MITSUBISHI ELECTRIC

Mitsubishi Programmable Controller

MELSEC iQ-R series

MELSEC iQ-R Ethernet/CC-Link IE Function Block Reference

CONTENTS

CHAPTER 1 MODULE FUNCTION BLOCK (FB) LIST 2

CHAPTER 2 NETWORK COMMON MODULE FB 4

2.1 M+model_DeviceRead 4
2.2 M+model_DeviceWrite 9
2.3 M+model_Send 14
2.4 M+model_Recv 19
2.5 M+model_RemoteStopRun 24
2.6 M+model_ReadTime 29
2.7 M+model_WriteTime 33

CHAPTER 3 ETHERNET-EQUIPPED MODULE FB 37

3.1 M+model_ConnectionOpen 37
3.2 M+model_ConnectionClose 41
3.3 M+model_Recv_Socket 43
3.4 M+model_Send_Socket 46
3.5 M+model_Refresh_Data 49
3.6 M+model_SLMP_DeviceRead_IP 50
3.7 M+model_SLMP_DeviceWrite_IP 56

CHAPTER 4 CC-LINK IE CONTROLLER NETWORK MODULE FB 62

4.1 M+model_StationNoSet 62
4.2 M+Model_RedundantSystem_GetAddress 65

CHAPTER 5 CC-LINK IE FIELD NETWORK MODULE FB 69

5.1 M+model_SetParameter 69
5.2 M+model_StationNoSet 75
5.3 M+Model_RedundantSystem_GetAddress 76
5.4 M+model_ReadSystemTypeInformation 77
5.5 M+model_ReadSystemStatusInformation 80

REVISIONS 84

1 MODULE FUNCTION BLOCK (FB) LIST

This chapter lists the module FBs that can be used in the MELSEC iQ-R series network modules and Ethernet function of the CPU module.

Network common module FB

Name	Description
M+model_DeviceRead	Reads data by specifying a device in the programmable controller of another station.
M+model_DeviceWrite	Writes data by specifying a device in the programmable controller of another station.
M+model_Send	Sends data to the programmable controller of another station.
M+model_Recv	Reads the data received from the programmable controller of another station.
M+model_RemoteStopRun	Sends a remote STOP/RUN request to the programmable controller of another station.
M+model_ReadTime	Reads clock data from the programmable controller of another station to adjust the time of the programmable controller CPU of own station.
M+model_WriteTime	Writes the clock data of the programmable controller of own station to another station to adjust the time of the programmable controller CPU of another station.

Ethernet-equipped module FB

Name	Description
M+model_ConnectionOpen	Opens (establishes) a connection.
M+model_ConnectionClose	Closes (disconnects) the connection.
M+model_Recv_Socket	Reads the data received from the external device through socket communication or fixed buffer communication.
M+model_Send_Socket	Sends data to the external device through socket communication or fixed buffer communication.
M+model_Refresh_Data	Transfers module label data.
M+model_SLMP_DeviceRead_IP	Reads data from the SLMP-compatible device by specifying IP address.
M+model_SLMP_DeviceWrite_IP	Writes data to the SLMP-compatible device by specifying IP address.

CC-Link IE Controller Network module FB

Name	Description
M+model_StationNoSet	Sets the station number of the own station.
M+model_RedundantSystem_GetAddress	Identifies the control system or standby system in the target (another station) redundant system and acquires the address of the control system or standby system in the redundant system.

CC-Link IE Field Network module FB

Name	Description
M+model_SetParameter	Sets the parameters in the master, submaster, and local stations.
M+model_StationNoSet	Sets the station number for the own (local) station.
M+model_RedundantSystem_GetAddress	Identifies the control system or standby system in the target (another station) redundant system to acquire the address of the control system or standby system in the redundant system.
M+model_ReadSystemTypeInformation	Reads the model information of the system configuration module of the intelligent device station (remote head module).
M+model_ReadSystemStatusInformation	Reads the status information of the system configuration module of the intelligent device station (remote head module).

MEMO

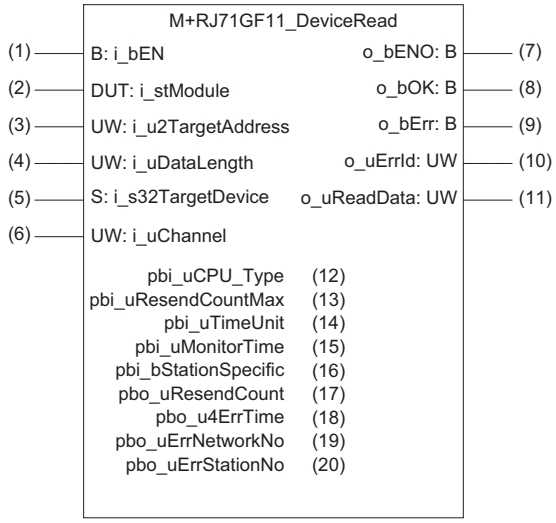
2 NETWORK COMMON MODULE FB

2.1 M+model_DeviceRead

Name

M+model_DeviceRead

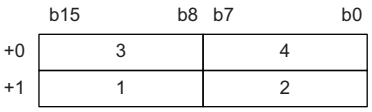
Overview

Item	Description
Overview	Reads data by specifying a device in the programmable controller of another station.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)

No.	Variable name	Name	Data type	Range	Description
(3)	i_u2TargetAddress	Target station address specification	Word [Unsigned] /Bit String [16-bit] (0..1)	—	Specify the network number and station number of the target station when "target station address specification method" is 0. When specifying the address using a label, use an array as the data type. • 1st word: Network number (1 to 239) • 2nd word: Station number Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 126: Master operating station • 1 to 120: Local station, remote device station, intelligent device station, submaster station
					Specify the IP address of the target station when "target station address specification method" is 1 (Ethernet only). Specify the third and fourth octets to the 1st word, and first and second octets to the 2nd word. When specifying the address using a label, use an array as the data type. • 00000001H to FFFFFFFEH Note that the fourth octet cannot be set to 0 or 255 (FFH).  1 to 4: IP address octet When specifying the address using a label, use an array as the data type.
(4)	i_uDataLength	Read data length	Word [Unsigned] /Bit String [16-bit]	—	Specify the number of words to be read. • When reading data from RCPU, QCPU, or LCPU: 1 to 8192 words • When reading data from QnACPU: 1 to 480 words When specifying 961 words or more, specify 9 or 10 in "own station channel".
(5)	i_s32TargetDevice	Target station read device	Character string (32)	—	Specify the start address of the target station from which data is to be read.
(6)	i_uChannel	Own station channel	Word [Unsigned] /Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/ Function Blocks)

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(7)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(8)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(9)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(10)	o_uErrId	Error code	Word [Unsigned] /Bit String [16-bit]	An error code is stored at error completion.	0
(11)	o_ReadData	Read data storage device	Word [Unsigned] /Bit String [16-bit]	Specify the start number of the device for storing the read data	0

■Operation parameters

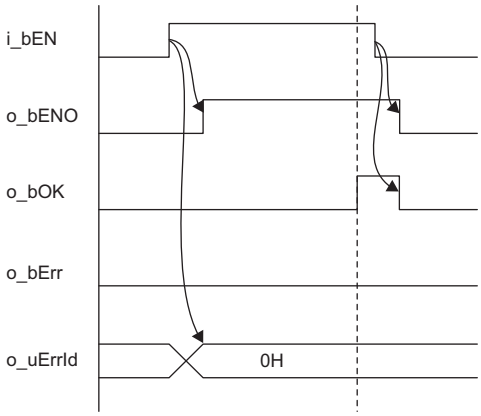
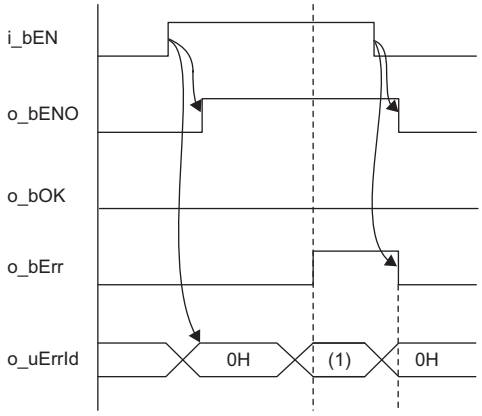
No.	Variable name	Name	Data type	Range	Description	Default value
(12)	pbi_uCPU_Type	Target station CPU type	Word [Unsigned]/Bit String [16-bit]	0000H, 030DH to 03D3H, 03E0H to 03E3H, 03FFH	Specify the CPU type of the target station. • 0000H: To CPU of target station (control CPU) • 03D0H: To control system CPU • 03D1H: To standby CPU • 03D2H: To system A CPU • 03D3H: To system B CPU • 03E0H: To multiple CPU No. 1 • 03E1H: To multiple CPU No. 2 • 03E2H: To multiple CPU No. 3 • 03E3H: To multiple CPU No. 4 • 03FFH: To CPU of target station (control CPU)	0
(13)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(14)	pbi_uTimeUnit	Arrival monitoring time unit	Word [Unsigned]/Bit String [16-bit]	0, 1	Specify the unit of the "arrival monitoring time". • 0: 1s • 1: 100ms	0
(15)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/Bit String [16-bit]	—	Specify the monitoring time until completion of processing. If "arrival monitoring time unit" is set to 1s, specify the TCP resend timer value or a greater value for the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • Effective range (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s When "arrival monitoring time unit" is set to 100ms • Effective range 1 to 65535: 1 to 65535 × 100ms	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		—	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. When "arrival monitoring time unit" is set to 1s • Effective range 1 to 32767: 1s to 32767s When "arrival monitoring time unit" is set to 100ms • Effective range 1 to 65535: 1 to 65535 × 100ms	0: 10s
(16)	pbi_bStationSpecific	Target station address specification method	Bit	On or off	Specify the specification method of a target station. • Off: Use the network number and station number. • On: Use the IP address (IPv4). (Ethernet only).	Off

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(17)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(18)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(19)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(20)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/Bit String [16-bit]	The station number of the station in which an error was detected is stored. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, remote device station, intelligent device station, submaster station	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	85 steps	
Processing	When i_bEN (execution command) is turned on, this function reads device data from another station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	

Item	Description
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the G(P).READ instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.

Error code

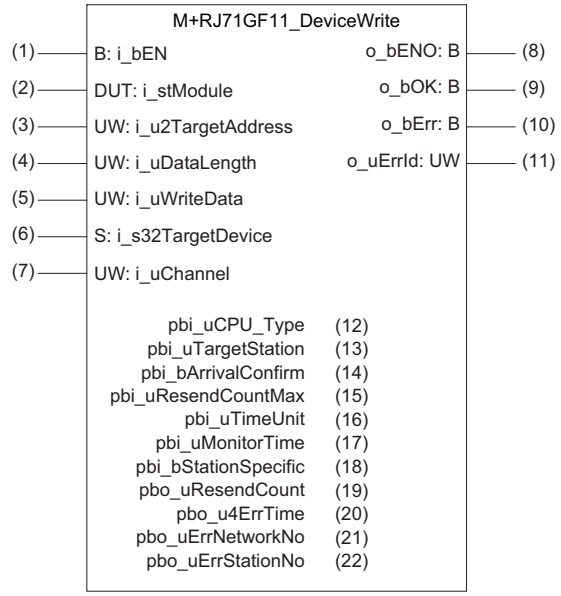
Error code	Reference
4000H to 4FFFH	📖 MELSEC iQ-R CPU Module User's Manual (Application)
C000H to CFFFH	📖 MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	📖 MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	📖 MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

2.2 M+model_DeviceWrite

Name

M+model_DeviceWrite

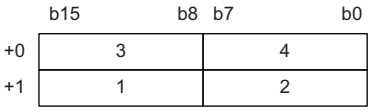
Overview

Item	Description
Overview	Writes data by specifying a device in the programmable controller of another station.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

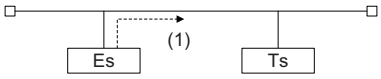
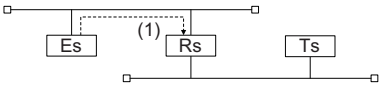
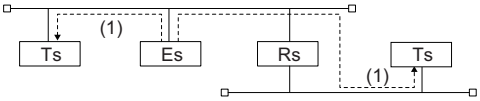
No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)

No.	Variable name	Name	Data type	Range	Description
(3)	i_u2TargetAddress	Target station address	Word [Unsigned] /Bit String [16-bit] (0..1)	—	Specify the network number and station number of the target station when "target station address specification method" is 0. When specifying the numbers using a label, use an array as the data type. ■When "target station specification method" is set to 0 to specify a station number • 1st word: Network number (1 to 239) • 2nd word: Station number Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 126: Master operating station • 1 to 120: Local station, remote device station, intelligent device station, submaster station ■When "target station specification method" is set to 1 to specify a group • 1st word: Network number (1 to 239) • 2nd word: Transient transmission group number (1 to 32) ■When "target station specification method" is set to 2 to specify all stations • 1st word: Network number (1 to 239) • 2nd word: 0 (The setting is ignored.)
					Specify the IP address of the target station when "target station address specification method" is 1 (Ethernet only). Specify the third and fourth octets to the 1st word, and first and second octets to the 2nd word. When specifying the address using a label, use an array as the data type. • 00000001H to FFFFFFFEH Note that the fourth octet cannot be set to 0 or 255 (FFH).  1 to 4: IP address octet When specifying the address using a label, use an array as the data type.
(4)	i_uDataLength	Write data length	Word [Unsigned] /Bit String [16-bit]	—	Specify the number of words to be written. • When writing to RCPU, QCPU, or LCPU: 1 to 8192 words • When writing to QnACPU: 1 to 480 words When specifying 961 words or more, specify 9 or 10 in "own station channel".
(5)	i_uWriteData	Write data storage device	Word [Unsigned] /Bit String [16-bit]	—	Specify the start device of own station containing the write data.
(6)	i_s32TargetDevice	Target station write device	Character string (32)	—	Specify the start device of the target station to which data is to be written.
(7)	i_uChannel	Own station channel	Word [Unsigned] /Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/ Function Blocks)

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(8)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(9)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(10)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(11)	o_uErrId	Error code	Word [Unsigned]/ Bit String [16-bit]	An error code is stored at error completion.	0

■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(12)	pbi_uCPU_Type	Target station CPU type	Word [Unsigned]/ Bit String [16-bit]	0000H, 030DH to 03D3H, 03E0H to 03E3H, 03FFH	Specify the CPU type of the target station. • 0000H: To CPU of target station (control CPU) • 03D0H: To control system CPU • 03D1H: To standby CPU • 03D2H: To system A CPU • 03D3H: To system B CPU • 03E0H: To multiple CPU No. 1 • 03E1H: To multiple CPU No. 2 • 03E2H: To multiple CPU No. 3 • 03E3H: To multiple CPU No. 4 • 03FFH: To CPU of target station (control CPU)	0
(13)	pbi_uTargetStation	Target station specification method	Word [Unsigned]/ Bit String [16-bit]	0 to 2	Specify the specification method of a target station. • 0: Station number specification → Station with the station number specified in "target station address" • 1: Group specification (only when "OFF (No)" is specified in "arrival acknowledgment") → All stations of the transient transmission group number specified in "arrival station address" (For the CC-Link IE Field Network, the value 1 cannot be specified.) • 2: All stations (only when "OFF (No)" is specified in "arrival acknowledgment") → All stations of the network number specified in "arrival station address" (broadcast excluding own station)	0
(14)	pbi_bArrivalConfirm	Arrival acknowledgment	Bit	On or off	Specify whether to use arrival acknowledgment. ■Off: No check • When the target station is within the own network, sending data from the own station completes the sending.  (1) Completion Es: Execution source Ts: Target station • When the target station is within another network, data arrival to the relay station within the own network completes the sending.  (1) Completion Es: Execution source Rs: Relay station Ts: Target station ■On: Check Sending data is completed when the data is written to the target station.  (1) Completion Es: Execution source Rs: Relay station Ts: Target station	Off
(15)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/ Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(16)	pbi_uTimeUnit	Arrival monitoring time unit	Word [Unsigned]/ Bit String [16-bit]	1, 0	Specify the unit of the "arrival monitoring time". • 0: 1s • 1: 100ms	0

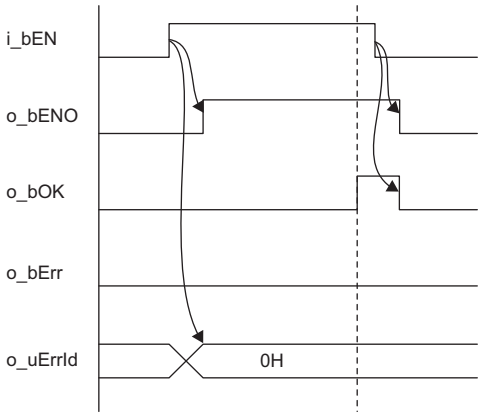
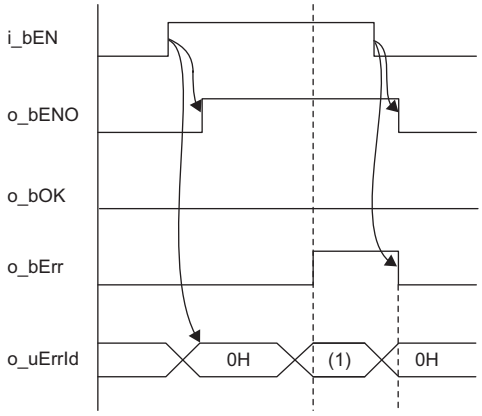
No.	Variable name	Name	Data type	Range	Description	Default value
(17)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/ Bit String [16-bit]	—	Specify the monitoring time until completion of processing. If "arrival monitoring time unit" is set to 1s, specify the TCP resend timer value or a greater value for the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • Effective range (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s When "arrival monitoring time unit" is set to 100ms • Effective range 1 to 65535: 1 to 65535 × 100ms	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		—	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. When "arrival monitoring time unit" is set to 1s • Effective range 1 to 32767: 1s to 32767s When "arrival monitoring time unit" is set to 100ms • Effective range 1 to 65535: 1 to 65535 × 100ms	0: 10s
(18)	pbi_bStationSpecific	Target station address specification method	Bit	On or off	Specify the specification method of a target station. • Off: Use the network number and station number. • On: Use the IP address (IPv4). (Ethernet only).	Off

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(19)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(20)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(21)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(22)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/Bit String [16-bit]	The station number of the station in which an error was detected is stored. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, remote device station, intelligent device station, submaster station	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3

Item	Description
Language	Ladder diagram
Number of basic steps	90 steps
Processing	When i_bEN (execution instruction) is turned on, this function writes device data to another station.
FB compilation method	Macro type
FB operation	Pulse type (multiple-scan execution type)
Input condition for FB_EN	None
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the G(P).WRITE instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.

Error code

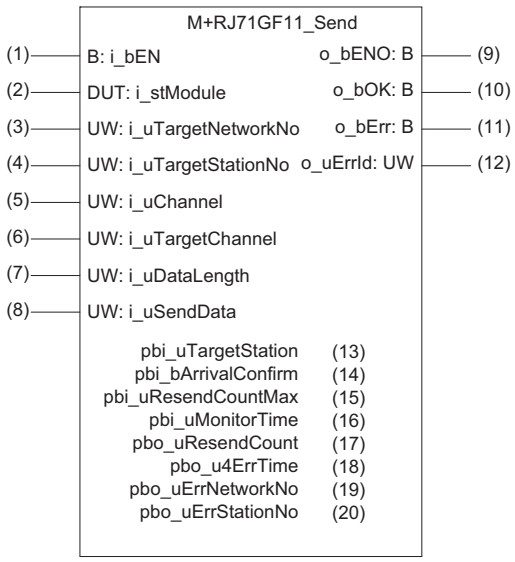
Error code	Reference
4000H to 4FFFH	MELSEC iQ-R CPU Module User's Manual (Application)
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

2.3 M+model_Send

Name

M+model_Send

Overview

Item	Description
Overview	Sends data to the programmable controller of another station.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)
(3)	i_uTargetNetworkNo	Target network number	Word [Unsigned]/ Bit String [16-bit]	1 to 239	Specify the network number of the target station.
(4)	i_uTargetStationNo	Target station number	Word [Unsigned]/ Bit String [16-bit]	—	Specify the station number of the target station or the transient transmission group number. ■When "target station specification method" is set to 0 to specify a station number Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 126: Master operating station • 1 to 120: Local station, remote device station, intelligent device station, submaster station ■When "target station specification method" is set to 1 to specify a group Specify the transient transmission group number. • 1 to 32 ■When "target station specification method" is set to 2 to specify all stations The setting is ignored.

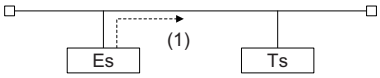
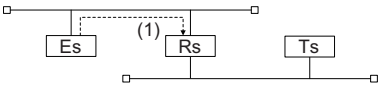
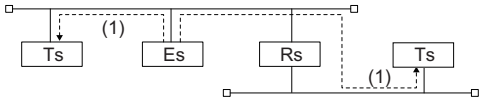
No.	Variable name	Name	Data type	Range	Description
(5)	i_uChannel	Own station channel	Word [Unsigned]/ Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)
(6)	i_uTargetChannel	Target station data storage channel	Word [Unsigned]/ Bit String [16-bit]	1 to 8	Specify the channel of the target station for storing data. When the target station is a CC-Link IE Field Network master/local module, specify 1 or 2.
(7)	i_uDataLength	Send data length	Word [Unsigned]/ Bit String [16-bit]	—	Specify the number of words to be sent. • When the target station is RCPU, QCPU, or LCPU: 1 to 960 words • When the target station is QnACPU: 1 to 480 words
(8)	i_uSendData	Send data storage device	Word [Unsigned]/ Bit String [16-bit]	—	Specify the start device of own station containing the send data.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(9)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(10)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(11)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(12)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(13)	pbi_uTargetStation	Target station specification method	Word [Unsigned]/ Bit String [16-bit]	0 to 2	Specify the specification method of a target station. • 0: Station number specification → Station with the station number specified in "target station number" • 1: Group specification (only when "OFF (No)" is specified in "arrival acknowledgment") → All stations of the transient transmission group number specified in "target station number" (For the CC-Link IE Field Network, the value 1 cannot be specified.) • 2: All stations (only when "OFF (No)" is specified in "arrival acknowledgment") → All stations of the network number specified in "target network number" (broadcast excluding own station)	0

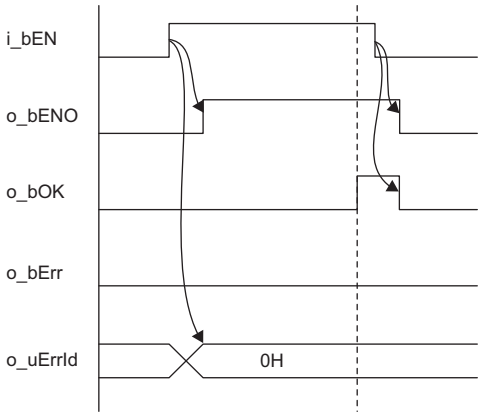
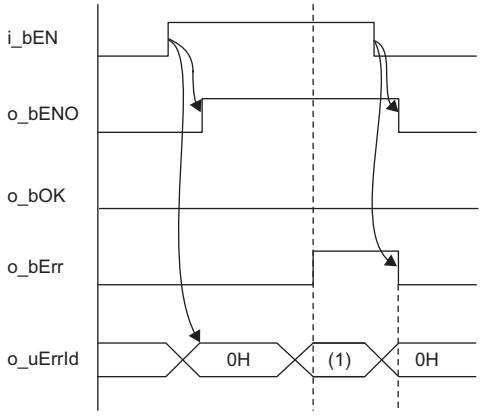
No.	Variable name	Name	Data type	Range	Description	Default value
(14)	pbi_bArrivalConfirm	Arrival acknowledgment	Bit	On or off	Specify whether to use arrival acknowledgment. ■Off: No check • When the target station is within the own network, sending data from the own station completes the sending.  (1) Completion Es: Execution source Ts: Target station • When the target station is within another network, data arrival to the relay station within the own network completes the sending.  (1) Completion Es: Execution source Rs: Relay station Ts: Target station ■On: Check Sending data is completed when the data is written to the target station.  (1) Completion Es: Execution source Rs: Relay station Ts: Target station	Off
(15)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/ Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(16)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/ Bit String [16-bit]	0 to 16383	Specify the TCP resend timer value or a greater value for the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		0, 1 to 32767	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0: 10s • 1 to 32767: 1 to 32767s	0

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(17)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(18)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(19)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(20)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/Bit String [16-bit]	The station number of the station in which an error was detected is stored. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, remote device station, intelligent device station, submaster station	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	75 steps	
Processing	When i_bEN (execution instruction) is turned on, this function sends a message to another station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	

Item	Description
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the G(P).SEND instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.

Error code

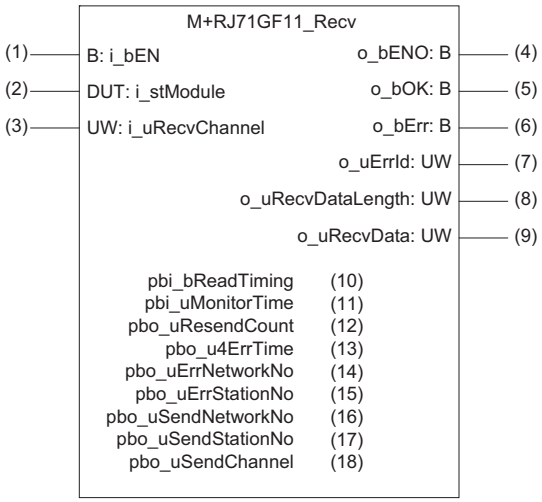
Error code	Reference
4000H to 4FFFH	📖 MELSEC iQ-R CPU Module User's Manual (Application)
C000H to CFFFH	📖 MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	📖 MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	📖 MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

2.4 M+model_Recv

Name

M+model_Recv

Overview

Item	Description
Overview	Reads the data received from the programmable controller of another station.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)
(3)	i_uRecvChannel	Receive data storage channel	Word [Unsigned]/ Bit String [16-bit]	—	Specify the channel containing the data to be read. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(6)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(7)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0
(8)	o_uRecvDataLength	Receive data length	Word [Unsigned]/Bit String [16-bit]	The number of received data is stored. • 1 to 1920 words	0
(9)	o_uRecvData	Receive data storage device	Word [Unsigned]/Bit String [16-bit]	Specify the start number of the device for storing received data.	0

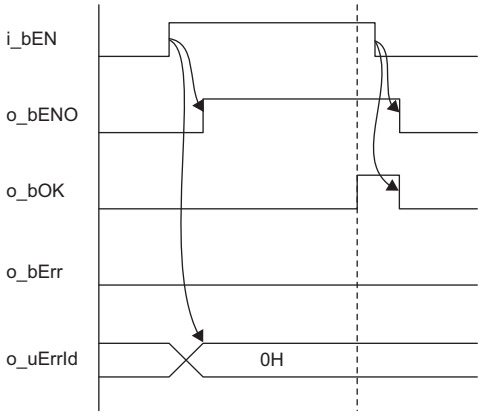
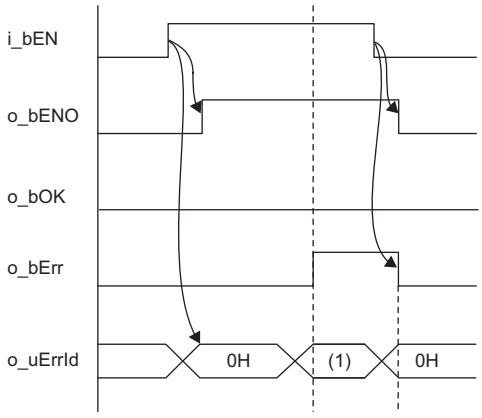
■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(10)	pbi_bReadTiming	Read timing	Bit	On	Specify the timing of executing data read processing. • On: Start reading in the first END processing after the module FB starts.	On
(11)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/ Bit String [16-bit]	0 to 16383	Specify the TCP resend timer value or a greater value for the monitoring time until completion of processing (the setting is valid only when "read timing" is on). When the processing is not completed normally within the monitoring time, the processing is completed with an error. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		0, 1 to 32767	Specify the monitoring time until completion of processing (the setting is valid only when "read timing" is on). When the processing is not completed normally within the monitoring time, the processing is completed with an error. • 0: 10s • 1 to 32767: 1 to 32767s	0

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(12)	pbo_uResendCount	Number of resends	Word [Unsigned]/ Bit String [16-bit]	The number of resends performed (result) is stored.	0
(13)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/ Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(14)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/ Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(15)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/ Bit String [16-bit]	The station number of the station in which an error was detected is stored. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, remote device station, intelligent device station, submaster station	0
(16)	pbo_uSendNetworkNo	Send station network number	Word [Unsigned]/ Bit String [16-bit]	The network number of the send station is stored.	0
(17)	pbo_uSendStationNo	Send station number	Word [Unsigned]/ Bit String [16-bit]	The station number of the send station is stored. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, remote device station, intelligent device station, submaster station	0
(18)	pbo_uSendChannel	Channel used by send station	Word [Unsigned]/ Bit String [16-bit]	The channel number used by the send station is stored. 1 to 8	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	94 steps	
Processing	When i_bEN (execution instruction) is turned on, this function receives a message from another station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.RECV instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

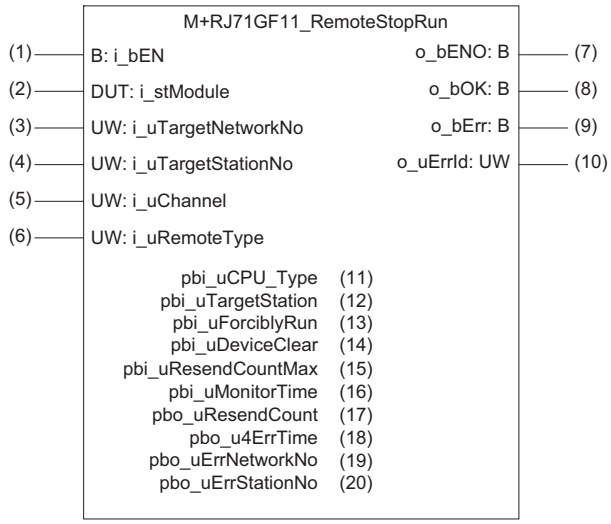
Error code	Reference
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

2.5 M+model_RemoteStopRun

Name

M+model_RemoteStopRun

Overview

Item	Description
Overview	Performs remote STOP/RUN for other stations.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)
(3)	i_uTargetNetworkNo	Target network number	Word [Unsigned]/ Bit String [16-bit]	1 to 239	Specify the network number of the target station.
(4)	i_uTargetStationNo	Target station number	Word [Unsigned]/ Bit String [16-bit]	—	Specify the station number of the target station or the transient transmission group number. ■When "target station specification method" is set to 0 to specify a station number Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 126: Master operating station • 1 to 120: Local station, remote device station, intelligent device station, submaster station ■When "target station specification method" is set to 1 to specify a group Specify the transient transmission group number. • 1 to 32 ■When "target station specification method" is set to 2 to specify all stations The setting is ignored.

No.	Variable name	Name	Data type	Range	Description
(5)	i_uChannel	Own station channel	Word [Unsigned]/ Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)
(6)	i_uRemoteType	Remote operation	Word [Unsigned]/ Bit String [16-bit]	1, 2	Specify remote RUN or STOP. • 1: Remote RUN • 2: Remote STOP

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(7)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(8)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(9)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(10)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

■Operation parameters

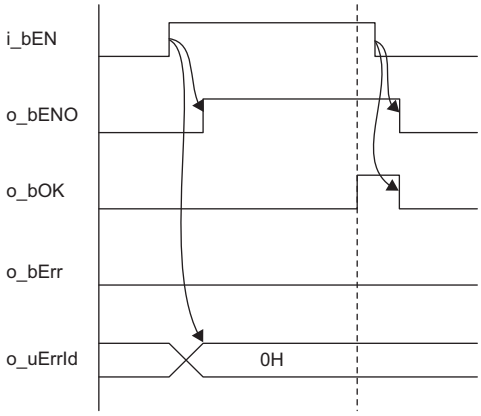
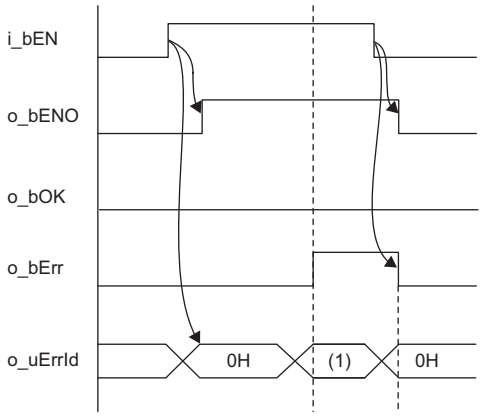
No.	Variable name	Name	Data type	Range	Description	Default value
(11)	pbi_uCPU_Type	Target station CPU type	Word [Unsigned]/Bit String [16-bit]	0000H, 030DH to 03D3H, 03E0H to 03E3H, 03FFH	Specify the CPU type of the target station. • 0000H: To CPU of target station (control CPU) • 03D0H: To control system CPU • 03D1H: To standby CPU • 03D2H: To system A CPU • 03D3H: To system B CPU • 03E0H: To multiple CPU No. 1 • 03E1H: To multiple CPU No. 2 • 03E2H: To multiple CPU No. 3 • 03E3H: To multiple CPU No. 4 • 03FFH: To CPU of target station (control CPU)	0
(12)	pbi_uTargetStation	Target station specification method	Word [Unsigned]/Bit String [16-bit]	0 to 2	Specify the specification method of a target station. • 0: Station number specification → Station with the station number specified in "target station number" • 1: Group specification → All stations of the transient transmission group number specified in "target station number" (For the CC-Link IE Field Network, the value 1 cannot be specified.) • 2: All stations → All stations of the network number specified in "target network number" (simultaneous broadcast except own station)	0
(13)	pbi_uForciblyRun	Specification of forced remote RUN	Word [Unsigned]/Bit String [16-bit]	1, 2	■"Remote operation": 1 (remote RUN) Specify whether to forcibly execute remote RUN. The forcible execution function enables forcible execution of remote RUN from another station when a station which executed remote STOP can no longer execute remote RUN. • 1: Not forcibly executed • 2: Forcibly executed ■"Remote operation": 2 (remote STOP) Any setting here is ignored and the following setting is always used. • 2: Forcibly executed	1
(14)	pbi_uDeviceClear	Specification of device clear at remote RUN	Word [Unsigned]/Bit String [16-bit]	0 to 2	■"Remote operation": 1 (remote RUN) Specify how to handle the CPU module device memory after remote RUN is executed. • 0: Do not clear. • 1: Clear (except the latch range). • 2: Clear (including the latch range). ■"Remote operation": 2 (remote STOP) Any setting here is ignored.	0

No.	Variable name	Name	Data type	Range	Description	Default value
(15)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time".	5
(16)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/Bit String [16-bit]	0 to 16383	Specify the TCP resend timer value or a greater value for the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		0, 1 to 32767	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0: 10s • 1 to 32767: 1 to 32767s	0

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(17)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(18)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(19)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(20)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/Bit String [16-bit]	The station number of the station in which an error was detected is stored. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, remote device station, intelligent device station, submaster station	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	122 steps	
Processing	When i_bEN (execution instruction) is turned on, this function receives a message from another station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.REQ instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

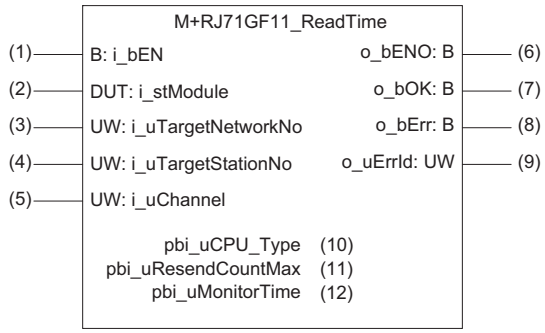
Error code	Reference
4000H to 4FFFH	MELSEC iQ-R CPU Module User's Manual (Application)
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

2.6 M+model_ReadTime

Name

M+model_ReadTime

Overview

Item	Description
Overview	Reads clock data from the programmable controller of another station to adjust the time of the programmable controller CPU of own station.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)
(3)	i_uTargetNetworkNo	Target network number	Word [Unsigned] /Bit String [16-bit]	1 to 239	Specify the network number of the target station.
(4)	i_uTargetStationNo	Target station number	Word [Unsigned] /Bit String [16-bit]	—	Specifies the station number of the target station. Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 126: Master operating station • 1 to 120: Local station, remote device station, intelligent device station, submaster station
(5)	i_uChannel	Own station channel	Word [Unsigned] /Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)

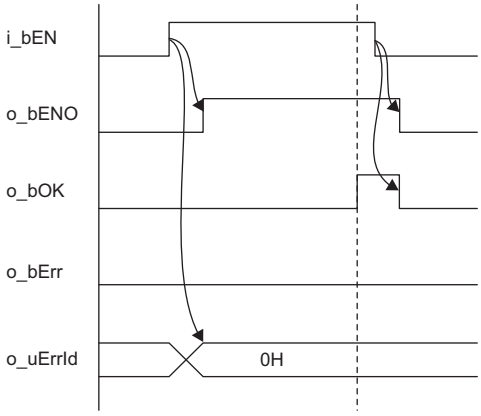
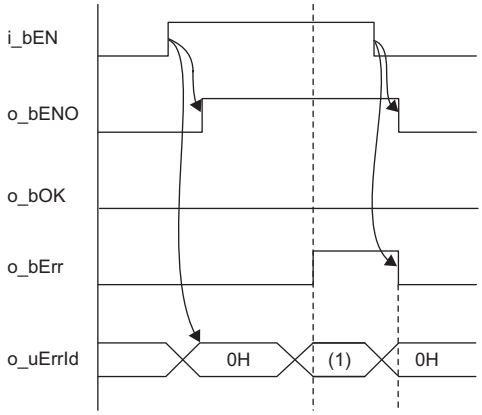
■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(6)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(7)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(8)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(9)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(10)	pbi_uCPU_Type	Target station CPU type	Word [Unsigned]/Bit String [16-bit]	0000H, 030DH to 03D3H, 03E0H to 03E3H, 03FFH	Specify the CPU type of the target station. • 0000H: To CPU of target station (control CPU) • 03D0H: To control system CPU • 03D1H: To standby CPU • 03D2H: To system A CPU • 03D3H: To system B CPU • 03E0H: To multiple CPU No. 1 • 03E1H: To multiple CPU No. 2 • 03E2H: To multiple CPU No. 3 • 03E3H: To multiple CPU No. 4 • 03FFH: To CPU of target station (control CPU)	0
(11)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time".	5
(12)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/Bit String [16-bit]	0 to 16383	Specify the TCP resend timer value or a greater value for the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		0, 1 to 32767	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0: 10s • 1 to 32767: 1 to 32767s	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	133 steps	
Processing	When i_bEN (execution instruction) is turned on, this function reads clock data from another station to adjust the time of the programmable controller CPU of own station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.REQ instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

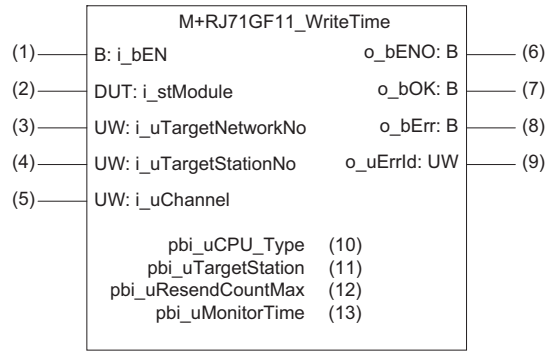
Error code	Reference
4000H to 4FFFH	📖 MELSEC iQ-R CPU Module User's Manual (Application)
C000H to CFFFH	📖 MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	📖 MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	📖 MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

2.7 M+model_WriteTime

Name

M+model_WriteTime

Overview

Item	Description
Overview	Writes the clock data of the programmable controller of own station to another station to adjust the time of the programmable controller CPU of another station.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)
(3)	i_uTargetNetworkNo	Target network number	Word [Unsigned]/ Bit String [16-bit]	1 to 239	Specify the network number of the target station.
(4)	i_uTargetStationNo	Target station number	Word [Unsigned]/ Bit String [16-bit]	—	Specify the station number of the target station or the transient transmission group number. ■When "target station specification method" is set to 0 to specify a station number Station number of Ethernet or CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 126: Master operating station • 1 to 120: Local station, remote device station, intelligent device station, submaster station ■When "target station specification method" is set to 1 to specify a group Specify the transient transmission group number. • 1 to 32 ■When "target station specification method" is set to 2 to specify all stations The setting is ignored.
(5)	i_uChannel	Own station channel	Word [Unsigned]/ Bit String [16-bit]	—	Specify the channel to be used by own station. 📖 MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)

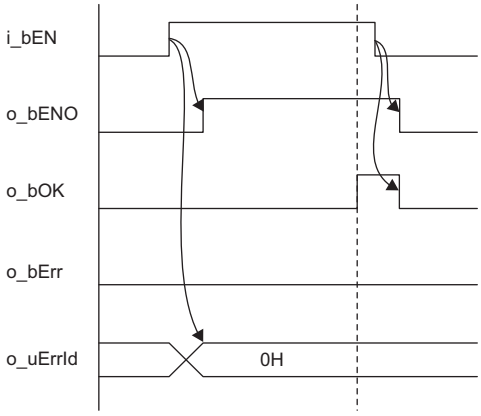
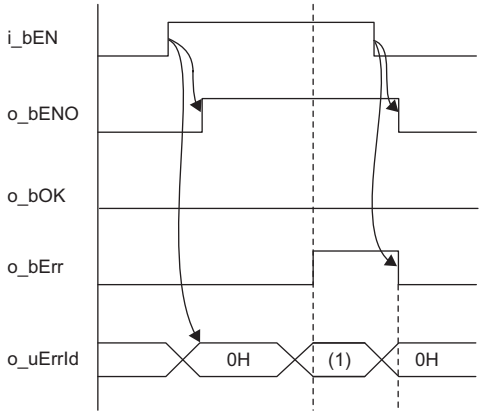
■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(6)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(7)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(8)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(9)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(10)	pbi_uCPU_Type	Target station CPU type	Word [Unsigned]/Bit String [16-bit]	0000H, 030DH to 03D3H, 03E0H to 03E3H, 03FFH	Specify the CPU type of the target station. • 0000H: To CPU of target station (control CPU) • 03D0H: To control system CPU • 03D1H: To standby CPU • 03D2H: To system A CPU • 03D3H: To system B CPU • 03E0H: To multiple CPU No. 1 • 03E1H: To multiple CPU No. 2 • 03E2H: To multiple CPU No. 3 • 03E3H: To multiple CPU No. 4 • 03FFH: To CPU of target station (control CPU)	0
(11)	pbi_uTargetStation	Target station specification method	Word [Unsigned]/Bit String [16-bit]	0 to 2	Specify the specification method of a target station. • 0: Station number specification → Station with the station number specified in "target station number" • 1: Group specification → All stations of the transient transmission group number specified in "target station number" (For the CC-Link IE Field Network, the value 1 cannot be specified.) • 2: All stations → All stations of the network number specified in "target network number" (simultaneous broadcast except own station)	0
(12)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time".	5
(13)	pbi_uMonitorTime	Arrival monitoring time (Ethernet)	Word [Unsigned]/Bit String [16-bit]	0 to 16383	Specify the TCP resend timer value or a greater value for the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0 to TCP resend timer value: Time represented by "TCP resend timer value" • (TCP resend timer value + 1) to 16383: ("TCP resend timer value" + 1) seconds to 16383s	0
		Arrival monitoring time (CC-Link IE Controller Network, CC-Link IE Field Network)		0, 1 to 32767	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0: 10s • 1 to 32767: 1 to 32767s	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2 • RJ71GP21-SX • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	133 steps	
Processing	When i_bEN (execution instruction) is turned on, this function writes clock data to another station to adjust the time of the programmable controller CPU of the station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.REQ instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

Error code	Reference
4000H to 4FFFH	MELSEC iQ-R CPU Module User's Manual (Application)
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

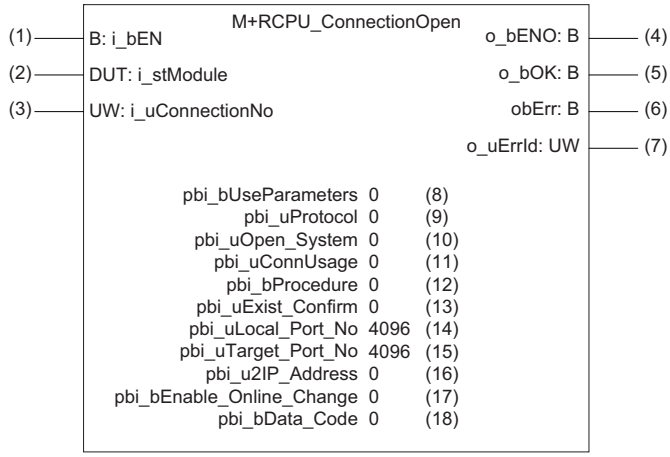
3 ETHERNET-EQUIPPED MODULE FB

3.1 M+model_ConnectionOpen

Name

M+model_ConnectionOpen

Overview

Item	Description
Overview	Opens (establishes) a connection for data communication with an external device.
Symbol	 The above FB is an example for the CPU module.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, RCPU)
(3)	i_uConnectionNo	Connection No.	Word [Unsigned] /Bit String [16-bit]	• RCPU (CPU part for the RnENCPU): 1 to 16 • RJ71EN71: 1 to 128 • RnENCPU (network part): 1 to 64	Specify the number of the connection to be opened.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(6)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(7)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

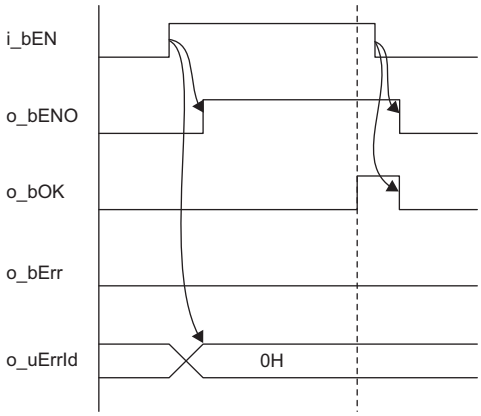
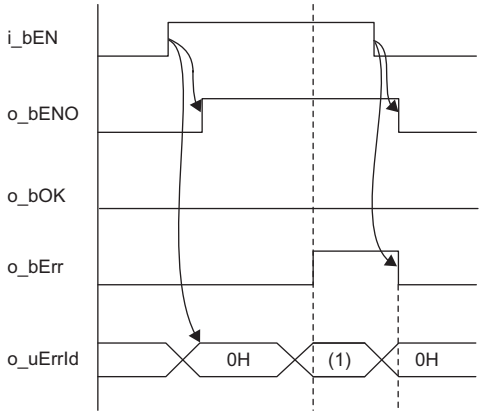
■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(8)	pbi_bUseParameters	Parameter used	Bit	On or off	Specify whether to use the parameter values set by the engineering tool or the following operation parameter values when processing for opening a connection. • Off: Performs open processing according to the external device configuration setting made by the engineering tool. (The following operation parameters need not be set. Any settings are ignored if made.) • On: Performs open processing according to the following operation parameters.	Off
(9)	pbi_uProtocol	Protocol	Word [Unsigned] /Bit String [16-bit]	0, 1	Select the protocol to be used for the connection to be opened. • 0: TCP/IP • 1: UDP/IP	0
(10)	pbi_uOpen_System	Open method	Word [Unsigned] /Bit String [16-bit]	0 to 2	Select the connection open method. • 0: Active open or UDP/IP • 1: Unpassive open • 2: Fullpassive open	0
(11)	pbi_uConnUsage	Connection use application	Word [Unsigned] /Bit String [16-bit]	0 to 2	Specify the purpose of the connection: sending, receiving, or paring open with regard to the external device. • 0: Send • 1: Receive • 2: Pairing open (The value 2 can be set for the connection No.1 to No.7 and No.9 to No.15.) Valid only when connection No.1 to 16 is used with the RJ71EN71 or the RnENCPU (network part). For the RCPU (CPU part for the RnENCPU), the setting is ignored because it does not support communications using a fixed buffer.	0
(12)	pbi_bProcedure	Communication procedure	Bit	On or off	Specify whether to use a communication procedure. • Off: Procedure not used • On: Procedure used Valid only when connection No.1 to 16 is used with the RJ71EN71 or the RnENCPU (network part). For the RCPU (CPU part for the RnENCPU), the setting is ignored because it does not support communications using a fixed buffer.	Off
(13)	pbi_uExist_Confirm	Alive check	Word [Unsigned] /Bit String [16-bit]	0 to 2	Specify whether to enable the arrive check function (with the use mode). • 0: Disable the alive check. • 1: Enable KeepAlive (in TCP/IP mode only). • 2: Enable the alive check with UDP (in TCP/IP mode only) Valid only when connection No.1 to 16 is used with the RJ71EN71 or the RnENCPU (network part). For the RCPU (CPU part for the RnENCPU), the setting is ignored because it does not support communications using a fixed buffer.	0
(14)	pbi_uLocal_Port_No	Own node port number	Word [Unsigned] /Bit String [16-bit]	1 to 4999, 5010 to 65534	Specify the port number of the own node. Port numbers 1 to 1023 are generally reserved port numbers (WELL KNOWN PORT NUMBERS), and therefore port numbers 1024 to 4999 and 5010 to 65534 should be used.	4096
(15)	pbi_uTarget_Port_No	Destination port number	Word [Unsigned] /Bit String [16-bit]	1 to 65534, 65535	Specify the destination port number. With the connection that is assigned port No.65535, data is received through all port number. Data cannot be sent with the connection which is assigned port No.65535 and therefore a port number from 1 to 65534 should be specified to send data.	4096

No.	Variable name	Name	Data type	Range	Description	Default value
(16)	pbi_u2IP_Address	IP address of external device	Word [Unsigned] /Bit String [16-bit] (0..1)	0.0.0.1 to 255.255.255.255	Specify the IP address of an external device. Specify the third and fourth octets to the 1st word, and first and second octets to the 2nd word. Specify 255.255.255.255 when performing simultaneous broadcast. b15 b8 b7 b0 +0: 3 | 4 +1: 1 | 2 1 to 4: IP address octet	192.168.1.1
(17)	pbi_bEnable_Online_Change	Online program change	Bit	On or off	Specify whether to enable of disable the online program change. • Off: Disable • On: Enable Valid only for the RJ71EN71 or the RnENCPU (network part). For the RCPU (CPU part for the RnENCPU), the setting is ignored. Set this item in the module parameters of the CPU module.	Off
(18)	pbi_bData_Code	Communication data code	Bit	On or off	Set the communication code used. • Off: Binary code • On: ASCII code Valid only for the RJ71EN71 or the RnENCPU (network part). For the RCPU (CPU part for the RnENCPU), the setting is ignored. Set this item in the module parameters of the CPU module.	Off

FB details

Item	Description	
Available device	Target module	• RCPU (CPU part for the RnENCPU) • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	171 steps	
Processing	When i_bEN (start condition) is turned on, this function opens (establishes) a connection for data communication with an external device.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	

Item	Description
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• This module FB cannot be executed for the connection that is being used by another module FB or dedicated instruction. An error occurs if this module FB is executed for the connection in use. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0. • If this FB is executed for the connection for which parameters are already set by "External Device Connection Configuration Setting", make settings so that the parameters specified by this FB are overwritten. • When open processing is performed according to the content of the operation parameter with pbi_bUseParameters set to ON, the available communication means are the fixed-buffer communications and socket communications only.

Error code

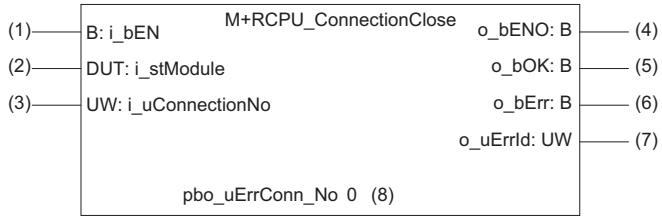
Error code	Reference
C000H to CFFFH	📖 MELSEC iQ-R Ethernet User's Manual (Application)

3.2 M+model_ConnectionClose

Name

M+model_ConnectionClose

Overview

Item	Description
Overview	Closes (disconnects) a connection for data communication with an external device.
Symbol	 The above FB is an example for the CPU module.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, RCPU)
(3)	i_uConnectionNo	Connection No.	Word [Unsigned] /Bit String [16-bit]	• RCPU (CPU part for the RnENCPU): 1 to 16 • RJ71EN71: 1 to 128 • RnENCPU (network part): 1 to 64	Specify the number of the connection to be opened. This function closes all connections if FFFF is specified.

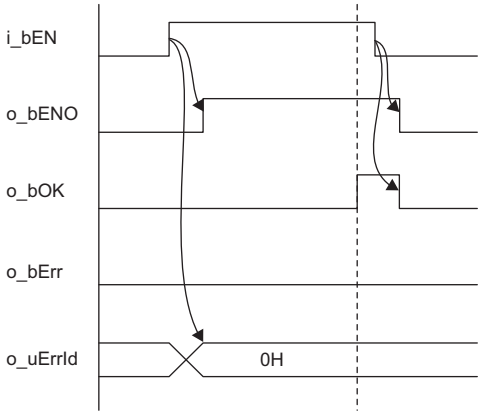
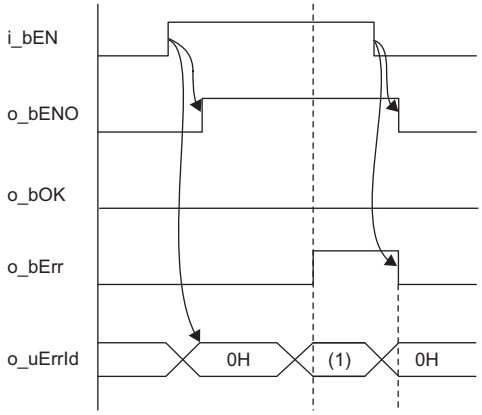
■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(6)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(7)	o_uErrId	Error code	Word [Unsigned]/ Bit String [16-bit]	An error code is stored at error completion.	0

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(8)	pbo_uErrConn_No	Error connection No.	Word [Unsigned]/ Bit String [16-bit]	The number of the connection for which close processing was completed with an error is stored. If FFFF is specified in "Connection No.", the number of the connection for which close processing was first completed with an error is stored.	0

FB details

Item	Description	
Available device	Target module	• RCPU (CPU part for the RnENCPU) • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	86 steps	
Processing	• When i_bEN (execution command) is turned on, this function closes (disconnects) a connection for data communication with an external device. • The function closes all connections if FFFF is specified for the connection number in the input argument. • If the function fails to close even one connection among those specified to be closed, it is completed with an error.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This module FB cannot be executed for the connection that is being used by another module FB or dedicated instruction. An error occurs if this module FB is executed for the connection in use. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

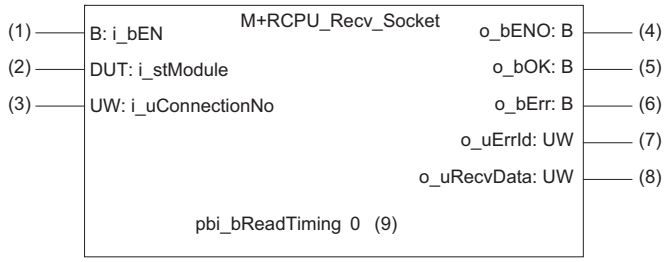
Error code	Reference
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)

3.3 M+model_Recv_Socket

Name

M+model_Recv_Socket

Overview

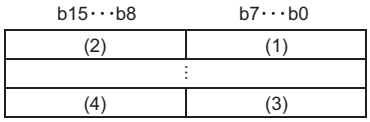
Item	Description
Overview	Reads the data received by connection communication.
Symbol	 The above FB is an example for the CPU module.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, RCPU)
(3)	i_uConnectionNo	Connection No.	Word [Unsigned] /Bit String [16-bit]	• RCPU (CPU part for the RnENCPU): 1 to 16 • RJ71EN71: 1 to 128 • RnENCPU (network part): 1 to 64	Specify the number of the connection to be opened. This function closes all connections if FFFF is specified.

■Output arguments

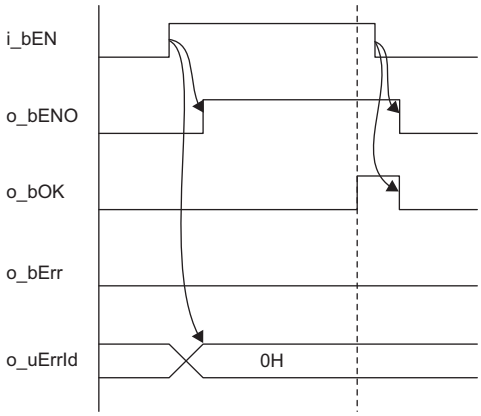
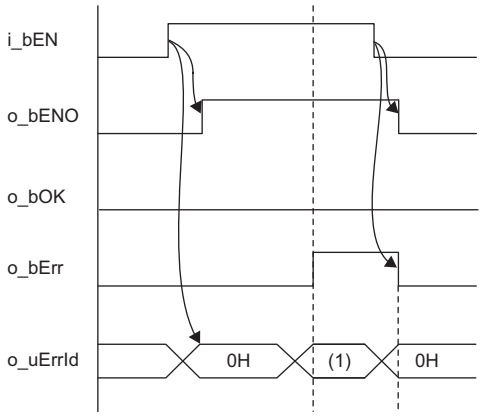
No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(6)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(7)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0
(8)	o_uRecvData	Receive data storage destination	Word [Unsigned]/Bit String [16-bit]	Specify the receive data length and the start number of the device for storing received data. The data that has been read is stored sequentially in ascending order of addresses as shown below. • When the data unit is word 1st word: Receive data length (unit: word) 2nd to nth word: Receive data 1 to m • When the data unit is byte 1st word: Receive data length (unit: byte) 2nd to nth word:  (1) Receive data 1 (2) Receive data 2 (3) Receive data m-1 (4) Receive data m • The data format, unit, and data length range of receive data vary depending on the module type and connection number. • Receive data is stored in the word area in order from the first half (b0 to b7) to the second half (b8 to b15).	0

■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(9)	pbi_bReadTiming	Read timing	Bit	On or off	Specify the timing of executing data read processing. • Off: Start reading soon after the module FB starts. • On: Start reading in the first END processing after the module FB starts.	Off

FB details

Item	Description	
Available device	Target module	• RCPU (CPU part for the RnENCPU) • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	109 steps	
Processing	When i_bEN (execution instruction) is turned on, this function reads the data received to the connection specified by the input argument.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	

Item	Description
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• This module FB cannot be executed for the connection that is being used by another module FB or dedicated instruction. An error occurs if this module FB is executed for the connection in use. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0. ■For the RCPU (CPU part for the RnENCPU) • The execution command of this FB can be executed at any timing. However, when executing it after receiving data, SD1506 (Socket communications reception status signal) or corresponding module label must be added to conditions of the command. • When the module FB is executed by specifying ON (start reading in the first END processing after the FB starts) in operation parameter "read timing", the module FB extends the scan time to complete data read processing within one END processing. ■For the RJ71EN71 or the RnENCPU (network part) • The execution command of this FB can be executed at any timing. However, when executing it after receiving data, 'Socket/fixed buffer reception status signal' (Un\G1900016 to Un\G1900023) must be added to conditions of the command. • When the module FB is executed by specifying OFF (Start reading soon after the module FB starts) in operation parameter "read timing", processing completes in a single scan.

Error code

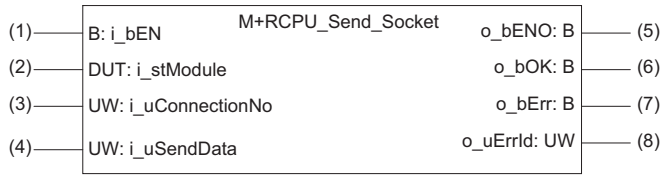
Error code	Reference
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)

3.4 M+model_Send_Socket

Name

M+model_Send_Socket

Overview

Item	Description
Overview	Sends the data to the external device of the specified connection.
Symbol	 The above FB is an example for the CPU module.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, RCPU)
(3)	i_uConnectionNo	Connection No.	Word [Unsigned] /Bit String [16-bit]	• RCPU (CPU part for the RnENCPU): 1 to 16 • RJ71EN71: 1 to 128 • RnENCPU (network part): 1 to 64	Specify the number of the connection to be opened. This function closes all connections if FFFF is specified.
(4)	i_SendData	Send data storage destination	Word [Unsigned] /Bit String [16-bit]	—	Specify the send data length and the start number of the device containing the send data.*1 • When the data unit is word 1st word: Receive data length (unit: word) 2nd to nth word: Receive data 1 to m • When the data unit is byte 1st word: Receive data length (unit: byte) 2nd to nth word: b15···b8 b7···b0 (2) (1) ⋮ (4) (3) (1) Receive data 1 (2) Receive data 2 (3) Receive data m-1 (4) Receive data m • The data format and data length range of send data vary depending on the module type and the setting of the connection used. • Data is sent in the word area in order from the first half (b0 to b7) to the second half (b8 to b15).

*1 The data unit and the range of send data length differ depending on the communication method of parameters and communication data code setting as follows.

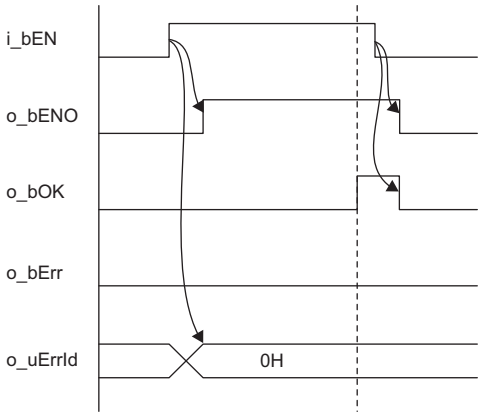
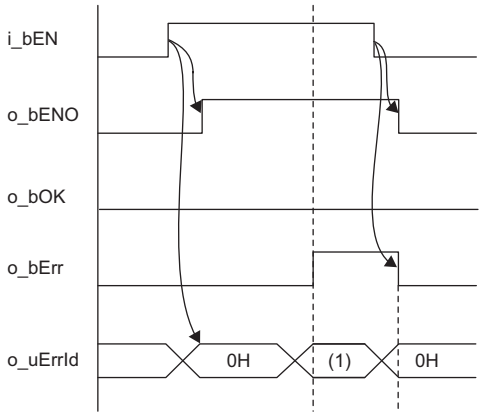
Parameter setting		Data unit	Send data length
Communication method	Communication data code		
Communications using a fixed buffer (procedure used)	Binary	Word	1 to 5113
	ASCII	Word	1 to 2556
Communications using a fixed buffer (procedure not used)	Binary/ASCII	Byte	1 to 10238
Socket communications	Binary/ASCII	Byte	1 to 10238

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(7)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(8)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

FB details

Item	Description	
Available device	Target module	• RCPU (CPU part for the RnENCPU) • RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	60 steps	
Processing	When i_bEN (execution instruction) is turned on, this function sends the data to the external device of the connection specified by the input argument.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	

Item	Description
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• This module FB cannot be executed for the connection that is being used by another module FB or dedicated instruction. An error occurs if this module FB is executed for the connection in use. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.

Error code

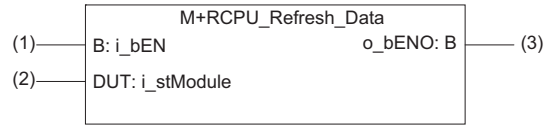
Error code	Reference
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)

3.5 M+model_Refresh_Data

Name

M+model_Refresh_Data

Overview

Item	Description
Overview	Transfers data from the buffer memory in the Ethernet module to the module label.
Symbol	 The above FB is an example for the CPU module.

Labels

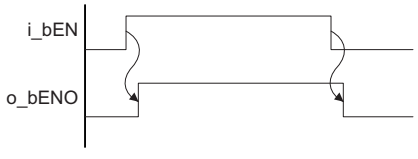
■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, RCPU)

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(3)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off

FB details

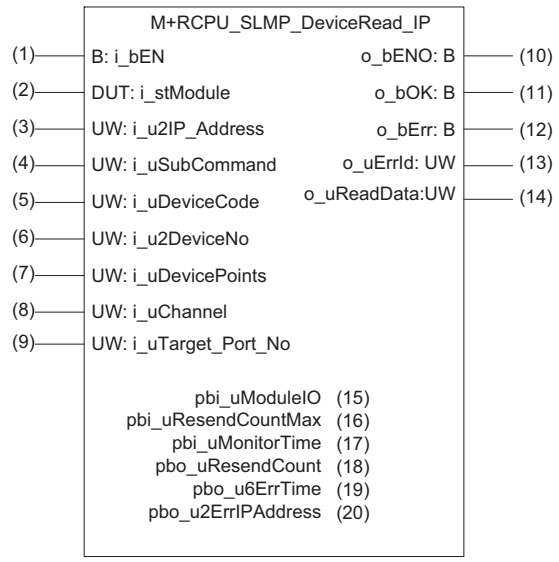
Item	Description	
Available device	Target module	• RJ71EN71 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	33 steps	
Processing	When i_bEN (execution instruction) is turned on, this function transfers the following buffer memory data of the RJ71EN71 or the RnENCPU (network part) to the module label. • Open completion signal (addresses 1900000 to 1900007) • Open request signal (addresses 1900008 to 1900015) • Socket/fixed buffer reception status signal (addresses 1900016 to 1900023)	
FB compilation method	Macro type	
FB operation	ON-time execution type	
Timing chart of I/O signals		
Precautions	When another FB is used, write the program so that scan is executed every time at the beginning of the program.	

3.6 M+model_SLMP_DeviceRead_IP

Name

M+model_SLMP_DeviceRead_IP

Overview

Item	Description
Overview	Reads data from the external device with IP address specification.
Symbol	

Labels

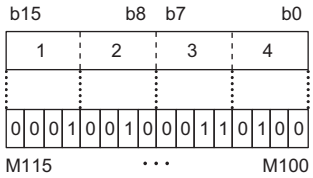
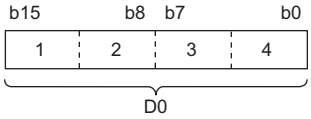
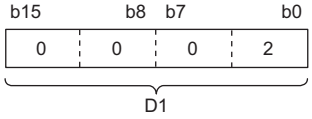
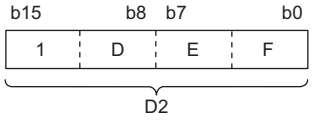
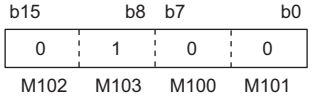
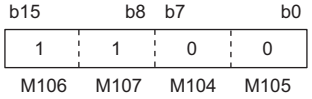
■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules.
(3)	i_u2IP_Address	IP address of external device	Word [Unsigned]/Bit String [16-bit] (0..1)	00000001H to FFFFFFFEH	Specify the IP address of an external device. Specify the third and fourth octets to the 1st word, and first and second octets to the 2nd word. Note that the fourth octet cannot be set to 0 or 255 (FFH). b15 b8 b7 b0 +0: 3 | 4 +1: 1 | 2 1 to 4: IP address octet
(4)	i_uSubCommand	Sub command	Word [Unsigned]/Bit String [16-bit]	—	Specify the read unit and specification method of a device. • 0th bit: Specify whether the device is read in units of words or in units of bits. 0: In units of words 1: In units of bits • 1st bit: Specify the combination of the number of digits of the device code and start device number of the device to be read. 0: Specify the device code in 2 digits and the start device number in 6 digits (for MELSEC-Q/L series). 1: Specify the device code in 4 digits and the start device number in 8 digits (for MELSEC iQ-R series).

No.	Variable name	Name	Data type	Range	Description
(5)	i_uDeviceCode	Device code	Word [Unsigned]/Bit String [16-bit]	—	Specify the device code of the device to be read in binary code. • When the 1st bit of the subcommand is 0: 2 digits • When the 1st bit of the subcommand is 1: 4 digits
(6)	i_u2DeviceNo	Head device No.	Word [Unsigned]/Bit String [16-bit] (0..1)	—	Specify the start device number of the device to be read in binary code. • When the 1st bit of the subcommand is 0: 6 digits • When the 1st bit of the subcommand is 1: 8 digits
(7)	i_uDevicePoints	Number of device points	Word [Unsigned]/Bit String [16-bit]	—	Specify the number of device points of the device to be read in binary code. • When the 1st bit of the subcommand is 1: 0 to 960 digits • When the 1st bit of the subcommand is 1: 1 to 3972 digits
(8)	i_uChannel	Own station channel	Word [Unsigned]/Bit String [16-bit]	1 to 9	Specify the channel to be used by own station.*1 📖 MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)
(9)	i_uTarget_Port_No	Destination port number	Word [Unsigned]/Bit String [16-bit]	1 to 65534	Specify the UDP port number of an external device.

*1 Set 1 when not adding a serial No. Set 2 to 9 when adding a serial No.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(10)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(11)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(12)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(13)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0
(14)	o_uReadData	Read data storage destination	Word [Unsigned]/Bit String [16-bit]	Specify the start device number of the device for storing the read data. • When the 0th bit of the subcommand is 0, the device data is read in units of words. Example: When reading the bit device M100 to M115 (one word) in units of words 1st word:  Example: When reading the word device D0 to D2 in units of words 1st word:  2nd word:  3rd word:  • When the 0th bit of the subcommand is 1, read the device data in units of bits. Example: When reading the bit device M100 to M107 in units of bits 1st word:  2nd word:  	0

■Operation parameters

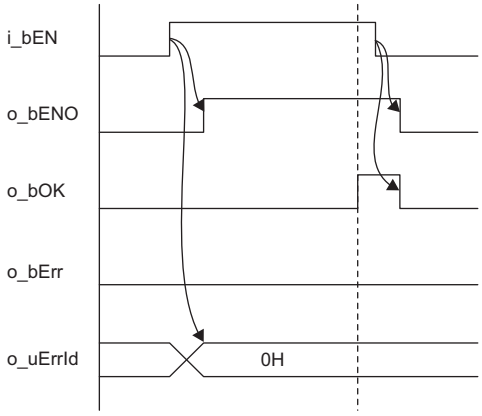
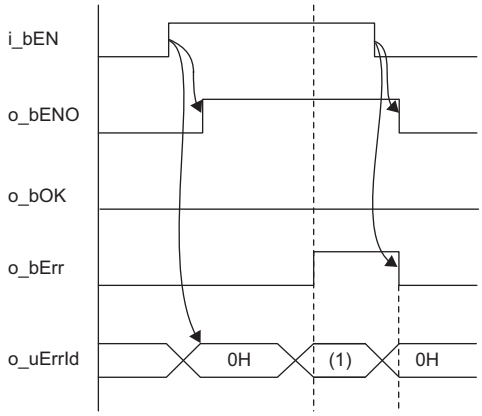
No.	Variable name	Name	Data type	Range	Description	Default value
(15)	pbi_uModuleIO	Requested module I/O No.	Word [Unsigned]/Bit String [16-bit]	0000H to 01FFH, 03E0H to 03E3H, 03FFH	Specify the module of the access destination. • 03FFH: Own station, control CPU • 03E0H: Multiple CPU No.1 • 03E1H: Multiple CPU No.2 • 03E2H: Multiple CPU No.3 • 03E3H: Multiple CPU No.4 • 0000H to 01FFH: Multidrop connection station via the programmable controller CPU in multidrop connection*1	03FFH
(16)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(17)	pbi_uMonitorTime	Arrival monitoring time	Word [Unsigned]/Bit String [16-bit]	0, 1 to 32767	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0: 10s • 1 to 32767: 1 to 32767s	0

*1 When the multidrop connection station is via the CPU module in multidrop connection, specify the value in 4 digits (hexadecimal) obtained by dividing the I/O No. of the serial communication module of the multidrop connection source by 16.

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(18)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(19)	pbo_u6ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..5)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(20)	pbo_u2ErrIPAddress	Error-detected station IP address	Word [Unsigned]/Bit String [16-bit] (0..1)	The IP address of the station in which an error was detected is stored. The third and fourth octets are stored in the 1st word, and first and second octets are stored in the 2nd word. b15 b8 b7 b0 +0: 3 | 4 +1: 1 | 2 1 to 4: IP address octet	0

FB details

Item	Description	
Available device	Target module	• RnCPU[*1] • RnENCPU (CPU part)[*1]
	CPU module	• RnCPU[*1] • RnENCPU[*1]
	Engineering tool	GX Works3[*2]
Language	Ladder diagram	
Number of basic steps	145 steps	
Processing	• When i_bEN (start condition) is turned on, this function reads device data from the SLMP-compatible device. • This FB is executed specifying the IP address of an external device. • This FB uses Read command (command: 0401) of the SLMP. The message of the SLMP command is a binary code. (📖 SLMP Reference Manual)	
FB compilation method	Macro type	
FB operation	ON-time execution type	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the SLMPSND instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0. • In this FB, access devices (such as link direct device) that are accessed by the extension specification of the SLMP cannot be read. • In this FB, stations in other network cannot be set as the target station. • For the port of an external device where the remote password is set, execute this FB after performing the unlock processing of the remote password. When this FB is executed for the port of an external device where the remote password is set, an error will occur. • The target station must support "Read (command: 0401H)" of the SLMP command. • This FB is for communications in binary code only. (Communications using ASCII code cannot be performed.) • This FB uses UDP communications. Set the protocol setting of the external device to UDP.	

*1 The supported firmware version is "17" or later.

*2 The supported version is "1.020W" or later.

Error code

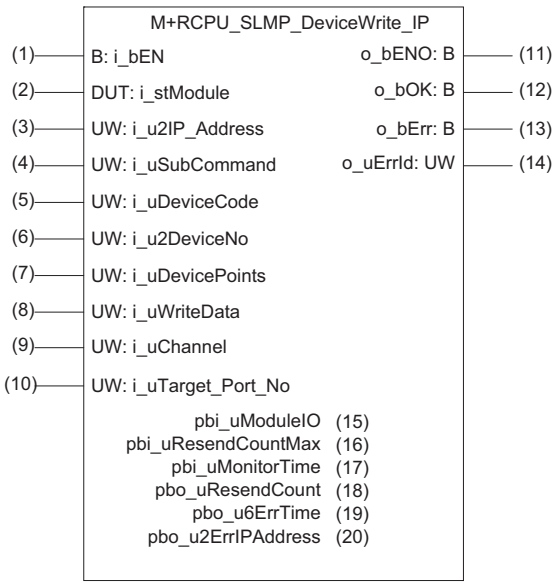
Error code	Reference
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)

3.7 M+model_SLMP_DeviceWrite_IP

Name

M+model_SLMP_DeviceWrite_IP

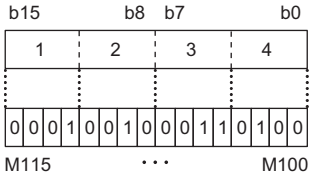
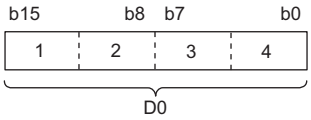
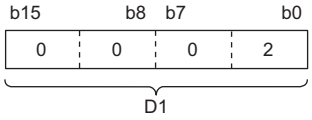
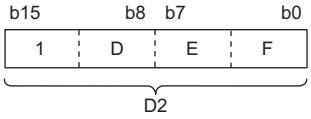
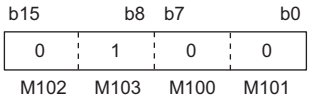
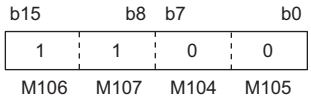
Overview

Item	Description
Overview	Writes data to the external device by specifying IP address.
Symbol	

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules.
(3)	i_u2IP_Address	IP address of external device	Word [Unsigned]/Bit String [16-bit] (0..1)	00000001H to FFFFFFFEH	Specify the IP address of the target station. Specify the third and fourth octets to the 1st word, and first and second octets to the 2nd word. Note that the fourth octet cannot be set to 0 or 255 (FFH). b15 b8 b7 b0 +0: 3 | 4 +1: 1 | 2 1 to 4: IP address octet
(4)	i_uSubCommand	Sub command	Word [Unsigned]/Bit String [16-bit]	—	Specify the write unit and specification method of a device. • 0th bit: Specify whether the device is written in units of words or in units of bits. 0: In units of words 1: In units of bits • 1st bit: Specify the combination of the number of digits of the device code and start device number of the device to be written. 0: Specify the device code in 2 digits and the start device number in 6 digits (for MELSEC-Q/L series). 1: Specify the device code in 4 digits and the start device number in 8 digits (for MELSEC iQ-R series).
(5)	i_uDeviceCode	Device code	Word [Unsigned]/Bit String [16-bit]	—	Specify the device code of the device to be written in binary code. • When the 1st bit of the subcommand is 0: 2 digits • When the 1st bit of the subcommand is 1: 4 digits
(6)	i_u2DeviceNo	Head device No.	Word [Unsigned]/Bit String [16-bit] (0..1)	—	Specify the start device number of the device to be written in binary code. • When the 1st bit of the subcommand is 0: 6 digits • When the 1st bit of the subcommand is 1: 8 digits
(7)	i_uDevicePoints	Number of device points	Word [Unsigned]/Bit String [16-bit]	—	Specify the number of device points of the device to be written in binary code. • When the 1st bit of the subcommand is 1: 0 to 960 digits • When the 1st bit of the subcommand is 1: 1 to 3972 digits

No.	Variable name	Name	Data type	Range	Description
(8)	i_uWriteData	Write data storage destination	Word [Unsigned]/Bit String [16-bit]	—	Specify the start device number of the device for storing the write data. • When the 0th bit of the subcommand is 0, the device data is written in units of words. Example: When writing the bit device M100 to M115 (one word) in units of words 1st word:  Example: When writing the word device D0 to D2 in units of words 1st word:  2nd word:  3rd word:  • When the 0th bit of the subcommand is 1, the device data is written in units of bits. Example: When writing the bit device M100 to M107 in units of bits 1st word:  2nd word: 
(9)	i_uChannel	Own station channel	Word [Unsigned]/Bit String [16-bit]	1 to 9	Specify the channel to be used by own station.*1 MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)
(10)	i_uTarget_Port_No	Destination port number	Word [Unsigned]/Bit String [16-bit]	1 to 65534	Specify the UDP port number of an external device.

*1 Set 1 when not adding a serial No. Set 2 to 9 when adding a serial No.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(11)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(12)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(13)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(14)	o_uErrId	Error code	Word [Unsigned]/Bit String [16-bit]	An error code is stored at error completion.	0

■Operation parameters

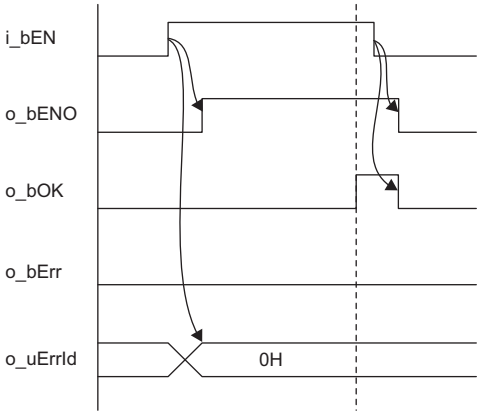
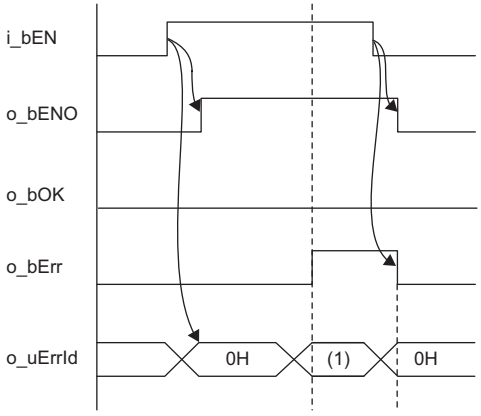
No.	Variable name	Name	Data type	Range	Description	Default value
(15)	pbi_uModuleIO	Requested module I/O No.	Word [Unsigned]/Bit String [16-bit]	0000H to 01FFH, 03E0H to 03E3H, 03FFH	Specify the module of the access destination. • 03FFH: Own station, control CPU • 03E0H: Multiple CPU No.1 • 03E1H: Multiple CPU No.2 • 03E2H: Multiple CPU No.3 • 03E3H: Multiple CPU No.4 • 0000H to 01FFH: Multidrop connection station via the programmable controller CPU in multidrop connection*1	03FFH
(16)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(17)	pbi_uMonitorTime	Arrival monitoring time	Word [Unsigned]/Bit String [16-bit]	0, 1 to 32767	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. • 0: 10s • 1 to 32767: 1 to 32767s	0

*1 When the multidrop connection station is via the CPU module in multidrop connection, specify the value in 4 digits (hexadecimal) obtained by dividing the I/O No. of the serial communication module of the multidrop connection source by 16.

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(18)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(19)	pbo_u6ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..5)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(20)	pbo_u2ErrIPAddress	Error-detected station IP address	Word [Unsigned]/Bit String [16-bit] (0..1)	The IP address of the station in which an error was detected is stored. The third and fourth octets are stored in the 1st word, and first and second octets are stored in the 2nd word. b15 b8 b7 b0 +0: 3 | 4 +1: 1 | 2 1 to 4: IP address octet	0

FB details

Item	Description	
Available device	Target module	• RnCPU[*1] • RnENCPU (CPU part)[*1]
	CPU module	• RnCPU[*1] • RnENCPU[*1]
	Engineering tool	GX Works3[*2]
Language	Ladder diagram	
Number of basic steps	165 steps	
Processing	• When i_bEN (start condition) is turned on, this function writes device data of the SLMP-compatible device. • This FB is executed specifying the IP address of an external device. • This FB uses Write command (command: 1401) of the SLMP. The message of the SLMP command is a binary code. (📖 SLMP Reference Manual)	
FB compilation method	Macro type	
FB operation	ON-time execution type	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the SLMPSND instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0. • In this FB, access devices (such as link direct device) that are accessed by the extension specification of the SLMP cannot be read. • In this FB, stations in other network cannot be set as the target station. • For the port of an external device where the remote password is set, execute this FB after performing the unlock processing of the remote password. When this FB is executed for the port of an external device where the remote password is set, an error will occur. • The target station must support "Write (command: 1401H)" of the SLMP command. • This FB is for communications in binary code only. (Communications using ASCII code cannot be performed.) • This FB uses UDP communications. Set the protocol setting of the external device to UDP.	

*1 The supported firmware version is "17" or later.
*2 The supported version is "1.020W" or later.

Error code

Error code	Reference
C000H to CFFFH	MELSEC iQ-R Ethernet User's Manual (Application)

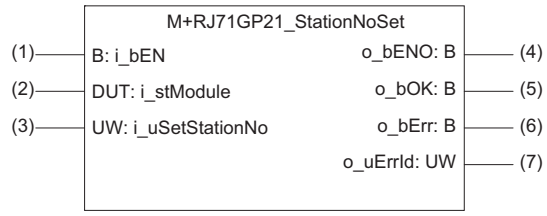
4 CC-LINK IE CONTROLLER NETWORK MODULE FB

4.1 M+model_StationNoSet

Name

M+model_StationNoSet

Overview

Item	Description
Overview	Sets the station number of the own station (normal station/local station).
Symbol	 The above FB is an example for the RJ71GP21-SX.

Labels

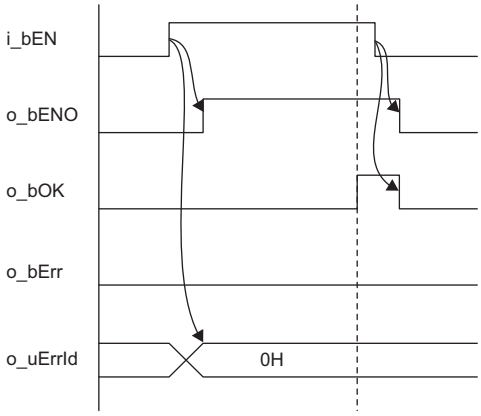
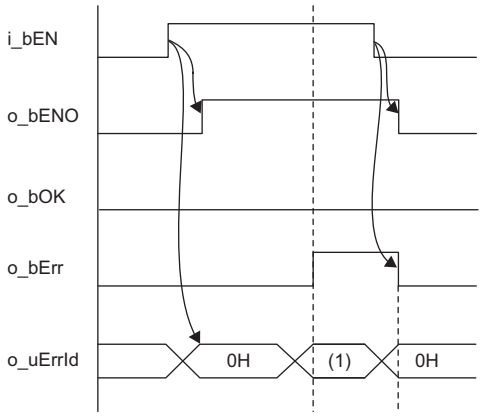
■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules. (Example: EN71_EE_1, EN71_EF_1, EN71_F_1, GF11_1, GP21_1)
(3)	i_uSetStationNo	Setting station number	Word [Unsigned] /Bit String [16-bit]	1 to 120	Specifies the station number to be set.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(4)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(5)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(6)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(7)	o_uErrId	Error code	Word [Unsigned] /Bit String [16-bit]	An error code is stored at error completion.	0

FB details

Item	Description	
Available device	Target module	• RJ71EN71 • RJ71GP21-SX • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	44 steps	
Processing	When i_bEN (execution instruction) is turned on, this function sets the station number of the own station.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.UNI instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

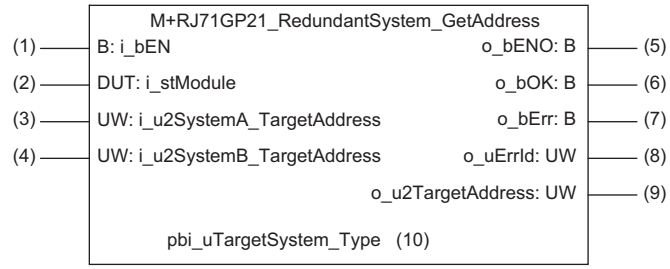
Error code	Reference
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
E000H to EFFFH	MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)

4.2 M+Model_RedundantSystem_GetAddress

Name

M+Model_RedundantSystem_GetAddress

Overview

Item	Description
Overview	Identifies the control system or standby system in the target (another station) redundant system to acquire the address of the control system or standby system in the redundant system.
Symbol	 The above FB is an example for the RJ71GP21-SX.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules.
(3)	i_u2SystemA_Target Address	System A target station address	Word [Unsigned] /Bit String [16-bit] (0..1)	—	Specify the network number and station number of the system A target station. • 1st word: Network number (1 to 239) • 2nd word: Station number Network No. • Set the network number same as that of the FB executing station. Station number of CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, submaster station
(4)	i_u2SystemB_Target Address	System B target station address	Word [Unsigned] /Bit String [16-bit] (0..1)	—	Specify the network number and station number of the system B target station. • 1st word: Network number (1 to 239) • 2nd word: Station number Network No. • Set the network number same as that of the FB executing station. Station number of CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, submaster station

■Output arguments

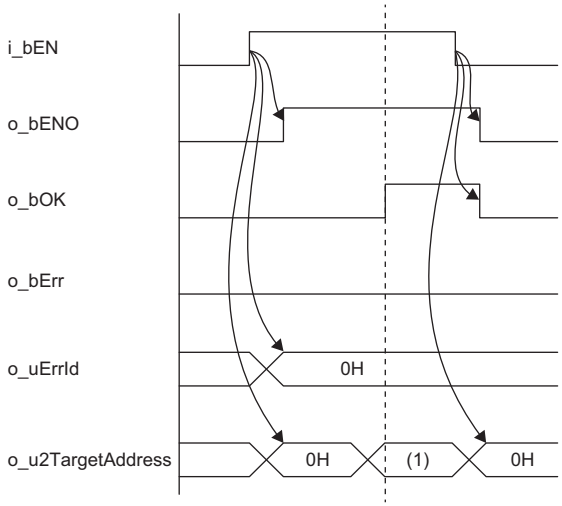
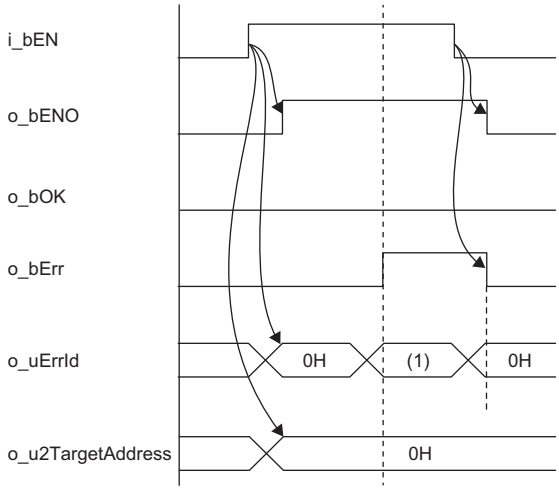
No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(7)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(8)	o_uErrId	Error code	Word [Unsigned] /Bit String [16-bit]	An error code is stored at error completion.	0
(9)	o_u2TargetAddress	Target station address	Word [Unsigned] /Bit String [16-bit] (0..1)	The target station address of the current control system or standby system in the target redundant system is stored. • 1st word: Network number (1 to 239) • 2nd word: Station number Network No. • The network number same as that of the FB executing station is stored. Station number of CC-Link IE Controller Network • 1 to 120 Station number of CC-Link IE Field Network • 125: Master station • 1 to 120: Local station, submaster station	0

■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(10)	pbi_uTargetSystem_Type	Target system type	Word [Unsigned] /Bit String [16-bit]	0 to 1	Specify the type of the target system. • 0: Control system • 1: Standby system	0

FB details

Item	Description	
Available device	Target module	• RJ71GF11-T2[*1] • RJ71GP21-SX
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	• RJ71GF11-T2: 425 steps • RJ71GP21-SX: 237 steps	
Processing	When i_bEN (execution instruction) is turned on, this function identifies the control system or standby system in the target (another station) redundant system and acquires the address of the control system or standby system in the redundant system. This FB is used with a combination of the following FB. • DeviceRead • DeviceWrite • Send • RemoteStopRun • ReadTime • WriteTime The procedure when this FB is used with DeviceRead is shown below. To execute DeviceRead to the control system in the redundant system, execute DeviceRead to the target station address of the control system which is acquired by this FB. ❶ Specify the system A and system B target station addresses and execute this FB. (Specify the control system.) ❷ The target station address of the control system is output. ❸ Set the target station address of the control system to i_u2TargetAddress of DeviceRead and execute DeviceRead. ❹ DeviceRead is executed to the control system.	
FB compilation method	Macro type	
FB operation	ON-time execution type	
Input condition for FB_EN	None	

Item	Description
Timing chart of I/O signals	• For normal completion  (1) Target station address • For error completion (same as in the case of a module error)  (1) Error code
Precautions	• When using this FB, set "Module Label" for the refresh target device of SB and SW in "Refresh Setting" of "Basic Settings". • This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0. • This FB can be executed only for the redundant system of the same network number. • This FB cannot be executed for redundant line configuration on CC-Link IE Field Network. • This FB is enabled when 'Baton pass status of own station' (SB0047) is on. • When the target station is the master station or submaster station, this FB cannot detect whether it is in a redundant system. • Even when the station number which does not exist in the network configuration setting is specified, it may completed successfully. • For "system A target station address" and "system B target station address", specify the addresses of the pairing-set stations. In CC-Link IE Field Network, specify the addresses of the paring-set stations or the combination of the master station and submaster station.

*1 The supported firmware version is "12" or later.

Error code

Error code	Description	Action
100H	A value out of the range is set in a target station address of the argument.	Correct the range of the target station address.
101H	The network number of the target station differs from that of the FB executing station.	Set the network number same as that of the FB executing station.
102H	The same value is set in the system A and system B target station addresses of the argument.	Set the different value in the system A and system B target station addresses.
200H	The target station (station of control system or standby system) does not exist in a network.	Correct the network connection of the target station.
201H	The target station is not in a redundant system.	Execute this FB to a redundant system.
202H	"Module Label" is not selected for the refresh target device in "Refresh Setting" of "Basic Settings".	Set "Module Label" for the refresh target device in "Refresh setting" of "Basic Settings".

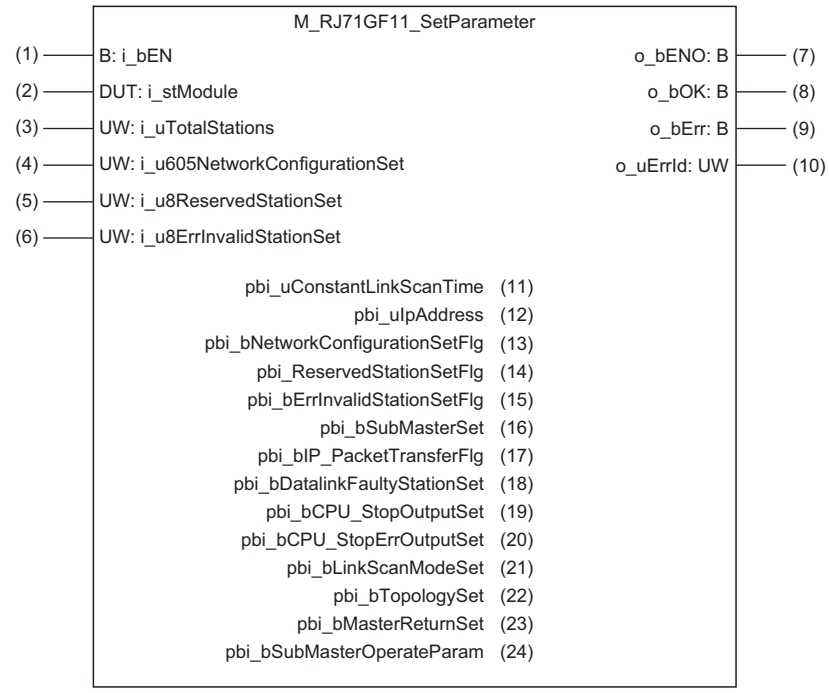
5 CC-LINK IE FIELD NETWORK MODULE FB

5.1 M+model_SetParameter

Name

M+model_SetParameter

Overview

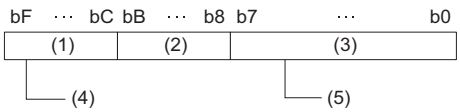
Item	Description
Overview	Sets parameters for a module.
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules.
(3)	i_uTotalStations	Total number of slave stations	Word [Unsigned] /Bit String [16-bit]	1 to 120, 121	Specify the total number of the slave stations connected. • 1 to 120: Applicable when "presence of submaster function" is OFF (disabled) • 1 to 121: Applicable when "presence of submaster function" is ON (enabled)
(4)	i_u605NetworkConfigurationSet	Network configuration setting data	Word [Unsigned] /Bit String [16-bit] (0..604)	—	Specify the start address of the storage location of network configuration setting data. When specifying the address using a label, use an array as the data type. Set data for the number of stations specified in "total number of slave stations". (☞ Page 71 Network configuration setting data)
(5)	i_u8ReservedStationSet	Reserved station setting data	Word [Unsigned] /Bit String [16-bit] (0..7)	—	Specify the start address of the storage location of the reserved-station setting data. When specifying the address using a label, use an array as the data type. Setting: Specify an error invalid station. (No default value) • 0: Not specified • 1: Specified bF bE bD bC bB bA b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 +0 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 +1 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 +2 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 +3 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 +4 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 +5 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 +6 112 111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 +7 0 120 119 118 117 116 115 114 113 Numbers 1 to 120 in the table indicate station numbers.
(6)	i_u8ErrInvalidStationSet	Error invalid station setting data	Word [Unsigned] /Bit String [16-bit] (0..7)	—	Specify the start address of the storage location of the error invalid station setting. When specifying the address using a label, use an array as the data type. Setting: Specify a reserved station. • 0: Not specified • 1: Specified If both an error invalid station and a reserved station are specified for the same station, the reserved station will take priority. bF bE bD bC bB bA b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 +0 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 +1 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 +2 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 +3 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 +4 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 +5 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 +6 112 111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 +7 0 120 119 118 117 116 115 114 113 Numbers 1 to 120 in the table indicate station numbers.

■Network configuration setting data

Element number	Item name		Range	Description
0	For 1st module	Slave station setting information	—	Specify the station type and number.  (1) Station type (2) Fixed to 1 (3) Station number (4) 0: Remote I/O station, 1: Remote device station, 2: Intelligent device station, 3: Local station (master-slave system), 4: Submaster station, F: Master station (5) 0: Master station, 1 to 120: Station number
1		RX/RY offset	0 to 16368	Specify the offset value from the head of RX/RY in increments of 16 points.
2		Number of RX/RY points	—	Specify the number of RX/RY points in increments of 16 points. • Master station, local station: 0 to 2048 • Intelligent device station: 0 to 2048 • Remote I/O station: 0 to 64 • Remote device station: 0 to 128
3		RWr/RWw offset	0 to 8188	Specify the offset value from the head of RWr/RWw/LW in increments of 4 points.
4		Number of RWr/RWw points	—	Specify the number of RWr/RWw points in increments of 16 points. • Master station, local station: 0 to 1024 • Intelligent device station: 0 to 1024 • Remote device station: 0 to 64
5 to 599	Setting for the 2nd to 120th module			
600	For 121st module	Slave station setting information	Same as for the 1st module	
601		RX/RY offset		
602		Number of RX/RY points		
603		RWr/RWw offset		
604		Number of RWr/RWw points		

If the specified total number of slave stations does not match the individual station setting data, the total number of individual stations specified in the total number of slave stations take precedence and any individual station information exceeding the total number of slave stations is ignored. Note that 1 is added to the total number of slave stations when "presence of submaster function" is ON (enabled).

Example) When the station information of ten stations is set even if the total number of slave stations is two.

→ The first and second information is enabled and parameters which are set the third to tenth station information are ignored.

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(7)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(8)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(9)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(10)	o_uErrId	Error code	Word [unsigned]	An error code is stored at error completion.	0

■Operation parameters

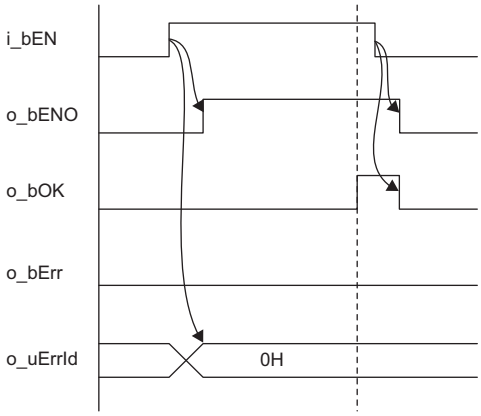
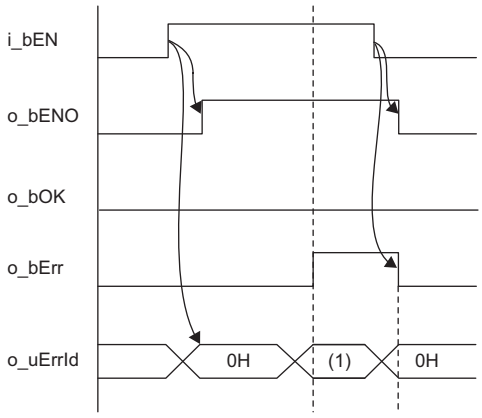
○: Can be set, ×: Cannot be set

No.	Variable name	Name	Data type	Range	Description	Default value	Master station	Submaster station	Local station
(11)	pbi_uConstantLinkScanTime	Constant link scan time	Word [Unsigned]/ Bit String [16-bit]	0, 1 to 200	Specify the constant link scan time. • 0: Not set (default value) • 1 to 200: 1ms to 200ms	0	○	○*1	×
(12)	pbi_uIpAddress	Upper 2 digits of IP address	Word [Unsigned]/ Bit String [16-bit]	—	Set the IP address when the IP packet transfer function is used. Only the upper two digits (1st and 2nd octets) of a 4-digit IP address can be set. The 3rd and 4th digits are each determined automatically from the network number and station number (master station is 125).	0	○	○*1	×
(13)	pbi_bNetworkConfigurationSetFlg	Presence of network configuration setting data	Bit	Off, on	Specify whether to enable/disable the network configuration setting data. • Off: Disable • On: Enable	Off	○	○*1	×
(14)	pbi_bReservedStationSetFlg	Presence of reserved station specification data	Bit	Off, on	Specify whether to enable/disable the reserved station specification data. • Off: Disable • On: Enable	Off	○	○*1	×
(15)	pbi_bErrInvalidStationSetFlg	Presence of error invalid station setting data	Bit	Off, on	Specify whether to enable/disable the error invalid station setting data. • Off: Disable • On: Enable	Off	○	○*1	×
(16)	pbi_bSubMasterSet	Presence of submaster function	Bit	Off, on	Specify whether to use the submaster function • Off: Do not use. • On: Use.	Off	○	×	×
(17)	pbi_bIP_PacketTransferFlg	Presence of IP packet transfer function	Bit	Off, on	Specify whether to enable/disable the IP address. (Specify whether to enable/disable the IP packet transfer function.) • Off: Disable • On: Enable	Off	○	○*1	×
(18)	pbi_bDatalinkFaultyStationSet	Data link faulty station setting	Bit	Off, on	Specify whether to hold or clear the input data from a data link faulty station. • Off: Clear • On: Hold	Off	○	○	○
(19)	pbi_bCPU_StopOutputSet	Output setting for CPU STOP	Bit	Off, on	Specify whether to hold or clear the output data when the operating status of a CPU module is STOP. • Off: Hold • On: Clear	Off	○	○	○
(20)	pbi_bCPU_StopErrOutputSet	Output setting for CPU stop error	Bit	Off, on	Specify whether to hold or clear the output data when the a CPU module caused a stop error. • Off: Clear • On: Hold	Off	○	○	○
(21)	pbi_bLinkScanModeSet	Link scan mode setting	Bit	Off, on	Specify whether to perform a link scan and sequence scan synchronously or asynchronously. (Valid when "constant link scan time" is 0 (no setting)) • Off: Asynchronous • On: Synchronous	Off	○	○	×
(22)	pbi_bTopologySet	Network topology setting	Bit	Off, on	Specify the network topology. • Off: Line topology, star topology, or coexistence of star and line topologies • On: Ring topology	Off	○	○*1	×

No.	Variable name	Name	Data type	Range	Description	Default value	Master station	Submaster station	Local station
(23)	pbi_bMasterReturnSet	Master station return time operation setting	Bit	Off, on	Specify the operation mode applicable when the master station returns. • Off: Returns as the master operating station. • On: Returns as a submaster operating station.	Off	○	×	×
(24)	pbi_bSubMasterOperateParam	Submaster station parameter operation setting	Bit	Off, on	Specify which station parameters (master or own station) should be used for the submaster station to work. • Off: Operating with the parameters of the master station • On: Operating with the parameters of the own (submaster) station	Off	×	○	×

*1 Valid only when "submaster station parameter operation setting" is ON (Operating with the parameters of the own (submaster) station)

FB details

Item	Description	
Available device	Target module	• RJ71EN71 • RJ71GF11-T2 • RnENCPU (network part)
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	79 steps	
Processing	When i_bEN (execution command) is turned on, this function sets parameters for a module.	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.CCPASET instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

Error code

Error code	Reference
D000H to DFFFH	📖 MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

5.2 M+model_StationNoSet

The contents are the same as M+model_StatoinNoSet in CC-Link IE Controller Network Module FB. (☞ Page 62 M+model_StationNoSet)

5.3 M+Model_RedundantSystem_GetAddress

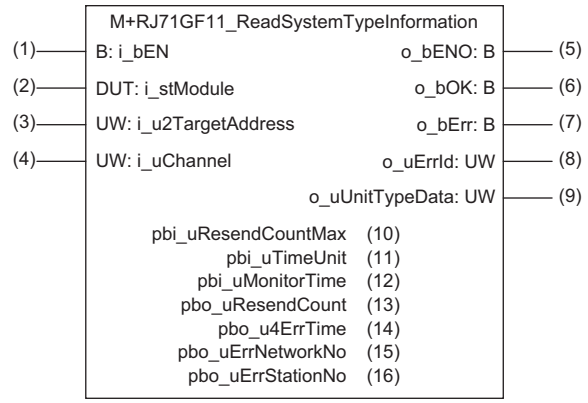
The contents are the same as M+model_RedundantSystem_GetAddress in CC-Link IE Controller Network Module FB. (☞ Page 65 M+Model_RedundantSystem_GetAddress)

5.4 M+model_ReadSystemTypeInformation

Name

M+model_ReadSystemTypeInformation

Overview

Item	Description
Overview	Reads the system configuration model information of the intelligent device station (remote head module).
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules.
(3)	i_u2TargetAddress	Target station address	Word [Unsigned] /Bit String [16-bit] (0..1)	—	Specifies the station number of the target station. • 1st word: Network number • 2nd word: Station number (1) 0 (The setting is ignored.) (2) Station number • 1 to 120: Intelligent device station (remote head module)
(4)	i_uChannel	Own station channel	Word [Unsigned] /Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/ Function Blocks)

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(7)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(8)	o_uErrId	Error code	Word [Unsigned] /Bit String [16-bit]	An error code is stored at error completion.	0
(9)	o_uUnitTypeData	Model data storage device	Word [Unsigned] /Bit String [16-bit]	The start number of the device for storing model data is stored.	0

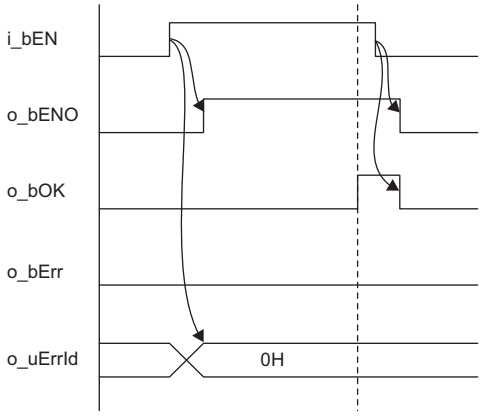
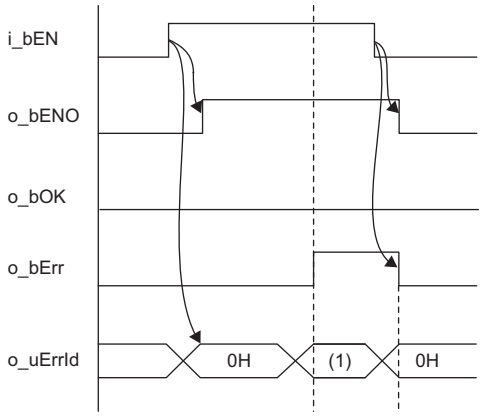
■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(10)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned]/ Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(11)	pbi_uTimeUnit	Arrival monitoring time unit	Word [Unsigned]/ Bit String [16-bit]	0, 1	Specify the unit of the "arrival monitoring time". • 0: 1s • 1: 100ms	0
(12)	pbi_uMonitorTime	Arrival monitoring time	Word [Unsigned]/ Bit String [16-bit]	—	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. When "arrival monitoring time unit" is set to 1ms • Effective range 1 to 32767: 1s to 32767s When "arrival monitoring time unit" is set to 100ms • Effective range 1 to 65535: 1 to 65535 × 100ms	0: 10s

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(13)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(14)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(15)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(16)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/Bit String [16-bit]	The station number of the station in which an error was detected is stored. • 125: Master station • 1 to 120: Local station, intelligent device station, submaster station	0

FB details

Item	Description	
Available device	Target module	• RJ71EN71*1 • RJ71GF11-T2*1 • RnENCPU (network part)*1
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	79 steps	
Processing	When i_bEN (execution instruction) is turned on, this function reads the model information of the system configuration module of the intelligent device station (remote head module).	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.SINFTYRD instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

*1 The supported firmware version is "12" or later.

Error code

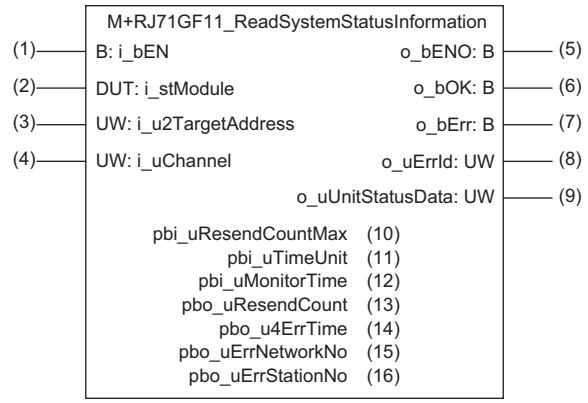
Error code	Reference
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

5.5 M+model_ReadSystemStatusInformation

Name

M+model_ReadSystemStatusInformation

Overview

Item	Description
Overview	Reads the system configuration model status of the intelligent device station (remote head module).
Symbol	 The above FB is an example for the RJ71GF11-T2.

Labels

■Input arguments

No.	Variable name	Name	Data type	Range	Description
(1)	i_bEN	Execution command	Bit	—	On: Start FB. Off: Do not start FB.
(2)	i_stModule	Module label	Structure	—	Specify the module for which the FB is to be executed. Specify the module label of relevant modules.
(3)	i_u2TargetAddress	Target station address	Word [Unsigned] /Bit String [16-bit] (0..1)	—	Specifies the station number of the target station. • 1st word: Network number • 2nd word: Station number (1) 0 (The setting is ignored.) (2) Station number • 1 to 120: Intelligent device station (remote head module)
(4)	i_uChannel	Own station channel	Word [Unsigned] /Bit String [16-bit]	—	Specify the channel to be used by own station. MELSEC iQ-R Programming Manual (Instructions, Standard Functions/ Function Blocks)

■Output arguments

No.	Variable name	Name	Data type	Description	Default value
(5)	o_bENO	Execution status	Bit	The execution status of the module FB is output. On: In execution Off: Not in execution	Off
(6)	o_bOK	Normal completion	Bit	The module FB has been processed normally when this argument is on.	Off
(7)	o_bErr	Error completion	Bit	The module FB has been processed abnormally when this argument is on.	Off
(8)	o_uErrId	Error code	Word [Unsigned] /Bit String [16-bit]	An error code is stored at error completion.	0
(9)	o_uUnitStatusData	Module status data storage device	Word [Unsigned] /Bit String [16-bit]	The start number of the device for storing module status data is stored.	0

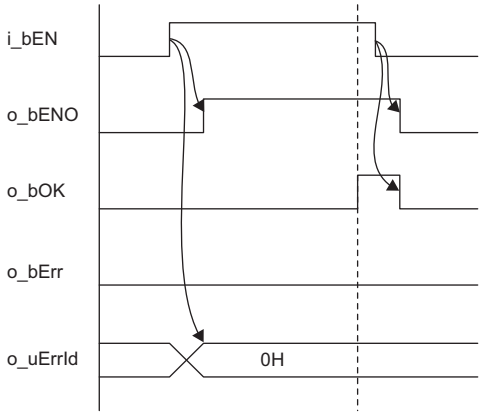
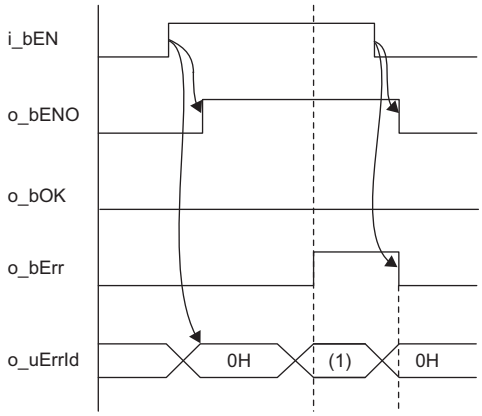
■Operation parameters

No.	Variable name	Name	Data type	Range	Description	Default value
(10)	pbi_uResendCountMax	Maximum number of resends	Word [Unsigned] /Bit String [16-bit]	0 to 15	Specify the number of resends to be performed if the data transfer is not completed within the monitoring time specified by "arrival monitoring time". • 0 to 15	5
(11)	pbi_uTimeUnit	Arrival monitoring time unit	Word [Unsigned] /Bit String [16-bit]	0, 1	Specify the unit of the "arrival monitoring time". • 0: 1s • 1: 100ms	0
(12)	pbi_uMonitorTime	Arrival monitoring time	Word [Unsigned] /Bit String [16-bit]	—	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, data is resent until the value specified in "maximum number of resends" is reached. When "arrival monitoring time unit" is set to 1ms • Effective range 1 to 32767: 1s to 32767s When "arrival monitoring time unit" is set to 100ms • Effective range 1 to 65535: 1 to 65535 × 100ms	0: 10s

■Public variables

No.	Variable name	Name	Data type	Description	Default value
(13)	pbo_uResendCount	Number of resends	Word [Unsigned]/Bit String [16-bit]	The number of resends performed (result) is stored.	0
(14)	pbo_u4ErrTime	Error occurrence time	Word [Unsigned]/Bit String [16-bit] (0..3)	Clock data at the time of error occurrence is stored. 1st word • Upper 8 bits: Month (01H to 12H) • Lower 8 bits: Lower 2 digits of year (00H to 99H) 2nd word • Upper 8 bits: Hour (00H to 23H) • Lower 8 bits: Day (01H to 31H) 3rd word • Upper 8 bits: Second (00H to 59H) • Lower 8 bits: Minute (00H to 59H) 4th word • Upper 8 bits: Upper 2 digits of year (00H to 99H) • Lower 8 bits: Day of week (00H (Sunday) to 06H (Saturday))	0
(15)	pbo_uErrNetworkNo	Error detection network number	Word [Unsigned]/Bit String [16-bit]	The network number of the station in which an error was detected is stored.	0
(16)	pbo_uErrStationNo	Error-detected station number	Word [Unsigned]/Bit String [16-bit]	The station number of the station in which an error was detected is stored. • 125: Master station • 1 to 120: Local station, intelligent device station, submaster station	0

FB details

Item	Description	
Available device	Target module	• RJ71EN71*1 • RJ71GF11-T2*1 • RnENCPU (network part)*1
	CPU module	RCPU
	Engineering tool	GX Works3
Language	Ladder diagram	
Number of basic steps	79 steps	
Processing	When i_bEN (execution instruction) is turned on, this function reads the status information of the system configuration module of the intelligent device station (remote head module).	
FB compilation method	Macro type	
FB operation	Pulse type (multiple-scan execution type)	
Input condition for FB_EN	None	
Timing chart of I/O signals	• For normal completion  • For error completion (same as in the case of a module error)  (1) Error code	
Precautions	• This FB does not include error recovery processing. Please create error recovery processing separately according to the system and required operations. • This FB uses the GP.SINFSTRD instruction. • Turn off i_bEN (execution command) after o_bOK (normal completion) or o_bErr (error completion) is turned on. By turning off i_bEN (execution command), o_bOK (normal completion) or o_bErr (error completion) is turned off and o_uErrId (error code) is cleared to 0.	

*1 The supported firmware version is "12" or later.

Error code

Error code	Reference
D000H to DFFFH	MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)

MEMO

REVISIONS

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

Revision date	*Manual number	Description
June 2014	BCN-P5999-0381-A	First edition
July 2014	BCN-P5999-0381-B	Partial correction
November 2014	BCN-P5999-0381-C	■Added function CC-Link IE Controller Network function of the RJ71EN71 ■Added or modified parts Section 2.1, 2.2, 3.3, 4.1, 5.1
July 2015	BCN-P5999-0381-D	■Added or modified parts Section 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 5.1
January 2016	BCN-P5999-0381-E	■Added or modified parts Chapter 1, Section 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 5.1
May 2016	BCN-P5999-0381-F	■Added or modified parts Chapter 1, Section 4.2, 5.3, 5.4, 5.5

Japanese manual number: BCN-P-5999-0372-F

This manual confers no industrial property rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

© 2014 MITSUBISHI ELECTRIC CORPORATION

BCN-P5999-0381-F(1605)MEE

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

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.