



Programmable Controller

MELSEC iQ-R
series

MELSEC iQ-R EtherNet/IP Function Block Reference

SAFETY PRECAUTIONS

(Read these precautions before using Mitsubishi Electric programmable controllers.)

Before using the products described under "Relevant products", please read this manual and the relevant manuals carefully and pay full attention to safety to handle the products 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 user's manual for the module used.

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.

CONDITIONS OF USE FOR THE PRODUCT

- (1) MELSEC programmable controller ("the PRODUCT") shall be used in conditions;
- i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
 - ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.
- (2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries. MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.
- ("Prohibited Application")
- Prohibited Applications include, but not limited to, the use of the PRODUCT in;
- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
 - Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
 - Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.
- Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTS are required. For details, please contact the Mitsubishi Electric representative in your region.
- (3) Mitsubishi Electric shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

INTRODUCTION

Thank you for purchasing the Mitsubishi Electric programmable controllers.

This manual describes the module function blocks for the relevant products listed below.

Before using the products, please read this manual and the relevant manuals carefully and develop familiarity with the functions and performance of the MELSEC iQ-R series programmable controller to handle the products correctly.

When applying the program examples provided in this manual to an actual system, ensure the applicability and confirm that it will not cause system control problems.

Please make sure that the end users read this manual.

Relevant products

Item	Model
CC-Link IE TSN Plus master/local module	RJ71GN11-EIP
EtherNet/IP network interface module	RJ71EIP91

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RELEVANT MANUALS

Manual name [manual number]	Description	Available form
MELSEC iQ-R EtherNet/IP Function Block Reference [BCN-P5999-0942] (this manual)	Specifications of the EtherNet/IP network interface module FBs and CC-Link IE TSN Plus master/local module FBs	e-Manual PDF
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual [SH-082472ENG]	Specifications, procedures before operation, system configuration, wiring, functions, parameter settings, programming, troubleshooting, I/O signals, and buffer memory of the CC-Link IE TSN Plus master/local module	Print book e-Manual PDF
MELSEC iQ-R EtherNet/IP Network Interface Module User's Manual (Application) [SH-081915ENG]	Functions, parameter settings, EtherNet/IP Configuration Tool, programming, troubleshooting, I/O signals, and buffer memory of the EtherNet/IP network interface module	Print book e-Manual PDF



e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.

e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- The hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.
- Sample programs can be copied to an engineering tool.

TERMS

Unless otherwise specified, this manual uses the following terms.

Term	Description
Engineering tool	A tool used for setting up programmable controllers, programming, debugging, and maintenance
Module label	A label that represents one of memory areas (I/O signals and buffer memory areas) specific to each module in a given character string. For the module used, GX Works3 automatically generates this label, which can be used as a global label.

1 OVERVIEW

The FBs listed in this reference are module FBs (for GX Works3) to be used in the EtherNet/IP™ function of the MELSEC iQ-R series network module.

1.1 Function Block (FB) List

This section lists the module FBs described in this reference. FB names end in the FB version information such as "_00A"; however, this reference manual leaves out it.

○: Available, —: Not available

Name	Description	CC-Link IE TSN Plus master/local module	EtherNet/IP network interface module
M+model_Class1GetInputData	Acquires input data of the specified connection via the Class1 communications.	○	○
M+model_Class1SetOutputData	Sets output data of the specified connection via the Class1 communications.	○	○
M+model_UCMMOriginator_ReadTagData	Acquires data from the tag of the specified external device via the UCMM tag communications.	○	—
M+model_UCMMOriginator_WriteTagData	Sets data to the tag of the specified external device via the UCMM tag communications.	○	—
M+model_Class3Originator_ReadTagData	Acquires data from the tag of the specified external device via the Class3 tag communications.	○	—
M+model_Class3Originator_WriteTagData	Sets data to the tag of the specified external device via the Class3 tag communications.	○	—
M+model_UCMMOriginator_MessageSend	Sends messages to the specified external device via the UCMM message communications.	○	—
M+model_Class3Originator_MessageSend	Sends messages to the specified external device via the Class3 message communications.	○	—

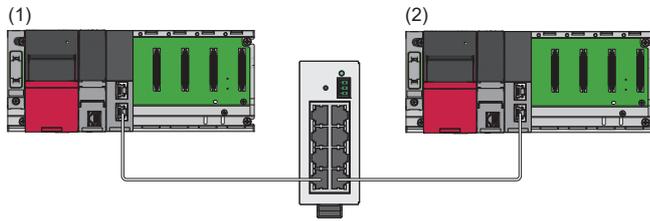
1.2 How to Obtain

Module FBs are installed at the same time as installing GX Works3; however, the module FBs in this reference may not be installed with some versions of GX Works3. It is recommended to install the latest version of GX Works3.

1.3 System Configuration

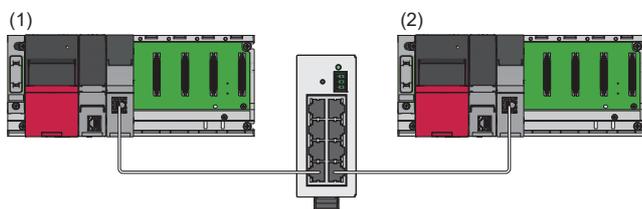
The following shows the system configuration for using the module FBs in this reference.

CC-Link IE TSN Plus master/local module FB



- (1) Originator
- (2) Target

EtherNet/IP network interface module FB



- (1) Originator
- (2) Target

2 CC-Link IE TSN Plus MASTER/LOCAL MODULE FB

2.1 M+model_Class1GetInputData

Name

M+RJ71GN11_SE_EIP_Class1GetInputData

Overview

Item	Description
Functional overview	Acquires input data of the specified connection via the Class1 communications.
Symbol	<pre> graph LR subgraph Symbol direction LR subgraph Inputs I1["(1) B: i_bEN"] I2["(2) DUT: i_stModule"] I3["(3) UW: i_uConnectionNo"] end subgraph Outputs O4["(4) o_bENO: B"] O5["(5) o_bOK: B"] O6["(6) o_bErr: B"] O7["(7) o_uErrId: UW"] O8["(8) o_uStatusId_IN: UD"] O9["(9) o_uStatusId_OUT: UD"] O10["(10) o_uInputData: UW"] end end </pre>

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_uConnectionNo	Connection number	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the connection number to acquire input data.*1

*1 It is recommended not to set the connection number for which auto refresh is enabled. For a program example for a connection for which auto refresh is enabled, refer to the following.

MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

Output arguments

No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.*1	Off
(6)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.*1	Off
(7)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(8)	o_uStatusId_IN	Error code on the input side for connection communication error	Double word [unsigned]/bit string [32 bits]	An error code on the input side is stored when a connection communication error has occurred (when 200H is stored in o_uErrId).	0

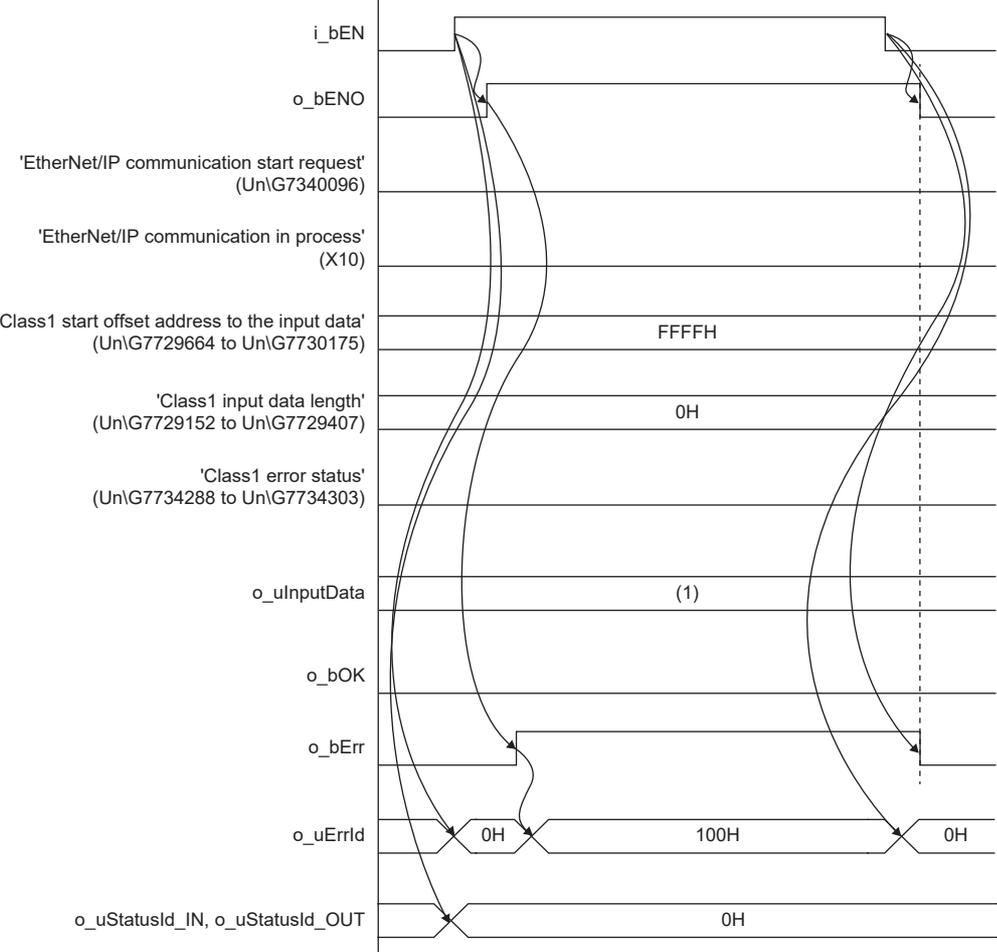
No.	Variable name	Name	Data type	Description	Default value
(9)	o_uStatusId_OUT	Error code on the output side for connection communication error	Double word [unsigned]/bit string [32 bits]	An error code on the output side is stored when a connection communication error has occurred (when 200H is stored in o_uErrId).	0
(10)	o_uInputData	Input data storage device	Word [unsigned]/bit string [16 bits]	The start address of the device for storing input data is stored.	0

*1 "Completed successfully" and "Completed with an error" do not turn on until the first communication processing is completed. (Request rejection made by the external device and timeout due to an absence of the external device are included.) If either of them do not turn on within 10 seconds after the execution command is turned on, check that the set value in the buffer memory, for which any change is prohibited as described in precautions, has not been changed.

FB details

Item	Description
Available device	Module RJ71GN11-EIP
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	344 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<ul style="list-style-type: none"> When i_bEN (execution command) is turned on, input data of the specified connection is acquired via the Class1 communications. While i_bEN (execution command) and o_bOK (completed successfully) are on, input data is continuously stored in o_uInputData (input data storage device). <p>It is recommended not to use this FB for the connection number for which auto refresh is enabled. For a program example for a connection for which auto refresh is enabled, refer to the following.</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>
FB compilation method	Macro type
FB operation	Any-time execution type

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed successfully (when the module recovers from the error that had occurred and persisted for a certain period during communications)</p> <p>(1) Set value (2) The last value is held. (3) The input data is stored. (4) Error code</p>

Item	Description
Timing chart of I/O signals	<p data-bbox="335 181 1412 208">• When the processing has been completed with an error (when i_uConnectionNo (connection number) is out of the setting range)</p>  <p data-bbox="335 1198 534 1220">(1) The last value is held.</p>

Item	Description
<p>Timing chart of I/O signals</p>	<p>• When the processing has been completed with an error (when no input data is assigned to the target connection)</p> <p>(1) FFFFH (not changed) (2) 0H (not changed) (3) The last value is held.</p>
<p>Precautions</p>	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for connection communication error) are cleared to 0. • Turning off i_bEN (execution command) does not make 'EtherNet/IP communication start request' (Un\G7340096) 0H (stop request). To stop EtherNet/IP communications, turn off i_bEN (execution command) of all the module FBs of the RJ71GN11-EIP in the program, and then set 'EtherNet/IP communication start request' (Un\G7340096) to 0H (stop request). • Do not change the values set in the following buffer memory areas. <ul style="list-style-type: none"> 'Class1 input data length' (Un\G7729152 to Un\G7729407) 'Class1 start offset address to the input data' (Un\G7729664 to Un\G7730175) • It is recommended not to use this FB for the connection number for which auto refresh is enabled. If it is used, apart from the input data stored in the device specified as the output argument, the same input data will be set to the target device for auto refresh.

Error codes

Error code	Description	Action
100H	The i_uConnectionNo (connection number) value is out of the setting range.	Set the i_uConnectionNo (connection number) value within the range from 1 to 256.*1
110H	Input data is not assigned to the target connection.	Review the settings for "EtherNet/IP Configuration" of GX Works3. Check that the value set in the buffer memory, for which any change is prohibited as described in precautions, has not been changed.*2
111H	A connection assigned as a reserved station was used.	A connection assigned as a reserved station was used. Review the value set for i_uConnectionNo (connection No.) or review the settings in "EtherNet/IP Configuration" of GX Works3.
200H	Communication error has occurred in the target connection.	Check the value stored in o_uStatusId (error code for connection communication error) by referring to the following.  MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*1 It is recommended not to set the connection number for which auto refresh is enabled. For a program example for a connection for which auto refresh is enabled, refer to the following.

 MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*2 If the input data start offset address value is changed to FFFFFFFFH, the input data size is changed to 0, or the input data size is set to 723 or more, it will be deemed that there is no connection assignment.

2.2 M+model_Class1SetOutputData

Name

M+RJ71GN11_SE_EIP_Class1SetOutputData

Overview

Item	Description																																				
Functional overview	Sets output data of the specified connection via the Class1 communications.																																				
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_Class1SetOutputData</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 15%;"></td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: left;">o_bENO: B</td> <td style="width: 5%; text-align: right;">(5)</td> </tr> <tr> <td>(2) —</td> <td>DUT: i_stModule</td> <td></td> <td></td> <td>o_bOK: B</td> <td>(6)</td> </tr> <tr> <td>(3) —</td> <td>UW: i_uConnectionNo</td> <td></td> <td></td> <td>o_bErr: B</td> <td>(7)</td> </tr> <tr> <td>(4) —</td> <td>UW: i_uOutputData</td> <td></td> <td></td> <td>o_uErrId: UW</td> <td>(8)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>o_uStatusId_IN: UD</td> <td>(9)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>o_uStatusId_OUT: UD</td> <td>(10)</td> </tr> </table> </div>	(1) —	B: i_bEN			o_bENO: B	(5)	(2) —	DUT: i_stModule			o_bOK: B	(6)	(3) —	UW: i_uConnectionNo			o_bErr: B	(7)	(4) —	UW: i_uOutputData			o_uErrId: UW	(8)					o_uStatusId_IN: UD	(9)					o_uStatusId_OUT: UD	(10)
(1) —	B: i_bEN			o_bENO: B	(5)																																
(2) —	DUT: i_stModule			o_bOK: B	(6)																																
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				o_uStatusId_IN: UD	(9)																																
				o_uStatusId_OUT: UD	(10)																																

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_uConnectionNo	Connection number	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the connection number for which output data is set.*1
(4)	i_uOutputData	Output data storage device	Word [unsigned]/bit string [16 bits]	—	Specify the start address of the device storing the output data.

*1 Do not set the connection number for which auto refresh is enabled. For a program example for a connection for which auto refresh is enabled, refer to the following.

MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.*1	Off
(7)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.*1	Off
(8)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(9)	o_uStatusId_IN	Error code on the input side for connection communication error	Double word [unsigned]/bit string [32 bits]	An error code on the input side is stored when a connection communication error has occurred (when 200H is stored in o_uErrId (error code)).	0
(10)	o_uStatusId_OUT	Error code on the output side for connection communication error	Double word [unsigned]/bit string [32 bits]	An error code on the output side is stored when a connection communication error has occurred (when 200H is stored in o_uErrId (error code)).	0

*1 "Completed successfully" and "Completed with an error" do not turn on until the first communication processing is completed. (Request rejection made by the external device and timeout due to an absence of the external device are included.) If either of them do not turn on within 10 seconds after the execution command is turned on, check that the set value in the buffer memory, for which any change is prohibited as described in precautions, has not been changed.

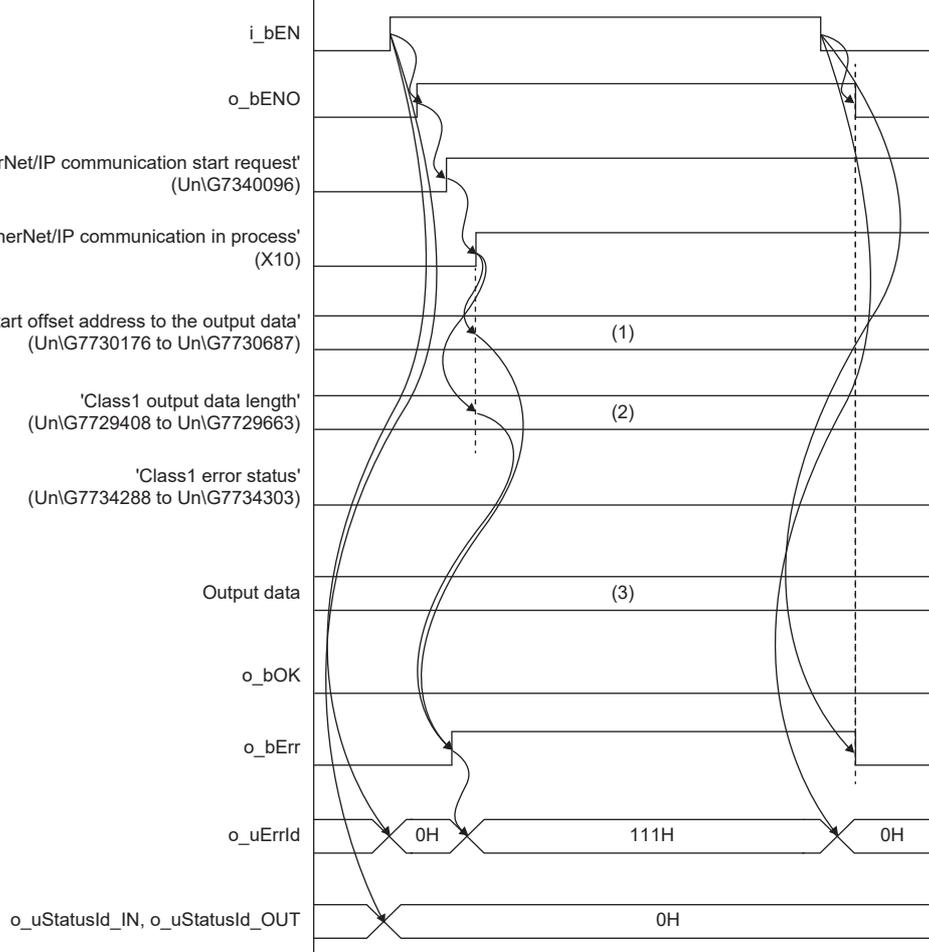
If the specified connection is operating as an adapter, target, or producer, check the devices on the scanner, originator, and consumer side and then check that the communication start process has not failed.

FB details

Item	Description
Available device	Module RJ71GN11-EIP
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	344 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<ul style="list-style-type: none"> When i_bEN (execution command) is turned on, output data of the specified connection is set via the Class1 communications. While i_bEN (execution command) and o_bOK (completed successfully) are on, output data is continuously updated to the value stored in i_uOutputData (output data storage device). <p>Do not use this FB for the connection number for which auto refresh is enabled. For a program example for a connection for which auto refresh is enabled, refer to the following.</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>
FB compilation method	Macro type
FB operation	Any-time execution type

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed successfully (when the module recovers from the error that had occurred and persisted for a certain period during communications)</p> <p>(1) Set value (2) The last value is held. (3) Values are updated to the values stored in i_uOutputData (output data storage device). (4) Error code</p>

Item	Description
Timing chart of I/O signals	<p data-bbox="335 181 1412 208">• When the processing has been completed with an error (when i_uConnectionNo (connection number) is out of the setting range)</p> <p data-bbox="335 1205 534 1227">(1) The last value is held.</p>

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed with an error (when no output data is assigned to the target connection)</p>  <p>(1) FFFFH (not changed) (2) 0H (not changed) (3) The last value is held.</p>
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for connection communication error) are cleared to 0. • Turning off i_bEN (execution command) does not make 'EtherNet/IP communication start request' (UnG7340096) 0H (stop request). To stop EtherNet/IP communications, turn off i_bEN (execution command) of all the module FBs of the RJ71GN11-EIP in the program, and then set 'EtherNet/IP communication start request' (UnG7340096) to 0H (stop request). • If the connection for which i_uConnectionNo (connection number) is specified is operating as an adapter, target, or producer and there is no command from the scanner, originator, or consumer side; communication does not reach due to network disconnection or other problems; or the command is rejected due to parameter mismatch or for another reason, o_bOK (completed successfully) and o_bErr (completed with an error) do not turn on. If either of them do not turn on within 10 seconds after i_bEN (execution command) is turned on, check the status of the external device. • Do not change the values set in the following buffer memory areas. 'Class1 output data length' (UnG7729408 to UnG7729663) 'Class1 start offset address to the output data' (UnG7730176 to UnG7730687) • This FB cannot be used for connections for which auto refresh is enabled in "Refresh Setting" of GX Works3 module parameters. If it is used, integrity cannot be maintained in the data sent between the data of the device that is the target of auto refresh and i_uOutputData (output data storage device) specified as the input argument. (MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual)

Error codes

Error code	Description	Action
100H	The i_uConnectionNo (connection number) value is out of the setting range.	Set the i_uConnectionNo (connection number) value within the range from 1 to 256. ^{*2}
110H	Output data is not assigned to the target connection.	Review the settings for "EtherNet/IP Configuration" of GX Works3. Check that the value set in the buffer memory, for which any change is prohibited as described in precautions, has not been changed. ^{*1}
111H	A connection assigned as a reserved station was used.	A connection assigned as a reserved station was used. Review the value set for i_uConnectionNo (connection No.) or review the settings in "EtherNet/IP Configuration" of GX Works3.
200H	Communication error has occurred in the target connection.	Check the value stored in o_uStatusId (error code for connection communication error) by referring to the following.  MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*1 If the input data start offset address value is changed to FFFFFFFFH, the input data size is changed to 0, or the input data size is set to 723 or more, it will be deemed that there is no connection assignment.

*2 In "Refresh Setting" of GX Works3 module parameters, do not set the connection number for which auto refresh is enabled. For a program example for a connection for which auto refresh is enabled, refer to the following.

 MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

2.3 M+model_UCMMOriginator_ReadTagData

Name

M+RJ71GN11_SE_EIP_UCMMOriginator_ReadTagData

Overview

Item	Description																																																												
Functional overview	Acquires data from the tag of the specified external device via the UCMM tag communications.																																																												
Symbol	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_UCMMOriginator_ReadTagData</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 10%;"></td> <td style="width: 10%;">o_bENO: B</td> <td style="width: 10%;">(10)</td> </tr> <tr> <td>(2) —</td> <td>DUT: i_stModule</td> <td></td> <td>o_bOK: B</td> <td>(11)</td> </tr> <tr> <td>(3) —</td> <td>UW: i_u2TargetAddress</td> <td></td> <td>o_bErr: B</td> <td>(12)</td> </tr> <tr> <td>(4) —</td> <td>S: i_snTagName</td> <td></td> <td>o_uErrId: UW</td> <td>(13)</td> </tr> <tr> <td>(5) —</td> <td>UW: i_uDataType</td> <td></td> <td>o_uStatusId: UW</td> <td>(14)</td> </tr> <tr> <td>(6) —</td> <td>UW: i_uDataSize</td> <td></td> <td>o_uDataType: UW</td> <td>(15)</td> </tr> <tr> <td>(7) —</td> <td>UW: i_uRPI</td> <td></td> <td>o_uDataSize: UW</td> <td>(16)</td> </tr> <tr> <td>(8) —</td> <td>UW: i_uTrigger</td> <td></td> <td>o_uReadData: UW</td> <td>(17)</td> </tr> <tr> <td>(9) —</td> <td>UW: i_uRequestNo</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>pbi_unPathSegment</td> <td>(18)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>pbo_u2CIPResponseCode</td> <td>(19)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>pbo_udRequestCompleteCount</td> <td>(20)</td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B	(10)	(2) —	DUT: i_stModule		o_bOK: B	(11)	(3) —	UW: i_u2TargetAddress		o_bErr: B	(12)	(4) —	S: i_snTagName		o_uErrId: UW	(13)	(5) —	UW: i_uDataType		o_uStatusId: UW	(14)	(6) —	UW: i_uDataSize		o_uDataType: UW	(15)	(7) —	UW: i_uRPI		o_uDataSize: UW	(16)	(8) —	UW: i_uTrigger		o_uReadData: UW	(17)	(9) —	UW: i_uRequestNo							pbi_unPathSegment	(18)				pbo_u2CIPResponseCode	(19)				pbo_udRequestCompleteCount	(20)
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Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_u2TargetAddress	IP address	Word [unsigned]/bit string [16 bits] (0..1)	—	Specify the IP address of the external device.
(4)	i_snTagName	Tag name	Character string (255)	—	Specify the tag name of the external device to be read.
(5)	i_uDataType	Read request tag data type	Word [unsigned]/bit string [16 bits]	00C3H 00C4H	Specify the data type of the tag to be read. • 00C3H: INT (1 word) • 00C4H: DINT (2 words)
(6)	i_uDataSize	Read request data size	Word [unsigned]/bit string [16 bits]	1 to 249	Specify the number of data pieces to be read. The number of data pieces to be read is calculated by data type × number of data pieces. ■Scope • INT (00C3H): 1 to 249 • DINT (00C4H): 1 to 124
(7)	i_uRPI	RPI	Word [unsigned]/bit string [16 bits]	200 to 60000	■When Trigger specification is set to Cyclic Specify the send cycle. (Unit: millisecond) ■When Trigger specification is set to Application Trigger Setting is not required. (The value is ignored.)
(8)	i_uTrigger	Trigger specification	Word [unsigned]/bit string [16 bits]	0000H 0010H	Specify the send trigger. • 0000H: Application Trigger • 0010H: Cyclic

No.	Variable name	Name	Data type	Scope	Description
(9)	i_uRequestNo	Request No.	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the request No. to be used by RJ71GN11-EIP.*1

*1 A request No. which matches the connection number for which Class3 communications parameters are set in "EtherNet/IP Configuration" of GX Works3 cannot be specified. Specify a request No. for which Class3 communications parameters are not set.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(10)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(11)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.	Off
(12)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.	Off
(13)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(14)	o_uStatusId	Error code for communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)).	0
(15)	o_uDataType	Read tag data type	Word [unsigned]/bit string [16 bits]	The data type that is set for a tag received from the external device is stored.*1 • 00C3H: INT (1 word) • 00C4H: DINT (2 words)	0
(16)	o_uDataSize	Read data size	Word [unsigned]/bit string [16 bits]	The size of the read data is stored.*2	0
(17)	o_uReadData	Read data storage device	Word [unsigned]/bit string [16 bits]	Data (read data size × type size for the read tag data type) that is read from a tag of the external device is stored from the start of the specified device.	0

*1 It may differ from the read request tag data type because the data type of the tag read from the external device is set.

*2 The unit of data pieces is to be 1 word when the read tag data type is INT, and 2 words when DINT.

■Operation parameters

No.	Variable name	Name	Data type	Scope	Description	Default value
(16)	pbi_unPathSegment	PathSegment	Word [unsigned]/bit string [16 bits]	—	Specify the Path Segment data to be given at connection during UCMM tag communications. Specify 0 when not using it.*1*2	0001H

*1 Specify 0 to access Class3 tag or UCMM tag that is set to the module.

*2 For details on this parameter, refer to the following.

 MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

■Public variables

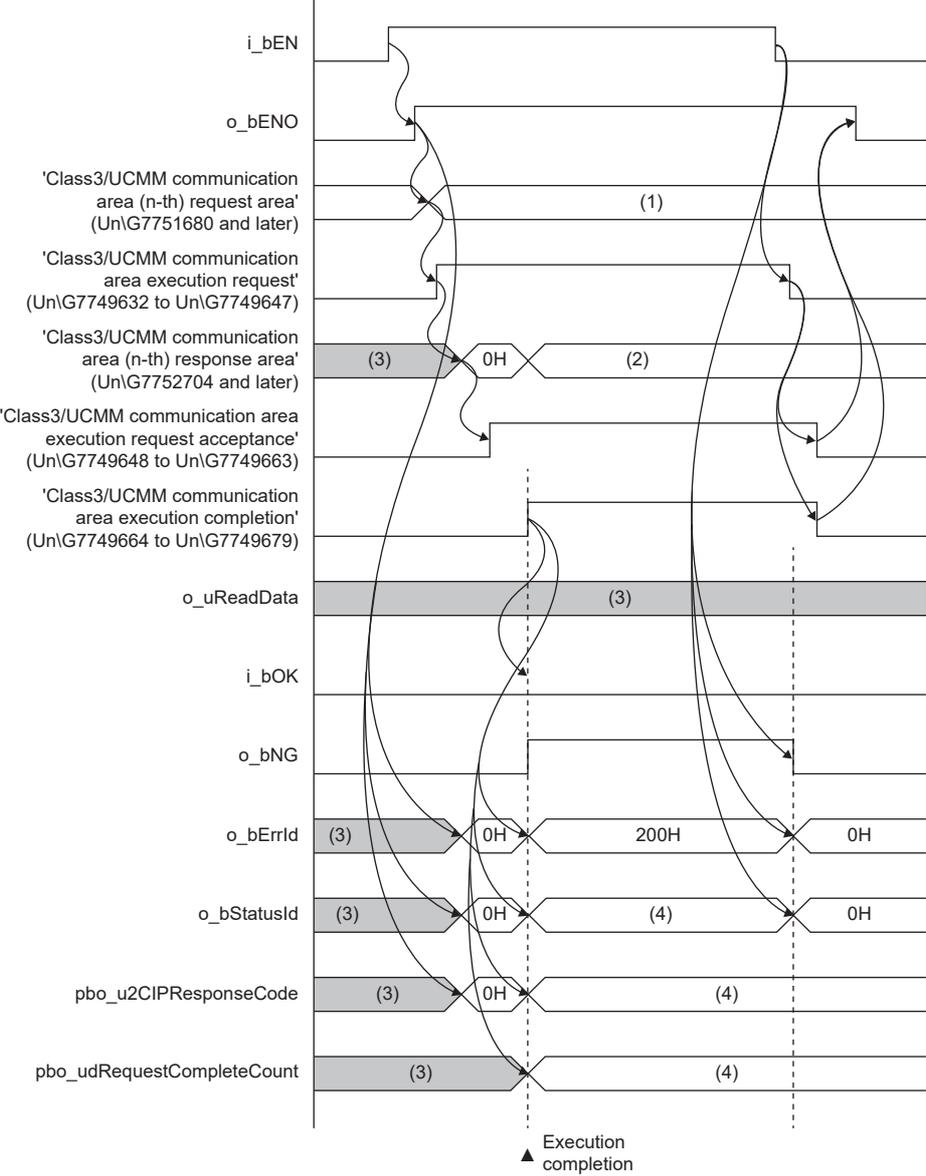
No.	Variable name	Name	Data type	Description	Default value
(17)	pbo_u2CIPResponseCode	CIP response code	Word [unsigned]/bit string [16 bits] (0..1)	CIP response code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)). For details on CIP response codes, refer to the manual of the external device that sends response commands.	0
(18)	pbo_udRequestCompleteCount	Number of completed requests	Double word [unsigned]/bit string [32 bits]	The number of completed requests for UCMM tag communications is stored.	0

FB details

Item	Description
Available device	Module RJ71GN11-EIP
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	724 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<ul style="list-style-type: none"> ■When Trigger specification is set to Cyclic <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, data is periodically acquired from the tag of the specified external device via the UCMM tag communications. • While i_bEN (execution command) and o_bOK (completed successfully) are on, read data is continuously stored in o_uReadData (read data storage device). ■When Trigger specification is set to Application Trigger <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, data is acquired from the tag of the specified external device via the UCMM tag communications.
FB compilation method	Macro type
FB operation	Any-time execution type

Item	Description
Timing chart of I/O signals	<ul style="list-style-type: none"> Completed successfully when Trigger specification is set to Cyclic (When the module recovers from the error that had occurred and persisted for a certain period during communications)
	<p>(1) Set value (2) Read results/read data (3) The last value is held. (4) Read data is stored. (5) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Application Trigger</p> <p>(1) Set value (2) Read results/read data (3) The last value is held. (4) Read data is stored. (5) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p data-bbox="331 181 1316 208">• Completed with an error when Trigger specification is set to Application Trigger (when a communication error occurs)</p>  <p data-bbox="331 392 630 459">'Class3/UCMM communication area (n-th) request area' (Un\G7751680 and later) (1)</p> <p data-bbox="331 474 630 542">'Class3/UCMM communication area execution request' (Un\G7749632 to Un\G7749647)</p> <p data-bbox="331 557 630 624">'Class3/UCMM communication area (n-th) response area' (Un\G7752704 and later) (3) 0H (2)</p> <p data-bbox="331 640 630 707">'Class3/UCMM communication area execution request acceptance' (Un\G7749648 to Un\G7749663)</p> <p data-bbox="331 723 630 790">'Class3/UCMM communication area execution completion' (Un\G7749664 to Un\G7749679)</p> <p data-bbox="510 806 630 833">o_uReadData (3)</p> <p data-bbox="566 884 630 911">i_bOK</p> <p data-bbox="566 963 630 990">o_bNG</p> <p data-bbox="550 1041 630 1068">o_bErrId (3) 0H 200H 0H</p> <p data-bbox="518 1120 630 1146">o_bStatusId (3) 0H (4) 0H</p> <p data-bbox="399 1198 630 1225">pbo_u2CIPResponseCode (3) 0H (4)</p> <p data-bbox="359 1276 630 1303">pbo_udRequestCompleteCount (3) (4)</p> <p data-bbox="845 1355 965 1400">▲ Execution completion</p> <p data-bbox="331 1422 821 1518"> (1) Set value (2) Read results/read data (3) The last value is held. (4) Results storage area in the response area/stored value </p>

Item	Description
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. • By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for communication error) are cleared to 0. • Using the FB in a program that is to be executed only once, such as a subroutine program or FOR to NEXT instructions, has a problem that i_bEN (execution command) can no longer be turned off and normal operation is not possible. Always use the FB in a program that is capable of turning off i_bEN (execution command). • This FB requires the configuration of the circuit for every input label. • The buffer memory is operated using the module labels inside the FB. Therefore, when using more than one of this FB or using the FB with M+model_UCMMOriginator_WriteTagData or M+model_UCMMOriginator_MessageSend simultaneously, a double coil warning may occur during compilation. This does not cause any problem during use. • When using more than one of this FB or using the FB with M+model_UCMMOriginator_WriteTagData or M+model_UCMMOriginator_MessageSend simultaneously, care must be taken to avoid duplication of i_uRequestNo (request No.). • The execution result is determined when o_bOK (completed successfully) or o_bErr (completed with an error) is turned on. • Refer to o_uReadData (read data storage device) while o_bOK (completed successfully) is on. • Refer to o_uErrId (error code) and o_uStatusId (error code for communication error) while o_bErr (completed with an error) is on. • This FB performs operations in the following buffer memory areas. For this reason, during the execution of this FB, do not execute any operation in any buffer memory area*1 with the same i_uRequestNo (request No.) outside of the FB. 'Class3/UCMM communication execution request' (Un\G7749632 to Un\G7749647) 'Class3/UCMM communication execution request acceptance' (Un\G7749648 to Un\G7749663) 'Class3/UCMM communication execution completion' (Un\G7749664 to Un\G7749679) 'Class3/UCMM communication request/response area' (Un\G7751680 to Un\G8275967)

*1 Area where this FB's i_uRequestNo (request No.) is the same as "n" in "No. n" in the buffer memory area.

Error codes

Error code	Description	Action
100H	The i_uRequestNo (request No.) value is out of the setting range.	Set the i_uRequestNo (request No.) value within the range from 1 to 256.
101H	EtherNet/IP communications have stopped.	Set a value other than 0 for 'EtherNet/IP communication start request signal' (Un\G7340096) and start EtherNet/IP communications.
102H	The number of characters for i_snTagName (tag name) is out of the setting range.	Set the number of characters for i_snTagName (tag name) within the range from 1 to 255 characters.
103H	UCMM used an inappropriate area.	<ul style="list-style-type: none"> • Check whether Class3 is using the request No. area. • Check that the initial value of the request No. area has not been changed using a ladder diagram or other diagram.
200H	Communication error has occurred.	<p>Check the value stored in o_uStatusId (error code for communication error) by referring to the following.</p> <p>(The CIP response code when o_uStatusId (error code for communication error) is 01FFH is stored in pbo_u2CIPResponseCode (CIP response code).)</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>

2.4 M+model_UCMMOriginator_WriteTagData

Name

M+RJ71GN11_SE_EIP_UCMMOriginator_WriteTagData

Overview

Item	Description																																																				
Functional overview	Sets data to the tag of the specified external device via the UCMM tag communications.																																																				
Symbol	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_UCMMOriginator_WrireTagData</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 15%; text-align: right;">o_bENO: B</td> <td style="width: 20%; text-align: right;">(11)</td> </tr> <tr> <td>(2) —</td> <td>DUT: i_stModule</td> <td style="text-align: right;">o_bOK: B</td> <td style="text-align: right;">(12)</td> </tr> <tr> <td>(3) —</td> <td>UW: i_u2TargetAddress</td> <td style="text-align: right;">o_bErr: B</td> <td style="text-align: right;">(13)</td> </tr> <tr> <td>(4) —</td> <td>S: i_snTagName</td> <td style="text-align: right;">o_uErrId: UW</td> <td style="text-align: right;">(14)</td> </tr> <tr> <td>(5) —</td> <td>UW: i_uDataType</td> <td style="text-align: right;">o_uStatusId: UW</td> <td style="text-align: right;">(15)</td> </tr> <tr> <td>(6) —</td> <td>UW: i_uDataSize</td> <td></td> <td></td> </tr> <tr> <td>(7) —</td> <td>UW: i_uWriteData</td> <td></td> <td></td> </tr> <tr> <td>(8) —</td> <td>UW: i_uRPI</td> <td></td> <td></td> </tr> <tr> <td>(9) —</td> <td>UW: i_uTrigger</td> <td></td> <td></td> </tr> <tr> <td>(10) —</td> <td>UW: i_uRequestNo</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;">pbi_unPathSegment</td> <td></td> <td style="text-align: right;">(16)</td> </tr> <tr> <td></td> <td style="text-align: right;">pbo_u2CIPResponseCode</td> <td></td> <td style="text-align: right;">(17)</td> </tr> <tr> <td></td> <td style="text-align: right;">pbo_udRequestCompleteCount</td> <td></td> <td style="text-align: right;">(18)</td> </tr> </table> </div>	(1) —	B: i_bEN	o_bENO: B	(11)	(2) —	DUT: i_stModule	o_bOK: B	(12)	(3) —	UW: i_u2TargetAddress	o_bErr: B	(13)	(4) —	S: i_snTagName	o_uErrId: UW	(14)	(5) —	UW: i_uDataType	o_uStatusId: UW	(15)	(6) —	UW: i_uDataSize			(7) —	UW: i_uWriteData			(8) —	UW: i_uRPI			(9) —	UW: i_uTrigger			(10) —	UW: i_uRequestNo				pbi_unPathSegment		(16)		pbo_u2CIPResponseCode		(17)		pbo_udRequestCompleteCount		(18)
(1) —	B: i_bEN	o_bENO: B	(11)																																																		
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	pbo_udRequestCompleteCount		(18)																																																		

Labels

■ Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_u2TargetAddress	IP address	Word [unsigned]/bit string [16 bits] (0..1)	—	Specify the IP address of the external device.
(4)	i_snTagName	Tag name	Character string (255)	—	Specify the tag name of the external device to be written.
(5)	i_uDataType	Tag data type	Word [unsigned]/bit string [16 bits]	00C3H 00C4H	Specify the data type of the tag to be written. • 00C3H: INT (1 word) • 00C4H: DINT (2 words)

No.	Variable name	Name	Data type	Scope	Description
(6)	i_uDataSize	Write data size	Word [unsigned]/bit string [16 bits]	1 to 245	Specify the number of data pieces to be written. The number of data pieces to be written is calculated by tag data type × number of data pieces. ■Scope <ul style="list-style-type: none"> • The tag data type is INT (00C3H) and PathSegment is 0: 1 to (494 - number of characters of tag name) ÷ 2 (decimals are omitted) • The tag data type is INT (00C3H) and PathSegment is other than 0: 1 to (480 - number of characters of tag name) ÷ 2 (decimals are omitted) • The tag data type is DINT (00C4H) and PathSegment is 0: 1 to (494 - number of characters of tag name) ÷ 4 (decimals are omitted) • The tag data type is DINT (00C4H) and PathSegment is other than 0: 1 to (480 - number of characters of tag name) ÷ 4 (decimals are omitted)
(7)	i_uWriteData	Write data storage device	Word [unsigned]/bit string [16 bits]	—	Data (write data size × type size for the tag data type) is written to the tag specified with the tag name of the external device specified with the IP address from the start of the specified device.
(8)	i_uRPI	RPI	Word [unsigned]/bit string [16 bits]	200 to 60000	■When Trigger specification is set to Cyclic Specify the send cycle. (Unit: millisecond) ■When Trigger specification is set to Application Trigger Setting is not required. (The value is ignored.)
(9)	i_uTrigger	Trigger specification	Word [unsigned]/bit string [16 bits]	0000H 0010H	Specify the send trigger. <ul style="list-style-type: none"> • 0000H: Application Trigger • 0010H: Cyclic
(10)	i_uRequestNo	Request No.	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the request No. to be used by RJ71GN11-EIP.*1

*1 A request No. which matches the connection number for which Class3 communications parameters are set in "EtherNet/IP Configuration" of GX Works3 cannot be specified. Specify a request No. for which Class3 communications parameters are not set.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(11)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(12)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.	Off
(13)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.	Off
(14)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(15)	o_uStatusId	Error code for communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)).	0

■Operation parameters

No.	Variable name	Name	Data type	Scope	Description	Default value
(16)	pbi_unPathSegment	PathSegment	Word [unsigned]/bit string [16 bits]	—	Specify the Path Segment data to be given at connection during UCMM tag communications. Specify 0 when not using it.*1*2	0001H

*1 Specify 0 to access Class3 tag or UCMM tag that is set to the module.

*2 For details on this parameter, refer to the following.

 MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

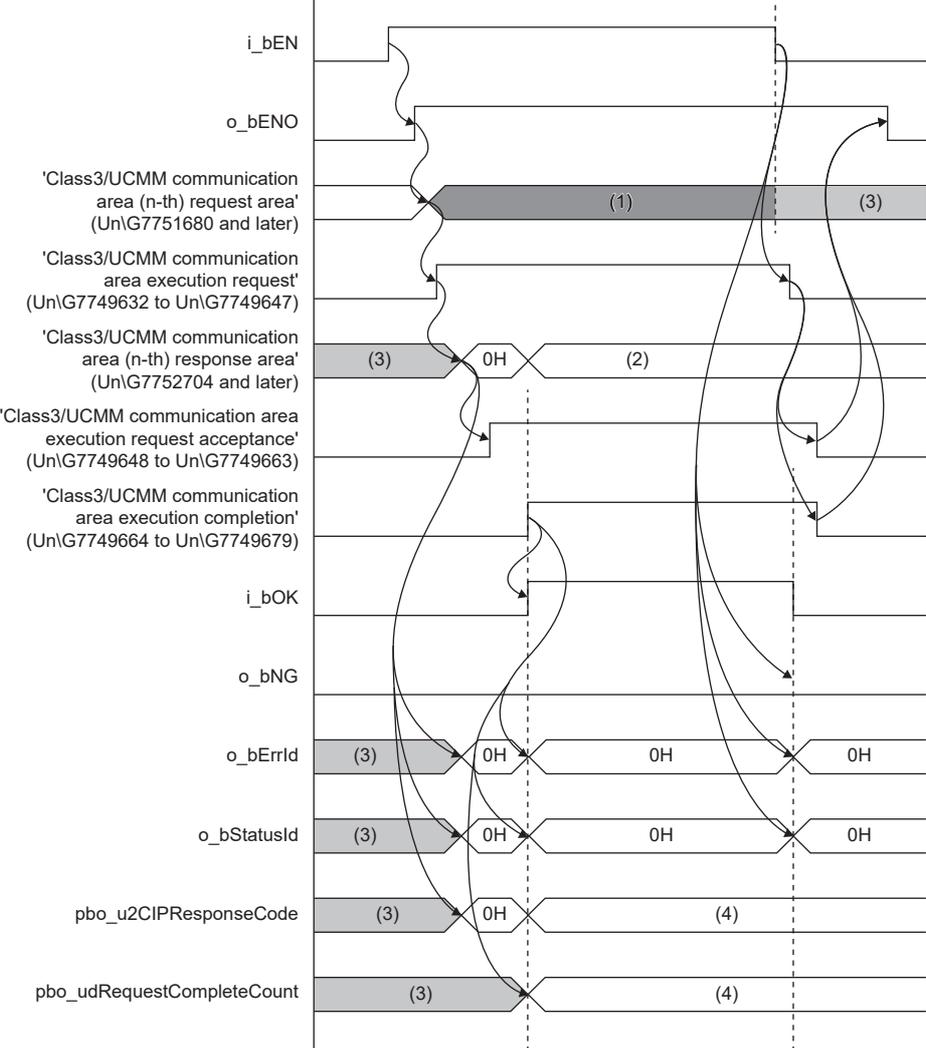
Public variables

No.	Variable name	Name	Data type	Description	Default value
(17)	pbo_u2CIPResponseCode	CIP response code	Word [unsigned]/bit string [16 bits] (0..1)	CIP response code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)). For details on CIP response codes, refer to the manual of the external device that sends response commands.	0
(18)	pbo_udRequestCompleteCount	Number of completed requests	Double word [unsigned]/bit string [32 bits]	The number of completed requests for UCMM tag communications is stored. This area is updated when the read data is updated.	0

FB details

Item	Description
Available device	Module RJ71GN11-EIP
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	712 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<p>■When Trigger specification is set to Cyclic</p> <ul style="list-style-type: none"> When i_bEN (execution command) is turned on, data is periodically set to the tag of the specified external device via the UCMM tag communications. While i_bEN (execution command) is on, the request data is continuously updated to the value stored in i_uWriteData (write data storage device). <p>■When Trigger specification is set to Application Trigger</p> <ul style="list-style-type: none"> When i_bEN (execution command) is turned on, data is set to the tag of the specified external device via the UCMM tag communications.
FB compilation method	Macro type
FB operation	Any-time execution type

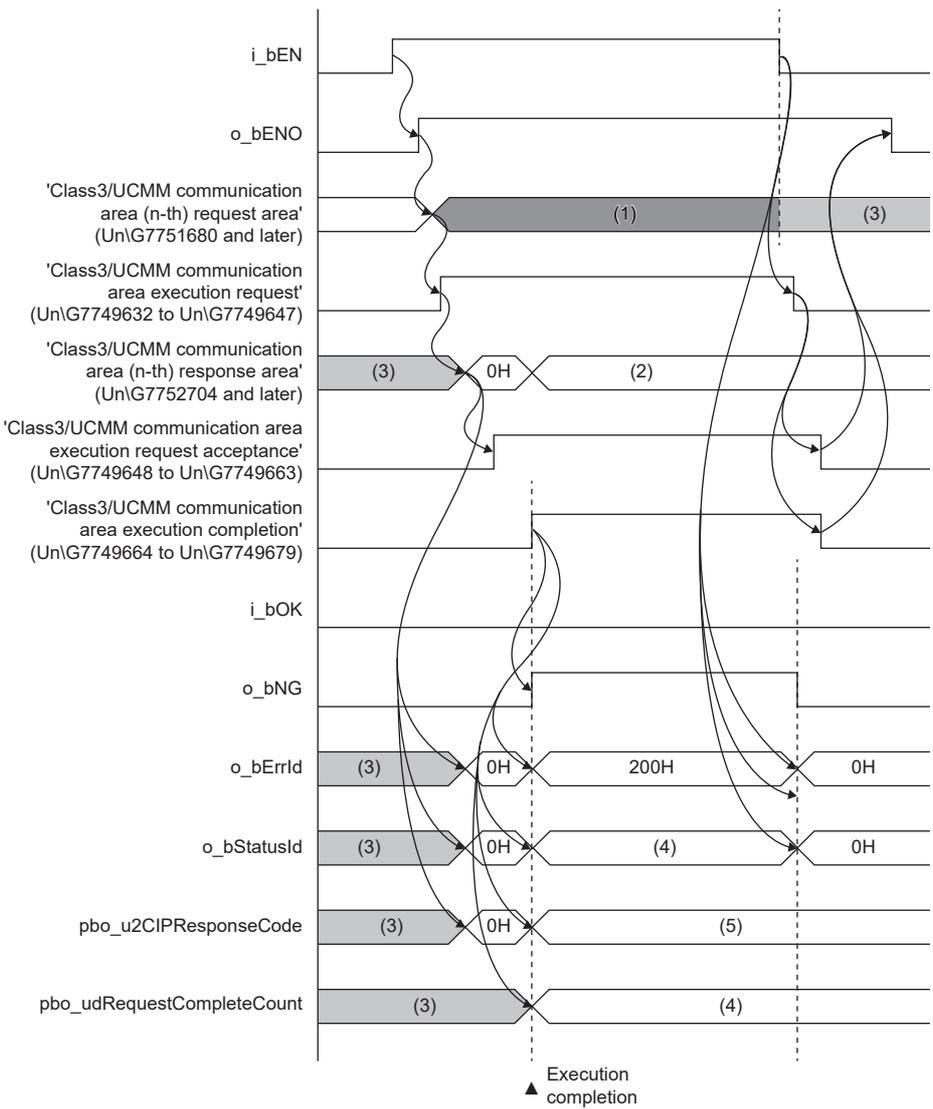
Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Cyclic (When the module recovers from the error that had occurred and persisted for a certain period during communications)</p> <p>(1) Write data is stored. (2) Results of writing (3) The last value is held. (4) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p data-bbox="331 181 997 208">• Completed successfully when Trigger specification is set to Application Trigger</p>  <p data-bbox="331 1339 821 1438"> (1) Write data is stored. (2) Results of writing (3) The last value is held. (4) Results storage area in the response area/stored value </p>

Item	Description
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Timing chart of I/O signals

• Completed with an error when Trigger specification is set to Application Trigger (when a communication error occurs)



- (1) Write data is stored.
- (2) Results of writing
- (3) The last value is held.
- (4) Results storage area in the response area/stored value
- (5) CIP response code

Precautions

- Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on.
- By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for communication error) are cleared to 0.
- Using the FB in a program that is to be executed only once, such as a subroutine program or FOR to NEXT instructions, has a problem that i_bEN (execution command) can no longer be turned off and normal operation is not possible. Always use the FB in a program that is capable of turning off i_bEN (execution command).
- This FB requires the configuration of the circuit for every input label.
- The buffer memory is operated using the module labels inside the FB. Therefore, when using more than one of this FB or using the FB with M+model_UCMMOriginator_ReadTagData or M+model_UCMMOriginator_MessageSend simultaneously, a double coil warning may occur during compilation. This does not cause any problem during use.
- When using more than one of this FB or using the FB with M+model_UCMMOriginator_ReadTagData or M+model_UCMMOriginator_MessageSend simultaneously, care must be taken to avoid duplication of i_uRequestNo (request No.).
- The execution result is determined when o_bOK (completed successfully) or o_bErr (completed with an error) is turned on.
- Refer to o_uErrId (error code) and o_uStatusId (error code for communication error) while o_bErr (completed with an error) is on.
- This FB performs operations in the following buffer memory areas. For this reason, during the execution of this FB, do not execute any operation in any buffer memory area*1 with the same i_uRequestNo (request No.) outside of the FB.
 - 'Class3/UCMM communication execution request' (UnG7749632 to UnG7749647)
 - 'Class3/UCMM communication execution request acceptance' (UnG7749648 to UnG7749663)
 - 'Class3/UCMM communication execution completion' (UnG7749664 to UnG7749679)
 - 'Class3/UCMM communication request/response area' (UnG7751680 to UnG8275967)

*1 Area where this FB's i_uRequestNo (request No.) is the same as "n" in "No. n" in the buffer memory area.

Error codes

Error code	Description	Action
100H	The i_uRequestNo (request No.) value is out of the setting range.	Set the i_uRequestNo (request No.) value within the range from 1 to 256.
101H	EtherNet/IP communications have stopped.	Set a value other than 0 for 'EtherNet/IP communication start request signal' (Un\G7340096) and start EtherNet/IP communications.
102H	The number of characters for i_snTagName (tag name) is out of the setting range.	Set the number of characters for i_snTagName (tag name) within the range from 1 to 255 characters.
103H	UCMM used an inappropriate area.	<ul style="list-style-type: none"> • Check whether Class3 is using the request No. area. • Check that the initial value of the request No. area has not been changed using a ladder diagram or other diagram.
200H	Communication error has occurred in the target connection.	<p>Check the value stored in o_uStatusId (error code for communication error) by referring to the following.</p> <p>(The CIP response code when o_uStatusId (error code for communication error) is 01FFH is stored in pbo_u2CIPResponseCode (CIP response code).)</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>

2.5 M+model_Class3Originator_ReadTagData

Name

M+RJ71GN11_SE_EIP_Class3Originator_ReadTagData

Overview

Item	Description																																																						
Functional overview	Acquires data from the tag of the specified external device via the Class3 tag communications.																																																						
Symbol	<div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_Class3Originator_ReadTagData</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; vertical-align: top;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: right;">o_bENO: B (5)</td> </tr> <tr> <td style="vertical-align: top;">(2) —</td> <td>DUT: i_stModule</td> <td></td> <td></td> <td></td> <td style="text-align: right;">o_bOK: B (6)</td> </tr> <tr> <td style="vertical-align: top;">(3) —</td> <td>UW: i_uRPI</td> <td></td> <td></td> <td></td> <td style="text-align: right;">o_bErr: B (7)</td> </tr> <tr> <td style="vertical-align: top;">(4) —</td> <td>UW: i_uRequestNo</td> <td></td> <td></td> <td></td> <td style="text-align: right;">o_uErrId: UW (8)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">o_uStatusId: UW (9)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">o_uReadData: UW (10)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">o_uReadSize: UW (11)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">pbo_u2CIPResponseCode (12)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">pbo_udRequestCompleteCount (13)</td> </tr> </table> </div>	(1) —	B: i_bEN				o_bENO: B (5)	(2) —	DUT: i_stModule				o_bOK: B (6)	(3) —	UW: i_uRPI				o_bErr: B (7)	(4) —	UW: i_uRequestNo				o_uErrId: UW (8)						o_uStatusId: UW (9)						o_uReadData: UW (10)						o_uReadSize: UW (11)						pbo_u2CIPResponseCode (12)						pbo_udRequestCompleteCount (13)
(1) —	B: i_bEN				o_bENO: B (5)																																																		
(2) —	DUT: i_stModule				o_bOK: B (6)																																																		
(3) —	UW: i_uRPI				o_bErr: B (7)																																																		
(4) —	UW: i_uRequestNo				o_uErrId: UW (8)																																																		
					o_uStatusId: UW (9)																																																		
					o_uReadData: UW (10)																																																		
					o_uReadSize: UW (11)																																																		
					pbo_u2CIPResponseCode (12)																																																		
					pbo_udRequestCompleteCount (13)																																																		

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_uRPI	RPI	Word [unsigned]/bit string [16 bits]	0, 200 to 60000 ^{*1}	Specify the send cycle. (Unit: millisecond) Specify 0 when not changing from the value set in "EtherNet/IP Configuration" of GX Works3.
(4)	i_uRequestNo	Request No.	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the request No. to be used by RJ71GN11-EIP. ^{*2}

*1 Operation is performed using the last value if a value out of the setting range is set.

*2 Specify a value that matches the connection number in Class3 communications parameters set in "EtherNet/IP Configuration" of GX Works3.

Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.	Off
(7)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.	Off
(8)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(9)	o_uStatusId	Error code for communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)).	0

No.	Variable name	Name	Data type	Description	Default value
(10)	o_uReadData	Read data storage device	Word [unsigned]/bit string [16 bits]	Data (read data size × type size for the read tag data type) that is read from a tag of the external device is stored from the start of the specified device.*1	0
(11)	o_uDataSize	Read data size	Word [unsigned]/bit string [16 bits]	The number of read data pieces (in units of words) is stored.	0

*1 For the tag name, tag data type, and the size of an external device for which a read is requested, set Class3 communications parameters in "EtherNet/IP Configuration" of GX Works3. The type size is to be 1 word when the tag data type is set to INT, and 2 words when DINT.

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(12)	pbo_u2CIPResponseCode	CIP response code	Word [unsigned]/bit string [16 bits] (0..1)	CIP response code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)). For details on CIP response codes, refer to the manual of the external device that sends response commands.	0
(13)	pbo_udRequestCompleteCount	Number of completed requests	Double word [unsigned]/bit string [32 bits]	The number of completed requests for Class3 tag communications is stored.	0

FB details

Item	Description
Available device	Module RJ71GN11-EIP
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	587 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<p>To perform Class3 tag communications, set Class3 communications parameters for the module using "EtherNet/IP Configuration" of GX Works3.</p> <p>■When Trigger specification for Class3 communications parameters is set to Cyclic</p> <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, data is periodically acquired from the tag of the specified external device via the Class3 tag communications. • While i_bEN (execution command) and o_bOK (completed successfully) are on, read data is continuously stored in o_uReadData (read data storage device). <p>■When Trigger specification for Class3 communications parameters is set to Application Trigger</p> <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, data is acquired from the tag of the specified external device via the Class3 tag communications.
FB compilation method	Macro type
FB operation	Any-time execution type

Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Cyclic (When the module recovers from the error that had occurred and persisted for a certain period during communications)</p> <p>(1) Set value (2) Read results/read data (3) The last value is held. (4) Read data is stored. (5) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Application Trigger</p> <p>(1) Set value (2) Read results/read data (3) The last value is held. (4) Read data is stored. (5) Results storage area in the response area/stored value</p> <p>▲ Execution completion</p>

Item	Description
Timing chart of I/O signals	<p>• Completed with an error when Trigger specification is set to Application Trigger (when a communication error occurs)</p> <p>The timing chart illustrates the sequence of I/O signals for Class3/UCMM communication. The signals are:</p> <ul style="list-style-type: none"> i_bEN: Input enable signal. o_bENO: Output enable signal. 'Class3/UCMM communication area (n-th) request area' (Un\G7751680 and later): Signal (1) Set value. 'Class3/UCMM communication area execution request' (Un\G7749632 to Un\G7749647): Signal (2) Read results/read data. 'Class3/UCMM communication area (n-th) response area' (Un\G7752704 and later): Signal (3) The last value is held. Value: 0H. 'Class3/UCMM communication area execution request acceptance' (Un\G7749648 to Un\G7749663): Signal (4) Results storage area in the response area/stored value. 'Class3/UCMM communication area execution completion' (Un\G7749664 to Un\G7749679): Signal (4) Results storage area in the response area/stored value. o_uReadData: Signal (3) The last value is held. i_bOK: Input OK signal. o_bNG: Output NG signal. o_bErrId: Signal (3) The last value is held. Values: 0H, 200H, 0H. o_bStatusId: Signal (3) The last value is held. Values: 0H, (4), 0H. pbo_u2CIPResponseCode: Signal (3) The last value is held. Values: 0H, (4). pbo_udRequestCompleteCount: Signal (3) The last value is held. Value: (4). <p>▲ Execution completion</p> <p>(1) Set value (2) Read results/read data (3) The last value is held. (4) Results storage area in the response area/stored value</p>

Item	Description
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. • By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for communication error) are cleared to 0. • Using the FB in a program that is to be executed only once, such as a subroutine program or FOR to NEXT instructions, has a problem that i_bEN (execution command) can no longer be turned off and normal operation is not possible. Always use the FB in a program that is capable of turning off i_bEN (execution command). • This FB requires the configuration of the circuit for every input label. • The buffer memory is operated using the module labels inside the FB. Therefore, when using more than one of this FB or using the FB with M+model_Class3Originator_WriteTagData or M+model_Class3Originator_MessageSend simultaneously, a double coil warning may occur during compilation. This does not cause any problem during use. • When using more than one of this FB or using the FB with M+model_Class3Originator_WriteTagData or M+model_Class3Originator_MessageSend simultaneously, care must be taken to avoid duplication of i_uRequestNo (request No.). • The execution result is determined when o_bOK (completed successfully) or o_bErr (completed with an error) is turned on. • Refer to o_uReadData (read data storage device) while o_bOK (completed successfully) is on. • Refer to o_uErrId (error code) and o_uStatusId (error code for communication error) while o_bErr (completed with an error) is on. • This FB performs operations in the following buffer memory areas. For this reason, during the execution of this FB, do not execute any operation in any buffer memory area*1 with the same i_uRequestNo (request No.) outside of the FB. 'Class3/UCMM communication execution request' (Un\G7749632 to Un\G7749647) 'Class3/UCMM communication execution request acceptance' (Un\G7749648 to Un\G7749663) 'Class3/UCMM communication execution completion' (Un\G7749664 to Un\G7749679) 'Class3/UCMM communication request/response area' (Un\G7751680 to Un\G8275967)

*1 Area where this FB's i_uRequestNo (request No.) is the same as "n" in "No. n" in the buffer memory area.

Error codes

Error code	Description	Action
100H	The i_uRequestNo (request No.) value is out of the setting range.	Set the i_uRequestNo (request No.) value within the range from 1 to 256.
101H	EtherNet/IP communications have stopped.	Set a value other than 0 for 'EtherNet/IP communication start request signal' (Un\G7340096) and start EtherNet/IP communications.
104H	An area where Class3 communications parameters are not set was used.	<ul style="list-style-type: none"> • Check the settings in "EtherNet/IP Configuration" of GX Works3 and check that the connection number for which Class3 communications parameters are set and the number specified in i_uRequestNo (request No.) match. • Check that the initial value in the area where Write is prohibited has not been changed using a ladder diagram or other diagram within the request area of Class3/UCMM communications area (request No. X).
105H	An area where a service other than Read service is set was used.	<ul style="list-style-type: none"> • Check the settings for "EtherNet/IP Configuration" of GX Works3 and check that the service ID is set to [Read service]. • Check that the initial value in the area where Write is prohibited has not been changed using a ladder diagram or other diagram within the request area of Class3/UCMM communications area (request No. X).
200H	Communication error has occurred.	<p>Check the value stored in o_uStatusId (error code for communication error) by referring to the following.</p> <p>(The CIP response code when o_uStatusId (error code for communication error) is 01FFH is stored in pbo_u2CIPResponseCode (CIP response code).)</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>

2.6 M+model_Class3Originator_WriteTagData

Name

M+RJ71GN11_SE_EIP_Class3Originator_WriteTagData

Overview

Item	Description																																			
Functional overview	Sets data to the tag of the specified external device via the Class3 tag communications.																																			
Symbol	<div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_Class3Originator_WtireTagData</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 15%;"></td> <td style="width: 10%; text-align: right;">o_bENO: B</td> <td style="width: 5%; text-align: right;">(6)</td> </tr> <tr> <td style="text-align: right;">(2) —</td> <td>DUT: i_stModule</td> <td></td> <td style="text-align: right;">o_bOK: B</td> <td style="text-align: right;">(7)</td> </tr> <tr> <td style="text-align: right;">(3) —</td> <td>UW: i_uWriteData</td> <td></td> <td style="text-align: right;">o_bErr: B</td> <td style="text-align: right;">(8)</td> </tr> <tr> <td style="text-align: right;">(4) —</td> <td>UW: i_uRPI</td> <td></td> <td style="text-align: right;">o_uErrId: UW</td> <td style="text-align: right;">(9)</td> </tr> <tr> <td style="text-align: right;">(5) —</td> <td>UW: i_uRequestNo</td> <td></td> <td style="text-align: right;">o_uStatusId: UW</td> <td style="text-align: right;">(10)</td> </tr> <tr> <td></td> <td style="text-align: center;">pbo_u2CIPResponseCode</td> <td></td> <td></td> <td style="text-align: right;">(11)</td> </tr> <tr> <td></td> <td style="text-align: center;">pbo_udRequestCompleteCount</td> <td></td> <td></td> <td style="text-align: right;">(12)</td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B	(6)	(2) —	DUT: i_stModule		o_bOK: B	(7)	(3) —	UW: i_uWriteData		o_bErr: B	(8)	(4) —	UW: i_uRPI		o_uErrId: UW	(9)	(5) —	UW: i_uRequestNo		o_uStatusId: UW	(10)		pbo_u2CIPResponseCode			(11)		pbo_udRequestCompleteCount			(12)
(1) —	B: i_bEN		o_bENO: B	(6)																																
(2) —	DUT: i_stModule		o_bOK: B	(7)																																
(3) —	UW: i_uWriteData		o_bErr: B	(8)																																
(4) —	UW: i_uRPI		o_uErrId: UW	(9)																																
(5) —	UW: i_uRequestNo		o_uStatusId: UW	(10)																																
	pbo_u2CIPResponseCode			(11)																																
	pbo_udRequestCompleteCount			(12)																																

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_uWriteData	Write data storage device	Word [unsigned]/bit string [16 bits]	—	Data (set size × type size for the tag data type) is written to the tag of the external device from the start of the specified device.*3
(4)	i_uRPI	RPI	Word [unsigned]/bit string [16 bits]	0, 200 to 60000*1	Specify the send cycle. (Unit: millisecond) Specify 0 when not changing from the value set in "EtherNet/IP Configuration" of GX Works3.
(5)	i_uRequestNo	Request No.	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the request No. to be used by RJ71GN11-EIP.*2

*1 Operation is performed using the last value if a value out of the setting range is set.

*2 Specify a value that matches the connection number in Class3 communications parameters set in "EtherNet/IP Configuration" of GX Works3.

*3 For the send size and the target tag name, set Class3 communications parameters in "EtherNet/IP Configuration" of GX Works3. The type size is to be 1 word when the tag data type is set to INT, and 2 words when DINT.

Output arguments

No.	Variable name	Name	Data type	Description	Default value
(6)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(7)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.	Off
(8)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.	Off
(9)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0

No.	Variable name	Name	Data type	Description	Default value
(10)	o_uStatusId	Error code for communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)).	0

Public variables

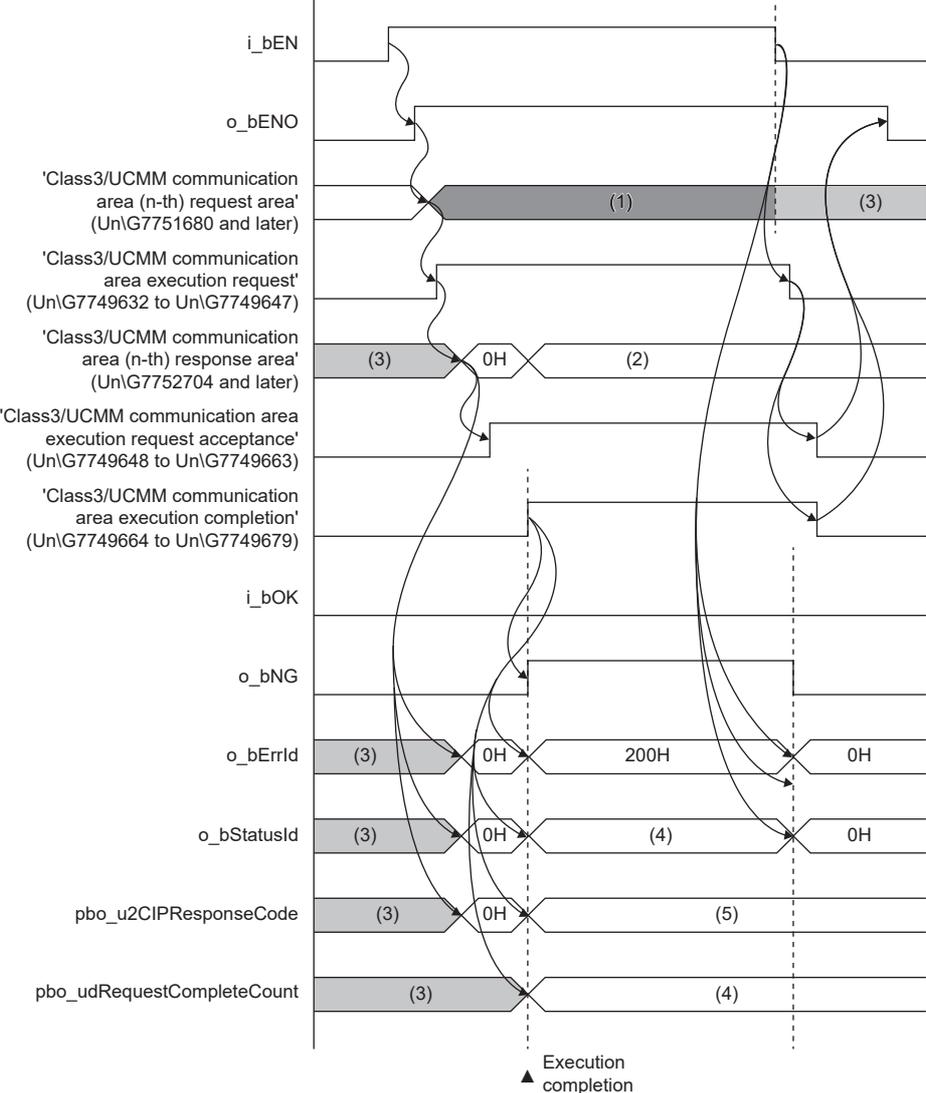
No.	Variable name	Name	Data type	Description	Default value
(11)	pbo_u2CIPResponseCode	CIP response code	Word [unsigned]/bit string [16 bits] (0..1)	CIP response code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)). For details on CIP response codes, refer to the manual of the external device that sends response commands.	0
(12)	pbo_udRequestCompleteCount	Number of completed requests	Double word [unsigned]/bit string [32 bits]	The number of completed requests for Class3 tag communications is stored.	0

FB details

Item	Description	
Available device	Module	RJ71GN11-EIP
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	567 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.	
Processing	To perform Class3 tag communications, set Class3 communications parameters for the module using "EtherNet/IP Configuration" of GX Works3. <ul style="list-style-type: none"> ■When Trigger specification for Class3 communications parameters is set to Cyclic <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, data is periodically set to the tag of the specified external device via the Class3 tag communications. • While i_bEN (execution command) is on, the request data is continuously updated to the value stored in i_uWriteData (write data storage device). ■When Trigger specification for Class3 communications parameters is set to Application Trigger <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, data is set to the tag of the specified external device via the Class3 tag communications. 	
FB compilation method	Macro type	
FB operation	Any-time execution type	

Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Cyclic (When the module recovers from the error that had occurred and persisted for a certain period during communications)</p> <p>(1) Write data is stored. (2) Results of writing (3) The last value is held. (4) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Application Trigger</p> <p>(1) Write data is stored. (2) Results of writing (3) The last value is held. (4) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p data-bbox="331 181 1316 208">• Completed with an error when Trigger specification is set to Application Trigger (when a communication error occurs)</p>  <p data-bbox="331 1339 817 1473"> (1) Write data is stored. (2) Results of writing (3) The last value is held. (4) Results storage area in the response area/stored value (5) CIP response code </p>
Precautions	<ul data-bbox="331 1480 1453 2033" style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. • By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for communication error) are cleared to 0. • Using the FB in a program that is to be executed only once, such as a subroutine program or FOR to NEXT instructions, has a problem that i_bEN (execution command) can no longer be turned off and normal operation is not possible. Always use the FB in a program that is capable of turning off i_bEN (execution command). • This FB requires the configuration of the circuit for every input label. • The buffer memory is operated using the module labels inside the FB. Therefore, when using more than one of this FB or using the FB with M+model_Class3Originator_ReadTagData or M+model_Class3Originator_MessageSend simultaneously, a double coil warning may occur during compilation. This does not cause any problem during use. • When using more than one of this FB or using the FB with M+model_Class3Originator_ReadTagData or M+model_Class3Originator_MessageSend simultaneously, care must be taken to avoid duplication of i_uRequestNo (request No.). • The execution result is determined when o_bOK (completed successfully) or o_bErr (completed with an error) is turned on. • Refer to o_uReadData (read data storage device) while o_bOK (completed successfully) is on. • Refer to o_uErrId (error code) and o_uStatusId (error code for communication error) while o_bErr (completed with an error) is on. • This FB performs operations in the following buffer memory areas. For this reason, during the execution of this FB, do not execute any operation in any buffer memory area*1 with the same i_uRequestNo (request No.) outside of the FB. <ul data-bbox="359 1928 1157 2033" style="list-style-type: none"> 'Class3/UCMM communication execution request' (Un\G7749632 to Un\G7749647) 'Class3/UCMM communication execution request acceptance' (Un\G7749648 to Un\G7749663) 'Class3/UCMM communication execution completion' (Un\G7749664 to Un\G7749679) 'Class3/UCMM communication request/response area' (Un\G7751680 to Un\G8275967)

*1 Area where this FB's i_uRequestNo (request No.) is the same as "n" in "No. n" in the buffer memory area.

Error codes

Error code	Description	Action
100H	The i_uRequestNo (request No.) value is out of the setting range.	Set the i_uRequestNo (request No.) value within the range from 1 to 256.
101H	EtherNet/IP communications have stopped.	Set a value other than 0 for 'EtherNet/IP communication start request signal' (UnlG7340096) and start EtherNet/IP communications.
104H	An area where Class3 communications parameters are not set was used.	<ul style="list-style-type: none"> • Check the settings in "EtherNet/IP Configuration" of GX Works3 and check that the connection number for which Class3 communications parameters are set and the number specified in i_uRequestNo (request No.) match. • Check that the initial value in the area where Write is prohibited has not been changed using a ladder diagram or other diagram within the request area of Class3/UCMM communications area (request No. X).
106H	An area where a service other than Write service is set was used.	<ul style="list-style-type: none"> • Check the settings for "EtherNet/IP Configuration" of GX Works3 and check that the service ID is set to [Write service]. • Check that the initial value of the request No. area has not been changed using a ladder diagram or other diagram.
200H	Communication error has occurred in the target connection.	<p>Check the value stored in o_uStatusId (error code for communication error) by referring to the following.</p> <p>(The CIP response code when o_uStatusId (error code for communication error) is 01FFH is stored in pbo_u2CIPResponseCode (CIP response code).)</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>

2.7 M+model_UCMMOriginator_MessageSend

Name

M+RJ71GN11_SE_EIP_UCMMOriginator_MessageSend

Overview

Item	Description																																																																						
Functional overview	Sends messages to the specified external device via the UCMM message communications.																																																																						
Symbol	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_UCMMOriginator_MessageSend</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 65%;">B: i_bEN</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: left;">o_bENO: B</td> <td style="width: 10%; text-align: right;">(13)</td> </tr> <tr> <td>(2) —</td> <td>DUT: i_stModule</td> <td></td> <td>o_bOK: B</td> <td>(14)</td> </tr> <tr> <td>(3) —</td> <td>UW: u2TargetAddress</td> <td></td> <td>o_bErr: B</td> <td>(15)</td> </tr> <tr> <td>(4) —</td> <td>UW: i_uRequestData</td> <td></td> <td>o_uErrId: UW</td> <td>(16)</td> </tr> <tr> <td>(5) —</td> <td>UW: i_uRequestDataSize</td> <td></td> <td>o_uStatusId: UW</td> <td>(17)</td> </tr> <tr> <td>(6) —</td> <td>UW: i_uService</td> <td></td> <td>o_uResponseData: UW</td> <td>(18)</td> </tr> <tr> <td>(7) —</td> <td>UW: i_uClass</td> <td></td> <td>o_uResponseSize: UW</td> <td>(19)</td> </tr> <tr> <td>(8) —</td> <td>UW: i_uInstance</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(9) —</td> <td>UW: i_uAttribute</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(10) —</td> <td>UW: i_uRPI</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(11) —</td> <td>UW: i_uTrigger</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(12) —</td> <td>UW: i_uRequestNo</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>pbo_u2CIPResponseCode</td> <td>(20)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>pbo_udRequestCompleteCount</td> <td>(21)</td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B	(13)	(2) —	DUT: i_stModule		o_bOK: B	(14)	(3) —	UW: u2TargetAddress		o_bErr: B	(15)	(4) —	UW: i_uRequestData		o_uErrId: UW	(16)	(5) —	UW: i_uRequestDataSize		o_uStatusId: UW	(17)	(6) —	UW: i_uService		o_uResponseData: UW	(18)	(7) —	UW: i_uClass		o_uResponseSize: UW	(19)	(8) —	UW: i_uInstance				(9) —	UW: i_uAttribute				(10) —	UW: i_uRPI				(11) —	UW: i_uTrigger				(12) —	UW: i_uRequestNo							pbo_u2CIPResponseCode	(20)				pbo_udRequestCompleteCount	(21)
(1) —	B: i_bEN		o_bENO: B	(13)																																																																			
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(5) —	UW: i_uRequestDataSize		o_uStatusId: UW	(17)																																																																			
(6) —	UW: i_uService		o_uResponseData: UW	(18)																																																																			
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			pbo_u2CIPResponseCode	(20)																																																																			
			pbo_udRequestCompleteCount	(21)																																																																			

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_u2TargetAddress	IP address	Word [unsigned]/bit string [16 bits] (0..1)	—	Specify the IP address of the external device.
(4)	i_uRequestData	Request data storage device	Word [unsigned]/bit string [16 bits]	—	As the request data to be used for the service, data (request data size ÷ 2 (value is rounded up)) is sent to the external device specified with the IP address from the start of the device specified here. However, when the request data size is an odd number, only the lower 8 bits are sent as the final area.
(5)	i_uRequestDataSize	Request data size	Word [unsigned]/bit string [16 bits]	0 to 496 ^{*1}	Specify the size of request data. (Unit: byte) Specify 0 if request data does not exist. The settable maximum value decreases according to parameters set to the FB. <ul style="list-style-type: none"> • When Class is set to 0100H to FFFFH, • When Instance is set to 0100H to FFFFH, and • When Attribute is set to 0100H to FFFFH, the each value decreases by 2. ^{*3}

No.	Variable name	Name	Data type	Scope	Description
(6)	i_uService	Service	Word [unsigned]/bit string [16 bits]	0 to 255	Set the service code to be used. In this area, only values in the lower 8 bits are enabled and numerical values set in the upper 8 bits are ignored.
(7)	i_uClass	Class	Word [unsigned]/bit string [16 bits]	—	Specify the target class ID.
(8)	i_uInstance	Instance	Word [unsigned]/bit string [16 bits]	—	Specify the target instance ID.
(9)	i_uAttribute	Attribute	Word [unsigned]/bit string [16 bits]	—	Specify the target attribute ID.
(10)	i_uRPI	RPI	Word [unsigned]/bit string [16 bits]	200 to 60000	■When Trigger specification is set to Cyclic Specify the send cycle. (Unit: millisecond) ■When Trigger specification is set to Application Trigger Setting is not required. (The value is ignored.)
(11)	i_uTrigger	Trigger specification	Word [unsigned]/bit string [16 bits]	0000H 0010H	Specify the send trigger. • 0000H: Application Trigger • 0010H: Cyclic
(12)	i_uRequestNo	Request No.	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the request No. to be used by RJ71GN11-EIP.*2

*1 When 0 is set, the request data storage device setting is not required.

*2 A request No. which matches the connection number for which Class3 communications parameters are set in "EtherNet/IP Configuration" of GX Works3 cannot be specified. Specify a request No. for which Class3 communications parameters are not set.

*3 For details on the settable range of this parameter, refer to the following.

📖 MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(13)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(14)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.	Off
(15)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.	Off
(16)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(17)	o_uStatusId	Error code for communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)).	0
(18)	o_uResponseData	Response data storage device	Word [unsigned]/bit string [16 bits]	Data (response data size ÷ 2 (value is rounded up)) is stored from the start of the device specified with the response data for the requested service. However, when the response data size is an odd number, only the lower 8 bits are stored for the final area.	0
(19)	o_uResponseSize	Response data size	Word [unsigned]/bit string [16 bits]	The size of the received response data is stored. (Unit: byte)	0

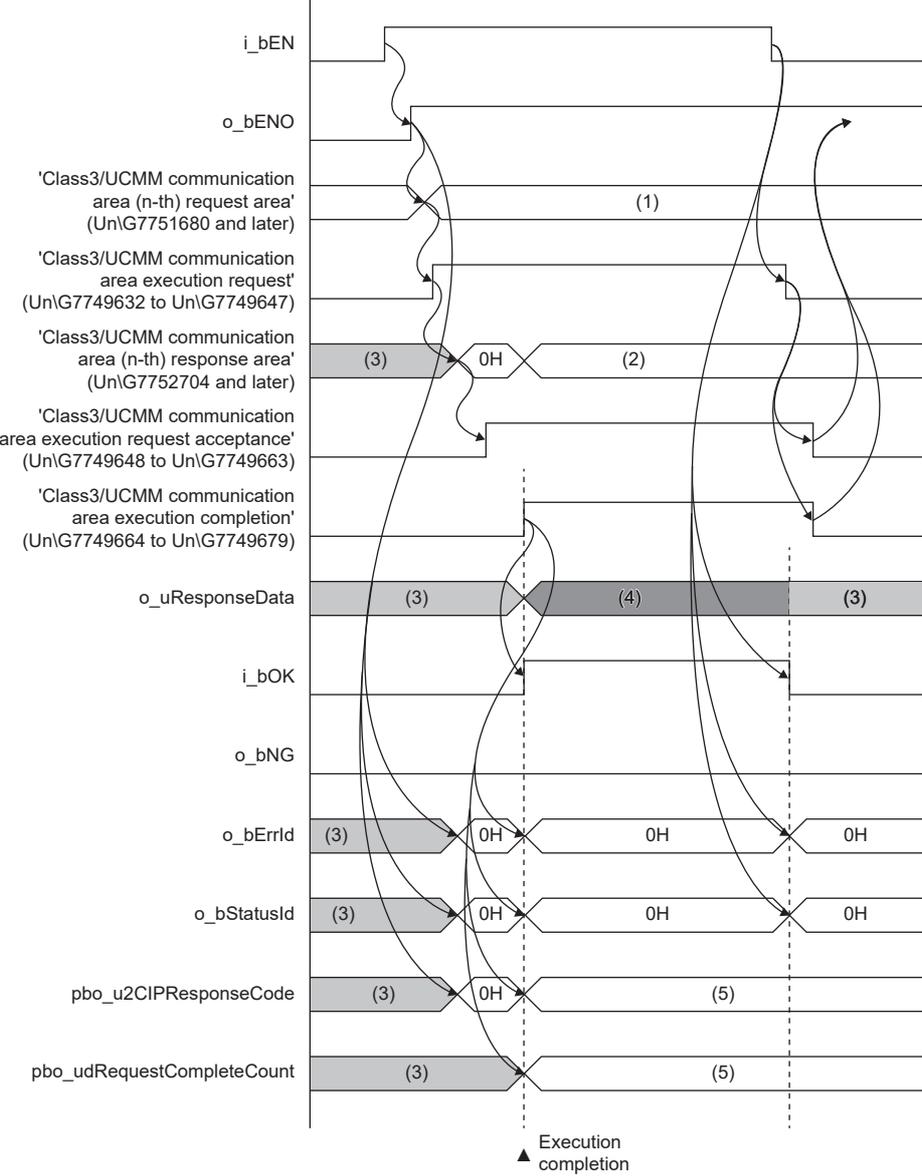
■Public variables

No.	Variable name	Name	Data type	Description	Default value
(20)	pbo_u2CIPResponseCode	CIP response code	Word [unsigned]/bit string [16 bits] (0..1)	CIP respond code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)). For details on CIP response codes, refer to the manual of the external device that sends response commands.	0
(21)	pbo_udRequestCompleteCount	Number of completed requests	Double word [unsigned]/bit string [32 bits]	The number of completed requests for UCMM message communications is stored.	0

FB details

Item	Description
Available device	Module RJ71GN11-EIP
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	799 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<ul style="list-style-type: none"> ■When Trigger specification is set to Cyclic <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, messages are periodically sent to the specified external device via the UCMM message communications. • While i_bEN (execution command) and o_bOK (completed successfully) are on, data in i_uRequestData (request data storage device) is sent by adding it to the message and response data is continuously stored in o_uResponseData (response data storage device). ■When Trigger specification is set to Application Trigger <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, messages are sent to the specified external device via the UCMM message communications.
FB compilation method	Macro type
FB operation	Any-time execution type

Item	Description
Timing chart of I/O signals	<p>• Completed successfully when Trigger specification is set to Cyclic (When the module recovers from the error that had occurred and persisted for a certain period during communications)</p> <p>(1) Request data is stored. (2) Response results/response data (3) The last value is held. (4) Response data is stored. (5) Results storage area in the response area/stored value</p>

Item	Description
Timing chart of I/O signals	<p data-bbox="335 181 997 208">• Completed successfully when Trigger specification is set to Application Trigger</p>  <p data-bbox="335 1411 821 1545"> (1) Request data is stored. (2) Response results/response data (3) The last value is held. (4) Response data is stored. (5) Results storage area in the response area/stored value </p>

Item	Description
Timing chart of I/O signals	<p>• Completed with an error when Trigger specification is set to Application Trigger (when a communication error occurs)</p> <p>(1) Request data is stored. (2) Response results/response data (3) The last value is held. (4) Results storage area in the response area/stored value</p>

Item	Description
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. • By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for communication error) are cleared to 0. • Using the FB in a program that is to be executed only once, such as a subroutine program or FOR to NEXT instructions, has a problem that i_bEN (execution command) can no longer be turned off and normal operation is not possible. Always use the FB in a program that is capable of turning off i_bEN (execution command). • This FB requires the configuration of the circuit for every input label. • The buffer memory is operated using the module labels inside the FB. Therefore, when using more than one of this FB or using the FB with M+model_UCMMOriginator_WriteTagData or M+model_UCMMOriginator_ReadTagData simultaneously, a double coil warning may occur during compilation. This does not cause any problem during use. • When using more than one of this FB or using the FB with M+model_UCMMOriginator_WriteTagData or M+model_UCMMOriginator_ReadTagData simultaneously, care must be taken to avoid duplication of i_uRequestNo (request No.). • The execution result is determined when o_bOK (completed successfully) or o_bErr (completed with an error) is turned on. • Refer to o_uReadData (read data storage device) while o_bOK (completed successfully) is on. • Refer to o_uErrId (error code) and o_uStatusId (error code for communication error) while o_bErr (completed with an error) is on. • This FB performs operations in the following buffer memory areas. For this reason, during the execution of this FB, do not execute any operation in any buffer memory area*1 with the same i_uRequestNo (request No.) outside of the FB. 'Class3/UCMM communication execution request' (Un\G7749632 to Un\G7749647) 'Class3/UCMM communication execution request acceptance' (Un\G7749648 to Un\G7749663) 'Class3/UCMM communication execution completion' (Un\G7749664 to Un\G7749679) 'Class3/UCMM communication request/response area' (Un\G7751680 to Un\G8275967)

*1 Area where this FB's i_uRequestNo (request No.) is the same as "n" in "No. n" in the buffer memory area.

Error codes

Error code	Description	Action
100H	The i_uRequestNo (request No.) value is out of the setting range.	Set the i_uRequestNo (request No.) value within the range from 1 to 256.
101H	EtherNet/IP communications have stopped.	Set a value other than 0 for 'EtherNet/IP communication start request signal' (Un\G7340096) and start EtherNet/IP communications.
103H	UCMM used an inappropriate area.	<ul style="list-style-type: none"> • Check whether Class3 is using the request No. area. • Check that the initial value of the request No. area has not been changed using a ladder diagram or other diagram.
200H	Communication error has occurred.	<p>Check the value stored in o_uStatusId (error code for communication error) by referring to the following.</p> <p>(The CIP response code when o_uStatusId (error code for communication error) is 01FFH is stored in pbo_u2CIPResponseCode (CIP response code).)</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>

2.8 M+model_Class3Originator_MessageSend

Name

M+RJ71GN11_SE_EIP_Class3Originator_MessageSend

Overview

Item	Description																																				
Functional overview	Sends messages to the specified external device via the Class3 message communications.																																				
Symbol	<div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">M+RJ71GN11_SE_EIP_Class3Originator_MessageSend</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: right;">(1) —</td> <td style="width: 60%;">B: i_bEN</td> <td style="width: 15%;"></td> <td style="width: 20%; text-align: left;">o_bENO: B (6)</td> </tr> <tr> <td style="text-align: right;">(2) —</td> <td>DUT: i_stModule</td> <td></td> <td style="text-align: left;">o_bOK: B (7)</td> </tr> <tr> <td style="text-align: right;">(3) —</td> <td>UW: i_uRequestData</td> <td></td> <td style="text-align: left;">o_bErr: B (8)</td> </tr> <tr> <td style="text-align: right;">(4) —</td> <td>UW: i_uRPI</td> <td></td> <td style="text-align: left;">o_uErrId: UW (9)</td> </tr> <tr> <td style="text-align: right;">(5) —</td> <td>UW: i_uRequestNo</td> <td></td> <td style="text-align: left;">o_uStatusId: UW (10)</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: left;">o_uResponseData: UW (11)</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: left;">o_uResponseSize: UW (12)</td> </tr> <tr> <td></td> <td style="text-align: center;">pbo_u2CIPResponseCode (13)</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">pbo_udRequestCompleteCount (14)</td> <td></td> <td></td> </tr> </table> </div>	(1) —	B: i_bEN		o_bENO: B (6)	(2) —	DUT: i_stModule		o_bOK: B (7)	(3) —	UW: i_uRequestData		o_bErr: B (8)	(4) —	UW: i_uRPI		o_uErrId: UW (9)	(5) —	UW: i_uRequestNo		o_uStatusId: UW (10)				o_uResponseData: UW (11)				o_uResponseSize: UW (12)		pbo_u2CIPResponseCode (13)				pbo_udRequestCompleteCount (14)		
(1) —	B: i_bEN		o_bENO: B (6)																																		
(2) —	DUT: i_stModule		o_bOK: B (7)																																		
(3) —	UW: i_uRequestData		o_bErr: B (8)																																		
(4) —	UW: i_uRPI		o_uErrId: UW (9)																																		
(5) —	UW: i_uRequestNo		o_uStatusId: UW (10)																																		
			o_uResponseData: UW (11)																																		
			o_uResponseSize: UW (12)																																		
	pbo_u2CIPResponseCode (13)																																				
	pbo_udRequestCompleteCount (14)																																				

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	Off or on	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specify the module label for the module that executes the FB. (Example: GN11_SE_1)
(3)	i_uRequestData	Request data storage device	Word [unsigned]/bit string [16 bits]	—	As the request data to be used for the service, data (request data size ÷ 2 (value is rounded up)) is sent to the specified external device from the start of the device specified here. However, when the request data size is an odd number, only the lower 8 bits are sent as the final area.*3
(4)	i_uRPI	RPI	Word [unsigned]/bit string [16 bits]	0, 200 to 60000*1	Specify the send cycle. (Unit: millisecond) Specify 0 when not changing from the value set in "EtherNet/IP Configuration" of GX Works3.
(5)	i_uRequestNo	Request No.	Word [unsigned]/bit string [16 bits]	1 to 256	Specify the request No. to be used by RJ71GN11-EIP.*2

*1 Operation is performed using the last value if a value out of the setting range is set.

*2 Specify a value that matches the connection number in Class3 communications parameters set in "EtherNet/IP Configuration" of GX Works3.

*3 For the service to use, request data size, and external device, set Class3 communications parameters in "EtherNet/IP Configuration" of GX Works3.

■Output arguments

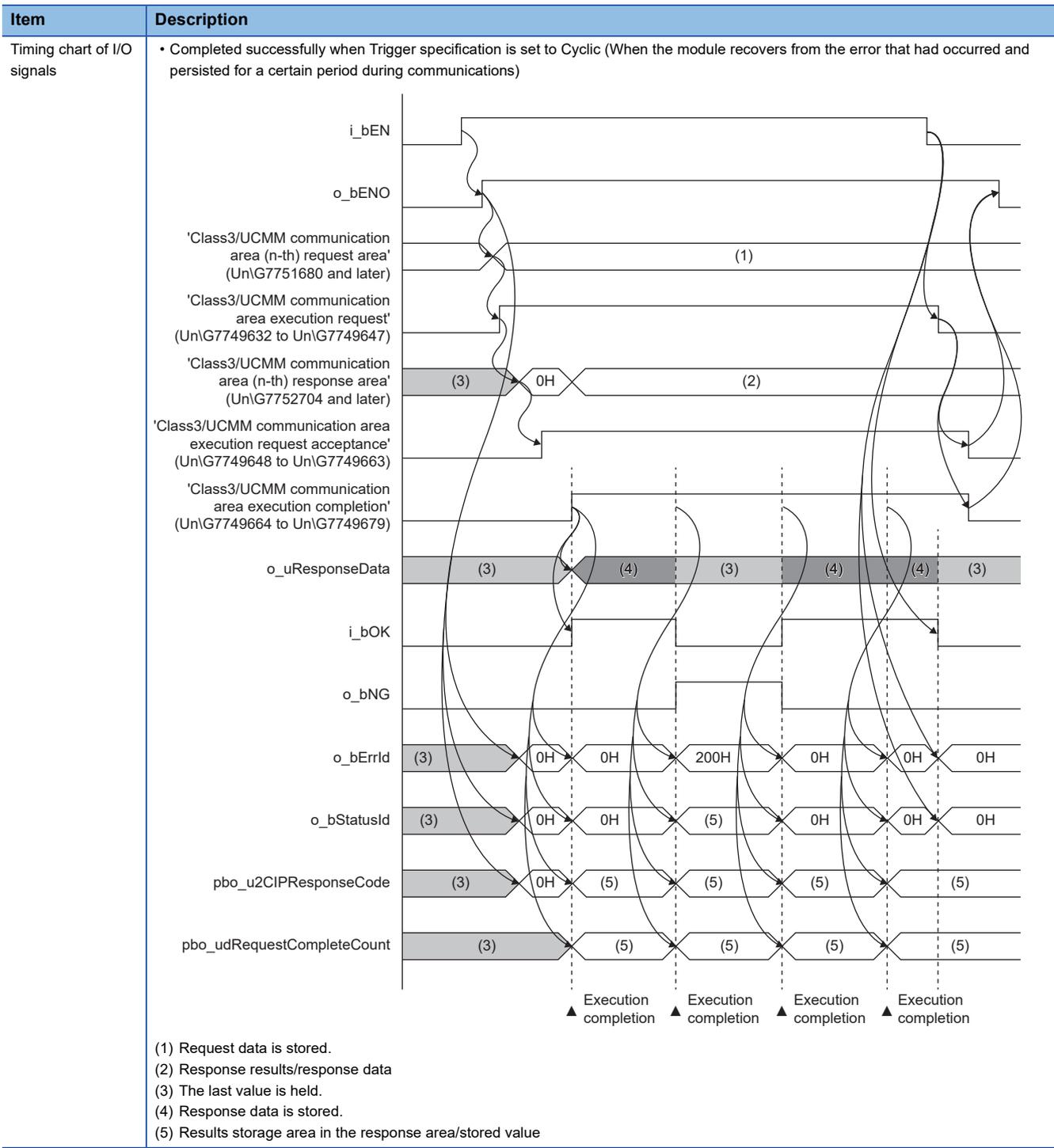
No.	Variable name	Name	Data type	Description	Default value
(6)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(7)	o_bOK	Completed successfully	Bit	The FB has been processed normally when this argument is on.	Off
(8)	o_bErr	Completed with an error	Bit	The FB has been processed abnormally when this argument is on.	Off
(9)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(10)	o_uStatusId	Error code for communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)).	0
(11)	o_uResponseData	Response data storage device	Word [unsigned]/bit string [16 bits]	Data (response data size ÷ 2 (value is rounded up)) is stored from the start of the device specified with the response data for the requested service. However, when the response data size is an odd number, only the lower 8 bits are stored for the final area.	0
(12)	o_uResponseSize	Response data size	Word [unsigned]/bit string [16 bits]	The size of the received response data is stored. (Unit: byte)	0

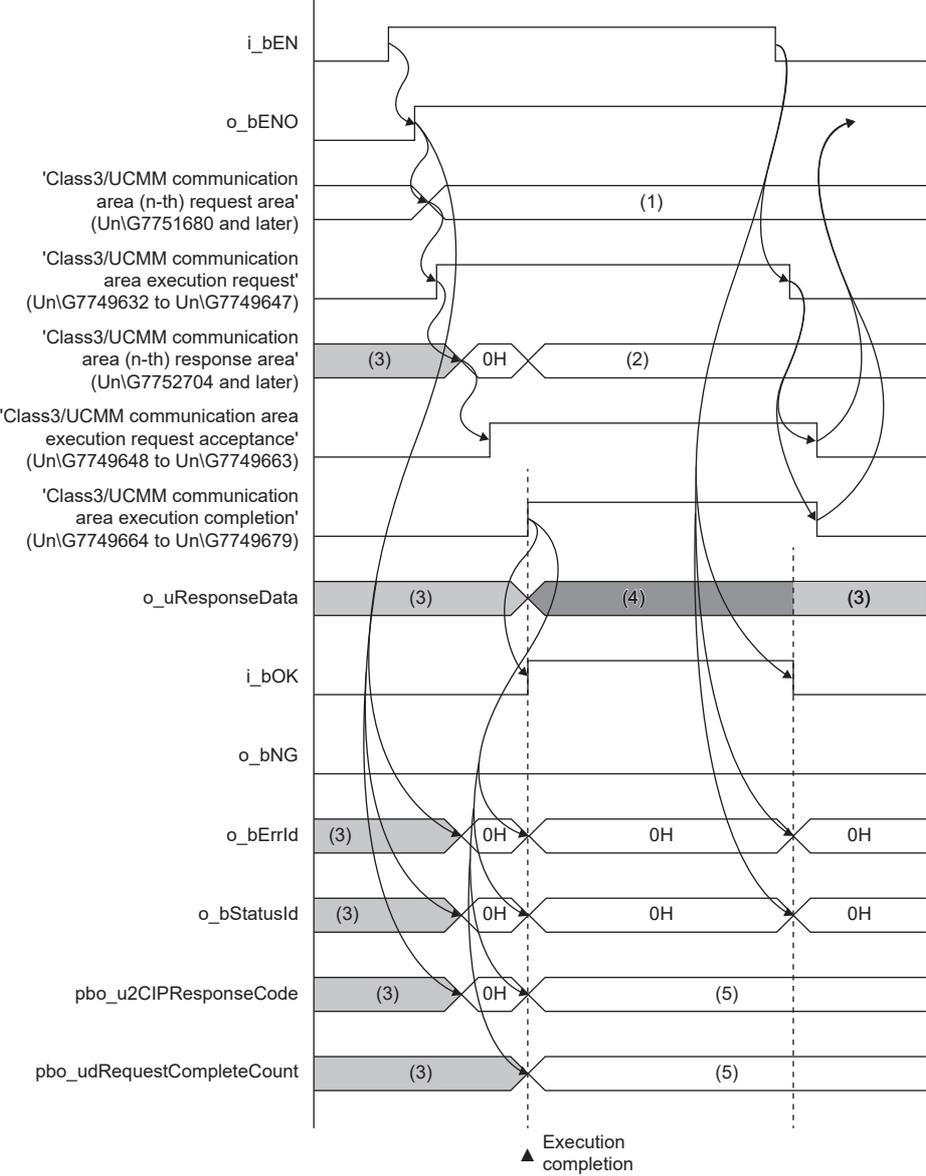
■Public variables

No.	Variable name	Name	Data type	Description	Default value
(13)	pbo_u2CIPResponseCode	CIP response code	Word [unsigned]/bit string [16 bits] (0..1)	CIP response code is stored when a communication error has occurred (when 200H is stored in o_uErrId (error code)). For details on CIP response codes, refer to the manual of the external device that sends response commands.	0
(14)	pbo_udRequestCompleteCount	Number of completed requests	Double word [unsigned]/bit string [32 bits]	The number of completed requests for Class3 message communications is stored.	0

FB details

Item	Description	
Available device	Module	RJ71GN11-EIP
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	678 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.	
Processing	To perform Class3 message communications, set Class3 communications parameters for the module in "EtherNet/IP Configuration" of GX Works3. <ul style="list-style-type: none"> ■When Trigger specification for Class3 communications parameters is set to Cyclic <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, messages are periodically sent to the specified external device via the Class3 message communications. • While i_bEN (execution command) and o_bOK (completed successfully) are on, data in i_uRequestData (request data storage device) is sent by adding it to the message and response data is continuously stored in o_uResponseData (response data storage device). ■When Trigger specification for Class3 communications parameters is set to Application Trigger <ul style="list-style-type: none"> • When i_bEN (execution command) is turned on, messages are sent to the specified external device via the Class3 message communications. 	
FB compilation method	Macro type	
FB operation	Any-time execution type	



Item	Description
Timing chart of I/O signals	<p data-bbox="331 181 997 208">• Completed successfully when Trigger specification is set to Application Trigger</p>  <p data-bbox="331 1415 817 1547"> (1) Request data is stored. (2) Response results/response data (3) The last value is held. (4) Response data is stored. (5) Results storage area in the response area/stored value </p>

Item	Description
Timing chart of I/O signals	<p>• Completed with an error when Trigger specification is set to Application Trigger (when a communication error occurs)</p> <p>(1) Request data is stored. (2) Response results/response data (3) The last value is held. (4) Results storage area in the response area/stored value</p>

Item	Description
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. • By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for communication error) are cleared to 0. • Using the FB in a program that is to be executed only once, such as a subroutine program or FOR to NEXT instructions, has a problem that i_bEN (execution command) can no longer be turned off and normal operation is not possible. Always use the FB in a program that is capable of turning off i_bEN (execution command). • This FB requires the configuration of the circuit for every input label. • The buffer memory is operated using the module labels inside the FB. Therefore, when using more than one of this FB or using the FB with M+model_Class3Originator_ReadTagData or M+model_Class3Originator_WriteTagData simultaneously, a double coil warning may occur during compilation. This does not cause any problem during use. • When using more than one of this FB or using the FB with M+model_Class3Originator_ReadTagData or M+model_Class3Originator_WriteTagData simultaneously, care must be taken to avoid duplication of i_uRequestNo (request No.). • The execution result is determined when o_bOK (completed successfully) or o_bErr (completed with an error) is turned on. • Refer to o_uReadData (read data storage device) while o_bOK (completed successfully) is on. • Refer to o_uErrId (error code) and o_uStatusId (error code for communication error) while o_bErr (completed with an error) is on. • This FB performs operations in the following buffer memory areas. For this reason, during the execution of this FB, do not execute any operation in any buffer memory area*1 with the same i_uRequestNo (request No.) outside of the FB. 'Class3/UCMM communication execution request' (Un\G7749632 to Un\G7749647) 'Class3/UCMM communication execution request acceptance' (Un\G7749648 to Un\G7749663) 'Class3/UCMM communication execution completion' (Un\G7749664 to Un\G7749679) 'Class3/UCMM communication request/response area' (Un\G7751680 to Un\G8275967)

*1 Area where this FB's i_uRequestNo (request No.) is the same as "n" in "No. n" in the buffer memory area.

Error codes

Error code	Description	Action
100H	The i_uRequestNo (request No.) value is out of the setting range.	Set the i_uRequestNo (request No.) value within the range from 1 to 256.
101H	EtherNet/IP communications have stopped.	Set a value other than 0 for 'EtherNet/IP communication start request signal' (Un\G7340096) and start EtherNet/IP communications.
104H	An area where Class3 communications parameters are not set was used.	<ul style="list-style-type: none"> • Check the settings in "EtherNet/IP Configuration" of GX Works3 and check that the connection number for which Class3 communications parameters are set and the number specified in i_uRequestNo (request No.) match. • Check that the initial value in the area where Write is prohibited has not been changed using a ladder diagram or other diagram within the request area of Class3/UCMM communications area (request No. X).
107H	An area, where a service other than message communications is set, was used.	<ul style="list-style-type: none"> • Check the settings for "EtherNet/IP Configuration" of GX Works3 and check that message communications are set. • Check that the initial value in the area where Write is prohibited has not been changed using a ladder diagram or other diagram within the request area of Class3/UCMM communications area (request No. X).
200H	Communication error has occurred.	<p>Check the value stored in o_uStatusId (error code for communication error) by referring to the following.</p> <p>(The CIP response code when o_uStatusId (error code for communication error) is 01FFH is stored in pbo_u2CIPResponseCode (CIP response code).)</p> <p> MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual</p>

3 EtherNet/IP NETWORK INTERFACE MODULE FB

3.1 M+model_Class1GetInputData

Name

M+RJ71EIP91_Class1GetInputData

Overview

Item	Description
Functional overview	Acquires input data of the specified connection via the Class1 communications.
Symbol	<pre> graph LR subgraph M+RJ71EIP91_Class1GetInputData direction TB i_bEN((1) B: i_bEN) i_stModule((2) DUT: i_stModule) i_uConnectionNo((3) UW: i_uConnectionNo) o_bENO((4) o_bENO: B) o_bOK((5) o_bOK: B) o_bErr((6) o_bErr: B) o_uErrId((7) o_uErrId: UW) o_uStatusId((8) o_uStatusId: UW) o_uInputData((9) o_uInputData: UW) end </pre>

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specifies the module label for the module that executes the FB (Example: EIP91_1)
(3)	i_uConnectionNo	Connection number	Word [unsigned]/bit string [16 bits]	1 to 256	Specifies the connection number to acquire input data.

Output arguments

No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The FB has been processed normally when this argument is on.	Off
(6)	o_bErr	Error completion	Bit	The FB has been processed abnormally when this argument is on.	Off
(7)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(8)	o_uStatusId	Error code for connection communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a connection communication error has occurred (when 200H is stored in o_uErrId).	0
(9)	o_uInputData	Input data storage device	Word [unsigned]/bit string [16 bits]	Specify the start address of the storage device for input data.	0

FB details

Item	Description
Available device	Target module RJ71EIP91
	CPU module RCPU
	Engineering tool GX Works3
Language	Ladder diagram
Number of basic steps	251 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.
Processing	<ul style="list-style-type: none"> When i_bEN (execution command) is turned on, input data of the specified connection is acquired via the Class1 communications. While i_bEN (execution command) and o_bOK (completed successfully) are turned on, input data is continuously stored in o_uInputData (input data storage device).
FB compilation method	Macro type
FB operation	Any-time execution type
Timing chart of I/O signals	<p>• When the processing has been completed successfully (when the module recovers from the error that had occurred for a certain period during communications)</p> <p>(1) Set value (2) The last value is held. (3) The input data is stored. (4) Error code</p>

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed with an error (when i_uConnectionNo (connection number) is out of the setting range)</p> <p>(1) The last value is held.</p>

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed with an error (when no input data is assigned to the target connection)</p> <p>(1) FFFFH (not changed) (2) 0H (not changed) (3) The last value is held.</p>
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for connection communication error) are cleared to 0. • 'EtherNet/IP communication start request' (Y10) is not turned off by turning off i_bEN (execution command). To stop EtherNet/IP communications, turn off i_bEN (execution command) of all the module FBs of the RJ71EIP91 in the program, and then turn off 'EtherNet/IP communication start request' (Y10).

Error codes

Error code	Description	Action
100H	The i_uConnectionNo (connection number) value is out of the setting range.	Set the i_uConnectionNo (connection number) value within the range between 1 and 256.
110H	Input data is not assigned to the target connection.	Review the settings for EtherNet/IP Configuration Tool.
200H	Communication error has occurred in the target connection.	Check the value stored in o_uStatusId (error code for connection communication error) by referring to the following manual. MELSEC iQ-R EtherNet/IP Network Interface Module User's Manual (Application)

3.2 M+model_Class1SetOutputData

Name

M+RJ71EIP91_Class1SetOutputData

Overview

Item	Description
Functional overview	Sets output data of the specified connection via the Class1 communications.
Symbol	<p>The diagram shows a rectangular box labeled 'M+RJ71EIP91_Class1SetOutputData'. On the left side, there are four input variables: (1) B: i_bEN, (2) DUT: i_stModule, (3) UW: i_uConnectionNo, and (4) UW: i_uOutputData. On the right side, there are five output variables: (5) o_bENO: B, (6) o_bOK: B, (7) o_bErr: B, (8) o_uErrId: UW, and (9) o_uStatusId: UW.</p>

Labels

Input arguments

No.	Variable name	Name	Data type	Scope	Description
(1)	i_bEN	Execution command	Bit	On or off	On: The FB is activated. Off: The FB is not activated.
(2)	i_stModule	Module label	Structure	—	Specifies the module label for the module that executes the FB (Example: EIP91_1)
(3)	i_uConnectionNo	Connection number	Word [unsigned]/bit string [16 bits]	1 to 256	Specifies the connection number for which output data is set.
(4)	i_uOutputData	Output data storage device	Word [unsigned]/bit string [16 bits]	—	Specifies the start address of the storage device for output data.

Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The FB has been processed normally when this argument is on.	Off
(7)	o_bErr	Error completion	Bit	The FB has been processed abnormally when this argument is on.	Off
(8)	o_uErrId	Error code	Word [unsigned]/bit string [16 bits]	An error code is stored when the processing has been completed with an error.	0
(9)	o_uStatusId	Error code for connection communication error	Word [unsigned]/bit string [16 bits]	An error code is stored when a connection communication error has occurred (when 200H is stored in o_uErrId (error code)).	0

FB details

Item	Description	
Available device	Target module	RJ71EIP91
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	251 steps The number of steps of the FB embedded in a program depends on the CPU module used, the input/output definitions, and the option settings of GX Works3. For the option settings of GX Works3, refer to the GX Works3 Operating Manual.	
Processing	<ul style="list-style-type: none"> When i_bEN (execution command) is turned on, output data of the specified connection is set via the Class1 communications. While i_bEN (execution command) and o_bOK (completed successfully) are turned on, output data is continuously updated to the value stored in i_uOutputData (output data storage device). 	
FB compilation method	Macro type	
FB operation	Any-time execution type	
Timing chart of I/O signals	<p>• When the processing has been completed successfully (when the module recovers from the error that had occurred for a certain period during communications)</p> <p>(1) Set value (2) The last value is held. (3) Data are updated to the value stored in i_uOutputData (output data storage device). (4) Error code</p>	

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed with an error (when i_uConnectionNo (connection number) is out of the setting range)</p> <p>(1) The last value is held.</p>

Item	Description
Timing chart of I/O signals	<p>• When the processing has been completed with an error (when no output data is assigned to the target connection)</p> <p>(1) FFFFH (not changed) (2) 0H (not changed) (3) The last value is held.</p>
Precautions	<ul style="list-style-type: none"> • Turn off i_bEN (execution command) after o_bOK (completed successfully) or o_bErr (completed with an error) turns on. By turning off i_bEN (execution command), o_bOK (completed successfully) and o_bErr (completed with an error) are turned off, and o_uErrId (error code) and o_uStatusId (error code for connection communication error) are cleared to 0. • 'EtherNet/IP communication start request' (Y10) is not turned off by turning off i_bEN (execution command). To stop EtherNet/IP communications, turn off i_bEN (execution command) of all the module FBs of the RJ71EIP91 in the program, and then turn off 'EtherNet/IP communication start request' (Y10).

Error codes

Error code	Description	Action
100H	The i_uConnectionNo (connection number) value is out of the setting range.	Set the i_uConnectionNo (connection number) value within the range between 1 and 256.
111H	Output data is not assigned to the target connection.	Review the settings for EtherNet/IP Configuration Tool.
200H	Communication error has occurred in the target connection.	Check the value stored in o_uStatusId (error code for connection communication error) by referring to the following manual. MELSEC iQ-R EtherNet/IP Network Interface Module User's Manual (Application)

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mitsubishi electric corporation

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS : 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA, JAPAN

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