, and link register, refer to the figure on the next page.

*3 Specify the bit device as a multiple of 16. Due to the constraints of the ADRSET instruction, bit devices are truncated to multiples of 16.

The following shows the flow of data at the cyclic data refresh of other nodes.



(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.
Area 1 storage location start address	io_dArea1StartAddress	Double word	00000000 to FFFFFFFF (Hexadecimal)	Stores the data of the common memory Area 1 (bit area) of the target node.
Area 2 storage location start address	io_dArea2StartAddress	Double word	00000000 to FFFFFFFF (Hexadecimal)	Stores the data of the common memory Area 2 (word area) of the target node.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

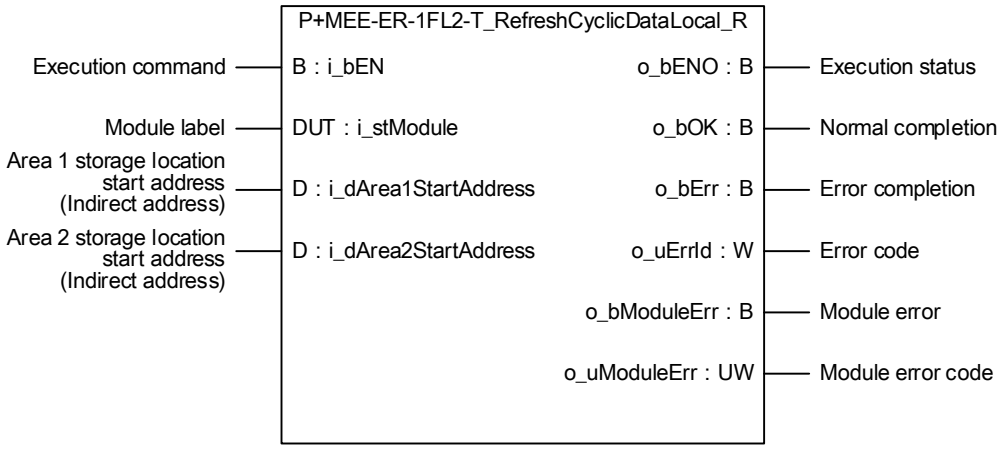
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations. Please read the user's manuals for those products prior to use.

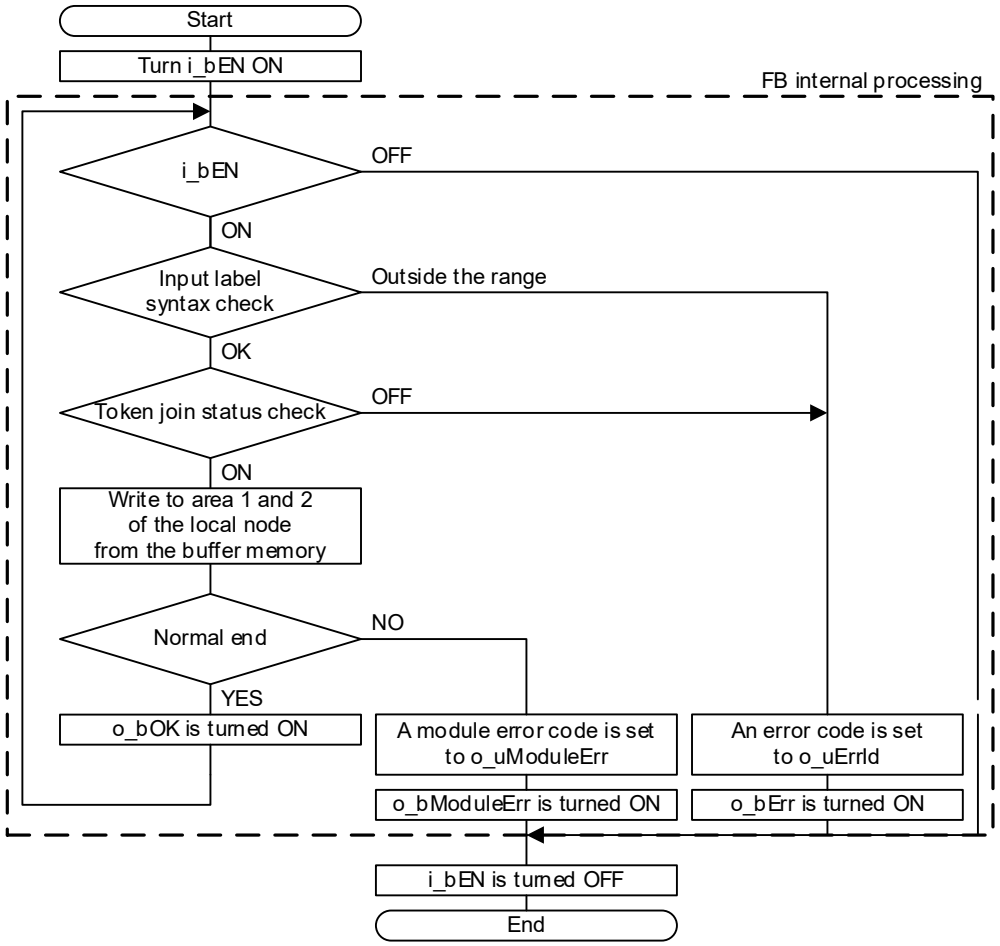
2.17. P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal_R (Refresh cyclic data (Local node))

Function Name

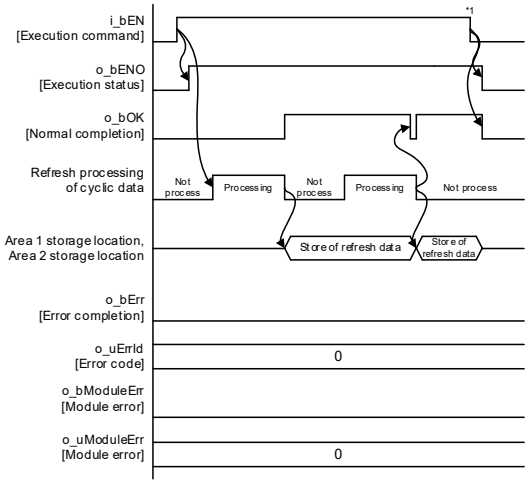
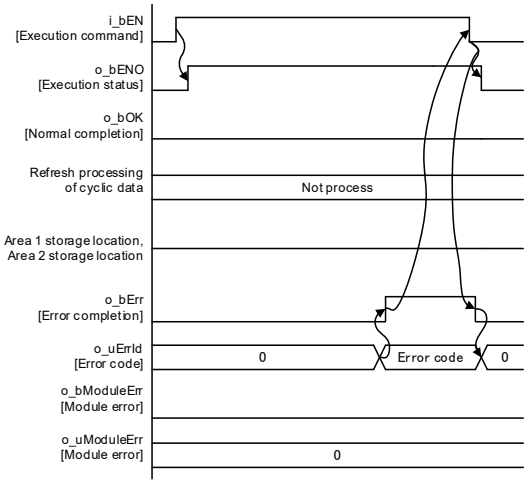
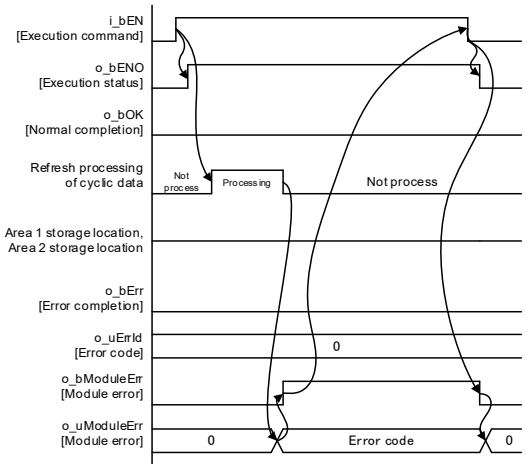
P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal_R

Function Description

<table>
<tr><th>Items</th><th colspan="2">Description</th></tr>
<tr><td>Function overview</td><td colspan="2">This function refreshes the cyclic data of the local node by transferring the data between cyclic data area (Area 1, Area 2) and the device of the programmable controller CPU.</td></tr>
<tr><td>Symbol</td><td colspan="2"> 
</td></tr>
<tr><td rowspan="4">Target device</td><td>Module</td><td>ER-1FL2-T</td></tr>
<tr><td>FL-net (OPCN-2) system</td><td>
<table>
<tr><th>Standard</th><th>Version/Method</th></tr>
<tr><td>FL-net (OPCN-2)</td><td>Version 2.00</td></tr>
<tr><td>Ethernet Standard</td><td>10BASE-T/100BASE-TX</td></tr>
</table>
</td></tr>
<tr><td>CPU module</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr>
</table>
</td></tr>
<tr><td>GX Works3</td><td>
<table>
<tr><th>Series</th><th>Model</th></tr>
<tr><td>MELSEC iQ-R series</td><td>Version 1.036N or later</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td colspan="2">Ladder diagram</td></tr>
<tr><td>Steps</td><td colspan="2">1017Step (for MELSEC iQ-R series / R04CPU)
* The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.</td></tr>
<tr><td>Consumption label capacity</td><td colspan="2">16word</td></tr>
</table>

Items	Description
Function Description	1) Turning on i_bEN (Execution status) refreshes the cyclic data of the local node. 2) This FB is constantly executed after i_bEN (Execution command) is turned ON. 3) o_bOK (Normal completion) turns on when the process is completed successfully.  4) If an error occurs, o_bErr (error completion) is turned on after setting the error code to o_uErrId, and FB processing is interrupted. Refer to the error code Description section for details. 5) If an error occurs in ER-1FL2-T, o_bModuleErr (module error) is turned on after setting the error code to o_uModuleErr (module error code), and processing is interrupted. Refer to the error code Description section for details. 6) Stop the FB processing when the i_bEN (Execution status) turns off during the refresh process. The refresh is executed to the end even when the processing is stopped.
FB compile format	Macro

Items	Description
Limitations, Precautions, etc.	1) This FL-net module is dedicated to FL-net (OPCN-2) Ver2.00 or Ver.3. Since FL-net (OPCN-2) Ver1.00 is not compatible, mixed connection and communications are unavailable. 2) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 3) This FB cannot be used within interrupt programs. 4) This FB uses index registers Z6 to Z9 and data registers D5000 to D5003. 5) Check that the following output labels are turned off when turning on i_bEN (Execution status). ・ o_bOK (Normal completion) ・ o_bErr (Error completion) ・ o_bModuleErr (Module error) 6) An interlocking program is required for this FB. 7) The module label needs to be set in GX Works3 before using this FB. For details, refer to the manual of GX Works3. 8) Check that the initial processing has completed successfully before using this FB. 9) For this FB, a circuit must be set for every input label. 10) Specify the indirect address of the storage location to the following labels. ・ i_dArea1StartAddress (Area 1 storage location start address (Indirect address)) ・ i_dArea2StartAddress (Area 2 storage location start address (Indirect address)) 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 1.6. 11) Specify the bit device as a multiple of 16. Due to the constraints of the ADRSET instruction, bit devices are truncated to multiples of 16. 12) Do not change the following values while i_bEN (Execution command) is ON. ・ i_stModule (Module label) ・ i_dArea1StartAddress (Area 1 storage location start address (Indirect address)) ・ i_dArea2StartAddress (Area 2 storage location start address (Indirect address)) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used. 14) The range check of the indirect address is not performed. Specify the address according to the CPU used. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.
FB operation	Real-time execution
Usase example	Refer to "Appendix 2. FB Library Usage Examples".

Items	Description
I/O signal timings	[When the process is completed without an error]  [When the process is completed with an error]  [For module error]  *1 To terminate the FB at normal completion, turn off i_bEN at an arbitrary timing.

Error Code

Error code (hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.

Used Labels

(1) Input labels

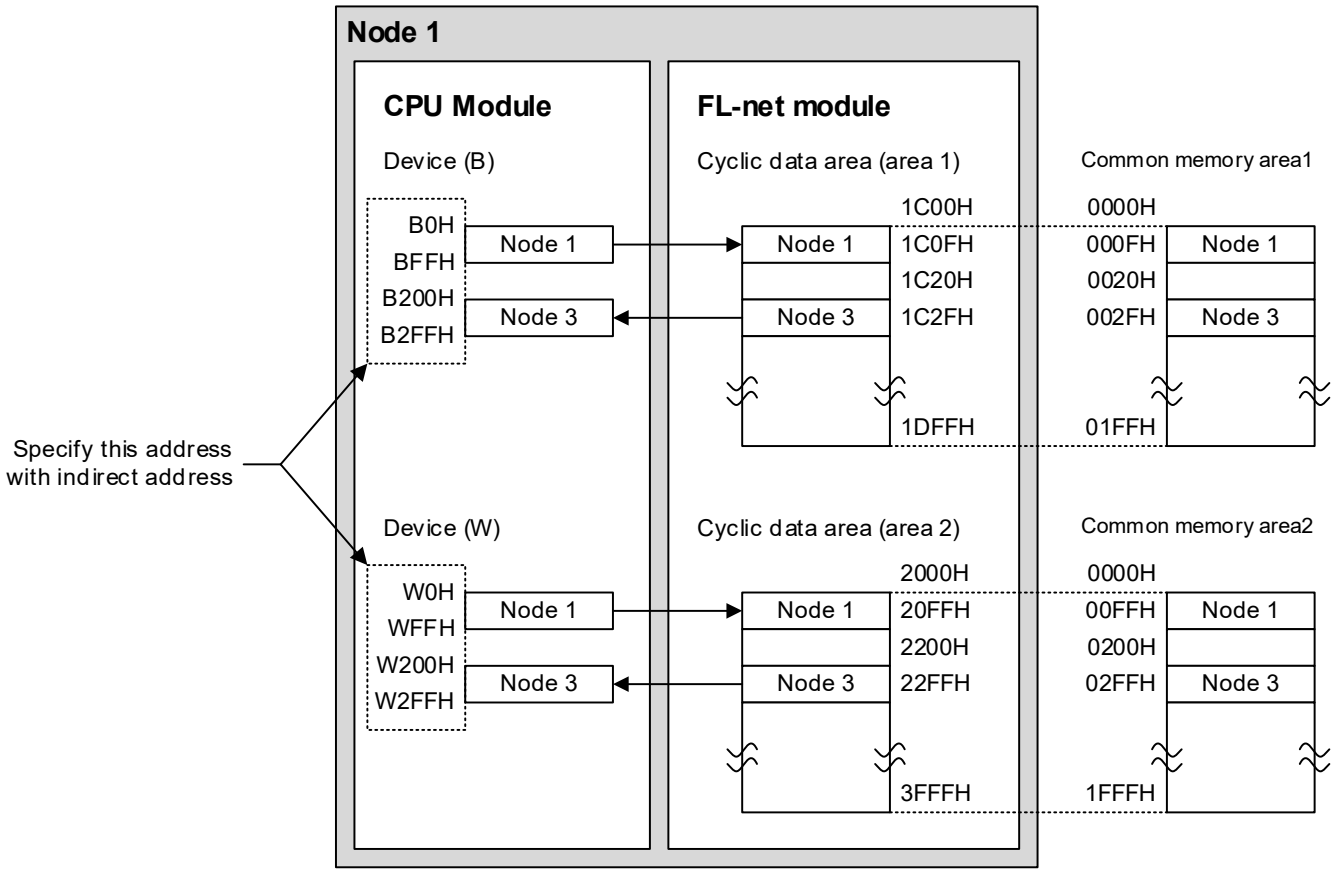
Name (comment)	Label name	Data type	Range	Description
Execution command	i_bEN	Bit	－	ON : Execute FB. OFF : Do not execute FB.
Module label	i_stModule	Structure	*1	Specify Module label of the FL-net module.
Area 1 storage location start address (Indirect address)	i_dArea1StartAddress	Double word	00000000 to FFFFFFFF (Hexadecimal)	Set the start address where the local node common memory Area 1 (bit area) is stored. Specify the link relay device (B) of the CPU module with indirect address. (*2,*3)
Area 2 storage location start address (Indirect address)	i_dArea2StartAddress	Double word	00000000 to FFFFFFFF (Hexadecimal)	Set the start address where the local node common memory Area 2 (word area) is stored. Specify the link register (W) of the CPU module with indirect address. (*2,*3)

*1 The valid range depends on Module label.

*2 For the relation among the common memory area, link relay device of the CPU module, and link register, refer to the figure on the next page.

*3 Specify the bit device as a multiple of 16. Due to the constraints of the ADRSET instruction, bit devices are truncated to multiples of 16.

The following shows the flow of data at the cyclic data refresh of the local node.



(2) Output labels

Name (comment)	Label name	Data type	Range	Description
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
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	0	Returns the error code related to the error raised in the FB.
Module error	o_bModuleErr	Bit	OFF	ON : An error has occurred in a configuration device. OFF : Normal
Module error code	o_uModuleErr	Word [Unsigned]	0	Stores the error code occurred in the configuration devices.

FB version history

Version	Date	Details
00A	Sep. 2017	First edition

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.

Appendix 1. Connection procedure

Appendix 1.1. SAFETY PRECAUTIONS (Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product only. For the safety precautions of the programmable controller system, refer to the MELSEC iQ-R Module Configuration Manual. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In this manual, the safety precautions are classified into two levels: "⚠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 minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠CAUTION" may lead to serious consequences. Observe the precautions of both levels because they are important for personal and system safety. Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

⚠WARNING

- For the operating status of each node at a communication failure of cyclic transmission in the FL-net (OPCN-2), refer to the user's manual. Incorrect output or malfunction due to a communication failuremay result in an accident.
- Configure safety circuits external to the programmable controller to ensure that the entire system operates safely even when a fault occurs in the external power supply or the programmable controller. Failure to do somay result in an accident due to an incorrect output or malfunction.
  (1) Emergency stop circuits, protection circuits, and protective interlock circuits for conflicting operations (such as forward/reverse rotations or upper/lower limit positioning) must be configured external to the programmable controller.
  (2) When the programmable controller detects an abnormal condition, it stops the operation and all outputs are:
    - Turned off if the overcurrent or overvoltage protection of the power supply module is activated.
    - Held or turned off according to the parameter setting if the self-diagnostic function of the CPU module detects an error such as a watchdog timer error.
  (3) All outputs may be turned on if an error occurs in a part, such as an I/O control part, where the CPU module cannot detect any error. To ensure safety operation in such a case, provide a safety mechanism or a fail-safe circuit external to the programmable controller. For a fail-safe circuit example, refer to "General Safety Requirements" in the MELSEC iQ-R Module Configuration Manual.
- When connecting an external device with a CPU module or intelligent function module to modify data of a running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely. For other forms of control (such as program modification, parameter change, forced output, or operating status change) of a running programmable controller, read the relevant manuals carefully and ensure that the operation is safe before proceeding. Improper operation may damage machines or cause accidents.

- Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure. To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.
- Do not write any data to the "system area" and "write-protect area" of the buffer memory in themodule. Also, do not use any "use prohibited" signals as an output signal from the CPU module to each module. Doing somay cause malfunction of the programmable controller system. For the "system area", "write-protect area", and the "use prohibited" signals, refer to the user's manual for the module used.
- If a communication cable is disconnected, the networkmay be unstable, resulting in a communication failure ofmultiple stations. Configure an interlock circuit in the program to ensure that the entire system will always operate safely even if communications fail. Incorrect output or malfunction due to a communication failure may result in an accident.
- To maintain the safety of the programmable controller system against unauthorized access from external devices via the network, take appropriate measures.

[Design Precautions]

⚠CAUTION

- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
- After the CPU module is powered on or is reset, the time taken to enter the RUN status varies depending on the system configuration, parameter settings, and/or program size. Design circuits so that the entire system will always operate safely, regardless of the time.
- Do not power off the programmable controller or reset the CPU module while the settings are being written. Doing so will make the data in the flash ROM undefined. The values need to be set in the buffer memory and written to the flash ROM again. Doing so also may cause malfunction or failure of the module.

[Installation Precautions]

⚠WARNING

- Shut off the external power supply (all phases) used in the system before mounting or removing the module. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Installation Precautions]

⚠CAUTION

- Use the programmable controller in an environment that meets the general specifications in the Safety Guidelines included with the base unit. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- To mount a module, place the concave part(s) located at the bottom onto the guide(s) of the base unit, and push in the module until the hook(s) located at the top snaps into place. Incorrect interconnection may cause malfunction, failure, or drop of the module.
- When using the programmable controller in an environment of frequent vibrations, fix the module with a screw.
- Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- Do not directly touch any conductive parts and electronic components of the module. Doing so can cause malfunction or failure of the module.

[Wiring Precautions]

⚠WARNING

- Shut off the external power supply (all phases) used in the system before installation and wiring. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Wiring Precautions]

⚠CAUTION

- Individually ground the FG and LG terminals of the programmable controller with a ground resistance of 100 ohms or less. Failure to do so may result in electric shock or malfunction.
- Check the rated voltage and signal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause fire or failure.
- Connectors for external devices must be crimped or pressed with the tool specified by the manufacturer, or must be correctly soldered. Incomplete connections may cause short circuit, fire, or malfunction.
- Securely connect the connector to the module. Poor contact may cause malfunction.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
- Place the cable in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cable or malfunction due to poor contact.
- Check the interface type and correctly connect the cable. Incorrect wiring (connecting the cable to an incorrect interface) may cause failure of the module and external device.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable.
- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- A protective film is attached to the top of the module to prevent foreign matter, such as wire chips, from entering the module during wiring. Do not remove the film during wiring. Remove it for heat dissipation before system operation.
- Programmable controllers must be installed in control panels. Connect the main power supply to the power supply module in the control panel through a relay terminal block. Wiring and replacement of a power supply module must be performed by qualified maintenance personnel with knowledge of protection against electric shock. For wiring, refer to the MELSEC iQ-R Module Configuration Manual.
- For Ethernet cables to be used in the system, select the ones that meet the specifications in the user's manual for the module used. If not, normal data transmission is not guaranteed.

[Startup and Maintenance Precautions]

⚠WARNING

- Do not touch any connectors while power is on. Doing so can cause electric shock or malfunction.
- Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the module fixing screws. Failure to do so may result in electric shock.
- When changing data and operating status, and modifying program of the running programmable controller, ensure the safety before operation.

[Startup and Maintenance Precautions]

⚠CAUTION

- When connecting an external device with a CPU module or intelligent function module to modify data of a running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely. For other forms of control (such as program modification, parameter change, forced output, or operating status change) of a running programmable controller, read the relevant manuals carefully and ensure that the operation is safe before proceeding. Improper operation may damage machines or cause accidents.
- Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure. To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.
- Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
- Use any radio communication device such as a cellular phone or PHS (Personal Handy-phone System) more than 25cm away in all directions from the programmable controller. Failure to do so may cause malfunction.
- Turn off the programmable controller and shut off the external power supply (all phases) used in the FL-net (OPCN-2) system before mounting or removing the module. Failure to do so may result in electric shock or cause the module to fail or malfunction.
- After the first use of the product, do not mount/remove the module to/from the base unit more than 50 times (IEC 61131-2 compliant) respectively. Exceeding the limit may cause malfunction.
- Startup and maintenance of a control panel must be performed by qualified maintenance personnel with knowledge of protection against electric shock. Lock the control panel so that only qualified maintenance personnel can operate it.
- Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.

[Operating Precautions]

⚠CAUTION

- When changing data and operating status, and modifying program of the running programmable controller from an external device such as a personal computer connected to an intelligent function module, read relevant manuals carefully and ensure the safety before operation. Incorrect change or modification may cause system malfunction, damage to the machines, or accidents.
- Do not power off the programmable controller or reset the CPU module while the setting values in the buffer memory are being written to the flash ROM in the module. Doing so will make the data in the flash ROM undefined. The values need to be set in the buffer memory and written to the flash ROM again. Doing so can cause malfunction or failure of the module.

[Disposal Precautions]

⚠CAUTION

- When disposing of this product, treat it as industrial waste.

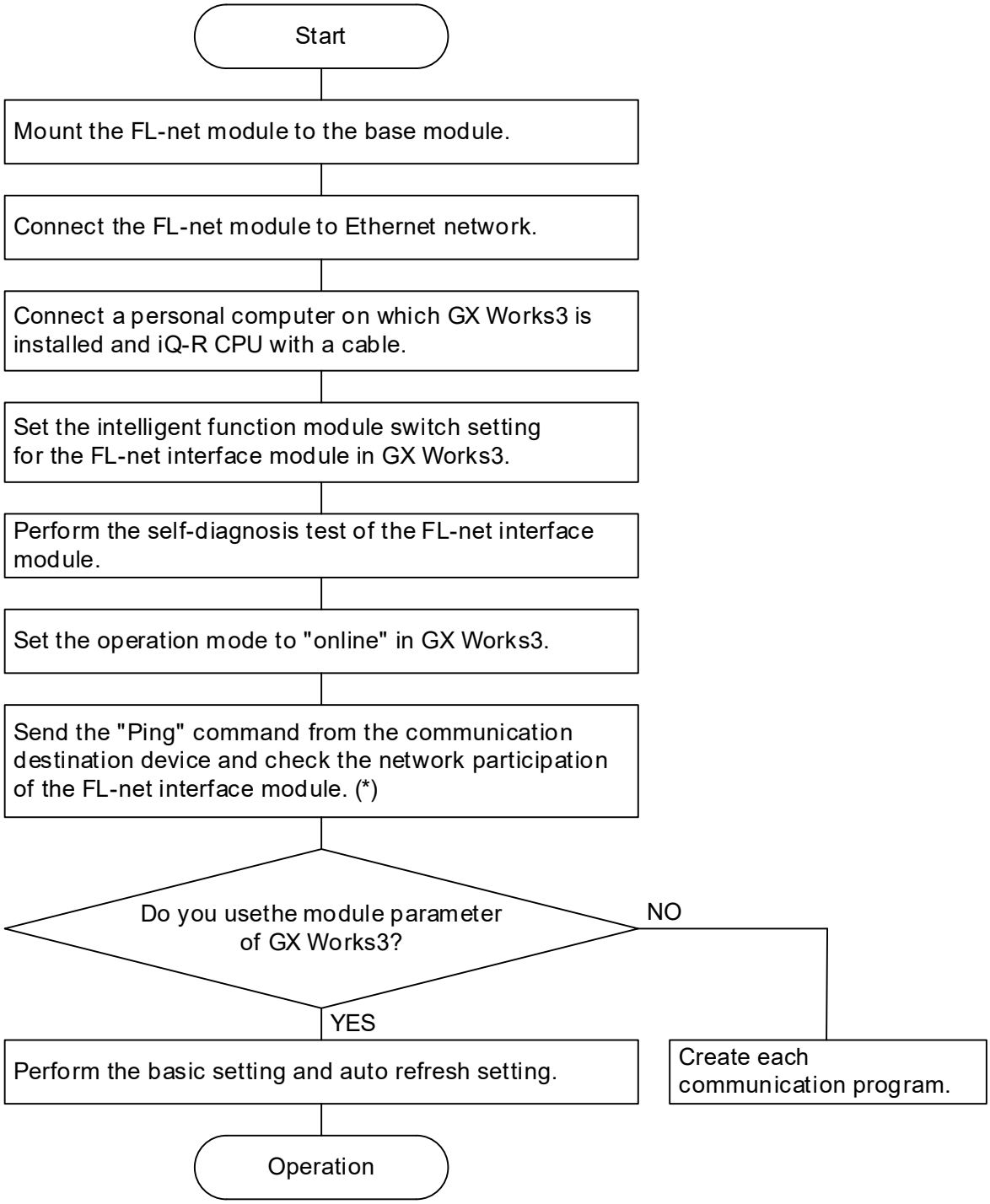
[Transportation Precautions]

⚠CAUTION

- The halogens (such as fluorine, chlorine, bromine, and iodine), which are contained in a fumigant used for disinfection and pest control of wood packaging materials, may cause failure of the product. Prevent the entry of fumigant residues into the product or consider other methods (such as heat treatment) instead of fumigation. The disinfection and pest control measures must be applied to unprocessed raw wood.

Appendix 1.2. Flow chart of connection procedure

The following shows the procedure for operating the FL-net (OPCN-2) system. For details, refer to the relevant manual.



* This FL-net module cannot send the "ping" command.

Appendix 1.3. Connection and wiring

This section explains the methods for connecting the FL-net module to a 10BASE-T/100BASE-TX network.

1) Connect the Ethernet cable to the hub.

2) Connect the Ethernet cable to the FL-net module.

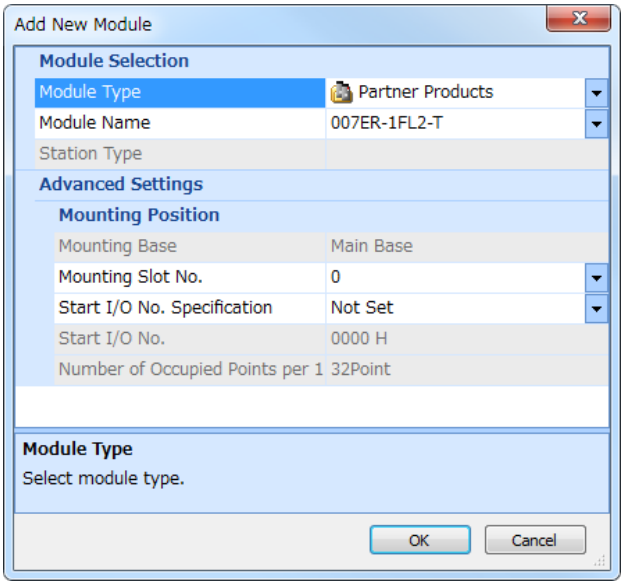
Appendix 1.4. Device settings

This section describes the GX Works3 settings required to use the FL-net module.

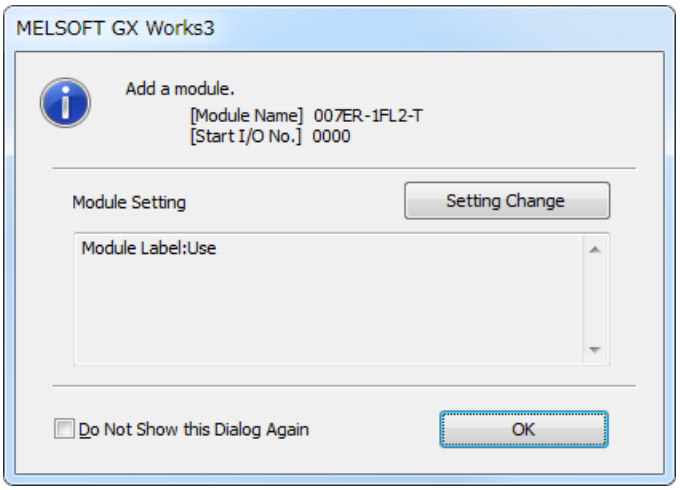
For the operation method of each window, refer to the operating manual of GX Works3.

(1) Add new module

Setting item	Setting value
Module Type	Partner Products
Module Name	ER-1FL2-T
Mounting Slot No.	The slot No. where the FL-net module is mounted.



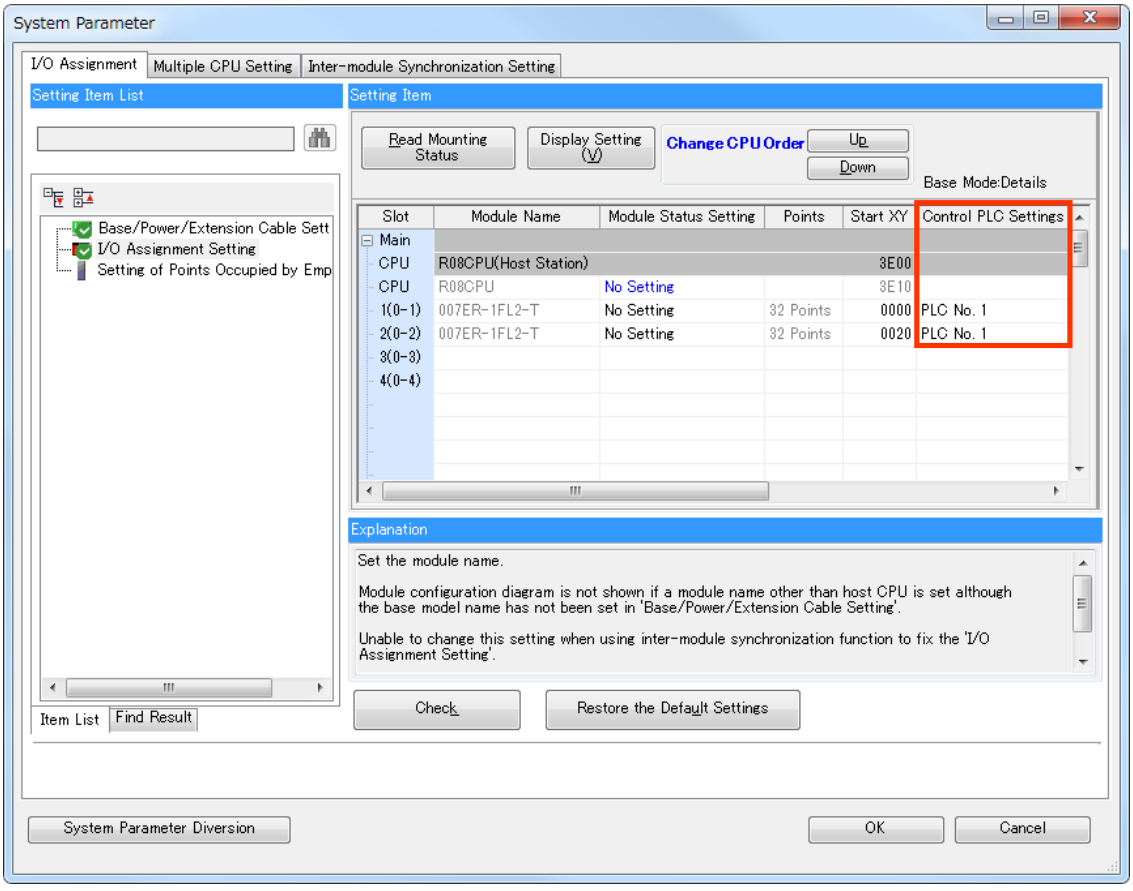
Confirm the "Module Label: Use" is set, then add the FL-net module.



(2) Control CPU setting

Set the control PLC of the FL-net module when the multiple CPU system is used.

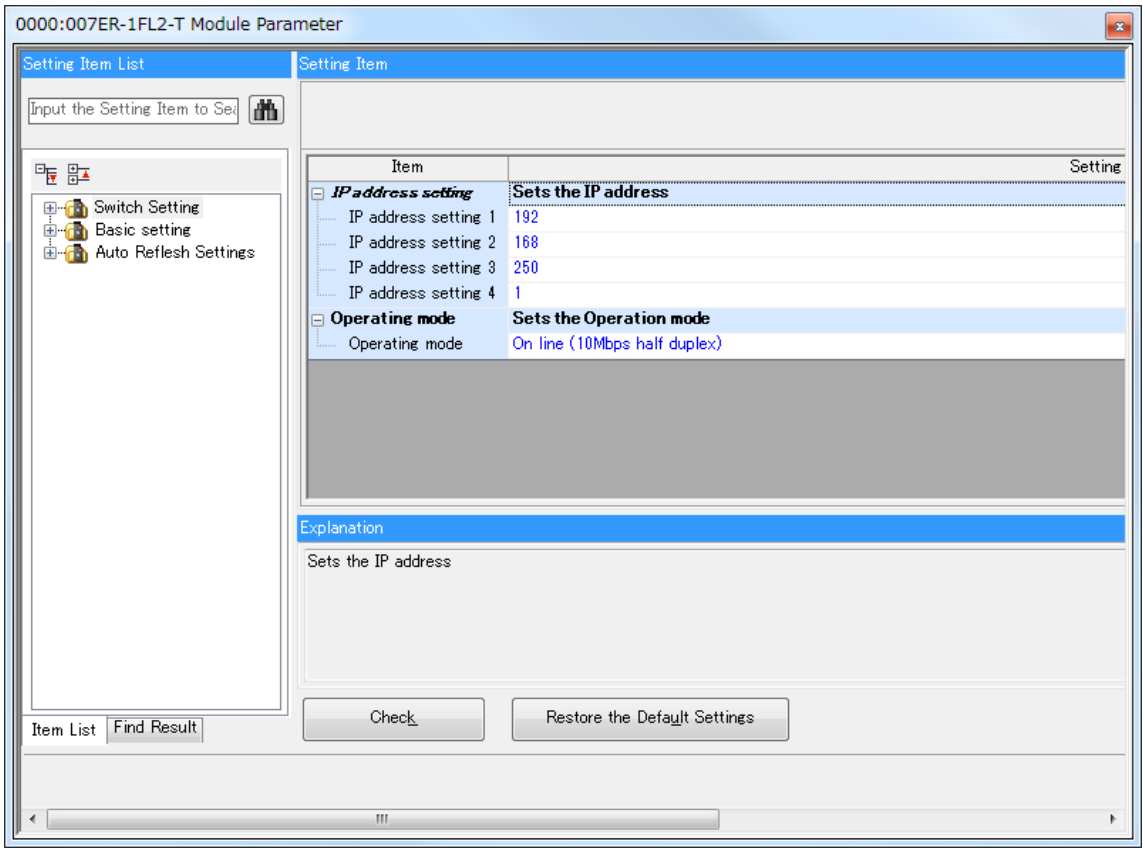
For the multiple CPU system, refer to the MELSEC iQ-R CPU Module User's Manual (Application).



(3) Module parameter setting

Select ER-1FL2-T from the navigation window and open the module parameter.

After setting the module parameter, write it to the CPU module and reset the CPU module.



(1) Switch setting

Set the item as follows.

Setting item	Setting value	Setting range	Default
IP address setting 1	An IP address (*1)	192 to 223	192
IP address setting 2	An IP address (*1)	0 to 255	168
IP address setting 3	An IP address (*1)	0 to 255	250
IP address setting 2 (*2)	An IP address (*1)	1 to 254	1
Operating mode	Online (10Mbps half duplex)	On line (10Mbps half duplex)	On line (10Mbps half duplex)
		Off line	
		Loopback test	
		Hardware test	
		On line (Auto negotiation)	

*1 Set the value according to the system.

*2 Node numbers 250 to 254 are reserved for maintenance tools.

(4) Basic setting, Auto refresh setting

For details, refer to the FL-net (OPCN-2) Interface module ER-1FL2-T User's manual (Detailed edition).

Appendix 1.5. How to check the connection

The following describes an example for checking that the connection is completed by issuing the PING command from the external device (such as Windows personal computer) connected on the FL-net (OPCN-2) network to the local node FL-net module.

¥>ping IP address

Ex. FL-net module IP address: 192.168.250.1

Screen example at normal operation

```
C:\>ping 192.168.250.1        <-- ping command execution

Pinging 192.168.250.1 with 32 bytes of data:
Reply from 192.168.250.1: bytes=32 time<1ms TTL=128
Reply from 192.168.250.1: bytes=32 time<1ms TTL=128
Reply from 192.168.250.1: bytes=32 time<1ms TTL=128
Reply from 192.168.250.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.250.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>_
```

Screen example at operation error

```
C:\>ping 192.168.250.1        <-- ping command execution

Pinging 192.168.250.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.250.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>_
```

Appendix 1.6. Troubleshooting

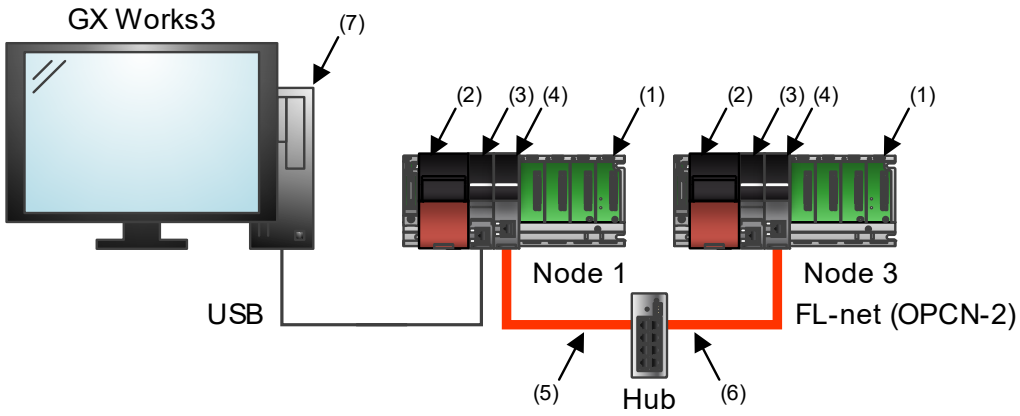
Inspect the following items first whenever the FL-net module does not operate properly.

No.	Description
1	Is the module properly mounted?
2	Have the settings from the GX Works3 been properly set for the module?
3	Is the IP address of the network correctly set?
4	Has the common memory area been properly set?
5	Is there any looseness or other abnormalities with the connections for the module?
6	Is Ethernet cable correctly connected?
7	Is the 10BASE-T cable higher than category 3 specifications? Is the 100BASE-TX cable higher than category 5 specifications?
8	Is the power on for the Ethernet hub and repeater?

For details on the troubleshooting, refer to the FL-net (OPCN-2) Interface module ER-1FL2-T User's manual (Detailed edition).

Appendix 2. FB Library Usage Examples

Appendix 2.1. System Configuration Example



No.	Device name	Description
1	FL-net (OPCN-2) Node 1	Base module
2	FL-net (OPCN-2) Node 3	Power supply module
3		CPU module Series: MELSEC iQ-R series; Model: RCPU
4		FL-net moduleEL-1FL2-T
5	Ethernet cable	Cat 5e or better Ethernet cable
6	Hub	Switching hub module
7	Computer	Windows® supported personal computer

Appendix 2.2. Used Devices List

(1) External inputs (instructions)

Device	FB name	Purpose (when ON)
M100	P+MEE-007ER-1FL2-T_Initialize_R	Initial setting command
M110	P+MEE-007ER-1FL2-T_ByteBlockRead_R	Byte block read command
M120	P+MEE-007ER-1FL2-T_ByteBlockWrite_R	Byte block write command
M130	P+MEE-007ER-1FL2-T_WordBlockRead_R	Word block read command
M140	P+MEE-007ER-1FL2-T_WordBlockWrite_R	Word block write command
M150	P+MEE-007ER-1FL2-T_NetworkParameterRead_R	Network parameter/join node read command
M160	P+MEE-007ER-1FL2-T_NetworkParameterWrite_R	Network parameter write command
M170	P+MEE-007ER-1FL2-T_OperateCommand_R	Operate command
M180	P+MEE-007ER-1FL2-T_StopCommand_R	Stop command
M190	P+MEE-007ER-1FL2-T_DeviceProfileRead_R	Device profile read command
M200	P+MEE-007ER-1FL2-T_LogInformationRead_R	Log information read command
M210	P+MEE-007ER-1FL2-T_LogInformationClear_R	Log information clear command
M220	P+MEE-007ER-1FL2-T_MessageReturn_R	Message return command
M230	P+MEE-007ER-1FL2-T_SendTransparentMessage_R	Send transparent message command
M240	P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R	Receive transparent message command
M250	P+MEE-007ER-1FL2-T_RefreshCyclicDataOther_R	Refresh cyclic data (Other node) command
M260	P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal _R	Refresh cyclic data (Local node) command

(2) External inputs (data)

Device	FB name	Purpose (when ON)
D2010 to D2017	P+MEE-007ER-1FL2-T_ByteBlockRead_R	Read data
D2020 to D2027	P+MEE-007ER-1FL2-T_ByteBlockWrite_R	Write data
D2030 to D2037	P+MEE-007ER-1FL2-T_WordBlockRead_R	Read data
D2040 to D2047	P+MEE-007ER-1FL2-T_WordBlockWrite_R	Write data
D3000 to D3027	P+MEE-007ER-1FL2-T_NetworkParameterRead_R	Read data
D3100 to D3611	P+MEE-007ER-1FL2-T_DeviceProfileRead_R	Read data
D3700 to D3891	P+MEE-007ER-1FL2-T_LogInformationRead_R	Read data
D2120 to D2121	P+MEE-007ER-1FL2-T_MessageReturn_R	Send data
D2122 to D2123		Receive data
D2130	P+MEE-007ER-1FL2-T_SendTransparentMessage_R	Send data
D2147	P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R	Receive data
D2200	P+MEE-007ER-1FL2-T_RefreshCyclicDataOther _R	Area 1 storage location start address (Indirect address)
D2202		Area 2 storage location start address (Indirect address)
D2210	P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal _R	Area 1 storage location start address (Indirect address)
D2212		Area 2 storage location start address (Indirect address)

(3) External output (Verification)

Device	FB name	Purpose (when ON)
M101	P+MEE-007ER-1FL2-T_Initialize_R	Execution status
M102		Normal completion
M103		Error completion
M104		Module error
M111	P+MEE-007ER-1FL2-T_ByteBlockRead_R	Execution status
M112		Normal completion
M113		Error completion
M114		Module error
M121	P+MEE-007ER-1FL2-T_ByteBlockWrite_R	Execution status
M122		Normal completion
M123		Error completion
M124		Module error
M131	P+MEE-007ER-1FL2-T_WordBlockRead_R	Execution status
M132		Normal completion
M133		Error completion
M134		Module error
M141	P+MEE-007ER-1FL2-T_WordBlockWrite_R	Execution status
M142		Normal completion
M143		Error completion
M144		Module error
M151	P+MEE-007ER-1FL2-T_NetworkParameterRead_R	Execution status
M152		Normal completion
M153		Error completion
M154		Module error
M161	P+MEE-007ER-1FL2-T_NetworkParameterWrite_R	Execution status
M162		Normal completion
M163		Error completion
M164		Module error
M171	P+MEE-007ER-1FL2-T_OperateCommand_R	Execution status
M172		Normal completion
M173		Error completion
M174		Module error
M181	P+MEE-007ER-1FL2-T_StopCommand_R	Execution status
M182		Normal completion
M183		Error completion
M184		Module error

Device	FB name	Purpose (when ON)
M191	P+MEE-007ER-1FL2-T_DeviceProfileRead_R	Execution status
M192		Normal completion
M193		Error completion
M194		Module error
M201	P+MEE-007ER-1FL2-T_LogInformationRead_R	Execution status
M202		Normal completion
M203		Error completion
M204		Module error
M211	P+MEE-007ER-1FL2-T_LogInformationClear_R	Execution status
M212		Normal completion
M213		Error completion
M214		Module error
M221	P+MEE-007ER-1FL2-T_MessageReturn_R	Execution status
M222		Normal completion
M223		Error completion
M224		Module error
M231	P+MEE-007ER-1FL2-T_SendTransparentMessage_R	Execution status
M232		Normal completion
M233		Error completion
M234		Module error
M241	P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R	Execution status
M242		Normal completion
M243		Error completion
M244		Module error

(4) External output (Data)

Device	FB name	Purpose (when ON)
D1000	P+MEE-007ER-1FL2-T_Initialize_R	Error code
D1001		Module error code
D1010	P+MEE-007ER-1FL2-T_ByteBlockRead_R	Error code
D1010		Module error code
D2010 to D2017		Read data
D1020	P+MEE-007ER-1FL2-T_ByteBlockWrite_R	Error code
D1021		Module error code
D1030	P+MEE-007ER-1FL2-T_WordBlockRead_R	Error code
D1030		Module error code
D2030 to D2037		Read data
D1040	P+MEE-007ER-1FL2-T_WordBlockWrite_R	Error code
D1041		Module error code
D1050	P+MEE-007ER-1FL2-T_NetworkParameterRead_R	Error code
D1051		Module error code
D3000 ～D3027		Read data
D1060	P+MEE-007ER-1FL2-T_NetworkParameterWrite_R	Error code
D1061		Module error code
D1070	P+MEE-007ER-1FL2-T_OperateCommand_R	Error code
D1071		Module error code
D1080	P+MEE-007ER-1FL2-T_StopCommand_R	Error code
D1081		Module error code
D1090	P+MEE-007ER-1FL2-T_DeviceProfileRead_R	Error code
D1091		Module error code
D3100 ～D3611		Read data
D1100	P+MEE-007ER-1FL2-T_LogInformationRead_R	Error code
D1101		Module error code
D3700 ～D3891		Read data
D1110	P+MEE-007ER-1FL2-T_LogInformationClear_R	Error code
D1111		Module error code
D1120	P+MEE-007ER-1FL2-T_MessageReturn_R	Error code
D1121		Module error code
D2122 ～D2123		Receive data
D1130	P+MEE-007ER-1FL2-T_SendTransparentMessage_R	Error code
D1131		Module error code

Device	FB name	Purpose (when ON)
D1140	P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R	Error code
D1141		Module error code
D2140		Response message classification
D2141 ～D2142		Virtual address space start address
D2143		Virtual address space data size
D2144		Send source node number
D2145		Transaction code
D2146		Receive data size
D2147		Receive data
D1150	P+MEE-007ER-1FL2-T_RefreshCyclicDataOther_R	Error code
D1151		Module error code
D1160	P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal _R	Error code
D1161		Module error code

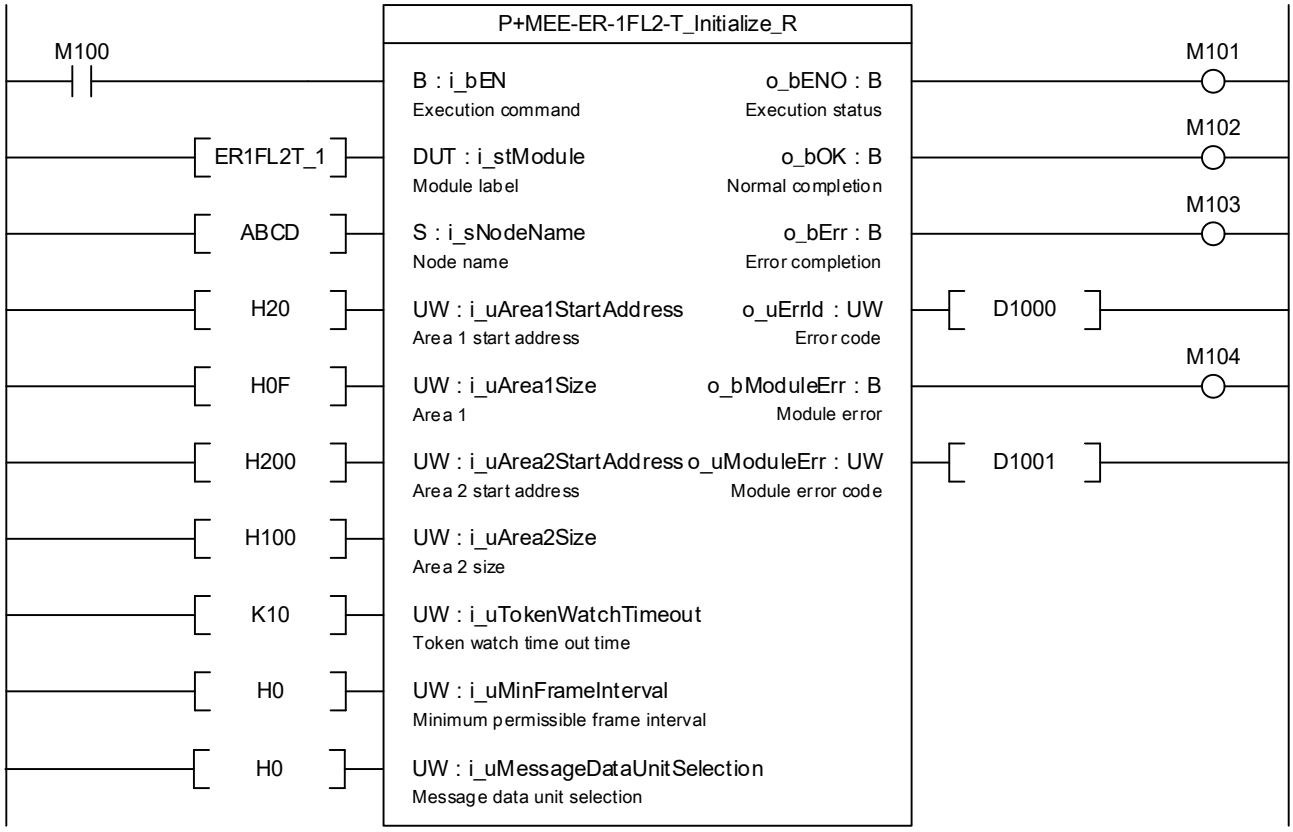
Appendix 2.3. Programs

Appendix 2.3.1. P+MEE-007ER-1FL2-T_Initialize_R (Sets the network parameter area of the local node)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Node name	ABCD
Area 1 start address	H20
Area 1 size	H0F
Area 2 start address	H200
Area 2 size	H100
Token watch time out time	K10
Minimum permissible frame interval	H0
Message data unit selection	H0

The following shows the program example that sets the initial settings under the above conditions when M100 is turned on.



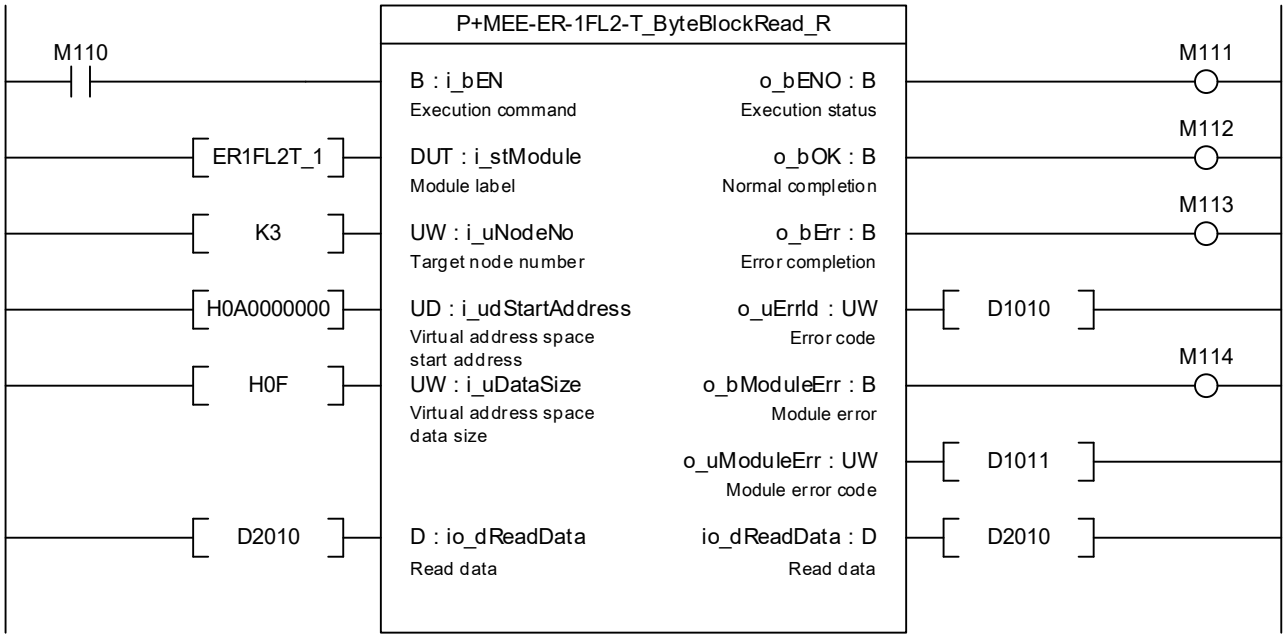
Appendix 2.3.2. P+MEE-007ER-1FL2-T_ByteBlockRead_R (Byte block read)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Virtual address space start address	H0A0000000
Virtual address space data size	H10
Read data	D2010

The following shows the program example that reads the byte block under the above conditions when M110 is turned on.

* ER-1FL2-T can not be set as a target node.



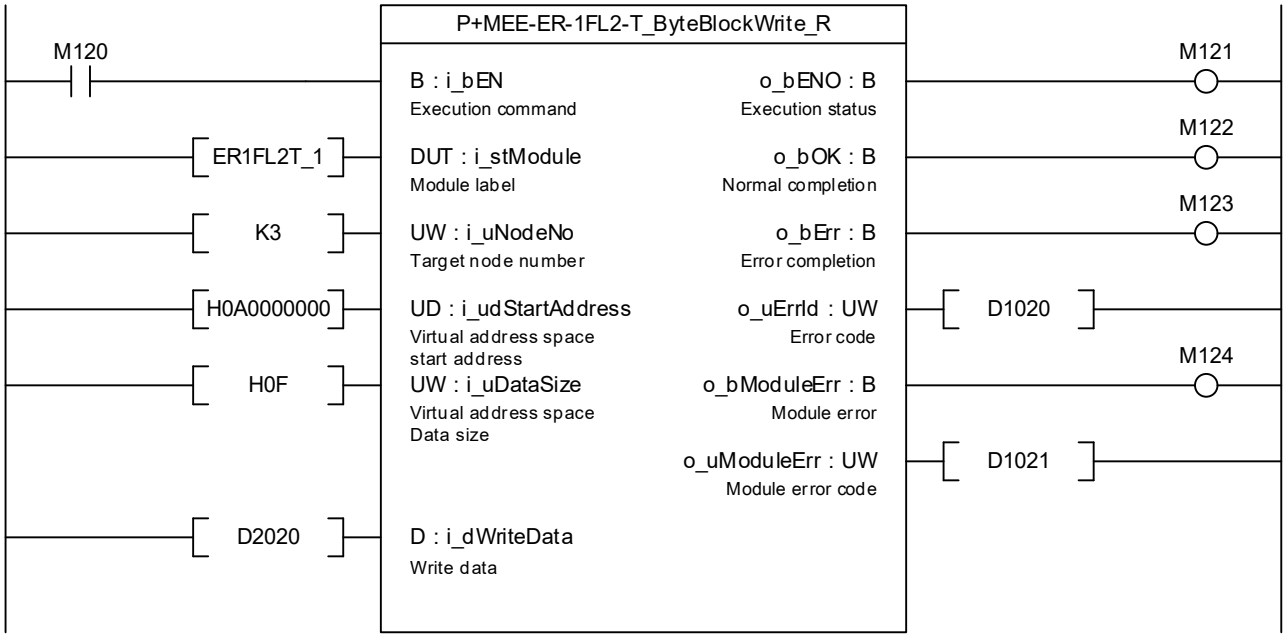
Appendix 2.3.3. P+MEE-007ER-1FL2-T_ByteBlockWrite_R (Byte block write)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Virtual address space start address	H0A0000000
Virtual address space data size	H10
Write data	D2020

The following shows the program example that writes the byte block under the above conditions when M120 is turned on.

* ER-1FL2-T can not be set as a target node.

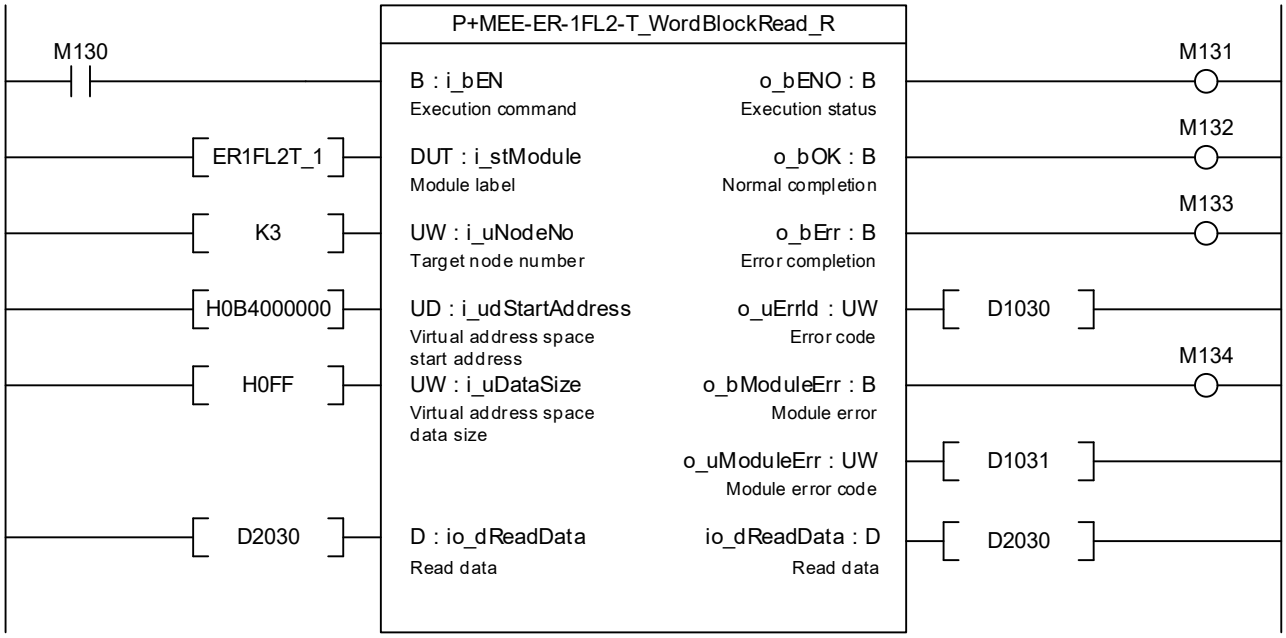


Appendix 2.3.4. P+MEE-007ER-1FL2-T_WordBlockRead_R (Word block read)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Virtual address space start address	H0B4000000
Virtual address space data size	H08
Read data	D2030

The following shows the program example that reads the word block under the above conditions when M130 is turned on.

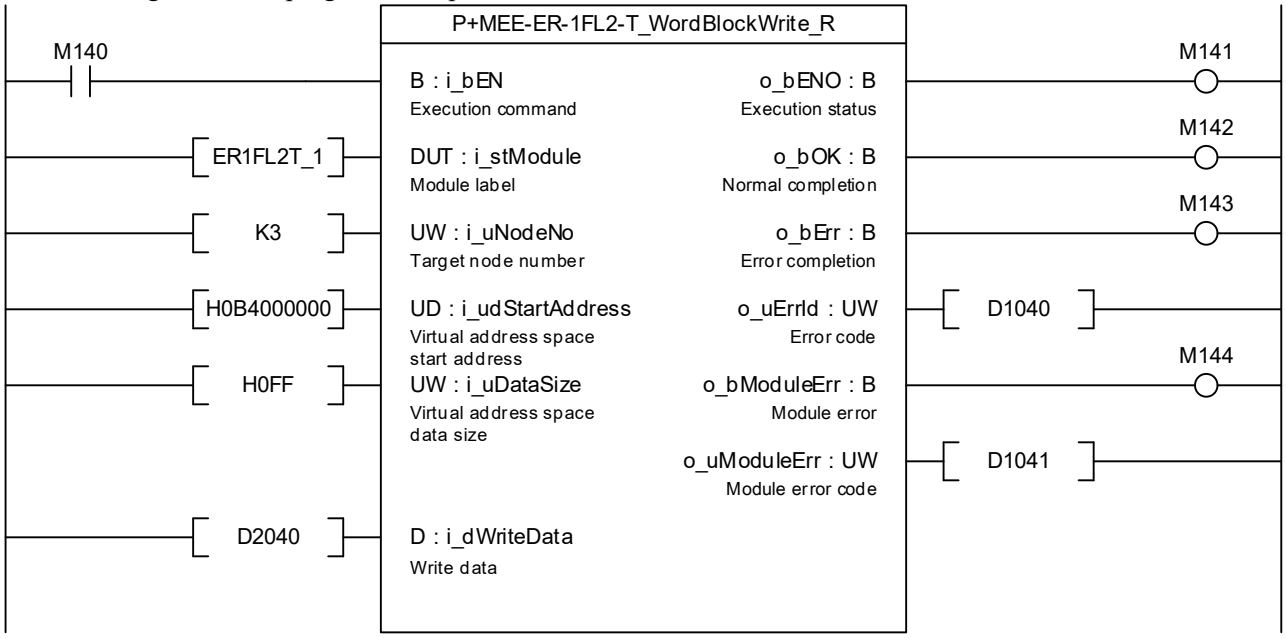


Appendix 2.3.5. P+MEE-007ER-1FL2-T_WordBlockWrite_R (Word block write)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Virtual address space start address	H0B4000000
Virtual address space data size	H08
Write data	D2040

The following shows the program example that writes the word block under the above conditions when M140 is turned on.

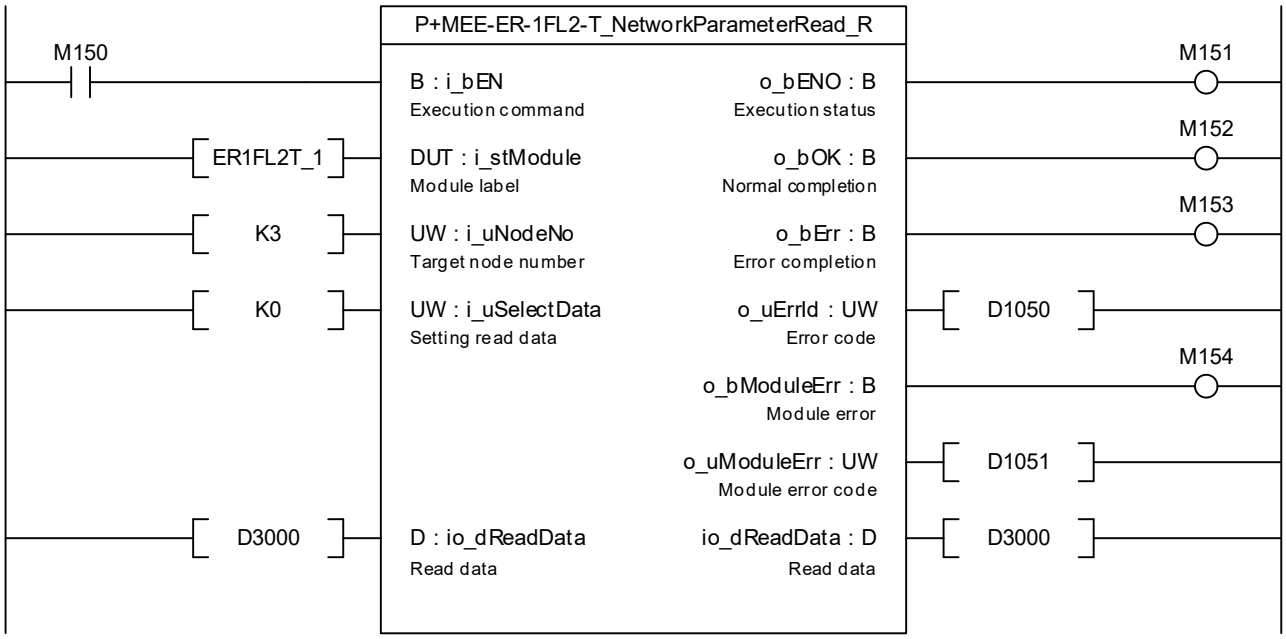


Appendix 2.3.6. P+MEE-007ER-1FL2-T_NetworkParameterRead_R (Network parameter/join node information read)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Setting read data	K0
Read data	D3000

The following shows the program example that reads the network parameter/join node under the above conditions when M150 is turned on.



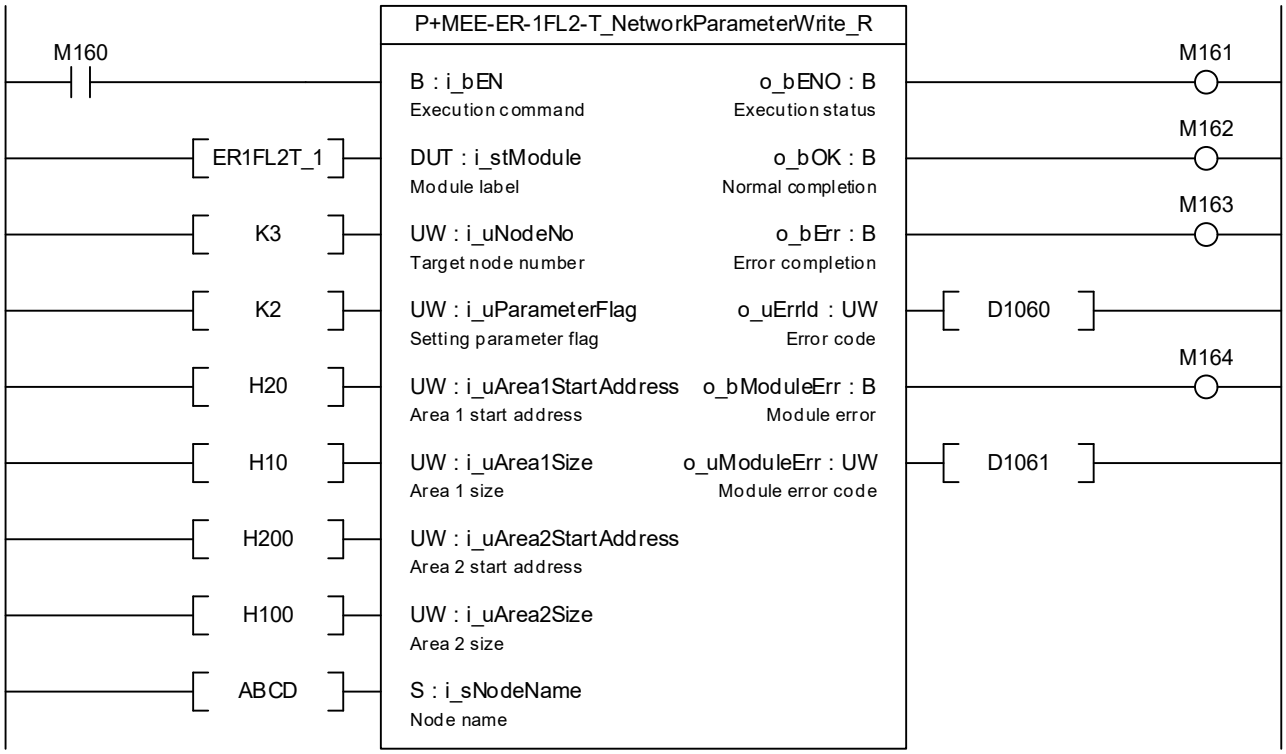
Appendix 2.3.7. P+MEE-007ER-1FL2-T_NetworkParameterWrite_R (Network parameter write)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Setting parameter flag	K2
Area 1 start address	H20
Area 1 size	H10
Area 2 start address	H200
Area 2 size	H100
Node name	ABCD

The following shows the program example that writes the network parameter under the above conditions when M160 is turned on.

* ER-1FL2-T can not be set as a target node.



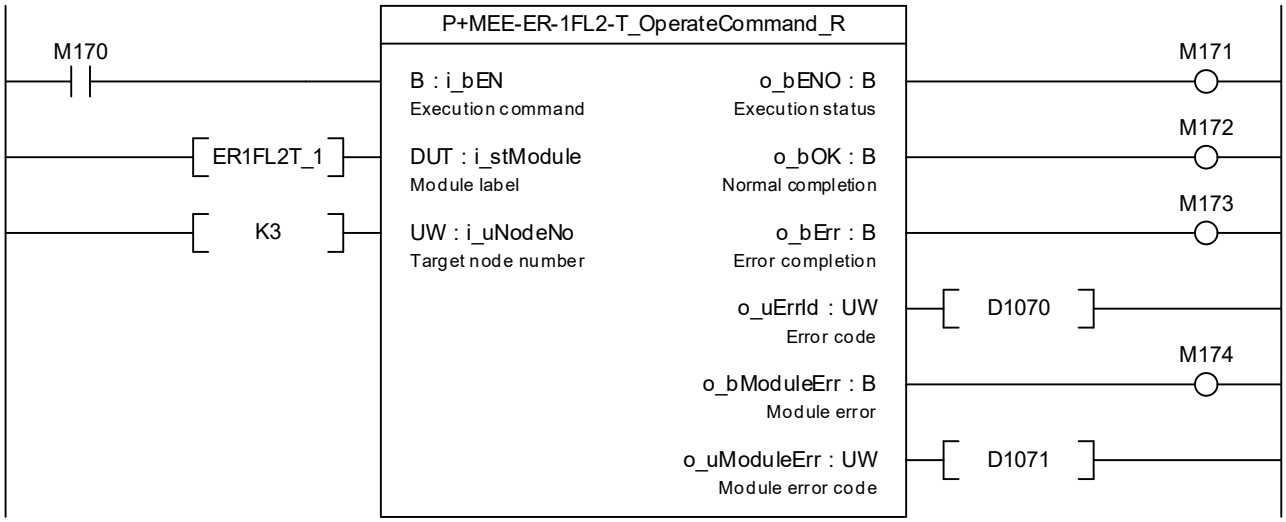
Appendix 2.3.8. P+MEE-007ER-1FL2-T_OperateCommand_R (Operate command)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3

The following shows the program example that executes the operation command under the above conditions when M170 is turned on.

* ER-1FL2-T can not be set as a target node.



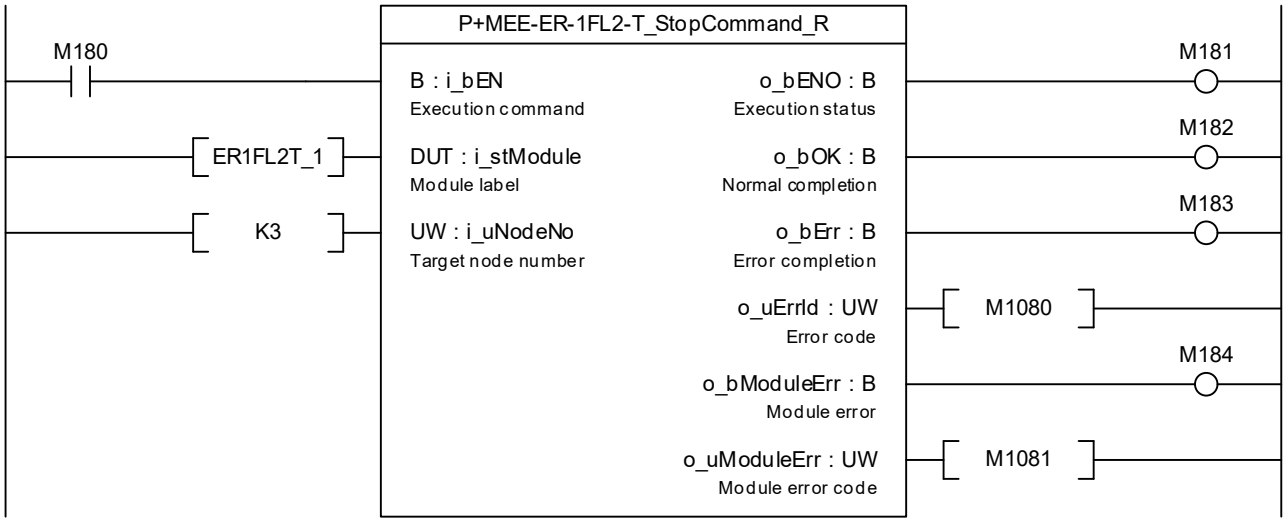
Appendix 2.3.9. P+MEE-007ER-1FL2-T_StopCommand_R (Stop command)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3

The following shows the program example that executes the stop command under the above conditions when M175 is turned on.

* ER-1FL2-T can not be set as a target node.

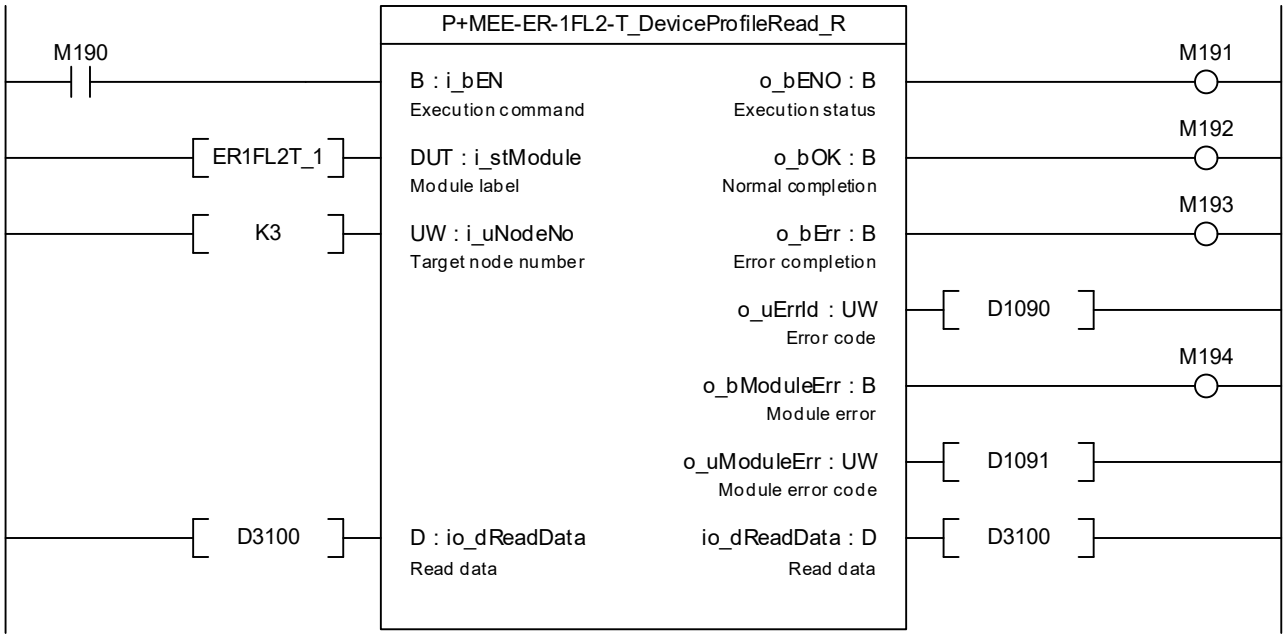


Appendix 2.3.10. P+MEE-007ER-1FL2-T_DeviceProfileRead_R (Device profile read)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Read data	D3100

The following shows the program example that reads the device profile under the above conditions when M180 is turned on.

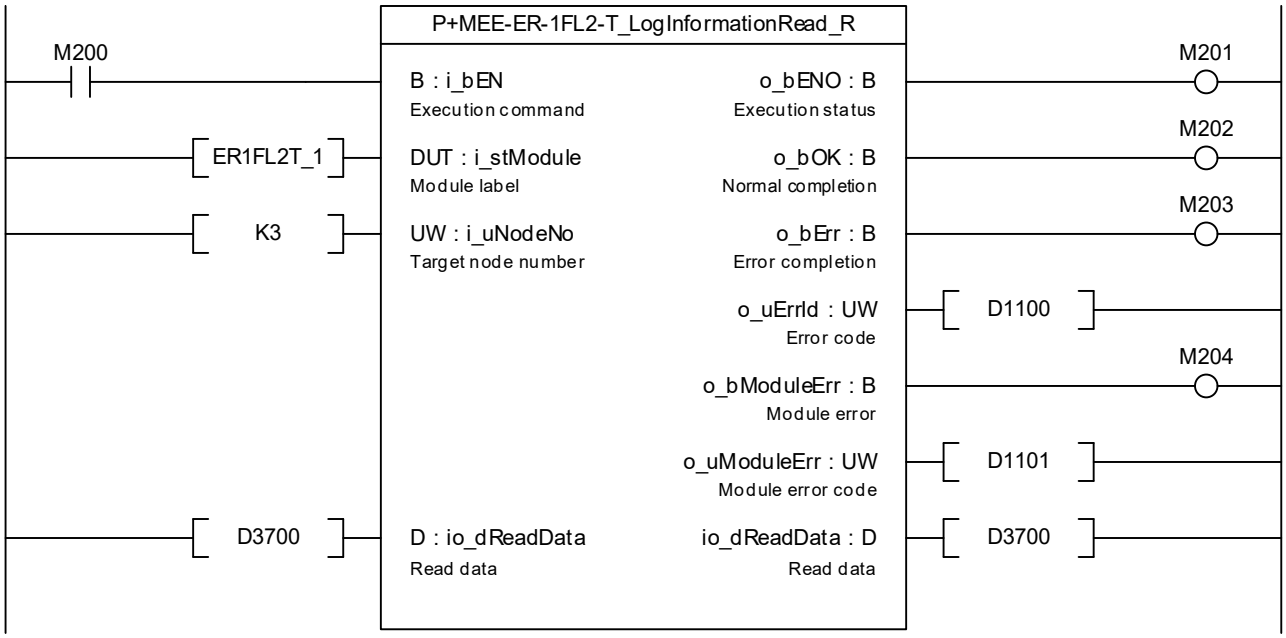


Appendix 2.3.11. P+MEE-007ER-1FL2-T_LogInformationRead_R (Log information read)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Read data	D3700

The following shows the program example that reads the log information under the above conditions when M190 is turned on.

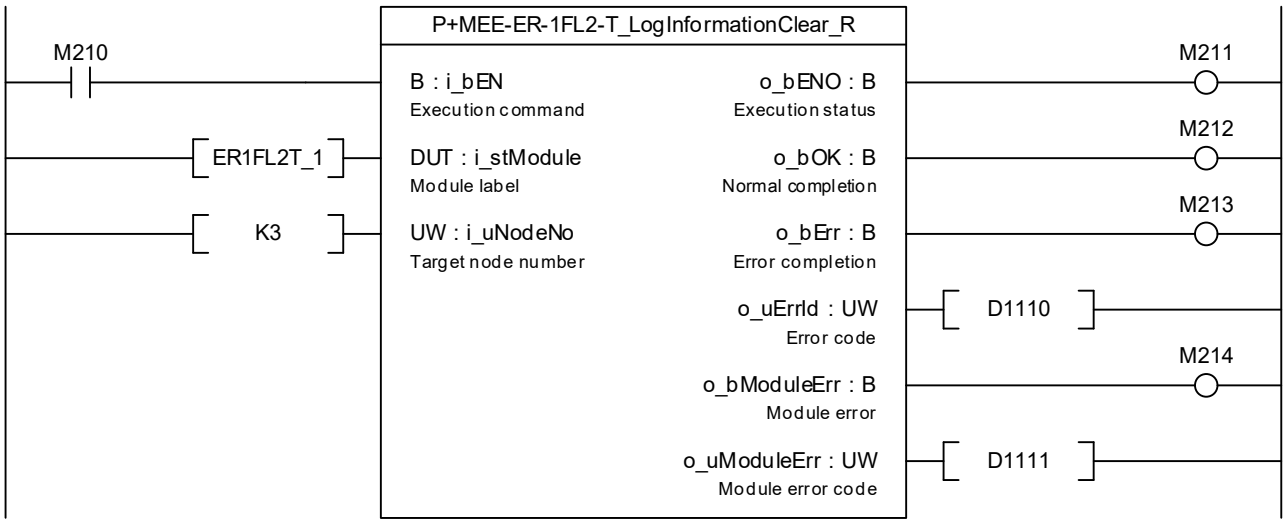


Appendix 2.3.12. P+MEE-007ER-1FL2-T_LogInformationClear_R (Log information clear)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3

The following shows the program example that clears the log information under the above conditions when M200 is turned on.

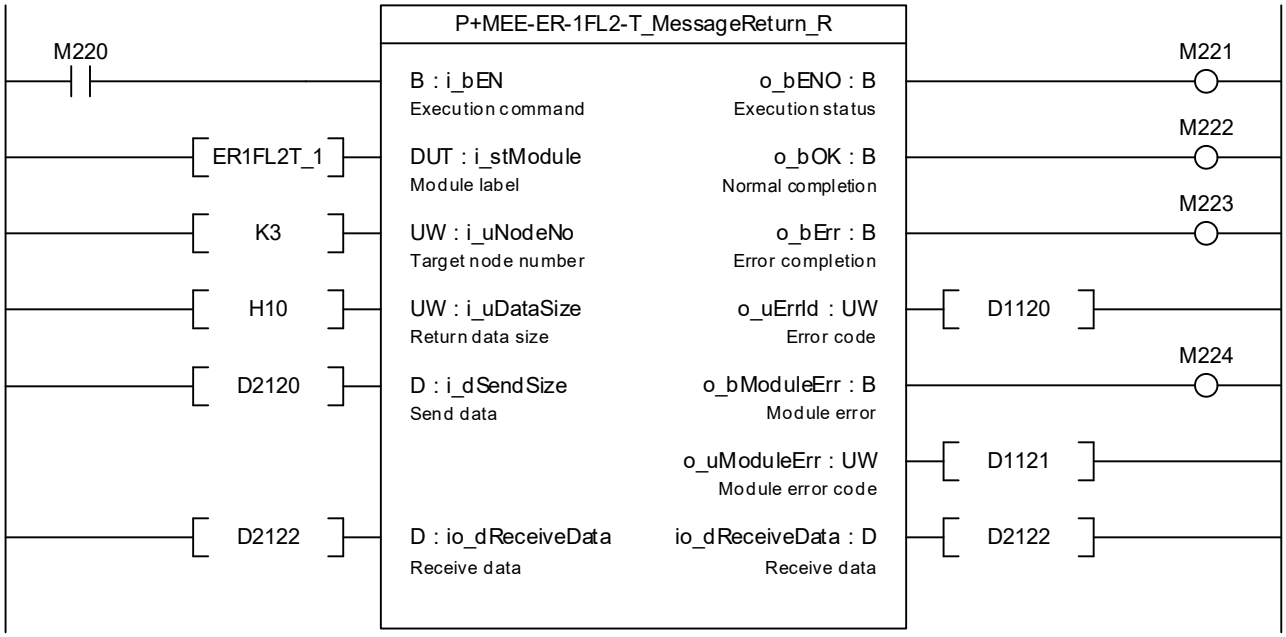


Appendix 2.3.13. P+MEE-007ER-1FL2-T_MessageReturn_R (Message return)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Return data size	H2
Send data	D2120
Receive data	D2122

The following shows the program example that returns the message under the above conditions when M210 is turned on.

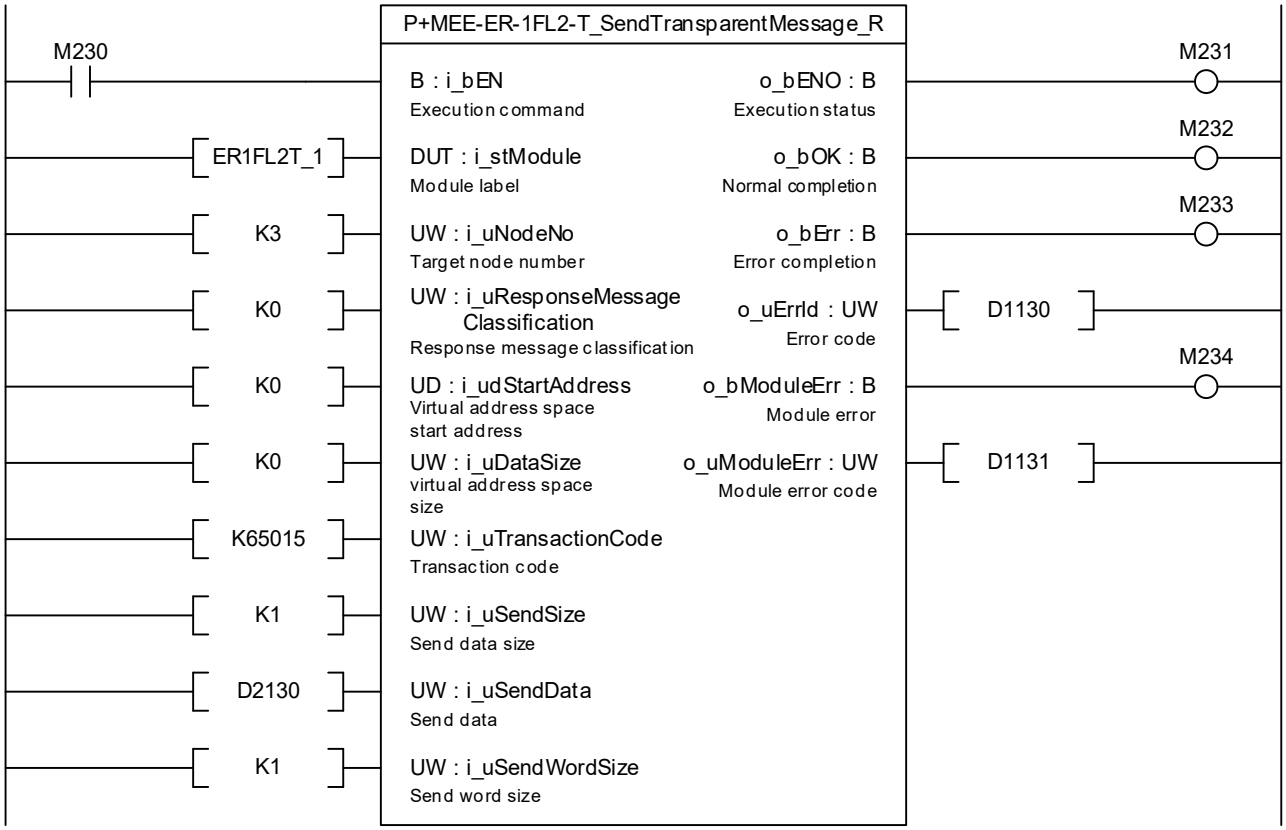


Appendix 2.3.14. P+MEE-007ER-1FL2-T_SendTransparentMessage_R (Transparent type message send)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Response message classification	K0
Virtual address space start address	K0
Virtual address space data size	K0
Transaction code	K65015
Send data size	K1
Send data	D2130
Send word size	K1

The following shows the program example that execute transparent type message transmission (send) under the above conditions when M220 is turned on.

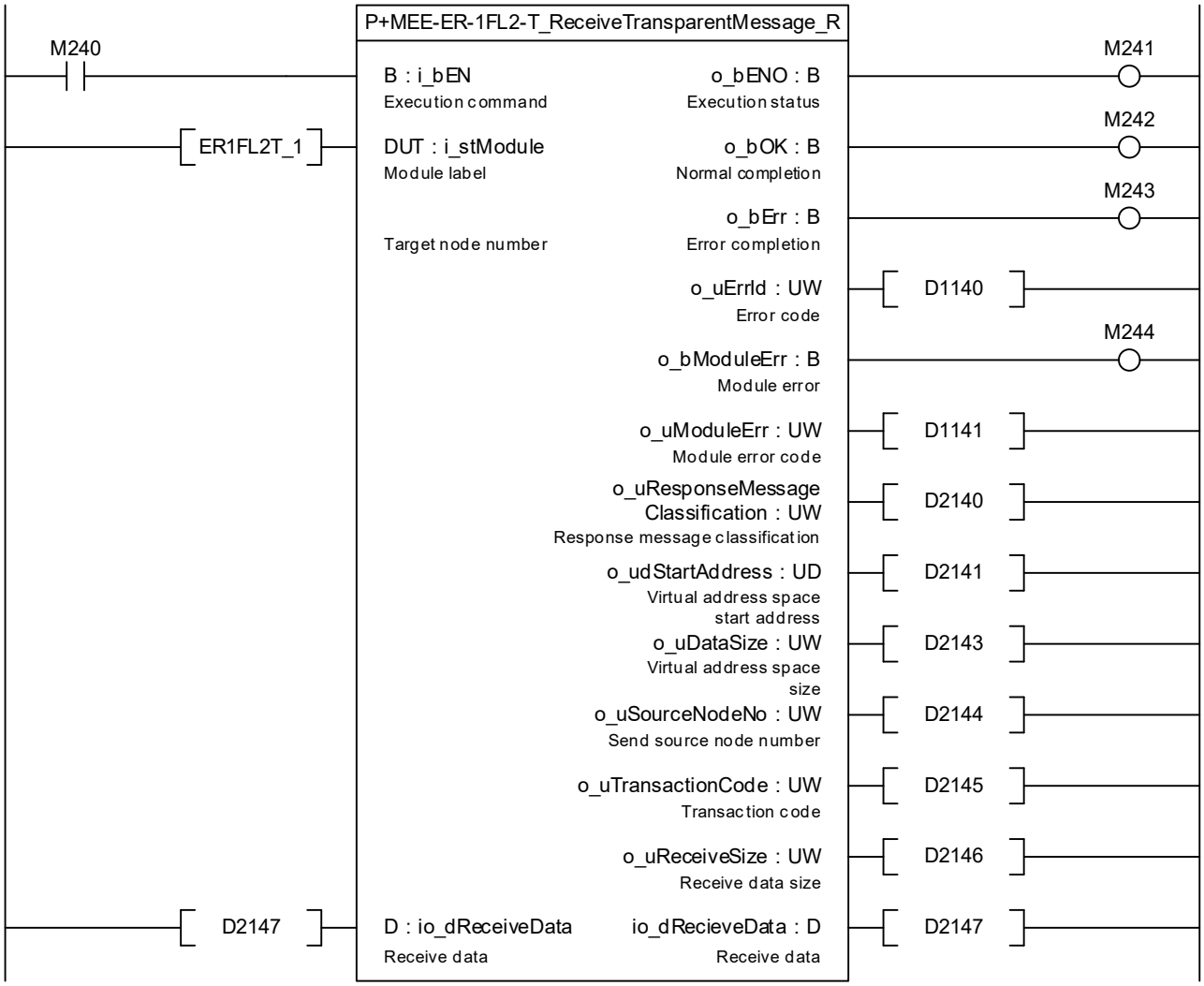


Appendix 2.3.15. P+MEE-007ER-1FL2-T_RecieveTransparentMessage_R (Receives the transparent type message)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Receive data	D2147

The following shows the program example that execute transparent type message transmission (receive) under the above conditions when M230 is turned on.

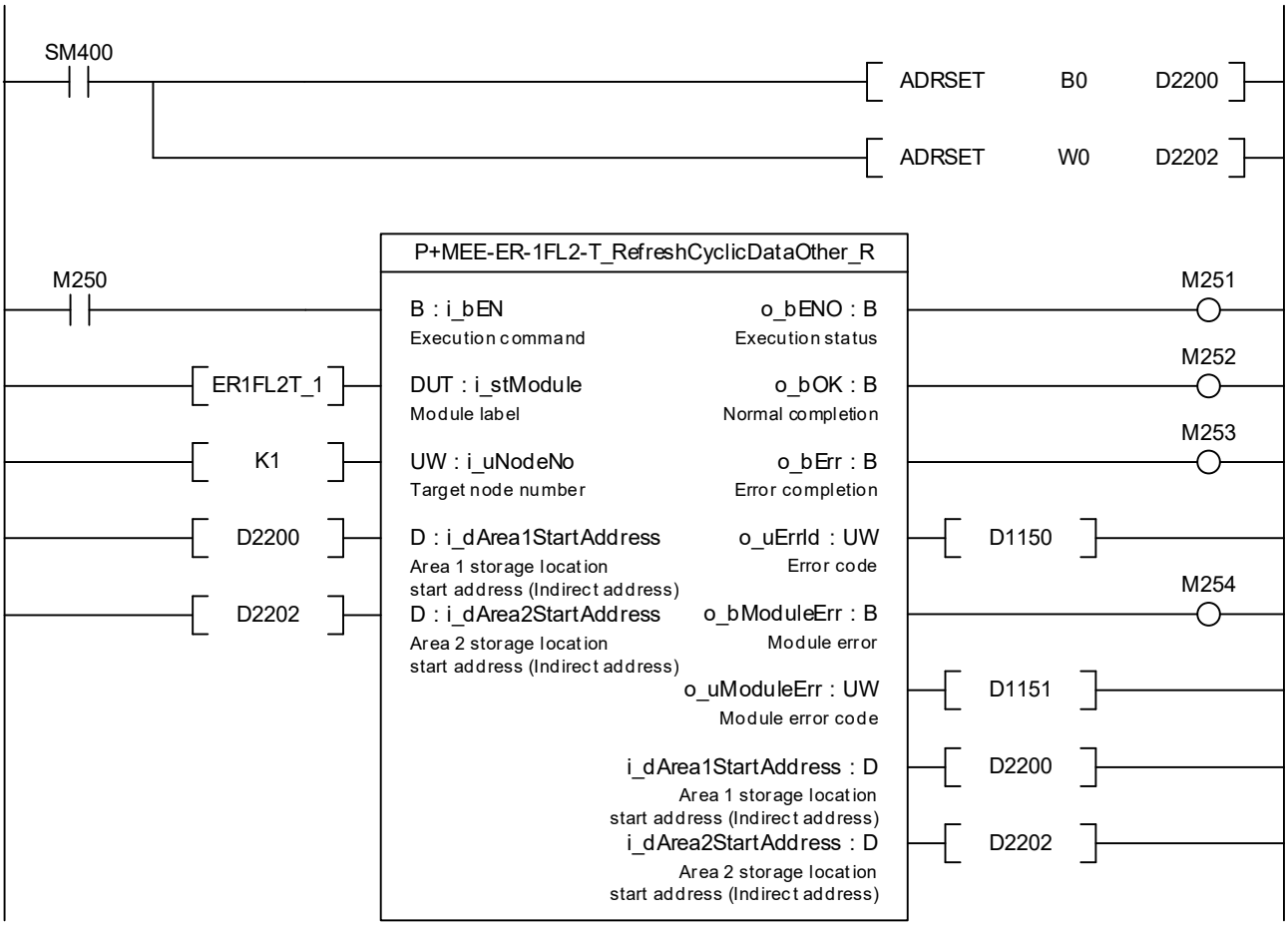


Appendix 2.3.16. P+MEE-007ER-1FL2-T_RefreshCyclicDataOther_R (Cyclic data refresh of other nodes)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K1
Area 1 storage location start address (Indirect address)	D2200
Area 2 storage location start address (Indirect address)	D2202

The following shows the program example that refreshes the cyclic data of other nodes under the above conditions when M240 is turned on.

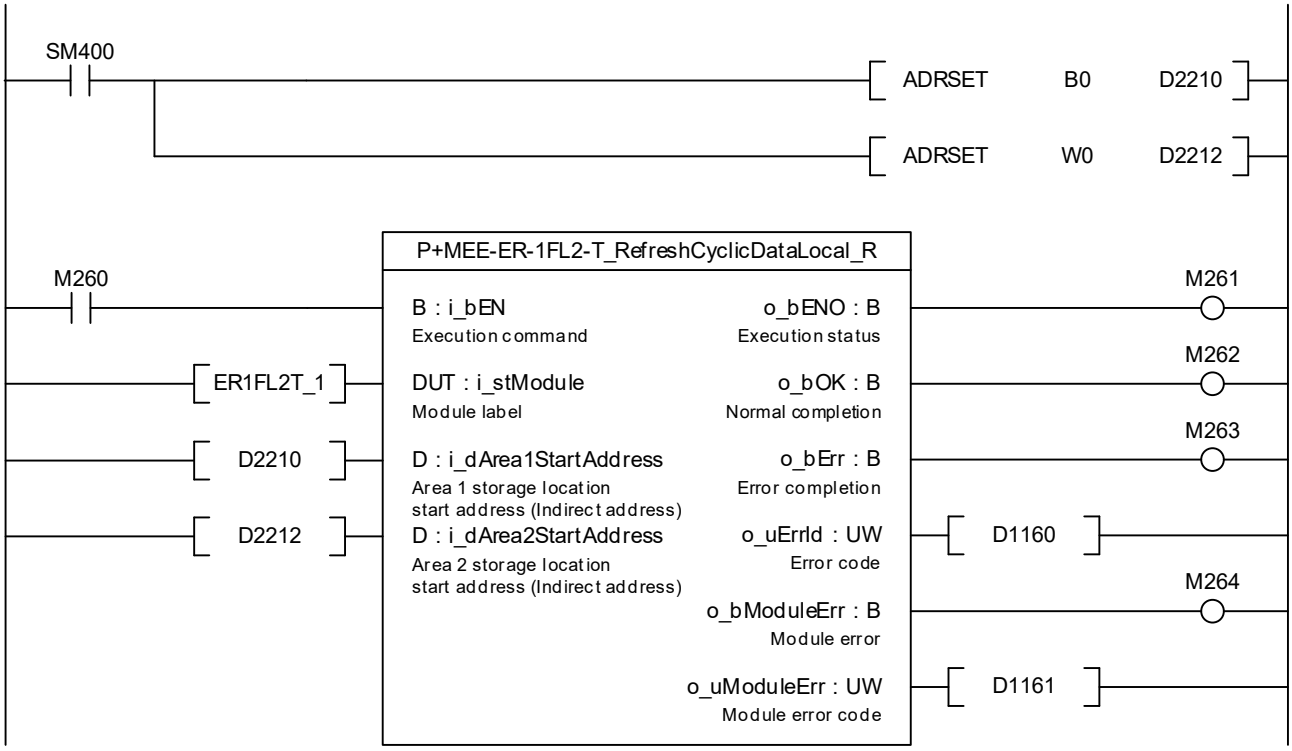


Appendix 2.3.17. P+MEE-007ER-1FL2-T_RefreshCyclicDataLocal_R (Cyclic data refresh of the local node)

Set the following values to the input labels for this example.

I/O items	Setting value
Module label	ER1FL2T_1
Target node number	K3
Area 1 storage location start address (Indirect address)	D2210
Area 2 storage location start address (Indirect address)	D2212

The following shows the program example that refreshes the local node under the above conditions when M250 is turned on.



Appendix 3. Error Code List

Error code (Hexadecimal)	Description	Action
H100	The FL-net Module is not READY.	Execute the FB again after the FL-net Module has completed setting up after power is applied.
H101	Token join state is release.	Review and correct the settings and then execute the FB again.
H110	Target node number is out of range.	Set the value within the following range. ・ 1 to 255 (Decimal) (*1) Review and correct the settings and then execute the FB again.
H111	Token monitoring time out time is out of range.	Set the value within the following range. ・ 1 to 255 (Decimal) Review and correct the settings and then execute the FB again.
H112	Minimum permissible frame interval is out of range.	Set the value within the following range. ・ 0 to 50 (Hexadecimal) Review and correct the settings and then execute the FB again.
H113	Area 1 start address is out of range.	Set the value within the following range. ・ 0 to 1FF (Hexadecimal) Review and correct the settings and then execute the FB again.
H114	Area 1 size is out of range.	Set the value within the following range. ・ 0 to 200 (Hexadecimal) Review and correct the settings and then execute the FB again.
H115	Area 2 start address is out of range.	Set the value within the following range. ・ 0 to 1FFF (Hexadecimal) Review and correct the settings and then execute the FB again.

*1 Node number 255 is a global specification for all nodes.
It can be specified when "Log information clear" and “Transparent type message (send)”.

Error code (Hexadecimal)	Description	Action
H116	Area 2 size is out of range.	Set the value within the following range. ・ 0 to 2000 (Hexadecimal) Review and correct the settings and then execute the FB again.
H117	Message data unit selection is out of range.	Set the value within the following range. ・ 0, 1 Review and correct the settings and then execute the FB again.
H120	The size of send data is out of range.	Set the value within the following range. ・ 1 to 1024 (Decimal) Review and correct the settings and then execute the FB again.
H121	Setting parameter flag is out of range.	Set the value within the following range. ・ 0 to 2 (Hexadecimal) Review and correct the settings and then execute the FB again.
H122	Read data setting is out of range.	Set the value within the following range. ・ 0 to 2 (Hexadecimal) Review and correct the settings and then execute the FB again.
H123	Virtual address space start address is out of range.	Review and correct the settings and then execute the FB again. When the error is notified from the external device, the error codes is stored in the module error code of the output label.
H124	Virtual address space data size is out of range.	Set the value within the following range. ・ 1 to 1024 (Decimal) Review and correct the settings and then execute the FB again. When the error is notified from the external device, the error codes is stored in the module error code of the output label.

Error code (Hexadecimal)	Description	Action
H200	The return value of the response message classification is an abnormal response.	Review and correct the settings and then execute the FB again.
H201	The return value of the response message classification is not supported.	The target node does not support the request command.
H202	The transaction code of the response message is invalid.	Review and correct the settings and then execute the FB again.

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